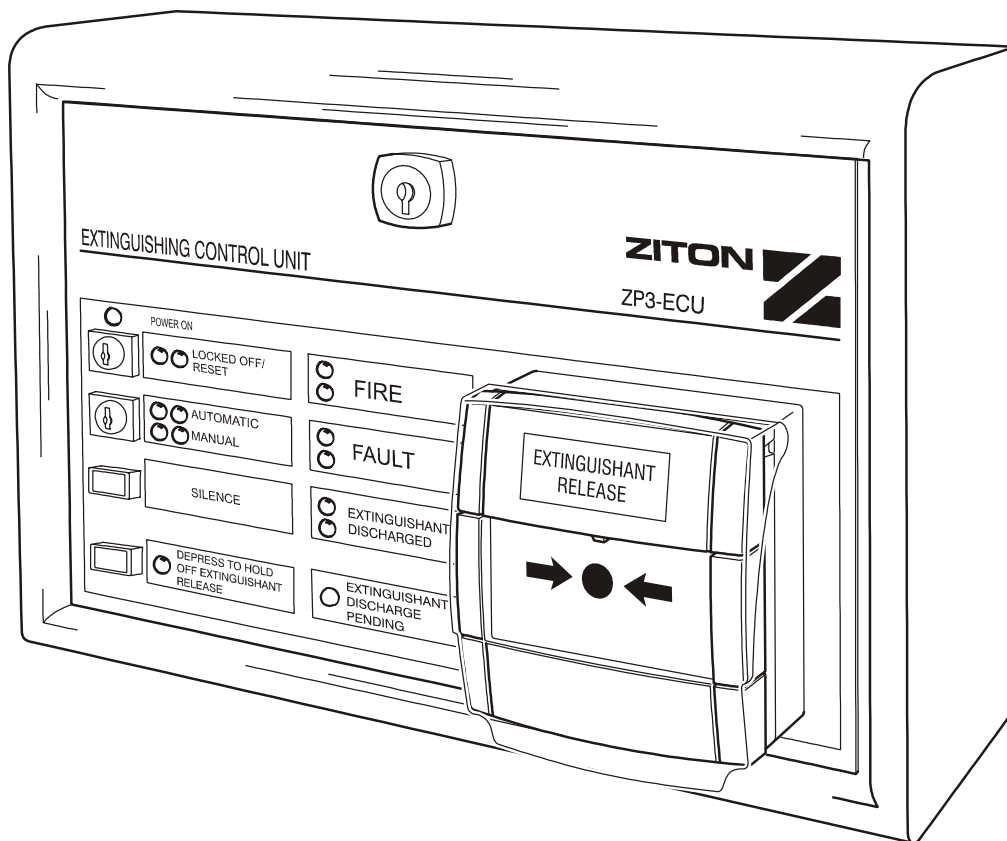


ZP3-ECU Extinguishing Control Unit Installation and Commissioning Manual



993900-01



imagination at work

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The European directive "Waste Electrical and Electronic Equipment" (WEEE) aims to minimise the impact of electrical and electronic equipment waste on the environment and human health. To conform with this directive, electrical equipment marked with this symbol must not be disposed of in European public disposal systems.



European users of electrical equipment must now return end-of-life equipment for disposal.

Further information can be found on the following website: <http://www.recyclethis.info/>.



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List of Abbreviations, Acronyms and Terms

Abbreviation	Definition
DC	Direct Current
ECU	Extinguishing Control Unit
EOL	End of Line
Extinguishant	Generic term to describe an extinguishing agent used to combat fires; for example water, dry chemical, foam etc.
GND	Ground
LCD	Liquid Crystal Display
LED	Light Emitting Diode
mA	milliampere
PC	Personal Computer
RX	Receive
SKNS	Single Knock Non Silencing
SPDT	Single Pole Double Throw
SW	Switch
TX	Transmit
V	Volts

Associated Publications and References

The following documents, or parts thereof, are referenced from this manual:

Document Description	Document Number
ZP3 Fire Control Panel Installation, Operation and Maintenance Manual	503-116000-0-07
ZP5 Mk4 Fire Alarm Control Panel (Part 5: Commissioning)	501-0865 (UD865 Part 5 Iss 3)
ZP3-ECU Extinguishing Control Unit Maintenance Manual	503-0800ZE-M-01

Preface

This manual is intended for use by the ZP3-ECU Extinguishing Control System installation and commissioning personnel. It provides the information required to configure, install and commission the Extinguishing Control System and its relevant equipment.

Safety Issues/Limitations

Installation Criteria

Do not attempt to install, service or operate the system until this manual has been read and understood. Adherence to the manual recommendations ensures a problem-free installation and long-term reliability.

System Power Supplies

During installation of the system or modification to the system, the DC power supply and batteries should be disconnected to avoid damage to circuit.

Operating Environment

Make sure that all system components and peripheral equipment are located within the limiting environment specified.

Power Transients

As with all electronic devices, the system is susceptible to damage by lightning induced transients. Proper grounding reduces this susceptibility.

Physical Mounting

All electronic assemblies should be removed from cabinets prior to any drilling, filing, reaming or punching of the enclosure. Before making modifications, verify that they will not interfere with printed circuit board location.

Wiring

All wiring must fall within the limitations given in the wiring guide, with respect to line resistance, line capacitance and cross talk from interfering signals.

Screw Terminals

Over tightening of screw terminals can damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

Static Sensitive Components

Printed circuit boards contain static sensitive components. Retain loose printed circuit boards in static suppressive packing.

System Documentation

Comprehensive drawings of the system, signed off by the responsible engineer, must be kept on record. The system design must take into account local codes and requirements.

Limitations

Equipment Compatibility

The Extinguishant Cylinder release mechanism must be compatible with the Extinguishing Control Unit activating circuit. Incompatibility can cause malfunction.

Sensing Equipment Limitations

The Extinguishing Control System equipment is reliant on external detection equipment such as detectors, call points and fire control panels in order to activate effective fire alarms. Incorrect positioning of the detectors, limitations in the detector itself or incorrect application can result in failure of the detection process.

Bells and Sirens

When the Extinguishing Control System causes an extinguishing discharge, the appropriate fire bells and sirens sound. These could prove useless unless they are situated in close proximity to the people they are supposed to alert.

System Wiring

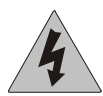
General

All wiring must be installed in compliance with local codes, and in accordance with the requirements of the local authority having jurisdiction.

Fire alarm systems must remain operative during the initial phase of a fire. It is therefore important that certain wiring practices are followed, and must comply to British Standard BS5839 : Part 1 : 1988 : Sections 17 and 24.

Wiring Standards

All wiring must be installed to the standards laid down in Ziton wiring guide GA322.



WARNING: THE WIRING CONNECTION TO THE EXTINGUISHANT CYLINDER ACTUATOR IS A LOW IMPEDANCE CIRCUIT, WHICH CAN DRAW UP TO 1 A DURING ACTUATION. MAKE SURE THAT WIRING TO THE ACTUATOR IS OF SUFFICIENT CAPACITY TO AVOID WIRING RESISTANCE VOLTAGE LOSS.

Wiring Connections

