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Chapter 1 - Introduction

Fire Detection

Welcome to the latest issue of the Tyco Safety Products Fire Detection Catalogue of product available from our Letchworth U.K. distribution centre. This catalogue is intended to assist all sellers and system designers involved in fire detection from entry level conventional systems to extensive networked addressable systems and special hazard protection.

In line with our ISO 9000 accreditation, only those products that meet the highest quality criteria have been included.

Our goal is to despatch product on the same day as we receive your order. Our warranty and service returns policy is second to none. We recognise that your business is highly dependant on excellence in customer service and to help achieve this we offer extended warranty from many of our suppliers. Full credit is also available on a "No Question - No Fuss" basis for any new in-warranty product returned to the distribution centre.

New Catalogue Layout

With an emphasis on ease of use, the contents of this Issue has been arranged to meet the specific needs of individual users. Each section covers a different aspect of fire detection and contains all product associated with that subject. If a particular product is used for example with both conventional systems and addressable systems, it will appear in both sections. Each section can therefore be used independently and each section can also be downloaded separately from the Tyco Safety Products website. The 11 sections covered are:

1. Introduction
2. Addressable Systems
3. Conventional Systems
4. Networks & Graphics
5. Detector Test Equipment
6. System Accessories
7. Aspirating Systems
8. Fire Phones and Disabled Refuge
9. Water Leak Detection
10. Special Hazard
11. Useful Information

Website

The Tyco Safety Products website is full of up-to-date information including a section dedicated to fire detection products where you will find lots of useful information including:

Approval Certificates
AutoCAD Downloads
Catalogues
Datasheets
Forums
Marketing Bulletins
Presentations

Technical Information including:

User manuals
Application & Design Manuals
Installation Manuals
Commissioning Manuals
Service Manuals
Sales Information
Software Downloads

Contact Us

For further details on this catalogue, contact our customer telephone Help Line at Letchworth Customer Services on + 44 (0) 1462 66 77 00.

TFS Technical Support Call Centre:-
Direct: +31 475 352 722
Fax: +31 475 352 725
Hours: 9:00 to 18:00 CET, 8:00 to 18:00 GMT, 7:00 to 17:00 EET
UK only: 0800 CALL TYCO or (0800 22 55 89 26)
E-Mail: tspmea.support.fire@tycoint.com

Our web site can be found at: www.tycoemea.com
Chapter 1 - Introduction

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Chapter 2 - MZX Technology

MZX Detection Panels

Tyco MX detection panels use all the features of Tyco MX Technology to provide the latest fire detection technology meeting the latest worldwide standards in cost-effective, expandable packages.

Tyco MX detection panels support Tyco MX Technology:
- MX VIRTUAL Multi-sensor detectors
- MX DIGITAL high speed reliable digital protocol
- MX FASTLOGIC fuzzy logic smoke detection algorithms
- MX CCO universal carbon monoxide fire detection algorithms

Tyco MX detection panels provide modular cost effective solutions:
- Networked panels from 1 to 792 detection loops
- Powerful central loop processing functions
- Powerful and modular user interface
- MX REMOTE diagnostics and service functions
- TXG graphical user interfaces
- MZX, MX2 and designer housing options

Tyco MX detection panels provide long term fire detection solutions including upgrade paths from earlier panel models and a long term development strategy providing future upgrade paths.

Tyco MX detection panels include:
- MZX for compact single loop solutions
- MINERVA MX for EN54 LPCB approved systems
- MINERVA T2000 for Marine approved systems

Tyco MX detection panels include a powerful user interface:
- 640 Character display
- Displays first alarm and most recent alarm
- Permanently displays systems status including number of alarms, number of faults, number of isolated points
- Scroll function allows details of all events and status to be easily viewed
- Displays temperature, CO level and smoke level at point in alarm
- Displays 95 character custom messages for emergency procedures

Tyco MX panels include advanced manager and engineer functions including:
- Menu driven
- Multi-level password protected
- Viewing 3000 event log
- Detailed fault reporting
- Isolate by point, zone or sector
- Viewing and printing status
- Viewing and printing isolated points
- Manual and automatic walk test and reporting functions
- Viewing and printing maintenance reports
- Extensive diagnostic functions including simulation and force outputs
- Text and configuration changes/Automatic battery test
- Detector service functions

Tyco MX detection panels include very powerful event/action programming including:
- Seamless network wide event/action
- 240 x 240 Output map and output sequencing algorithms
- Over 3000 event/action groups for the most complex applications
- Templates for fast programming of standard applications including:
  - EN54/BS5839
  - EN54 Marine
- User defined templates
- Time, date and special day programming
- Wide range of co-incidence, double knock and delay functions
Chapter 2 - MZX Technology

Minerva® MZX Addressable Control Panels
This range of digital addressable fire control panels uses the well established MXDigital® Loop protocol, detectors, i/o modules, user interface and software from the MX range of panels. They provide a single box solution ideally suited for small and medium sized installations up to 64 zones.

The following models are available:
- MZX125 Single Loop, 125 Addresses, 16 Zones
- MZX250 Single Loop, 250 Addresses, 32 Zones
- MZX251 Single Loop, 250 Addresses, 32 Zones
- MZX252 Two Loop, 500 Addresses, 32 Zones
- MZX253 2 to 4 Loop, up to 1000 addresses, 64 Zones

The MZX125 housing has space for 2 x 12Ah batteries
The MZX250 housing has space for 2 x 17Ah batteries
The MZX251, 252 & 253 housings have space for 2 x 38Ah batteries

Running the robust MXDigital® loop protocol the panels can operate using most cable types. This makes them ideal for upgrades as the existing cables can be utilised reducing installation time and cost.

All panels are complete with an integral PSU which will support a full compliment of loop powered sounders and beacons.

The MZX250, 251, 252 and 253 control panels can be fitted with the TL800EN network interface module. This enables up to 99 control panels to be seamlessly networked, or to be added to an existing network of MX Fire controllers.

Features
- Supports one, two or 4 loops with 125, 250, 500 or 1000 addresses (panel dependant)
- 2km loop length
- High level User Interface with “Front Panel Controls” to reduce lifetime cost of ownership
- Wide range of detectors including the 3oTec triple sensing detector providing early detection without false alarms.
- Wide range of ancillaries including door control to BS7273 category A
- DDA compliance using AVBase and loop powered sounder beacons.
- Approved to EN54 the system is designed to be installed to BS5839 Part 2

Repeaters
Three dedicated repeaters are available. These repeaters offer the user full panel functionality. Up to 7 repeaters can be attached to the control panel’s 2 wire remote bus. Two repeaters are mains driven with internal mains psu & batteries and one requires an external 24VDC supply

MZX16R 16 Zones with space for 7Ah or 12Ah batteries
MZX32R 32 Zones with space for 17Ah batteries
MZX64DR 64 Zones (requires 24VDC supply)

Product Codes
- 557.200.501 MZX125 1 loop 16 Zone Fire Controller
- 557.200.502 MZX250 1 loop 32 Zone Fire Controller
- 557.200.503 MZX251 1 loop 32 Zone Fire Controller
- 557.200.506 MZX252 2 loop 32 Zone Fire Controller
- 557.200.508 MZX253 2 to 4 loop 64 zone fire controller
- 557.200.073 MZX16R 16 Zone Repeater (mains powered)
- 557.200.520 MZX32R 32 Zone Repeater (mains powered)
- 557.200.526 MZX64DR 64 Zone Repeater (24VDC powered)
- 557.201.502 Semi-Flush Bezel for MZX125/MZX16R
- 557.201.501 Semi-Flush Bezel for MZX250/251/252/253/MZX32R
- 557.201.503 Accessory mounting plate for std modules, IOB800, LIM800 and TUD800 (MZX250/251/252 only)
- 557.201.519 Comms Interface mounting plate (MZX250/251/252/253 only)
- 557.201.510 Rack mount kit for MZX 125
- 557.201.511 Rack mount kit for MZX 250
- 557.201.512 Rack Mount Kit for MZX 251/252/253
- 557.201.307 MZX250 17Ah Battery Clamp
- 557.201.505 MZX251/252 38Ah Battery Clamp
- 557.201.520 MZX251/252/253 24Ah Battery Clamp
Chapter 2 - MZX Technology

MZX Addressable Control Panels
Technical Specifications

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<th>MZX250</th>
<th>MZX251/252/253</th>
<th>MZX16R</th>
<th>MZX32R</th>
<th>MZX64R</th>
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<td>H x W x D mm</td>
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<td>370x325x126</td>
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<td>2 x 12V 17Ah</td>
<td>2 x 12V 38Ah</td>
<td>2 x 12V 12Ah</td>
<td>2 x 12V 17Ah</td>
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</table>

Note 1 – Max PSE output current with the charger interrupted (I max b, EN54-4)

MZX Ancillary housings & PSUs

This range of housing & PSU’s is designed to complement the MZX range of fire controllers, the housings are available in different sizes to match the MZX fire controller. Two ranges of ancillary housing are available; one is designed to accommodate various modules on the removable chassis plate and also has the option to mount a document holder on the rear of the door. The other ancillary housings, (aperture housings) are designed to accommodate one or two standard sized MX control, display, printer or annunciator modules ie ANN880, COM820, PRN800 or similar, a chassis plate for mounting modules is also fitted.

The housings with two apertures are supplied with one blanking plate

Product Codes

557.202.625 ANC125-A Ancillary Housing, One Aperture (Small - matches MZX125)
557.202.626 ANC250-A Ancillary Housing, Two Aperture (Large – matches MZX250)
557.202.627 ANC251-A Ancillary Housing, Two Aperture (Deep – matches MZX251/252/253)
557.202.622 ANC125 Ancillary Housing (Small - matches MZX125)
557.202.623 ANC250 Ancillary Housing (Large – matches MZX250)
557.201.513 Document Holder attachment (used with ANC125/250/251)
557.201.516 M520 Anc Fitting Kit – req’d for older M520 modules, fittings for 4 modules

Power Supply Units

The power supplies utilise switch mode PSU’s as used in the MZX range of panels, if monitoring of these PSU’s is required a monitoring kit is available which includes a MIM800, mounting bracket and cables

557.200.530 PSU A17 17Ah 5A Addressable expansion PSU - matches MZX250
557.200.531 PSU A38 38Ah 5A Addressable expansion PSU - matches MZX251/252/253

557.201.516 PSU monitor kit (includes MIM800)
Chapter 2 - MZX Technology

Minerva MX2 Range - IEC 61508 Approved (SIL2)

The Minerva MX2 range of panels are intelligent LPCB EN54 compliant panels, which can be networked to provide up to 396 detection loops and installed to BS5839-Part 1 2002.

The MX2 design philosophy is to have a single panel housing that incorporates all the necessary components required to satisfy the most comprehensive of specifications. Additional matching ancillary housings can accommodate a range of standard modules, adjacent to or remote from the main controller.

- MX2 panels support two MX DIGITAL detection loops with up to 250 addressable devices per loop.
- MX2 panels can be expanded to eight loops supporting up to 1000 addressable devices.
- MX2 consists of a strong steel enclosure incorporating a removable chassis plate. The chassis plate holds:
  - PSU830 5A 24Vdc battery back power supply and loop booster to EN54: pt.4.
  - FIM800 field interface PCB incorporating two MX DIGITAL loops.
  - CPU800 32 bit processor and memory card
  - Optional network card and additional loop card(s)
  - Optional IOB800 input/output expansion card

The panel has a removable steel front door, which incorporates the MX user interface and optional zonal LED’s. The user interface has a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys. All mandatory operator controls are provided with LED functions including Day/Night switching. One control key and 2 status indication LEDs are provided for site-specific functions.

Product Codes

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<tr>
<th>Code</th>
<th>Description</th>
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<th>Description</th>
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<td>557.200.203</td>
<td>MX2-210 Two loop c/w LEDs shallow housing</td>
<td>557.202.206</td>
<td>MX Battery expansion aperture installation kit.</td>
</tr>
<tr>
<td>557.200.205</td>
<td>MX2-211 Two loop c/w LEDs deep housing</td>
<td>557.202.204</td>
<td>MX2 Battery housing</td>
</tr>
<tr>
<td>557.200.207</td>
<td>MX2-XB0 Expansion Box Shallow</td>
<td>557.202.205</td>
<td>MX2 Battery and Expansion Housing (65AH)</td>
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<td>557.200.208</td>
<td>MX2-XB1 Expansion Box Deep</td>
<td>557.202.209</td>
<td>MX2 LCD Assembly (Spare)</td>
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<td>557.200.210</td>
<td>MX2-FBX Expansion box flush mounting bezel</td>
<td>557.202.200</td>
<td>LCD800 (Display + Control Module)</td>
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<td>557.202.007</td>
<td>XLM800 Loop expansion module</td>
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<td>557.202.026</td>
<td>TU800 MXNet network node interface module</td>
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<td>557.202.021</td>
<td>ANN840 LED Annunciator 40 way bi-colour</td>
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<td>557.202.022</td>
<td>ANN880 LED Annunciator 80 way</td>
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<td>557.202.020</td>
<td>COM820 Status command module 20 way</td>
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<td>557.202.024</td>
<td>PRN800 In-built thermal printer (expansion box)</td>
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<tr>
<td>557.201.211</td>
<td>Ancillary/expansion board mounting kit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 2 - MZX Technology

Minerva MX4000 - IEC 61508 Approved (SIL2)

The MINERVA MX panels are intelligent LPCB EN54 approved panels, which can be networked to provide up to 792 detection loops and installed to BS5839:Pt.1.

• The MX4000 supports two MX DIGITAL detection loops and can be expanded to eight loops supporting up to 1000 addressable devices.
• The MX4000 provides up to 240 zones of detection

Both panels consist of a strong steel enclosure incorporating a removable chassis plate. The chassis plate holds:

• PSB800M 5A 24Vdc battery backed power supply and loop booster to EN54:pt.4
• FIM800 field interface PCB incorporating one or two MX DIGITAL loops
• CPU800 32 bit processor and memory card
• Optional network card and additional loop card(s)
• Optional IOB800 input/output expansion card

The panel has a strong cast aluminium front door, which incorporates a modular user interface that fully complies with EN54:pt.2. The user interface incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad, 5 softkeys. The OCM800 operator control module provides all mandatory operator control keys and LED functions including Day/Night switching. Two control keys and 2 indication LEDs are provided for site-specific functions. Control keys and LEDs are labelled in English according to the default LPCB functionality. The slide in decals can be reversed and alternative text added.

A maximum of 1200 digital INPUT/OUTPUT points can be provided via expansion boards connected to the remote bus.

Product Codes

Standard Panels
557.200.003 MX4000 Two to Four Loop Panel – Shallow Back Box
557.200.004 MX4000 Two to Eight Loop Panel – Deep Back Box
557.200.009 MX4000 Two to Four Loop Panel - Flush Back Box

Options
557.202.006 IOB800 (8in/8out) expansion board (Max. 24 I/O on main panel 8in/16out)
557.202.007 XLM-MX two loop MX DIGITAL expansion card
557.202.026 TLI 800 ThornNet & MX-NET network card
Chapter 2 - MZX Technology

Battery & Expansion Boxes
The batteries and any additional zone LED’s or operator controls and fireman’s interface are mounted in a separate housing which can be mounted below the main panel or behind the panel. The matching battery and expansion box is available with shallow (17Ah) or deep backbox (38Ah) according to the batteries used.

Features
• Compact
• Low Cost Option
• Rack Mounting Kit

Product Codes
- 557.200.005 MX-BBX 17Ah shallow expansion and battery box
- 557.200.019 MX-BBX-F 17Ah shallow flush expansion and battery box
- 557.200.006 MX-DPBBX 38Ah deep expansion and battery box
- 557.200.016 MX-BATT Deep Battery Box (322H x 442W x 217D mm)
- 572.065 MX Rack Mounting Kit for standard 19” racks

The chassis plate in the battery box also has space for up to 2 x IOB800 input/output expansion modules (maximum 24 I/O) or 1 x MX FILNET or 1 x PSM/PSB800M.
Chapter 2 - MZX Technology

Minerva MX Repeaters
The MINERVA MX full function repeater is an EN54 LPCB approved repeater with optional addressable EN54:Pt.4 power supply. The repeater consists of a steel backbox and cast aluminium front door which incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys. The OCM800 operator control module provides all mandatory operator control keys and LED functions including Day/Night switching. One control key and 2 indication LEDs are provided for site-specific functions.

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

Two power supply options are available for repeaters. The MXR incorporates an RSM800 repeater supply module for connection to a 24 Vdc supply. Or the MXR-PSU which incorporates a PSM800 power supply module for connection to a 120-240Vac mains supply and an APM800 addressable power monitor for connection to an MX addressable loop, providing power supply monitoring in accordance with EN54:pt.4.

The back box has a removable chassis plate with either the RSM800 or the PSM800 power supply. APM800 addressable PSU monitor and provides space for 2 x 7 Ah batteries to provide 72 h backup.

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

The operator control module (OCM800) can support up to 80 inputs and outputs in the form of LED annunciators, IOB800 input/output modules, or com 820 command modules.

Features
• Fully Functional
• Flush or Surface Mounting
• Fully Monitored

Product Codes

Standard Repeaters
557.200.012 MXR Repeater with shallow backbox (24Vdc)
557.200.017 MXR-F Repeater with flush backbox (24Vdc)
557.200.013 MXR-PSU Repeater and addressable PSU (120-240 Vac)

Options
557.202.006 IOB-800 (8in/8out) expansion board
557.180.005 Mimic driver module
557.180.016 XIOM universal I/O module
557.202.028 RSM800 PSU Module (24Vdc)
Chapter 2 - MZX Technology

MZX4000 Black Box

For situations where a networked MX Technology panel is not required to have a user interface an MZX4000 black box panel can be used. Black box panels consist of steel back boxes which house the FIM, processor board, power supply and optional network card and expansion loop card. The front cover is of steel construction and has a simple status display panel giving LED indication of alarm, fault, power and system fault.

Features

• 2 MZX detection loops as standard
• Expandable to 8 loops using XLM800
• Same loop power capability of standard MZX4000 panel/Reduces the cost of network systems
• Uses MXNet networks (network card supplied separately)
• Create a system of distributed loops to reduce installation costs
• Alarm, fault, power and system fault status display
• Single deep surface mount enclosure
• Integral power supply and space for 38AH batteries
• Distributed power supplies reduce cabling costs
• On board dual sounder circuits/Printer support at each black box
• Fully featured and supported remote bus at each black box drive repeaters and mimic displays
• Download MX Consys configurations from any panel or black box on the network

Technical Specification

<table>
<thead>
<tr>
<th>Dimension (mm)</th>
<th>640H X 440W X 230D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aprox weight</td>
<td>16Kg</td>
</tr>
<tr>
<td>Colour, housing &amp; front cover</td>
<td>Dawn Grey (BS 4800 10A)</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>Range -8°C to +55°C</td>
</tr>
<tr>
<td>Storage Temp</td>
<td>-20°C to +70°C</td>
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<tr>
<td>Relative Humidity</td>
<td>95% non condensing</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>120 to 240 Vac</td>
</tr>
<tr>
<td>Input current</td>
<td>0.8 to 2.2A</td>
</tr>
</tbody>
</table>

Product Code

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>542.098</td>
<td>MZX4000 Black Box</td>
</tr>
</tbody>
</table>

MZX4000 black box panels are fully featured MZX Technology panels designed to be used on networked systems in situations where a local user interface is not required.
Chapter 2 - MZX Technology

Minerva T2000 and T2000 CV Marine Detection Panels
IEC 61508 Approved (SIL2)

The T2000 is a fully Marine approved EN54 compliant 1 to 8 loop networkable detection panel. The T2000 supports two Tyco MX DIGITAL detection loops and can be expanded to eight loops supporting up to 1000 addressable devices. The T2000 consists of a strong stainless steel or mild steel Marine approved enclosure incorporating the above features.

The T2000CV is a 3 loop marine approved panel housed in a mild steel enclosure designed for use in commercial vessels.

All panels have a strong cast aluminium front door, which incorporates a modular user interface that fully complies with EN54 pt2. The user interface incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys.

The T2000 operator control module provides all mandatory operator control keys and LED functions including Day/Night switching. One control key and 2 indication LEDs are provided for vessel specific functions. Control keys and LEDs are labelled in English according to the default Marine functionality. The slide in decals can be reversed and alternative text added.

The batteries and any additional zonal LED’s or operator controls are mounted in a separate housing which can be mounted below the main panel or behind the panel. The battery box incorporates a heavy duty backbox and battery clamp.

The chassis plate in the battery box also has space for up to 2 x IOB800 input/output expansion modules (maximum 24 I/O) or 1 x PSM/PSB800M.

Features

- PSB800M 5A 24V DC battery backed power supply and loop booster to EN54 pt4
- FIM800 field interface PCB incorporating one or two MX DIGITAL loops
- CPU800 32 bit processor and memory card
- Optional network card and additional loop card(s) (T2000 only)
- VDR (Voyage Data Recorder) Interface as standard

Product Codes

- 557.200.600 T2000 Two To Eight Loop Marine Panel (Stainless steel enclosure)
- 557.200.602 T2000B Battery Box (Stainless steel enclosure)
- 557.200.605 T2000 BM Battery Box (Mild steel enclosure)
- 557.200.606 T2000 RMRS Door Stay Kit
- 557.200.610 T2000 Standard Two To Eight Loop Marine Panel (Mild steel enclosure)
- 557.201.216 T2000 XLM 8-Loop Mounting Kit
- 557.200.620 T2000CV 3 loop marine panel (mild steel back box)
- 557.202.127 VDR Cable For a Standalone panel, Com port 3
- 557.202.128 VDR Cable for a networked system, Com port 1
- 557.180.454 Marine Bulkhead Mount
- 557.180.452 Marine 19” rack mount kit for use with surface mounting housings
- 557.180.022 Terminal chamber PCB assembly
- 557.201.233 PSU 830 T2000/T2000R Conversion Kit
- 557.201.234 PSU 830 T2000 120VAC Kit
Chapter 2 - MZX Technology


The T2000R full function repeater is an EN54 Marine approved repeater with optional addressable EN54 Pt.4 power supply. The repeater consists of a steel backbox and cast aluminium front door which incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys. The OCM800 operator control module provides all mandatory operator control keys and LED functions including Day/Night switching. One control key and 2 indication LEDs are provided for vessel-specific functions. Control keys and LEDs are labelled in English according to the default Marine functionality. The slide in decals can be reversed and alternative text added. The back box has a removable chassis plate with the PSM800M power supply and APM800 addressable PSU monitor and space for 2 x 7 Ah batteries to provide 72h backup.

The T2000R CV indicating repeater is an EN54 Marine approved repeater (24Vdc Supply). The repeater consists of a mild steel backbox and cast aluminium front door which incorporates the ODM800 operator display module with a 16 x 40-character backlit LCD display, simple alphanumeric keypad and 5 softkeys. Operator controls comprise a panel buzzer silence button, status LED’s are provided for fire, fault and power on indication.

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

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

Product Codes

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.200.601</td>
<td>T2000R Marine Repeater with Power Supply Unit 240Vac (Stainless steel enclosure)</td>
</tr>
<tr>
<td>557.200.604</td>
<td>T2000R Marine Repeater without Power Supply Unit 24Vdc (Stainless steel enclosure)</td>
</tr>
<tr>
<td>557.200.606</td>
<td>T2000R RMR8 Door Stay Kit</td>
</tr>
<tr>
<td>557.200.611</td>
<td>T2000R Standard Marine Repeater with Power Supply Unit 240Vac (Mild steel enclosure)</td>
</tr>
<tr>
<td>557.200.621</td>
<td>T2000R CV Marine Indicating Repeater without Power supply unit 24Vdc (Mild Steel enclosure)</td>
</tr>
<tr>
<td>557.201.233</td>
<td>PSU 830 T2000/T2000R Conversion Kit</td>
</tr>
<tr>
<td>557.201.234</td>
<td>PSU 830 T2000 120VAC Kit</td>
</tr>
</tbody>
</table>

Features

- Fully Functional
- Optional Approved Mild Steel Enclosure
- Fully Monitored R-Bus
## Chapter 2 - MZX Technology

### MX Detection Panels - Technical Specifications & System Schematics

#### MX Detection Panels - Designer Housing Technical Specification

<table>
<thead>
<tr>
<th></th>
<th>Shallow Housing</th>
<th>Flush Shallow Housing</th>
<th>Deep Housing</th>
<th>Marine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions (mm)</strong></td>
<td>320Hx440Wx120D</td>
<td>380Hx500Wx120D</td>
<td>320Hx440Wx215D</td>
<td>320Hx440Wx135D</td>
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<tr>
<td><strong>Approx Weight</strong></td>
<td>7.6kg</td>
<td>7.2kg</td>
<td>8.9kg</td>
<td>14.0kg</td>
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<tr>
<td><strong>Temperature (Storage)</strong></td>
<td>-20°C to +70°C</td>
<td>-20°C to +70°C</td>
<td>-20°C to +70°C</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td><strong>Temperature (Operating)</strong></td>
<td>-8°C to +55°C</td>
<td>-8°C to +55°C</td>
<td>-8°C to +55°C</td>
<td>-8°C to +55°C</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>up to 95% RH, Non-Condensing</td>
<td>up to 95% RH, Non-Condensing</td>
<td>up to 95% RH, Non-Condensing</td>
<td>up to 95% RH, Non-Condensing</td>
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<tr>
<td><strong>Colour (Modules)</strong></td>
<td>Pantone 431C</td>
<td>Pantone 431C</td>
<td>Pantone 431C</td>
<td>Pantone 431C</td>
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<tr>
<td><strong>EMC/RFI</strong></td>
<td>EN 50130-4</td>
<td>EN 50130-4</td>
<td>EN 50130-4</td>
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<td><strong>Shock</strong></td>
<td>EN 54-2</td>
<td>EN 54-2</td>
<td>EN 54-2</td>
<td>EN 54-2</td>
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<tr>
<td><strong>Vibration</strong></td>
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#### MX2 Detection Panels Technical Specification

<table>
<thead>
<tr>
<th></th>
<th>Panel Shallow Housing</th>
<th>Panel Deep Housing</th>
<th>Expansion Housing Shallow</th>
<th>Expansion Housing Deep</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions (MM)</strong></td>
<td>580H x 458W x 129D</td>
<td>580H x 458W x 209D</td>
<td>357H x 458W x 129D</td>
<td>357H x 458W x 209D</td>
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<tr>
<td><strong>Approx Weight</strong></td>
<td>12.7kg</td>
<td>15.2kg</td>
<td>6.2kg</td>
<td>7.5kg</td>
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<tr>
<td><strong>Temperature (storage)</strong></td>
<td>-20°C to +70°C</td>
<td>-20°C to +70°C</td>
<td>-20°C to +70°C</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td><strong>Temperature (operating)</strong></td>
<td>-5°C to +55°C</td>
<td>-5°C to +55°C</td>
<td>-5°C to +55°C</td>
<td>-5°C to +55°C</td>
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<tr>
<td><strong>Humidity</strong></td>
<td>Up to 90% RH, Non-Condensing</td>
<td>Up to 90% RH, Non-Condensing</td>
<td>Up to 90% RH, Non-Condensing</td>
<td>Up to 90% RH, Non-Condensing</td>
</tr>
<tr>
<td><strong>Colour (Modules)</strong></td>
<td>Pantone 431C</td>
<td>Pantone 431C</td>
<td>Pantone 431C</td>
<td>Pantone 431C</td>
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<tr>
<td><strong>EMC/RFI</strong></td>
<td>EN50130-4</td>
<td>EN50130-4</td>
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<td><strong>Shock</strong></td>
<td>EN54-2</td>
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<tr>
<td><strong>Vibration</strong></td>
<td>EN54-2</td>
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<td>EN54-2</td>
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</tr>
</tbody>
</table>

**IP Rating**

IP30
Chapter 2 - MZX Technology

Designer Housing Schematic

24Vdc
Non-Resettable
24Vdc
Resettable

Field I/O
Network
PC/Modem
Printer

Loop C
Loop A
Loop B
Loop D

TLI
CPU
FIM
XLM
PSB

110-240Vac

RBus

ODM
OCM
XBus
IOB
TUD/

17 or 38Ah

ANN880
ANN840
or COM820

MPM
Remote bus up to 15 addresses a combination of up to 7 x OCM and 15 x MPM Maximum

Battery & Expansion Housing

Main Panel Housing

Network
Field I/O
110-240Vac

Loop A
Loop B
Loop C
Loop D

MX2 Schematic

NETWORK
FIELD
I/O
110-240 Vac

LDOOP A
LDOOP B
LDOOP C
LDOOP D

XLM
FIM
PSB

INT
PRINTER
NETWORK
PC MODEM
24Vac

17AH OR 38AH
17AH OR 38AH

MAIN PANEL HOUSING

RBUS

DCM

ANN881

ANN880
ANN840
or COM820

MX2 Schematic

Remote bus up to 15 addresses a combination of up to 7 x OCM and 15 x MPM Maximum

Battery & Expansion Housing

Main Panel Housing

Network
Field I/O
110-240Vac

Loop A
Loop B
Loop C
Loop D

TLI
CPU
FIM
XLM
PSB

110-240Vac

RBus

ODM
OCM
XBus
IOB
TUD/

17 or 38Ah

ANN880
ANN840
or COM820

MPM
Remote bus up to 15 addresses a combination of up to 7 x OCM and 15 x MPM Maximum

Battery & Expansion Housing

Main Panel Housing

Network
Field I/O
110-240Vac

Loop A
Loop B
Loop C
Loop D

TLI
CPU
FIM
XLM
PSB

110-240Vac

RBus

ODM
OCM
XBus
IOB
TUD/

17 or 38Ah

ANN880
ANN840
or COM820

MPM
Remote bus up to 15 addresses a combination of up to 7 x OCM and 15 x MPM Maximum
Chapter 2 - MZX Technology

MX Panel Components

CPU Central Processor
The CPU-800 provides the main processing power behind the MX detection panels. It is a multi-layer PCB and contains the CPU, the memory and interface electronics. The CPU-800 plugs into the Field Interface Module (FIM800).

Technical Specification
- 32 bit Processor: Motorola 68331
- Data Memory SRAM: 1 MByte
- Program Memory Flash EPROM: 2 MByte
- Configuration Memory Flash EPROM: 1 MByte
- Boot EPROM: 64 kByte
- Number of serial Interfaces: 4
- Quiescent Current: 67mA
- Alarm Current: 67mA

Features
- Full alarm and fault monitoring for up to 1000 addressable points including central loop processing of MX Fastlogic expert algorithms
- Concurrent operation of the main user interface and 2 remote user interfaces including one remote dial up or networked user interface
- Cause and core effect using up to 1000 input, output groups, delay timers and logic functions

Product Code
557.202.002 CPU800 standard MX central processor
Chapter 2 - MZX Technology

MX Loop Expansion Module
The XLM800 Loop Expansion Module fits “piggyback” style onto the FIM or an existing XLM 800 and is used to:

- Expand the capability of the MX4000 C.I.E. two loop system to eight loops
- Replace the FIM loops in case of a failure on either a two or four loop system.

The XLM800 Loop Expansion Module controls the communications between the detectors (and other ancillaries) connected on the 2-wire loop circuits and the controller. In addition, the addressable interface contains line isolation circuits which protect the loop driver circuit from short-circuit conditions.

Technical Specification
Dimensions: 17.5H x 104W x 196Dmm
Battery Requirements:
- Standby 104.3mA + loop current
- Alarm 105.3mA + loop current
- Loop Current 495mA maximum

Features
- MX Digital Loop Protocol
- Extensive Loop Protection
- Interfaced to FIM 800 module

Product Code
557.202.007 XLM-MX Two Loop MX Digital Expansion Card
Chapter 2 - MZX Technology

FIM800 Field Interface Module

The Field Interface Module FIM is the main interface for field wiring on MX detection panels and contains plug-in field wiring terminals, inter board connectors, EMC protectors and filters and general I/O electronics.

The FIM801 and FIM801CV provide 1 x MX DIGITAL loop and the FIM802 provides 2 x MX DIGITAL loops. Each MX DIGITAL loop can support several kilometres of loop wiring using a mixed topology using multiple loops and spurs.

The FIM provides up to 495mA of loop power to each loop to drive loop powered sounders and other loop powered devices. An optional plug-in additional loop cards (XLM800-MX) provide up to 8 x MX Digital loops.

The FIM incorporates the following local I/O connections:

- 2 x reverse polarity monitored sounder outputs
- 2 x volt free outputs (Default alarm and fault)
- 1 monitored input (eg. Day/Night changeover)
- 1 emergency alarm input
- 1 unmonitored input (eg. Class Change or Tamper)
- Full monitoring of power supply
- Ground fault monitoring

The FIM incorporates a local I/O bus which allows the local I/O connections to be increased by 24. A variety of I/O expansion boards are available including:

- I/OB800 (8 in/8 out) expansion board
- TU800 German Transmission Unit

The FIM includes two connections to the RBUS one for the local user interface and one for connecting up to 15 remote addresses in the form of up to 2 x operator control modules (OCM800) or up to 15 multi-purpose modules (MPM800).

The FIM provides 3 configurable external serial ports:

- Port 1 Local printer
- Port 2 Configuration PC or remote diagnostics and upload/download modem
- Port 3 FSI open protocol or Network card/gateway (TLI-800 or MX-FIL) (not provided on FIM 800CV)

Technical Specification

- Dimensions: 25H x 105W x 196D mm
- Weight: 156g
- Power Consumption: 119mA (Quiescent - excluding loops and operator interface)
- Relay Outputs: 30Vdc @ 2A
- Monitored inputs: 10k Ohm EOL, 3kHz in parallel
- RBUS: RS-485, default 19.6kB, up to 1200m
- Serial Ports: RS232C, 19.6kB, up to 10m
- Local I/O Expansion: Up to 2 modules, up to 24 I/O, max. 300mm

Features

- Interfaces to CPU & XLM modules
- 3 Download/Network & Printer ports
- Up to 2 MX Loops

Product Codes

- 557.202.000 FIM801 field interface module with one MX loop driver
- 557.202.001 FIM802 field interface module with two MX loop drivers
- 557.180.053 MX RBUS Driver chip (spare)
Chapter 2 - MZX Technology

PSU830 Power Supply

The MX PSU830 power supply module is a state-of-the-art integrated switch mode system power supply and battery charger, which can provide up to 5A external and auxiliary loop power during alarm conditions.

The charging voltage is temperature compensated. The power supply recharges the batteries within 24hr for the following timings:

• 90hr stand by time and 15 minute alarm condition.
• 72hr stand by time and 30 minute alarm condition.

The power supply provides full condition and fault monitoring to the system via the FIM or addressable power supply monitor module APM800. The PSU830 incorporates a booster module to provide the correct voltage levels to maximise the performance of the MX DIGITAL protocol.

Fault signals (Loss of AC, Battery charger fault, Battery fault and earth fault) are provided.
Battery voltage readings are also provided to the FIM and a volt free fault o/p is also provided.

Screw terminals provide 2 x 27V outputs (one with reset control) and one 5V output. The power supply is fitted in a steel cage with mounting points to allow any of the following boards to be mounted:
• APM800 addressable power supply monitor module.
• FB800 fuse board with 15 x 24Vdc fused spurs.
• IOB800 input/output expansion board.
• PTM800 power terminal module.

The MX2 PSU830 Dual PSU Kit is required to power the XLM800 pcb on 6 to 8 loop systems which require the extended loop power capability. It consists of the necessary cables & connectors to enable an additional PSU830 to be fitted to an MX2 controller.

Technical Specification

Dimensions (HWD): 62 x 132 x 242mm
Electrical Characteristics:
Input Voltage: 120-240Vac -15% /+10% 50/60Hz (auto ranging)
Input Current Rated Load: 0.8-2.2A RMS
Output Voltages: 27.3Vdc @ +25°C
Non-reset: 27.3Vdc @ 2A
5Vdc @ 2.2A
40Vdc @ 2.2A
27.3Vdc @ 2A
Reset:
Rated Output: Maximum Alarm current 5A for 30 minutes
Maximum continuous load current (excluding charging): 2.5A

Battery Requirements:
17Ah or 38Ah single PSU
65Ah dual PSU
Standby Current Consumption:
90mA @ 24Vdc
Battery Fault High Resistance:
Single PSU: 0.6 Ohms
Dual PSU: 0.3 Ohms

Features
• Universal Input Voltage
• Temperature Compensated
• Full Fault Monitoring
• Can drive 4 fully loaded MX digital loops
• When used with second PSU830 and MX2 8 loop expansion kit can power 8 fully loaded MX digital loops
• Same footprint and fixings as the PSB821
• Replaces PSB820 and PSM820
• Meets the requirements of EN54 part 4 amendment 2

Product Codes
557.201.232 PTM800 Power Terminal Module
557.201.231 MX2 PSU830 Dual PSU Kit
557.202.044 PSU 830K Power Expansion Kit
557.202.030 PSU 830 Panel Fixing Conversion Kit
557.202.031 PSU 830 Small Chassis Plate Conversion Kit
557.200.014 MXAPSU17 Boxed Addressable PSU (17A/H)
557.200.015 MXAPSU38 Boxed Addressable PSU (38A/H)
Chapter 2 - MZX Technology

OCM800 Operator Control Module

The OCM800 is utilised by all MX detection panels and full function repeaters to provide mandatory operator control and LED indication functions to comply with EN54:pt.2. The OCM800 is fully programmable but operates in default configurations according to the software template used.

Most software templates allow several of the LED’s and control buttons to be programmed for site-specific functions. The LED’s and control buttons both have slide in legends to suit the default configurations and language. Standard panels include the appropriate legends for their relevant markets.

The OCM800 incorporates the functionality of an MPM800, which allows it to drive an operator display module to provide a complete panel user interface.

In addition the OCM800 can drive up to 80 inputs/outputs using one of the following modules.

The following I/O and LED annunciator modules can be slaved from an MPM800:

• Up to 5 x IOB800 (8 in/8 out LPCB/VdS approved expansion board)
• Up to 5 x XIOM (16 way universal I/O board)
• One Mimic Panel (80 way LED mimic driver PCB)
• One 80 way ANN880 LED mimic
• One 40 way ANN840 LED mimic using red & yellow LED’s
• Two 20 way COM820 LED status/command modules

Up to 2 x OCM800 units can be connected to an MX panel via the internal or external RBus communication port.

Technical Specification

- Dimensions: 50H x 232W x 133D mm
- Weight: 0.272Kg
- Power Consumption: 35mA (Quiescent) 36mA (Lamp test) 81mA (Alarm)
- Control Buttons: 7
- Indication LED’s: 18
- Communications: RS-485: RBus -Default 9.2Kb
- Expansion Bus: MX X-Bus
- Legends for LPCB modules: UK/English, Marine

Product Code

557.202.013 OCM800 with Minerva MX Inserts
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Features
- 0-9 alpha-numeric phone style keypad
- Up and down scroll keys
- Five function keys

ODM800 Operator Display Module
The ODM800 operator display module provides a powerful and flexible 40 x 16 character backlit LCD display used by all MX detection panels and full function repeaters. The ODM800 is used with the OCM800 to provide a fully compliant and approved user interface EN54 fire detection panels.

The ODM800 is powered and controlled by the OCM800 operator control module and provides various functions according to the panel software.

Technical Specification
Dimensions: 25H x 232W x 133D mm
Weight: 0.361Kg
Power Consumption: 50mA (Quiescent)
900mA (Alarm Backlit)
50mA (Alarm during mains failure)

Product Code
557.202.019 ODM800 operator display module

OCM800 to IOB800 Connection Details

Standard EN54 panels use the LCD display as five windows on the system:
Window 1: Details of first detector in alarm
Window 2: Details of the most recent detector in alarm
Window 3: System Status including Alarm/Fault and Isolate counters
Window 4: Full alarm/event details and lists including 95 character procedure plus full password controlled system manager, service and engineering menu structure
Window 5: Function key legends (eg. Back, Enter, >>, <<)

Features
- 0-9 alpha-numeric phone style keypad
- Up and down scroll keys
- Five function keys
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### ANN840 LED Annunciator

The ANN840 is a standard LED annunciator user interface module which can be driven from an OCM800 or an MPM800. The MPM800 can be mounted remotely or "piggy-backed" on the ANN840. The ANN840 has 40 removable legends for 80 zone status indicators. Each zone can indicate RED (eg. Alarm) and YELLOW (eg. Fault & Isolate). The functionality is programmed in the MX detection panel.

**Technical Specification**
- **Dimensions:** 25H x 232W x 133D mm
- **Weight:** 177g
- **Power Consumption:**
  - Quiescent: 1mA + MPM800
  - Alarm: 85mA + MPM800 (25% zones in alarm)
  - Lamp Test: 340mA + MPM800

**Product Code**
- 557.202.021
- ANN840 LED Annunciator

### ANN880 LED Annunciator

The ANN880 is a standard LED annunciator user interface module, which can be driven from an OCM800 or an MPM800. The ANN880 has 80 red LEDs numbered 1 to 80. The functionality is programmed in the MX detection panel but is defaulted to zone alarm LED's.

**Technical Specification**
- **Dimensions:** 25H x 232W x 133D mm
- **Weight:** 177g
- **Power Consumption:**
  - Quiescent: 1mA + MPM800
  - Alarm: 85mA + MPM800 (25% zones in alarm)
  - Lamp Test: 340mA + MPM800

**Product Code**
- 557.202.022
- ANN880 LED Annunciator

### COM820 Status/Command Module - 20 Way

The COM820 is a standard user interface module, which can be driven from an OCM800 or an MPM800. The MPM800 can be mounted remotely or "piggy-backed" on the COM820. The COM820 has removable legends for 20 status command functions. Each function includes a command button and a yellow status LED. The functionality is programmed in the MX detection panel. Typical applications include:
- Manual/OFF/Auto:Isolate functions for evacuation or plant control
- Selective Isolate and evacuate functions for fireman's control
- Selective plant shutdown and override functions
- Selective system delay and timer functions

**Technical Specification**
- **Dimensions:** 25H x 232W x 133D mm
- **Weight:** 204g
- **Power Consumption:**
  - Quiescent: 0.267mA
  - Alarm: 5mA (25% LED's)
  - Lamp Test: 21mA

**Product Code**
- 557.202.020
- COM820 Status/Command Module

### Remote Mimics

The 80-Way Mimic allows custom-made display and presentation panels to be incorporated in the MINERVA MX addressable system. It is supplied as a single PCB, which may be mounted in an expansion box or on the rear of a free-standing panel, as required. It may be used to drive up to 80 zone LED indicators, arranged in any configuration, together with two FIRE LEDs, one FAULT LED and one ISOLATE LED. These indicators can operate in the same manner as the corresponding indicators on the panel. A remote mimic can be connected to the MPM800’s configured as remote Mimics drivers via the remote bus.

**Technical Specification**
- **Dimensions:** 235H x 190Wmm
- **Operating Temp:** -10°C to +55°C
- **Storage Temp:** -20°C to +65°C
- **Relative Humidity:** Up to 95% RH Non-Condensing
- **Power Consumption:**
  - Quiescent: 11mA
  - Alarm: 220mA (25% Alarm)
  - Lamp Test: 600mA

**Product Code**
- 557.200.005
- MINERVA 80 way mimic driver module
MPM800 Multi Purpose Interface Module

The MPM800 is used to provide various expansion capabilities via the remote bus (RBUS). The MPM800 is provided as a standalone module but is also incorporated into the circuitry of the OCM800 operator control module to drive the LCD display, LEDs, keyswitch and keys on the OCM800 and the operator display module. The OCM800 and MPM800 have an XBUS which can be used to drive up to 80 I/O. The MPM800 also has a printer interface for connecting to a serial or parallel printer.

An additional printer driver kit is required to allow the MPM800 to drive a printer - a serial isolation module should be used to eliminate earth fault indications caused by some mains connected printers.

Up to 15 x MPM modules can be connected to each panel of which 8 can be in the form of OCM800 (including the main OCM800 user interface). One OCM800 can also be in the form of an emulated user interface on a remote PC connected via the network or dial up modem. The following I/O and LED annunciator modules can be slaved from an MPM800:

- Up to 5 x IOB800 (8 in/8 out expansion board)
- Up to 5 x XIO800 (16 way universal I/O board)
- One Mimic Panel (80 way LED mimic driver PCB)
- One 80 way ANN880 LED mimic**
- One 40 way ANN840 LED mimic using red & yellow LEDs**
- Two 20 way COM820 LED status/command modules**

The MPM800 is mounted by plugging directly onto the back of those items marked **

Technical Specification

Dimensions: 25.4H x 92W x 167.64D mm
Weight: 98g
Power Supply: 24Vdc (from PSB or PSM800)
Communications: RS-485, up to 19.6kB
Printer Connection: Serial or Parallel

Features

- Drives up to 80 I/O points
- Direct Interface to Zonal Displays and other Modules
- Interfaces to FIM Board

Product Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.202.012</td>
<td>MPM800 multi-purpose interface modules</td>
</tr>
<tr>
<td>557.202.117</td>
<td>Serial printer cable for MPM800 or FIM800</td>
</tr>
<tr>
<td>557.180.052</td>
<td>Serial Printer Driver Kit</td>
</tr>
<tr>
<td>557.180.053</td>
<td>Isolated RS485 IC (for U16)</td>
</tr>
</tbody>
</table>
The IOB800 is an LPCB approved board that provides 8 opto-isolated digital inputs and 8 x 24V d.c. relay outputs for providing I/O expansion capabilities to MX detection panels for interfacing to other subsystems and signalling devices. The IOB800 also incorporates a connector, which provides decoded signals for the 8 inputs and 8 outputs for specialist interfacing.

The IOB800 can be used to provide expansion I/O to the following MX panel components:
- FIM801/802 field interface modules (maximum 24 I/O)
- OCM800 operator control modules (maximum 80 I/O)
- MPM800 multi-purpose interface (maximum 80 I/O)

Features:
- 16 I/P's or 16 Q/P's or 8 I/P + 8 Q/P
- 5 per MPM800 (80 I/O points)
- Fully configurable in MX consys

Technical Specification
Dimensions: 144H x 85W x 15D mm

Product Code
557.202.006
IOB800 Expansion Board and cables

---

The FB800 fuse board provides terminations for 15 fused 24V d.c. output spurs from a single 24V d.c. input. The FB800 is designed to be normally mounted on the PSB800M or PSM800 power supply. The fuses are rated at 500mA.

Technical Specification
Dimensions: 93H x165W x 80D mm
Weight: 149g
Input: 24V d.c
Output: 15 x 24V d.c / 500mA
Terminations: 2.5mm

Product Code
557.202.100
FB800 fuse board (15 way)

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The XIOM is a 16 universal input/output expansion board.

The I/O on the XIOM can be set in banks of 8 to operate as follows:
- LED driver outputs (10mA source)
- Relay Driver Outputs (100mA sink)
- Voltage Monitor Input (0 - 30Vdc Normal)
- Volt Free Contact inputs

Features
- 16 I/P's or 16 Q/P's or 8 I/P + 8 Q/P
- 5 per MPM800 (80 I/O points)
- Fully configurable in MX consys

Technical Specification
Dimensions: 93H x165W x 80D mm

Product Code
557.180.016
XIOM MINERVA Input/Output Expansion Module (16 Way)
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**Features**

- High level interface to building automation systems
- Meet interfacing requirements for large integrated projects

Displayed on BACnet Client side:

- Zone alarms, point alarms from fire inputs
- MZX panel faults, faults from zones and points
- Mains fault, System faults
- Pre-alarm and alarm warnings
- Isolation of zones, loops & points
- Day/Night Mode status
- Analogue values of automatic detectors

Supported commands issued from the BACnet Client side:

- Silence, Resound
- Sounders On and Off
- Evacuate
- Fire Reset
- Isolation of zones and points

**MZX BACnet Interface**

BACnet can be provided from a stand-alone MZX Technology panel or from an MZX or FILnet network via the MZX BACnet converter.

The MZX BACnet converter is a mini RISC-based embedded computer which converts fire data to the BACnet communications protocol. The converter needs special firmware that is simply uploaded from a PC.

**Technical Specification**

**Product Code**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight</strong></td>
<td>130 g</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>67 x 22 x 100.4 mm</td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>DIN-Rail, wall</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>-10 to 60°C</td>
</tr>
<tr>
<td><strong>Operating Humidity</strong></td>
<td>5 to 95% RH</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>-20 to 80°C</td>
</tr>
<tr>
<td><strong>Input Voltage</strong></td>
<td>12 to 48 VDC</td>
</tr>
</tbody>
</table>

RS800-IP/GPRS - IP Communication Module

The RS800-IP/GPRS module connects to an individual or a network of MZX, MX, ZK, MX2 and T2000 fire control panels to provide a cost effective, secure and robust IP (Internet Protocol) based communication platform for alarm signalling, fault reporting and a range of remote services.

The RS800-IP/GPRS module connects to the communication ports and relays of a fire control panel and converts the RS232 and digital data into IP data that can be transmitted over the internet.

Communication is dual path. The primary path is the clients IT network, eliminating the additional cost of a traditional PSTN telephone line. Efficient, digital communication puts negligible demand on the network and ensures future compatibility as the traditional analogue systems are progressively phased out.

The GPRS mobile communication network is the secondary path and maintains communication in the event of a failure of the primary path.

Features
- A cost effective digital communication platform to enable a range of remote services
- Robust dual path transmission over the clients IT network and the GPRS network, ensures continuity of communication in the event of a failure
- Regular polling of the IP path and the GPRS path confirms successful end to end communication - a failure will be reported within 3 minutes
- Secure communication is ensured by AES encryption with a 128 bit key and 256 bit hash code
- BRE approved to EN 54-21 for fire alarm transmission and fault warning routing equipment and LPCB Red Book listed
- Supplied with an activated 02 SIM card
- All access is securely controlled and logged

Product Codes
- 557.202.090 RS800 WebWay IP / GPRS for alarm signalling, fault reporting and remote IP services. Includes cables, SIM and first year’s service
- 557.202.091 RS800 WebWay IP for remote IP services only. No GPRS SIM included. Includes cables and first years service
- 557.202.093 Enclosure for RS-800
- 22-5054 WebWay Smart Disc Eng Pack
- 22-5049-10M WebWay High Gain Eng Pack
- 22-5049-15M WebWay High Gain Eng Pack

Technical Specification

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type:</td>
<td>Dual Path Ethernet / GPRS EN 54-21 Alarm Transmission and Fault Routing Equipment</td>
</tr>
<tr>
<td>Transmission protocol:</td>
<td>UDP/IP</td>
</tr>
<tr>
<td>Encryption:</td>
<td>AES standard with a 128-bit key and 256 bit hash code</td>
</tr>
<tr>
<td>Data bandwidth:</td>
<td>160 bytes (round trip including alarm and acknowledgement)</td>
</tr>
<tr>
<td>Power Supply:</td>
<td>From the connected panel’s EN 54-4 power supply</td>
</tr>
<tr>
<td>Power Consumption:</td>
<td>100 mA / 24 VDC</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>160 x 95 x 40 mm</td>
</tr>
<tr>
<td>Weight:</td>
<td>0.2 kg</td>
</tr>
<tr>
<td>Housing:</td>
<td>To be mounted in an IP30 / Access Level 2 metal enclosure, close coupled to MZX panel.</td>
</tr>
<tr>
<td>Enclosure for RS-800</td>
<td>237 x 161 x 58 mm</td>
</tr>
<tr>
<td>Weight:</td>
<td>1 Kg</td>
</tr>
<tr>
<td>Material:</td>
<td>1.2 mm Mild Steel</td>
</tr>
<tr>
<td>Finish:</td>
<td>RAL 7035 Semi Textured</td>
</tr>
<tr>
<td>Ingress Protection:</td>
<td>IP30</td>
</tr>
<tr>
<td>Access Level:</td>
<td>2</td>
</tr>
</tbody>
</table>

For alarm signalling, fault reporting and remote IP services. Includes cables, SIM and first year’s service.
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Desktop Printer

The printer is designed as a low cost business printer ideally suited for mounting adjacent to the fire control panel. The LQ-300+ combines high performance with paper handling flexibility and quiet operation.

- **300 cps draft / 90cps LQ.**
- Quiet operation
- Lightweight and compact design
- 9 LQ fonts
- 2 paper feed paths
- Convertible pull/push tractor
- Paper guide
- Auto loading
- Paper park

**Technical Specification**
- Dimensions: 159H x 366W x 275D mm
- Weight: 4.4kg
- Operating Voltage: 180V to 264Va.c.

**Product Codes**
- 557.180.239 MINERVA printer LQ-300+
- 557.180.220 LQ 300+ Printer Ribbon (spare)
- 557.202.117 MX FIM/MPM to serial printer lead

In-Built Printer

The PRN800 Printer Kit is designed for use with the designer range of MX Controllers (MX4000 and T2000). It is fitted to the front cover of the MX battery housing and is powered from the PSB 800 power supply via an FB800 fuseboard in the MX Controller housing.

- A thermal printer mechanism which ensures high reliability.
- Quiet Operation
- Lightweight and Compact Design
- High Speed Printing: 40mm per second.

**Technical Specification**
- Dimensions: 230H x 137W x 85D mm
- Weight: 0.38Kg
- Operating Temp: +5°C to +45°C
- Storage Temp: -20°C to +70°C
- Relative Humidity: Up to 80% non-condensing

**Product Codes**
- 557.200.024 PRN 800 Printer c/w front cover module
- 557.301.014 Spare Paper Roll (pk of 5)

Remote LCD Display

The Remote LCD Repeater Module is designed to provide an independent scrolling log of system status at numerous points within a building or site. The module interfaces directly to a serial printer port of the MX addressable fire panel. If a local printer is already connected to the Panel’s MPM800 serial port, a second MPM800 must be used.

- Uses a backlit 4x20 character alphanumeric display.
- Provides an internal log of up to 330 events.
- Provides internal audible warning of an event.
- Allows the event log to be scrolled.
- Local internal buzzer silence.
- Connects to host panels RS232 port (maximum cable length between panels and first repeater of 15m).
- Provides an external sounder to mimic the internal buzzer.
- Can be connected to an unlimited number of other LCD Repeaters by using the RS232/RS422 converter (Up to 1200m between repeaters).

**Technical Specification**
- Dimensions: 150H x 200W x 75D mm
- Material: Bayblend polycarbonate/ABS alloy
- Power Supply: 200mA @24Vdc
- EME: Product Family Standard EN50130-4

**Product Codes**
- 557.180.035 Remote LCD Repeater MK9 (compatible with Version 4.1 and above for UK/UL/Marine/Western European Countries)
- 557.190.151 RS232/422 converter for LCD Repeaters.
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**DDA Compliant Pager**

The FireTek Pro paging system is designed for use with professional Fire Systems installed in commercial, industrial and educational premises. The system is primarily designed to alert the 'hearing impaired' in the event of a fire or other emergency where an audible sounder is the normal means of indication.

The FireTek Pro has been designed to comply with the recommendations detailed in BS5839-1: 2002 for alerting the 'hearing impaired' to the activation of a fire alarm system.

The system can also be used in conjunction with a security panel to alert guards who might be located remotely from the main premises.

The interface to the fire panel comprises of three Prioritised Fire Inputs and two Fault Inputs. For ease of installation, a monitored cable assembly is provided with each system which includes a "common fault" relay output back to the host fire panel. This output will activate if the FireTek Pro suffers a mains failure, transmitter fault, antenna mismatch, interface link failure, or low battery state.

Upon activation of any one of the Fire Inputs, the FireTek Pro will enter the fire alert condition, prioritising and transmitting the Fire message to all enrolled pagers. The transmissions will be repeated until the fire condition is reset. The FireTek Pro Pagers ensure that users are alerted by distinct vibration patterns and clear text messages.

**Features**
- UHF radio link for maximum licensable protection
- Unique coding avoids neighbouring system clashes
- Self monitoring of system health
- Rugged steel enclosure to IP65
- Backlit 2 line text display continuously reports system status
- Additional audible & visible status indicators
- Prioritised Fire Alarm Inputs
- Automated test calls alert pagers to loss of radio signal
- Fault Notification to the lost fire panel via a monitored link
- Key operated 'System Test' facility for routine confidence checking
- Over 90 hour's backup operation with internal battery
- Achieves Disability Discrimination Act (DDA) compliance

**High Integrity Pagers**
To complete the system the alphanumeric pagers have added features specifically incorporated for the "hard of hearing" when used with the FireTek Pro. These features include distinct vibrate alerts for emergency messages, a vibrating out of range indicator which displays "No Service" on the pager when the radio link is lost, and a vibrating low battery indicator.

**Antenna Options**
- Mini Dipole Antenna - remote internally mounted antenna for large sites or areas of difficult signal propagation.
- Folded Dipole Antenna - remote externally mounted antenna for maximum signal coverage e.g. campuses and multi-building sites.

**UHF Radio Operation**
Any alerting system is only as good as its weakest link. The FireTek Pro utilises UHF radio frequencies, the main benefits being superior in-building radio signal propagation and the option of a manual frequency co-ordinate license issued by OFCOM. Licensing the FireTek Pro provides a higher degree of protection from interference. This fact is acknowledged in Section 18.1 of BS 5839-1:2002.
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### Technical Specification

<table>
<thead>
<tr>
<th>Supply Voltage:</th>
<th>230V AC 50-60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>12v 7Ah standby battery</td>
<td></td>
</tr>
<tr>
<td>Operational Current:</td>
<td>250mA</td>
</tr>
<tr>
<td>Inputs:</td>
<td>3 Prioritised Volt Free (Fire)</td>
</tr>
<tr>
<td>Input 1 - Fire Alarm - Evacuate Building</td>
<td></td>
</tr>
<tr>
<td>Input 2 - There is an Incident - Leave Building</td>
<td></td>
</tr>
<tr>
<td>Input 3 - Prepare to Evacuate - Await Instructions</td>
<td></td>
</tr>
<tr>
<td>2 Volt Free (Fault)</td>
<td></td>
</tr>
<tr>
<td>Outputs:</td>
<td>1 off volt free relay output</td>
</tr>
<tr>
<td>Fault Notification:</td>
<td>Mains Failure</td>
</tr>
<tr>
<td>Transmitter Fault</td>
<td></td>
</tr>
<tr>
<td>Antenna Mismatch</td>
<td></td>
</tr>
<tr>
<td>Panel Link Failure</td>
<td></td>
</tr>
<tr>
<td>Low/Missing Battery</td>
<td></td>
</tr>
<tr>
<td>Visual Display:</td>
<td>2 Line Backlit LCD</td>
</tr>
<tr>
<td>Enclosure:</td>
<td>Steel Enclosure rated to IP65</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>380 x 320 x 110 mm (H x W x D)</td>
</tr>
<tr>
<td>(No antenna fitted)</td>
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</tr>
</tbody>
</table>

### Product Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.200.071</td>
<td>Paging Transmitter</td>
</tr>
<tr>
<td>557.200.074</td>
<td>40 Character Alpha Numeric Pager</td>
</tr>
<tr>
<td>557.200.076</td>
<td>1/2 wave dipole antenna</td>
</tr>
<tr>
<td>557.200.077</td>
<td>Wall mounting folded dipole antenna</td>
</tr>
<tr>
<td>557.200.078</td>
<td>Pole mounting folded dipole antenna</td>
</tr>
<tr>
<td>557.200.079</td>
<td>5 metre antenna feeder cable</td>
</tr>
<tr>
<td>557.200.080</td>
<td>10 metre antenna feeder cable</td>
</tr>
</tbody>
</table>
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**Features**
The pagers:
- Display messages sent out by the MX as displayed on the MX LCD
- Internal log of up to 40 events
- Audible and/or vibrate warning of event
- Allows the event log to be displayed

The transmitter:
- Connects using a 9 way D type MX interface lead to MX printer port

**Pager Interface**
The MX pager system is designed to provide a facility to signal all text messages or alarm/fault messages from a local transmitter to the pagers.

The transmitter connects to the serial printer port on the FIM800 or if already in use to a MPM800. The pager system requires a +12V d.c. connection from a remote psu. If the transmitter needs to be located further than 2 m from the MX Panel, then a non-standard serial printer cable may be used, up to a maximum distance of 14m.

The Type A alarm pager displays alarm/fault messages. The Type A maintenance pager displays all messages sent by the fire controller.

**Technical Specification**
- Dimensions: 328H x 190W x 75D mm
- System operating voltage: 12 to 13.8Vdc
- Effective radiated power: 500mW Max
- Frequency range: 450-470 MHz
- Channel spacing: 25KHz
- TX baud rate: 512 or 1200
- Type approval: ETS 300 224, EC type approved to ETS 300 682

**Product Codes**
- 557.200.029 - Pager Transmitter
- 577.002.002 - Type A alarm pager
- 577.002.003 - Type A maintenance pager
- 577.002.007 - Pager aerial 60 db gain up to 1km (c/w mounting bracket)
- 577.002.008 - Optional feeder cable (10m long)
- G13801N-A - Elmdene 12V 1A PSU in Housing

**CAUTION:** Before any installation is carried out, an on site radio paging license must be obtained by the customer. Care should be taken when designing pager systems. Normal practice indicates that a site survey should be done. Contact Product Management for additional advice on site surveys.
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Generation 6 Fire Detectors

**Features**
- Advanced multi-sensor designs
- Choice of heat, optical, optical and heat multi-sensor or JoTec triple multi-sensor
- FASTLOGIC expert algorithms
- Up to 250 detectors per loop
- Built-in line isolator on 850 series
- Advanced commissioning features using the 850EMT Engineering Management Tool
- Two way infra-red communication to the 850EMT Engineering Management Tool
- Protective optical chamber screen
- Robust coated electronics
- Extended service life
- Fire, isolate and fault LED indications

850 and 830 Series Fire Detectors - Generation 6

The 850 and 830 series of fire detectors are designed to be both adaptable and flexible which means they can be used in most premises to protect against a wide range of potential fire risks. They use sophisticated digital signalling to communicate with the MZX Technology fire control panel, sending fire data from each sensing element for analysis. Because all of the sensed data is sent to the controller, powerful algorithms can be used to determine whether a fire condition is real or not. The sensitivity, mode and degree of verification can be altered by the user in response to environmental or activity changes.

A built-in line isolator incorporated into the 850 series devices means that when a single short circuit fault occurs on a loop, all the detectors will continue to operate. An on-board amber LED will give a local indication that the line isolator has operated. The 830 series detectors can be used with an isolator base to provide protection against short circuit faults.

Two way infrared communications allows the detector to work with the 850EMT Engineering Management Tool to speed up commissioning and service routines and to provide status / reports data without the need to physically access the device. Extended drift compensation reduces the lifetime cost of ownership by typically doubling the service life of the detector whilst a new insect screen and surface coating of electronics results in a robust industrial design.

Both 850 series and 830 series detectors are environmentally friendly. They do not use any radioactive parts and can be returned for recycling at the end of their life.

The detectors are constructed from hardwearing flame retardant FR3010 ‘BAYBLEND’ plastic. They are supplied with dust covers as part of the packaging which essentially prevents contamination entering the detection chambers during installation, after which they are removed.
Chapter 2 - MZX Technology

**850PH and 830PH Photo Heat Multi-Sensor Detectors**

With its ability to detect a wide range of fires from flaming to smouldering types, the combined optical and heat multi-sensor detector is the preferred choice for a range of applications including light industrial, retail and office environments. It operates in a number of approved modes and sensitivities that can be dynamically selected to suit different environmental conditions.

**Technical Specification**

- **Detector material:** Flame Retardant FR3010 ‘BA BLEND’
- **Dimensions:** Height 43mm Dia. 109mm
- **Colour:** White
- **Weight:** (Excluding Base)76g
- **Voltage:** 20 – 40 VDC
- **Quiescent Current:** 380uA
- **Alarm Current:** 3.3mA
- **Operating Temp:** -25 °C to +70 °C
- **Storage Temp:** -40 °C to +80 °C
- **Relative Humidity:** 95% (non-condensing)
- **Approvals:** EN54-5 and EN54-7, CPD, VdS
- **Type Approval:** CEA4021

**Product Codes**

- **516.850.051**
  850PH Photo Heat Detector with built in line isolator
- **516.830.051**
  830PH Photo Heat Detector

**850P and 830P Photo Detectors**

More benign environments where any potential fire will be slow burning can be protected using the optical detector. A choice of sensitivities and modes gives this detector a broad range of applications.

**Technical Specification**

- **Detector material:** Flame Retardant FR3010 ‘BA BLEND’
- **Dimensions:** Height 43mm Dia. 109mm
- **Colour:** White
- **Weight:** (Excluding Base)76g
- **Voltage:** 20 – 40 VDC
- **Quiescent Current:** 380uA
- **Alarm Current:** 3.3mA
- **Operating Temp:** -25 °C to +70 °C
- **Storage Temp:** -40 °C to +80 °C
- **Relative Humidity:** 95% (non-condensing)
- **Approvals:** EN54-7, CPD, VdS Type Approval CEA4021

**Product Codes**

- **516.850.052**
  850P Photo Detector with built in line isolator
- **516.830.052**
  830P Photo Detector
Chapter 2 - MZX Technology

850H and 830H Heat Detectors

Complimenting the range is the heat sensor which can operate in fixed temperature and rate-of-rise modes with a number of approved sensitivities. It is most often used in areas where high levels of dust are present or where the environment precludes the use of smoke detectors.

Technical Specification
Detector material: Flame Retardant
FR3010 'BAYBLEND'
Dimensions: Height 43mm Dia. 109mm
Colour: White
Weight: (Excluding Base) 91g
Voltage: 20 – 40 VDC
Quiescent Current: 335µA
Alarm Current: 3.3mA
Operating Temp: -25 °C to +70 °C, Short-term: to +80 °C
Storage Temp: -40 °C to +80 °C
Relative Humidity: 95% (non-condensing)
Approvals: EN54-5 and EN54-7, CPD, VdS
Type Approval: VdS2806, CEA4021

Product Codes
516.850.053 850H Heat Detector with built in line isolator
516.830.053 830H Heat Detector

850PC and 830PC 3oTec Triple Sensor Detectors

For life protection and where the environmental conditions are challenging, the 850PC/830PC 3oTec detector provides the ultimate in detector performance and false alarm rejection. It is a multi sensor that uses optical, heat and carbon monoxide sensors in concert to accurately determine the presence of fire.

Applications include industrial, retail, transport hubs, and healthcare. Its false alarm rejection properties make it the ideal choice for hotel bedrooms where steam from bathrooms is a common source of false alarms.

Technical Specification
Detector material: Flame Retardant
FR3010 'BAYBLEND'
Dimensions: Height 43mm Dia. 109mm
Colour: White
Weight: (Excluding Base) 94g
Voltage: 20 – 40 VDC
Quiescent Current: 335µA
Alarm Current: 3.3mA
Operating Temp: -10 °C to +55 °C
Storage Temp: -40 °C to +80 °C
Relative Humidity: 95% (non-condensing)
Approvals: EN54-5 and EN54-7, CPD, VdS
Type Approval: VdS2806, CEA4021

Product Codes
516.850.054 850PC 3oTec Triple Sensor Detector with built in line isolator
516.830.054 830PC 3oTec Triple Sensor Detector

850 and 830 Series Coloured Detector Covers & Bases

The existing white cover on the 850 and 830 Series Fire Detectors can be removed and replaced with any of the below covered covers.

Product Codes
517.050.501 Sample set of coloured detector covers and bases - set of 10
517.050.502 Detector Cover & Base in Orange Semi Gloss-pack of 10
517.050.503 Detector Cover & Base in Yellow Gloss-pack of 10
517.050.504 Detector Cover & Base in Matt Green-pack of 10
517.050.505 Detector Cover & Base in Matt Red-pack of 10
517.050.506 Detector Cover & Base in Matt Brown-pack of 10
517.050.507 Detector Cover & Base in Blue Gloss-pack of 10
517.050.508 Detector Cover & Base in Pink Gloss-pack of 10
517.050.509 Detector Cover & Base in Metallic Silver-pack of 10
517.050.510 Detector Cover & Base in Metallic Gold-pack of 10
517.050.511 Detector Cover & Base in Matt Black-pack of 10
Chapter 2 - MX Technology

800F Flame Detectors

The 800F is a digital addressable, low cost infrared flame detector with some high end features such as ‘Solar Blind’ operation for false alarm free reliability and an automatic health check feature. Will detect a 0.1m² flaming fire at a range of 20m. Uses the standard MX detector bases and MX base accessories. An Intrinsically safe version is available as part of the System 800 I.S range.

Technical Specification
- Dimensions (mm): 108Dia x 21.2H
- Weight: 74g
- Operating Temp: -20°C to +70°C
- Storage Temp: -40°C to +80°C
- Relative Humidity: 90% RH non-condensing
- Range: 0.1m²-n-heptane at 50m
- Field of View: 100°
- Standards: EN54 pt10 Certification

Product Codes
- 801F LPCB
- 801F Marine

800I Ionisation Smoke Detector

The 800I ionisation detectors are offered for old specifications which still call for ionisation smoke detectors. The 800CH and 800PH detectors offer improved performance, significantly lower false alarms and environmental compatibility for smoke detection applications. The 800I nonetheless offers state-of-the-art ionisation smoke detection with self verification, smoke level indication and threshold compensation for detector condition monitoring. The 801I is LPCB approved.

Technical Specification
- Dimensions: 109 dia x 43Hmm
- Operating Temp: -20°C to +70°C
- Storage Temp: -40°C to +80°C
- Relative Humidity: <95% (non-condensing)
- Standards: EN54 pt 7

Product Codes
- 801I
- 516.800.515.A ADT
- 516.800.515.T THORN
- 516.800.515.Y TYCO

801PS High Sensitivity Smoke Detector

The 801 PS high sensitivity smoke detector is designed for applications which require a detector with a greater sensitivity than specified within EN54-7.

Having a response to smoke of 0.6%/m makes this device suitable for use in locations where early smoke detection is required, e.g. cabinet protection and areas where aspirating systems would have previously been considered.

Technical Specification
- Dimensions: 109 Dia x 43Hmm
- Operating Temp: -25°C to +70°C
- Storage Temp: -40°C to +80°C
- Relative Humidity: <95% (non-condensing)
- Standards: EN54 pt 7

Product Code
- 516.800.518

Line Shorting Adaptor

Low profile line shorting adaptor commissioning tool (shorts terminals together enabling cable resistance checks to be carried out) - ADT Branded

Product Code
- 517.050.002.A Line Shorting Adapter

GD210 Gas Detector

The GD210 flammable gas detector is designed for use in non-hazardous areas where flammable gas detection is required, typical locations include kitchens, gas fired boiler rooms, meter rooms, sub basements and cable chambers.

This detector connects via a 4-20mA interface to the DDM800 Universal Fire and Gas Module

- Voltage 12-30 VDC
- Power 3.5 watts
- Output 4-20mA 3 wire Source
- Load resistance 250 ohms (max)
- Operating temp: -40 to +65°C
- IP rating – 55
- Cable entry 1 x M20

Product Codes
- 516.100.050
- 516.100.013 Test Gas Kit - 12 L can of 2.5% methane (50%LEL) c/w adaptor and tube
- 516.100.014 Test Gas - 12 L can of 2.5% methane (50%LEL)
- 516.100.051 Spare Flammable Gas Detector Sensor
- 516.100.052 Spare Flammable Gas Detector PCB
Beam and Linear Heat Detectors

Beam type smoke detection is ideal for large open span buildings where point type detection is unsuitable i.e. warehousing & sports halls. The range of Linear Heat Detection is of particular use in tunnels and cable ducts and other similar areas.

**FIRERAY 5000 Multi Head Auto Aligning Infrared Optical Beam Smoke Detector**

The FIRERAY® 5000 motorised, auto aligning infrared optical beam smoke detector can now be installed with up to four detector heads per system, thus saving on installation time and costs. This innovative system has been designed from the ground up to include pioneering technology that fully addresses the needs of the installer and user, both now and in the future.

With its industry leading optics, the FIRERAY 5000 is ideally suited for the protection of large areas where the use of traditional detection technologies would prove to be too difficult and/or costly to install. The FIRERAY 5000 combines an infrared transmitter and receiver in the same discrete unit and operates by projecting a well-defined beam to a reflective prism, which returns the beam to the receiver for analysis. Smoke in the beam path causes a drop in power, which, if below a pre-determined level, results in an alarm signal.

Getting the system operational is simplified by a number of groundbreaking features that combine to make the FIRERAY 5000 the quickest and easiest detector of its type to install. Once the detector heads are connected, using the Easifit First Fix system, an integral LASER, which is aligned along the optical path of the beam, can be activated. This allows the reflective prism to be sighted quickly and with confidence. Once the LASER has been used to coarsely align the beam, the AutoOptimise beam alignment system takes over and automatically steers the beam into the optimum position.

**Technical Specification**

- Controller: 202w x 230h x 81d mm 0.9 Kg
- Detector: 134w x 135h x 134d mm - 0.5 Kg
- Additional detector head 2mA @ 24VDC
- Operating Current (low power mode): 10mA @ 24VDC
- Operating Voltage: 14 to 28VDC
- IP Rating: IP54
- Operating Temp: -20 to +55°C
- Humidity: 93% RH (non condensing) max

**Features**

- Motorised Auto-Aligning
- Up to 4 Detectors per System Controller
- Each Detector configurable from 8m to 100m
- Integral LASER
- Auto-Align Fast Automatic BeamAlignment
- Auto-Optimise Building Movement and Contamination Compensation
- Low Level System Controller
- 20mm Cable Gland Knockouts on System Controller
- 2-wire interface from System Controller to Detector
- Worldwide Approvals including EN54:12 and UL268
- Up to 4 Detectors per System Controller

**Product Codes**

- 516.015.020 FireRay 5000 System (50m)
- 516.015.021 FR 5000 Detector Head (50m)
- 516.015.007 FireRay Reflector 100 x 100mm
- 4 reflectors are required for distances from 50 to 100m
Chapter 2 - MZX Technology

Optical Beam Smoke Detectors

The FIRE-RAY 2000 is an active infra-red smoke detector. The system comprises of three base elements i.e. a transmitter, receiver and Control Unit.

Analysis of the modulated infra-red beam by the Control Unit determines whether smoke is present, and if so generates an alarm signal.

Technical Specification

- **Features**
  - Range 5 metres up to 100 metres
  - Area coverage up to 1400m²
  - Selectable sensitivity
  - Self-check and automatic compensation
  - Manual or automatic reset
  - Optional Mx Technology loop powered interface module (BDM800)
  - Suitable for both conventional and addressable fire systems
  - Fire/fault interface to MX controller
  - Low current consumption
  - Flexible system design options
  - Robust metal construction
  - Designed to conform to BS5839 Part 5

- **Product Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>516.015.006.A</td>
<td>FireRay 2000 optical beam smoke detector</td>
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<tr>
<td>516.015.006.T</td>
<td>Thorn Branded FireRay 2000 optical beam smoke detector</td>
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<tr>
<td>920450</td>
<td>UL approved FireRay 2000 optical beam smoke detector</td>
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<tr>
<td>516.015.007</td>
<td>FireRay 2000 Retro-Reflector 100 x 100mm</td>
</tr>
<tr>
<td>516.015.008</td>
<td>FireRay 2000 Alignment tool</td>
</tr>
</tbody>
</table>

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<table>
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<tr>
<th>Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>5000-005</td>
<td>Universal Mounting Bracket</td>
</tr>
<tr>
<td>5000-006</td>
<td>Flat Mounting Plate for 1 to 4 Prisms</td>
</tr>
<tr>
<td>5000-007</td>
<td>Prism Mounting Plate for 4 Prisms</td>
</tr>
<tr>
<td>5000-008</td>
<td>Prism Mounting Plate for 1 Prism</td>
</tr>
</tbody>
</table>

FireRay Optical Beam Smoke Detector Mounting Accessories

There are a range of mounting accessories available for use with FireRay Optical Beam Smoke Detectors. These accessories will help reduce installation times and provide a professional mounting solution when faced with challenging building internals.

- The Universal Mounting bracket can be used with the FireRay 5000 detector head and the 1 or 4 way prism plates to enable the detector head or prism plates to be easily mounted and adjusted when fixing to angled walls or cladding.

- The large prism plate will securely mount 4 prisms and is designed to be used in conjunction with the Universal Mounting Bracket (not included).

- The Flat Mounting plate is a metal plate which will support a single prism or 4 prisms, the side mounting holes are compatible with Unistrut® racking systems.

- The small prism plate will securely mount a single prism and is designed to be used in conjunction with the Universal Mounting Bracket (not included).
Chapter 2 - MZX Technology

Linear Heat Detectors

**Features**
- Easy and cost effective installation
- Good sensitivity with adjustable alarm threshold
- Suited for outdoor and indoor applications
- Can be used in hazardous areas
- Mechanical protection is provided for cables in areas where damage may occur
- Chemical resistance sheathing is available for areas where petro-chemical corrosion may occur.

**Linear Heat Detection**
The LD40 linear heat detection system is used to monitor fire (or overheat) conditions in confined or polluted areas or where there are adverse or unusually variable environmental conditions.

The sensor cable is unaffected by dust, moisture or vibration and requires little maintenance.

**Technical Specification**
- **Dimensions:** 178H x 130W x 75D mm
- **Weight:** 0.55Kg
- **Operating Temp:** -25°C to +70°C
- **Relative humidity:** Up to 98% RH non-condensing
- **Rating:** IP55
- **Operating Voltage:** +8 to +30Vdc
- **Quiescent Current:** 60-80μA

**Product Codes**
- 516.016.005 LD40 High resistance sensor cable blue - 200M reel
- 516.016.006 LD40 High resistance sensor cable black - 200M reel (Nylon sheath suitable for petrochemical exposure)
- 516.016.010 LD40 EOL Termination kit (PK10)
- 516.016.011 LD40 In-line Jointing kit (PK10)
- 516.016.012 LD40 Analyser module with conventional detection zone interface
- 516.016.201 B6782-003 EDGE CLIP 2-3mm WEB
- 516.016.202 B6782-004 EDGE CLIP 3-8mm WEB
- 516.016.203 B6782-025 EDGE CLIP 8-13mm WEB
- 516.016.204 B6782-026 EDGE CLIP 14-20mm WEB
- 516.016.205 B6782-004 T CLIP
- 516.016.206 B6782-005 PIPE CLIP
- 516.016.207 B6782-023 V CLIP
- 516.016.208 B6782-008 NEOPRENE SLEEVE
Chapter 2 - MZX Technology

Detector Bases & Accessories

To complement the new 850 range and 830 range of detectors, a number of bases and detector accessories are available. They are designed to further enhance the installability and serviceability of the range with an emphasis on reducing engineering costs. The detector bases are designed to snap-fit to the ceiling tile adaptor or can be screw fixed to a ceiling or electrical box in the traditional manner. A park position allows the detector to be mechanically attached to the base without making electrical connection to facilitate the testing of electronic free bases.

### 4B-C 4" Continuity Base

The new 4B-C 4" continuity base is designed to snap-fit to the ceiling tile adaptor or it can screw fix to a ceiling in the traditional manner. The 4B-C 4" continuity base is designed specifically for use with the 850 series detector and provides a switching mechanism that ensures continuity on the detector (and built-in short circuit isolator) is removed. When used with the Time Saver ceiling tile adaptor, the 4B-C 4" continuity base uses a snap-fit mechanism that saves installation time.

**Features**
- For use with the 850 series detectors
- Compact rigid design that improves the appearance and is easy to install
- Built-in continuity switch that closes on detector removal
- Electronics free, permits in circuit testing
- Snap fit to the Time Saver ceiling tile adaptor
- Detector locking pin included
- Detector park position for service and commissioning, holds the detector mechanically in place whilst disconnected from the loop and continuity switch is closed
- Choice of 8 mini-trunking break-outs

**Product Code** 517.050.042

### 4B 4" Detector Base

The new 4B 4" detector base is designed to snap-fit to the ceiling tile adaptor or it can be screw fixed to a ceiling in the traditional manner.

**Features**
- Compatible with 830 series detectors
- Drives a remote indicator
- Detector locking pin provided with every base
- Snap fit to the Time Saver Ceiling Tile Adaptor
- Fits directly to a British or European electrical back box
- Temporary park position
- Break-outs for surface mount

**Product Code** 517.050.041

### 4B-I 4" Isolator Base

The new 4B-I 4" isolator base is designed to snap-fit to the ceiling tile adaptor or it can screw fix to a ceiling in the traditional manner. The 4B-I 4" base is designed specifically for use with the 830 series detectors and provides protection against short circuit faults on the MZX digital addressable loop.

**Features**
- For use with the 830 series detectors
- Compact rigid design that improves the appearance and is easy to install
- Up to 250 x 4B-I 4" isolators can be connected on each loop
- Snap fit to the Time Saver ceiling tile adaptor
- Detector locking pin included
- Detector park position for service and commissioning, holds the detector mechanically in place whilst disconnected from the loop
- Choice of 8 mini-trunking break-outs

**Product Code** 517.050.043
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### Ceiling Tile Adapter

The Time Saver Ceiling Tile Adaptor is used with the 4" snap fit base and consists of three parts, a bezel and clamp that are fitted to the ceiling tile and a back-box that carries the detector and base assembly. It is available as a complete unit or alternatively, the back-box can be ordered separately, as can the bezel and clamp assembly. Ordering the parts separately may be preferred if there is an extended period before the false ceiling is installed e.g. "shell and core" projects. Requires a 127mm diameter hole. The CTA adaptor plate allows the Time Saver Ceiling Tile Adaptor to be used with other devices such as the AV Base, A320F or Mux Fixscopy.

**Features**
- Cuts installation time by 30%
- Commission the system before the suspended ceiling is installed
- Suitable for ceiling tiles from 1mm to 30mm thick
- Made from flame retardant material
- No additional back-box is required
- Time saver is designed for use with a new snap-fit 4" detector base
- Adaptor available for use with the AV base & other devices

**Product Codes**
- 517.050.060 Ceiling Tile Adaptor Kit consists of 1 x 517.050.056 and 1 x 517.050.057
- CTA-BB CTA Back Box
- CTA-BC CTA Bezel and Clamp
- CTA-AP CTA Adaptor Plate

### 4B-6A 4" to 6" Adaptor

The 4B-6A 4" to 6" Adaptor is designed for use with U.S. style 6" electrical back boxes and provides a flush architectural trim between the electrical box and the 4B-C 4" continuity base. It can also be fixed directly to a ceiling and used to conceal marks left when older, large diameter detectors are replaced with MZX Technology.

**Features**
- Adapts 6" electrical boxes to fit the 4B-C 4" continuity base
- Architectural trim for neat appearance
- Concealed fixings
- Use to conceal marks left by old detectors when replaced by MZX Technology

**Product Code**
- 517.050.064 4B-6A 4" to 6" Base Adaptor
Chapter 2 - MZX Technology

The range of standard bases is supplemented by this selection of sounder bases, relay bases and accessories, including loop powered sounder base for use on MX technology controllers. In addition, changes to the building during its life can be easily adapted to, by retrofitting sounders and relay outputs to existing detection points.

When functional bases are fitted to universal bases, they automatically lock into position. Removal is then achieved using the detector removal tool. This feature ensures that the detector and functional bases are removed separately.

### Tyco MKII Sounder Base

A new low current range of sounder bases for use with Conventional and Addressable Fire Alarm Control Panels.

**Features**
- Manufactured to EN54 part 3
- Integral sounder and detector base
- Volume and tone adjustable after installation
- Low Power Synchronisation
- Do not require use of a standard base (maybe installed directly onto a standard base box)

**Product Codes**
- 516.800.911
- 901SB Universal Sounder Base
- 516.800.910
- 802SB MX Loop Powered Sounder Base
- 516.800.913
- 812SB MX Loop Powered UL Sounder Base
- 516.800.912
- 912SB Universal UL Sounder Base
- 517.050.002
- Volume Pot Spare Cover (1 sheet of 144)
- 517.050.005
- 4" Detector Base Locking Pin Kit

### SAB 801 Sounder Addressable Beacon

The SAB 801 Sounder Addressable Beacon is an MX Addressable Beacon that fits into the Standard Minerva Universal Base. Alternatively the SAB may be fitted to the 802SB, 812SB, 901SB and 912SB Sounder Bases to enable the MX Control Panel to communicate with and control these sounder bases and also provide a Flashing Beacon effectively turning the 802SB, 812SB, 901SB and 912SB into a combined addressable loop powered sounder and beacon.

**Product Code**
- 516.800.906
- SAB 801 Low Power Sounder Addressable Beacon (Compatible with Consys Version 8.1 and above)

### 801RB - Functional Relay Base

The 801RB provides dual relay contacts for signalling external devices on MX addressable systems. A very low operating current even when the relay is energised enables the relay base to be used without any additional power. The dual contacts are under the control of a programmable output, through the powerful cause and effect software.

**Features**
- Dual pole 24V DC relay contact (60VA)
- Very low power consumption (<20μA except startup)

**Product Code**
- 516.800.905
- 801RB Relay Base

### Volume Adjustment Tool

A simple Volume Adjustment Tool, specific to the task of sounder volume selection on the "variable-volume" range of Tyco MKII Sounder Bases.

Sounder volume can be easily varied between the maximum 90dBA and minimum 68dBA-volume settings, using this simple, functional tool.

**Product Code**
- 517.050.015
- Volume Adjustment Tool
Chapter 2 - MZX Technology

**801RIL - Remote Indication LED**

All detector bases have the ability to drive a remote LED in the event that the installed position of the detector is not easily visible. The 801RIL is primarily designed for LPCB influenced markets but is compatible with all 800 Series detectors.

**Features**
- UK Single gang mounting
- High intensity red LED

**Product Code**
516.800.908
801RIL remote indication LED

**800HL - Indication Lamp**

The 800HL remote indicator lamp provides a larger indicator for use in place of the RIL when longer distances are involved or in VdS influenced markets. Typically used to indicate the source of an alarm in buildings with long corridors eg. Hotels, hospitals, apartments.

**Product Code**
516.800.909
800HL indication lamp

**4B-EM 4" Euro Mount**

The euro-mounting base provides a matching back box, which allows the 4" bases to be ceiling mounted with conduit entries for standard 18 and 21mm conduit.

**Features**
- 2 x 18mm conduit entries
- 2 x 21mm conduit entries
- Fits all 4" Bases
- Accepts up to 8 accessory terminals

**Product Codes**
517.050.052
4B-EM 4" Euro Mount
517.050.612
Base Accessory terminal kit (pack of 10)

**4B-DHM Deck Head Mounting**

Where the detectors are mounted in humid and environmentally challenging situations such as marine or offshore installations, the 4B-DHM deck head mount provides a sealed waterproof mounting which protects the electrical connections in the base. Can be screwed, bolted / welded to the deckhead. Supplied with 1 terminal. If more are required, use the optional base accessory terminal kit.

**Features**
- 4 x 20mm gland entries
- Fits ALL 4" bases
- IP55 with supplied gasket

**Product Codes**
517.050.051
4B-DHM Deckhead Mount
517.050.613
Base accessory terminal kit (pack of 10)

**Protective Detector Cage**

Robust steel protective cage for Series 800 detector ranges using the 5" bases. Ideal for schools and sporthalls or whenever detectors need protection.

Strong coated steel construction with 4 point fitting.

**Product Code**
517.050.614
CW-5B Detector Cage

**Protective Detector Sounder Base Cage**

White powder coated steel protective cage for Series 800 Detectors fitted with a sounder base. Internal dimensions: 120mm dia x 80mm deep.

**Product Code**
517.050.011
Steel Protective Detector Cage
Chapter 2 - MZX Technology

Detector Ancillaries

Features
• Provides clear identification of address
• Colour coded
• Flag remains on base

800 Series MX Address Flag
The 800 Series detectors incorporate a feature, which automatically transfers the address flag to the detector base, when the detector is plugged into the base. On removal of the detector the address flag remains on the ceiling, thus ensuring that detectors are not accidentally returned to the wrong detector base following service routines.

Product Codes
- 516.800.915 MX Address flags (pack of 100)
- 516.800.931 Address flag labels Loop A - White
- 516.800.932 Address flag labels Loop B - Yellow
- 516.800.933 Address flag labels Loop C - Purple
- 516.800.934 Address flag labels Loop D - Green

Most MX detection panels incorporate additional fail safe software features to ensure that incorrect detector positioning does not compromise the system. Address flags are supplied in packs of 100. Labels are provided on sheets of 250 in eight colours to enable quick identification between different loops.

Callpoint & Ancillary Address Labels
Detectors have a special address flag for carrying the address labels - detailed in the detector section. For other devices or on detectors where zone information is also required a series of address labels are available.

Numbered 1 to 250, the address labels are available in 8 different colours to distinguish between different loops. In addition small zone labels can be fixed to the address labels.

Product Codes
- 599.047.011 Zone labels - Zones 1 - 16
- 599.047.012 Zone labels - Zones 17 - 32
- 599.047.013 Zone labels - Zones 33 - 48
- 599.047.014 Zone labels - Zones 49 - 64
- 599.047.015 Zone labels - Zones 65 - 80
- 599.047.016 Zone labels - Zones 81 - 100
- 599.047.018 Zone labels - Zones 101 - 120
- 599.047.019 Zone labels - Zones 121 - 140
- 599.047.020 Zone labels - Zones 141 - 160
- 599.047.021 Zone labels - Zones 161 - 180
- 599.047.022 Zone labels - Zones 181 - 200
- 599.047.023 Zone labels - Zones 201 - 220
- 599.047.024 Zone labels - Zones 221 - 240
- 599.047.030 Address Labels - Address Labels 1 - 250 Loop A - White
- 599.047.031 Address Labels 1 - 250 Loop B - Yellow
- 599.047.032 Address Labels 1 - 250 Loop C - Purple
- 599.047.033 Address Labels 1 - 250 Loop D - Green
- 599.047.034 Address Labels 1 - 250 Loop E - Grey
- 599.047.035 Address Labels 1 - 250 Loop F - Blue
- 599.047.036 Address Labels 1 - 250 Loop G - Orange
- 599.047.037 Address Labels 1 - 250 Loop H - Red

Features
• Colour coded for Easy Loop Identification
• Space for Zonal Label
• Strong Adhesive Backing
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Duct Probe Air Sampling

Where smoke within duct work needs to be detected these duct probe units provide an economical solution, for use with 800 series detectors.

SMP Duct Probe Units

The SMP Duct Probe Units are designed to be installed in air conditioning supply and exhaust ducts for the purpose of monitoring the airflow for smoke and combustion products.

The SMP69 probe units are designed to accept and operate with the 800 series detectors. For general applications it is recommended that photoelectric smoke detectors rather than ionisation smoke detectors are used.

The SMP stainless steel probe unit is designed to withstand the more demanding environments of the offshore oil and gas industries.

The units are designed to operate in airspeeds of 1.5 to 25 metres per second. A range of sampling tubes from 525mm to 1575mm is available.

**Warning**

Duct probe units sited in the common duct work to several extract grills may fail to respond to smoke from any one extract due to the effect of dilution. The SMP units will not respond to airflow of less than 1.5m/sec.

**Technical Specification**

- **Operating temperature:** -20°C to +70°C
- **Storage temperature:** -25°C to +80°C
- **Relative Humidity:** 0 to 95%
- **SMP69** Stainless steel 316 housing with transparent polycarbonate cover

**SMP69 Duct Probe Air Sampling - Stainless Steel**

**Product Codes**

- 517.025.025 SMP69 Stainless Steel Duct Probe unit and universal detector base for Series 600/800 Detectors.
- 517.025.028 DPS450 Probe tube stainless steel 450mm and exhaust
- 517.025.029 DPS600 Probe tube stainless steel 600mm and exhaust
- 517.025.030 DPS750 Probe tube stainless steel 750mm and exhaust
- 517.025.031 DPS900 Probe tube stainless steel 900mm and exhaust
- 517.025.032 DPS1200 Probe tube Stainless Steel 1200mm and exhaust
- 517.025.033 DPS1500 Probe tube stainless steel 1500mm and exhaust

**Datasheet**

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**Features**
- Built-in MZX Detector base
  - DPK4 - with built-in MZX detector base 5” - 5B
  - DPK4I - with built-in MZX detector base 5” - 5BI
- DPK4 is suitable for addressable and conventional systems
- DPK4I with built-in line isolator for use with MZX Technology® systems
- Suitable for air velocities from 1 m/s to 20 m/s
- Can be used in combination with a wide range of optical smoke detectors e.g. 801P
e, 813P, 601P or 601PH
- One-pipe air sampling system simplifies installation
- Range of aluminium probe tubes are available for ducts up to 2700 mm
- Transparent lid allows detector to be seen
- Test hole on cover
- Sensitive flow indicator
- Simple service and maintenance
- Installer friendly connection of cables
- Easy installation of duct probe tubes

**DPK4 Duct Probe**

The DPK4 and DPK4I duct probe units have been developed to detect smoke in ventilation ducts. They offer significant benefits in terms of performance and installation. The system comprises a single duct probe tube and housing specially designed for optimum airflow through the smoke detector and suitable for use in incoming, outgoing and circulation air ducts of ventilation and conditioning systems.

The duct probes can operate across a wide range of airflow speeds and are especially recommended for installations in ducts with air flow velocities between 1 m/s and 20 m/s.

Unlike more traditional duct probe units that employ an inlet and exhaust tube with sampling holes, the DPK4 and DPK4I units uses a highly efficient single sampling tube that is slotted along its length. This allows the sampling tubes to be cut to the desired length whilst maintaining maximum efficiency.

The transparent cover gives clear visibility of the detector, its LED indication and airflow indicator. A red plastic flag is fixed inside the housing providing a simple but effective confirmation that there is no leakage and that the air flow from the air duct is in fact passing through the housing.

In order to reduce the time required to test the duct probe detector during routine maintenance, an aperture is provided that allows aerosol test gas to be directed at the detector without having to dismantle the unit.

**Accessories**

Tyco Safety Products offer 3 lengths of the duct probe tubes. The tube is made of aluminium and can easily be shortened to suit the span of the air duct. Where the unit is mounted on insulated or circular air ducts, the DPKM mounting bracket is required.

**Product Codes**

- 517.025.049 DPK4 - Duct Probe with MZX detector base 5” - 5B
- 517.025.050 DPK4I - Duct Probe with MZX detector base 5” with isolator - 5BI
- 517.025.051 DPK600 - Duct Probe Tube 600 mm
- 517.025.052 DPK1500 - Duct Probe Tube 1500 mm
- 517.025.053 DPK2800 - Duct Probe Tube 2800 mm
- 517.025.054 DPKM - Duct Probe Mounting Bracket
- 517.025.055 Spare Filters for DPK4/DPK4I (PK of 10)

Detector supplied separately.
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MX Addressable Input/Output Modules

APM800 Addressable Power Supply Monitor

The APM800 is an MX addressable power supply monitoring module which is usually used with the PSM800/820/821 power supply module to make an addressable power supply. The APM800 is designed to fit to studs on the top of the PSM800/820/821. The APM800 monitors the PSM800/820/821 for mains failure, earth fault, battery charger fault and battery fault. It can reset the PSM800/820/821 resettable 24Vdc output and initiate a battery test which then reports battery voltage and current to the controller.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN50081-1 & EN50130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH
- **Dimensions:** 241h x 127w x 57d mm
- **Weight:** 0.794Kg

**Product Code**

557.202.027

APM800 addressable power supply monitor

MIM800 Mini-Input Module

The MIM800 is a small MX addressable module designed for monitoring a single input circuit. The MIM800 can monitor normally open or normally closed inputs and provides open and short circuit monitoring of the line. The MIM800 is designed for fitting in small devices such as flow switches, special detection devices and explosion proof callpoints. A variant of the MIM800 is used in all callpoints and pullstations.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN50081-1 & EN50130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH
- **Dimensions:** 13h x 48w x 57d mm
- **Weight:** 100g
- **EOL resistor:** 200 Ohm
- **Monitor Resistor:** 100 Ohm

**Product Code**

555.800.001

MIM800 mini-input module

CIM800 Contact Input Module

The CIM800 is a flexible addressable input-monitoring device that fits in the standard ancillary housings. The CIM800 provides two inputs to current MX panels though this can be implemented as two separately wired spurs (Style B) or as a loop (Style A). Both spur and loop input wiring can be configured to monitor normally open or normally closed inputs. In addition both can be configured to initiate an alarm or short circuit fault message in the event of a short circuit on normally open monitoring circuits.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN50081-1 & EN50130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH
- **Dimensions:** 14h x 148w x 87d mm
- **Weight:** 100g
- **EOL & monitor resistor:** 10k Ohms

**Product Codes**

555.800.002

CIM800 contact input monitor

555.800.032

CIM800 Module c/w Front Cover

DIM800 Detector Input Module

The DIM800 is designed to power and monitor a circuit of low voltage conventional detectors and callpoints. The detection circuit is powered from an external 24V d.c. supply and is reset by the MX addressable panel. The DIM800 monitors the external 24V d.c. and provides a fault signal if it is lost. The input detection circuit can be wired as one or two input circuits (Class B), one loop configured circuit (Class A) or one 4-wire detection circuit. The DIM800 is designed to be compatible with most conventional detection products. Compatibility has been tested to date on the following products: Compatible Thorn detectors: M300 Series, M601 Series, M612 Series, H Series, S231F, S231F+, CP200; Series 600Compatible Zettler detectors: M613 Series.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN50081-1 & EN50130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH
- **Dimensions:** 14h x 148w x 87d mm
- **Weight:** 100g

**Product Codes**

555.800.012

DIM800 detector input monitor

555.800.042

DIM800 Module c/w front cover
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LIM800 Line Isolator Module

The LIM800 Ancillary Line Isolator Module is designed to be used on all MX addressable loops. It monitors the line condition and upon detection of a short circuit it isolates the affected section whilst allowing the rest of the addressable loop to function normally. The LIM800 Ancillary Line Isolator Module ensures that on a looped addressable system a short circuit fault cannot disable more detection devices than would be lost on a conventional non-addressable system in accordance with BS5839 Part 1.

Technical Specification
- EMC/RFI: Equal or exceeds EN61000-6-3 & EN50130-4
- Operating Temperature: -25°C to +70°C
- Relative Humidity: Up to 95% RH non-condensing
- Dimensions: 14H x 148W x 87D mm
- Weight: 100g

Product Codes
- 545.800.004: LIM800 Ancillary Line Isolator Module
- 545.800.033: LIM800 Ancillary Line Isolator Module c/w front cover

TM520 Timer Module

The TM520 provides 2 x outputs that can be activated based on a delay time. If either the key-switch on the module is activated, or a predefined event within the control panel occurs then a timed delay (set between 10 minutes and 2 hours 10 minutes) is started. When the delay reaches zero the TM520 outputs are activated. The unit sounds an internal buzzer and shows a red LED when the outputs are active, and shows a yellow LED when the timer is counting down. To provide a warning that the delay is nearly over, the red LED and the buzzer will pulse 5 minutes before the end of the delay.

Technical Specification
- Powered: 24Vdc
- Temperature Range: -10°C to +70°C
- Operating Humidity: <95% RH
- Dimensions: 87H x 148W x 14D mm

Product Code
- 557.180.423: TM520 timer module - non addressable

SIO800 Single Input/Output Module

The SIO800 Single Input/Output Module is designed to provide a monitored input and a volt free relay changeover output. It consists of an input for monitoring the status of a normally open contact and a single changeover relay contact. The relay is controlled by a command sent from the Minerva MX Fire Controller via the addressable loop.

Technical Specification
- Operating Temperature: -25°C to +70°C
- Relative Humidity: Up to 95% RH non-condensing
- Dimensions: 14H x 148W x 87D mm
- Weight: 105g

Product Codes
- 555.800.063: SIO800 Single Input/Output Module
- 555.800.064: SIO800 Single Input/Output Module c/w Front Cover

DDM800 Universal Fire and Gas Module

The DDM800 provides the ability to connect and interface 2 zones of conventional 2 wire fire detectors or two 4-20mA sensors to the MX Fire alarm controllers. When used to interface conventional detection devices, Open & Short circuit and device removal monitoring is provided. Intrinsically safe (IS) detection is supported when used with a galvanic isolator. An integral line isolator is incorporated in the module. Loop powered or 24vdc operation. The 4-20mA interface can be used to monitor devices such as gas detectors, temperature alarms or any 4-20mA interfaced device.

Technical Specification
- EMC/RF1: Equal or exceeds EN61000-6-3 & EN50130-4
- Operating Temperature: -25°C to +70°C
- Operating Humidity: Up to 95% RH non-condensing

Product Codes
- 577.800.026: DDM800 Universal Fire and Gas Module
- 577.800.036: DDM800 Universal Fire and Gas Module c/w front cover
- 577.800.056: DDM800 Universal Fire and Gas Module housed in IP55 D800 enclosure
- 557.800.057: DDM800 Detector Removal End of Line Resistor (pack of 10)
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**RIM800 Relay Interface Module**

The RIM800 provides a single programmable relay output from the MX DIGITAL addressable loop which can be programmed for a variety of applications including signaling fire conditions to plant, machinery, fire doors, dampers & security systems.

The RIM800 relay coil is monitored. The RIM800 relay contact is rated for 2A @ 24V d.c. but can be used to switch mains voltage when used with the HR800. This unit has two opto-isolated terminals specifically for driving the HR800.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN61000.6.3 & EN50130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH non-condensing
- **Dimensions:** 14H x 148W x 87D mm
- **Weight:** 100g
- **Quiescent Current:** 200μA
- **Relay Contacts:** 2A @ 24V d.c.

**Product Codes**

- 568.800.003 RIM800 relay interface module
- 568.800.033 RIM800 Module c/w Front Cover

**HVR800 High Voltage Relay Module**

The HVR800 module is a non-addressable device which allows a low current mains relay relay to switch up to 10A. Alternatively a low voltage drive signal such as that provided by the RIM800 or 80 way mimic can be used to switch the integral mains relay via the opto-isolated input.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN61000.6.3 & EN50130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH non-condensing
- **Dimensions:** 26.5H x 42W x 74D mm
- **Relay Contacts:** Up to 10A @ 250V a.c.

**Product Codes**

- 568.800.004 HVR800 high voltage relay
- 568.800.034 HVR800 in isolated D800 housing

**SNM800 Sounder Notification Module**

The SNM800 is a remote addressable sounder circuit output device capable of switching sounder and speaker circuits up to 2A @ 24V d.c. or provide a monitored output facility for other applications. These can be used in addition to the two circuits provided as standard on most MX detection panels.

The SNM800 can support sounder circuits wired as a spur (Class B - Style Y) or in a loop configuration (Class A - Style Z). The SNM800 can be configured with a RIM800 to provide a secure monitored extinguishing release solenoid control.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN61000.6.3 & EN50130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH non-condensing
- **Dimensions:** 14H x 148W x 87D mm
- **Weight:** 100g
- **Output rating:** 2A @ 24V d.c.
- **EOL resistor:** 27k 1/2W

**Product Codes**

- 577.800.005 SNM800 sounder notification module
- 577.800.035 SNM800 Module c/w Front Cover

**LPS800 Loop Powered Sounder Module**

The LPS800 provides a single monitored sounder output circuit with up to 75mA of power sourced from the MX panel.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN61000.6.31 & EN606130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH non-condensing
- **Dimensions:** 14H x 148W x 87D mm
- **Weight:** 100g
- **Output rating:** 75mA @ 24V d.c. max

**Product Codes**

- 577.800.011 LPS800 Loop Powered Sounder module
- 577.800.041 LPS800 Module c/w front cover

**NOTE:** Each MX Digital Loop can provide up to 495mA for loop powered sounders and modules

**SB520 Sounder Booster Module**

The SB520 sounder booster module enables the SNM800 to drive circuits with higher currents whilst maintaining the reverse polarity integrity line monitoring.

**Technical Specification**

- **EMC/RFI:** Equal or exceeds EN61000.6.31 & EN606130-4
- **Operating Temp.:** -20°C to +70°C
- **Relative Humidity:** up to 95% RH non-condensing
- **Dimensions:** 14H x 148W x 87D mm
- **Weight:** 100g
- **Output rating:** 15A @ 24V d.c./10A Max. per terminal
- **Non addressable**
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**BDM800 Beam Detector Module - Loop Powered**

The BDM800 Beam Detector Module is designed to interface the FIRERAY 50R or 100R reflective beam detector to the MX Digital Admisible Loop. The BDM800 provides power from the loop to the Fire and Fault outputs of the detector and also monitors inter-connections for open and short circuit faults. The BDM800 can also be used with the FIRERAY 2000 active infrared beam detector. Supplied fitted in a standard double gang ancillary housing, the BDM800 greatly simplifies the wiring normally associated with beam detection. The considerable cost of providing local power supplies that satisfy the stringent requirements of BS5839 part 1 is eliminated.

**Features**

- Power Beam detectors directly from the MX Digital loop.
- Reduced wiring and installation costs.
- Monitors beam detector for fire and fault.
- Inter-connection monitored for open and short circuit faults.
- LPCB and VSS approved (pending).
- Can be installed to BS5839 part 1 2002.

**Product Code**

555.800.068

**Product Name**

BDM800 Beam Detector Module c/w Cover

**BTM Beam Termination Module**

In many cases it will be necessary to site the BDM800 Beam Detector Module some distance from the beam detector itself. To minimise and simplify wiring in such cases an optional unit, the BTM800 beam termination module is available. The BTM800 is also housed in a standard double gang ancillary cover and has all the connections and components required to minimise installation time.

**Features**

- Simplifies the wiring between Beam detector and BDM800.
- Allows BDM800 to be sited up to 40m from the beam detector.

**Product Code**

555.800.067

**Product Name**

BTM800 Beam Terminal Module c/w Cover

**MIO800 Multi-I/O Module**

The MIO800 is a general purpose interface module for use with MX technology fire detection systems. It allows multiple input and output connections to be made between external equipment and the MX Digital loop. These input and output are provided. Each input and output can be programmed independently using the MX Consys configuration tool to provide customised functionality. An IP55 rated D800 style housing is used as the standard enclosure with the option of a DIN-rail mounting kit for in-cabinet installations.

**Features**

- Normal open or normally closed inputs.
- Inputs monitored for open or short circuit faults.
- STYLE B (short circuit gives an alarm) or STYLE C (short circuit gives a fault) selectable for inputs.
- Provides four digital outputs.
- All four outputs can drive a self-powered high voltage relay HVR800.
- Two outputs have both volt free change over contacts and HVR Drivers.

**Technical Specification**

- Operating Temperature: -25°C to +70°C
- Storage Temperature: -40°C to +80°C
- Operating Humidity: Up to 95% non-condensing
- Dimensions (WxDxH): 234 x 166 x 84.5mm
- Weight: Module 70g
- Boxed 271g
- Relay Contact Rating: DC - 2A @ 30VDC

**Product Codes**

555.800.068
557.201.401

**Product Name**

D800 Ancillary Housing

**TSM800 Door Control Module**

The TSM800 is used to control fire doors in accordance with BS1122 Part 4. When activated, either by a fire signal or by a fault or isolation within the fire door zone, the TSM800 will interrupt the supply to the door holders and the doors under control of the module will close. The module has the provision to monitor a contact to report to the fire controller if the door fails to close. The module also includes a built-in line isolator. This module requires MX Consys10 or later to function.

**Technical Specification**

- EMC/RFI: Equal or exceeds EN61000.6.3 & EN50130-4
- Dimensions: 14H x 148W x 87D mm
- Weight: 105g
- Relay contacts: 2A @ 30VDC

**Product Code**

555.800.069

**Product Name**

TSM800 PCB

**VIO800 MX Vesda Interface**

The VIO800 MX Vesda Interface will enable all versions of the popular LaserPLUS Detectors and 7 relay versions of the Laser SCANR. Detectors to be interfaced directly to the MX Digital detection loops. 3 configurable inputs and 1 output signal are available from the interface enabling it to integrate fully with the Vesda detector.

This module is designed to fit in bay one of the Vesda Detectors.

**Product Code**

516.018.014

**Product Name**

VIO800 MX VESDA Interface
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Features
• Connects directly to the MX Digital Loop.
• Reduced installation time and cost since no external module is required.
• Easier Programming and Commissioning – predefined in MXconsys.
• EN60950:2000 Compliant PSU.
• EN50130-4:1996 & EN50081-1:1992 Compliant PSU.
• Mains and Fault LED Indicator on front cover.
• Output fuse protected.
• 24VDC Voltage Door Release Relay
• Specifically designed for the safe actuation of release mechanisms for doors.
• Satisfies the requirements of BS7273 Part 4 for category A actuation of Fire Doors.
• Built in line isolator.
• Self monitoring operation.
• Approved to EN54-18 (Input/Output Devices) and EN54-17 (Line Isolators).

MZX Compatible 4 Amp 24VDC Addressable Door Holder PSU

The MZX compatible ELM24TSM 4 Amp 24VDC Addressable Door Control & Power Supply Unit, is designed to provide monitoring and activation in compliance with the most stringent local door control standards.

This Door Holder PSU is interfaced to the MZX Panels via an integral TSM800 Door Control Module which is field mounted inside the Door Holder PSU and connects to the MZX Detector Loop.

Technical Specification

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>230V AC 50 Hz</td>
</tr>
<tr>
<td>Output Voltage</td>
<td>22 - 30Vdc</td>
</tr>
<tr>
<td>Output Current</td>
<td>4 Amps Continuous</td>
</tr>
<tr>
<td>Temperature</td>
<td>-10°C to + 40°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>95% RH</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP41 (excluding rear face)</td>
</tr>
<tr>
<td>Material</td>
<td>1.2mm white powder coated steel</td>
</tr>
<tr>
<td>Dimensions</td>
<td>230mm (W) x 200mm (H) x 80mm (D)</td>
</tr>
</tbody>
</table>

Product Code

558.004.011 ELM24TSM 4 Amp 24VDC Addressable Door Holder PSU
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### Housings

#### MX Ancillary Housings

A variety of ancillary housings are available to fit the 800 Series MX ancillaries. The standard sized modules are mechanically compatible with all options. LPCB approvals are with the M520 double gang cover plate or ancillary housings. The M520 double gang cover provides external access for the MX SERVICE TOOL to plug into the ancillary module which is mounted in the cover. All options allow the ancillary to be programmed and tested when the cover is removed.

#### M520

<table>
<thead>
<tr>
<th>M520 Ancillary cover for use with 800 series modules. Will fit onto a MK style double gang back box.</th>
<th>Product Code 517.035.007 M520 Ancillary Cover</th>
</tr>
</thead>
</table>

#### D800

<table>
<thead>
<tr>
<th>D800 IP55 ancillary housing 140W x 120H x 70mm D incorporates window to view module LED</th>
<th>Product Code 557.201.401 D800 IP55 Ancillary Housing</th>
</tr>
</thead>
</table>

#### ANC-3 Ancillary Housing

<table>
<thead>
<tr>
<th>ANC-3 MINERVA ancillary housing - for use with M800 ancillary modules (can accommodate up to 3 M800 modules). 340W x 290H x 90mm D</th>
<th>Product Code 557.180.097.A ADT Branded</th>
</tr>
</thead>
</table>

#### ANC-8 Ancillary Housing

<table>
<thead>
<tr>
<th>ANC-8 MINERVA ancillary housing - for use with M800 ancillary modules, houses 8 modules, expandable to 16 using the STK8 stacking kit. 440W x 320H x 140mm D</th>
<th>Product Codes 557.180.096.A ADT Branded 557.180.095 STK8 stacking kit</th>
</tr>
</thead>
</table>

#### DIN Rail Mounting Bracket

<table>
<thead>
<tr>
<th>DIN Rail mounting bracket enables any module which can be mounted to a M520 ancillary cover to be DIN rail mounted using this bracket. Clip-on PCB mounting pillars are included. Will fit standard 35mm DIN Rail bracket.</th>
<th>Product Code 547.004.002 DIN rail mounting bracket</th>
</tr>
</thead>
</table>
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**QFB/2**

QFB/2 Dry lining flush mount (for plasterboard etc) MK backbox for use with 800 Series addressable ancillaries using 517.035.007 cover.

**Product Code**

517.035.015

QFB/2 Dry lining flush mount backbox

**K2214 ALM**

K2214 ALM Metal surface mount MK backbox for use with 800 Series addressable ancillaries using 517.035.007 cover.

**Product Code**

517.035.014

K2214 ALM Metal Surface Mount MK Backbox

**MK K2142**

MK K2142 White plastic surface mount MK backbox for use with 800 Series addressable ancillaries using 517.035.007 cover.

**Product Code**

517.035.011

MK K2142 White plastic surface mount backbox

**8621C**

8621C Steel flush mount MK backbox for use with 800 Series addressable ancillaries using 517.035.007 cover.

**Product Code**

517.035.010

8621C Steel Flush Mount MK Backbox

---

**Technical Specification**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Mounting</th>
<th>Dimensions</th>
<th>Knockouts</th>
<th>Earth Screw</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.035.011</td>
<td>K2214</td>
<td>146x85x38mm</td>
<td>2 top &amp; bottom</td>
<td>Yes</td>
<td>Plastic</td>
</tr>
<tr>
<td>517.035.010</td>
<td>K2142</td>
<td>146x85x34mm</td>
<td>1 rear (25x35mm)</td>
<td>N/A</td>
<td>Plastic</td>
</tr>
<tr>
<td>517.035.014</td>
<td>8621C</td>
<td>146x85x34mm</td>
<td>N/A</td>
<td>Yes</td>
<td>Steel</td>
</tr>
<tr>
<td>517.035.015</td>
<td>QFB/2</td>
<td>146x85x38mm</td>
<td>2 top &amp; bottom</td>
<td>N/A</td>
<td>Plastic</td>
</tr>
</tbody>
</table>
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Callpoints

Features
• Integral LED indicator for easy identification of operation
• Surface or flush mounting
• Extensive range of digital addressable callpoints
• Test key facility, speeds maintenance visits
• Hazardous areas models available (See Special Hazards Section)
• IP67 Waterproof models for external applications

CP Series Callpoints
A comprehensive range of callpoints for use with addressable systems. All the callpoints are designed to enable an alarm signal to be given by breaking a glass element.

Technical Specification
(Indoor & Outdoor)
Housing: PC/ABS
Operating Temp.: Outdoor -25°C TO +70°C
Indoor -10°C TO +55°C
Relative Humidity: up to 95% RH (non-condensing)
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Callpoints CP820/CP830 Indoor/Outdoor

Indoor Callpoint
- Weight: 110g

Outdoor Callpoint
- Weight: 240g

CP820 Indoor Callpoint

The CP820 is an indoor MX addressable manual callpoint with programmable status LED. The CP820 is designed for LPCB approvals and the CP820M for Marine approvals. The CP820 provides high speed communication to the MX panel of a manual fire alarm.

Technical Specification
- Meets BS5839 Pt.2 and pr EN54
- EMC/RFI: EN50130-4/EN61000-6-3
- Operating Temp.: -10°C to +55°C
- Relative Humidity: up to 95% RH non-condensing
- Dimensions: 99.4 x 89 x 59.5 mm (27.5 mm flush mount)
- Weight: 110g
- IP Rating: 24D

Product Codes
- 514.800.603.T CP820 Indoor Callpoint (Thorn Branded)
- 514.800.603.A CP820 Indoor Callpoint (ADT Branded)
- 514.800.603.Y CP820 Indoor Callpoint (TYCO Branded)

CP830 Outdoor Callpoint

The CP830 is an outdoor MX addressable manual callpoint with programmable status LED. The CP830 is designed for LPCB approvals and the CP830M for Marine approvals. The CP830 provides high speed communication to the MX panel of a manual fire alarm.

Technical Specification
- Meets BS5839 Pt.2 and pr EN54
- EMC/RFI: EN50130-4/EN61000-6-3
- Operating Temp.: -25°C to +70°C
- Relative Humidity: up to 95% RH non-condensing
- Dimensions: 99.4 x 97.5 x 73 mm
- Weight: 240g
- IP Rating: 67

Product Codes
- 514.800.604.T CP830 Outdoor Callpoint (Thorn Branded)
- 514.800.604.A CP830 Outdoor Callpoint (ADT Branded)
- 514.800.604.Y CP830 Outdoor Callpoint (TYCO Branded)
- 514.800.606.T CP830 Marine Outdoor Callpoint (Thorn Branded)
# Chapter 2 - MZX Technology

## Callpoint Ancillaries

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>90.187</td>
<td>Red M141 spacer for red CP200/800 KAC callpoints</td>
</tr>
<tr>
<td>515.001.1-28</td>
<td>Callpoint hinged cover for use on MCP callpoints models (Colour - Clear)</td>
</tr>
<tr>
<td>515.001.026</td>
<td>Black callpoint bezel for CP200/800 models</td>
</tr>
</tbody>
</table>

## Ancillaries - Back Boxes

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>515.001.021</td>
<td>Standard Red surface mounting back box for MCP &amp; CP indoor callpoints</td>
</tr>
<tr>
<td>515.001.045</td>
<td>Test key for all MCP and CP style callpoints</td>
</tr>
<tr>
<td>10-115</td>
<td>SR2-T Optional Back Box (2 terminals)</td>
</tr>
</tbody>
</table>

Unless stated the indoor callpoints are supplied as flush mount units. The range is approved for use with the standard backbox. However, SR2-T backboxes are also available.

## Callpoint Spare Glasses - Current

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>515.001.119</td>
<td>EN54 Part 11 Spare Glass for MCP and CP series Callpoints (Pack of 5)</td>
</tr>
<tr>
<td>515.001.025</td>
<td>CP200/300/500 Glasses, clear English text on white background. No logo</td>
</tr>
<tr>
<td>515.001.127</td>
<td>Deformable operating unit “glass” for use in place of glasses, for kitchens or other areas where glass is not acceptable. For MCP callpoints only.</td>
</tr>
</tbody>
</table>
Chapter 2 - MZX Technology

Features
- Prevents accidental operation of callpoints
- Strong polycarbonate construction
- Optional break seal kit

STOPPER
The callpoint STOPPER provides protection from malicious or accidental activation of manual callpoints. Available for flush or surface mounted callpoints the ‘STOPPER’ is also available with optional high pitch sounder which is activated when the lid is lifted.
An optional ‘Break-Seat’ fitting kit allows ‘Break-Seals’ to be used to provide extra protection.

WARNING: Break seals only to be fitted by agreement with relevant fire authorities.

The STOPPER is suitable for all callpoints up to 100mm square.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Ref</th>
<th>Flush</th>
<th>Surface</th>
<th>With Sounder</th>
<th>Weatherproof</th>
</tr>
</thead>
<tbody>
<tr>
<td>515.001.029</td>
<td>STI630</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.030</td>
<td>STI631</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.031</td>
<td>STI633</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.034</td>
<td>STI1130</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.035</td>
<td>ST13150</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.036</td>
<td>STI632</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.037</td>
<td>STI633</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

STOPPER Dimensions

Product Code
515.001.033  IPO36 Break Seal Kit
(pack of 1)

STOPPER II Dimensions

Product Code
515.001.033  IPO36 Break Seal Kit
(pack of 1)
Chapter 2 - MZX Technology

**STOPPER II**

STOPPER II is constructed as the STOPPER from tough injection moulded polycarbonate. Physically larger than the STOPPER the STOPPER II extends the number of products to which these tough multi-purpose covers can protect. It consists of a strong tamper-proof clear polycarbonate cover and frame that fits easily over such products as break glass callpoints.

STOPPER II can also be fitted with an integral battery powered sounder which activates if the cover is lifted. The STOPPER II is suitable for callpoints up to 160mm square.

**Features**

- Strong polycarbonate construction
- Will accommodate weatherproof callpoints
- Tamper resistant

**Product Code**

515.001.034 STI1230 Surface Fit STOPPER II

---

**Weather STOPPER & Weather STOPPER II**

The Weather STOPPER and Weather STOPPER II extends the life of weather exposed devices, such as break glass callpoints, by offering protection against harsh conditions and environments. Experience has shown that this protective cover can extend the life of products installed in saline atmospheres, such as oil rigs and ship decks.

While offering environmental protection the Weather STOPPER and Weather STOPPER II are constructed from tough durable polycarbonate which will also guard against tampering, vandalism or accidental operation of devices such as emergency switches.

**Product Codes**

515.001.036 STI6535 Surface fit Weather STOPPER
515.001.035 STI3150 Surface fit Weather STOPPER II

---

**Features**

- Strong polycarbonate construction
- Provides environmental protection
- Ideal for offshore environments
## Chapter 2 - MZX Technology

### Smoke Beam/CCTV Guard

<table>
<thead>
<tr>
<th>Smoke Beam/CCTV Guard</th>
<th>Suitable for use with System Sensor, Hochiki and FireRay 2000 detectors.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Code</strong></td>
<td>516.015.009 STI9625 Smoke beam/CCTV guard</td>
</tr>
<tr>
<td><strong>Technical Specification</strong></td>
<td>Dimensions: 260H x 200W x 321D mm</td>
</tr>
</tbody>
</table>

### Keybox

<table>
<thead>
<tr>
<th>Keybox</th>
<th>This tough polycarbonate breakglass keybox is available to protect emergency keys.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Code</strong></td>
<td>515.001.043 STI8720 Keybox with printed glass</td>
</tr>
</tbody>
</table>
Chapter 2 - MZX Technology

Sounders & Beacons

Features
- Wide range of both bells and electronic sounders
- High sound output characteristics
- Low current consumption
- Clean lines, modern styling
- Easy to install, low installation costs
- Weatherproof units for outdoor use
- Distinct sounds are available
- Motorised and Solenoid bells available
- Wide range of voltages available

Sounders
A range of sounders to meet a wide variety of alarm applications where loud, penetrating and distinctive warnings must be given to alert people of fire situations. In addition, multi-tone electronic sounders can give a variety of sounds to signal other conditions e.g. “extinguishing gas release imminent,” etc.

Note: For I.S. & Flameproof sounders, please see the special hazards section in Chapter 10.
Chapter 2 - MZX Technology

Sounder/Beacon and Sounder Bases
One Point of Installation – Unique Solution with Huge Savings
Combining a detector base, sounder, beacon and line isolator in one low cost unit will result in a dramatic reduction in the final installation cost. Typically 40% to 55% of the installation costs per point can be saved. This presents an exciting opportunity for sellers in the DDA compliant market. This is achieved without the need for specialist high cost detector heads as standard 800 series Minerva® MX detectors are used.

Unique
When used with the 801PC 3oTec detector ADT can provide a completely unique solution combining fire detector, toxic gas detector, isolator, sounder and beacon into a single very cost effective point of installation.

Reflective Sound Monitoring (RSM) – Patented* Solution significantly reduces Risk
Reflective Sound Monitoring is employed to monitor the audio output of the LPSB3000 and LPAV3000 by listening to the output and reporting any sounders that are not working. RSM is a Tyco patented* technology and was successfully introduced with the Minerva® MX Loop powered Symphonie sounders. It is particularly beneficial during regular weekly sounder tests where users can be satisfied that all their sounders are working, even if the building is not fully occupied at the time of the test. Failure of the beacon would also generate a fault at the Minerva® MX control panel.

Features
• High output programmable sounder base and sounder beacon base
• One point of installation for detector, isolator, sounder & beacon
• Loop powered from the MX Technology® Digital Loop
• High brightness Multi-LED Beacon
• Software programmable
• 15 Tones and 2 Flash Rates
• Integral line isolator
• RSM (Reflective Sound Monitoring)
• Can be used as a standalone device using the sounder blanking cap
• Optional surface mount plastic conduit adaptor

Loop Power Capacity
The advanced 3000 series sounders and beacons are independently addressed and are therefore separately controllable from the Minerva® MX Digital loop. The maximum number that can be driven from a single loop is dependant on the number of addresses available, the volume selected and the flash rate of the beacon. MXDesigner version 5.0 should be used to accurately determine loop loading and battery size. Typically, at full volume of 90dBA, 50 x LPSB3000 sounders or 35 x LPAV3000 sounder beacons at 0.5Hz flash rate can be driven by a single 1Km loop. That gives a typical maximum of 280 sounder beacons at full volume from a single 8 loop Minerva® MX panel.

Built-in Isolation
As the line isolator is now integral to the device the need for separate line isolation devices is reduced.

Tones
15 Tones are available from the sounder, which include tones compatible with the LP Symphonie range, 802SB sounder base and the LPBB520 (loop powered Besson Banshee). 4 sound levels 60dB to 90dB (±3dB) and 2 flash rates 1/2Hz & 1Hz are available

MXConsys
The AV base range of devices are fully supported by Consys Version 14 and later, the point input dialog box provides an easy method for setting the Tones, Volume and Flash rate of the device. The only operation required at the device is to set the address using the 850EMT device programmer.

Technical Specification

<table>
<thead>
<tr>
<th>System</th>
<th>For use with MX/ZX fire alarm controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Up to 90% RH (non condensing)</td>
</tr>
<tr>
<td>IP Rating</td>
<td>En60529</td>
</tr>
<tr>
<td>Temp - Operating</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td>Temp - Storage</td>
<td>-25°C to +70°C</td>
</tr>
<tr>
<td>Dimensions</td>
<td>102 mm dia x 42 mm high</td>
</tr>
<tr>
<td>Weight:</td>
<td>LPSB3000 0.160 kg</td>
</tr>
<tr>
<td></td>
<td>LPAV3000 0.170 Kg</td>
</tr>
<tr>
<td>Materials</td>
<td>Housing ABS FR &amp; Polycarbonate</td>
</tr>
<tr>
<td>EMC</td>
<td>The range complies with the following: Product family standard EN50130-4 in respect of conducted disturbances, radiated immunity, electrostatic discharge, fast transients and slow high energy EN61000-6-3 for emissions</td>
</tr>
</tbody>
</table>

Product Codes
516.800.957 LPSB3000 Sounder only L/P addressable base
516.800.958 LPAV3000 Sounder beacon L/P addressable base
516.800.959 DAB3-4 Mounting flange – type B for conduit (supplied in packs of 10)
557.001.040.A Mark 2 Sounder Cap (ADT Branded)
557.001.040.Y Mark 2 Sounder Cap (Tyco Branded)

Note: Detectors supplied separately

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Loop Powered Symphoni Sounders and Sounder Beacons

Models Available
The Sounder only models are available with a red or white housing suitable for indoor use and an IP65 rated red housing for outdoor applications.

The Audio / Visual models, which incorporate a highly efficient LED beacon, are also available with a red or white housing for indoor use and an IP65 rated red housing for outdoor applications.

Reflective Sound Monitoring
Up to now sounder circuits have been monitored up to the EOL but not the individual sounders, fault detection has relied on human feedback from the weekly tests that should be carried out to meet the requirements of BS5839.

The LP Symphoni utilising Reflective Sound Monitoring (RSM) employs a transducer to actively monitor the units sound output during the weekly sounder test and will report back to the MX controller if it fails to detect the sounder operating when it has been commanded to, this ensures that the LP Symphoni range of sounders will in the unlikely event of a fault, display it immediately on the fire controller and is therefore not dependant upon the staff within a building reporting a sounder failure.

Features
- Loop Powered – Reduced installation costs
- High Output/Low consumption – Lower lifetime costs
- Indoor and Outdoor models – Same sounder tones in all areas
- Sounder/LED Beacon Version – DDA Compliant
- 16 Tones and 2 Flash rates – Suits individual requirements
- Reflective Sound Monitoring RSM – Reassurance that all sounders are working
- Integral Line Isolator – Saves cost and installation time

Built-in Isolation
As the line isolator is now integral to the device the need for separate line isolation devices is reduced.

Tones
16 Tones are available from the sounder, which include tones compatible with the 802SB sounder base and the LPBB520 (loop powered Besson Banshee). Dutch slow whoop and the DIN 1Hz sweep are included. Two sound levels 103dB & 90dB (±3dB).

MXConsys
The LP Symphoni range of devices will be fully supported by Consys Version 10 and later, the point input dialog box provides an easy method for setting the Tones, Volume and Flash rate of the device. The only operation required at the device is to set the address using the 850EMT device programmer.

Technical Specification
- Operating temp
  Indoor devices -10°C to +55°C
  Outdoor devices -20°C to +70°C
- IP rating
  Indoor devices IP21C
  Outdoor devices IP65
- EMC
  Product family standard EN50130-4 in respect of Conducted Disturbances, Radiated Immunity,
  Electrostatic Discharge, Fast Transients and Slow High Energy
  EN61000-6-3 for Emissions

Product Codes
- 516.800.960 LPSY800-R LP Symphoni (indoor use) red
- 516.800.961 LPSY800-W LP Symphoni (indoor use) white
- 516.800.962 LPSY865 LP Symphoni IP65 (out door use)
- 516.800.963 LPAB800-R LP Symphoni Sounder/Beacon (indoor use) red
- 516.800.964 LPAB800-W LP Symphoni Sounder/Beacon (indoor use) white
- 516.800.965 LPAB865 LP Symphoni Sounder/Beacon IP65 (outdoor use)
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**Features**
- Solenoid Operated
- Designed for Long Life
- Stove Enamelled Dome

---

**6" Red Solenoid Operated Friedland Bell**

The bells are the underdome type, with a high resonance pressed alloy-steel gong to ensure a loud clear ring tone. The operating mechanism is fully enclosed and the gong is red stove enamelled for long life. The bells are designed for internal use, but gasket sealed conduit boxes can be provided for external use.

**Product Code**
576.500.014  240V Red bell 6" 240Vac solenoid operated. 'Fire' text

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**Features**
- CE marked
- Low current 6" bell (ONLY 11mA)
- Low cost
- Extra high 95dBA/m
- Slim profile (53mm)
- Fully suppressed and polarised
- Quick and easy to install
- LPCB approved to EN54 Pt 3

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**6" & 8" Motorised Bells**

<table>
<thead>
<tr>
<th>Model</th>
<th>MBF-6EV</th>
<th>MBF-8EV</th>
<th>MBA-8EV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>24V d.c.</td>
<td>24V d.c.</td>
<td>24V d.c.</td>
</tr>
<tr>
<td>Rated Current</td>
<td>17mA</td>
<td>17mA</td>
<td>18mA</td>
</tr>
<tr>
<td>Sound output</td>
<td>90-95dBA</td>
<td>90-95dBA</td>
<td>91-97dBA</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-12 to +50°C</td>
<td>-10 to +50°C</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Weight</td>
<td>410g</td>
<td>640g</td>
<td>1100g</td>
</tr>
</tbody>
</table>

**Product Codes**
- 576.501.039.A MBF-6EV ADT Branded
- 576.501.039.T MBF-6EV Thorn Branded
- 576.501.040.A MBF-8EV ADT Branded
- 576.501.044.A MBA-8EV ADT Branded
- 576.501.044.T MBA-8EV Thorn Branded
- 576.501.045 BBX4 (2) W/P Backbox for MBA-8 Bell

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Electronic Solenoid Bell
Unique patented alarm bell with miniature solenoid and integrated electronic control. No backbox required for surface wiring.

Technical Specification
- Dimensions: 6" diameter
- Voltage: 18-30Vdc
- Typical Current: 24Vdc@30mA
- Typ. Sound Output: 94dB (A)@1m

Product Codes
- 20-100 6" 24Vdc Electronic bell, weatherproof IP33C - Wormald Branded
- 20-101 6" 24Vdc Electronic bell - red IP21C - Wormald Branded
- 20-111 6" 24Vdc Electronic bell - white IP21C

Marine Approved Products
- 576.501.407 MED 6" 24Vdc Electronic bell, weatherproof IP33C
- 576.501.408 MED 6" 24Vdc Electronic bell - red IP21C

Features
- Weatherproof Option
- Flexible Mounting Option
- Attractive Design

CF Motorised Bells
The CF Motorised bells are low current, fully suppressed and polarised.

Technical Specification
- Dimensions: 6 & 8" Diameter available
- Colour: Red
- Output Voltage: 20-28Vdc
- Typical Current: 25-28mA @ 24Vdc
- Typical Sound Output: 95/97dB (A) @ 1m

Product Codes
- Marine Approved Products
  - 576.501.405 MED 6" Red 24Vdc Motorised bell, "Fire" text with Thorn Branding

Features
- Low Current Consumption
- Suppressed and Polarised
- Sturdy Construction
Chapter 2 - MZX Technology

**Banshee Excel Sounders**

The Banshee Excel sounder replaces the Banshee Multi Tone range of Sounders. It uses the same technically superior rocking arm transducer to reproduce the familiar 32 tones of the previous Banshee and Bedlam ranges.

**Features**
- Modern aesthetic design
- 32 Selectable tones
- 3 Volume settings
- Push and twist mount
- Shallow and deep bases
- Available in red or white
- Low current consumption
- 2 Stage alarm available
- Independently switched sounder or beacon
- Xenon beacon with the Excel Lite

**Technical Specification**

- Approvals: LPCB & VdS approved to EN54-3
- Tones available: 32
- Operating voltage: 9-30Vdc
- Tone current consumption: See Tone Table in Chapter 11
- Flash current consumption: 40mA
- Operating temperature range (Deg C): -40 to +70
- Volume control via DIL switch: Maximum, Medium (-10dBA), Low (-20dBA)
- Flash rate per second: 1
- Ingress Protection: IP45 or IP66
- Termination: Screw terminals for 0.28mm² to 2.5mm² wire conductor

**Product Codes**

- 576.501.063 Banshee Excel Lite, red sounder, red xenon beacon, IP45

**Banshee Excel Lite Sounder Beacon**

The new Banshee Excel adds the Banshee Excel Lite Sounder Beacon to its range using a high output xenon with the familiar sounder. The Banshee Excel Lite can be used as a multi stage device by switching the beacon and the sounder independently using a third wire.

**Features**
- Modern aesthetic design
- 32 Selectable tones
- 3 Volume settings
- Push and twist mount
- Shallow and deep bases
- Available in red or white
- Low current consumption
- 2 Stage alarm available
- Independently switched sounder or beacon
- Xenon beacon with the Excel Lite
Chapter 2 - MZX Technology

Accessories

The combined mounting bracket for the Besson Multi-tone Banshee and Xenon Beacon allows quick and neat installation of combined sounders and beacons. The bracket allows the following electronic sounders to be mounted with the range of 1W Xenon Beacons:

- Besson Banshee
- MINERVA FIRECRIER voice enhanced sounder

The bracket can be used with any of the 24V, 1W Xenon Beacons in red, clear, amber or blue (Part no.’s 540.001.030/031/032 & 033)

Product Code
576.501.047
Banshee/Xenon bracket

Besson Wafer Sounder

The standard Besson Wafer sounder is supplied in white with a blank cover included. The specification is as follows:

- Input voltage: 24V d.c. (+/-25%)
- Sound Output: 65dB/80dB at 1m typical (pot. Adjustable) offering the same sound formats as the Banshee sounder range. It can therefore be used in conjunction with the Banshee sounders on the same site.

Technical Specification
- Current: 4mA to 15mA
- Temperature Range: 40°C to + 70°C
- Dimensions: Dia 103mm, Height 22mm (excluding cover plate)

Product Code
576.501.038
Besson wafer sounder and blank cover in white

Flush Mount Bedroom Sounder

Meeting the requirements for BS5839 part 1, the Bedroom Sounder range is well suited to hotels and residential environments where aesthetics is a prime concern. Matching the sound output of the Banshee range of sounders so therefore they can be mixed on the same site.

Features
- Low current consumption 7mA
- Dual sound options selected via a jumper switch: ‘Continuous’ and ‘Fast Sweep’ 90dB
- Can be both Flush and Surface mounted
- Robust terminal connectors to accommodate up to 2.5mm2 conductors

Product Codes
576.501.032.A
Flush Mount Sounder ADT Branded
576.501.032.T
Flush Mount Sounder Thorn Branded

Yodalarms

This versatile range of sounders are ideally suited for fire, safety and security hazard warning.

Technical Specification
- Dimensions:
  - YO3: 89H x 89W x 85D mm
  - YO5: 134H x 134W x 128D mm
  - YO8: 216H x 216W x 153D mm

Product Codes
576.501.001
YO3 Yodalarm 3” 24Vdc 100dB @ 1Mtr
576.501.002
YO5 Yodalarm 5” 24Vdc 106dB @ 1Mtr
576.501.003
YO8 Yodalarm 8” 24Vdc 112dB @ 1Mtr
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24Vdc Symphoni Sounder

The 24Vdc Symphoni Sounder is a general purpose internal sounder, available either as a very high output sounder for noisy areas, or a high output low current sounder for applications where power is limited. Both versions share the same horn and backbox which has double cable entries for ease of installation.

The low power version has 3 selectable tones which may be employed for one, two or three stage alarm applications. The high output version has 32 selectable tones and retains full tone compatibility with the Roshni, Squashni and Askari product ranges.

Product Codes
- SY/R Low Power Red Symphoni Sounder (3 tone)
- SY/W Low Power White Symphoni Sounder (3 tone)
- SYHD/R High Output Red Symphoni Sounder (3 tone)
- SYHD/W High Output White Symphoni Sounder (3 tone)

Technical Specification

<table>
<thead>
<tr>
<th>Model</th>
<th>Symphoni High Output</th>
<th>Symphoni Low Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation</td>
<td>2 Hours Continuous</td>
<td>Continuous</td>
</tr>
<tr>
<td>Operating Voltage Range</td>
<td>9-28Vdc</td>
<td>12-30Vdc</td>
</tr>
<tr>
<td>Sound Output (@ 1m)</td>
<td>Up to 120dB(A)</td>
<td>100dB(A) +/- 2dB(A) @24Vd. c.</td>
</tr>
<tr>
<td>Volume Control</td>
<td></td>
<td>Down to 80dB approx.</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>240mA +/- 20mA on Tone 3</td>
<td>5mA +/- 1mA at all volumes</td>
</tr>
<tr>
<td>Tones</td>
<td>1 to 32</td>
<td>Alternating 990Hz/650Hz@2Hz Continuous 990Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermittent 990Hz On/Off@1Hz</td>
</tr>
<tr>
<td>Synchronisation</td>
<td>Synchronised Start</td>
<td>Synchronised Start</td>
</tr>
<tr>
<td>Frequency Stability</td>
<td>+/- 0.15%</td>
<td>+/- 0.5%</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-25 °C to +55°C</td>
<td>-25 °C to +70°C</td>
</tr>
<tr>
<td>Line Monitoring Method</td>
<td>Polarised Input</td>
<td>Polarised Input</td>
</tr>
<tr>
<td>Construction</td>
<td>ABS Plastic Case</td>
<td>ABS Plastic Case</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP42</td>
<td>IP42</td>
</tr>
<tr>
<td>Weight</td>
<td>0.58Kg</td>
<td>0.212Kg</td>
</tr>
</tbody>
</table>

Roshni

A flexible alarm sounder for Fire and Security applications complete with volume control and dial switch to provide 32 tones.

Low profile Roshni with Deep base offers IP65 protection. All Roshni sounders have synchronised start for self synchronisation without third wire.

Product Codes
- ROSHNI Sounder c/w deep base - red
- ROSHNI Sounder c/w shallow base - red
- ROSHNI Deep Base - Red
- ROSHNI Deep Base - White

Technical Specification

Dimensions: 93 Dia x 100D mm (Deep base)
Colour: Red/white
Output Voltage: 9-28Vdc
Typical Current: 240mA +/-18mA
Typ. Sound Output: @1m 100dB

Marine Approved Products
- MED ROSHNI Sounder c/w deep base-red
- MED ROSHNI Sounder c/w shallow base-red

Model Symphoni High Output Symphoni Low Power
Operation 2 Hours Continuous Continuous
Operating Voltage Range 9-28Vdc 12-30Vdc
Sound Output (@ 1m) Up to 120dB(A) 100dB(A) +/- 2dB(A) @24Vdc. c.
Volume Control Continuous Continuous
Current Consumption 240mA +/- 20mA on Tone 3 5mA +/- 1mA at all volumes
Tones 1 to 32 Alternating 990Hz/650Hz@2Hz Continuous 990Hz
Sync Start Synchronised Start
Frequency Stability +/- 0.15% +/- 0.5%
Operating Temperature -25°C to +55°C -25°C to +70°C
Line Monitoring Method Polarised Input Polarised Input
Construction ABS Plastic Case ABS Plastic Case
Ingress Protection IP42 IP42
Weight 0.58Kg 0.212Kg
Fire-Cryer Plus® - Voice Enhanced Sounders

The Fire-Cryer® Plus range of voice sounders are electronic sounders which are pre-programmed with 9 messages. Each of the Fire-Cryer® voice sounders can be used as a single message voice sounder by simply installing them on to a conventional 24Vdc sounder circuit or by using a sounder controller on a loop. The choice of message(s) broadcast can be selected using a DIL switch on the rear of the sounder. See Table A

The Fire-Cryer® Plus offers an excellent service upgrade opportunity for systems as well as a highly flexible and cost effective solution to providing a voice evacuation system to many buildings. The choice of Fire-Cryer® voice sounders can be selected using Table B

Messages 1 to 7 in Table A can be used in a multi message installation with the addition of a Multi Message Switching PCB (576.501.171) or a Voice Message Controller (576.501.181 or 576.501.182) interfaced between the fire alarm control panel and the sounder circuits. The Voice Message Controllers can be supplied with a 2.5A or 5.25A power supply built in. A Zone Extension PCB (576.501.172) is available to extend the system to 4 zones or 8 sounder circuits. See Table C

Features

- Single Message or Multiple Message using the same sounder
- Multi Message facilitates multi evacuation strategies
- Clear and unambiguous alarm messages
- Voice Alarm Messages provoke an immediate response
- Sound Output - Up to 100db(A) (Fire-Cryer® Plus), 90db(A) (Mini Fire-Cryer® Plus), 110db(A) (Midi Fire-Cryer® Plus)
- Optional integral Red Strobe
- Low current consumption – average 20mA
- No special wiring easily retro fitted
- Fully synchronised over multi zones
- Deep base version available to IP66
- Ultra slim base sounder to fit industry standard detectors
- Suitable for ceiling or wall mounting (Mini Fire-Cryer® Plus)
- Optional front plate for stand alone use (Mini Fire-Cryer® Plus)
- Voice Message Controller makes manual message switching easy

A special Extinguishing PCB (576.501.173) used with the 576.501.135 will enable 1st, 2nd Stage, ‘Hold’ and ‘Gas Released’ messages to be automatically broadcast dependent on the state of the alarm. See Table A1
Chapter 2 - MZX Technology

**Fire-Cryer® Plus Multi Message PCB**
- **Product Code**: 576.501.171
- Fire-Cryer® Plus Multi Message PCB

**Fire-Cryer® Plus Zone Extension PCB**
- **Product Code**: 576.501.172
- Fire-Cryer® Plus Zone Extension PCB

**Fire-Cryer® Plus Extinguishing PCB**
- **Product Code**: 576.501.173
- Fire-Cryer® Plus Extinguishing PCB

**VMC / Multi Message PCB and 2.5A PSU**
- **Product Code**: 576.501.181
- VMC / Multi Message PCB and 2.5A PSU

**VMC / Multi Message / Zone Extension PCB and 5.25A PSU**
- **Product Code**: 576.501.182
- VMC / Multi Message / Zone Extension PCB and 5.25A PSU
Chapter 2 - MZX Technology

Technical Specification

<table>
<thead>
<tr>
<th>Fire-Cryer® Plus Model</th>
<th>Fire-Cryer® Plus</th>
<th>Mini</th>
<th>Midi</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDC Operating Voltage</td>
<td>20-28</td>
<td>20-28</td>
<td>20-28</td>
</tr>
<tr>
<td>Current mA @ 24VDC Peak/Avg - Sounder only</td>
<td>27/20</td>
<td>27/20</td>
<td>180/100</td>
</tr>
<tr>
<td>Current mA @ 24VDC Typical: Sounder with low current strobe</td>
<td>33/28</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Current mA @ 24VDC Typical: Sounder with high current strobe</td>
<td>52/60</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Current mA @ 24VDC Low current strobe only</td>
<td>13</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Current mA @ 24VDC High current strobe only</td>
<td>32</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Strobe Output Cd (LOW)</td>
<td>2</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Strobe Output Cd (HIGH)</td>
<td>6</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Volume Adjustment from Max. dBA Output to max output -18dBA</td>
<td>82 to 100</td>
<td>72 to 90</td>
<td>101 to 110</td>
</tr>
<tr>
<td>Weatherproofing (IP66 requires Deep Base)</td>
<td>IP44 or IP66</td>
<td>n/a</td>
<td>IP44</td>
</tr>
<tr>
<td>Housing Material</td>
<td>ABS</td>
<td>ABS</td>
<td>Aluminium/Plastic Base</td>
</tr>
<tr>
<td>Temperature Range °C</td>
<td>-25 to +70</td>
<td>-10 to +55</td>
<td>-25 to +70</td>
</tr>
<tr>
<td>Colour</td>
<td>Red or White</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>Connections</td>
<td>Screw 1B 1.5mm²</td>
<td>Screw 1B 1.5mm²</td>
<td>Clamp 2.5mm²</td>
</tr>
</tbody>
</table>

Figure 1 - Direct Connection to FACP

Figure 2 - Connection via Loop Interface
Chapter 2 - MZX Technology

Standard Message Set which consists of 9 pre-programmed messages with tones (See Table A)

Table A

<table>
<thead>
<tr>
<th>Message</th>
<th>Starting Tone Code</th>
<th>Two Letter Message Code</th>
<th>Beacon Flash Y/N</th>
<th>Speech Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MA</td>
<td>Y</td>
<td>The fire emergency. Please remain calm and evacuate the building immediately.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>AB</td>
<td>Y</td>
<td>This is a fire alert. Await further instructions.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>MA</td>
<td>Y</td>
<td>Standby alert. Close all blinds and move to the middle of the room.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>AD</td>
<td>N</td>
<td>All clear. No further action required.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>BF</td>
<td>N</td>
<td>This is an ACP fire alert. No action required.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>CC</td>
<td>N</td>
<td>This is a class change announcement.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>EA</td>
<td>Y</td>
<td>We have an emergency situation. Please leave the building by the nearest exit.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>CC</td>
<td>N</td>
<td>This is a fire alert. Keep calm. Leave the building by the nearest exit.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>AX</td>
<td>Y</td>
<td>We have an emergency situation. Please leave the building by the nearest exit.</td>
<td></td>
</tr>
</tbody>
</table>

Table A1 - GAS EXTINGUISHANT MESSAGES (Used with 576.501.135)

<table>
<thead>
<tr>
<th>Message</th>
<th>Starting Tone Code</th>
<th>Two Letter Message Code</th>
<th>Beacon Flash Y/N</th>
<th>Speech Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Stage</td>
<td>Z</td>
<td>D</td>
<td>First stage extinguishant release warning</td>
<td></td>
</tr>
<tr>
<td>2nd Stage</td>
<td>Z</td>
<td>F</td>
<td>Second stage extinguishant release warning</td>
<td></td>
</tr>
<tr>
<td>Hold</td>
<td>Z</td>
<td>L</td>
<td>Extinguishant gas release on hold</td>
<td></td>
</tr>
<tr>
<td>Gas Released</td>
<td>Z</td>
<td>L</td>
<td>Extinguishant released</td>
<td></td>
</tr>
</tbody>
</table>

Table A2 - Tone

<table>
<thead>
<tr>
<th>Tone</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No tone</td>
</tr>
<tr>
<td>1</td>
<td>Banshee LF Fast Sweep, 800Hz to 950Hz swept @ 9Hz</td>
</tr>
<tr>
<td>2</td>
<td>Banshee LF Fast Sweep, 800Hz to 950Hz swept @ 9Hz Pulsed at 1 second ON, 1 second OFF</td>
</tr>
<tr>
<td>3</td>
<td>Bell tone, pulsed</td>
</tr>
</tbody>
</table>
Chapter 2 - MZX Technology

Ordering Fire-Cryer® Plus® Voice Sounders

Step 1 - Choose your Fire-Cryer® Sounder

<table>
<thead>
<tr>
<th>Type</th>
<th>Body Colour</th>
<th>Beacon</th>
<th>Base</th>
<th>Part Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall Mount</td>
<td>Red</td>
<td>Red</td>
<td>Shallow</td>
<td>576.501.131</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Deep</td>
<td>576.501.132</td>
</tr>
<tr>
<td>Wall Mount</td>
<td>White</td>
<td>Red</td>
<td>Shallow</td>
<td>576.501.133</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Deep</td>
<td>576.501.134</td>
</tr>
<tr>
<td>Wall Mount</td>
<td>Red</td>
<td>None</td>
<td>Shallow</td>
<td>576.501.142</td>
</tr>
<tr>
<td>Wall Mount</td>
<td>Red</td>
<td>None</td>
<td>Deep</td>
<td>576.501.135</td>
</tr>
<tr>
<td>Base Mount</td>
<td>White</td>
<td>None</td>
<td>n/a</td>
<td>576.501.161</td>
</tr>
</tbody>
</table>

Step 2 - Choose your Interfaces for Multi Message Systems

<table>
<thead>
<tr>
<th>Product Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>576.501.131</td>
</tr>
<tr>
<td>576.501.132</td>
</tr>
<tr>
<td>576.501.133</td>
</tr>
<tr>
<td>576.501.134</td>
</tr>
<tr>
<td>576.501.141</td>
</tr>
<tr>
<td>576.501.142</td>
</tr>
<tr>
<td>576.501.151</td>
</tr>
<tr>
<td>576.501.161</td>
</tr>
<tr>
<td>576.501.171</td>
</tr>
<tr>
<td>576.501.172</td>
</tr>
<tr>
<td>576.501.173</td>
</tr>
<tr>
<td>576.501.181</td>
</tr>
<tr>
<td>576.501.182</td>
</tr>
<tr>
<td>576.501.191</td>
</tr>
</tbody>
</table>

Product Codes
Chapter 2 - MZX Technology

Single Gang Lamp/Buzzer Units

Lamp Buzzer units may be used for local alarms when high level audible warnings may not be appropriate. Available in flush and surface mount versions to fit standard single gang backboxes.

Features
• Low Current
• Flush or Surface Mount
• Hi-Brightness LED

Technical Specification
Dimensions: 90H x 90W x 40D mm
Current Rating: 15mA at 24Vdc nominally

Product Codes
540.011.012 Single gang flush mount LED (red)/Buzzer Unit labelled 'Fire Alarm'
540.011.013 Single gang surface mount LED (red)/Buzzer Unit labelled 'Fire Alarm' c/w surface backbox.

Solista LED Beacon

Ultra low power requirement: 3mA or 6mA at 24Vdc. Long life low profile design. Protected to IP54, supplied complete with base.

Product Code
576.501.230 Solista LED Beacon (Red)

Easy AV™ Retrofit LED Beacon

This low power LED beacon is designed to be retrofitted to existing Banshee electronic sounders. Easy and fast installation typically 3 min. Low power 6mA max at 24Vdc. High Output LEDs.

Product Code
576.501.012 Easy AV strobe for Banshee Sounders
Xenon Beacons - 24V Including Surface Mount Adaptor

This high quality range of Xenon beacons are tested to IP 65 making them ideal for the most stringent applications. Each beacon incorporates a low profile Fresnel lens designed to give maximum light output.

Technical Specification

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power Output</th>
<th>Alarm Current</th>
<th>Flash Rate</th>
<th>Rating</th>
<th>Temp. Range</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V d.c.</td>
<td>Watt(s)</td>
<td>mA</td>
<td></td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>Height</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>42</td>
<td>60 min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>51</td>
</tr>
<tr>
<td>24</td>
<td>2</td>
<td>84</td>
<td>60 min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>51</td>
</tr>
<tr>
<td>24</td>
<td>3</td>
<td>126</td>
<td>60 min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>51</td>
</tr>
<tr>
<td>24</td>
<td>5</td>
<td>270</td>
<td>60 min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>75</td>
</tr>
</tbody>
</table>

Product Codes

- 540.001.030 Low profile clear 24Vdc 1 watt
- 540.001.031 Low profile blue 24Vdc 1 watt
- 540.001.032 Low profile amber 24Vdc 1 watt
- 540.001.033 Low profile red 24Vdc 1 watt
- 20-112 Low profile red 24Vdc 2 watt
- 20-113 Low profile red 24Vdc 5 watt
- 20-120 Low profile red 24Vdc 3 watt
Chapter 2 - MZX Technology

Features
- Combined strobe & sounder
- Matches Roshni sounders
- Weather Resistant to IP65

Flashni
A combined sounder and beacon which combines the features of the Roshni electronic sounder with a fully integrated Xenon beacon.

Technical Specification
- Dimensions: 93 Dia x 92D mm (Shallow base)
- Dimensions: 93 Dia x 121D mm (Deep base)
- Output Voltage: 18-30Vdc
- Typical Current: 68mA@24Vdc
- Typ. Sound Output: 101dB (A)@1m

Product Codes
- 20-118 Combined Roshni sounder/strobe complete with deep base (IP65)

Marine Approved Product
- 576.501.403 MED Combined Roshni Sounder/Strobe, Red Body/Red Lens complete with shallow base

Features
- Combined strobe & sounder
- Matches Roshni sounders
- Weather Resistant to IP65

Squashni G3/AV Sounder Beacon
This low current combined sounder/beacon is ideal for standalone usage utilising the optional blanking cap or can be used in conjunction with a 4" base and detector. When used with a detector it will provide a single point of installation for the detector, sounder and beacon.

Product Codes
- 517.050.401 4" Universal Base
- 517.050.005 4" Detector Base Locking Pin Kit (PK100)

These sounders are fully compatible with all Roshni tones.
Chapter 2 - MZX Technology

Software Tools & Accessories

MX Technology Fire controllers are supported by a comprehensive suite of software programmes which provide key features to enable fast and accurate configuration and commissioning of the MX systems.

MXConsys
MXConsys, the highly flexible and extremely powerful programming tool that has been used successfully with MX systems since day one. Specially designed for MX it is constantly being extended and refined to meet ever changing demands. Available for free download from the Tyco Fire and Security Website but requires a dongle and license to operate.

Incorporated into MXConsys is MXConsys-Express – An alternative approach to system configuration that simplifies the programming effort by automating many of the processes. Its heart lies in a number of pre-defined templates that have been expertly designed to match a selection of building types. The demands on users in terms of experience and training are considerably reduced.

MXDesigner
MXDesigner is a sophisticated engineering design tool that not only ensures system parameters and design rules are obeyed but are key to the ordering and documentation processes. Battery calculations, loop loading calculations, remote bus parameters, system schematics and parts lists are all included. The extensive use of graphics and ‘drag and drop’ techniques makes the system easy and quick to use. In addition, a design module for the intrinsically safe MXDigital detectors and associated system 800 components is included. Available for free download from the Tyco Fire and Security Website.

MXFlow
MXFlow - If you have ever been involved in the configuration process for a complex ‘cause and effect’ programme, you will appreciate the benefits of an automated method of documenting your work. MXFlow does just that; it takes your MXConsys ‘event action’ and transcribes it into a graphical format that is comprehensive and easy to follow. It can be a valuable commissioning tool that saves time and effort as well as an easily understood form of documentation for future service use.

Available for free download from the Tyco Fire and Security Website to authorised personnel.

MXChecker
MXChecker - MXChecker replaces, in software, all configured MX loop devices on a single panel. It offers a user the following major functionality:

- Connection to a panel directly, or indirectly via the MXnetwork (in the same way Consys does to perform a download/upload).
- Provides the input status of each and every device configured on the Loops, e.g. make a Sounder go ‘No Response’, a detector appear active, etc.
- The ability to display the General Status of each and every Point configured on the Loops, e.g. indicate a Sounder is Isolated, a Callpoint is Disarmed, a Detector is Resetting, etc. The ability to display the Output Status of each and every Point configured on the Loops, e.g. indicate a Sounder is being driven to P1, a Relay Module is not being driven, etc.

MXLogger
MXLogger - MXLogger enables the engineer to selectively monitor any device or devices on the addressable loops. The returned values are displayed on a PC screen and can be saved to a file for later analysis. Available for free download from the Tyco Fire and Security Website.

MXRemote
MXRemote - Remote communications software provides a fast and efficient means of diagnosis without anyone having to leave the office. In situations where access to a site may be difficult or where an attending technician requires high level assistance then MXRemote is the tool for the job. Using modems, MXRemote can link to the MXDigital fire system via PSTN or IP and once connected, becomes an integral part of the fire system, acting as a fully functional repeater. All system functions are then available to the MXRemote operator. Available for free download from the Tyco Fire and Security Website but requires a dongle and license to operate.

MXService Tool
The TYCO MXService tool is a powerful and flexible tool for assistance in the installation, commissioning, diagnostics and service of Tyco MX detection systems. The MXService tool allows all MX addressable devices to be interrogated, tested and programmed. Suitable for desktop or single handed operation the MXService tool is battery operated using standard rechargeable batteries.

MXLoop Tester
The MXLoop Tester can test, commission and fault find a loop of up to 250 MX analogue addressable detectors/devices, without a fire panel. A laptop is generally used for operation & display, but a “One Person Installation Mode” is automatically enabled on power up.

Identifies all devices on the loop, determining addresses and types. Over-addressed (>250), unknown device types, and, generally, duplicate addressed devices are recognised. Monitors analogue values of all detectors/modules on the loop to determine device status: normal/alarm/fault/dirty etc.
Chapter 2 - MZX Technology

Features
• MZX Product Line Overview.
• Key Terms & Conditions.
• Key Functions & Features.
• System Display and Controls.
• Set Time and Date.
• Enter Pass Codes
• Customer Operator Access Levels.
• Accept Fire Alarm Events.
• Accept Incoming Events.
• Walk Test.
• Isolate Detectors.
• Isolate Field Devices.
• View Status of a Loop Device.
• View Event Log.
• Interpret System Faults.
• Carry out Routine Testing.

MZX Interactive Training CD
An Operator Training CD which contains an interactive training programme that provides information on the MZX Fire Detection System.

Product Code
TCD-1 MZX Interactive Training CD
Chapter 2 - MX Technology

MXConsys
MXConsys is a powerful Windows programming tool which provides full system programming functions and project configuration and issue control. MXConsys is used on MINERVA MX, MX2, T2000 & MZX panels. It also supports automatic data transfer to MXGraph & TXG graphical mimic and alarm management systems. MXConsys is available under document control from authorised personnel in the Tyco businesses.

Features
• Programs the system across multiple sub-panels
• Downloads to the system from one point
• Provides Firmware download as well as configuration download
• Dongle protected
• Provides full project configuration printouts. Includes MX consys express

Product Codes
557.203.001 MXConsys Dongle and license (parallel)
557.203.003 MXConsys Dongle and license (USB)
557.202.118 MXConsys Download lead

MXRemote
MXRemote is a Windows based software tool for remote service and support of MX detection panels. MXRemote provides a full function fire panel repeater running on a PC either locally or over dial up telephone lines or via the internet. Providing the operator has the correct passwords MXRemote allows all operator, manager, service and engineer functions available at the panel to be provided at the PC. This allows the customer or the Tyco service organisation to provide remote assistance, service and limited configuration assistance to the installation.

Features
• Facilitates remote diagnostics
• Display identical to panel view
• Remote Assistance

Product Codes
557.203.002 MXRemote dongle and license (parallel)
557.203.004 MXRemote Dongle and license (USB)
557.202.116 MX-FIM Modem Lead
UDS1100 Lantronics Device Server LAN
Chapter 2 - MX Technology

Programming and Service Tools

Features
- Simplifies installation and commissioning
- Reduces the possibility of engineer error
- Improves health and safety by removing the need to work at height
- Provides peace of mind through evidence based digital reporting

850EMT Engineering Management Tool
The engineering management tool communicates with the 850 series and 830 series devices using a 2 way infrared wireless link. Commissioning data is held within the 850 EMT and the technician will be prompted to select and confirm configuration details resulting in an evidence based commissioning document that can be downloaded from the programmer.

Technical Specification
2 way wireless infrared communication with detectors
TFT colour touch screen display
Save time with One Visit Commissioning (OVC)
Facilitates evidence based commissioning
Read/write the detector/ancillary address
Display and confirm zone and point strings
Display temperature/CO levels/smoke obscuration
Programme the device LED
Initiate detector self verification test
Display detector dirtiness level
Control ancillary outputs
Read ancillary statuses
Compatible with all 800 series devices

Product Codes
516.850.900 850EMT engineering management tool
516.850.905 Pack of 5 replacement stylus
WWQ252379 2GB USB memory stick
SP1203941 3m RJ11 panel to 850EMT cable
516.800.922 Spare ancillary programming lead
516.800.924 Pack of 10 spare pins for ancillary lead
516.800.923 Accessory kit (Carry case, shoulder strap & car 12v adaptor)
Chapter 2 - MX Technology

MX AVR Programmer
This unit allows the MZX Technology® Fire Controller Loop Drivers to be updated to the latest software version. When required upgrades can be performed easily and quickly in the field with minimal system downtime. The MZX AVR Programmer is designed for use with MX, MZX, ZX and T2000 addressable fire controllers, please check document 17-05-AVR for compatibility details.

Technical Specification
- 2 Button Keypad
- 3 Status LEDs
- Operating Temperature 0°C to 50°C
- Size 189 x 80 x 31

Product Code
516.800.941 Tyco MZX AVR Programmer

Features
- Pre-Programmed with latest AVR firmware
- Powered from XLM Loop card or FIM, No external power required
- Simple to operate
- Compact handheld device
- Complete with ribbon cable and connector

MX Service Accessory Kit
A carry case which contains the following items:-
- Car Lighter Adapter
- Shoulder Strap

This provides space for the following:-
- 850EMT Engineer Management Tool
- Ancillary Programming Lead
- Mains Charger

Product Code
516.800.923 850EMT Engineer Management Tool accessory kit

Features
- Compact
- Organises Tools
- Sturdy Construction Protects Tools
Chapter 2 - MX Technology

**Features**
- Ability to commission loops without a panel
- Verify installed loops before connection to panel
- Fault find loops whilst disconnected from panel

**MX Loop Tester**

The MX Loop Tester can test, commission and fault-find a loop of up to 250 MX digital addressable detectors/devices, without a fire panel. A laptop is generally used for operation & display, but a “One Person Installation Mode” is automatically enabled on power up.

- Monitors loop current and status, identifying open / short and over-current conditions. Details devices present on each side of break (so that position of break or tripped isolator can be determined).
- Includes commands to operate device LED and control output modules (relays and sounders).
- Turns on LED of faulty detectors (when there is no alarm) to aid visual identification.
- Automatic addressing mode allows un-programmed devices to be added in sequence and be automatically addressed. Detailed diagnostics and commissioning modes via laptop.

**Technical Specification**

- Powered from 110V/230V mains supply via 24V, 3A plug pack, or from 24V batteries (batteries not included).
- Dimensions: Unit: 200mm x 122mm x 46mm
- Carry Bag: 250mm x 250mm x 70mm
- Weight: 2 kg (without battery)

**Product Codes**

- 557.203.021 MXLoop tester with EUROPEAN/UK MAINS to IEC CABLE
- 557.203.022 SPARE ECM prog DB6 (FEM) - DB9 (FEM) null modem
- 557.203.023 Spare carry bag with 2 pockets and strap
- 557.203.024 Spare PSU 90-264VAC IN/24VDC 3A out
- 557.203.026 Spare MX loop tester battery lead set

**MX Service Case**

There are 11 main circuit boards shared between the Minerva® MX4000 and MX2 Control Panels, Repeater Panels and Black Box Panels. The MX Service Case is designed to hold one of each board in a convenient lightweight and portable case that will protect the boards whilst taking the minimum amount of space in a service engineer’s vehicle. The case also contains a fault finding manual.

The MX Service Case allows a service engineer to carry onto site, sufficient spares to effect a panel repair efficiently and in a professional manner. It will avoid unnecessary return trips to the service vehicle or branch to collect spares and negates the need to carry cumbersome panels & enclosures in service vehicles.

**Features**
- Lightweight
- Convenient
- Compact

**Product Code**

- 557.202.298 MX Service Case
# Chapter 2 - MX Technology

## Service & Spares

<table>
<thead>
<tr>
<th>Keys &amp; Keyswitches</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>557.203.005</td>
<td>Set of spare keys for MX Panel (AL102)</td>
</tr>
<tr>
<td>557.180.209</td>
<td>Keyswitch assembly for use with MX2 controllers (spare)</td>
</tr>
<tr>
<td>557.180.208</td>
<td>MX2 Spare Keys</td>
</tr>
<tr>
<td>557.201.508</td>
<td>MXZ Spare Key Set</td>
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<thead>
<tr>
<th>Housings &amp; Metalwork</th>
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<tr>
<td>557.201.300</td>
<td>BFP801 Blank Half Module - Grey Overlay</td>
</tr>
<tr>
<td>557.201.306</td>
<td>Standard MX Expansion backbox and chassis plate</td>
</tr>
<tr>
<td>557.201.310</td>
<td>Deep MX Expansion backbox and chassis plate</td>
</tr>
<tr>
<td>557.202.206</td>
<td>MX2 expansion aperture installation kit</td>
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<th>CPU FIMs &amp; Loop Cards</th>
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<td>557.202.000</td>
<td>FIM801 1-Loop Field I/F Module</td>
</tr>
<tr>
<td>557.202.001</td>
<td>FIM802 2-Loop Field I/F Module</td>
</tr>
<tr>
<td>557.202.008</td>
<td>FIM801CV – T2000CV only</td>
</tr>
<tr>
<td>557.202.007</td>
<td>XLM800 2-Loop Expansion Card</td>
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<tr>
<td>557.202.002</td>
<td>CPU800 Central Processor Unit</td>
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<th>Power Supplies</th>
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<td>557.202.003</td>
<td>PSM800 Power Supply Unit</td>
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<td>557.202.004</td>
<td>LB800 Loop Booster Module PCB</td>
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<tr>
<td>557.202.005</td>
<td>PSM800M Marine approved PSU</td>
</tr>
<tr>
<td>557.202.002</td>
<td>PSM800M Marine approved PSU c/w Loop Booster</td>
</tr>
<tr>
<td>557.202.210</td>
<td>PSM800 Power Supply with Loop Booster</td>
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<tr>
<td>557.202.208</td>
<td>MX8 8 Loop Expansion kit</td>
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<tr>
<td>557.202.210</td>
<td>Dual power supply mounting kit</td>
</tr>
<tr>
<td>557.202.050</td>
<td>PSM800 Temp Sensor Accessory Kit</td>
</tr>
<tr>
<td>557.202.113</td>
<td>PSM to FIM Cable</td>
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<tr>
<td>557.202.608</td>
<td>BAQ800 Power monitor module</td>
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<tr>
<td>557.202.609</td>
<td>BAQ800T24 2.5A MZX PSU</td>
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<tr>
<td>557.202.610</td>
<td>BAQ140T24 5A MZX PSU</td>
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<tr>
<td>557.202.611</td>
<td>PSM805 Power Monitor Module - 5V Repeater</td>
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<tr>
<th>Indication &amp; Expansion</th>
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<tr>
<td>557.202.013</td>
<td>ODM800 Operator Control Module</td>
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<tr>
<td>557.202.019</td>
<td>ODM800 Operator Display Module</td>
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<tr>
<td>557.202.021</td>
<td>ANN880 80-Way Alarm LED Module</td>
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<tr>
<td>557.202.022</td>
<td>ANN880 80-Way Alarm LED Module</td>
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<tr>
<td>557.202.020</td>
<td>CM820 20-Way Status/Command Module</td>
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<tr>
<td>557.202.200</td>
<td>CM820 MX2 Display Control Module</td>
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<tr>
<td>557.202.601</td>
<td>CM816 16 zone display PCB for MZX125</td>
</tr>
<tr>
<td>557.202.602</td>
<td>CM832 32 zone display PCB for MZX250/251/252</td>
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<tr>
<td>557.202.209</td>
<td>MX2 LCD assembly</td>
</tr>
<tr>
<td>557.202.208</td>
<td>RSM800 Power Supply</td>
</tr>
<tr>
<td>557.180.053</td>
<td>RBUS Driver Chip</td>
</tr>
<tr>
<td>557.180.052</td>
<td>Serial Printer Driver Kit</td>
</tr>
<tr>
<td>557.202.613</td>
<td>DCM6464R Spare Display / Control PCB for MZX 253 (64 red zonal LEDs)</td>
</tr>
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<thead>
<tr>
<th>Callpoint Key &amp; Glasses</th>
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<tbody>
<tr>
<td>515.001.045</td>
<td>MCP test key</td>
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<tr>
<td>515.001.119</td>
<td>MCP EN54 Spare Glasses pk of 5</td>
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<thead>
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<th>MX Service Tool</th>
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<tr>
<td>516.800.922</td>
<td>MX Service tool, Spare programming lead</td>
</tr>
<tr>
<td>516.800.924</td>
<td>MX Service tool, Spare pins for programming lead pk of 10</td>
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<table>
<thead>
<tr>
<th>MX Loop Tester</th>
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<tbody>
<tr>
<td>557.203.022</td>
<td>MX Loop Tester ECM Prog Null Modem</td>
</tr>
<tr>
<td>557.203.023</td>
<td>MX Loop Tester Carry Bag</td>
</tr>
<tr>
<td>557.203.024</td>
<td>MX Loop tester PSU</td>
</tr>
<tr>
<td>557.203.026</td>
<td>MX Loop Tester Battery lead set</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flammable Gas Detector</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>516.100.051</td>
<td>Spare Flammable Gas Detector Sensor</td>
</tr>
<tr>
<td>516.100.052</td>
<td>Spare Flammable Gas Detector PCB</td>
</tr>
</tbody>
</table>
Chapter 3 - Conventional Systems

Control Panels and Repeater Panels

Features

- 2, 4 and 8 zone versions available.
- Supports the complete range of EN54 approved series 600 detectors including photo multi-sensor and CO multi-sensor.
- Supports Tyco twin wire sounders on all eight detection zones.
- Drives up to 3 repeater panels (4 and 8 zone panels).
- Access to controls via key switch.
- Space for 2 x 3.4 A/H batteries providing up to 72 hour standby.
- Remote control inputs for class change, alert, evacuate, silence alarms and reset.
- Zone 1 configurable for latching or non latching.
- Selectable zonal or general alarm sounder operation.
- Alert sounder option.
- Configurable zone co-incidence for automatic detectors.
- Fully monitored fire signalling output.
- Single pole volt free change over fire relay output.
- Single pole volt free change over fail safe fault relay output.
- Short circuit fire option.
- Auxiliary 24VDC 250mA power supply output.
- Open collector output for buzzer active, disablement active and evacuate active.
- Earth fault monitoring.
- Zone/Output disablement for each zone, fire signal output and all sounders.
- Buzzer disable feature.
- One man zone test.
- One man sounder test.
- Automatic fire detector and manual alarm call point fire event discrimination.
- Alarm counter.
- Compatible with diode bases for detector removal.

Minerva® MZX-c

The Minerva MZX-c range of conventional twin wire fire alarm control panels will satisfy a wide range of applications from 2 to 8 zones and have many features that are normally associated with more expensive addressable systems.

The Minerva MZX-c range of conventional fire detection control panels are designed to be both installer and user friendly. A high degree of flexibility and programmability allows the systems to be customised without the need for any configuration software.

The range consists of 2, 4 and 8 zone panels together with an 8 zone repeater which is compatible with the 4 and 8 zone variants. The matching repeater panel has an inbuilt 240Vac power supply.
### Chapter 3 - Conventional Systems

#### Technical Specifications

<table>
<thead>
<tr>
<th>Section</th>
<th>2 Zone</th>
<th>4 Zone</th>
<th>8 Zone</th>
<th>8 Zone</th>
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</thead>
<tbody>
<tr>
<td><strong>Panels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mains Supply</td>
<td>230VAC +10% - 15%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption (max)</td>
<td>1.5kW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSU/Charger Output</td>
<td>1.5A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sounder DC Output Nominal</td>
<td>2 x 0.5A</td>
<td>4 x 0.5A</td>
<td>4 x 0.5A</td>
<td>N/A</td>
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<tr>
<td>Aux DC Output Nominal</td>
<td>0.25A</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Battery Space</td>
<td>2 x 3.4 A/H (PS-1230)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-5°C to +40°C</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>95% Non Condensing</td>
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<td></td>
</tr>
<tr>
<td><strong>Mechanical</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (W x H x D mm)</td>
<td>365 x 273 x 110</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Weight Excl Batteries Kg</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure Colour</td>
<td>Light Grey RAL 7035</td>
<td></td>
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</tbody>
</table>

#### Product Codes

- 508.031.004.EG MZX-e 2 ZONE PANEL TYCO 2 WIRE
- 508.031.005.EG MZX-e 4 ZONE PANEL TYCO 2 WIRE
- 508.031.006.EG MZX-e 8 ZONE PANEL TYCO 2 WIRE
- 508.031.016.EG MZX-e 8 ZONE REPEATER PANEL
Chapter 3 - Conventional Systems

Minerva® MZX-c+ (Does not support Tyco twin wire sounders)

The MZX-c+ range of Conventional Control Panels are designed to be both installer and user friendly.

They are designed and manufactured to a high standard and are approved by LPCB to EN54 parts 2 & 4.

These Panels are available in 4, 8, 16 & 32 zone versions along with suitable Repeaters for all models.

The 8 to 32 Zone Panels are capable of driving any combination of 8 channel output expansion boards (relays, alarm circuits & open collector 0v outputs) up to a maximum of 12 boards which can be set to zonal activated or common output modes.

Each Panel has extensive configuration options but remains easy to install, program and operate and are supported by detailed documentation on commissioning, operation and maintenance.

The Panels are designed to work with a wide range of manufacturers detectors (in addition to Tyco detectors) and are suitable for use in many types of installation including upgrades and new installations.

Ancillaries and Expansion

- C1631 Repeater Interface Board provides a port for driving up to 5 repeater panels. One C1631 Repeater interface board is required for the panel and one for each repeater. Repeaters are supplied with a C1631 fitted.
- C1630 Output Expansion Interface Board provides a port for driving up to 12 output expansion boards.
- EXP 4 and EXP 4 PSU Expansion Housings are designed to house any combination of up to four output expansion boards. The PSU version is equipped with a 5A 24Vdc power supply with space for 2 x 12V 12Ah batteries. Housing dimensions 325W x 370H x 126D mm
- EXP 5 and EXP 5 PSU Expansion Housings are similar to the EXP 4 and EXP 4 PSU but accommodate five output expansion boards. Housing dimensions 400W x 441H x 131D mm
- C1633 LED Driver Board provides eight open collector outputs rated @ 60mA. Outputs can be zonal alarm or common alarm.
- C1634 Relay Output Module provides eight volt free changeover contacts rated at 1A 30Vdc. Outputs can be zonal alarm or common alarm.
- C1635 Monitored Output Board provides eight fault monitored 24Vdc outputs. Power can be derived from the control panel or an external source. Outputs can be zonal alarm or common alarm.
- C1651 MZX-c+ Timer Module is an optional plug-in board with an alphanumeric LCD to provides a real-time clock display. The clock can be programmed to provide investigate delays, sequential alarms and day night settings. The unit is also used to store and display a total count of the number of times the panel enters the alarm condition. Can be fitted to 8, 16 and 32 zone panels.

Features

- 4, 8, 16 and 32 zone versions available
- Semi-Flush mounting using optional bezel
- Supports the complete range of EN54 Approved Series 600 Detectors including photo multi-sensor and CO multi-sensor
- Compatible with System 620 ATEX and IECEx approved intrinsically safe system
- Extensive custom options programmable via switches and front panel controls
- Two stage alarms and investigate delay options
- Day/Night modes and alarm counter (with optional timer module)
- Full EN54 zone operation with options for non-latching, short circuit alarm or indication only circuits

Additional Benefits

- Inputs for remote Silence, Evacuate, Reset and Class change
- Configurable monitored or volt free outputs for Fire, Fault and Protection
- Outputs for zones 1 to 4 (open collector) with 8, 16 or 32 zonal outputs provided by optional expansion boards
- Outputs for Disablement active, Evacuate active and buzzer active (open collector)
- Volt free reset relay. Active for 10 seconds following a panel reset
- 8 to 32 zone systems can drive up to 12 expansion input / output modules per panel
- Drive up to 5 repeater panels
Chapter 3 - Conventional Systems

Technical Specifications

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<th>Panels</th>
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<td><strong>Electrical</strong></td>
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</tr>
<tr>
<td>Mains Supply</td>
<td>230Vac +10% - 15%</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>85W</td>
</tr>
<tr>
<td>PSU / Charger Output</td>
<td>1.5A</td>
</tr>
<tr>
<td>Sounder Circuits 24Vdc nominal</td>
<td>4 @ 600mA</td>
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<tr>
<td>Aux. DC Output 24Vdc nominal</td>
<td>500mA</td>
</tr>
<tr>
<td>Maximum Battery Space</td>
<td>2 x 3Ah</td>
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<tr>
<td><strong>Environmental</strong></td>
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</tr>
<tr>
<td>Operating Temperature</td>
<td>-5 to +40 °C</td>
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<tr>
<td>Operating Humidity</td>
<td>5% to 95% non-condensing</td>
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<tr>
<td><strong>Mechanical</strong></td>
<td></td>
</tr>
<tr>
<td>Dimensions (W x H x D mm)</td>
<td>325x370x126</td>
</tr>
<tr>
<td>Space for 8 way expansion</td>
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<tr>
<td>Weight Excl. Batteries Kg</td>
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</tr>
<tr>
<td>Enclosure Colour</td>
<td>RAL7035 Light Grey</td>
</tr>
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</table>

Product Codes

- 508.032.002.EA MZX+ 4 Zone Panel English/Arabic
- 508.032.003.EA MZX+ 8 Zone Panel English/Arabic
- 508.032.004.EA MZX+ 16 Zone Panel English/Arabic
- 508.032.005.EA MZX+ 32 Zone Panel English/Arabic
- 508.032.006.EA MZX+ 8 Zone Repeater 240Vac English/Arabic
- 508.032.007.EA MZX+ 16 Zone Repeater 240Vac English/Arabic
- 508.032.008.EA MZX+ 32 Zone Repeater 240Vac English/Arabic
- 508.032.012 MZX+ 4 Way Expansion Housing English/Arabic
- 508.032.013 MZX+ 4 Way Expansion Housing with PSU English/Arabic
- 508.032.014 MZX+ 5 Way Expansion Housing English/Arabic
- 508.032.015 MZX+ 5 Way Expansion Housing with PSU English/Arabic
- 557.201.502 Flush Mount Bezel for MZX+ 4/8/16 Zone Panel and Repeater
- 2605060 C1630 O/P Expansion Interface Board
- 2605061 C1631 Repeater Interface Board
- 2605062 C1632 16 Zone Interface Board
- 2605063 C1633 LED Driver Board
- 2605064 C1634 Relay Output Board
- 2605065 C1636 Monitored Output Board
- 2605070 C1651 MZX+ Timer Board
Chapter 3 - Conventional Systems

T1200 Conventional Marine Controller

Developed and Manufactured in the United Kingdom the T1200 range of Conventional Panels are a powerful yet user friendly series of Control Panels. The range is fully approved by all major Marine Authorities and takes advantage of the very latest technological advancements both in terms of design and manufacturing to the latest European, Marine and Asian standards.

Benefits

- Allows very early detection of accommodation fires with significantly reduced false alarms when used with Tyco’s unique heat enhanced Compensated Carbon Monoxide (CCO) Detector.
- Configurable Detection Zones allowing zones to be configured for any or all of the following: - Latching or Non Latching Fire Indication Normal or Intrinsically Safe Zone Monitoring of Machinery space zones.
- Crew Alert Mode: - Manages Alarm Annunciation.
- Pre-configured for Immediate use.

Detection Options

- Optical Detector - An excellent all round detector suited to all applications.
- High Performance Optical (HPO) Detector - A direct replacement for the Ion Chamber Smoke Detector.
- Flame Detector - Used where there is a risk of large flaming fires e.g. Machinery Spaces.
- Enhanced Compensated Carbon Monoxide (CCO) Detector - The best detector for early warning without false alarms, used in life threatening applications e.g. Cabins, Public Spaces etc.
- Heat Detector - Used where smoke detectors cannot be used e.g. Galleys, Laundries, Drying Rooms etc.

Extensive configuration options using simple on board DIL switches and links.

Fault Finding Features

- The following fault finding indications are available: -
  - General Fault - Any Fault Condition.
  - Power Supply Fault - Mains or standby power supply/charger fault.
  - System Fault - Micro Controller or memory fault.
  - Earth Fault - Positive or Negative Power Supply Earth Fault.
  - Fuse Fault - Auxiliary Supply Fuse Failure.
  - Repeater Fault - Repeater Fault or Repeater communications failure.
  - Sounder Fault - Any Sounder Fault.
  - Fire Output Fault - Fault on the Fire Output.
  - Fault Output Fault - Fault on the Fault Output.

Technical Specification

- Dimensions:
  - T1204 & T1216RDC – 335w x 270h x 148d mm
  - T1216 & T1216R – 420w x 445h x 148d mm
  - T1232/T1216W/T1232RAC/T1232RDC/T1200EA/T1200EDC – 500w x 535h x 174d mm
  - T1200B – 335w x 170h x 102d mm

- Environmental IP Rating: Designed to IP56
- Operating Temp: -10°C to +55°C
- Humidity: 95% RH (non condensing)
### Chapter 3 - Conventional Systems

**Product Codes**

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<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
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<td>508.023.001</td>
<td>T1204DC 4 ZONE PANEL C/W 1.5A 24VDC PSU (requires T1200B battery box)</td>
</tr>
<tr>
<td>508.023.002</td>
<td>T1204A1 4 ZONE PANEL C/W 1.5A 110VAC PSU (requires T1200B battery box)</td>
</tr>
<tr>
<td>508.023.003</td>
<td>T1204A2 4 ZONE PANEL C/W 1.5A 230VAC PSU (requires T1200B battery box)</td>
</tr>
<tr>
<td>508.023.004</td>
<td>T1216 16 ZONE PANEL C/W VOYAGE DATA C/P MODULE &amp; 5.0A 110/230VAC PSU</td>
</tr>
<tr>
<td>508.023.005</td>
<td>T1216W 16 ZONE WATER MIST FIRE DETECTION PANEL C/W 2 X 8 WAY ZONAL RELAY OUTPUT MODULES (C1634) AND 5.0 AMP 110/230VAC PSU</td>
</tr>
<tr>
<td>508.023.006</td>
<td>T1232 32 ZONE PANEL C/W VOYAGE DATA C/P MODULE &amp; 5.0A 110/230VAC PSU</td>
</tr>
<tr>
<td>508.023.007</td>
<td>T1216RDC 16 ZONE REPEATER WITHOUT PSU</td>
</tr>
<tr>
<td>508.023.008</td>
<td>T1216RA1 16 ZONE REPEATER C/W 1.5A 110VAC PSU</td>
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<tr>
<td>508.023.009</td>
<td>T1216RA2 16 ZONE REPEATER C/W 1.5A 230VAC PSU</td>
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<tr>
<td>508.023.010</td>
<td>T1232RDC 32 ZONE REPEATER WITHOUT PSU</td>
</tr>
<tr>
<td>508.023.011</td>
<td>T1232RA1 32 ZONE REPEATER C/W 1.5A 110VAC PSU</td>
</tr>
<tr>
<td>508.023.012</td>
<td>T1232RA2 32 ZONE REPEATER C/W 1.5A 230VAC PSU</td>
</tr>
<tr>
<td>509.023.001</td>
<td>C1626 4 ZONE PANEL MOTHERBOARD C/W AC PSU</td>
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<tr>
<td>509.023.002</td>
<td>C1626 4 ZONE PANEL MOTHERBOARD WITHOUT AC PSU</td>
</tr>
<tr>
<td>509.023.003</td>
<td>C1627 16 ZONE PANEL MOTHERBOARD WITHOUT AC PSU</td>
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<tr>
<td>509.023.004</td>
<td>C1627 16 ZONE PANEL MOTHERBOARD</td>
</tr>
<tr>
<td>509.023.011</td>
<td>C1628 16 ZONE PANEL MOTHERBOARD</td>
</tr>
<tr>
<td>509.023.012</td>
<td>C1632 16 ZONE PANEL EXPANSION BOARD</td>
</tr>
<tr>
<td>509.023.013</td>
<td>C1630 OUTPUT EXPANSION INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.014</td>
<td>C1631 REPEATER INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.015</td>
<td>C1632 REPEATER INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.016</td>
<td>C1633 LED DRIVER BOARD</td>
</tr>
<tr>
<td>509.023.017</td>
<td>C1634 RELAY OUTPUT BOARD</td>
</tr>
<tr>
<td>509.023.018</td>
<td>C1635 MONITORED OUTPUT BOARD</td>
</tr>
<tr>
<td>509.023.019</td>
<td>C1665 MUSTER INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.020</td>
<td>A1466 RELAY OUTPUT BOARD</td>
</tr>
<tr>
<td>509.023.021</td>
<td>T1216 ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
<tr>
<td>509.023.022</td>
<td>T1232 ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
<tr>
<td>509.023.023</td>
<td>T1216R ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
<tr>
<td>509.023.024</td>
<td>T1232R ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
</tbody>
</table>

**Spares**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>509.023.001</td>
<td>C1626 4 ZONE PANEL MOTHERBOARD</td>
</tr>
<tr>
<td>509.023.002</td>
<td>C1626 4 ZONE PANEL MOTHERBOARD</td>
</tr>
<tr>
<td>509.023.003</td>
<td>C1627 16 ZONE PANEL MOTHERBOARD</td>
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<tr>
<td>509.023.011</td>
<td>C1628 16 ZONE PANEL MOTHERBOARD</td>
</tr>
<tr>
<td>509.023.012</td>
<td>C1632 16 ZONE PANEL EXPANSION BOARD</td>
</tr>
<tr>
<td>509.023.013</td>
<td>C1630 OUTPUT EXPANSION INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.014</td>
<td>C1631 REPEATER INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.015</td>
<td>C1632 REPEATER INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.016</td>
<td>C1633 LED DRIVER BOARD</td>
</tr>
<tr>
<td>509.023.017</td>
<td>C1634 RELAY OUTPUT BOARD</td>
</tr>
<tr>
<td>509.023.018</td>
<td>C1635 MONITORED OUTPUT BOARD</td>
</tr>
<tr>
<td>509.023.019</td>
<td>C1665 MUSTER INTERFACE BOARD</td>
</tr>
<tr>
<td>509.023.020</td>
<td>A1466 RELAY OUTPUT BOARD</td>
</tr>
<tr>
<td>509.023.021</td>
<td>T1216 ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
<tr>
<td>509.023.022</td>
<td>T1232 ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
<tr>
<td>509.023.023</td>
<td>T1216R ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
<tr>
<td>509.023.024</td>
<td>T1232R ENGLISH/CHINESE/JAPANESE INSERT SET</td>
</tr>
</tbody>
</table>
Chapter 3 - Conventional Systems

Extinguishing Panels, Repeaters & Accessories

MZX-e Extinguishing Control Panel

The MZX-e gaseous extinguishing control panel is powerful yet user-friendly and is designed and manufactured to a high standard. The panel features approval to BS EN 12094-1:2003, BS EN 54-2 and 4 and is designed to BS 7273 part 1. The panel has extensive configuration options but is easy to install, programme and operate. The removable chassis enables the engineer to "first fix" an empty cabinet and then fit the chassis at the commissioning stage.

This is supported by comprehensive documentation on commissioning, operating, maintenance and fault finding. In addition there is a comprehensive range of compatible accessories available to meet most customer requirements.

Operation

Three fully-monitored detection zones are provided. Zones 1 and 2 normally provide first stage and second stage fire conditions to allow extinguishant discharge (coincidence detection zones). Zone 3 is an auxiliary zone for detection only purposes. Zone 4 is used as a manual release zone.

Facilities

Three fully-monitored alarm circuits are provided, each rated at 0.5A with various configuration options via the engineers DIL switch settings. Two circuits are designed to provide audible warning of any fire condition and one circuit to provide an individually distinct audible warning of the pre-discharge, discharged and emergency hold condition.

Two fully-monitored actuator/solenoid circuits, each rated at 1A, operate simultaneously upon "extinguishant release".

An RS485 multi-drop circuit link supports up to 7 Status Controller/Indicators of any type mixed on the communication path. Additional terminals and configuration options allows the engineer to configure the manual release, abort and hold switches to either data comms or hard wired inputs as required.

Features

- Approval to BS EN 12094-1:2003 additional options
- Approval to BS EN 54-2 and 4
- Designed to BS7273-1:2000
- Comprehensive facilities for gaseous extinguishing systems
- Monitored inputs for gas discharged, gas low, isolation valve closed/abnormal, gas trapped in manifold
- Control inputs for auto/manual, gas hold, gas abort
- 1 minute actuator cut off option
- Monitored actuator/solenoid release
- Extensive disablement options
- Common fire, fault, relay / monitored output facilities
- 1st, 2nd, 3rd stage and gas discharged relay / monitored output facilities
- Reset relay facilities

Normally-open inputs provide for remote evacuate, silence alarms, system reset, lock-off input, low pressure and gas discharged pressure switch input.

Outputs are provided for first stage signalling, second stage signalling, system discharged, common fire and common fault. These outputs may be configured as either Volt-Free C/O contacts or monitored 24V (50mA) outputs. A system reset Volt-Free relay is also provided.

Configuration

The use of DIL switches on the internal motherboard enables the engineer to easily configure the extensive options available and view the panel’s configuration upon any return visit.

Additional Benefits

- Intrinsically safe barrier settings
- Metron or solenoid compatible
- Single or double knock operation
- Pre-discharge delay adjustable from 0 to 60 seconds
- Discharged indication with or without pressure switch
- Inhibit silence alarms until gas discharged
- Latching or non latching fault indication option
- Option for rapid buzzer pulse when gas discharge is imminent
- One man zone and sounder test
- Easily removable chassis

Product Codes

- 508.033.050.EA MZX-e Extinguishing Control Panel
- 508.033.002.EA MZX-e SLU1 Status Lamp Unit, Indication only
- 508.033.003.EA MZX-e SLU2 Status Lamp Unit, Indication, Auto/Manual Select and Manual Release
- 508.033.004.EA MZX-e SLU3 Full Function Status Lamp Unit, Indication, Auto/Manual Select, Manual Release, Hold, Abort & Time Counter English / Arabic
- 508.033.005.EA MZX-e SLU4 Weatherproof Status Lamp Unit, Indication and Auto/Manual Select English / Arabic
Chapter 3 - Conventional Systems

**Extinguishing Door Interlock Ancillaries & T500 Series Spares**

A microswitch lock keep can be used with a deadlock to provide a signal to the panel to ensure that the extinguishing system is only put into Automatic mode when the door is locked shut.

**Product Codes**

- 527.001.002: Micro-switch Lock Keep & Back-plate For Deadlock
- 599.001.012: Lamp 28V 60mA Used On T525

**T561 Electrical Manual Release Unit**

A stand alone manual extinguishant release unit with selectable activation and end of line resistors making the T561 compatible with MACE, Prescient, System 1700 and NTR Extinguishing Panels.

**Product Code**

- 509.001.117: T561 Extinguishing Release Manual Callpoint

**Weatherproof Extinguishing Indicator Units**

### E1 Single Red lamp unit
- Single 24V d.c. red lamp labelled ‘Extinguishing System Operated’

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>540.007.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1 Single Red lamp unit</td>
<td></td>
</tr>
<tr>
<td>Heavy Duty IP67 Cast Aluminium Surface Mount Lamp Unit</td>
<td></td>
</tr>
</tbody>
</table>

**Technical Specification: Dimensions:**

<table>
<thead>
<tr>
<th>E1</th>
<th>H(mm)</th>
<th>W(mm)</th>
<th>D(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100</td>
<td>115</td>
<td></td>
</tr>
</tbody>
</table>

### E3 Red/Amber/Green lamp unit
- Heavy Duty IP67 Cast Aluminium Surface Mount Lamp Unit: Three 24Vdc lamps:
  - Red labeled  ‘Extinguishing System Operated’
  - Amber labeled Extinguishing System Automatic Control
  - Green labeled Extinguishing System Manual Control

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>540.007.002</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3 Red/Amber/Green lamp unit</td>
<td></td>
</tr>
<tr>
<td>Spare Bulb for E1/E3 24V-5W</td>
<td></td>
</tr>
</tbody>
</table>

**Product Codes**

- 599.001.029: Spare bulb for E1/E3 24V-5W
Chapter 3 - Conventional Systems

DDA Compliant Pager

Fire Tek Pro Paging System
The FireTek Pro paging system is designed for use with professional Fire Systems installed in commercial, industrial and educational premises. The system is primarily designed to alert the "hearing impaired" in the event of a fire or other emergency where an audible sounder is the normal means of indication.

The FireTek Pro has been designed to comply with the recommendations detailed in BS5839-1: 2002 for alerting the "hearing impaired" to the activation of a fire alarm system.

The system can also be used in conjunction with a security panel to alert guards who might be located remotely from the main premises.

The interface to the fire panel comprises of three Prioritised Fire Inputs and two Fault Inputs. For ease of installation, a monitored cable assembly is provided with each system which includes a "common fault" relay output back to the host fire panel. This output will activate if the FireTek Pro suffers a mains failure, transmitter fault, antenna mismatch, interface link failure, or low battery state.

Upon activation of any one of the Fire Inputs, the FireTek Pro will enter the fire alert condition, prioritising and transmitting the Fire message to all enrolled pagers. The transmissions will be repeated until the fire condition is reset. The FireTek Pro Pagers ensure that users are alerted by distinct vibration patterns and clear text messages.

UHF Radio Operation
Any alerting system is only as good as its weakest link. The FireTek Pro utilises UHF radio frequencies, the main benefits being superior in-building radio signal propagation and the option of a manual frequency co-ordinate license issued by OFCOM. Licensing the FireTek Pro provides a higher degree of protection from interference. This fact is acknowledged in Section 18.1 of BS 5839-1:2002.

High Integrity Pagers
To complete the system the alphanumeric pagers have added features specifically incorporated for the "hard of hearing" when used with the FireTek Pro. These features include distinct vibrate alerts for emergency messages, a vibrating out of range indicator which displays "No Service" on the pager when the radio link is lost, and a vibrating low battery indicator.

Antenna Options
Mini Dipole Antenna - remote internally mounted antenna for large sites or areas of difficult signal propagation.
Folded Dipole Antenna - remote externally mounted antenna for maximum signal coverage e.g. campuses and multi-building sites.
### Technical Specifications

<table>
<thead>
<tr>
<th>Supply Voltage:</th>
<th>230V AC 50-60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Current:</td>
<td>250mA</td>
</tr>
<tr>
<td>Inputs:</td>
<td></td>
</tr>
<tr>
<td>3 Prioritised Volt Free (Fire)</td>
<td></td>
</tr>
<tr>
<td>Input 1 - Fire Alarm - Evacuate Building</td>
<td></td>
</tr>
<tr>
<td>Input 2 - There is an Incident - Leave Building</td>
<td></td>
</tr>
<tr>
<td>Input 3 - Prepare to Evacuate - Await Instructions</td>
<td></td>
</tr>
<tr>
<td>2 Volt Free (Fault)</td>
<td></td>
</tr>
<tr>
<td>Outputs:</td>
<td>1 off volt free relay output</td>
</tr>
<tr>
<td>Fault Notification:</td>
<td>Mains Failure</td>
</tr>
<tr>
<td></td>
<td>Transmitter Fault</td>
</tr>
<tr>
<td></td>
<td>Antenna Mismatch</td>
</tr>
<tr>
<td></td>
<td>Panel Link Failure</td>
</tr>
<tr>
<td></td>
<td>Low/Missing Battery</td>
</tr>
<tr>
<td>Visual Display:</td>
<td>2 Line Backlit LCD</td>
</tr>
<tr>
<td>Enclosure:</td>
<td>Steel Enclosure rated to IP65</td>
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<tr>
<td>Dimensions:</td>
<td>380 x 320 x 110 mm (H x W x D)</td>
</tr>
<tr>
<td></td>
<td>(No antenna fitted)</td>
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</table>

### Product Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.200.071</td>
<td>Paging Transmitter</td>
</tr>
<tr>
<td>557.200.074</td>
<td>40 Character Alpha Numeric Pager</td>
</tr>
<tr>
<td>557.200.076</td>
<td>1/2 wave dipole antenna</td>
</tr>
<tr>
<td>557.200.077</td>
<td>Wall mounting folded dipole antenna</td>
</tr>
<tr>
<td>557.200.078</td>
<td>Pole mounting folded dipole antenna</td>
</tr>
<tr>
<td>557.200.079</td>
<td>5 metre antenna feeder cable</td>
</tr>
<tr>
<td>557.200.080</td>
<td>10 metre antenna feeder cable</td>
</tr>
</tbody>
</table>
Chapter 3 - Conventional Systems

Point Detectors

Features

• Unique early detection enhanced CO fire detector
• Intelligent Universal HPO Smoke Detector
• Low profile, discreet and unobtrusive
• Superior performance and reliability
• Designed for fast, easy installation
• Integral and remote alarm LED
• Series of Product Approvals

Through innovative design the Series 600 detectors have reduced the installation and servicing time to a minimum, needing only one visit to complete the installation and having a park position for the detector to ease the servicing.

The Series 600 includes the unique enhanced Carbon Monoxide CO fire detector, which provides a general purpose fire detector with unprecedented early detection capability and excellent false alarm immunity. The CO fire detectors are the first choice for sleeping risks.

Also included within the range is the intelligent high performance optical smoke (HPO) detector. The use of the patented optical sensing chamber, together with refined signal processing, has enabled the introduction of a smoke detector suitable for fast, reliable smoke detection of both slow and fast developing fires.

The HPO can be seen as a truly universal smoke detector, suitable for most applications.

Approvals:*

* UL LISTED  VdS  LPOB
Chapter 3 - Conventional Systems

High Performance Optical Smoke

These detectors react to the whole range of fire products from slow smouldering fires, producing visible particles to open flaming fires producing large numbers of very hot smaller sized aerosols. It combines optical and heat detector technology to detect clear burning fire products which hitherto could only be easily detected by ion-chamber detectors.

For normal ambient conditions, the high performance optical detector behaves as a normal optical detector. Only when a rapid rise in temperature is detected does the sensitivity of the detector increase and the presence of smoke will confirm a fire condition. The HPD will not operate on a rate of rise of temperature alone.

Datasheet - Product Code PSF123
Manual - Vol01C-02-D2 “Detectors Fire Manual”

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Approval</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.600.002.A</td>
<td>LPCB</td>
<td>ADT</td>
</tr>
<tr>
<td>516.600.002.T</td>
<td>LPCB</td>
<td>Thorn</td>
</tr>
<tr>
<td>516.600.002.Y</td>
<td>LPCB</td>
<td>Tyco</td>
</tr>
<tr>
<td>516.600.202</td>
<td>Marine</td>
<td></td>
</tr>
</tbody>
</table>

Enhanced Carbon Monoxide Fire

These detectors are capable of detecting the visible smoke produced by materials which smoulder or burn slowly, i.e. soft furnishings, plastic foam etc.; or ‘smoke’ produced by overheated but unburnt PVC. These detectors are particularly suitable for general applications and areas where cable overheating may occur e.g. electrical services areas. The novel design of the asymmetrical sampling chamber and signal processing techniques stop unwanted alarms caused by very small insects, i.e. thrips. Smoke entering the sampling chamber scatters the infra-red light pulses onto a photo-diode. These pulses are converted to an electrical signal which is compared against a preset alarm level.

Datasheet - Product Code PSF123
Manual - Vol01C-02-D6 “Detectors Fire Manual”

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Approval</th>
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<tbody>
<tr>
<td>516.600.004.A</td>
<td>LPCB</td>
<td>ADT</td>
</tr>
<tr>
<td>516.600.004.T</td>
<td>LPCB</td>
<td>Thorn</td>
</tr>
<tr>
<td>516.600.004.Y</td>
<td>LPCB</td>
<td>Tyco</td>
</tr>
<tr>
<td>516.600.204</td>
<td>Marine</td>
<td></td>
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</tbody>
</table>

Optical Smoke

These detectors react to the whole range of fire products from slow smouldering fires, producing visible particles to open flaming fires producing large numbers of very hot smaller sized aerosols. It combines optical and heat detector technology to detect clear burning fire products which hitherto could only be easily detected by ion-chamber detectors.

For normal ambient conditions, the high performance optical detector behaves as a normal optical detector. Only when a rapid rise in temperature is detected does the sensitivity of the detector increase and the presence of smoke will confirm a fire condition. The HPD will not operate on a rate of rise of temperature alone.

Datasheet - Product Code PSF123
Manual - Vol01C-02-D2 “Detectors Fire Manual”

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Approval</th>
<th>Model</th>
</tr>
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<tbody>
<tr>
<td>516.600.002.A</td>
<td>LPCB</td>
<td>ADT</td>
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<tr>
<td>516.600.002.T</td>
<td>LPCB</td>
<td>Thorn</td>
</tr>
<tr>
<td>516.600.002.Y</td>
<td>LPCB</td>
<td>Tyco</td>
</tr>
<tr>
<td>516.600.202</td>
<td>Marine</td>
<td></td>
</tr>
</tbody>
</table>

Heat

These detectors use two networked thermistors in a bridge configuration to provide a fast response, that depends both on absolute temperature and notes the change of temperature. The rate of rise/fixed temperature heat detectors can be used in areas where smoke sensors are unsuitable due to environmental conditions (smoke, dust etc.). Such areas include kitchens, locker rooms, canteens, garages, loading bays etc.

Datasheet - Product Code PSF123
Manual - Vol01C-02-D6 “Detectors Fire Manual”

<table>
<thead>
<tr>
<th>Rate of Rise Product Codes</th>
<th>Approval</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.600.003.A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>516.600.003.T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>516.600.003.Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>516.650.003</td>
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<td></td>
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</tbody>
</table>

Fixed Temperature 60°C

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Approval</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.600.214</td>
<td></td>
<td></td>
</tr>
<tr>
<td>516.600.233</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixed Temperature 90°C Product Code</th>
<th>Approval</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.600.214</td>
<td></td>
<td></td>
</tr>
<tr>
<td>516.600.233</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
These detectors react to the visible and invisible fire aerosols (products of combustion) and are therefore capable of detecting the early presence of hot smouldering and flaming fires, such as wood, paper etc. They are particularly suitable for general applications in all areas and use a dual ionisation chamber in which the air is ionised by a single radioactive source (33k Bq Americium 241). The presence of smoke in the sampling chamber causes a change in the balance voltage, between the two chambers. This is then compared against an alarm level.

Datasheet - Product Code PSF123
Manual - Vo01C-02-D4 “Detectors Fire Manual”

Product Codes
516.600.005.A
Approval LPCB
516.600.005.T
Approval LPCB
516.600.005.Y
Approval LPCB

These detectors react to the visible and invisible fire aerosols (products of combustion) and are therefore capable of detecting the early presence of hot smouldering and flaming fires, such as wood, paper etc. They are particularly suitable for general applications in all areas and use a dual ionisation chamber in which the air is ionised by a single radioactive source (33k Bq Americium 241). The presence of smoke in the sampling chamber causes a change in the balance voltage, between the two chambers. This is then compared against an alarm level.

Datasheet - Product Code PSF123
Manual - Vo01C-02-D4 “Detectors Fire Manual”

Product Codes
516.600.005.A
Approval LPCB
516.600.005.T
Approval LPCB
516.600.005.Y
Approval LPCB

Flame detectors, unlike smoke and heat detectors, do not rely on convection to transport the fire product to the detector, nor do they rely on a ceiling to trap the products. They can therefore, be used to protect large open areas without sacrificing speed of response to flaming fires. In order to ensure full coverage, however, flame detectors do require direct line of sight to all parts of the protected area. Infra-red Flame detectors such as the 601F are designed to respond rapidly to fires which involve clean-burning fuels such as alcohol or methane, as fires which would not be detected by smoke detectors. The 601F Flame detector, by virtue of it’s operating wavelength and flicker discrimination, is insensitive to normal environmental influences. For outdoor use, a solar-blind detector (e.g. the S200Plus) should be used. The 601F Flame detector should, normally, only be used inside buildings to supplement heat and smoke detectors.
### Chapter 3 - Conventional Systems

**Series 600 Detector Specifications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight</strong></td>
<td>100g</td>
<td>93g</td>
<td>80g</td>
<td>90g</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td>FR 110 Bayblend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating Temp.</strong></td>
<td>0°C to 70°C</td>
<td>-20°C to +70°C</td>
<td>-10°C to +55°C</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td><strong>Storage Temp.</strong></td>
<td>-40°C to +80°C</td>
<td>-25°C to +80°C</td>
<td>-20°C to +55°C</td>
<td>-40°C to +80°C</td>
</tr>
<tr>
<td><strong>Relative Humidity</strong></td>
<td>95/98% Non-Condensing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Quiescent Current (typ)</strong></td>
<td>63μA</td>
<td>61μA</td>
<td>87μA</td>
<td>304μA</td>
</tr>
<tr>
<td><strong>Alarm Current (typ)</strong></td>
<td>54mA</td>
<td>45mA</td>
<td>53mA</td>
<td>42mA</td>
</tr>
<tr>
<td><strong>Operating Voltage</strong></td>
<td>10.5 - 33 Vdc</td>
<td>10.5 - 33 Vdc</td>
<td>10.5 - 33 Vdc</td>
<td>18-28 Vdc</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td><img src="image" alt="Dimensions of Smoke/Heat/Co Detector" /></td>
<td><img src="image" alt="Dimensions of Flame Detector" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Short Term (<3min): -40°C to +120°C*
Chapter 3 - Conventional Systems

**T54B - Point Type Heat Detector**

Constructed from stainless steel, the T54B is an extremely rugged heat detector that can be used to detect fires in the harshest of environments. The T54B can be used in environments with ambient temperatures up to 200°C and, being hermetically sealed is impervious to most contaminants.

Classified as a simple device, the T54B can be used in Zone 0 areas when connected to a suitable intrinsically safe barrier.

For reliable operation, it is recommended that T54B detectors have set points 20°C or 20% (whichever is higher) above the maximum temperature they will be exposed to in normal operation.

Preferred factory preset temperatures are:
- 60, 90, 100, 145°C; normally with open contacts.

**Technical Specification**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>240V a.c. to 24V d.c.</td>
</tr>
<tr>
<td>Switching Current</td>
<td>5 to 500mA</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>&lt;1 ohm</td>
</tr>
<tr>
<td>Actuating Temp.</td>
<td>(factory set) 60 to 240°C</td>
</tr>
<tr>
<td>Fixed Temp. only</td>
<td>Type E</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± or -5%</td>
</tr>
<tr>
<td>Ambient Temp.</td>
<td>-40 to +270°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>100% RH</td>
</tr>
<tr>
<td>Protection Category</td>
<td>IP67</td>
</tr>
<tr>
<td>Thread Size</td>
<td>M20 x 1.5mm</td>
</tr>
</tbody>
</table>

**Features**

- Sealed Stainless Steel Construction
- Suitable for use in hazardous areas

**Product Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.033.011</td>
<td>T4E60X T54B Point Type heat detector - 60°C</td>
</tr>
<tr>
<td>516.033.012</td>
<td>T4E90X T54B Point Type heat detector - 90°C</td>
</tr>
<tr>
<td>516.033.013</td>
<td>T4E100X T54B Point Type heat detector - 100°C</td>
</tr>
<tr>
<td>516.033.014</td>
<td>T4E145X T54B Point Type heat detector - 145°C</td>
</tr>
</tbody>
</table>

Other temperatures and normally closed contacts are available by request.
Chapter 3 - Conventional Systems

Beam Detectors

The FIRERAY® 5000 motorised, auto aligning infrared optical beam smoke detector can now be installed with up to four detector heads per system, thus saving on installation time and costs. This innovative system has been designed from the ground up to include pioneering technology that fully addresses the needs of the installer and user, both now and in the future.

With its industry leading optics, the FIRERAY 5000 is ideally suited for the protection of large areas where the use of traditional detection technologies would prove to be too difficult and/or costly to install. The FIRERAY 5000 combines an infrared transmitter and receiver in the same discrete unit and operates by projecting a well-defined beam to a reflective prism, which returns the beam to the receiver for analysis. Smoke in the beam path causes a drop in power, which, if below a pre-determined level, results in an alarm signal.

Getting the system operational is simplified by a number of groundbreaking features that combine to make the FIRERAY 5000 the quickest and easiest detector of its type to install. Once the detector heads are connected, using the Easifit First Fix system, an integral LASER, which is aligned along the optical path of the beam, can be activated. This allows the reflective prism to be sighted quickly and with confidence. Once the LASER has been used to coarsely align the beam, the AutoOptimise beam alignment system takes over and automatically steers the beam into the optimum position.

The system can be fully customised, according to local conditions; both alarm thresholds (sensitivity) and time to Alarm/Fault can be set from the ground level System Controller.

Each detector head is independently configurable from 8m through to 100m and has its own individual fire threshold. The System Controller retains one set of Fire and Fault relays that is common to all detectors that are installed.

The FR5000 MultiHead is supplied with one detector head and reflector for single beam operation from 8 to 50 meters. Up to 3 additional detector heads can be added to the controller to enable larger or more complex areas to be protected (Subject to local codes and standards).

FIRERAY 5000 Multi Head Auto Aligning Infrared Optical Beam Smoke Detector

Technical Specification

Controller: 202w x 230h x 81d mm 0.9 Kg
Detector: 134w x 135h x 134d mm - 0.5 Kg
Additional detector head 2mA @ 24VDC
Operating Current (low power mode): 10mA @ 24VDC
Operating Voltage: 14 to 28VDC
IP Rating: IP54
Operating Temperature: -20 to +55°C
Humidity: 93% RH (non condensing) max

Features

• Motorised Auto-Aligning
• Up to 4 Detectors per System Controller
• Each Detector configurable from 8m to 100m
• Integral LASER
• Auto-Align Fast Automatic BeamAlignment
• Auto-Optimise Building Movement and Contamination Compensation
• Low Level System Controller
• 20mm Cable Gland Knockouts on System Controller
• 2-wire interface from System Controller to Detector
• Worldwide Approvals including EN54-12 and UL268
• Up to 4 Detectors per System Controller

Product Codes

516.015.020 FireRay 5000 System (50m)
516.015.021 FR 5000 Detector Head (50m)
516.015.007 FireRay Reflector 100 X 100mm
4 reflectors are required for distances from 50 to 100m
Chapter 3 - Conventional Systems

Optical Beam Smoke Detectors
The FIRE-RAY 2000 is an active infra-red smoke detector. The system comprises of three base elements i.e. a transmitter, receiver and Control Unit.

Technical Specification

<table>
<thead>
<tr>
<th>Technical Specification</th>
<th>Dimensions(mm)</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitter/Receiver</td>
<td>95 x 75 x 115</td>
<td>0.4</td>
</tr>
<tr>
<td>Control Unit</td>
<td>260 x 210 x 80</td>
<td>2.25</td>
</tr>
</tbody>
</table>

Voltage Range:
- Fireray 2000: +11.5 to +28Vdc
- Fireray 2000: Quiescent Current <13mA
- Fireray 2000: Alarm Current <20mA

Operating Temp. Range:
- Fireray: -10°C to +55°C
- Humidity: up to 95% RH (Non-condensing)

Fireray 2000 Enclosure: IP54

Features
- Range 5 metres up to 100 metres
- Area coverage up to 1400m²
- Selectable sensitivity
- Self-check and automatic compensation
- Manual or automatic reset
- Suitable for both conventional and addressable fire systems
- Low current consumption
- Flexible system design options
- Robust metal construction
- Designed to conform to BS5839 Part 5

Product Codes
516.015.006.T: FireRay2000 optical beam smoke detector (VdS approved, Thorn Branded)
920450: FireRay2000 - UL Optical beam smoke detector (UL approved)
516.015.007: FireRay2000 Retro-Reflector 100 x 100mm
516.015.008: FireRay2000 Alignment tool

There are a range of mounting accessories available for use with FireRay® Optical Beam Smoke Detectors. These accessories will help reduce installation times and provide a professional mounting solution when faced with challenging building internals.

FireRay Optical Beam Smoke Detector Mounting Accessories

The Universal Mounting bracket can be used with the Fireray 5000 detector head and the 1 or 4 way prism plates to enable the detector head or prism plates to be easily mounted and adjusted when fixing to angled walls or cladding.

The Flat Mounting plate is a metal plate which will support a single prism or 4 prisms, the side mounting holes are compatible with Unistrut® racking systems.

The large prism plate will securely mount 4 prisms and is designed to be used in conjunction with the Universal Mounting Bracket (not included).

The small prism plate will securely mount a single prism and is designed to be used in conjunction with the Universal Mounting Bracket (not included).

Product Codes
5000-005: Universal Mounting Bracket
5000-006: Flat Mounting Plate for 1 to 4 Prisms
5000-007: Prism Mounting Plate for 4 Prisms
5000-008: Prism Mounting Plate for 1 Prism
Chapter 3 - Conventional Systems

Linear Heat Detectors

Features
- Easy and cost effective installation
- Good sensitivity with adjustable alarm threshold
- Open and short circuit monitoring
- Suited for outdoor and indoor applications
- Can be used in hazardous areas
- Mechanical protection is provided for cables in areas where damage may occur
- Chemical resistance sheathing is available for areas where petro-chemical corrosion may occur.

Linear Heat Detection
The LD40 linear heat detection system is used to monitor fire (or overheat) conditions in confined or polluted areas or where there are adverse or unusually variable environmental conditions.

The sensor cable is unaffected by dust, moisture or vibration and requires little maintenance.

Technical Specification
- Dimensions: 178H x 130W x 75D mm
- Weight: 0.55Kg
- Operating Temp: -25°C to +70°C
- Relative humidity: Up to 98% RH non-condensing
- Rating: IP55
- Operating Voltage: +8 to +30Vdc
- Quiescent Current: 60-80μA

Product Codes
- 516.016.005 LD40 High resistance sensor cable blue - 200M reel
- 516.016.006 LD40 High resistance sensor cable black - 200M reel (Nylon sheath suitable for petrochemical exposure)
- 516.016.010 LD40 EOL Termination kit (PK10)
- 516.016.011 LD40 In-line Jointing kit (PK10)
- 516.016.012 LD40 Analyser module with conventional detection zone interface.
- 516.016.201 B6782-003 EDGE CLIP 2-3mm WEB
- 516.016.202 B6782-024 EDGE CLIP 3-8mm WEB
- 516.016.203 B6782-025 EDGE CLIP 8-13mm WEB
- 516.016.204 B6782-026 EDGE CLIP 14-20mm WEB
- 516.016.205 B6782-004 ‘T’ CLIP
- 516.016.206 B6782-005 PIPE CLIP
- 516.016.207 B6782-023 ‘V’ CLIP
- 516.016.208 B6782-008 NEOPRENE SLEEVE
Chapter 3 - Conventional Systems

Detector Bases and Accessories

Features
• Optional relay bases
• Remote indication LEDs
• Optional conduit entry backboxes
• Protective wire cages

Detector Bases and Ancillaries

The 600 Series range of low profile detectors provide a comprehensive range of highly effective and aesthetically pleasing smoke and heat detectors with worldwide approvals.

The unique design and leading edge technology of the detectors go beyond the detection technology itself.

The range of detector bases is designed to make low profile detector installations cost effective, aesthetically pleasing and easy to install and maintain – thus minimising disruption.

The detector bases include standard universal bases, which have no integral electronics, thus making them low cost and low maintenance. Alternatively, a range of functional bases incorporate sounders and relays to provide a cost effective method of adding functions and flexibility to the fire detection installation.
Chapter 3 - Conventional Systems

The standard universal detector bases are compatible with the Series 600 low profile detectors. The standard bases have no electronics and even when the detectors are connected to the bases, they can be electrically disconnected and left in a ‘park’ position. This enables wiring integrity tests to take place without any damage to electronics. An optional, tool removable locking pin allows the detector to be fixed in place to prevent tampering.

### 5B-5 Inch Universal Detector Base

This is the most commonly used base. It is fully EN54 approved for use with the Series 600 conventional range of detectors.

**Features**
- Drives a remote indicator
- Detector locking pin with every base
- Temporary Park position
- Fits directly to a British or European conduit box or directly onto the ceiling.
- Break-outs for surface installation

**Product Code**
517.050.017
5B 5" Universal Base LPCB

### 5BD-5 Inch Conventional Diode Continuity Base

The 5BD Continuity Base is a standard 5 inch base fitted with a continuity diode, for use with all Series 600 detectors. The base is designed to ensure that conventional systems meet the requirements of BS5839 Pt:1 for callpoints placed after detectors.

**Features**
- Compatible with Series 600 Low Profile Detector Range
- Designed for two wire operation
- Facility to drive a remote indicator
- A breakout locking key is provided as an integral part of each base, which can be fitted to lock the detector into position.
- A temporary park position is provided so that the field wiring can be tested with the detector in situ.
- Maybe fitted directly to a British or European conduit box or directly onto the ceiling

**Product Code**
517.050.600
5BD 5" Conventional Diode Continuity Base LPCB
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Functional Detector Bases

Functional detector bases use a common moulding which incorporates a double sided circuit board which enables electrical connections to be made on the top and bottom of the functional base. This allows the functional bases to be retrofitted into new and existing universal bases or alternatively the depth and cost of the installed detector can be reduced by using the functional base instead of the universal base.

This feature enables additional sounders to be easily added during commissioning. In addition, changes to the building during it’s life can be easily adapted to, by retrofiting sounders and relay outputs to existing detection points. When functional bases are fitted to universal bases, they automatically lock into position. Removal is then achieved using the detector removal tool. This feature ensures that the detector and functional bases are removed separately.

Tyco MKII Sounder Base

A new low current range of sounder bases for use with Conventional Fire Alarm Control Panels.

Features
- Manufactured to EN54 part 3
- Integral sounder and detector base
- Volume and tone adjustable after installation
- Low Power Synchronisation
- Do not require use of a standard base (maybe installed directly onto a standard base box)

Product Codes
- 577.001.035 601SB Conventional Sounder Base
- 577.001.037 601SBD Conventional Diode Sounder Base
- 577.001.036 602SB 2 Wire Line Powered Sounder Base
- 577.001.038 602SBD 2 Wire Line Powered Diode Sounder Base
- 517.050.018 Volume Pot Spare Cover (1 sheet of 144)

Tyco MKII Sounder Cap

A plastic cap which fits onto the 601SB/601SBD/602SB/602SBD Sounder Base to enable these bases to operate as a sounder without fitting a detector.

Product Codes
- 577.001.040.A Mark II Sounder Cap (ADT Branded)
- 577.001.040.Y Mark II Sounder Cap (Tyco Branded)

MC600 Functional Relay Base

The 600 Series relay base provides dual relay contacts for signalling external devices on conventional detection systems. Very low operating current even when the relay is energised, enable the relay base to be used without additional power. The relay contacts operate when the detector enters the alarm condition.

Features
- Dual pole 24Vdc relay contact (60VA)
- Status indicator LED
- Low power consumption (<20μA except start up)
- Latching operation
- Can be used instead of a standard base
- Requires diode fitting if used in place of a diode base.

Technical Specification
- Operating Temp.: -25°C to +70°C
- Humidity: Up to 95% RH (non-condensing)
- Vibration: Exceeds requirements of EN54-3, Marine & UL268

Product Code
- 568.001.018 MC600 Relay base (BS5839)

Volume Adjustment Tool

A simple Volume Adjustment Tool, specific to the task of sounder volume selection on the “variable-volume” range of Tyco MKII Sounder Bases.

Sounder volume can be easily varied between the maximum 90dBA and minimum 66dBA volume settings, using this simple, functional tool.

Note: Sounder Bases are supplied with the volume pre-set to maximum volume.

Product Code
- 517.050.015 Volume Adjustment Tool
Chapter 3 - Conventional Systems

Remote Indication LED
All detector bases have the ability to drive a remote LED in the event that the installed position of the detector is not easily visible.

Features
- UK Single gang mounting
- High intensity red LED

Product Code
548.003.006
Remote LED

EM-5B Euro Mounting
The euro-mounting base provides a matching back box, which allows the standard MUB to be ceiling mounted with conduit entries for standard 18 and 21mm conduit.

Features
- 2 x 18mm conduit entries
- 2 x 21mm conduit entries
- Fits all 5" Bases
- Fitted with terminal, if more are required use optional accessory kit

Product Codes
517.050.604
EM5B mounting base
517.050.612
Base accessory terminal kit (pack of 10)

DHM-5B - Deck Head Mounting
Where the detectors are mounted in humid and environmentally challenging situations such as marine or offshore installations, the DHM 5B deck head mount provides a sealed waterproof mounting which protects the electrical connections in the base. Can be screwed, bolted or welded to the deckhead. Supplied with 1 terminal. If more are required, use the optional base accessory kit.

Features
- 4 x 20mm gland entries
- Fits ALL 5" bases
- IP55 with supplied gasket

Product Codes
517.050.603
Deckhead mounting
517.050.612
Base accessory terminal kit (pack of 10)

Protective Detector Cage
Robust steel protective cage for Series 600 detectors using the 5" base. Ideal for schools and sporthalls or whenever detectors need protection.

Strong coated steel construction with 4 point fitting.

Product Code
517.055.614
CW-5B Detector Cage

Protective Detector/Sounder Base Cage
White powder coated steel protective cage for Series 600 Detectors fitted with a sounder base. Internal dimensions: 120mm dia x 80mm deep.

Product Code
517.050.011
Steel Protective Detector Cage
**Chapter 3 - Conventional Systems**

### Duct Probes

**SMP Duct Probe Units**

Where smoke within duct work needs to be detected these duct probe units provide an economical solution, for use with series 600 detectors.

The SMP Duct Probe Units are designed to be installed in air conditioning supply and exhaust ducts for the purpose of monitoring the airflow for smoke and combustion products.

The SMP69 probe units are designed to accept and operate with series 600 detectors. For general applications it is recommended that photoelectric smoke detectors rather than ionisation smoke detectors are used.

The SMP stainless steel probe unit is designed to withstand the more demanding environments of the offshore oil and gas industries.

The units are designed to operate in airspeeds of 1.5 to 25 metres per second. A range of sampling tubes from 525mm to 1575mm are available.

**Technical Specification**

- Operating temperature: -20°C to + 70°C
- Storage temperature: -25°C to + 80°C
- Relative Humidity: 0 to 95%
- SMP69: Stainless steel 316 housing with transparent polycarbonate cover

**Warning**

Duct probe units sited in the common duct work to several extract grills may fail to respond to smoke from any one extract due to the effect of dilution. The SMP units will not respond to airflow of less than 1.5m/sec.

**SMP69 Duct Probe Air Sampling - Stainless Steel**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.025.035</td>
<td>SMP69 Stainless Steel Duct Probe unit and universal detector base for Series 600/800 Detectors.</td>
</tr>
<tr>
<td>517.025.028</td>
<td>DPS450 Probe tube stainless steel 450mm and exhaust</td>
</tr>
<tr>
<td>517.025.029</td>
<td>DPS600 Probe tube stainless steel 600mm and exhaust</td>
</tr>
<tr>
<td>517.025.030</td>
<td>DPS750 Probe tube stainless steel 750mm and exhaust</td>
</tr>
<tr>
<td>517.025.031</td>
<td>DPS900 Probe tube stainless steel 900mm and exhaust</td>
</tr>
<tr>
<td>517.025.032</td>
<td>DPS1200 Probe tube stainless steel 1200mm and exhaust</td>
</tr>
<tr>
<td>517.025.033</td>
<td>DPS1500 Probe tube stainless steel 1500mm and exhaust</td>
</tr>
</tbody>
</table>

Datasheet - Product Code PSF092

"SMP69 Duct Probe Unit"

Manual - VoH19-06-D1 "Detectors Fire Manual"
Chapter 3 - Conventional Systems

DPK4 Duct Probe

The DPK4 duct probe unit have been developed to detect smoke in ventilation ducts. They offer significant benefits in terms of performance and installation.

The system comprises a single duct probe tube and housing specially designed for optimum airflow through the smoke detector and suitable for use in incoming, outgoing and circulation air ducts of ventilation and conditioning systems.

The duct probes can operate across a wide range of airflow speeds and are especially recommended for installations in ducts with air flow velocities between 1 m/s and 20 m/s.

Unlike more traditional duct probe units that employ an inlet and exhaust tube with sampling holes, the DPK4 unit uses a highly efficient single sampling tube that is slotted along its length. This allows the sampling tubes to be cut to the desired length whilst maintaining maximum efficiency.

Features

• Built-in MZX Detector base
  DPK4 - with built-in MZX detector base 6" - 5B
• DPK4 is suitable for conventional systems
• Suitable for air velocities from 1 m/s to 20 m/s
• Can be used in combination with a wide range of optical smoke detectors e.g. 601P or 601PH
• One-pipe air sampling system simplifies installation
• Range of aluminium probe tubes are available for ducts up to 2700 mm
• Transparent lid allows detector to be seen
• Test hole on cover
• Sensitive flow indicator
• Simple service and maintenance
• Installer friendly connection of cables
• Easy installation of duct probe tubes

Product Codes

517.025.049 DPK4 - Duct Probe with MZX detector base 5" - 5B
517.025.051 DPK400 - Duct Probe Tube 600 mm
517.025.052 DPK1500 - Duct Probe Tube 1500 mm
517.025.053 DPK2800 - Duct Probe Tube 2800 mm
517.025.054 DPKM - Duct Probe Mounting Bracket
517.025.055 Spare Filters for DPK4/DPK4I (Pk 10)

Detector supplied separately.

The transparent cover gives clear visibility of the detector, its LED indication and airflow indicator. A red plastic flag is fixed inside the housing providing a simple but effective confirmation that there is no leakage and that the air flow from the air duct is in fact passing through the housing.

In order to reduce the time required to test the duct probe detector during routine maintenance, an aperture is provided that allows aerosol test gas to be directed at the detector without having to dismantle the unit.

Accessories

Tyco Safety Products offer 3 lengths of the duct probe tubes. The tube is made of aluminium and can easily be shortened to suit the span of the air duct. Where the unit is mounted on insulated or circular air ducts, the DPKM mounting bracket is required.
Chapter 3 - Conventional Systems

Callpoints

Features
• Integral LED indicator for easy identification of operation
• Surface or flush mounting
• Extensive range of conventional callpoints
• Test key facility, speeds maintenance visits
• Optional transparent hinged cover
• Hazardous areas models available (See Special Hazards Section)
• IP67 Waterproof models for external applications

MCP Series Callpoints
A comprehensive range of callpoints for use with conventional systems. All the callpoints are designed to enable an alarm signal to be given by breaking a glass element.

This operates a switch and is indicated by an LED indicator. If required, an optional transparent hinged cover may be installed to guard against accidental operation.

Technical Specification
(Indoor & Outdoor)
Housing: PC/ABS
Operating Temp.: Outdoor -30°C TO +70°C
Indoor -10°C TO +55°C
Relative Humidity: up to 95% RH (non-condensing)

<table>
<thead>
<tr>
<th>Model</th>
<th>Colour</th>
<th>Type</th>
<th>IP Rating</th>
<th>Ohms</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCP200</td>
<td>Red</td>
<td>Conventional Alert</td>
<td>24D</td>
<td>120/470</td>
</tr>
<tr>
<td>MCP210</td>
<td>Red</td>
<td>Conventional Evacuate</td>
<td>24D</td>
<td>47/39</td>
</tr>
<tr>
<td>MCP230</td>
<td>Red</td>
<td>Conventional Alert</td>
<td>67</td>
<td>120/470</td>
</tr>
<tr>
<td>MCP270</td>
<td>Yellow</td>
<td>Conventional Evacuate</td>
<td>24D</td>
<td>47/39</td>
</tr>
<tr>
<td>Keyswitch</td>
<td>White</td>
<td>Conventional</td>
<td>24D</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Commonly Used Callpoints

Indoor & Outdoor MCP Callpoint

Indoor Callpoint
Weight: 110g

Outdoor Callpoint
Weight: 240g
Chapter 3 - Conventional Systems

**Conventional MCP200 Callpoint**

The MCP200 is a red indoor callpoint with 'alert' resistors and LED indicator. The MCP200 is LPCB approved.

**Product Codes**

- 514.001.142.A MCP200 without backbox - ADT branded
- 514.001.142.T MCP200 without backbox - Thorn branded
- 514.001.142.Y MCP200 without backbox - Tyco branded

---

**Conventional MCP210/MCP211 Callpoint**

The MCP210 is a red indoor callpoint with LED indicator and evacuate resistors. The MCP210 is LPCB approved and is supplied without a backbox.

**Product Codes**

- 514.001.143.A MCP210 ADT branded
- 514.001.143.T MCP210 Thorn branded
- 514.001.143.Y MCP210 Tyco branded

The MCP211 is a red indoor callpoint with evacuate resistors and LED indicator. (For use with the MZx Panels only).

**Product Codes**

- 514.001.160.A MCP211 without backbox - ADT branded
- 514.001.160.T MCP211 without backbox - Thorn branded
- 514.001.160.Y MCP211 without backbox - Tyco branded

---

**Conventional MCP230 Callpoint**

The MCP230 is an IP67 red weatherproof callpoint with LED indicator and LPCB approved.

**Product Codes**

- 514.001.110.A MCP230 ADT branded
- 514.001.110.T MCP230 Thorn branded
- 514.001.110.Y MCP230 Tyco branded

---

**Conventional MCP270 Callpoint**

**Product Code**

514.001.114 MCP270 Yellow callpoint 'Evacuate' complete with LED indicator and backbox - LPCB approved

---

**Other Conventional Callpoints & Keyswitches**

**Product Code**

514.002.002.A White keyswitch in callpoint housing English 'Bomb Alert' marking with ADT branded

---

**Special Marine Callpoints**

**Product Codes**

- 514.001.112 MCP260M Marine callpoint complete with LED indicator - IP67
- 514.001.113 MCP250M Marine callpoint complete with LED indicator surface mount

---
### Chapter 3 - Conventional Systems

#### Callpoint Ancillaries

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-107</td>
<td>Red M141 spacer for red MCP KAC callpoints</td>
</tr>
<tr>
<td>515.001.128</td>
<td>Callpoint hinged cover for use on MCP &amp; CP style callpoint models (Colour - Clear)</td>
</tr>
<tr>
<td>515.001.026</td>
<td>Black callpoint bezel for MCP KAC callpoints</td>
</tr>
<tr>
<td>515.001.046</td>
<td>Test key for all MCP and CP style callpoints</td>
</tr>
</tbody>
</table>

#### Ancillaries - Back Boxes

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>515.001.021</td>
<td>Standard Red surface mounting back box for MCP &amp; CP indoor callpoints</td>
</tr>
<tr>
<td>10-115</td>
<td>SR2-T Optional Back Box (2 terminals) for MCP &amp; CP indoor callpoints</td>
</tr>
</tbody>
</table>

Unless stated the indoor callpoints are supplied as flush mount units. The range is approved for use with the standard backbox. However, the SR2-T backbox is also available.
# Chapter 3 - Conventional Systems

## Callpoint Spare Glasses - Current

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>515.001.119</td>
<td>EN54 Part 11 Spare Glass for MCP and CP series Callpoints (Pack of 5)</td>
</tr>
<tr>
<td>515.001.025</td>
<td>CP200 Glasses, clear English text on white background. No logo (Pack of 5).</td>
</tr>
<tr>
<td>515.001.127</td>
<td>Deformable operating unit “glass” for use in place of glasses, for kitchens or other areas where glass is not acceptable. For MCP callpoints only.</td>
</tr>
<tr>
<td>515.001.024</td>
<td>CP200 spare glasses, white Arabic/English text with Thorn Security logo on white background (Pack of 5).</td>
</tr>
<tr>
<td>515.001.014</td>
<td>CP200 Spare glasses, black Arabic text on a white background (Pack of 5)</td>
</tr>
<tr>
<td>515.001.023</td>
<td>CP200 Spare glasses for CP200 white dutch text on clear background (Pack of 5)</td>
</tr>
</tbody>
</table>

## Callpoint Spare Glasses - Old

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>515.001.019</td>
<td>Walsall callpoint glasses (Pack of 10) for service spares. The Walsall callpoint is an old square callpoint with round glass.</td>
</tr>
<tr>
<td>515.001.003</td>
<td>ZF121 Callpoint glass (Pack 10) for service spares. The ZF121 is a square metal fronted AFA MINERVA callpoint typically used on Firefinder, System 1100, ZF/System 1200, CP and CT systems.</td>
</tr>
<tr>
<td>515.001.009</td>
<td>CP100A glass unscorched (Pack 10) for service spares. The CP100A has a large square glass to the edge of the callpoint. Used on the same AFA systems as the ZF121.</td>
</tr>
</tbody>
</table>
STOPPER

The callpoint STOPPER provides protection from malicious or accidental activation of manual callpoints. Available for flush or surface mounted callpoints, the STOPPER is also available with optional high pitch sounder which is activated when the lid is lifted. An optional ‘Break-Seal’ fitting kit allows ‘Break-Seals’ to be used to provide extra protection.

WARNING: Break seals only to be fitted by agreement with relevant fire authorities.

The STOPPER is suitable for all callpoints up to 100mm square, including the MCP200 and other indoor KAC style callpoints.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Ref</th>
<th>Flush</th>
<th>Surface</th>
<th>STOPPER II</th>
<th>With Sounder</th>
<th>Weatherproof</th>
</tr>
</thead>
<tbody>
<tr>
<td>515.001.029</td>
<td>STI630</td>
<td>✓</td>
<td></td>
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</tr>
<tr>
<td>515.001.030</td>
<td>STI631</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>515.001.033</td>
<td>STI635</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>515.001.037</td>
<td>STI1230</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.036</td>
<td>STI6530</td>
<td>✓</td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>515.001.035</td>
<td>STI1230</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515.001.034</td>
<td>STI6532</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

STOPPER Dimensions:

<table>
<thead>
<tr>
<th>Millimetres</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>137</td>
<td>104</td>
<td>25</td>
<td>6</td>
<td>12.5</td>
<td>12.5</td>
<td>185</td>
<td>12.5</td>
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</tbody>
</table>

STOPPER II Dimensions:

<table>
<thead>
<tr>
<th>Millimetres</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>197</td>
<td>16</td>
<td>50</td>
<td>178</td>
<td>146</td>
<td>238</td>
<td>254</td>
<td></td>
</tr>
</tbody>
</table>
STOPPER II

STOPPER II is constructed as the STOPPER from tough injection moulded polycarbonate. Physically larger than the STOPPER the STOPPER II extends the number of products to which these tough multi-purpose covers can protect.

It consists of a strong tamper-proof clear polycarbonate cover and frame that fits easily over such products as break glass callpoints.

STOPPER II can also be fitted with an integral battery powered sounder which activates if the cover is lifted.

The STOPPER II is suitable for callpoints up to 160mm square.

**Product Code**

515.001.034 STI1230 Surface Fit STOPPER II

---

Weather STOPPER & Weather STOPPER II

The Weather STOPPER and Weather STOPPER II extends the life of weather exposed devices, such as break glass callpoints, by offering protection against harsh conditions and environments. Experience has shown that this protective cover can extend the life of products installed in saline atmospheres, such as oil rigs and ship decks.

While offering environmental protection the Weather STOPPER and Weather STOPPER II are constructed from tough durable polycarbonate which will also guard against tampering, vandalism or accidental operation of devices such as emergency switches.

**Product Codes**

515.001.036 STI653 Surface fit Weather STOPPER

515.001.035 STI3150 Surface fit Weather STOPPER II
Chapter 3 - Conventional Systems

Smoke Beam/CCTV Guard

The Smoke Beam/CCTV Guard is manufactured from tough coated steel rod and is designed to protect projected beam detectors or CCTV cameras from vandalism or accidental damage.

Suitable for use with System Sensor, Hochiki and Fireray 2000 detectors.

Technical Specification

Dimensions: 260H x 200W x 321D mm

Product Code

516.015.009

STI9625 Smoke beam/CCTV guard

KeyBox

This tough polycarbonate breakglass keybox is available to protect emergency keys.

Product Code

515.001.043

STI6720 Keybox with printed glass
Chapter 3 - Conventional Systems

Sounders and Beacons

**Features**
- Wide range of both bells and electronic sounders
- High sound output characteristics
- Low current consumption
- Clean lines, modern styling
- Easy to install, low installation costs
- Weatherproof units for outdoor use
- Distinct sounds are available
- Motorised and Solenoid bells available
- Wide range of voltages available

**Sounders**
A range of sounders to meet a wide variety of alarm applications where loud, penetrating and distinctive warnings must be given to alert people of fire situations.

In addition, multitone electronic sounders can give a variety of sounds to signal other conditions e.g. “extinguishing gas release imminent,” etc.

*Note: For I.S. & Flameproof sounders, please see the special hazards section.*
Chapter 3 - Conventional Systems

6" Red Solenoid Operated Friedland Bell
The bells are the underdome type, with a high resonance pressed alloy-steel gong to ensure a loud clear ring tone. The operating mechanism is fully enclosed and the gong is red stove enamelled for long life. The bells are designed for internal use, but gasket sealed conduit boxes can be provided for external use.

Product Code
576.500.014 240V Red bell 6" 240Vac solenoid operated. ‘Fire’ text

6" & 8" Motorised Bells

<table>
<thead>
<tr>
<th>Model</th>
<th>MBF-6EV</th>
<th>MBF-8EV</th>
<th>MBA 8EV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>24V d.c.</td>
<td>24V d.c.</td>
<td>24V d.c.</td>
</tr>
<tr>
<td>Rated Current</td>
<td>11mA</td>
<td>17mA</td>
<td>18mA</td>
</tr>
<tr>
<td>Sound output</td>
<td>90-95dBA</td>
<td>90-97dBA</td>
<td>91-97dBA</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-12 to +55°C</td>
<td>-10 to +50°C</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>Red</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>410g</td>
<td>640g</td>
<td>1100g with back box</td>
</tr>
</tbody>
</table>

Features
• CE marked
• Low current 6" bell (ONLY 11mA)
• Low cost
• Extra high 95dBA/m
• Slim profile (53mm)
• Fully suppressed and polarised
• Quick and easy to install
• LPCB approved to EN54 Pt 3

Product Codes
576.501.039.A MBF-6EV ADT Branded
576.501.039.T MBF-6EV Thorn Branded
576.501.040.A MBF-8EV ADT Branded
576.501.044.A MBA-8EV ADT Branded
576.501.044.T MBA-8EV Thorn Branded
576.501.045 BBX4 (2) W/P Backbox for MBA-8 Bell
Chapter 3 - Conventional Systems

Electronic Solenoid Bell
Unique patented alarm bell with miniature solenoid and integrated electronic control. No backbox required for surface wiring.

Technical Specification
- Dimensions: 6" diameter
- Voltage: 18-30Vdc
- Typical Current: 24Vdc@30mA
- Typ. Sound Output: 94dB (A)@1m

Features
- Weatherproof Option
- Flexible Mounting Option
- Attractive Design

Product Codes
- 20-100 6" 24Vdc Electronic bell, weatherproof IP33C - Wormald Branded
- 20-101 6" 24Vdc Electronic bell - red IP21C - Wormald Branded
- 20-111 6" 24Vdc Electronic bell - white IP21C

Marine Approved Products
- 576.501.407 MED 6" 24Vdc Electronic bell, weatherproof IP33C
- 576.501.408 MED 6" 24Vdc Electronic bell-red IP21C

CF Motorised Bells
The CF Motorised bells are low current, fully suppressed and polarised.

Technical Specification
- Dimensions: 6 & 8" Diameter available
- Colour: Red
- Output Voltage: 20-28Vdc
- Typical Current: 25/28mA @ 24Vdc
- Typical Sound Output: 95/97dB (A) @ 1m

Features
- Low Current Consumption
- Suppressed and Polarised
- Sturdy Construction

Product Codes
- Marine Approved Products
- 576.501.405 MED 6" Red 24Vdc Motorised bell, "Fire" text with Thom Branding
Chapter 3 - Conventional Systems

Banshee Excel Sounders
The Banshee Excel sounder replaces the Banshee Multi Tone range of Sounders. It uses the same technically superior rocking arm transducer to reproduce the familiar 32 tones of the previous Banshee and Bedlam ranges.

Banshee Excel Lite Sounder Beacon
The new Banshee Excel adds the Banshee Excel Lite Sounder Beacon to its range using a high output xenon with the familiar sounder. The Banshee Excel Lite can be used as a multi stage device by switching the beacon and the sounder independently using a third wire.

Technical Specification
- Approvals: LPCB & VdS approved to EN54-3
- Tones available: 32
- Operating voltage: 9-30Vdc
- Tone current consumption: See Tone Table in Chapter 11
- Flash current consumption: 40mA
- Operating temperature range (Deg C): -40 to +70
- Volume control via DIL switch: Maximum, Medium (-10dBA), Low (-20dBA)
- Flash rate per second: 1
- Ingress Protection: IP45 or IP66
- Termination: Screw terminals for 0.28mm² to 2.5mm² wire conductor

Features
- Modern aesthetic design
- 32 Selectable tones
- 3 Volume settings
- Push and twist mount
- Shallow and deep bases
- Available in red or white
- Low current consumption
- 2 Stage alarm available
- Independently switched sounder or beacon
- Xenon beacon with the Excel Lite

Product Codes
- 576.501.063 Banshee Excel Lite, red sounder, red xenon beacon, IP45
The combined mounting bracket for the Besson Multi-tone Banshee and Xenon Beacon allows quick and neat installation of combined sounders and beacons. The bracket allows the following electronic sounders to be mounted with the range of 1W Xenon Beacons:
- Besson Banshee
- MINERVA FIRECRYER voice enhanced sounder

The bracket can be used with any of the 24Vdc 1W Xenon beacons in red, clear, amber or blue (Part no.’s 540.001.030/031/032 & 033)

Product Code 576.501.047
Banshee/Xenon bracket

### Besson Wafer Sounder

The standard Besson Wafer sounder is supplied in white with a blank cover included. The specification is as follows:
- Input voltage: 24V d.c. (+/-25%)
- Sound Output: 60dBA/90dBA at 1m typical (pot. Adjustable) offering the same sound formats as the Banshee sounder range. It can therefore be used in conjunction with the Banshee sounders on the same site.

**Technical Specification**
- Current: 4mA to 15mA
- Temperature Range: -40°C to +70°C
- Dimensions: Dia 103mm, Height 22mm (excluding coverplate)

**Product Code**
576.501.038
Besson wafer sounder and blank cover in white

### Flush Mount Bedroom Sounder

Meeting the requirements for BS5839 part 1, the Bedroom Sounder range is well suited to hotels and residential environments where aesthetics is a prime concern. Matching the sound output of the Banshee range of sounders so therefore they can be mixed on the same site.

**Features**
- Low current consumption 7mA
- Dual sound options selected via a jumper switch: ‘Continuous’ and ‘Fast Sweep’ 90dB
- Can be both flush and surface mounted
- Robust terminal connectors to accommodate up to 2.5mm² conductors

**Products Codes**
- 576.501.032.T: Flush Mount Sounder Thorn Branded

### Yodalarms

This versatile range of sounders are ideally suited for fire, safety and security hazard warning.

**Technical Specification**
- Dimensions:
  - YO3: 89H x 89W x 85D mm
  - YO5: 134H x 134W x 128D mm
  - YO8: 216H x 216W x 153D mm

**Product Codes**
- 576.501.001: YO3 Yodalarm 3’ 24Vdc 100dB @ 1M
- 576.501.002: YO5 Yodalarm 5’ 24Vdc 106dB @ 1M
- 576.501.003: YO8 Yodalarm 8’ 24Vdc 112dB @ 1M
Chapter 3 - Conventional Systems

### MZX-e 2 Wire Symphoni Sounder

A Symphoni electronic sounder designed specifically for installation on the detection zone of the MZX-e panel.

**Technical Specification**

- **Sound Output @ 1m:** 100dB(A) +/-2dB(A) @ 24Vdc
- **Operating Voltage Range:** 9-28Vdc, 12-30Vdc
- **Volume Control:** Down to 80dB approx.
- **Current Consumption:** 240mA +/- 20mA on Tone 3, 5mA +/- 1mA at all volumes
- **Tones:** 1 to 32 Alternating 990Hz/650Hz at 2Hz, Continuous 990Hz, Pulsed 990Hz, On/Off @ 1Hz
- **Syncronisation:** Synchronised Start
- **Frequency Stability:** +/- 0.15%
- **Operating Temperature:** -25°C to +55°C
- **Line Monitoring Method:** Polarised Input
- **Construction:** ABS Plastic Case
- **Ingress Protection:** IP42
- **Weight:** 0.58Kg

**Product Codes**

- 576.501.204: Symphoni 2 Wire Sounder (Red)
- 576.501.205: Symphoni 2 Wire Sounder (White)

### 24Vdc Symphoni Sounder

The 24Vdc Symphoni Sounder is a general purpose internal sounder, available either as a very high output sounder for noisy areas, or a high output low current sounder for applications where power is limited. Both versions share the same horn and backbox which has double cable entries for ease of installation. The low power version has 3 selectable tones which may be employed for one, two or three stage alarm applications. The high output version has 32 selectable tones and retains full tone compatibility with the Roshni, Squashni and Askari product ranges.

**Technical Specification**

- **Sound Output @ 1m:** 100dB(A) +/-2dB(A) @ 24Vdc
- **Tones:** Continuous - 970Hz, Alternating - 970Hz/800Hz with 2Hz, Pulsed - 970Hz at 1Hz
- **Operating Temperature:** -25°C to +70°C
- **Construction:** Red/White ABS
- **Ingress Protection:** IP42
- **Weight:** 0.212Kg

**Product Codes**

- 576.501.201: SY/R Low Power White Symphoni Sounder (3 tone)
- 576.501.203: SYHO/W High Output White Symphoni Sounder (32 tone)

### Roshni

A flexible alarm sounder for Fire and Security applications complete with volume control and a switch to provide 32 tones.

- **Low profile Roshni with Deep base offers IP66 protection.** All Roshni sounders have synchronised start for synchronisation without third wire.

**Technical Specification**

- **Output Voltage:** 9-28Vdc
- **Typical Current:** 24Vdc@16mA
- **Typ. Sound Output:** @1m 102dB

**Product Codes**

- Roshni Sounder with Deep Base - Red: 576.501.220
- Roshni Sounder with Deep Base - White: 576.501.222
- Roshni/Flashni Deep Base - Red: 576.501.221
- Roshni/Flashni Deep Base - White: 576.501.223

**Marine Approved Products**

- 576.501.401: MED W/P Roshni Sounder c/w deep base-red
- 576.501.402: MED Roshni Sounder c/w shallow base-red

**Dimensions:** 93 Dia x 105D mm (Deep base) or 105D mm (Shallow base)

**Colour:** Red or white
Chapter 3 - Conventional Systems

Squashni

The Squashni electronic sounder is the original ceiling sounder for use as a universal fire detector platform or as a stand alone sounder complete with blank cover. It comes preset to tone 3 with a volume control and is fully compatible with Roshni tones, and has a synchronised start.

Technical Specification
- Dimensions: 112 Dia x 27D mm
- Colour: Matched to leading fire detector manufacturers
- Approvals: None
- Output Voltage: 9-28Vdc
- Typical Current: 24Vdc@16mA
- Typical Sound Output: 93dB (A) @1m

Product Codes
- 576.501.030 Squashni white 24Vdc
- 576.501.031 Blank cover plate white for Squashni

Multi-Tone Askari Compact

The Multi-Tone Askari Compact is a compact bedroom sounder for unobtrusive installation. It comes with a volume control and is fully compatible with Roshni tones and has a synchronised start. A surface mount backbox is available from the supplier to special order.

Technical Specification
- Dimensions: 87.5H x 87.5W x 36D mm
- Colour: Red or white
- Approvals: BS 5839 pt 1
- Input Voltage: 9-28Vdc
- Typical Current: 18mA @ 24Vdc
- Typical Sound Output: 97dB (A) @1m

Product Codes
- 576.501.242 Multi Tone Askari Compact Sounder - white
- 576.501.243 Multi Tone Askari Compact Sounder - red
Chapter 3 - Conventional Systems

Fire-Cryer Plus® - Voice Enhanced Sounders

The Fire-Cryer® Plus range of voice sounders are electronic sounders which are pre-programmed with 9 messages. Each of the Fire-Cryer® voice sounders can be used as a single message voice sounder by simply installing them on to a conventional 24Vdc sounder circuit or by using a sounder controller on a loop. The choice of message(s) broadcast can be selected using a DIL switch on the rear of the sounder. See Table A

The Fire-Cryer® Plus offers an excellent service upgrade opportunity for systems as well as a highly flexible and cost effective solution to providing a voice evacuation system to many buildings. The choice of Fire-Cryer® voice sounders can be selected using Table B

Messages 1 to 7 in Table A can be used in a multi message installation with the addition of a Multi Message Switching PCB (576.501.171) or a Voice Message Controller (576.501.181 or 576.501.182) interfaced between the fire alarm control panel and the sounder circuits. The Voice Message Controllers can be supplied with a 2.5A or 5.25A power supply built in. A Zone Extension PCB (576.501.172) is available to extend the system to 4 zones or 8 sounder circuits. See Table C

A special Extinguishing PCB (576.501.173) used with the 576.501.135 will enable 1st, 2nd Stage, 'Hold' and 'Gas Released' messages to be automatically broadcast dependent on the state of the alarm. See Table A1

Features
- Single Message or Multiple Message using the same sounder
- Multi Message facilitates multi evacuation strategies
- Clear and unambiguous alarm messages
- Voice Alarm Messages provoke an immediate response
- Sound Output – Up to 100db(A) (Fire-Cryer® Plus), 90db(A) (Mini Fire-Cryer® Plus), 110db(A) (Midi Fire-Cryer® Plus)
- Optional integral Red Strobe
- Low current consumption – average 20mA
- No special wiring easily retro fitted
- Fully synchronised over multi zones
- Deep base version available to IP66
- Ultra slim base sounder to fit industry standard detectors
- Suitable for ceiling or wall mounting (Mini Fire-Cryer® Plus)
- Optional front plate for stand alone use (Mini Fire-Cryer® Plus)
- Voice Message Controller makes manual message switching easy

Fire-Cryer Plus® - Voice Enhanced Sounders

The Fire-Cryer® Plus range of voice sounders are electronic sounders which are pre-programmed with 9 messages. Each of the Fire-Cryer® voice sounders can be used as a single message voice sounder by simply installing them on to a conventional 24Vdc sounder circuit or by using a sounder controller on a loop. The choice of message(s) broadcast can be selected using a DIL switch on the rear of the sounder. See Table A

The Fire-Cryer® Plus offers an excellent service upgrade opportunity for systems as well as a highly flexible and cost effective solution to providing a voice evacuation system to many buildings. The choice of Fire-Cryer® voice sounders can be selected using Table B

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- Multi Message facilitates multi evacuation strategies
- Clear and unambiguous alarm messages
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- Low current consumption – average 20mA
- No special wiring easily retro fitted
- Fully synchronised over multi zones
- Deep base version available to IP66
- Ultra slim base sounder to fit industry standard detectors
- Suitable for ceiling or wall mounting (Mini Fire-Cryer® Plus)
- Optional front plate for stand alone use (Mini Fire-Cryer® Plus)
- Voice Message Controller makes manual message switching easy
### Chapter 3 - Conventional Systems

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>576.501.171</td>
<td>Fire-Cryer® Plus Multi Message PCB</td>
</tr>
<tr>
<td>576.501.172</td>
<td>Fire-Cryer® Plus Zone Extension PCB</td>
</tr>
<tr>
<td>576.501.173</td>
<td>Fire-Cryer® Plus Extinguishing PCB</td>
</tr>
<tr>
<td>576.501.181</td>
<td>VMC / Multi Message PCB and 2.5A PSU</td>
</tr>
<tr>
<td>576.501.182</td>
<td>VMC / Multi Message / Zone Extension PCB and 5.25A PSU</td>
</tr>
</tbody>
</table>
### Technical Specification

<table>
<thead>
<tr>
<th>Fire-Cryer® Plus Model</th>
<th>Fire-Cryer® Plus</th>
<th>Mini</th>
<th>Midi</th>
</tr>
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<tbody>
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<td>VDC Operating Voltage</td>
<td>20-28</td>
<td>20-28</td>
<td>20-28</td>
</tr>
<tr>
<td>Current mA @ 24VDC Peak/Avg - Sounder only</td>
<td>27/20</td>
<td>27/20</td>
<td>180/100</td>
</tr>
<tr>
<td>Current mA @ 24VDC Typical - Sounder with low current strobe</td>
<td>33/26</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Current mA @ 24VDC Typical - Sounder with high current strobe</td>
<td>52/60</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Current mA @ 24VDC Low current strobe only</td>
<td>13</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Current mA @ 24VDC High current strobe only</td>
<td>32</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Strobe Output Cd (LOW)</td>
<td>2</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Strobe Output Cd (HIGH)</td>
<td>6</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Volume Adjustment from Max. dB(A) Output to max output -18dB(A)</td>
<td>82 to 100</td>
<td>72 to 90</td>
<td>101 to 110</td>
</tr>
<tr>
<td>Weatherproofing (IP66 requires Deep Base)</td>
<td>IP45 or IP66</td>
<td>n/a</td>
<td>IP44</td>
</tr>
<tr>
<td>Housing Material</td>
<td>ABS</td>
<td>ABS</td>
<td>Aluminium/Plastic Base</td>
</tr>
<tr>
<td>Temperature Range °C</td>
<td>-25 to +70</td>
<td>-10 to +55</td>
<td>-25 to +70</td>
</tr>
<tr>
<td>Colour</td>
<td>Red or White</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>Connections</td>
<td>Screw TB 1.5mm²</td>
<td>Screw TB 1.5mm²</td>
<td>Clamp 2.5mm²</td>
</tr>
</tbody>
</table>

#### Figure 1 - Direct Connection to FACP

![Figure 1 - Direct Connection to FACP](image1)

#### Figure 2 - Connection via Loop Interface

![Figure 2 - Connection via Loop Interface](image2)
Chapter 3 - Conventional Systems

Standard Message Set which consists of 9 pre-programmed messages with tones (See Table A)

Starting Tone (See Table (A2) below)

<table>
<thead>
<tr>
<th>Two Letter Message Code</th>
<th>Beacon Flash</th>
<th>Y/N</th>
<th>Speech Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message 1</td>
<td>1</td>
<td>1</td>
<td>Fire emergency. Please remain calm and evacuate the building immediately</td>
</tr>
<tr>
<td>Message 2</td>
<td>2</td>
<td>1</td>
<td>This is a fire alert. Await further instructions.</td>
</tr>
<tr>
<td>Message 3</td>
<td>2</td>
<td>0</td>
<td>Standby alert. Close all doors and move to the middle of the room.</td>
</tr>
<tr>
<td>Message 4</td>
<td>0</td>
<td>1</td>
<td>This is an ADT fire test. No action required.</td>
</tr>
<tr>
<td>Message 5</td>
<td>0</td>
<td>0</td>
<td>This is a class change announcement.</td>
</tr>
<tr>
<td>Message 6</td>
<td>3</td>
<td>1</td>
<td>Fire detected. Keep calm. Leave the building by the nearest exit.</td>
</tr>
<tr>
<td>Message 7</td>
<td>1</td>
<td>0</td>
<td>Ladies and gentlemen – due to unforeseen circumstances we must ask you to leave the building immediately by the nearest exit or as directed by members of staff.</td>
</tr>
<tr>
<td>Message 8</td>
<td>2</td>
<td>1</td>
<td>We have an emergency situation. Please leave the building by the nearest exit. Members of staff will assist you.</td>
</tr>
</tbody>
</table>

When used as a Multi Message sounder the multi message Switching PCB (576.501.171) will assign the messages to the following triggers:

<table>
<thead>
<tr>
<th>Tone</th>
<th>No tone</th>
<th>Banshee LF Fast Sweep, 800Hz to 950Hz swept @ 9Hz</th>
<th>Banshee LF Fast Sweep, 800Hz to 950Hz swept @ 9Hz Pulsed at 1 second ON, 1 second OFF</th>
<th>Bell tone, pulsed</th>
</tr>
</thead>
</table>
Chapter 3 - Conventional Systems

Ordering Fire-Cryer Plus® Voice Sounders

Step 1 - Choose your Fire-Cryer® Sounder

<table>
<thead>
<tr>
<th>Table A</th>
<th>Type</th>
<th>Body Colour</th>
<th>Beacon</th>
<th>Base</th>
<th>Part Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wall Mount</td>
<td>Red</td>
<td>Red</td>
<td>Shallow</td>
<td>576.501.131</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>Shallow</td>
<td>576.501.132</td>
</tr>
<tr>
<td></td>
<td>Wall Mount</td>
<td>White</td>
<td>Red</td>
<td>Shallow</td>
<td>576.501.141</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>Shallow</td>
<td>576.501.142</td>
</tr>
<tr>
<td></td>
<td>Wall Mount</td>
<td>Red</td>
<td>Red</td>
<td>Shallow</td>
<td>576.501.135</td>
</tr>
<tr>
<td></td>
<td>Base Mount</td>
<td>White</td>
<td>None</td>
<td>Deep</td>
<td>576.501.151</td>
</tr>
</tbody>
</table>

Step 2 - Choose your Interfaces for Multi Message Systems

| Table B | Standard Multi Message Switching PCB | 576.501.171 |
|         | Zone Extension PCB (adds 3 Zones of 2 Sounder Circuits i.e. 6 sounder circuits. Must be used with 576.501.171) | 576.501.172 |
|         | Extinguishant Interface PCB | 576.501.173 |

Voice Message Controllers & PSUs (All VMC enclosures include a 576.501.171)

<table>
<thead>
<tr>
<th>Part Ref.</th>
<th>PSU</th>
<th>Box Size</th>
<th>Part Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>576.501.171</td>
<td>No</td>
<td>2.5A M2</td>
<td>576.501.181</td>
</tr>
<tr>
<td>576.501.172</td>
<td>Yes</td>
<td>5.25A M3</td>
<td>576.501.182</td>
</tr>
</tbody>
</table>

Box Sizes
- M2 Enclosure 385W x 310H x 90D mm
- M3 Enclosure 385W x 520H x 90D mm

Product Codes

- 576.501.131 Standard Fire-Cryer® Plus, red wall mounted, shallow base, red beacon
- 576.501.132 Standard Fire-Cryer® Plus, red wall mounted, deep base, red beacon
- 576.501.133 Standard Fire-Cryer® Plus, red, wall mounted, shallow base
- 576.501.134 Standard Fire-Cryer® Plus, red, wall mounted, deep base
- 576.501.141 Standard Fire-Cryer® Plus, white wall mounted, shallow base, red beacon
- 576.501.142 Standard Fire-Cryer® Plus, white, wall mounted, deep base
- 576.501.151 Midi Fire-Cryer® Plus, c/w back box, red
- 576.501.161 Mini Fire-Cryer® Plus, base mounted, white, c/w cover
- 576.501.171 Fire-Cryer® Plus Multi Message PCB
- 576.501.172 Fire-Cryer® Plus Zone Extension PCB
- 576.501.173 Fire-Cryer® Plus Extinguishant PCB
- 576.501.181 Voice Message Controller c/w Multi Message PCB and 2.5A PSU
- 576.501.182 Voice Message Controller c/w Multi Message PCB, Zone Extension PCB and 5.25A PSU
- 576.501.191 Fire-Cryer® Plus Demo Unit
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Single Gang Lamp/Buzzer Units

Lamp Buzzer units may be used for local alarms when high level audible warnings may not be appropriate. Available in flush and surface mount versions to fit standard single gang backboxes.

Features
• Low Current
• Flush or Surface Mount
• Hi-Brightness LED

Technical Specification
Dimensions: 90H x 90W x 40D mm
Current Rating: 15mA at 24Vdc nominally

Product Codes
540.011.012 Single gang flush mount LED (red)/Buzzer Unit labelled ‘Fire Alarm’
540.011.013 Single gang surface mount LED (red)/Buzzer Unit labelled ‘Fire Alarm’ c/w surface backbox.

Solista LED Beacon

Ultra low power requirement 3mA or 6mA at 24Vdc. Long life low profile design. Protected to IP54, supplied complete with base.

Product Code
576.501.230 Solista LED Beacon (Red)

Easy AV™ Retrofit LED Beacon

This low power LED beacon is designed to be retrofitted to existing Banshee electronic sounders. Easy and fast installation typically 3 min. Low power 6mA max at 24Vdc High Output LEDs.

Product Code
576.501.012 Easy AV strobe for Banshee Sounders

NOTE: For I.S. Flameproof Beacons, please see the special hazards section.
Chapter 3 - Conventional Systems

Features
- Available in 1, 2, 3 and 5 watts
- Protected to IP65
- Attractive low profile design
- Optional bracket for mounting both Beacon and Banshee Sounder

Xenon Beacons - 24V Including Surface Mount Adaptor
This high quality range of Xenon beacons are tested to IP65 making them ideal for the most stringent applications. Each beacon incorporates a low profile Fresnel lens designed to give maximum light output.

Technical Specification

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power Output</th>
<th>Alarm Current</th>
<th>Flash Rate</th>
<th>Rating</th>
<th>Temp. Range</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d.c.</td>
<td>Watts</td>
<td>mA</td>
<td></td>
<td></td>
<td>Height</td>
<td>Diameter</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>42</td>
<td>60/min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>51 75</td>
</tr>
<tr>
<td>24</td>
<td>2</td>
<td>84</td>
<td>60/min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>51 75</td>
</tr>
<tr>
<td>24</td>
<td>3</td>
<td>126</td>
<td>60/min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>51 75</td>
</tr>
<tr>
<td>24</td>
<td>5</td>
<td>210</td>
<td>60/min</td>
<td>IP65</td>
<td>-30 to +70°C</td>
<td>75 90</td>
</tr>
</tbody>
</table>

Product Codes
- 540.001.030: Low profile clear 24Vdc 1 watt
- 540.001.031: Low profile blue 24Vdc 1 watt
- 540.001.032: Low profile amber 24Vdc 1 watt
- 540.001.033: Low profile red 24Vdc 1 watt
- 20-112: Low profile red 24Vdc 2 watt
- 20-113: Low profile red 24Vdc 5 watt
- 20-120: Low profile red 24Vdc 3 watt

Solex 10 cd Xenon Beacon
A Solex 10 Candela Xenon Beacon with a red lens and a white shallow base which can be used wherever a high power xenon beacon is required. Due to the high power output and current consumption it is recommended that this device is not used with the MZXe, MZXe+ or similar small panels (an SB520 sounder booster module and PSU may be required in some cases).

Features
- High Power – 10 Candela
- Current Surge Suppression
- High Efficiency – 88mA at 24VDC
- 1 Hz Flash Rate
- Protected to IP54
- Wide Operating Voltage – 10 to 60 VDC
- Operating Temperature -25°C to + 70°C

Product Code
- 576.501.232: Solex 10 cd Beacon with red lens and white base
Flashni - Sounder/Strobe

A combined sounder and beacon which combines the features of the Roshni electronic sounder with a fully integrated Xenon beacon.

Features
- Combined strobe & sounder
- Matches Roshni sounders
- Weather Resistant to IP65

Technical Specification
- Dimensions: 93 Dia x 92D mm (Shallow base)
  93 Dia x 121D mm (Deep base)
- Output Voltage: 18-30Vdc
- Typical Current: 68mA@24Vdc
- Typ. Sound Output: 101dB (A)@1m

Product Codes
- 20-118 Combined Roshni sounder/strobe complete with deep base (IP65).

Marine Approved Product
- 576.501.403 MED Combined Roshni Sounder/Strobe, Red Body/Red Lens complete with shallow base
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Squashni G3/AV Sounder Beacon

This low current combined sounder/beacon is ideal for standalone usage utilising the optional blanking cap or can be used in conjunction with a 4” base and detector. When used with a detector it will provide a single point of installation for the detector, sounder and beacon.

This is a conventional sounder / beacon and needs to be powered from the panel sounder outputs.

Features

• Combined Sounder and LED Beacon
• Low Current -10mA @ 24VDC
• 6 selectable tones
• Volume control (2 levels)
• White housing, clear lens with red LED’s
• DDA compliant audio visual solution for UK
• Neat unobtrusive design
• Ideal for hotels, care homes, schools & offices
• Independent power cables allow a large number of AV platform sounders to be driven from a single 24V circuit
• 90dB sound output
• >1Cd light output at 1 Hz
• Approved to EN54-3

Product Codes

576.501.250 Squashni G3/AV Sounder Beacon
517.050.401 4” Universal Base
517.050.006 4” Detector Base Locking Pin Kit (PK100)
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Features
• 2 Wire for use with MZX-e Fire Controllers
• Combined Sounder and LED Beacon
• Low Current
• 4 selectable tones
• Volume control (2 levels)
• Beacon Only option (switchable)
• White housing, clear lens with red LED’s
• DDA compliant audio visual solution for UK
• Neat unobtrusive design
• Ideal for hotels, offices, care homes, schools & offices
• 90dB sound output
• >1Cd Light output at 1 Hz
• Maximum number per zone = 10

Squashni G3/AV 2 Wire Sounder Beacon - (Twin Wire)
This low current combined sounder beacon is designed specifically for installation on the detection loop of the MZX-c control panel. Ideal for standalone usage utilising the optional blanking cap or can be used in conjunction with a 4” base and detector.

When used with a detector it will provide a single point of installation for the detector, sounder and beacon. This is a 2 wire sounder/beacon and can be used on all zones of the MZX-c control panel.

Product Codes
576.501.251 Squashni G3/AV 2 Wire Sounder Beacon
517.050.401 4” Universal Base
517.050.005 4” Detector Base Locking Pin Kit (PK100)
# Chapter 3 - Conventional Systems

## Service & Spares

### T1200 CONVENTIONAL MARINE PANEL

- **C1626 4 ZONE PANEL MOTHERBOARD WITH AC PSU**: (509.023.001)
- **C1626 4 ZONE PANEL MOTHERBOARD WITHOUT AC PSU**: (509.023.002)
- **C1627 16 ZONE PANEL MOTHERBOARD WITHOUT AC PSU**: (509.023.003)
- **C1627 16 ZONE PANEL MOTHERBOARD WITHOUT AC PSU FOR T1232**: (509.023.004)
- **C1626 REPEATER MOTHERBOARD WITH AC PSU**: (509.023.011)
- **C1626 REPEATER MOTHERBOARD WITHOUT AC PSU**: (509.023.012)
- **C1628 4 ZONE PANEL DISPLAY PCB**: (509.023.021)
- **C1628 16 ZONE PANEL DISPLAY PCB**: (509.023.022)
- **C1629 32 ZONE PANEL DISPLAY PCB**: (509.023.023)
- **C1628 16 ZONE REPEATER DISPLAY PCB**: (509.023.031)
- **C1629 32 ZONE REPEATER DISPLAY PCB**: (509.023.032)
- **C1630 OUTPUT EXPANSION INTERFACE PCB**: (2605060)
- **C1632 16 ZONE PANEL EXPANSION PCB**: (509.023.042)
- **PS136 5.0 AMP 110/230VAC PSU**: (509.023.051)
- **PS40 1.5 AMP 24VDC PSU**: (509.023.052)
- **T1200 SPARE KEY SET**: (509.023.061)

### MZx-e EXTINGUISHING PANEL

- **MZx-e SPARE KEY SET**: (557.201.508)

### EXTINGUISHING ANCILLARIES

- **LAMP 28V 60mA (MCC) FOR T525**: (599.001.012)
- **24VWSBC SP BULB FOR E1/E3**: (599.001.029)

### MANUAL ALARM CALLPOINTS

- **ZF121 CALLPOINT GLASS**: (PK10) (515.001.003)
- **CP100A CALLPOINT GLASS UNSCORED**: (PK10) (515.001.009)
- **WALSALL CALLPOINT GLASS**: (PK10) (515.001.010)
- **CP200 CALLPOINT GLASS-ARABIC**: (PK5) (515.001.014)
- **CP200N CALLPOINT GLASS**: (PK5) (515.001.023)
- **CP200 CALLPOINT ARABIC/ENGLISH GLASS**: (PK5) (515.001.024)
- **CP200 CALLPOINT ENGLISH GLASS NO LOGO**: (PK5) (515.001.025)
- **STOPPER BREAK SEAL KIT-RED**: (PK1) (515.001.033)
- **MCP/CP CALLPOINT TEST KEY**: (PK1) (515.001.045)
- **MCP/CP CALLPOINT EN54 PT11 SPARE GLASS**: (PK5) (515.001.118)
- **DEFORMABLE MCP ELEMENT**: (PK1) (515.001.127)

### MZx-e+ CONVENTIONAL PANEL

- **MZx-e+ SPARE KEY SET**: (557.201.508)
- **MZx-e+ 5.0 AMP PSU**: (2605071)
- **MZx-e+ TRANSFORMER 1.5 AMP**: (2000636)
- **MZx-e+ TRANSFORMER 3.0 AMP**: (2000637)
- **MZx-e+ TRANSFORMER 5.0 AMP**: (2000638)
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Chapter 4 - Networks and Graphics

Tyco Expert Graphics (TXG)

Features

• Provides annunciation, status display, and control in both normal and emergency situations
• Developed by Tyco specifically to provide monitoring and control of fire protection life safety systems
• Supports a range of fire detection systems:
  - Minerva® MX and MZX
  - Minerva®
  - Simplex 4100 range 4100, 4120, 4620, 4100U with upgrade paths to 2120
  - Zettler Zetfas, Wormald PBS16, Tyco Fast 2000
• Multiple workstations can be configured for specific functions or redundant operation
• Single monitor or two monitor (text and graphics) support at each workstation

Emergency Management System & Fire Detection Graphical User Interface

Tyco Expert Graphics is a new client/server emergency management system and fire detection graphical user interface.

TXG is based on a Tyco graphical alarm monitoring system that has been installed on hundreds of large fire detection and alarm monitoring systems around the world and will now be able to integrate the Minerva® MX product range with improved functionality, particularly suited to the MX Graph markets.

Tyco Expert Graphics provides annunciation, status display, and control for various fire detection and alarm systems including MX networks incorporating the latest MX Technology™ fire detection systems. It also supports the predecessor Minerva® fire detection systems thus ensuring that future updates from Minerva® to MX technology™ can be accommodated. Additional support is provided for Simplex 4100 range, Zetfas and Fast2000/PBS (Token ring format).

TXG is a Microsoft Windows® based graphical interface with a high resolution colour display. Responsive touch-screen (optional) buttons with realistic icons provide control switches specific to the operation being performed. Utilising a combination of symbols, floor plans, pictures, text, voice messages and video input, TXG displays the precise location and gives instructions on what emergency action should be taken.

Additional Features

• Link up with I.P CCTV camera systems, no additional wiring, reduced installation cost for a fully integrated fire/CCTV system
• Compatible with Flamevision® FV300 array based IR flame detectors with built in CCTV
• MX Hotspot, chromatic analogue display. Programmable tracking of analogue values. Changes display colour in response to changes in analogue value from a selected number of MX devices.
• Trending diagrams of analogue values helps reduce maintenance time and cost
• Export analogue values to Excel for in depth analysis
• Audio descriptions of screens can be played when they are displayed or played when an event occurs
• High level user interface allows end user to make changes to point attributes and layout further reducing lifetime cost of ownership.
• Centralised security administration means that operator accounts are administered through the TXG client’s common database
• Mouse, keyboard or touch-screen control with full multimedia compatibility
• Dual language switching
• The ability to display live video when specific predefined alarm conditions occur
• Easy to configure and set-up. No special networking or PC training required
• Facilities and maintenance management report and analysis tools are available

The display can be configured to track detector inputs by changing the colour of areas in response to changes in analogue value. A detailed map of the area affected can be printed automatically for use by personnel responding to an emergency. Prompt response to a fire emergency, with the correct action, provides the opportunity to reduce financial loss and greatly improves safety.

Much of the work involved in configuring TXG has been simplified through the automatic import of panel configurations and the ability to use a wide range of input data file types including GIF, JPG, bitmap, AutoCAD®, Vector and WAV files.

System maintenance can be carried out via the high level user interface with the ability to edit the position and attributes of point icons as well as make changes to drawing layouts. As well as simplifying maintenance, being a true client server application means that any number of on-site or off-site workstations can interrogate the database with pre-defined security levels to facilitate any required combination of access and control.
Chapter 4 - Networks and Graphics

The IP Video feature allows real-time images of the area at risk to be displayed in the event of an alarm or fault. Video capture of the affected area appears on the screen automatically, allowing the severity of the situation to be assessed quickly and the appropriate executive action to be taken.

For less serious incidents, expensive and unnecessary plant shut downs can be avoided. In more critical situations, accurate information can be quickly and efficiently communicated to the response team.

MX HOTSPOT icons representing the devices being monitored will change colour dependant on status, alarm, normal, fault, isolate etc.

In addition to this, selected areas can be highlighted using the chromatic analogue display feature, MX HOTSPOT. As the analogue value of a monitored point changes the chromatic analogue display will change the highlight colour through a pre-defined range.

For example a heat detector assigned MX HOTSPOT could transit the highlight from blue to red. The number of chromatic steps is dependant on the resolution of the graphics card used, 16, 24 or 32 bits.

NOTIFICATION BY EMAIL

Events, whether they are real or false alarms are handled most efficiently when information can be quickly and accurately communicated. TXG allows users to set up email groups and notification texts linked to predetermined events.

These are automatically transmitted ensuring that the appropriate resource is deployed.

ADDITIONAL FUNCTIONS AND FEATURES

- Response buttons with configurable icons or text provide control switches specific to any operation being performed
- Uses a combination of symbols, floor plans, pictures, text and video to communicate events
- Standard MX and Minerva® symbol libraries supplied
- Gives instructions on what emergency action should be taken
- Prints maps and instructions to assist response teams
- History logging recallable or printable by event, dates, device, or a host of other available filters
- The advanced filter allows the history report to be specifically limited to a particular range or date period.
- Commands to control outputs from the Graphical User Interface
- Events can be accepted individually or can be "auto-accept"
- Supports all standard PC image file types (i.e. GIF, JPG, BMP), AutoCAD® & Vector file types

AVAILABILITY AND ORDER PROCESS

TXG can be downloaded from the tycoemea.com website and can be used with a time restriction for demonstration or training purposes. TXG can also be ordered from our Letchworth and Echt distribution centres.

Customers can fax or E-Mail an order form which details the software options required, to customer service at Letchworth. Original order forms can be obtained from http://www.tycoemea.com/. This form will allow customer service to prepare and allocate a license code that will activate the required features. Customers will also be required to place an order on JDE for each part number on the form.

A media pack containing CD with license number, dongle, multi language manuals on CD and original order form will be dispatched to the customer.

On receipt, the software can be loaded and the license number entered to make available the requested software features.

Product Codes

- 508.040.100 TXG USB Server Dongle-License/Software
- 508.040.001 TXG001-Single Client with 1 panel (Requires TXG USB)
- 508.040.002 TXG004-Single Client with 2 to 4 panels (Requires TXG USB and TXG001)
- 508.040.003 TXG010-Single Client with 5 to 10 panels (Requires TXG USB, TXG001 and TXG004)
- 508.040.004 TXG020-Single Client with 11 to 20 panels (Requires TXG USB, TXG001, TXG004 and TXG010)
- 508.040.005 TXG099-Single Client with 21 or above panels (Requires TXG USB, TXG001, TXG004 TXG010 and TXG020)
- 508.040.011 TXG-C Additional Client license
- 508.040.021 TXG-MIN80 Minerva driver license
- 508.040.025 TXG-OPC - OPC Alarm / Event & Data Access Server Licence
- 508.040.027 TXG-CPP - SIMPLEX CPP driver
- 508.040.033 TXG-PBS/FAST2000 DRIVER
- 508.020.025 TXG Emergency Management PC (no monitor)
- 508.020.019 19” LCD Touchscreen Monitor
FROM A SINGLE FIRE ALARM PANEL CONNECTED TO A TXG SERVER......

The modest additional cost of a single TXG client/server is easily justified when the benefits that a Graphical User Interface bring are considered.

TO A COMPLEX INSTALLATION WITH MULTIPLE DIVERSE NETWORKS AND DISTRIBUTED CLIENTS

Large multi-building facilities may have a number of fire detection networks, possibly installed over an extended period of time. TXG can be used as a hub to integrate these systems with a number of clients providing annunciation and control where it is needed.

TXG with direct connection to a single Minerva® MX

TXG IS TOTALLY SCALABLE

TXG with multiple fire detection networks and CCTV integration
Chapter 4 - Networks and Graphics

Features

• Allows MZX Technology Fire Controllers to be “seamlessly” networked together
• Dual ARM 7 RISC processors
• Support for Emergency Mode Indication
• True peer-to-peer communications; no host or master controller required
• Highly resilient, node failure open and short circuit does not affect remaining network
• Approved to EN54-13 and EN54-2
• Up to 99 controllers may be used on the network
• Wide range of cable topography supported
• Network can use a variety of cable types with up to 2500m between nodes (cable dependant), 1200m using standard 1.5mm MICC cable
• FOM800 Plug on fibre optic module provides up to 5000m between nodes using 62.5/125 multimode fibres
• Easy to install and programme
• Simple to operate

TLI800EN Network Interface Module and FOM800 Fibre Optic Module

Inter-controller Network

The use of the MZX Technology Network allows the fragmentation of a number of fire controllers to be drawn into a network system. Because every installation is different, the MZX Technology Network has been designed to be highly flexible, allowing for a wide range of different systems applications. With a large network system the amount of data and information passing between fire controllers can become high during an emergency condition. The MZX Technology Network communication protocol has been specifically designed with this in mind and ensures that each event message passed around the network is acknowledged by the receiving controller in the fastest possible time.

Operation

The network is totally flexible and enables from 2 to 99 fire controllers to be seamlessly linked together, providing a system capability of up to 23,760 fire zones with 99,000 detection addresses, and over 100,000 digital I/O points.

System Overview

The MX Net communications network comprises a collection of network interface modules and peripheral equipment that together form a fault resistant, and flexible peer-to-peer network for the MX Digital addressable fire systems controllers.

With the MZX Technology Network, each MZX Fire Controller on the network permits an operator to interrogate and control any other MZX Fire Controller on the network for extended interrogation and control, the MZX Technology Network allows for up to a maximum of five nodes on the network to be configured either as Master operating stations or TXG graphical user interfaces (refer to datasheet PSF206).

Mode of Operation

The MZX Technology Network employs a token passing communications protocol that treats each node on the network equally. Loss of one or more nodes does not affect the operation of the remainder of the network.

Data is regenerated at each node in the network enabling maximum distance between nodes. In the event of a short/open circuit on the network between any two nodes, isolation will automatically occur and the network will re-configure communications and continue to allow communication between all nodes physically connected.

The MZX Technology Network offers a high level of system integrity, allowing safety critical actions to be passed across the network from one MZX Fire Controller to another. This very high level of system integrity enables the MZX Technology Network to meet the requirements of EN54-13 and EN54-2.

In the event of loss of communication with the host controller, the TLI800EN will use its secondary processor to monitor the controllers fire outputs and if necessary can activate the controllers emergency fire input. In addition it can support a LED annunciator for network panel fire indication, this is wired to a MPM800 via the TLI800EN’s integral RBus RS485 port.

Fibre Optics

Fibre optics can also be supported on the MZX Technology Network system by fitting one or two FOM800 modules to the TLI800EN network card, this uses either type 62.5/125 or 50/125 multi-mode fibres between nodes on the network. Use of fibre permits a maximum distance between nodes of up to 5000 metres in either bus or ring topology.

Product Codes

557.202.080 TLI800EN Network Card and cable
557.202.081 FOM800 Fibre Optic Module
557.200.039 TLI800EN Network Interface in Housing c/w PSU

Cable Parameters

<table>
<thead>
<tr>
<th>Baud rate</th>
<th>Wire to Wire Capacitance</th>
<th>Maximum resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>38400</td>
<td>0.3 uF</td>
<td>40 Ohm for EN54-13</td>
</tr>
<tr>
<td>19200</td>
<td>0.6 uF</td>
<td>40 Ohm for EN54-13</td>
</tr>
<tr>
<td>9600</td>
<td>1.2 uF</td>
<td>40 Ohm for EN54-13</td>
</tr>
<tr>
<td>2400</td>
<td>1.2 uF</td>
<td>40 Ohm for EN54-13</td>
</tr>
<tr>
<td>1200</td>
<td>1.2 uF</td>
<td>40 Ohm for EN54-13</td>
</tr>
</tbody>
</table>
### TLI800EN Network Card

**Mechanical**
- Dimensions: 116 x 90 x 20 mm
- Weight: 0.10 Kg
- Housing: The TLI800 Network P.C.B. is mounted directly onto the MXZ CPU800 within the panel enclosure

**Electrical**
- Power Consumption: 74mA @ 24VDC & 20mA @ 5VDC
- Network Connections: 2 x RS 485
- Network diagnostic: 9 x on board LED’s / RS232 port for system analysis and fault finding
- Cable Type: 2 Core MICC, Shielded or Twisted pair
- Network Connections: Screw terminals, will accept 2.5 mm² cable

**Network Parameters**
- Number of nodes: 99 (max)
- Distance between nodes: 1000 to 5000 metres (dependent upon cable type)
- Communications type: RS485
- Baud Rates: 9.6K to 115.2K
- Transport Type: Token passing, non-collision protocol

**Environmental**
- Operating Temp: -10°C to + 55°C
- Storage Temp: -10°C to + 70°C
- Relative Humidity: 95% (100% intermittent)

### FOM800 Fibre Optic Network Interface

**Mechanical**
- Dimension: 50 x 58 x12 mm
- Weight: 0.015 Kg
- Housing: The FOM800 is mounted directly onto the TLI800EN Network card

**Electrical**
- Supply Voltage: Powered from TLI800EN
- Network Connections: 2 x ST Fibre optic connections
- Cable Type: 62.5/125 or 50/125 multi-mode fibre optic cables

**Environmental**
- Operating Temp: -10°C to + 55°C
- Storage Temp: -10°C to + 70°C
- Relative Humidity: 95% (100% intermittent)

### TLI800EN-G Housed Network Card with PSU

**Mechanical**
- Dimension: 300 x 200 x 85 mm
- Weight: 3.85 Kg

**Environmental**
- Operating Temperature: 0°C to +55°C
- Relative Humidity: 95% max

**Electrical**
- Supply Voltage: 220 to 250 VAC
- Power consumption: 160mA
Chapter 4 - Networks and Graphics

**TLD-530 ThornNet/MXNet direct line driver PCB**

The Telephone Line Driver Module (TLD-530) is used to interface two (2) dedicated telephone line circuits to the TLI-800 module. The TLD-530 line driver module converts the RS-485 signals received from the TLI-800 network interface module to signals capable of being transmitted over the telephone line circuits. One TLI-800 supports two channels so only one module is required per controller for both single path and redundant path star connections. The interface allows for field configured baud rates and supports distances of up 3,000 metres. Up to two units can be fitted into a TLO/TLD Housing.

**Technical Specification**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>170 x 120 x 200 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>140 g</td>
</tr>
</tbody>
</table>

**Product Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.180.699</td>
<td>TLD 530 ThornNet/MXNet direct line driver PCB</td>
</tr>
<tr>
<td>557.180.148.A</td>
<td>TLO/TLD Housing - ADT branded</td>
</tr>
</tbody>
</table>

---

**CCU3**

The CCU3/C-MXMB provides a MODBUS interface to a number of MX panels on an MXNet. CCU/I/O boards may also be connected to provide general I/O devices accessed through the MODBUS interface.

The CCU3/C-MXMB connects to MX panels on the MXNet via a TLI-800 (TPI) interface card using RS232 (PL2 socket). It connects to MODBUS via either an RS232, RS485 (default) or RS422 connection. Another port allows up to 8 CCU/I/O boards to be connected. Each CCU/I/O has 8 relay outputs that can be used as inputs to the MX. These contacts are controlled via WRITE commands to the MODBUS map. Each CCU/I/O also has 8 supervised inputs whose status can be read from the MODBUS map.

**Technical Specification**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>18-30Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>150mA at 24Vdc</td>
</tr>
<tr>
<td>Dimensions</td>
<td>140 x 105 x 15 mm</td>
</tr>
</tbody>
</table>

**Product Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.202.046</td>
<td>MX CCU3/C-MXMB MX to MOD Bus Interface</td>
</tr>
</tbody>
</table>

---

The CCU3/C-MX Bridge enables the direct connection of an MX Technology® fire controller and Minerva® 16E or 80 fire controllers via the H-Bus Communications Driver Module (CDM). No network cards are required in this configuration. The CDM attaches on to the Minerva® H-Bus and provides a serial port for the CCU3/C-MX bridge.

**Product Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>557.202.123</td>
<td>MX Bridge CCU3/C-MX Bridge</td>
</tr>
<tr>
<td>557.180.025</td>
<td>Minerva Comms Driver Module</td>
</tr>
</tbody>
</table>
Chapter 4 - Networks and Graphics

Features
- Facilitates Integration of MX & Minerva Systems
- Easy Upgrade Path for MINERVA systems

MX Minerva - Bridge
The MX Minerva bridge enables a mix of Minerva and MX Panels anywhere on a shared network to operate as an integrated system.

Housed in either a MXAPSU17 or MXAPSU38 housing, the MX Minerva bridge is a translating host converting packets between the Minerva format and the MX format in both directions. Flexibility is provided for packet conversion in the bridge configuration programme.

The bridge comprises of 2 network cards and a translating host (CCU).

The MX Minerva bridge can be added to one mixed network using both Minerva and MX Nodes or it can be connected to span between two physically separated network rings, one with Minerva nodes and one with MX nodes.

Technical Specification
- Size: 320x440x120mm (17A/H)
  320x440x215mm (38A/H)
- Input voltage: 120-250VAC - 50/60Hz
- Operating Temp: 8° to +55°C
- EMC/RFI: EN50130-4

Product Codes
- 557.202.120 MX-Minerva Bridge Kit (17AH)
- 557.202.121 MX Minerva Bridge Kit (38AH)
Chapter 5 - Detector Test Equipment

Essential Test Equipment

Testifire is a 3 in 1 tool which represents the next generation of detector testing enabling smoke, heat and CO testing from one device. Latest technology stimuli production and delivery renders the product suitable for testing complex multi sensors to basic single sensor detectors.

Its advanced design allows for single, sequential or simultaneous stimuli generation. This ensures each type of detector can be functionally tested in an efficient manner.

Testifire eliminates the need for pressurised canisters by using replaceable capsules. It addresses global warming concerns associated with aerosols reducing waste and transport bulk.

---

### Smoke, Heat & CO Detector Test Kit

**Product Code** 517.001.236  
Includes:  
- 1 x Testifire Smoke, Heat & CO Detector Tester  
- 1 x Testifire Smoke Capsule  
- 1 x Testifire CO Capsule  
- 2 x Solo Battery Batons  
- 1 x Solo Battery Charger

### Smoke Capsules

**Product Code** 517.001.237  
6 x Replacement smoke capsules for use with Testifire

### CO Capsules

**Product Code** 517.001.238  
6 x Replacement CO capsules for use with Testifire

### Detector Removal Tool

**Product Code** 517.001.240  
- Universal Solo design suits wide range of detectors  
- Suitable for use at / from angles

### 800RT Detector Removal Tool

**Product Code** 516.800.917  
- Compatible with 800 and 600 series detectors  
- Enables detector dust covers to be removed

### Telescopic Access Pole

**Product Code** 517.001.230  
- Solo Telescopic Pole extends from 1.26 to 4.5 metres  
- Optimum strength to weight ratio  
- Certified non-conductivity  
- Simple looking mechanism and easy to use

### Extension Pole

**Product Code** 517.001.226  
A 1.13 metre Solo Extension Pole which can be used on its own or fitted to the Solo Telescopic Access Pole

### Storage Bag

**Product Code** 517.001.234  
A protective carry and storage bag for the Solo or Testifire product ranges
## Chapter 5 - Detector Test Equipment

### Adaptor Tube B

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.224</td>
<td>Adaptor for Solo Access Poles to allow fitting of detectors</td>
<td></td>
</tr>
<tr>
<td>516.800.217</td>
<td>800RT Detector Removal Tool</td>
<td></td>
</tr>
<tr>
<td>592.001.012</td>
<td>TX10 Flame Detector Tester</td>
<td></td>
</tr>
<tr>
<td>592.001.016</td>
<td>TX20+ Flame Detector Tester</td>
<td></td>
</tr>
<tr>
<td>517.001.235</td>
<td>M900 Address Key Extractor Tool</td>
<td>The address key extractor tool can be used to remove the address key from either a 4&quot; or 5&quot; detector base from ground level</td>
</tr>
</tbody>
</table>

### Additional and Alternative Products & Accessories

#### Smoke & Heat Detector Test Kit

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.256</td>
<td>Solo Smoke Detector Tester</td>
<td>Designed for use with Solo Dispenser, non flammable, fast activation, fast clearing</td>
</tr>
</tbody>
</table>

#### Dispenser for Solo Smoke and CO Canister

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.255</td>
<td>Lightweight and simple to use, universal design suits wide range of detectors, spring loaded solution for suspended ceilings, transparent cup for clear view of detector LED, designed for use at height, angles or low level, for use with Solo Smoke and CO Canisters</td>
</tr>
</tbody>
</table>

#### Solo Smoke Detector Tester

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.256</td>
<td>Designed for use with Solo Dispenser, non flammable, fast activation, fast clearing</td>
</tr>
</tbody>
</table>

#### Solo CO Detector Tester

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.262</td>
<td>Designed for use with Solo Dispenser, genuine, non-flammable CO stimulus, controlled delivery</td>
</tr>
</tbody>
</table>

#### Cordless Heat Detector Test Kit

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.254</td>
<td>Battery powered, no cables, trailing leads or hanging wires, suits fixed temperature, rate of rise and combination detectors up to 194°F / 90°C, lightweight and simple to use, universal design suits wide range of detectors, transparent cup for clear view of detector LED, designed for use at height, angles or low level</td>
</tr>
</tbody>
</table>

| Includes: | 1 x Solo Heat Detector Tester, 1 x Solo Battery Charger, 2 x Solo Battery Batons |

#### Battery Baton

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.239</td>
<td>NMH Battery Baton for use with Testifire and Solo Cordless Heat Detector Tester</td>
</tr>
</tbody>
</table>

#### Battery Charger

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.243</td>
<td>Fast Charger for use with Solo Battery Batons</td>
</tr>
</tbody>
</table>
Chapter 5 - Detector Test Equipment

Product Selector

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.237</td>
<td>517.001.255</td>
<td>517.001.267</td>
<td>517.001.236</td>
<td>517.001.262</td>
<td>517.001.267</td>
<td>517.001.236</td>
<td>517.001.267</td>
</tr>
</tbody>
</table>

Solo Battery Baton: 517.001.239
For use with Smoke, Heat & CO Detector Test Kit 517.001.236
Smoke & Heat Detector Test Kit 517.001.207
 Cordless Heat Detector Test Kit 517.001.254

Solo Ext Pole: 517.001.236

Solo Ext Pole 517.001.230
Solo Ext Pole 517.001.230+
Solo Ext Pole 517.001.226 (x1)
Solo Ext Pole 517.001.230+
Solo Ext Pole 517.001.226 (x2)
Solo Ext Pole 517.001.230+
Solo Ext Pole 517.001.226 (x3)

8m/30ft
7m/23ft
8m/26.25ft
9m/30ft

Access Height (approx max.)

Solo Poles Access Height

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Access Height (approx max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.230</td>
<td>6m / 20ft</td>
</tr>
<tr>
<td>517.001.230+</td>
<td>6m / 20ft (x1)</td>
</tr>
<tr>
<td>517.001.226</td>
<td>7m / 23ft</td>
</tr>
<tr>
<td>517.001.226+</td>
<td>7m / 23ft (x1)</td>
</tr>
<tr>
<td>517.001.226+</td>
<td>7m / 23ft (x2)</td>
</tr>
<tr>
<td>517.001.226+</td>
<td>7m / 23ft (x3)</td>
</tr>
<tr>
<td>517.001.239</td>
<td>8m / 30ft</td>
</tr>
<tr>
<td>517.001.239+</td>
<td>8m / 30ft (x1)</td>
</tr>
<tr>
<td>517.001.239+</td>
<td>8m / 30ft (x2)</td>
</tr>
<tr>
<td>517.001.239+</td>
<td>8m / 30ft (x3)</td>
</tr>
</tbody>
</table>

Solo Battery Baton: 517.001.239
Solo Carry Bag: 517.001.239
Chapter 5 - Detector Test Equipment

Features

- Approved for use in zone 1 & 2 areas (GPIIC gases)
- Adaptor plate to ensure perfect alignment
- IECEX Approved

S200+ Series Test Equipment

Technical Specification

- Material: Glass filled polyester
- Weight: 0.8kg
- Supply Voltage: 9Vdc
- Operating Temp: -10°C to + 50°C
- Humidity: 95% (Non Condensing)
- Enclosure: IP64
- Classification: Atex EExe ib IICT4. Suitable for use in zones 1 & 2 where group IIC gases or lesser hazards are sometimes present in explosive concentrations.

Product Codes

- 592.001.016 T210+ Test source for use with Solo 704 Adaptor Tube B (517.001.224) and Solo 100/101 Poles (517.001.230/226)
- 592.001.014 T210+ Adaptor required for the T210+ to be used with S200 and S200 Plus Flame Detectors
- 592.001.010 T110 PP9 Battery and Charger Kit

S100 Series Test Equipment

Product Codes

- 592.001.012 T110 Test Source for use with Solo 704 adaptor tube B (517.001.224) and Solo 100/101 poles (517.001.230/226)
- 592.001.018 T110 Adaptor for series 600 and 800 flame detectors
- 592.001.010 T110 PP9 Battery and Charger Kit
Chapter 6 - System Accessories

Batteries, PSU and Chargers

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Voltage (V)</th>
<th>Ah at 20h rate</th>
<th>Length (mm)</th>
<th>Dimensions (mm) Width</th>
<th>Height (mm)</th>
<th>Height including Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS-1221</td>
<td>12</td>
<td>2.1</td>
<td>178</td>
<td>35</td>
<td>60</td>
<td>66</td>
</tr>
<tr>
<td>PS-1230</td>
<td>12</td>
<td>3.0</td>
<td>134</td>
<td>67</td>
<td>60</td>
<td>66</td>
</tr>
<tr>
<td>PS-1270</td>
<td>12</td>
<td>7.0</td>
<td>151</td>
<td>85</td>
<td>94</td>
<td>98</td>
</tr>
<tr>
<td>PS-1212</td>
<td>12</td>
<td>1.2</td>
<td>97</td>
<td>42</td>
<td>51</td>
<td>54</td>
</tr>
<tr>
<td>PS-12850</td>
<td>12</td>
<td>65.0</td>
<td>348</td>
<td>167</td>
<td>178</td>
<td>178</td>
</tr>
<tr>
<td>PS-12380</td>
<td>12</td>
<td>38.0</td>
<td>197</td>
<td>166</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>PS-6100</td>
<td>6</td>
<td>10.0</td>
<td>151</td>
<td>51</td>
<td>94</td>
<td>98</td>
</tr>
<tr>
<td>PS-12170</td>
<td>12</td>
<td>17.0</td>
<td>181</td>
<td>76</td>
<td>167</td>
<td>167</td>
</tr>
<tr>
<td>PS-12260</td>
<td>12</td>
<td>26.0</td>
<td>166</td>
<td>178</td>
<td>112</td>
<td>125</td>
</tr>
<tr>
<td>PS-1242</td>
<td>12</td>
<td>4.5</td>
<td>90</td>
<td>70</td>
<td>101</td>
<td>105</td>
</tr>
<tr>
<td>PS-12120</td>
<td>12</td>
<td>12.0</td>
<td>181</td>
<td>98</td>
<td>94</td>
<td>100</td>
</tr>
</tbody>
</table>

Product Codes

- PS-1221: 12 Volt 2.1 Ampere hour rechargeable sealed lead acid battery
- PS-1230: 12 Volt 3.0 Ampere hour rechargeable sealed lead acid battery
- PS-1270: 12 Volt 7.0 Ampere hour rechargeable sealed lead acid battery
- PS-1212: 12 Volt 1.2 Ampere hour rechargeable sealed lead acid battery
- PS-12650: 12 Volt 65.0 Ampere hour rechargeable sealed lead acid battery
- PS-12380: 12 Volt 38.0 Ampere hour rechargeable sealed lead acid battery
- PS-6100: 6 Volt 10.0 Ampere hour rechargeable sealed lead acid battery
- PS-12170: 12 Volt 17.0 Ampere hour rechargeable sealed lead acid battery
- PS-12260: 12 Volt 26.0 Ampere hour rechargeable sealed lead acid battery
- PS-1242: 12 Volt 4.5 Ampere hour rechargeable sealed lead acid battery
- PS-12120: 12 Volt 12.0 Ampere hour rechargeable sealed lead acid battery
Chapter 6 - System Accessories

Minerva MXP24/50 PSU
The MXP24/50 PSU is approved by IMQ to EN 54-4:1997 + A1:2002 and EN60950-1:2001. The steel housing contains a 5 amp switch mode power supply and monitoring board and has space to accommodate 2 x 12V 17Ah sealed lead acid batteries. The 10 front panel LED's comprehensively indicate the status of the unit.

Features
- Robust metal housing
- Twin fused outputs
- Temperature compensated charging
- Deep discharge protection of batteries
- Fault relay output
- Size 363mm wide x 408mm high x 97mm deep
- Weight 4.3 Kg (excluding batteries)
- Operating temperature -5°C to +40°C
- Supply voltage 230VAC 50/60Hz
- Comprehensive LED status indication

Product Code
558.004.020 Minerva MXP24/50-U/TSP 5A Charger & Housing
Chapter 6 - System Accessories

Door Release Equipment

Door Release Magnets

The door magnet range encompasses 2 metal and 2 ABS housed wall mounted and 1 floor mounted release magnet sets.

- **Door release magnet set, Wall Mount, Metal Housing, 230VAC**
  - Product Code: 3-59-0404-S002

- **Door release magnet set, Wall Mount, Metal Housing, 24VDC**
  - Product Code: 3-59-0404-S001

- **Door release magnet set, Wall Mount, ABS Housing, 24VDC**
  - Product Code: 3-87-0351

- **Door release magnet set, Wall Mount, ABS Housing, 230VAC**
  - Product Code: 3-87-0352

- **Door release magnet set, floor mount, ABS housing 24VDC**
  - Product Code: 3-84-0301

Floor mounting bracket for adapting wall mounted door magnets to floor mount
  - Product Code: 2-34-035G-S001

Technical Specifications

- **3-59-0404-S001** - 89 x 89 x 70mm, 0.5Kg, 180N Holding Force, 1.15W Coil @ 24VDC
- **3-59-0404-S002** - 89 x 89 x 70mm, 0.5Kg, 180N Holding Force, 1.15W Coil @ 230VAC
- **3-87-0351** - 95 x 87 x 46mm, 0.36Kg, 200N Holding Force, 1.15W Coil @ 24VDC
- **3-87-0352** - 95 x 87 x 46mm, 0.36Kg, 200N Holding Force, 1.15W Coil @ 230VAC
- **3-84-0301** - 110 x 96 x 96mm, 0.7Kg, 200N Holding Force, 45mA Coil @ 24VDC

Door Release Power Supply

- **Technical Specification**
  - Input Voltage: 230VAC 50Hz
  - Output Voltage: 22 - 30Vdc
  - Output Current: 4 Amps
  - Temperature: Continuous -10°C to +40°C
  - Relative Humidity: 95% RH
  - IP Rating: IP41 (excluding rear face)
  - Material: 1.2mm white powder coated steel
  - Dimensions: 230mm (W) x 200mm (H) x 80mm (D)

- **Product Code**
  - ELM 24V 4A Door Holder PSU

Door Release Button

- **Door Release Button** supplied with surface mount backbox for manual release of door magnets or door release units.

- **Product Code**
  - 519.001.008
  - Door Release Button
Chapter 6 - System Accessories

### Auxiliary Interface Relays

#### Boxed Relays

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>567.005.004</td>
<td>Relay 5010. Supplied with 1 PCB but can fit a maximum of 2 PCB's each containing up to 5 plug in relays. Order relay (569.001.007) separately.</td>
</tr>
<tr>
<td>568.001.002</td>
<td>Relay 5010 PCB (5 Relay)</td>
</tr>
</tbody>
</table>

Metal boxed heavy duty alarm relay with 25A mains rated DPCO contacts. Available with either a 240VAC 12mA or 24VDC 50mA rated coil. Suitable for heavy duty switching applications.

RU1-24, this is a metal boxed auxiliary relay with 5 A Mains rated double pole contacts with a 24 VDC 25mA coil. This compact relay is suitable for interfacing a fire alarm controller to low current mains powered devices or contactors.

#### Relays

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>569.001.007</td>
<td>Cradle relay and retaining clip 2 C/O 28V nominal 700 ohm coil 5 amp (used with Relay 5000 and 5010).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>609.001.015</td>
<td>Polarised &amp; suppressed 24VDC double pole C/O relay with gold clad contacts, 2K ohm coil, 2 Amps @ 30VDC (PCB Mounted).</td>
</tr>
</tbody>
</table>

#### Fire Notice Frames

These frames are used mainly for Fire Alarm Zone Charts and are available to fit A4 to A1 size drawings. These come supplied with fitting hooks.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>525.001.005</td>
<td>A4 Dimensions: 212mm x 297mm</td>
</tr>
<tr>
<td>525.001.006</td>
<td>A3 Dimensions: 280mm x 356mm</td>
</tr>
<tr>
<td>525.001.007</td>
<td>A2 Dimensions: 483mm x 367mm</td>
</tr>
<tr>
<td>525.001.008</td>
<td>A1 Dimensions: 483mm x 737mm</td>
</tr>
</tbody>
</table>
Chapter 6 - System Accessories

Fire Resistant Cable

DÄTWYLER Lifeline cable is suitable for fire alarms and emergency lighting where BS6387 and BS7629 standards are acceptable and meets the installation and performance requirements of:

• BS5839 Pt.1 for use in fire alarms
• BS5266 for use with emergency lighting
• IEC331 fire resistance

Lifeline is LPCB approved to BS6387 CAT CWZ and BASEC approved to BS7629.

Lifeline is low smoke, zero halogen, has an integral aluminium backed mylar tape screen with tinned drain wire and requires no special terminations, tools or ferrules for installation.

Full details of Lifeline cable can be found in the DÄTWYLER Lifeline datasheets on the Tyco Safety Products website (www.tycoemea.com).

DÄTWYLER offer a wide range of cable and safety cabling systems including complete safety cable systems to DIN4102 part 12.

The following DÄTWYLER Lifeline cables are held in stock at Tyco Safety Products Letchworth warehouse, together with suitable P clips and glands. Cables are priced per metre but must be ordered in units of 100 metre. P clips and glands are priced each but must be ordered in packs.

Technical Specification

Conductor: Bare copper, solid or stranded to BS 6360
Insulation: Special double layer insulation according to BS 7655, E15
Inner Covering: High temperature resistant glass fibre tape
Screening: Al-Laminated tape with tinned copper drain wire, solid to BS 6360
Outer Sheath: Flame retardant polyolefin compound according to BS 7655, LTS3

Technical Properties

Rated Voltage: 300/500V
Test Voltage: 2000V, 50Hz core/core 2000V, 50Hz core/screen
Operating Temp: -15°C to +90°C
Core Colours:
2 cores + earth: red, black
4 cores + earth: red,yellow,blue,black
Sheath Colour: Red or white

General Properties
Zero Halogen, no corrosive gases - IEC 60754-2, BS 6425 part 1
Reduced fire propagation - IEC 60332-3, BS 4066 part 3
Minimum smoke emission - IEC 61034, BS 7622
Insulation integrity - IEC 60331 (FE180), BS 6387 (cat. CWZ)

Approvals
BASEC

Product Codes

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>DÄTWYLER Lifeline Fire Resistant P. Clips &amp; Glands</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Cores x Core Size x Colour</td>
<td>Qty. per pack</td>
</tr>
<tr>
<td>599.048.001</td>
<td>50</td>
</tr>
<tr>
<td>599.048.002</td>
<td>50</td>
</tr>
<tr>
<td>599.048.003</td>
<td>50</td>
</tr>
<tr>
<td>599.048.005</td>
<td>50</td>
</tr>
<tr>
<td>599.048.009</td>
<td>10</td>
</tr>
<tr>
<td>599.048.010</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>DÄTWYLER Lifeline cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Cores</td>
<td>Core Size (mm)</td>
</tr>
<tr>
<td>599.048.020</td>
<td>2 x earth</td>
</tr>
<tr>
<td>599.048.022</td>
<td>2 x earth</td>
</tr>
<tr>
<td>599.048.023</td>
<td>2 x earth</td>
</tr>
<tr>
<td>599.048.024</td>
<td>2 x earth</td>
</tr>
<tr>
<td>599.048.032</td>
<td>4 x earth</td>
</tr>
<tr>
<td>599.048.034</td>
<td>4 x earth</td>
</tr>
<tr>
<td>599.048.035</td>
<td>4 x earth</td>
</tr>
<tr>
<td>599.048.036</td>
<td>4 x earth</td>
</tr>
</tbody>
</table>

No. of Cores x Cross Section (in x mm²) | Copper Content (Kg/Km) | Total Weight (Kg/Km) | Outer Diameter (approx. mm) | Calorific Potential (KWh/m)
--- | --- | --- | --- | ---
2 x 1.0 | 19 | 75 | 7.4 | 0.16
2 x 1.5 | 29 | 97 | 8.2 | 0.18
2 x 2.5 | 48 | 141 | 9.6 | 0.24
4 x 1.0 | 39 | 114 | 8.6 | 0.23
4 x 2.5 | 96 | 233 | 11.3 | 0.37
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Chapter 7 - VESDA

Aspirating Smoke Detection

VESDA aspirating smoke detection provides a high sensitivity method for detection of fires at a very early stage - it is ideal for computer rooms and other high risk and high value areas. The range of products range from the Laserfocus for small risks up to the LaserPlus range of networkable 4 pipe panels.

Features

- Laser Based Absolute Smoke Detection
- Very Early Warning of a Potential Fire Incident
- Wide Sensitivity Range (0.025%-20% obs/m) (0.008 - 6.4% obs/ft)
- Detection Capabilities for smaller critical areas up to 500m
- Dual Stage Dust Filtration
- Programmable Alarm Thresholds
- Reliable Air Flow Monitoring
- Easy User Interaction
- AutoLearn Smoke & Flow
- Pre-engineered Pipe Designs

LaserFOCUS Aspirating Smoke Detection

Incorporating detection methodology derived from its VESDA predecessors - the VESDA LaserFOCUS multiple point air sampling technology works by utilising a highly effective aspirator that continually draws air into its laser detection chamber via a pipe network.

Accurate assessment of the air sample using calibrated detection and long detector life expectancy, are assured with a patented dual stage filtration process that both eliminates background ‘noise’ and preserves the optical integrity of the laser technology with its clean air bleed. The result of which is an unchallenged detection process able to provide reliable and consistent very early warning smoke detection performance across a diverse range of applications.

Technical Specification

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage:</td>
<td>18 to 30 Vdc</td>
</tr>
<tr>
<td>Current Consumption:</td>
<td>220mA quiescent</td>
</tr>
<tr>
<td></td>
<td>295 mA alarm</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>255H x 185W x 90Dmm</td>
</tr>
<tr>
<td>Weight:</td>
<td>2 kg</td>
</tr>
<tr>
<td>IP Rating:</td>
<td>IP30</td>
</tr>
<tr>
<td>Operating Temp:</td>
<td>0°C to + 40°C</td>
</tr>
<tr>
<td>Sampled Air:</td>
<td>0°C to + 40°C</td>
</tr>
<tr>
<td>Humidity:</td>
<td>5% to 95% (non condensing)</td>
</tr>
</tbody>
</table>

Product Codes

- 516.018.020 VLF-250 Vesda Laserfocus (with English overlay)
- 516.018.022 VIC-010 LaserFocus Vesda Network Card
- 516.018.023 VLF-500 Vesda Laserfocus (with English overlay)
Chapter 7 - VESDA

LaserCOMPACT™ and MX LaserCOMPACT™
The LaserCOMPACT and VLC800 MX Laser compact detector has been specifically designed to provide all the benefits of aspirating smoke detection, including very early warning, in single small areas and where space is a premium.

This has been achieved through the combination of approved LaserPLUS detection technology, dual stage filtration technology and a modified aspirator design incorporated in a smaller enclosure with simplified display.

Features
- Reduced size
- Absolute smoke detection
- Wide sensitivity range
- Single pipe inlet
- Simple display
- Referencing
- VESDAnet communication (VN)
- Dual stage dust filter
- Three alarm levels
- Configurable relays
- Air flow monitoring
- Optional remote display and relay capability
- Simple mounting design
- AutoLearn™
- Marine Approved Version

Product Codes
- 516.018.011 VLC-505-VN VESDA net Version (VN)
- 516.018.010 VLC-500-RO Relays Only Version (RO)
- 516.018.012 VLC800 MX Addressable Vesda Laser compact (Compatible with MX Consys versions 2.1 and above)
- 516.018.030 VLC-500-RO Relays Only Version (RO) Marine
- 516.018.031 VLC-500-VN Vesda.net Version (VN) Marine
- 516.018.032 VRT-J00 Remote Display c/w 7 relays Marine

Technical Specification
- Supply Voltage: 18 to 30Vdc
- Current Consumption: 225mA quiescent, 245mA in alarm
- Dimensions: 225H x 225W x 85Dmm
- Weight: 1.9Kg
- Operating Temp: -10°C to +39°C
- Sampled Air: -20°C to +60°C

The LaserCOMPACT is available in two versions, one that interfaces via relays only (RO) or across either the relays or VESDAnet™ (VN).

The VLC 800MX Laser Compact is available with an in-built MX interface to enable it to communicate directly with the MX loop.
Chapter 7 - VESDA

LaserPLUS Standard Modular Range

The detector assembly contains the laser detection chamber, high efficiency aspirator, monitored filter cartridge, control electronics and relay interface. The detector assembly can be used as a "distributed" system, with the display, programmer and VESDAnet socket modules mounted in a remote location.

Alternatively, the detector assembly can be configured as a "self-contained" system by replacing the detector’s blank panels with the display and/or programming modules.

Technical Specification

Supply Voltage: 18 to 30Vdc
Current Consumption: 240mA quiescent plus 50mA alarm (24Vdc at 3000 rpm)
Dimensions: 225H x 350W x 125D mm
Weight: 4.0Kg (including display and programmer modules)
Operating Temp: 0 °C to + 39°C
Humidity: 0-95% RH, non condensing

Features

• Wide sensitivity range
• Laser-based light source
• 4 Configurable alarm levels
• Purpose built Aspirator
• 4 In-line inlet pipes
• Flow sensor for each inlet pipe
• Wide range DC power
• Low-cost maintenance
• Dual stage filter
• Easy access to filter cartridge
• 7 Software configurable relays
• Recessed mounting
• Multiple exhausts

Product Codes

- 516.018.001 VLP-012 LaserPLUS Detector, programmer and display
- 516.018.002 VLP-002 LaserPLUS Detector and display
- 516.018.013 VLP-400 LaserPLUS Detector with fire OK LED
Chapter 7 - VESDA

Features
- Individual pipe annunciation
- Adaptive scan threshold
- Wide sensitivity range (0.005 to 20% obs/m)
- Laser based light source
- Configurable alarm levels
- Purpose built Aspirator
- 4 In-Line inlet pipes
- Flow sensor for each pipe inlet
- Low-cost maintenance
- Dual stage filter
- Easy access to filter cartridge
- Recessed mounting

LaserPLUS Scanners
VESDA LaserPLUS is also available in a Scanner configuration, which allows the system to distinguish and identify the pipe carrying smoke, while sampling multiple sectors.

The VESDA LaserPLUS will continue to sample from all sectors to monitor the fire growth and maintain full protection.

VLS-214/314 FD7/FD12 Scanner

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.018.004</td>
<td>VLS-214 FD7 Scanner, programmer and display with 7 relays.</td>
</tr>
<tr>
<td>516.018.007</td>
<td>VLS-314 FD12 Scanner, programmer and display with 12 relays</td>
</tr>
</tbody>
</table>

VLS-600/700 FD7/FD12 Scanner

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.018.016</td>
<td>VLS-600 FD7 Scanner with Fire OK LED</td>
</tr>
<tr>
<td>516.018.019</td>
<td>VLS-700 FD12 Scanner with Fire OK LED</td>
</tr>
</tbody>
</table>

VLS-204/304 FD7/FD12 Scanner

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.018.005</td>
<td>VLS-204 FD7 Scanner and display with 7 relays.</td>
</tr>
<tr>
<td>516.018.008</td>
<td>VLS-304 FD12 Scanner and display with 12 relays</td>
</tr>
</tbody>
</table>

Technical Specification
- Supply Voltage: 18 to 30Vdc
- Current consumption: (No display or programmer) 240mA quiescent plus 70mA alarm (24Vdc at 3000 rpm)
- Dimensions: 225H x 350W x 125D mm
- Weight: 4.0Kg including display and programmer modules
- Operating Temp: 0°C to + 39°C
- Humidity: 10-95% RH, non condensing
- Relay Outputs: 7 or 12

Product Codes
- 516.018.004 VLS-214 FD7 Scanner, programmer and display with 7 relays.
- 516.018.007 VLS-314 FD12 Scanner, programmer and display with 12 relays.
- 516.018.005 VLS-204 FD7 Scanner and display with 7 relays.
- 516.018.008 VLS-304 FD12 Scanner and display with 12 relays.
- 516.018.016 VLS-600 FD7 Scanner with Fire OK LED
- 516.018.019 VLS-700 FD12 Scanner with Fire OK LED

Datasheet - Product Code PSF105U “VESDA LaserPLUS”
Chapter 7 - VESDA

Remote Displays and Modules
A display module monitors the VESDA LaserPLUS detector. It reports a visual representation of smoke levels, and all alarm and fault conditions. The internal sounder warns personnel in the local area that an alarm threshold has been reached, or a fault has occurred.

It has a 20 segment vertical bar graph, a 2-digit numerical display, an audible sounder and clear alarm and fault indicators. It also has 4 push buttons to control the detector and the mode of the display.

Displays can be located at a convenient location - either within the detector module, or remotely on the VESDAnet. For monitoring convenience, multiple displays can be associated with a single detector.

### Features
- Four alarm levels (Alert/Action, Fire 1 & Fire 2)
- 20 segment vertical bar graph
- Alarm threshold indicators (Alert, Action & Fire 1)
- Audio and visual indication
- Alarm indicators
- Informative fault indicators
- Multi-mode numeric display (defaults to smoke obscuration)
- Acknowledged push-button presses
- Multiple language supported
- Addressable to any detector

### Technical Specification
- **Supply Voltage:** 18-30Vdc (when used in detector unit, Remote unit or 19" rack)
- **Current Consumption:**
  - 60mA quiescent plus 20mA alarm @24Vdc - (module only)95mA quiescent plus 20mA alarm @24Vdc (in remote mounting box)
- **Dimensions:** 150H x 146W x 90D mm
- **Operating Temp:** 0°C to +39°C
- **Humidity:** 10-95% RH, non condensing

### Product Codes

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.018.104</td>
<td>VRT-400 Remote scanner display including 7 relays</td>
</tr>
<tr>
<td>516.018.107</td>
<td>VRT-700 Remote scanner display - no relays</td>
</tr>
<tr>
<td>516.018.106</td>
<td>VRT-600 Remote scanner display with 12 relays</td>
</tr>
<tr>
<td>516.018.102</td>
<td>VRT-200 Remote display including 7 relays</td>
</tr>
<tr>
<td>516.018.105</td>
<td>VRT-300 Remote display including 7 relays</td>
</tr>
<tr>
<td>516.018.108</td>
<td>VRT-800 Remote display with 12 relays</td>
</tr>
<tr>
<td>516.018.119</td>
<td>VRT-J00 Compact Display c/w 7 relays</td>
</tr>
<tr>
<td>516.018.120</td>
<td>VRT-K00 Compact Display no relays</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.018.101</td>
<td>VRT-100 Remote display including 7 relays</td>
</tr>
<tr>
<td>516.018.103</td>
<td>VRT-300 Remote VESDAnet socket</td>
</tr>
<tr>
<td>516.018.100</td>
<td>VRT-100 Remote VESDAnet socket</td>
</tr>
<tr>
<td>516.018.120</td>
<td>VRT-K00 Compact Display no relays</td>
</tr>
</tbody>
</table>

02/12
The 19" sub-rack is available as a mounting option, with 4 mounting slots for display or programming modules.

**Technical Specification**
Dimensions: 128H x 482W x 120D mm

**Product Codes**
- 516.018.201 VSR-2000 19" Sub-rack with 1 detector display and 3 blanks
- 516.018.203 VSR-210 19" Sub-rack, 2 detector displays, programmer and 1 blank
- 516.018.204 VSR-2211 19" Sub-rack with 3 detector displays and programmer
- 516.018.206 VSR-2220 19" Sub-rack with 4 detector displays

Sub-rack configurations other than those available as standard can be supplied as custom built units. The sub-rack and cost of assembly are included in the VSR-CUSTOM.

The configuration of the custom built unit must be specified at time of ordering (e.g. 2 x VSU-0 and 2 x VSU-2 configured as VSR-0022).

Note: The order of the numbers (e.g. 0022) indicates the order in which the sub-units will be mounted in the sub-rack housing when looking from the front of the unit - from left to right.

**Product Codes**
- 516.018.260 VSU-0 Blank Sub-unit
- 516.018.261 VSU-1 Programmer sub-unit
- 516.018.262 VSU-2 Detector display sub-unit plus 7 relays
- 516.018.264 VSU-4 Scanner display sub-unit plus 7 relays
- 516.018.265 VSU-5 Blank sub-unit with 7 relays
- 516.018.266 VSU-8 Scanner display sub-unit with 12 relays
- 516.018.269 VSU-9 Blank display sub-unit with 12 relays
- 516.018.268 VSU-8 Scanner display sub-unit with 12 relays

A variety of other ancillaries are available from the Xtralis website www.vision-fs.com.

**Product Codes**
- 516.018.301 020-050 IP65 Enclosure
- 516.018.402 VHx0200 PC link HLI plus leads (MK2)
- 516.018.407 VESDA VPS-220 2A 24VDC PSU
- 516.018.410 VESDA VPS-250-E 5A 24VDC PSU
- 516.018.401 VH100 Hand held programmer plus leads

The following common VESDA LaserPLUS spares are kept in stock by Tyco Safety Products. Other spares can be supplied if required.

**Product Codes**
- 516.018.502 VSP-004 Scanner display (spare)
- 516.018.503 VSP-005 Filter cover door (spare)
- 516.018.506 VSP-006 Spare detector chassis and manifold
- 516.018.508 VSP-008 Spare remote termination card 7 relays
- 516.018.509 VSP-009 Spare scanner chassis and manifold
- 516.018.514 VSP-014 Spare header termination card 7 relays
- 516.018.515 VSP-015 Spare aspirator fan
- 516.018.504 VSP-005 Filter cartridge (spare)
Chapter 7 - VESDA

ICAM IAS800 Air Sampling Smoke Detection Systems

The ICAM IAS800 Air Sampling Smoke Detection System provides a flexible solution to meet the unique needs of numerous applications including industrial spaces such as cable tunnels, tamper proof and unobtrusive requirements for special accommodation, or can simply be used to replace spot (point) detectors in office environments.

The IAS800 system actively draws air from the protected area through sampling holes in a pipe network. Sampled air is then filtered before being analyzed by up to two MX Technology detectors.

The system utilizes a high performance aspirator and software configurable flow monitoring circuitry. The air flow level is displayed on a ten element bar graph that can be adjusted for high and low flow thresholds, and flow failure is reported as a device fault via up to two MX Technology MIM800 addressable modules.

Applications:
Ideal for areas where access is restricted, harsh environments and areas where a point detector would be damaged. Such as:-
- Lift Shafts
- Floor / Ceiling Voids
- Cabinet Protection
- Conveyor Tunnels
- Hose Down Areas
- Stables
- Prison Cells
- Areas with Low Ceilings

Technical Specification
Supply Voltage: 18 to 30Vdc
Current Consumption: 300mA
Dimensions: 259w x 184h x 166d mm
Weight: 2.77 Kg
Operating Temp: -10 to +55°C (with detectors)
Humidity: 10 to 90% RH NonCondensing
Sampling Pipes: 25 mm dia, 100m per inlet

Product Codes
516.016.301 ICAM IAS800 Aspirated Smoke
516.016.304 ICAM IAS801 Aspirated Smoke
516.016.305 ICAM IAS802 Aspirated Smoke
516.016.303 ICAM Course Filter (PK10)

Features
- Powerful fan
- Upto two x 100m pipe runs
- Pipes can be individually monitored for air flow with LED bar graph
- MX Loop and 24 VDC connections
- Fault monitored via the MX Loop
- IP65 enclosure
- Field serviceable air filters
- Uses standard 25mm Vesda pipe & fittings

Note: Detectors to be ordered separately.
Chapter 7 - VESDA

**VESDA Pipe, Fittings and Test Equipment**

VESDA Aspirating Pipe & Fittings are a metric standard of 25mm external diameter with suitable adaptors available for imperial to metric conversions. (British Standard approved pipes BS5391 Part 1 1976 and BS5391 Part 1 1976 for fittings). The British manufactured pipe is produced in red ABS under stringent quality control approved to BS EN ISO9001, which covers all aspects of product design, manufacture and inspection.

### Features
- Toughness and durability
- Chemical resistance
- Easy to joint
- Low Friction
- Wide temperature range
- Lightweight
- Red colour for easy identification

**Aspirating Pipe & Fittings**

<table>
<thead>
<tr>
<th>Pipe 25mm diameter</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESDA aspirating pipe, printed along its length on opposite side at 450mm intervals. 3 m length pipe</td>
<td>516.018.901</td>
</tr>
<tr>
<td>Order in multiples of 10.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socket 25mm</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight socket for 25mm pipe. Order in multiples of 10.</td>
<td>516.018.902</td>
</tr>
<tr>
<td>Socket 25mm</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socket union 25mm</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket union to facilitate servicing of pipework. Order in multiples of 1.</td>
<td>516.018.903</td>
</tr>
<tr>
<td>Socket union 25mm</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socket Adaptor 25mm to 3/4&quot;</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket adaptor, imperial to metric, to extend existing systems. Order in multiples of 5</td>
<td>516.018.904</td>
</tr>
<tr>
<td>Socket Adaptor 25mm to 3/4&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bend 25mm</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 degree Long Radius bend</td>
<td>516.018.904</td>
</tr>
<tr>
<td>Order in multiples of 5</td>
<td></td>
</tr>
<tr>
<td>Long Radius bend 90°</td>
<td></td>
</tr>
</tbody>
</table>
### Chapter 7 - VESDA

#### Elbow 25mm

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 deg elbow</td>
<td>516.018.905</td>
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Order in multiples of 5

#### End Cap 25mm

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>End cap 25mm</td>
<td>516.018.906</td>
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Order in multiples of 5

#### Equal Tee 25mm

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Tee 25mm</td>
<td>516.018.907</td>
</tr>
</tbody>
</table>

Order in multiples of 5

#### In-Line Filter

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Line Filter (red) for use with Vesda ASD systems</td>
<td>516.018.925</td>
</tr>
</tbody>
</table>

#### Filter Elements

<table>
<thead>
<tr>
<th>Description</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
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#### Pipe Clip 25mm

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Order in multiples of 10

#### Solvent Cement (0.25 Litre Tin)

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#### Capillary Tube Conical Sample Point Assembly

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</table>
## Chapter 7 - VESDA

### Test Equipment

<table>
<thead>
<tr>
<th>Wire Burn Test Box</th>
<th>Technical Specification</th>
<th>Product Code</th>
</tr>
</thead>
</table>
| ![Wire Burn Test Box](image) | - Built in timer  
- Insulated terminals  
- Selectable input voltage  
- Illuminated power on indicator  
- Robust enclosure  
- Supplied with UK power lead | 516.018.921 | Wire Burn Test Box |

<table>
<thead>
<tr>
<th>Smoke Test Wire</th>
<th>Technical Specification</th>
<th>Product Code</th>
</tr>
</thead>
</table>
| ![Smoke Test Wire](image) | - Size: 10/0.1mm, 0.078 mm² CSA  
- Length: 100m  
- Weight: 0.25Kg | 516.018.923 | Smoke Test Wire-Vesda 251-001 |
Chapter 7 - VESDA

VESDA ECO Gas Detection
Gas Detection and Aspirating Smoke Detection Plus Environmental Monitoring

The VESDA ECO is a gas detector module that is inserted into the pipework of a VESDA aspirating smoke detector. Different VESDA ECO models detect different gasses.

Applications
VESDA ECO by Xtralis provides protection from both fire and gas threats in powerful yet cost effective configurations to provide point, zone or total area coverage in a variety of applications including:

• Battery charging rooms
• Underground utility tunnels
• Boiler rooms
• Warehouses
• Manufacturing facilities
• Parking garages
• Transportation centres

Features
• Single gas or dual gas versions available
• Greater coverage than point gas detection
• Highly cost effective solution
• Can use the same pipe work to detect smoke and gas hazards
• Easily retrofitted to existing VESDA ASD installations
• Relay, 4-20mA and RS485 Modbus interfaces provided as standard
• High level interface to MZX via the DDM800 module
• On-board data logging

Areas requiring gas detection often also require a fire / smoke detection system. Xtralis VESDA ECO combines gas detection capability with VESDA aspirating smoke detection (ASD) at minimal additional cost. This combined solution can be significantly less expensive than a number of conventional standalone fixed point gas detectors and a separate fire detection system. Routine maintenance costs are also reduced as a single service contract can cover both systems.

It is common practice to provide constant ventilation of plant and process areas to reduce the risk of a gas hazard. The energy costs associated with this solution can be considerable. As an alternative, gas detection can be used to activate or boost ventilation only when required and consequently reduce HVAC operating costs. VESDA ECO provides an economical method of providing gas detection over a wide area for this application.
Chapter 7 - VESDA

VESDA ECO Gas Detection

Product Codes

VESDA ECO Detectors
- ECO-D-B-11 ECO Hydrogen H₂ Gas Detector H₂ 0-100% LEL
- ECO-D-B-12 ECO Methane CH₄ Gas Detector 0-100% LEL
- ECO-D-B-13 ECO Propane C₃H₈ Gas Detector 0-100% LEL
- ECO-D-B-31 ECO Oxygen O₂ Gas Detector 0-25% Vol
- ECO-D-B-41 ECO Carbon Monoxide CO Gas Detector 0-500 PPM
- ECO-D-B-42 ECO Ammonia NH₃ Gas Detector 0-100 PPM
- ECO-D-B-43 ECO Hydrogen Sulphide H₂S Gas Detector 0-100 PPM
- ECO-D-B-44 ECO Sulphur Dioxide SO₂ Gas Detector 0-10 PPM
- ECO-D-B-45 ECO Nitrogen Dioxide NO₂ Gas Detector 0-10 PPM
- ECO-D-B-41-45 ECO Dual Gas Detector Carbon Monoxide CO 0-500 PPM + Nitrogen Dioxide NO₂ 0-10 PPM

VESDA ECO Replacement Sensor Cartridges
- ECO-SC-11 ECO Spare Cartridge Hydrogen H₂ 0-100% LEL
- ECO-SC-12 ECO Spare Cartridge Methane CH₄ 0-100% LEL
- ECO-SC-13 ECO Spare Cartridge Propane C₃H₈ 0-100% LEL
- ECO-SC-31 ECO Spare Cartridge Oxygen O₂ 0-25% Vol
- ECO-SC-41 ECO Spare Cartridge Carbon Monoxide CO 0-500 PPM
- ECO-SC-42 ECO Spare Cartridge Ammonia NH₃ 0-100 PPM
- ECO-SC-43 ECO Spare Cartridge Hydrogen Sulphide H₂S 0-100 PPM
- ECO-SC-44 ECO Spare Cartridge Sulphur Dioxide SO₂ 0-10 PPM
- ECO-SC-45 ECO Spare Cartridge Nitrogen Dioxide NO₂ 0-10 PPM
- ECO-SC-41-45 ECO Spare Cartridge Dual Carbon Monoxide CO 0-500 PPM + Nitrogen Dioxide NO₂ 0-10 PPM

Technical Specification

Mechanical
- Weight: 250 g
- Dimensions: 110x125x34mm
- Pipe external diameter: 25 mm
- Terminal size: 1.5mm²
- Cable Access: 2xM16 bulkhead grommets

Environmental
- Ingress protection: IP65 and NEMA 4
- Operating temp: -20 to 55°C
- Sampled air temp: -20 to 55°C
- Humidity: 10-95% RH, non-condensing

Electrical
- Voltage: 18-30 VDC
- Current quiescent: Typically 60 mA @ 24 V DC
- Current alarm: 85 mA
- Power consumption: 3.2 W
- Outputs: RS 485 Modbus RTU
  - Four programmable relays 30 VDC
  - 1A 4-20 mA output
- Onboard Memory Card: Micro SD card 2 GB
Chapter 7 - VESDA

OSID Smoke Detection
Open-area Smoke Imaging Detection (OSID) by Xtralis is a new innovation in projected beam smoke detection technology. By using advanced dual wavelength projected beams and optical imaging technology, OSID provides a low-cost, reliable and easy to install solution that overcomes typical beam detection issues such as false alarm incidents and alignment difficulties.

Unique Detection Technology
The OSID system measures the level of smoke entering beams of light projected over an area of protection. A single OSID Imager can detect up to seven Emitters to provide a wide coverage area.

Technical Specification
Supply Voltage 20 to 30 VDC (24 VDC nominal)
Imager Current Consumption
Nominal (at 24 VDC): 4 mA (1 Emitter) 7 mA (7 Emitters)
Peak (at 24 VDC) during training mode: 27 mA
Emitter Current Consumption
Wired Version (at 24 VDC): 350 μA
Battery Version
Built-in 5 Year Battery
Adjustment Angle ±60° (horizontal) ±15° (vertical)
Maximum Misalignment Angle ± 2°

Dimensions (WHD)
Emitter / Imager 198 mm x 130 mm x 96 mm
Operating Conditions*
Temperature -10 °C to 55 °C *
Humidity 10 to 95% RH (non-condensing)
IP Rating IP 44 for Electronics
IP 66 for Optics Enclosure
Status LEDs
Fire Alarm (Red)
Trouble / Power (Bi-color Yellow / Green)

Product Codes
OSI-10 Imager 7° coverage
OSI-45 Imager 38° coverage
OSI-90 Imager 80° coverage
OSE-SP Emitter Standard Power
OSE-SPW Emitter Standard Power, Wired
OSE-HPW Emitter High Power, Wired
OSID-INST OSID Installation Kit
VKT-301 OSID Demo Kit (2 x OSE-SPW + 1 x OSI-90 + 1 x OSID-INST + Stand and Carry Case)

Features
- Maximum detection range of 150 metres for the OSI-10
- Status LEDs for Fire, Fault and Power
- High false alarm immunity
- Dust and intrusive solid object rejection
- Easy alignment with large adjustment and viewing angles
- No need for precise alignment
- Tolerant of alignment drift
- Automatic commissioning in under ten minutes
- Simple DIP switch configuration
- Dual wavelength LED-based smoke detection
- Simple and easy maintenance requirements
- Conventional alarm interface for straightforward fire system integration
- Three selectable alarm thresholds

Simple Installation and Maintenance
The OSID system consists of up to seven Emitters, for the 45° and 90° Imager units, located along the perimeter of the protected area, and an Imager mounted opposite. Each component can be mounted directly to the surface or can be secured with the supplied mounting brackets. Battery powered Emitters with up to five years battery life are also available to reduce installation time and cost.
Chapter 8 - Fire Phones and Disable Refuge

Fire Phones and Disable Refuge

Features
- Meets the requirements of BS5839 Part 9.
- Ideal for all disabled refuge and fire telephone applications.
- Compact 4 or 8 line (expandable to 12 or 16) wall mounted central control unit which saves space in crowded control rooms.
- Type B ‘disabled refuge’ outstations offer true duplex handsfree speech. Available in stainless steel or green steel flush, surface and weatherproof versions.
- Type A ‘fire telephone’ outstations come in locking or non locking red steel cabinets and offer true duplex speech. Flush and surface versions are available.
- Unique ‘auto learn’ facility allows fast network set up.
- All extensions can be named with user defined text of up to 15 characters.
- Fully monitored hardware and software.
- System operates at 24Vdc.
- In the event of mains failure, operation can be maintained for 24 hours (standby) and 3 hours (in use) using 2 x 12v 7Ah SLA batteries.

Cel TEL Disabled Refuge and Fire Telephone System
CelTEL comprises of a low cost, all-in-one, wall mounting controller which can handle 4 or 8 lines (expandable to 12 or 16 lines via an 8 line slave unit). Typically it would be located in a building’s control room (or in smaller applications at a fire services access point). It allows the management and/or the emergency services to communicate via a telephone style handset with the system’s outstations.

Cel TEL 1-64 Line Controllers

CelTEL 4 Way Master EVC Panel with Handset and Display
- Allows operators to communicate with up to 4 x Type A or B outstations.
- Supplied with a backlit LCD and handset.
- Requires 2 x 12v 7Ah SLA batteries.
- Can be semi flush mounted using the bezel.
- Optional tamper resistant cabinet.

CelTEL 8 Way Master EVC Panel with Handset and Display
- Allows operators to communicate with up to 8 x Type A or B outstations.
- Same features as 4 Way Master EVC Panel.
- Can be connected to a Master EVC Panel to increase its line capacity up to 16.
- Does not require a separate mains supply or batteries since it takes power from the Master EVC Panel.
- Can be semi flush mounted using the bezel.

CelTEL Slave EVC Panel with 8 Additional Lines
- Can be connected to a Master EVC Panel to increase its line capacity up to 16.
- Does not require a separate mains supply or batteries since it takes power from the Master EVC Panel.
- Can be semi flush mounted using the bezel.

CelTEL EVC Network Communication Card
- Allows the interconnection of up to 4 x Master Controllers over a 1km network.
- One card required per networked Master Controller.
- Allows systems of up to 64 lines (4 x Master Panels each with a Slave Panel) to be easily setup.
- Any Master EVC Panel can take control of the system by the input of a special code.
- For networked systems that do not require multiple control points, Master Controllers without Handsets are available.

Anti Tamper Enclosure for the CelTEL Master EVC Panel
- A tough tamper resistant cabinet for housing the Master EVC Controller in areas that are accessible to the general public.
- Helps ensure the Controller remains operational at all times by reducing the risk of vandalism.
- Flush and semi flush stainless steel and weather resistant options also available.

For larger systems up to 4 controllers can be interlinked using a network communication card allowing systems of up to 64 lines to be easily implemented.
Chapter 8 - Fire Phones and Disable Refuge

Type B Disabled Refuge Outstations

**Features**
- Allows anyone in the Refuge Area to communicate with building control at the touch of a button and vice versa.
- High quality brushed stainless steel or green finish.
- Includes connections for an optional audio frequency induction loop system.
- Easily interfaced to strobes, CCTV activation relays and/or disabled persons toilet alarm systems.

Weatherproof IP65 Enclosure for the Type B Surface Mounting Disabled Refuge Outstation

**Features**
- An IP65 rated weather resistant enclosure designed for use with the Surface Type B Outstation.
- Allows an IP65 rated Type B Outstation to be created for use in external areas.
- Supplied with a locking keyswitch mechanism that can be changed to a semi secure handle.
- Optional bezel available.

Type A Fire Telephone Outstations

**Features**
- Designed for use in fire telephone and stadium marshalling applications.
- Allows fire marshals and stewards to communicate via a telephone handset.
- Typically located at entrances and fire fighting lobbies.
- Supplied in a lockable red steel wall mounted cabinet that can be semi flushed with an optional bezel.
Chapter 8 - Fire Phones and Disable Refuge

Disabled Persons Toilet Alarm

Features

- Includes everything required for a BS8300 compliant emergency assistance alarm.
- Can be interfaced with the CelTEL Disabled Refuge System by wiring directly to a spare line.

Communication network (only required on networked systems) 4 x 2 core 1.5mm enhanced fire rated cable Total network length = 1km
Total number of networked systems = 4 (or 64 lines)
Chapter 8 - Fire Phones and Disable Refuge

### Technical Specifications

**Master Controllers**
- **Dimensions / Weight**: W 422 x H 250 x D 80mm (base); W 435 x H 269 x D 11mm (lid); 3.1kg
- **Standby Battery**: 2 x 12V 7Ah VRLA (valve regulated lead acid) connected in series
- **Mains Fuse / Battery Fuse**: 1A 20mm HRC / 1A 20mm
- **Max number of lines**: 8 (expandable to 16 if a slave unit is fitted) networking allows up to 64 line systems
- **Outstations per line**: 1
- **Outstation cabling requirements**: 2 core 1mm² or 1.5mm² enhanced fire rated cable, max. 1km line max. cable resistance

**Network Specifications**
- **Max no. of Master Panels per network**: 4 (providing 32 lines, or 64 lines if each Master Controller has a Slave Panel fitted)
- **Connection**: Via Network Communication Card (one per networked master)

**Anti Tamper Enclosure**
- **Dimensions**: W 603 x H 465 x D 200mm

**Expansion Units (CelTEL Slave)**
- **Cabling requirements**: 2 x CAT 5 patch leads (supplied)
- **Dimensions / Weight**: W 412 x H 250 x D 80mm (base); W 435 x H 269 x D 11mm (lid); 3.1kg
- **Paint Finish Lid and Base**: RAL 7035 (Grey Texture)

**Disabled Refuge (Type B) Outstations**
- **Dimensions & Weight (Flush)**: W 175 x H 250 x D 55mm (assembled); W 152 x H 228 x D 53mm (backbox); 1.4kg
- **Dimensions & Weight (Surface)**: W 175 x H 240 x D 55mm (assembled); 1.4kg
- **Paint Finish**: Stainless Steel facia, RAL 9005 (jet black) backbox
- **Dimensions (IP65 cabinet)**: W 200 x H 298 x D 124mm approx (unassembled w/o handle fitted)

**Fire Telephone (Type A) Outstations**
- **Dimensions & Weight (Push Door)**: W 202 x H 278 x D 105mm; 3.8kg
- **Dimensions & Weight (Lift Lock)**: W 202 x H 278 x D 125mm; 3.8kg

### Product Codes

- 2572200: CelTEL 4 Way Master EVC Panel with Handset and Display
- 2572201: CelTEL 8 Way Master EVC Panel with Handset and Display
- 2572202: Master Controller without Handset
- 2572203: CelTEL Slave EVC Panel with 8 Additional Lines
- 2572204: CelTEL EVC Network Communication Card
- 2572206: Anti Tamper Enclosure for the CelTEL Master EVC Panel
- 2572210: Type B Stainless Steel Flush Mounting Disabled Refuge Outstation
- 2572211: Type B Stainless Steel Surface Mounting Disabled Refuge Outstation
- 2572212: IP65 Enclosure for the Type B Surface Mounting Disabled Refuge Outstation
- 2572213: Type A Fire Telephone Outstation with Push Door
- 2572214: Type A Fire Telephone Outstation with Lift up Lock
- 2572215: Type B Green Flush Mounting Disabled Refuge Outstation
- 2572216: Type B Green Surface Mounting Disabled Refuge Outstation
- 2572217: Semi Flush Bezel for Type A Outstation
- 2572219: Disabled Persons Toilet Alarm
Chapter 9 - Water Leak Detection

Water Leak Detection Alarms

The Water Leak detection system is a water detection system designed to be used in situations where not just flooding but also undue dampness could cause damage or ultimately become dangerous.

The system comprises an electronic monitoring and alarm control panel connected to sensors located in the area requiring protection and can be custom made with a variety of types of detection sensor to suit the characteristics of the areas to be covered.

This system has been designed for ease of installation and modern micro-electronics ensure a high degree of reliability.

Typical Applications:
• Computer Rooms, Telecommunications and Office Areas
• Electrical Plant and Tank Areas
• Valuables, Antiques and Artifacts
• In general, wherever the presence of water could be a potential problem to people, equipment, perishable stock, data/information archives and record stores, hospital theatres and so on.

There are also sensors for the detection of non-conductive fluids such as diesel/oil.

Features
• Suitable for computer rooms
• Wide range of sensors
• Relay contacts to interface to BMS or fire alarm controllers

DETEK Water Flood Detection Controllers

Controller electronics are housed in a robust cabinet and provide accurate sensing for water leakage and comprehensive alarm facilities. The system is ideal for all types of applications utilizing a mixture of sensors on a single control panel to give optimum flexibility. All systems have a test facility to enable simple regular confidence checking of the equipment. Lockable cabinets constructed in mild steel with stove enamelled finish for surface mounting. 20mm Knockouts are provided for ease of cable entry.

Indications of status on each zone, wiring fault and supply healthy. Mains fail battery back-up indication where applicable. The 85dBA pulsed audible alarm has a fully functional local mute facility.

Approvals:
• Electro Magnetic Compatibility - All of the control panels and sensors have been performance tested to meet the requirements of EN55022 for emissions and EN50092 for immunity.
• British International Standards - The equipment is manufactured in accordance with EN ISO 9001 procedures.

Technical Specification

Dimensions:
160H x 220W x 62D mm
(Single Zone)
270H x 362W x 84D mm
(Multi Zone)

Supply:
Single phase 240VAC, 25VA
Max. Relay Contacts:
Two sets of volt free change over contacts for alarm and one set for wiring fault or power loss. These may be used to link into Building Management Systems or for remote alarms and beacons up to 2A, 50Va.c./d.c.

Product Codes
508.200.004  1 Zone - water/flood control panel
508.200.005  2 Zone - water/flood control panel
508.200.006  4 Zone - water/flood control panel
Sensor Cable
The Sensor cable comprises of high flexibility conductors insulated by Helagaine mono-filament braiding. Cable or tape sensors are suitable for general protection under false floors, or can be fastened directly to pipework enabling coverage in ceiling void areas.

The cables can be connected together, up to 100m, to cater for larger areas. For each zone a 'start of line' and an 'end of line' module is required.

Sensor Pads
Sensor pads are constructed from glass fibre with an anti-corrosive nickel plated surface. Pads will detect a few cc's of liquid and are either face up for location under vulnerable points or face down for general coverage.

Probe Sensors
Probe sensors are the least sensitive and are often employed as water level sensors. In general the sensor is enclosed in a protective cover which also provides a means for fixing and 20mm gland entry. The probe is designed for vertical mounting at skirting level though may be mounted in voids or sumps. A screw allows 16mm height adjustment after the sensor is installed.

**CD5 & CD10 Sensing Cable**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Sensor Cable Dimensions: 8mm dia</td>
<td>516.200.010 CD5 metre length of sensing cable</td>
</tr>
<tr>
<td></td>
<td>516.200.011 CD10 10 metre length of sensing cable</td>
</tr>
</tbody>
</table>

**SOL Start of Line for Sensing Cable**

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<td>516.200.012 SOL Start of Line for Sensing Cable</td>
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**EOL End of Line for Sensing Cable**

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<tr>
<td>516.200.013 EOL End of Line for Sensing Cable</td>
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**SFD Sensor Pad - Face Down**

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<tr>
<td>Sensor Pads Dimensions: 115H x 150Wmm</td>
<td>516.200.006 SFD Sensor Pad - Face Down</td>
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**SFU Sensor Pad - Face Up**

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<td>Sensor Pads Dimensions: 115H x 150Wmm</td>
<td>516.200.016 SFU Sensor Pad - Face Up</td>
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**SFD/C Cover for Sensor Pad**

<table>
<thead>
<tr>
<th>Technical Specification</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Pads Dimensions: 115H x 150Wmm</td>
<td>516.200.007 SFD/C Cover for Sensor Pad</td>
</tr>
</tbody>
</table>
## Chapter 9 - Water Leak Detection

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.200.004</td>
<td>SPS/V Vertical Mount Probe Sensor c/w cover</td>
</tr>
<tr>
<td>516.200.014</td>
<td>FF1 Fixing Clips for Sensing Cable</td>
</tr>
<tr>
<td>516.200.015</td>
<td>CDT Warning Labels for Sensing Cable</td>
</tr>
</tbody>
</table>
Chapter 9 - Water Leak Detection

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Chapter 10 - Special Hazards

Introduction

Tyco Safety Products manufacturers and provides a wide range of equipment suitable for use in hazardous areas where normal equipment cannot be safely used. The range extends from IS detectors for use on conventional systems to flameproof and I.S. flame detectors for use in the most demanding of environments.

A complete range of Barriers, Housings, Callpoints and Sounders are available to fully support the product range.

Electrical equipment supplied for use in Hazardous Areas must comply with rigid requirements to ensure that its introduction into the area does not increase the existing risk. Thorn Security Limited have designed Intrinsically Safe (I.S.) systems and equipment for use in Hazardous Areas which can be connected to Fire Detection Systems installed in Safe Areas.

There are two I.S. systems used by Thorn Security Limited. System 620 for use in conventional fire detection circuits and System 800 for use with MINERVA MX digital addressable circuits. The control equipment of the fire detection system must be connected either via a Shunt Diode Safety Barrier or by an Isolating Interface to System 620 and System 800.

Two Sounder Systems (one earthed and one isolated) are available for use with System 620 and System 800.

APPLICATION - GENERAL

The nature of the Hazard must be defined by the customer and a survey carried out to determine the proximity of the safe area to establish cable runs. The probability of a flammable mixture being present is defined by a Zone Number. Flammable gases are classified in Groups and their minimum spontaneous ignition temperature is categorised by Class. Thorn Security equipment marked EExe ia IIC T5 would be suitable for use in worst case conditions, e.g. Zone 0 (ia), Hydrogen (IIC), T5 (100 deg C).

The Fire Alarm Equipment and Safety Barriers should be placed as near as possible to the containment wall of the Hazardous Area. This minimises the cable lengths between the barrier and the Hazardous Area and thus the capacity to store energy.

In order that an Installation will comply with the ATEX certification designated for each system it is essential that the certified devices are connected with cables of the specified limits. These limits have been certified for specific classifications of hazard in order that energy storage is limited.

Safety Barriers are incorporated into the circuit feeding the Hazardous Area to limit the voltage excursion and the current. The limit of voltage and current will prevent a fault within the I.S. circuit exceeding the ignition conditions.

THE FITTING OF SAFETY BARRIERS, ISOLATING INTERFACES OR SOUNDER DRIVERS DOES NOT IN ITSELF MAKE A CIRCUIT TO WHICH THEY ARE CONNECTED INTRINSICALLY SAFE.
Chapter 10 - Special Hazards

APPLICATION - HAZARDOUS AREA

A Hazardous Area is defined as one where in the presence of a flammable mixture, ignition may cause an explosion. There is a risk of an explosion when substances (whether liquid, gas, vapour, dust, powder, or solid) are mixed with air to form a flammable atmosphere.

To prevent the possibility of ignition in flammable atmospheres special precautions for the construction and use of electrical apparatus is required. One method of construction and use is defined as INTRINSICALLY SAFE.

APPLICATION - INTRINSIC SAFETY

To preclude the risk of an explosion, equipment in the Hazardous Area must not be capable of causing ignition under normal operating, or specific fault conditions. Limiting the energy which can be stored in, and released by, electronic circuitry and cables in the Hazardous Area is achieved by using Intrinsically Safe equipment and by placing restrictions on the cable parameters.

To complete the explosion protection concept of a circuit a Safety Barrier must be connected between the Hazardous Area equipment and the source of power in the Safe Area. The electrical power which may be supplied or drawn from a Safe Area (i.e. an area with no definable hazard) is limited by using Shunt-Diode Safety Barriers or Isolating I.S. Interface Units.

Connection of the Hazardous Area equipment to the Safety Barrier must comply with the limitations listed in the System Certification. These limits have been certified for specific classifications of hazard in order that energy storage in the cables is limited. If the Electrical Energy in a circuit is less than the value required to ignite a potentially explosive mixture then the circuit is said to be INTRINSICALLY SAFE.

APPLICATION - GALVANIC ISOLATORS

Galvanic isolators protect the integrity of an Intrinsically Safe circuit under "Fault" conditions.

Galvanic isolators operate in a fully floating electrically isolated condition, no High Integrity I.S. earth is required.

SHUNT-DIODE SAFETY BARRIERS AND INTERFACE UNITS

A Shunt-Diode Safety Barrier, Isolating I.S. Interface Unit, or Isolating Sounder Driver protects the integrity of an Intrinsically Safe circuit under ‘Fault’ conditions. The over-voltage protection provided by a Shunt-Diode Safety Barrier is with reference to the safety barrier earth connection. It is therefore imperative that a HIGH INTEGRITY EARTH is used for this type of barrier.

A High Integrity Earth is a current sink of nominally zero impedance capable of passing a fault current without compromising the function of the Shunt-Diode Safety Barrier. Connection to this earth and the barrier earth must not be more than 1 ohm and not less than 4mm² cross section area.

Several types of safety barrier are commercially available and include Single circuit and Dual circuit Shunt-diode, and galvanically isolating types. The Shunt-diode type requires a High Integrity Earth connection and the galvanically isolating type operates in a fully floating electrically isolated condition; no High Integrity I.S. earth is required.

A Shunt-Diode Safety Barrier DOES NOT make a circuit to which it is connected Intrinsically Safe.

CERTIFICATION

The design and construction of the equipment that may be installed in a Hazardous Area is controlled by a scheme of inspection and certification to the EU ATEX Directive 94/9/EC. The inspection and certification is carried out by an approved ATEX notified body.

Designers are licensed to reproduce the marks on equipment that complies with the Certification listed in its License Number.

Only ATEX approved barriers/isolators and intrinsically safe hazardous area equipment may be used.
Chapter 10 - Special Hazards

Special Hazard Flame Detectors

FV300 Array Based Flame Detectors

The FlameVision FV300 is a range of detectors that use a 256 cell multi-infrared array, to detect flame and provide positional information so that the location of a flame within the detector’s field of view can be communicated. Additionally, an inbuilt CCTV camera can transmit a “detector’s eye view” of the protected area to a CCTV monitor. Superimposed onto the CCTV picture will be the positional data highlighting exactly where the source of alarm is coming from.

Features

- ATEX, IDEX & FM approved
- Fast, reliable flame detection using multi-infrared detection
- Simplifies alarm handling for remote control room situations
- Provides immediate visual ID of alarm location
- Robust stainless steel housing with heated window
- Automatic monitoring of detector functionality
- 256 cell infrared sensor array monitoring the field of view to separately identify flame and non flame sources
- Range of integral interface options
- Masking of part of field of view with software configuration tool
- 60m detection range with 90° field of view
- Remote video monitoring with fire location and detector information
- Automatic optical path monitoring
- History Log stored in detector

An angle of view of 90 degrees on the horizontal plane has been achieved with little or no reduction in sensitivity over the entire field. A pan fire covering one-tenth of a square metre can be detected by the FlameVision FV300 at a range of 60 metres. Such a small fire at that range would not normally be visible on a CCTV picture. The superimposed positional data on the CCTV display highlights and identifies the source of the alarm. This can save precious time and allow executive actions to take place at the earliest opportunity thus minimising potential fire losses.

Markets:
The FlameVision FV300 detectors are intended for applications demanding a high level of protection and where a rapid response to fire is important.

Typical applications are:
- Refineries
- Drilling and production plants
- Fuel loading facilities
- Compressor stations
- LNG/LPG processing & storage
- Gas turbines
- Chemical production
- Aircraft hangars
- Waste management/transfer
- Sports stadiums
- Tank farms
- Printing industry
- Warehousing
- Munitions storage

Range of Interfaces:
As standard the FV300 is supplied with the following interfaces:

- Fire and fault relays, programmable as normally open or normally closed
- 4 to 20mA analogue current output, proportional to the flame detection signal (sink or source)
- RS485 serial data port suitable for network connection using a MODBUS protocol. This can be used to communicate the positional co-ordinates of a flame within the field of view of the detector
- Video output compatible with twisted pair video cable

Flame Vision Models:
There are six FlameVision models in the FV300 detector range. There are models with and without cameras. Each model is also supplied either with a sealed back-box and a pre-connected 3m length of cable or with two threaded cable gland entries.

<table>
<thead>
<tr>
<th>FV300 Flame Detector Model Nos.</th>
<th>Cable gland entries</th>
<th>Sealed back-box</th>
</tr>
</thead>
<tbody>
<tr>
<td>No camera</td>
<td>FV311S</td>
<td>FV312S</td>
</tr>
<tr>
<td>PAL Format camera</td>
<td>FV311SC</td>
<td>FV312SC</td>
</tr>
<tr>
<td>NSTC Format camera</td>
<td>FV311SC-N</td>
<td>FV312SC-N</td>
</tr>
</tbody>
</table>
# Chapter 10 - Special Hazards

## Technical Specification

### Mechanical Characteristics

<table>
<thead>
<tr>
<th>Dimensions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>138.8 mm</td>
</tr>
<tr>
<td>Width</td>
<td>152.8 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>91.7 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3.96 kg</td>
</tr>
<tr>
<td>Mounting bracket weight</td>
<td>1.54 kg</td>
</tr>
</tbody>
</table>

### Materials

- **Enclosure:** Stainless Steel 316L, ANC4BFLC to BS 3146: Part 2
- **Detection window:** Sapphire
- **Guard/label plate:** Stainless Steel 316S16 to BS 1449: Part 2
- **Mounting bracket:** Stainless Steel 316S16 to BS 1449: Part 2
- **Screws etc. exposed to the elements:** Stainless Steel 316 A4

### Electronic modules

- Fibreglass substrate

### Electrical access

- FV311 Series detectors: Standard M20 gland holes (two)
- FV312 Series detectors: Multi twisted pair screened cable

### Environmental Temp., Humidity, Enclosure Protection and Pressure

- **Operating temp. range without camera:** -40°C to +80°C
- **Operating temp. range with camera:** -10°C to +55°C
- **Maximum withstand temp.:** 120°C (for 10minutes)
- **Storage temp. range:** -40°C to +80°C
- **Relative humidity:** Up to 99% (non condensing)
- **Enclosure protection:** Tested to IP66 and IP67
- **Normal operating atmospheric press:** 910 mbar to 1055 mbar
- **Heat radiation from sun:** 0 to 1kW/m² typical

## Product Codes

- **516.300.006** FV311S Flameproof Detector - cable gland entries - no camera
- **516.300.008** FV311SC Flameproof Detector - cable gland entries - PAL camera
- **516.300.007** FV311SC-N Flameproof Detector - cable gland entries - NTSC camera
- **516.300.055** FV312S Flameproof Detector - sealed back box - no camera
- **516.300.057** FV312SC Flameproof Detector - sealed back box - PAL camera
- **516.300.056** FV312SC-N Flameproof Detector - sealed back box - NTSC camera
- **517.300.001** JB300 Exe Junction Box
- **517.300.002** MB300 Mounting Bracket
- **517.300.005** WH300 Stainless Steel Weather Hood
- **517.300.006** MK300 Field Spares Kit
- **517.300.021** WT300 Walk-test Controller
- **517.300.022** CTI300 Off-line Configuration Tool Kit
Chapter 10 - Special Hazards

S200 Plus Triple IR Solar Blind Flame Detector

Unlike other flame detectors on the market the MINERVA S200 PLUS is available in both Intrinsically Safe (EEx ia) and Flameproof (EEx d) models.

The intrinsically safe models are suffixed by the letter ‘i’ and are ATEX Certified EEx ia IIC T5. As part of an intrinsically safe circuit, it is suitable for zones 0, 1 and 2 where group IIC gases or lesser hazards can be continuously present in explosive concentrations.

The flameproof models are suffixed by the letter ‘f’ and are ATEX Certified EEx d IIC T6. The detectors are suitable for zones 1 and 2 where group IIC gases or lesser hazards can be intermittently present in explosive concentrations.

Features

- Triple waveband infrared solar blind flame detection for optimum false alarm immunity
- Unrivalled black body rejection over a wide range of source temperatures
- Range adjustable to 50 metres for a 0.1m² petrol pan fire
- Discrimination of optical faults (dirty windows) from other faults by the built-in self test feature
- Housing designed for easy installation of cabling
- Models also available with relay or 4-20mA outputs
- Patented dual filter for complete solar blindness
- 100° field of view on IS versions
- 90° field of view on Flameproof versions
- IECEx Approved

Technical Specification

- Detector Material: Stainless Steel 316L/316
- Dimensions: 167H x 167W x 89D MM
- Weight: 4.5Kg
- Gland Entry: 2 x 20mm
- Range: 0.1m² petrol at 50m
- Operating Temp: -40°C to +80°C (IECEX & ATEX)
- Flame Proof: -20°C to +60°C/+80°C (IECEX/ATEX)
- Response Time: Field Selectable 3, 6 and 12s
- Sensitivity: 3 range settings
- Relative Humidity: 95% (100% intermittent)
- Enclosure: IP 66 and IP 67

Product Codes

- 517.001.266 S200+ Spares Kit & Sealant
- 517.001.263 S200+ Weather Protection Assembly
- 517.001.184 S200+ Detector Mounting Bracket

Approvals

Various models are certified by a number of approval bodies including those listed below.

- ATEX Approved models have a suffix ‘1’ as the third digit.
- FM Approved models have a suffix ‘2’ as the third digit.
### S200 Plus Triple IR Solar Blind Flame Detector

**Additional Features**
- Flexible mounting and angular adjustment
- 2 x 20mm field cable entries
- IP66/67 housing designed for external use
- Rugged 316 stainless steel housing and mounting bracket
- Variable response times and sensitivity settings
- Remote self test and range setting
- True window test in detection area (i.e. not in the edge of the window)
- Terminals provided for Remote LED connection where relevant
- BASEEFA (CENELEC) certified
- Approved to EN54 Pt 10 (Except FV282F)
- IEC 61508 Approved (SIL2)
- FM, DNV and LRS certified
- Very low power consumption (0.35mA)
- Models available with Conventional or Analogue Addressable interface (requires 2 core cable only)

<table>
<thead>
<tr>
<th>Interface</th>
<th>Approvals</th>
<th>Conventional</th>
<th>ATEX</th>
<th>FM</th>
<th>Product Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>S231+i</td>
<td></td>
<td>4-20mA</td>
<td>AXX Addressable</td>
<td>Relay</td>
<td>Ex 'ia'</td>
</tr>
<tr>
<td>S231i+</td>
<td></td>
<td></td>
<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S232f+</td>
<td></td>
<td></td>
<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S241+i</td>
<td></td>
<td></td>
<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S241f+</td>
<td></td>
<td></td>
<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S261f+</td>
<td></td>
<td></td>
<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S271+i</td>
<td></td>
<td></td>
<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S271f+</td>
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<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FV282F+</td>
<td></td>
<td></td>
<td>AXX Addressable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 10 - Special Hazards

System 800 Fire Detection for Hazardous Areas

A complete range of ATEX and ICEx certified detectors suitable for use in Zone 0, 1, 2, 20, 21 & 22 Areas. MX digital addressable for use on Minerva MX Fire Controllers.

There is a risk of fire or explosion in all areas containing flammable substances in the form of liquids, gasses, dust or materials. Where these combustible materials are mixed with air in sufficient concentration they form a flammable atmosphere and the areas containing them are designated Hazardous Areas. When a source of ignition, such as a spark, is applied in a hazardous area, an explosion could take place. Electrical equipment supplied for use in Hazardous Areas must comply with requirements to ensure that its introduction into the area does not increase the existing risk. System 800 is an MX Technology™ Intrinsically Safe (I.S) system for use in Hazardous Areas which can be connected to the MX Fire Detection Systems installed in the Safe Areas.

The System designer must be familiar with ATEX certification and have successfully completed an appropriate recognised course in Intrinsic Safety. Design of the system requires that the designer has all the information concerning the installation correctly documented. The nature of the hazard must be defined by the customer and a survey carried out to determine the proximity of the safe area to establish cable runs.

The probability of a flammable mixture being present is defined by a zone number. Flammable gasses are classified in Groups and their minimum spontaneous ignition temperature is categorised by Class. Tyco Safety Products supplied equipment marked Ex II 1 GD System is suitable for use in worst case conditions. E.G. Zone 0 (ia), Hydrogen (IIC), T5 (100 deg C). The Fire Alarm Equipment and Safety Barriers should be placed as near as possible to the containment wall of the Hazardous Area. This minimises the cable lengths between the barrier and the Hazardous Area and thus the capacity to store energy.

In order that an Installation will comply with the ATEX certification designated for each system, it is essential that the certified devices are connected with cables of the specified limits. These limits have been certified for specific classifications of hazard in order that energy storage is limited.

The number of devices connected to the barrier and located in the Hazardous Area must always be limited to not more than the listed maximum.

The use of the MX designer Software tool will ensure correct loop loading and its use is essential to the design process.

System 800 is for use in MX Technology Addressable Fire detection circuits.

Datasheet PSF129U
Manual 17A-02-DETEX

Features
• Addressable I.S. MX Technology
• Compatible with S271i+ flame detector
• Compatible I.S. callpoint.
• ATEX certified intrinsically safe Ex II 1 GD System
• Suitable for use in Zone 0, 1, 20, 21 & 22
Chapter 10 - Special Hazards

801PHEx/811PHEx Smoke and Heat Detector

The 801PHEx/811PHEx Optical Smoke & Heat Detectors form part of the 800Ex Series of MX Addressable Fire Detectors. The detector plugs into the 5BEX base.

- Optical smoke only detector (sensitivity - High, Normal or Low)
- HPO smoke detector (sensitivity - High, Normal or Low)
- Heat only rate-of-rise (A1R) detector (no sensitivity selection)
- Heat fixed temperature 60°C (A2S, no sensitivity selection)
- Optical (sensitivity - High, Normal or Low) combined with heat fixed temperature 60°C (A2S)
- HPO (sensitivity - High, Normal or Low) combined with heat fixed temperature 60°C (A2S)

Technical Specification
- ATEX Code: Ex ia EX II 1GD
- Cenelec Code: Ex ia IIC T5/Ex ia D 20 T100°C/EExn A II T4
- Weight: 0.2Kg detector and base (approx)
- Operating Temp. Range: -20°C to +70°C
- Storage Temp: -40°C to +70°C
- Relative Humidity: 95% non-condensing

Product Codes
516.800.530
801PHEx Optical Smoke + Heat Detector
516.800.534
811PHEx Marine Optical Smoke + Heat Detector

801CHEx/811CHEx CO & Heat Detector

The 801CHEx/811CHEx Carbon Monoxide plus Heat Detector form part of the 800Ex Series of MX Addressable Fire Detectors. The detector plugs into the 5BEX base.

- Heat only detector (A1R or A2S) (sensitivity: High, Normal or Low)
- Compensated Carbon Monoxide detector (sensitivity: High, Normal or Low)
- Compensated Carbon Monoxide detector (sensitivity: High or Normal) combined with heat (A1R)

Technical Specification
- ATEX Code: Ex ia EX II 1GD
- Cenelec Code: Ex ia IIC T5/Ex ia D 20 T100°C/EExn A II T4
- Weight: 0.2Kg detector and base (approx)
- Operating Temp. Range: 0°C to +55°C/-20°C to +40°C
- Storage Temp: -20°C to +55°C
- Relative Humidity: 95% non-condensing

Product Codes
516.800.531
801CHEx Carbon Monoxide + Heat Detector
516.800.535
811CHEx Marine Carbon Monoxide + Heat Detector

801HEx/811HEx Heat Detector

The 801HEx/811HEx Heat Detectors form part of the 800Ex Series of MX Addressable Fire Detectors. The detector plugs into the 5BEX base.

- EN54-5 A1R, rate-of-rise normal ambient
- EN54-5 A2S, fixed 60°C
- EN54-5 CR, rate-of-rise high ambient
- EN54-5 A2S, fixed 60°C
- EN54-5 CR, rate-of-rise high ambient

Technical Specification
- ATEX Code: Ex ia EX II 1GD
- Weight: 0.2Kg detector and base (approx)
- Operating Temp. Range: -20°C to +70°C
- Storage Temp: -40°C to +70°C

Product Codes
516.800.532
801HEx Heat Detector
516.800.536
811HEx Marine Heat Detector

801FEx Flame Detector

The 801FEx point type flame detector forms part of the MX Technology® range of digital addressable fire detectors. The detector plugs into the 5BEX base.

- EN54-5 A1R, rate-of-rise normal ambient
- EN54-5 CR, rate-of-rise high ambient

Technical Specification
- ATEX Code: Ex ia EX II 1GD
- Weight: 0.2Kg detector and base (approx)
- Operating Temp. Range: -20°C to +70°C
- Storage Temp: -40°C to +80°C

Product Codes
516.800.066
801FEx I.R. Flame Detector
516.800.067
811FEx Marine I.R. Flame Detector

IS28 Banshee Sounder

The IS28 MK4 intrinsically safe Banshee sounder has been developed for use in hazardous areas. Up to a maximum of four sounders may be connected to one I.S. sounder driver. Each IS28 Banshee has an output of 94dB(A) at one metre, this sound output will reduce to approximately 90dB(A) when four sounders are fitted to a circuit.

Technical Specification
- IS28 Banshee T6371X II 1GD
- Weight: 0.2Kg detector and base (approx)
- Operating Temp. Range: -20°C to +70°C
- Storage Temp: -40°C to +80°C
- Relative Humidity: 95% non-condensing
Chapter 10 - Special Hazards

CP840Ex Break Glass Call Point

The CP840Ex Weatherproof Break Glass Call Point is designed to monitor and signal the condition of a switch contact associated with the break glass.

Technical Specification
- ATEX Code: Ex IIC T5
- Cenelec Code: Ex ia IIC T5/Ex iaD 20 T100°C
- Operating Temp Range: -25°C to +70°C
- Storage Temp: -30°C to +70°C
- Relative Humidity: Up to 95% RH non condensing

Product Code
- CP840Ex MX Digital Addressable Break Glass Call Point
- Manual Vol 17A-02-CPEEx

CP830Exn Break Glass Call Point

The CP830Exn Weatherproof Break Glass Call Point is designed to monitor and signal the condition of a switch contact associated with the break glass.

Technical Specification
- ATEX Code: Ex IIC T4
- Cenelec Code: Ex nL IIC T4 (-20°C ≤ Ta ≤ +40°C)
- Operating Temp Range: -25°C to +70°C
- Storage Temp: -40°C to +80°C
- Relative Humidity: Up to 95% RH non condensing

Product Code
- CP830Exn Marine MX Digital Addressable Break Glass Call Point
- Manual Vol 17A-02-CP830Exn

IF800Ex Interface Module

The Intrinsically Safe IF800EX Interface Module is designed to monitor fire contacts such as sprinkler flow switches. The IF800Ex is contained within a grey compression moulded glass filled polyester box with 2 x 20mm cable gland holes.

Technical Specification
- ATEX Code: Ex II 1GD
- Cenelec Code: Ex ia IIC T5

Product Code
- IF800EX MX Digital Addressable Interface Module Assembly
- Manual Vol 17A-02-IFEX

EXI800 Interface Module & Galvanic Isolators

The EXI800 Interface Module, used with a galvanic isolator, provides a path for an MX panel to transparently communicate to slave devices (000Ex Detectors, 904EX Interface Module or CP840Ex Addressable Break Glass Callpoints) connected to the Intrinsically Safe loop. The Interface reduces the standard MX loop supply voltage and signalling currents to levels that are acceptable for hazardous areas. The EXI800 can detect a short circuit of the left-loop, the right-loop, or the IS spur and will isolate the offending circuit from the other loop connections. The IS loop output of the EXI800 interfaces with the Pepper+Fuchs KFD0-CS-Ex1.54 Galvanic Isolator supplying loop voltage and signalling currents to the Intrinsically Safe loop. The EXI800 is supplied complete with one service tool EX dongle that is required to activate address programming using the standard MX service tool. The MTL 5021 Isolating Sounder driver enables an Intrinsically Safe sounder device located in the hazardous area, to be controlled from the safe area. The MTL 5021 has one channel and is suitable for connecting suitable certified loads in Zone 0, IIC, T4-6 hazardous areas.

Product Codes
- EXI800 Interface Module 514.001.063
- Pepper+Fuchs KFD0-CS-EX1.54 Galvanic Isolator 517.001.259
- MTL 5021 I.S. Sounder Driver 517.001.245
- Spare Service Tool Ex Dongle 517.001.246

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IS Barrier Enclosure

The MTL DX* Series enclosure equipment will house the EXI800 (28mm pitch), Pepper+Fuchs KFD0-CS-Ex1.54 Galvanic Isolator (20mm pitch) and MTL 5021 I.S. Sounder Driver 16.2mm pitch). The units are DIN rail mounted with 70mm of rail supplied with the DX070 and 170mm of rail with the DX170.

Enclosures are usually selected on the number of units they will accommodate. The following table shows the capacity of each of the enclosure types.

<table>
<thead>
<tr>
<th>Enclosure</th>
<th>MTL5000 Isolators 16mm Pitch</th>
<th>MTL7000 barriers 7.5mm Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX070</td>
<td>4(2*)</td>
<td>9(5*)</td>
</tr>
<tr>
<td>DX170</td>
<td>10 (8*)</td>
<td>22(18*)</td>
</tr>
</tbody>
</table>
* Use these figures when two IMB37 mounting brackets for tagging/earthing rail accessories are included.

Product Codes
- DX070 Enclosure 517.001.248
- DX170 Enclosure 517.001.247

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Chapter 10 - Special Hazards

BG MIM800 Callpoint EX II 2 GD
An Ex II 2 GD Dust Approved & Increased Safety (EExemd) Resettable Manual Alarm Call Point for use with the EEexd Flameproof MIM800 input module in EEexd housing on an Addressable Detection & Releasing System in gas and dust explosive risks.

Please note that the above part is only compatible with Consys Version 17.0 and above when used with 577.800.067.

Features
- Glass Reinforced Polyester Enclosure – light, strong and not subject to corrosion.
- Resettable Element.
- Explosion protected EEexe (ATEX Approved).
- In line and end of line resistors.
- Red Epoxy Finish.
- 7 x terminals.
- Lift flap for extra protection against inadvertent operation.
- 1 x changeover switch.
- Captive cover screws.
- Key operated test facility – simple but secure.
- 1 x M20 bottom cable entry.

Product Code
514.001.107 EX II 2 GD Dust Approved & Increased Safety (EExemd) Resettable Manual Alarm Callpoint

Protection: Explosion Protected EExed(Increased Safety)
Certification: ATEX approved Ex II 2 GD BAS02ATEX2105X EExemdICT4 CENELEC EN50014 EN50019 EN50018 EN50028
Suitable for use in Zones 1 & 2
Voltage: Up to 250V
Certified Temperature: -20°C to +50°C
Ingress Protection: IP66 & 67
Switch Ratings(1 x Changeover):
DC 0-30V 5A (Resistive) or 3A (Inductive)
DC 30-50V 1A Resistive or Inductive
AC 0-254V 5A Resistive or Inductive
Cable Entries: 1 x M20 Bottom
Weight: 1.2Kg
Material: Anti Static U.V. Resistant Glass Reinforced Polyester
Finish: Red Epoxy Paint
Resistors: Alarm: 100 Ohm EOL: 250 Ohm
Labelling: Burning House Symbol
Dimensions (W X H X D): 120mm x 126mm x 75mm

Technical Specification
Chapter 10 - Special Hazards

Features
- Copper Free Metal Alloy Aluminium Housing
- Explosion Protected to EExd (ATEX Approved)
- 9 x Terminals
- 3 x M20 Cable Entries
- Fast Interrupt Mode for Call Points

MIM800 Input Module in EExd Housing

An EExd Flameproof MIM800 Addressable Module for extending the monitoring of Call Points and other Alarm Inputs on an MX, ZX and MZX Addressable System in gas and dust explosive risks.

Please note that the above part is only compatible with Consys Version 17.0 and above when used with 514.001.107.

Product Code
577.800.067  MIM800 Input Module in EExd Housing

Technical Specification

Protection: Explosion Protected EEExd (Flameproof)
Certification:
- Ex II 2 GD LOM02ATEX2037
- EEExdICT6
- CENELEC EN50014
- EN50018
- EN50019
- EN50281-1-1
- EN60439-1
- Suitable for use in Zones 1 and 2 to IEC 60079-10
- Suitable for use in Zones 21 and 22 to EN50281-3

Voltage: 40Vdc
Certified Temperature: -20°C to +55°C
Ingress Protection: IP67
Terminals: 9 x 2.5mm²
Cable Entries: 3 x M20 (No Blanking Plugs)
Weight: 0.8 Kg
Material: Metal Alloy Aluminium - Copper Free
Dimensions (W X H X D): 108mm x 98mm x 90mm
DDM800 Fire & Gas Detector Module in EExd Housing

A DDM800 Fire and Gas Detector Module in a EExd Housing for use in special hazardous area applications.

The DDM800 Universal Fire and Gas Detection Module is a detector module designed to interface a wide range of conventional fire detectors to MZX Technology® control panels.

Additionally the option is available to connect two 4 to 20mA devices and to configure the alarm thresholds within the control panel.

Features

- Allows the DDM800 to be mounted in a Hazardous Area.
- Allows the monitoring of Call Points and other Alarm Inputs (including 4-20mA devices) designed for use in Hazardous Areas on an MX, ZX and MZX Addressable System in gas and dust explosive risks.
- Approved for use in Gas Zone 1 and 2.
- Approved for use in Dust Zone 21 and 22.
- Copper Free Metal Alloy Aluminium Housing.
- Explosion Protected to EExd (ATEX Approved).
- 5 x M20 Cable Entries (3 x bottom and one each side).

The DDM800 is supported by MXConsys® Version 15 and above and Issue 6 MXDesigner. It is recommended that MXDesigner is used for all system designs using DDM800 modules. For detailed design and application details, please refer to document "DDM800 Universal Fire & Gas Detector Module Product Application and Design Information" reference 17A-02-DDM.

Technical Specification

Protection: Explosion Protected EExd (Flameproof)
Certification: Ex II 2 GD LOM02ATEX2037
               EExdIICt6
               CENELEC EN50014
               EN50018
               EN50019
               EN50281-1-1
               EN60439-1
Suitable for use in Zones 1 and 2 to IEC 60079-10
Suitable for use in Zones 21 and 22 to EN50281-3
Voltage: 40Vdc
Certified Temperature: -20°C to +55°C
Ingress Protection: IP67
Terminals: 12 x 2.5mm²
Cable Entries: 5 x M20 (3 Blanking Plugs Supplied)
Weight: 1.3 Kg
Material: Metal Alloy Aluminium - Copper Free
Dimensions (W X H X D): 150mm x 150mm x 104mm

Product Code

577.800.066 DDM800 Fire & Gas Detector Module in EExd Housing
Chapter 10 - Special Hazards

Features

- Allows the SIO800 to be mounted in a Hazardous Area.
- Allows the status of a normally open contact to be monitored and/or a volt free change over relay output in a Hazardous Area to be interfaced onto an MX, ZX and MZX Addressable System in a gas and dust explosive risk.
- Approved for use in Gas Zone 1 and 2.
- Approved for use in Dust Zone 21 and 22.
- Copper Free Metal Alloy Aluminium Housing.
- Explosion Protected to EExd (ATEX Approved).
- 5 x M20 Cable Entries (3 x bottom fitted with blanking plugs and one each side supplied open).

SIO800 I/O Module in EExd Housing

The SIO800 Single Input/Output Module is designed to monitor a normally open contact input and provide a volt free changeover relay output. This enables inputs and outputs from hazardous area devices to be easily interfaced to the MX, MZX, MX2, T2000 and ZX Range of Control Panels.

Technical Specification

- Protection: Explosion Protected EExd (Flameproof)
- Certification:
  - Ex II 2 GD KEMA 09ATEX0110
  - EEExiICEx
  - CENELEC EN50014
  - EN50018
  - EN50019
  - EN50281-1-1
  - EN60439-1
  - Suitable for use in Zones 1 and 2 to IEC 60079-10
  - Suitable for use in Zones 21 and 22 to EN50281-3
- Voltage: 40Vdc
- Certified Temperature: -20°C to +55°C
- Ingress Protection: IP67
- Terminals: 9 x 2.5mm²
- Cable Entries: 5 x M20
- Weight: 1.64 Kg
- Material: Metal Alloy Aluminium - Copper Free
- Dimensions (W X H X D): 150mm x 150mm x 104mm

Product Code

- Code: 555.800.072
- Description: SIO800 Single Input/Output Module in EExd Housing

Suitable for use in Zones 1 and 2 to IEC 60079-10
Suitable for use in Zones 21 and 22 to EN50281-3

Voltage: 40Vdc
Certified Temperature: -20°C to +55°C
Ingress Protection: IP67
Terminals: 9 x 2.5mm²
Cable Entries: 5 x M20
Weight: 1.64 Kg
Material: Metal Alloy Aluminium - Copper Free
Dimensions (W X H X D): 150mm x 150mm x 104mm
System 620 Fire Detection for Hazardous Areas

Features
- Conventional I.S. system
- Suitable for worst case (EEx ia IIC T5)
- High Performance Optical (HPO) smoke detector
- Compatible with S231+ flame detector
- Compatible I.S. callpoint
- Suitable for use in Zone 0,1,2,20,21 & 22

System 620 Fire Detection
A complete range of ATEX and ICEX certified detectors suitable for use in Zones 0,1,2,20,21 & 22 areas for use on conventional panels. There is a risk of fire or explosion in all areas containing flammable substances in the form of liquids, gasses, dust or materials. Where these combustible materials are mixed with air in sufficient concentration they form a flammable atmosphere and the areas containing them are designated Hazardous Areas. When a source of ignition, such as a spark, is applied in a hazardous area, an explosion could take place. Electrical equipment supplied for use in Hazardous Areas must comply with requirements to ensure that its introduction into the area does not increase the existing risk. System 620 is an Intrinsically Safe (I.S.) system for use in Hazardous Areas which can be connected to a conventional fire Alarm Controller installed in the Safe Area.

The number of devices connected to the barrier and located in the Hazardous Area must always be limited to not more than the listed maximum.

When a mixture of devices is connected to any one zone the numbers must be reduced in proportion to the ratio of the load presented to the barrier. When a System includes the use of an S231+, it must be remembered that the load it presents to the circuit is twice that of a detector. A mixture of large and small load devices connected to a zone will require a calculation for the number of allowed devices.

System 620
System 620 is for use in conventional fire detection circuits. Two Sounder Systems, (one earthed and one isolated), are available and either can be used with System 620.

Datasheet - PSF122U
Chapter 10 - Special Hazards

High Performance Optical Smoke

The MR601TEX has been developed to overcome the slower response of the optical detectors to hot burning fires, by increasing the sensitivity of the optical detector when it is associated with a rapid change in temperature. In this way it is intended to become a detector which can cover some of the risks currently covered by ion chamber detectors. Smoke detectors will not detect burning alcohol or other clean burning liquids which do not generate smoke particles.

| ATEX Code: | Ex II 1GD |
| Combination Code: | Ex ia IC T5 |
| Operating Temp Range: | -20°C to +70°C |
| Storage Temp: | -25°C to +80°C |
| Relative Humidity: | 95% non-condensing |

Product Code
516.054.011.Y (Vol 01B-04-D12)
MR601TEX Conventional High Performance Optical Smoke Detector

Heat Detectors

If environmental conditions rule out the use of smoke detectors, then a heat detector of the type MD601EX/MD611EX may provide an acceptable, though less sensitive, alternative. For general use, and particularly where the ambient temperature may be low, a ‘Rate-of-Rise’ heat sensor is to be preferred. This type of sensor reacts to abnormally high rates of change of temperature and provides the fastest response over a wide range of ambient temperatures. A fixed temperature limit is also incorporated in these detectors. In many environments, e.g. kitchens and boiler rooms, sudden, large changes in temperature are considered ‘normal’. Rate-of-rise detectors are generally not suitable in these cases and fixed temperature (static) types should be used.

| ATEX Code: | Ex II 1GD |
| Combination Code: | Ex ia IC T5 |
| Operating Temp Range: | -20°C to +70°C |
| Storage Temp: | -25°C to +80°C |
| Relative Humidity: | 95% non-condensing |

Product Codes
516.052.051.Y (Vol 01B-04-D11)
MD601EX Conventional Rate of Rise Heat Detector
516.052.041.Y (Vol 01B-04-D11)
MD611EX Conventional Fixed Temperature Heat Detector

Flame Detectors

Flame detectors, unlike smoke and heat detectors, do not rely on convection to transport the fire products to the detector nor do they rely on a ceiling to trap the products. They can therefore be used to protect large open areas without sacrificing speed of response to flaming fires. In order to ensure full coverage however, flame detectors do require direct line of sight to all parts of the protected area.

Infra-red flame detectors such as the 601FEx are designed to respond rapidly to fires which involve clean-burning fuels such as alcohol or methane, i.e. fires which would not be detected by smoke detectors. The 601FEx Flame Sensor, by virtue of its operating wavelength and flicker discrimination is insensitive to normal environmental influences. For outdoor use a solar-blind detector (e.g. the S200 Plus) should be used. The 601FEx Flame detector should, normally, only be used inside buildings to supplement heat and smoke detectors.

| ATEX Code: | Ex II 1GD |
| Combination Code: | Ex ia IC T5 |
| Operating Temp Range: | -20°C to +70°C |
| Storage Temp: | -40°C to +80°C |
| Relative Humidity: | 90% non-condensing |

Product Codes
516.600.066 (Vol 01C-02-D10)
601FEx Infra-Red Flame Detector
516.600.067 (Vol 01C-02-D10)
601FEx-M Infra-Red Flame Detector (Marine)
## Chapter 10 - Special Hazards

### Enhanced Carbon Monoxide Fire & Heat Detector

The MDU601EX detector is a combined CO and Rate of Rise Heat Detector where the sensitivity of the CO detector is enhanced in response to a fast rate of change of temperature.

- **ATEX Code:** Ex II 1GD
- **Cenelec Code:** Ex ia IIC T5/
- **Ex iaD 20 T100°C**
- **Operating Temp Range:** -10°C to +55°C
- **Storage Temp:** -20°C to +55°C
- **Relative Humidity:** 90% non-condensing

**Product Code**

516.061.001.Y (V 018-04-D14)

MDU 601EX Enhanced Carbon Monoxide Fire & Heat Detector

### 5BEX Detector Base and Ancillaries

- **ATEX Code:** Ex II 1GD
- **Cenelec Code:** Ex ia IIC T5/
- **Ex iaD 20 T100°C**
- **Operating Temp Range:** -25°C to +70°C
- **Storage Temp:** -40°C to +80°C
- **Relative Humidity:** 95% non-condensing

**Product Codes**

- 517.050.023
- 5BEX 5” Universal Ex Base
- 517.050.603
- DHM-5B deckhead mounting
- 517.001.120
- System 601 EOL Unit (Pk 10)
Chapter 10 - Special Hazards

Features
- Intrinsically Safe
- Weatherproof to IP67
- Compatible with System 620

Intrinsically Safe Callpoint - ATEX Approved
The MCP220Ex is a conventional callpoint for use on the ATEX Certifed System.

Technical Specification
- Dimensions: 93H x 98W x 66Dmm
- Weight: 270g
- Material: PC/ABS
- Conventional: Yes
- Colour: Red
- ATEX Code: Ex II 1GD
- CENELEC: EX ia IIC T4 Ga /EX iaD T135°c Da
- ATEX Cert: SIRA 06ATEX2131X
- IP Rating: IP67

Product Code
- 514.001.109 MCP220Ex Red Callpoint intrinsically safe for use with ATEX certifed conventional system 620.
Chapter 10  - Special Hazards

BG3 Intrinsically Safe Conventional Callpoint -Atex Approved

This manual fire alarm call point is designed in accordance with the latest European Callpoint Standard (EN54-11). Weatherproof to IP66/IP67 and available certified intrinsically safe, simple apparatus manufactured from glass reinforced polyester (GRP) which provides a robust, corrosion free construction and ensures effective and reliable operation in harsh industrial and offshore environments. Units are supplied in self coloured GRP with a ‘Burning House’ duty label as standard.

Features
• Intrinsically safe
• Weatherproof to IP66/IP67
• Robust GRP Housing

Technical Specification
Model: BG3I
Protection: Explosion Protected EExia (Intrinsically Safe)
Certification: CENELEC EN60014, 020 BASEEFA EExia IIc T4
Cert No. BAS00ATEX1067X Suitable for use in Zones 0,1 & 2
Voltage: Up to 28V (IS)
Certified Temp: -55°C to +55°C
Ingress Protection: IP66 & IP67
European Standard for Callpoints: EN54-11
Terminals: 6 X 4.0mm²
Cable Entries: 2 X M20 Bottom
Weight: 0.5Kg
Material: UV resistant glass reinforced polyester
Finish: Natural Red GRP

Product Code
514.001.059 Intrinsically Safe Callpoint (BG3I4NBN)
Chapter 10 - Special Hazards

**BG Conventional Callpoint EX II 2 GD**

This EX II 2 GD Dust Approved & Increased Safety (EExedm) Conventional Break Glass Manual Alarm Call Point is fitted with a 470 ohm Alarm Level Resistor and a 4K7 ohm EOL Resistor for use with Tyco Conventional Detection Circuits including the DIM800 and DDM800 MX Modules.

**Technical Specification**

- **Protection:** Explosion Protected EExed (Increased Safety)
- **Certification:**
  - ATEX approved Ex II 2 GD
  - BASG0ATEX2105X
  - EExedmIICT4
  - CENELEC EN50014
  - EN50019
  - EN50028
- **Voltage:** Up to 250V
- **Certified Temperature:** -20°C to +50°C
- **Ingress Protection:** IP66 & 67
- **Terminals:** 9 x 2.5mm – up to 60V
- **Switch Ratings (1 x Changeover):**
  - DC 0-30V 5A (Resistive) or 3A (Inductive)
  - 30-50 1A Resistive or Inductive
  - AC 0-254V 5A Resistive or Inductive
- **Cable Entries:** 2 x M20 Bottom
- **Weight:** 1.2Kg
- **Material:** Anti Static U.V. Resistant Glass
- **Finish:** Red Epoxy Paint
- **Resistors:**
  - Alarm: 470 Ohm
  - EOL: 4K7 Ohm
- **Labelling:** Burning House Symbol

**Features**

- Polyester Enclosure – light, strong and not subject to corrosion.
- Break Glass.
- Explosion protected EExe (ATEX Approved).
- In line and end of line resistors.
- Red.
- 9 x terminals.
- Lift flip for extra protection against inadvertent operation.
- 1 x changeover switch.
- Captive cover screws.
- No hammer required – the glass is covered by a membrane thus protecting the operator from glass fragments.
- Key operated test facility – simple but secure.
- 2 x M20 bottom cable entries.

It is also fitted with a removable link which allows it to be connected on its own or with other Conventional Devices to a Tyco Conventional Detection Circuit.

**Product Code**

514.001.108 EX II 2 GD Dust Approved & Increased Safety (EExedm) Conventional Break Glass Manual Alarm Callpoint
Chapter 10  - Special Hazards

**XB8 Intrinsically Safe Beacon**

This ruggedised, intrinsically safe and weatherproof beacon is intended for use in potentially explosive atmospheres, and has been designed with high ingress protection to cope with the harsh environmental conditions found offshore and onshore in the oil, gas and petrochemical industries.

**Technical Specification**

- **Certification:** CENELEC EN50014, 20 & 39
- **Material:** UV stable glass reinforced polyester body. Clear polycarbonate cover/lens. Retained stainless steel cover screws.
- **Finish:** Painted Red
- **Tube Type:** Xenon discharge
- **Lens Colour:** Clear
- **Terminals:** 8 x 2.5mm²
- **Flash Rate:** 1 flash per second
- **Cable Entries:** Up to 3 x M20 via knockouts
- **Tube Energy:** 0.5 Joules
- **Weight:** 1.4kg
- **Certified Temperature:** -55°C to + 60°C
- **Ingress Protection:** IP66 & IP67
- **Tube Life:** > 1 x 10⁶ Flashes
- **Voltage:** 24V via suitable barrier
- **Current Consumption:** 71mA max nominal

**Features**

- Robust GRP Body
- Suitable for offshore and petrochem
- Certified Intrinsically Safe

**Product Code**

540.001.038  Intrinsically Safe Xenon Beacon (XB8BB024CNR)

**Banshee IS28**

IS28VCL MK4 Banshee SS839 Low Frequency ATEX and ICEx certified intrinsically safe grey sounder - 94dBA, 10mA. Certificate Number : ITS03ATEX21311x EXII 1GD EExia IIC T5.

**Product Code**

576.501.013  IS28VCL MK4 Banshee

**Features**

- Robust GRP Body
- Suitable for offshore and petrochem
- Certified Intrinsically Safe

**Product Code**

540.001.038  Intrinsically Safe Xenon Beacon (XB8BB024CNR)

Please refer to MEDC for guidance on cable capacitance and barriers.
Chapter 10 - Special Hazards

DB3 Flameproof Horn Sounder

This lightweight all GRP flameproof sounder is intended for use in potentially explosive gas and dust atmospheres and has been designed with high ingress protection to cope with the harsh environmental conditions found offshore and onshore in the oil, gas and petrochemical industries.

The flamepaths, flare and body, are manufactured completely from a UV stable glass reinforced polyester. Stainless steel screws and sinter are incorporated thus ensuring a corrosion free product. A tapered flamepath is used to overcome the problems of assembly of parallel spigot flamepaths.

Technical Specification

- Terminals: 6 x 2.5mm²
- Mounting: Stainless steel bracket with ratchet facility
- Cable Entries: 2 x 20mm EExd
- Tone Selection: 27 user selectable tones.
- Certification: CENELEC EN50014,18,19 BASEEFA Cert. No. BAS00ATEX2097X, EExd IIC. Zones 1 and 2.

 nominalOutputCurrentTable

<table>
<thead>
<tr>
<th>Nominal Output (dBA)</th>
<th>Input Current (mA)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>50</td>
</tr>
<tr>
<td>105</td>
<td>100</td>
</tr>
<tr>
<td>108</td>
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</tr>
<tr>
<td>115</td>
<td>350</td>
</tr>
<tr>
<td>118</td>
<td>380</td>
</tr>
</tbody>
</table>

Features

- For use in hazardous areas
- Robust GRP construction
- Powerful Output, up to 118dBA

Product Code

576.501.049 Flameproof Horn Sounder (DB3D048N2BNR)

*Output measured with 24VDC input voltage. Tone set to 970Hz continuous.
Chapter 10 - Special Hazards

XB11 Flameproof Xenon Beacon

These certified beacons have been designed for use in potentially explosive gas and dust atmospheres and harsh environmental conditions. The glass reinforced polyester enclosures are suitable for use offshore or onshore, where light weight combined with corrosion resistance is required.

The beacon housing is manufactured completely from a U.V. stable, glass reinforced polyester. Stainless steel screws and mounting bracket are incorporated ensuring a totally corrosion free product.

Features
- Robust Corrosion Resistant GRP body
- High Power (5 Joules)
- Certificated Flameproof

Technical Specification
- Voltage: 24Vdc
- Tube Energy: 5 Joules
- Peak Current Consumption (mA): 320
- Effective Intensity (Cd): 29
- Peak Intensity (Cd): 2213
- Power Consumption (Watts): 8
- Weight: 2.5Kg
- Certified Temperature: EExd -55°C to +70°C (T4)
  -55°C to +55°C (T5)
- Ingress Protection: IP66 & IP67
- Terminals: 6 x 2.5mm2
- Entries: 2 x 20mm ISO EExd.
- Certification: BASEEFA EExd IIB
- 135°C (-55 to AMB +70°C)T4
- 100°C (-55 to AMB +55°C)T5
- 85°C (-55 to AMB +40°C)T6
- Cert. No. 99 ATEX 2195X.
- CENELCC EN60079 and EN50018

Product Code
540.001.039 Flameproof Xenon Beacon
(XB11B02406RNBNNR)

Material
- Body: Glass reinforced polyester
- Lens: Glass
- Cover Screws + Backstrap: Stainless steel 316
- Finish: Red
Chapter 10 - Special Hazards

The following section relates to a range of intrinsically safe barrier and isolator equipment for use with Tyco Safety Products manufacturing fire detection systems. It essentially encompasses the relevant MTL 5000 and MTL 7000 series barriers plus the associated housing options as an alternative to existing MTL 700 series equipment.

On all issues of intrinsically safe systems design, please refer to Manual 26A for guidance.

Intrinsically Safe Barriers - Atex Approved

### Galvanic Isolators - MTL 5000

The MTL 5061 is a two channel interface for use with conventional fire and smoke detectors located in hazardous areas. This galvanic isolator is CE marked, and replaces the MTL 3043 barrier option. It is suitable for connecting loads in Zone 0, IC, T4-e hazardous areas if suitably certified.

The MTL 5021 Isolating sounder driver enables an intrinsically safe sounder device located in the hazardous area, to be controlled from the safe area. The MTL 5021 barrier is designed as a CE marked replacement for the existing MTL 3021 barrier. It has one channel and is suitable for connecting loads in Zone 0, IC, T4-e hazardous area if suitably certified. When designing new systems or upgrading existing MTL 3000 series systems to MTL 5000 series, please use the appropriate MTL “DX” series enclosure equipment (16.2mm pitch).

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>MTL5061 2 channel galvanic isolator for conventional detector zone - used on BASEEEFA Approved System 601</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.244</td>
<td>MTL 5061 2 channel galvanic isolator for conventional detector zone - used on BASEEEFA Approved System 601</td>
</tr>
<tr>
<td>517.001.245</td>
<td>MTL 5021 1.S. Sounder driver for conventional detection circuits designed in accordance with System 601</td>
</tr>
</tbody>
</table>

### Zener Barriers - MTL 7700

The MTL 7700 Series intrinsically safe shunt-diode safety barriers are innovative devices designed to provide exceptionally high packing densities, straightforward installation and simplified connection, commissioning and maintenance facilities. The MTL 7700 Series include secondary replaceable fuses. These are useful where there is the possibility of faults occurring during commissioning, which would otherwise blow the barriers' internal safety fuses.

One secondary replaceable fuse for each barrier channel is provided and is lower in value than the safety related fuse. Fuses are packaged in small mouldings which can be latched in a disconnect position to break the safe and hazardous areas during commissioning, maintenance and fault finding, thus avoiding the need for additional disconnect terminals.

Please note that this barrier is a direct alternative for the MTL 728+ barrier.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>MTL 728 + Zener Safety Barrier for conventional detection circuits designed in accordance with System 601</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.201</td>
<td>MTL 728 Single Channel Zener Safety Barrier</td>
</tr>
<tr>
<td>517.001.202</td>
<td>MTL 728 Dual Channel Zener Safety Barrier</td>
</tr>
<tr>
<td>546.004.005</td>
<td>Intrinsically safe sounder circuit interface module</td>
</tr>
</tbody>
</table>

### Zener Barriers - MTL 700

The MTL700 series are 1 or 2 channel devices which pass the electrical signal from fire detectors to the control panel or from the control panel to the output device. The barriers limit the amount of energy to a level that cannot ignite explosive atmospheres. The over-voltage protection provided by a Shunt-Diode Safety Barrier is with reference to the safety barrier earth connection. It is therefore imperative that a HIGH INTEGRITY EARTH is used for this type of barrier (14.2mm pitch).

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>MTL728 Single Channel Zener Safety Barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>517.001.281</td>
<td>MTL7728 Single Channel Zener Safety Barrier</td>
</tr>
<tr>
<td>517.001.282</td>
<td>MTL7728 Dual Channel Zener Safety Barrier</td>
</tr>
<tr>
<td>546.004.005</td>
<td>Intrinsically safe sounder circuit interface module</td>
</tr>
</tbody>
</table>
Chapter 10  - Special Hazards

Safety Enclosures

UC Series Enclosures

The UC series of enclosures provides a simple but effective means of mounting and protecting the MTL3000 series units, in safe areas. A standard lightweight enclosure with transparent lid, which can accommodate 4 units. The polycarbonate enclosure is impact resistant, flame retardant and dustproof to IP65.

Product Code
517.001.196
UC2 4 Way Barrier Housing

MT Series Enclosures

The MT series of enclosures provides a simple, effective means of mounting and protecting MTL700 Series barriers in safe areas or low-risk hazardous areas. Three lightweight polycarbonate enclosures with see through lids accommodate up to 2, 5 and 12 barriers in the safe area. All the enclosures are supplied ready fitted with a nickel plated brass busbar mount, so barriers can be installed and wired up immediately without special tools.

Product Codes
517.001.199
MT2 2 Way Zener Barrier Housing.
517.001.199
MT5 5 Way Zener Barrier Housing.
517.001.200
MT12 12 Way Zener Barrier Housing

Ancillaries

The ERL7 earth rail is a nickel plated 3 x 10mm rail (1 metre long), suitable for a do-it-yourself mounting arrangement. It will accommodate up to 2.5 ETM7 earth terminals per barrier location for terminating earth returns and cable screens from the hazardous area.

The IMB7 mounts on a flat surface or top hat rail (35mm) or G-profile rail and acts as a convenient method for mounting the earth busbar.

Product Codes
517.001.205
ERL7 Earth rail for I.S. systems
517.001.206
ETM7 Earth termination connection system
517.001.207
IMB7 Insulating mounting block
517.001.120
System 601 EOL Unit (PK10)
Chapter 10 - Special Hazards

Features

• Continuous detection despite extremely large monitoring area.
• Easy and rapid installation of the maintenance free sensor cable.
• Very high resistance to extreme ambient influences (immune against heat, cold, humidity, corrosion, strong winds and draft).
• Undiminished operation under electromagnetic interference.
• Unprecedented security against false alarms.
• Very high sensor cable service life of up to 30 years.
• Temperature profile over the complete measurement range delivers exact information of location, size and spread of fire.
• Very low maintenance costs as maintenance and troubleshooting can be done from the control unit.
• VdS certified to EN 54 part 5
• One controller unit will drive up two 8 km spurs or one 8 km loop.
• Easy integration into existing installations.
• Each sensor cable divided into up to 256 zones.
• Individual configuration of 5 alarm criteria per zone.
• Network connection through Modbus, TCP/IP, FTP and SCPI interfaces.

MZX SensorLaser™ Plus Fibre Optic Linear Heat Detection System

The MZX SensorLaser™ Plus guarantees fast and continuous fire detection even in difficult and varying ambient conditions. This linear heat detection system enables long and heavily fragmented facilities such as traffic and supply tunnels, cable routes and conveyor belts as well as large scale buildings such as production halls, cold stores and multi storey car parks to be monitored at all times. The MZX SensorLaser™ Plus is ideal for use in areas that are hard or impossible to access after installation, e.g. false floors, since maintenance and troubleshooting can be carried out from the control unit.

The fibre optic sensor cable itself is maintenance free and, thanks to its particularly robust characteristics, offers a high level of security against false alarms. The sensor cable is insensitive to dust, dirt, moisture, high temperatures (up to approx. 90 °C), pressure and the action of vibration and wind as well as corrosive atmospheres. Because of its purely passive, optical analysis process, the MZX SensorLaser™ Plus is even immune from electromagnetic interference caused by generators, energy routes, cables or electric motors.

The MZX SensorLaser™ Plus delivers precise information about the location, size and spread of a fire even under ambient conditions that would cause other fire detection systems to fail.

The MZX SensorLaser™ Plus enables a measuring range of up to 8 km per sensor cable. Up to 2 spurs each with an 8 km measurement range, or 1 loop with an 8 km range can be connected. Since the ambient conditions in a monitoring area of this size can vary enormously, each sensor cable can be divided into up to 256 zones. Several alarm criteria can be freely defined in each zone. This level of precision adjustment allows the MZX SensorLaser™ Plus to provide a high level of resistance to false alarms and precise fire detection despite contrary and variable ambient conditions.

The accessible laser radiation emitted by the Class 1M laser is not hazardous to the eyes (provided there are no other optical instruments in the path of the beam), while operation is absolutely fail-safe even in the event of a break in the cable. In addition, the sensor cable can be used in explosive atmospheres (ATEX zones) up to zone 0 without any additional measures being required. In contrast to conventional fibre optic systems, the low laser output of < 20mW ensures that the measuring system has a long service life.

Zone Configuration

Ambient conditions (temperatures) can fluctuate sharply over a measuring range of many hundreds of metres. This makes it essential to divide the measuring range into zones that can be adapted optimally to the ambient conditions on the basis of differing alarm criteria. This ensures high detection reliability and also security against false alarms.

The MZX SensorLaser™ Plus allows the measuring range to be very finely divided into zones. Up to 256 zones can be defined for each sensor cable, with up to 5 alarm criteria configurable in each zone. Another 2 alarm criteria respond when there is a temperature drop, enabling them to be used e.g. in tunnels to warn of black ice.
Chapter 10 - Special Hazards

MZx SensorLaser™ Plus Fibre Optic Linear Heat Detection System Cont’d.

Control Unit
With ten product variants, permitting measuring ranges of 1 to 8 km, the MZX SensorLaser™ Plus can be configured to suit the particular project.

Sensor Cable
The sensor cables offered are optimised for a rapid response time. The sheathing is flame retardant, halogen free and resistant to dust, dirt, moisture, corrosive atmospheres and most organic solvents. Both types of sensor cable offer adequate protection against rodents and are designed for a service life of 30 years.

There are two different types of sensor cable for differing project requirements. The MZX SensorLaser™ Plus Safety cable can be used under normal ambient conditions. It is particularly flexible and extremely versatile.

Where the sensor cable is expected to be exposed to high mechanical stresses, we recommend that the MZX SensorLaser™ Plus Steel Wire Armoured cable be used. This sensor cable, which was specifically developed for heavy duty applications, is particularly suitable where high tensile forces and high lateral pressures can occur.

The cable length will be individually cut to the customer specified length and 2 connectors are fitted for easy handling. The cable should be commissioned in multiples of one metre and therefore the order for the cable has to be placed per metre.

Every order for sensor cable must include the corresponding connectors, which will be assembled by the supplier. The cable with pre assembled connectors offers fast commissioning of the system without any additional splicing.

Mounting Materials
For professional mounting of the sensor cables four different types of mounting sets are available. These sets are designed for different applications. They can be used for the mounting of the sensor cable to the wall and the ceiling. Every set contains 100 x clamps, 100 x anchors and 1 x SDS drill bit.

Plastic Clamps
The plastic of these clamps is UV resistant, halogen free and particularly robust in ambient conditions.

Steel Clamps
The clamps in these sets are made of stainless steel or zinc plated steel and are rubber protected. The rubber protection guarantees that the sensor cable is not damaged if friction occurs. For every clamp 2 x nuts are included for fixing to the anchor.

Connection Cable
Connection to the MZX Fire Alarm Panel is by means of the MZX SensorLaser™ Plus Connection Set. This set consists of 3 x cables. For connection of the Fire Alarm Panel to one end of the sensor cable a D-Sub connector is included. The other end of the sensor cable is desoldered which provides a quick connection into the MZX System without any soldering effort.

Enhanced Communication
The MZX SensorLaser™ iBox allows the 20 relay outputs supplied as standard to be expanded up to 2 x 256 outputs so that each zone can be assigned its own relay output. This could, for instance, be used to control fire extinguishing systems. The iBox also enables connection to SCADA or process control systems via Modbus TCP or Modbus RTU.

The number of relays can be extended using the MZX SensorLaser™ Plus Relay Controller Set. This set consists of a pre-programmed field bus controller, one Digital Output Module and an End module. It also comes with 8 x relays and accessories for easy wiring.

Supervisory Control

PC Work Station

Interface Box

Relay Controller Set

By means of the Relay Controller Set and the Relay Extension Set an additional 256 relays per sensor cable can be connected.

LAN (10/100M)

Modbus / TCP/IP

SCPI/FTP

Modbus/TCP/IP/SCPI/FTP

Modbus / TCP/IP

SCPI

Controller Unit

20 Relay Outputs
1 Fault
19 Alarms

MZx Panel
Chapter 10 - Special Hazards

MZX SensorLaser™ Plus Fibre Optic Linear Heat Detection System Con’t.

Complies with the essential requirements of the following applicable European Directives and carries the CE marking accordingly:

- The EMC Directive 2004/108/EC

Conforms with the following product standards:

- EMC
- Canada: ICES-001:1998

Technical Specification

- Operating temperature range: -10°C to +60°C (2 channel options: from -5°C)
- Storage temperature range: -40°C to +80°C
- Operating humidity range: 0% to 95% RH (2 channel options: 15% to 85% RH) non condensing
- Dimensions (H x W x D): 88 x 448 x 364 mm (19” rack)
- Weight: 9 kg
- Fibre types: MM 50/125 μm graded index MM 62.5/125 μm graded index
- Dynamic range: 30 dB (2-way loss)
- Sensing temperature range: -273°C to +700°C depending on sensor coating
- Optical connector: E2000; 8° angled
- Number of channels: 1, 2 depending on channel option
- Computer interface: USB, LAN
- Relay board: 4 inputs / 20 outputs
- Power supply: 10 V to 30 Vdc
- Power consumption: 15 W typically, at 20°C ambient temperature < 40 W (entire operating conditions)
- Measurement times: from 10s to 30s
- Available spatial resolution settings: 1 m; 1.5 m; 3 m; 5 m; 8 m
- Available measurement modes: Single ended/Dual ended; including fibre break recovery
- Laser class (IEC 60825-1: 2001):1M

Product Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.016.310</td>
<td>MZX SensorLaser™ Plus 1/1 – 1 km range, 1 sensor cable.</td>
</tr>
<tr>
<td>516.016.311</td>
<td>MZX SensorLaser™ Plus 1/2 – 1 km range, 2 sensor cables.</td>
</tr>
<tr>
<td>516.016.312</td>
<td>MZX SensorLaser™ Plus 2/1 – 2 km range, 1 sensor cable.</td>
</tr>
<tr>
<td>516.016.313</td>
<td>MZX SensorLaser™ Plus 2/2 – 2 km range, 2 sensor cables.</td>
</tr>
<tr>
<td>516.016.333</td>
<td>MZX SensorLaser™ Plus 3/1 – 3 km range, 1 sensor cable.</td>
</tr>
<tr>
<td>516.016.334</td>
<td>MZX SensorLaser™ Plus 3/2 – 3 km range, 2 sensor cables.</td>
</tr>
<tr>
<td>516.016.314</td>
<td>MZX SensorLaser™ Plus 4/1 – 4 km range, 1 sensor cable.</td>
</tr>
<tr>
<td>516.016.315</td>
<td>MZX SensorLaser™ Plus 4/2 – 4 km range, 2 sensor cables.</td>
</tr>
<tr>
<td>516.016.316</td>
<td>MZX SensorLaser™ Plus 8/1 – 8 km range, 1 sensor cable.</td>
</tr>
<tr>
<td>516.016.317</td>
<td>MZX SensorLaser™ Plus 8/2 – 8 km range, 2 sensor cables.</td>
</tr>
<tr>
<td>516.016.318</td>
<td>MZX SensorLaser™ Plus Connection Set.</td>
</tr>
<tr>
<td>516.016.319</td>
<td>MZX SensorLaser™ Plus Box</td>
</tr>
<tr>
<td>516.016.320</td>
<td>MZX SensorLaser™ Plus Relay Controller Set.</td>
</tr>
<tr>
<td>516.016.322</td>
<td>MZX SensorLaser™ Plus Safety Cable (per metre).</td>
</tr>
<tr>
<td>516.016.323</td>
<td>MZX Steel Wire Armoured SensorLaser™ Plus Cable (per metre).</td>
</tr>
<tr>
<td>516.016.326</td>
<td>MZX SensorLaser™ Plus Zinc Plastic Clamp Set. (PK 100)</td>
</tr>
<tr>
<td>516.016.327</td>
<td>MZX SensorLaser™ Plus Steel Plastic Clamp Set. (PK 100)</td>
</tr>
<tr>
<td>516.016.328</td>
<td>MZX SensorLaser™ Plus Steel Zinc Clamp Set. (PK 100)</td>
</tr>
<tr>
<td>516.016.329</td>
<td>MZX SensorLaser™ Plus Stainless Steel Clamp Set. (PK 100)</td>
</tr>
<tr>
<td>516.016.330</td>
<td>MZX SensorLaser™ Plus Spare Unit.</td>
</tr>
<tr>
<td>516.016.331</td>
<td>MZX SensorLaser™ Plus Demo Unit.</td>
</tr>
<tr>
<td>516.016.332</td>
<td>MZX SensorLaser™ Plus Demo Box.</td>
</tr>
</tbody>
</table>
Chapter 11 - Useful Information

These charts are designed to assist with the selection of the best detector for the risk.

1. First select the environment
2. Then select the fire loading or risk being protected

### MX Addressable Detector - Mode Selection & Design Charts

<table>
<thead>
<tr>
<th>Environment</th>
<th>Very Clean and Dry</th>
<th>Moderately Clean Regulated Temperature</th>
<th>Dusty and/or Humid</th>
<th>Hot and Smoky When in Use</th>
<th>Open Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Clean Room</td>
<td>Data Processing Suite</td>
<td>Warehouse with Diesel Forklifts etc.</td>
<td>Livestock Pen</td>
<td>Kitchen, Atrium, Theatre, Engine Room, Hanger, Oil Rig, Turbine Hall</td>
</tr>
</tbody>
</table>

#### Mode Selection

<table>
<thead>
<tr>
<th>Mode</th>
<th>Universal</th>
<th>HFO</th>
<th>High Resilience</th>
<th>CCO</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 1</td>
<td>Heat H-O-R</td>
<td>Mode 2</td>
<td>Mode 3</td>
<td>Mode 4</td>
<td>Mode 5</td>
</tr>
</tbody>
</table>

Table 1 - 801PC Detector

<table>
<thead>
<tr>
<th>Mode</th>
<th>Night Mode</th>
<th>Day Mode</th>
<th>Night Mode</th>
<th>Day Mode</th>
<th>Night Mode</th>
<th>Day Mode</th>
<th>Night Mode</th>
<th>Day Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1-801PC Detector

Notes in brackets represent possible options for gas detection as required.
## Table 2 - 800 Series Detectors

<table>
<thead>
<tr>
<th>Environment</th>
<th>Fire Loading</th>
<th>Type</th>
<th>Mode</th>
<th>Night</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clean Room</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Data Processing Site</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Warehouse with Diesel Forklifts</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Heavy Industrial Ferry (Car Deck)</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Livestock Pen</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mill, Laundry, Changing Room</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrium, Theatre, Hangar, Oil, Gas, Test Beds</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Kitchen</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Air Conditioning Room</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Turbine Hall</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Office</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hospital</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Light Industrial</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Residential</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Passenger Cabin</strong></td>
<td><strong>Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- En: Temperature enhanced
- E+H: Temperature enhanced and heat detector together
- Other types represent recommended sensitivity settings
- H: Heat only part of combined detector
- C: Cold only part of composite detector
- A: Air only part of composite detector

Table 2 includes only and specific situations are likely to require variations on the suggested detector types. Fire situations may require detector combinations to cater for all likely risks. Night and Day constraints represent low base alarm rate and high base alarm rate, although this activity follows a day/night pattern, it may be configured for any time. For example, the car deck of a ferry would be configured for Day during vehicle loading and Night once all the passengers had left the car deck, thus achieving optimum protection for that area.

If dual operation is selected for optical detectors the same table applies. The chief difference being a higher resistance to shelf alarm, and lower resistance to excess heat.

---

**Table 2 - 800 Series Detectors**
<table>
<thead>
<tr>
<th>ENVIRONMENT</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERY CLEAN AND DRY</td>
<td>CLEAN ROOM DATA PROCESSING SUITE</td>
<td>OFFICES, LIGHT INDUSTRIAL, HOSPITALS, RESIDENTIAL, ASSEMBLY, ACCOMMODATION</td>
<td>LOADING BAY, WAREHOUSE WITH DIESEL FORK LIFTS etc., HEAVY INDUSTRIAL FERRY (CAR DECK)</td>
<td>LIVESTOCK PEN MILLS, LAUNDRY, CHANGING ROOMS, KITCHENS, ENGINE ROOMS, ENGINE TEST BAYS</td>
<td>KITCHEN, THEATRE, HANGAR, OIL RIGS, TUNNELS</td>
<td>OPEN AREAS</td>
</tr>
</tbody>
</table>

### For Example

#### FIRE LOADING

<table>
<thead>
<tr>
<th>1</th>
<th>ELECTRONIC EQUIPMENT</th>
<th>CABLE PYROLYSIS (TOXIC FLAMES)</th>
<th>ASPIRATED</th>
<th>Optical</th>
<th>Optical</th>
<th>Optical</th>
<th>Flame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ELECTRICAL SWITCHGEAR</td>
<td>ELECTRICAL ARCS (IGNITION SOURCES)</td>
<td>Optical HPO</td>
<td>Ion</td>
<td>HPO</td>
<td>Optical</td>
<td>BEAM</td>
</tr>
<tr>
<td></td>
<td>ELECTRIC MOTORS</td>
<td>ASOCIATED ELECTRICAL DANGERS</td>
<td>Optical</td>
<td>HPO</td>
<td>Optical</td>
<td>Optical</td>
<td>BEAM</td>
</tr>
<tr>
<td>2</td>
<td>FABRIC, CLOTHES</td>
<td>SOFT FURNISHINGS</td>
<td>SMOKE/POISON (DIFFICULT TO LOCATE - TOXIC FLAMES)</td>
<td>CO</td>
<td>HPO</td>
<td>Optical</td>
<td>CO</td>
</tr>
<tr>
<td></td>
<td>PAPER, CARDBOARD</td>
<td>PLASTIC FOAMS</td>
<td>LIKELIHOOD OF FLASHOVER (BACK-DRAFT)</td>
<td>CO</td>
<td>Optical</td>
<td>CO</td>
<td>Optical</td>
</tr>
<tr>
<td></td>
<td>ANIMAL BEDDING</td>
<td>WOOD SHAVINGS etc.</td>
<td>FLAMMABLE LIQUIDS PAINTS</td>
<td>Flame</td>
<td>Ion</td>
<td>HPO</td>
<td>Optical</td>
</tr>
<tr>
<td>3</td>
<td>FLAMMABLE LIQUIDS</td>
<td>PAINTS</td>
<td>FLAMING FIRE (RAPID BUILD-UP OF OXIDISING SMOKE)</td>
<td>Flame</td>
<td>Ion</td>
<td>HPO</td>
<td>Optical</td>
</tr>
<tr>
<td></td>
<td>SOLVENTS</td>
<td>FLAMMABLE GASES</td>
<td>HIGH TEMPERATURE FLAMES</td>
<td>Flame</td>
<td>Ion</td>
<td>HPO</td>
<td>Optical</td>
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<tr>
<td></td>
<td>UNSTABLE CHEMICALS</td>
<td></td>
<td>ASSOCIATED EXPLOSION DANGERS</td>
<td>Flame</td>
<td>Ion</td>
<td>HPO</td>
<td>Optical</td>
</tr>
<tr>
<td>4</td>
<td>FOODSTUFFS</td>
<td>GENERAL ORGANIC WASTE</td>
<td>SMOKE AND FLAME INITIALLY EQUALLY SMOKEY BUT HIGH TEMPERATURES ONCE ESTABLISHED</td>
<td>HPO</td>
<td>Optical</td>
<td>CO</td>
<td>Heat R-o-R</td>
</tr>
<tr>
<td></td>
<td>ANIMAL FOOD</td>
<td>WOODEN STRUCTURES</td>
<td></td>
<td>HPO</td>
<td>Optical</td>
<td>CO</td>
<td>Heat R-o-R</td>
</tr>
<tr>
<td></td>
<td>SOLID FUELS</td>
<td></td>
<td></td>
<td>HPO</td>
<td>Optical</td>
<td>CO</td>
<td>Heat R-o-R</td>
</tr>
<tr>
<td>5</td>
<td>PLASTIC CHEMICALS</td>
<td>MACHINERY</td>
<td>TYPE OF FIRE RISK MAY VERY AS CAN THE TYPE OF FIRE (MAY REQUIRE A MIX OF DETECTION TYPES)</td>
<td>ASPIRATED</td>
<td>HPO</td>
<td>Co</td>
<td>Heat R-o-R</td>
</tr>
<tr>
<td></td>
<td>BUILDING MATERIALS</td>
<td>UNKNOWN CONTENTS</td>
<td></td>
<td>HPO</td>
<td>Co</td>
<td>Heat R-o-R</td>
<td>Co</td>
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</table>

<p>| Table 3 - Series 600 Detectors |</p>
<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>CONTROL PANEL COMPATIBILITY</th>
<th>POWERED FROM DETECTOR REQUIRED TO OPERATE</th>
<th>PARK CLIP</th>
<th>TO OPERATE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>577.001.035</td>
<td>601SB CONVENTIONAL SOUNDER BASE</td>
<td>CONVENTIONAL ONLY</td>
<td>ONLY</td>
<td>24Vdc</td>
<td>NO</td>
<td>GREEN</td>
</tr>
<tr>
<td>577.001.037</td>
<td>601SBD CONVENTIONAL DIODE SOUNDER BASE</td>
<td>CONVENTIONAL ONLY</td>
<td>ONLY</td>
<td>24Vdc</td>
<td>NO</td>
<td>GREEN</td>
</tr>
<tr>
<td>516.800.911</td>
<td>901SB UNIVERSAL SOUNDER BASE</td>
<td>MINERVA ADDRESSABLE/MX</td>
<td>24Vdc</td>
<td>YES</td>
<td>BLUE</td>
<td></td>
</tr>
<tr>
<td>516.800.912</td>
<td>912SB UNIVERSAL UL SOUNDER BASE</td>
<td>MINERVA ADDRESSABLE/MX</td>
<td>24Vdc</td>
<td>YES</td>
<td>BLUE</td>
<td></td>
</tr>
<tr>
<td>577.001.036</td>
<td>602SB 2 WIRE LINE POWERED SOUNDER BASE</td>
<td>MZX-</td>
<td>ONLY DETECTION CIRCUIT</td>
<td>NO</td>
<td>YELLOW</td>
<td></td>
</tr>
<tr>
<td>577.001.038</td>
<td>602SBD 2 WIRE LINE POWERED DIODE SOUNDER BASE</td>
<td>MZX-</td>
<td>ONLY DETECTION CIRCUIT</td>
<td>NO</td>
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<td>MX</td>
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<th>CURRENT CONSUMPTION AT 68 dBA (MINIMUM VOLUME)</th>
<th>CURRENT CONSUMPTION AT 90 dBA (MAXIMUM VOLUME)</th>
<th>CURRENT CONSUMPTION AT 100 dBA (FIXED VOLUME)</th>
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<th>PART NO.</th>
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<th>DUTCH SLOW 4 SLOW SWEEP (3)</th>
<th>TEMPORAL 4 SLOW SWEEP (3)</th>
<th>MARCH TIME BEEP(25)</th>
<th>MARCH TIME BEEP(26)</th>
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<td>PART NO.</td>
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<td>ALTERNATING 2 (11)</td>
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(2) (3) (7) (9) (11) (14) (25) (26) = ROSHNI TONE NUMBER
### Sounder Tone Tables

#### Banshee 12V
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Frequency and Timing</th>
<th>1st Tone</th>
<th>2nd Tone</th>
<th>3rd Tone</th>
<th>4th Tone</th>
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<tbody>
<tr>
<td>1</td>
<td>Banshee LF Buzz</td>
<td>800Hz to 950Hz swept at 120Hz*</td>
<td>4</td>
<td>94</td>
<td>6</td>
<td>100</td>
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<td>2</td>
<td>Banshee LF Fast Sweep</td>
<td>800Hz to 950Hz swept at 9Hz*</td>
<td>4</td>
<td>94</td>
<td>6</td>
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<td>100</td>
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<td>3</td>
<td>Banshee LF Slow Sweep</td>
<td>800Hz to 950Hz swept at 3Hz*</td>
<td>4</td>
<td>94</td>
<td>6</td>
<td>100</td>
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<tr>
<td>4</td>
<td>Banshee LF Continuous</td>
<td>Continuous at 900Hz*</td>
<td>4</td>
<td>95</td>
<td>6</td>
<td>101</td>
<td>110</td>
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<td>Banshee LF Fast Sweep (New)</td>
<td>800Hz to 970Hz swept at 9Hz*</td>
<td>4</td>
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<tr>
<td>6</td>
<td>Medium Sweep LF</td>
<td>800Hz to 970Hz swept at 1 Hz*</td>
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<td>95</td>
<td>6</td>
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<td>Continuous LF</td>
<td>Continuous at 970Hz*</td>
<td>7</td>
<td>97</td>
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<td>132</td>
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<td>Backup Alarm LF</td>
<td>Intermitent at 800Hz 1s on, 1s off*</td>
<td>4</td>
<td>97</td>
<td>4</td>
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<td>Alternate LF</td>
<td>Alternating 800Hz/1000Hz 1s each sound*</td>
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<td>9</td>
<td>101</td>
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<td>800Hz/1000Hz swept at 0.5s*</td>
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<td>95</td>
<td>5</td>
<td>101</td>
<td>12</td>
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<td>Alternate LF</td>
<td>Alternating tones 800/900Hz*</td>
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<td>96</td>
<td>6</td>
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<td>12</td>
<td>Banshee/Bedlam HF buzz</td>
<td>2400Hz to 2900Hz at 120Hz*</td>
<td>15</td>
<td>103</td>
<td>13</td>
<td>110</td>
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<td>13</td>
<td>Banshee/Bedlam HF Fast Sweep</td>
<td>2400Hz to 2900Hz at 9Hz*</td>
<td>15</td>
<td>103</td>
<td>12</td>
<td>110</td>
<td>25</td>
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<tr>
<td>14</td>
<td>Banshee/Bedlam HF Slow Sweep</td>
<td>2400Hz to 2900Hz at 3Hz*</td>
<td>15</td>
<td>103</td>
<td>12</td>
<td>110</td>
<td>25</td>
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<td>15</td>
<td>Banshee/Bedlam HF Continuous</td>
<td>Continuous at 2900Hz at 3Hz*</td>
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<td>106</td>
<td>12</td>
<td>112</td>
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<td>16</td>
<td>Banshee/Bedlam HF Fast Sweep (New)</td>
<td>2400Hz to 3100Hz swept at 8Hz*</td>
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<td>106</td>
<td>12</td>
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<tr>
<td>17</td>
<td>Backup Alarm LF</td>
<td>Intermitent at 2900Hz 1s on, 1s off*</td>
<td>15</td>
<td>107</td>
<td>7</td>
<td>112</td>
<td>15</td>
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<tr>
<td>18</td>
<td>Alternate LF</td>
<td>Alternating tones 2400/2900Hz at 3Hz*</td>
<td>15</td>
<td>106</td>
<td>12</td>
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<td>25</td>
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<tr>
<td>19</td>
<td>Slow Whoop</td>
<td>900Hz rising to 1200Hz over 3.5, silence 0.5s, repeat</td>
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<td>101</td>
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<tr>
<td>20</td>
<td>On Tone (O1)</td>
<td>1200Hz falling to 900Hz over 1s, silence 10ms, repeat</td>
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<td>96</td>
<td>101</td>
<td>14</td>
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<tr>
<td>21</td>
<td>French Fire Siren</td>
<td>65Hz for 10ms and 440Hz for 400ms</td>
<td>4</td>
<td>96</td>
<td>5</td>
<td>96</td>
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<tr>
<td>22</td>
<td>Australian Alert Signal</td>
<td>420Hz repeating 0.5s on, 0.5s off</td>
<td>4</td>
<td>90</td>
<td>3</td>
<td>94</td>
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<tr>
<td>23</td>
<td>Australian Evacuation Signal</td>
<td>850Hz rising to 1200Hz over 2.75s on, 0.25s off</td>
<td>4</td>
<td>96</td>
<td>103</td>
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<tr>
<td>24</td>
<td>US Temporal Tone LF</td>
<td>900Hz for 0.5s, 0.5s off, for 3 phases, silence for 1.5s &amp; repeat</td>
<td>4</td>
<td>98</td>
<td>2</td>
<td>102</td>
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<tr>
<td>25</td>
<td>US Temporal Tone HF</td>
<td>550Hz for 0.5s on, 0.5s off for 3 phases, silence for 1.5s &amp; repeat</td>
<td>15</td>
<td>106</td>
<td>6</td>
<td>112</td>
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<tr>
<td>26</td>
<td>Swedish Tone (Fire)</td>
<td>Intermitent 600Hz, 150ms on, 150ms off</td>
<td>25</td>
<td>91</td>
<td>4</td>
<td>97</td>
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<td>27</td>
<td>Swedish Tone (all Class)</td>
<td>Continuous 600Hz</td>
<td>27</td>
<td>84</td>
<td>5</td>
<td>89</td>
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<td>Intermitent 975Hz, 550ms on, 550ms off*</td>
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<td>ISO8361 HF</td>
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<td>Vibral 800Hz/1000Hz, 0.25s each frequency*</td>
<td>31</td>
<td>93</td>
<td>8</td>
<td>101</td>
<td>14</td>
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<td>31</td>
<td>BT Banshee (P1063.1)</td>
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<td>8</td>
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<td>32</td>
<td>Bell Tone</td>
<td>Bell Tone*</td>
<td>32</td>
<td>96</td>
<td>8</td>
<td>101</td>
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*Tone meets frequency requirements of BS5839 Pt. 1 1988
Chapter 11 - Useful Information

Fulleon Sounder Tone Compatibility Table

<table>
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<tr>
<th>Fulleon Tone</th>
<th>Tone Number</th>
<th>2 Wire Symphonic</th>
<th>24V Symphonic</th>
<th>Sounder Base</th>
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<tr>
<td>CONTINUOUS TONE (970Hz)</td>
<td>14</td>
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<td>PULSED/INTERMITTENT TONE (970Hz@1Hz)</td>
<td>25</td>
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<td>00111</td>
<td>011X, 111X (970Hz)</td>
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<td>11111</td>
<td>N/A</td>
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<tr>
<td>DUTCH SLOW WHOOP</td>
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<tr>
<td>ALTERNATING TONE (970Hz/800Hz@2Hz)</td>
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<td>SLOW SWEEP (800Hz/970Hz@2Hz)</td>
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<td>11111</td>
<td>100X</td>
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<td>FAST SWEEP (800Hz/970Hz@3Hz)</td>
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<td>N/A</td>
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<td>100X</td>
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Fulleon Sounder Tone Table

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<th>24V Symphonic</th>
<th>Sounder Base</th>
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<tr>
<td>1</td>
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<td>1 0</td>
<td>10010</td>
<td>111X</td>
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<tr>
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<td>SWEEPING 800/970Hz at 7Hz</td>
<td>800/970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
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<td>SWEEPING 800/970Hz at 1Hz</td>
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<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>4</td>
<td>CONTINUOUS at 2850Hz</td>
<td>2850</td>
<td>1 0</td>
<td>10010</td>
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<td>5</td>
<td>SWEEPING 2400-2850Hz at 7Hz</td>
<td>2400-2850</td>
<td>1 0</td>
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<td>111X</td>
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<td>2400-2850</td>
<td>1 0</td>
<td>10010</td>
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<td>7</td>
<td>SLOW WHOOP</td>
<td>970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
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<td>SWEEP 1200-500 at 1Hz</td>
<td>1200-500</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
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<td>ALT TONES 2400-2850 2Hz</td>
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<td>1 0</td>
<td>10010</td>
<td>111X</td>
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<tr>
<td>10</td>
<td>INT TONE OF 970Hz at 1Hz</td>
<td>970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
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<tr>
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<td>ALT TONES 800/970 at 1Hz</td>
<td>800/970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
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<tr>
<td>12</td>
<td>INT TONE at 2500 Hz at 7Hz</td>
<td>2500</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>13</td>
<td>970Hz at 1 sec ON, 5 sec OFF</td>
<td>970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>14</td>
<td>CONTINUOUS at 5100Hz</td>
<td>5100</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>15</td>
<td>554 FOR 150ms and 440Hz FOR 400ms</td>
<td>554/440</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>16</td>
<td>INT 660Hz, 150ms ON/150ms OFF</td>
<td>660</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>17</td>
<td>INT 660Hz, 1.8s ON/1.8s OFF</td>
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<td>1 0</td>
<td>10010</td>
<td>111X</td>
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<td>INT 660Hz 3.5s ON/13s OFF</td>
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<td>1 0</td>
<td>10010</td>
<td>111X</td>
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<tr>
<td>19</td>
<td>CONTINUOUS at 660Hz</td>
<td>660</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>20</td>
<td>ALT 554/440Hz at 1Hz</td>
<td>554/440</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>21</td>
<td>INT 660Hz 1.5s</td>
<td>660</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>22</td>
<td>INT 2850Hz 150ms ON/150ms OFF</td>
<td>2850</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>23</td>
<td>SWEEP 800-970Hz at 50Hz</td>
<td>800-970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>24</td>
<td>SWEEP 2400-2850Hz at 50Hz</td>
<td>2400-2850</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>25</td>
<td>INTERMITTENT 970Hz 500ms ON/500ms OFF</td>
<td>970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>26</td>
<td>INTERMITTENT 800Hz 500ms ON/500ms OFF</td>
<td>800</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>27</td>
<td>CONTINUOUS AT 4kHz</td>
<td>4kHz</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>28</td>
<td>ALTERNATING TONES 800/970 AT 2Hz</td>
<td>800/970</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>29</td>
<td>ALTERNATING TONES 388/244 AT 2Hz</td>
<td>388/244</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>30</td>
<td>ALTERNATING 510-610 AT 1Hz</td>
<td>510/610</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>31</td>
<td>SWEEPING 300-1200 at 1Hz</td>
<td>300-1200</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
<tr>
<td>32</td>
<td>CONTINUOUS AT 4kHz</td>
<td>4kHz</td>
<td>1 0</td>
<td>10010</td>
<td>111X</td>
</tr>
</tbody>
</table>
Chapter 11 - Useful Information

Features
- Selecting the category of protection and coverage.
- How to configure detector zones and alarm zones within premises.
- Which type of fire detection system?
- Detector suitability.
- Detector coverage.
- Manual break glass call points.
- Limitation of false alarms.
- Means of giving warning to occupants.
- Control and indicating equipment.
- Power supplies.
- Cabling considerations.
- Communication with the fire service.
- System installation.
- Documentation.
- Standards and Specifications.
- Associated Ancillary Equipment.
- Networking and Graphics.
- Installation.
- Commissioning.
- Training.
- Maintenance.

Consultants Guide

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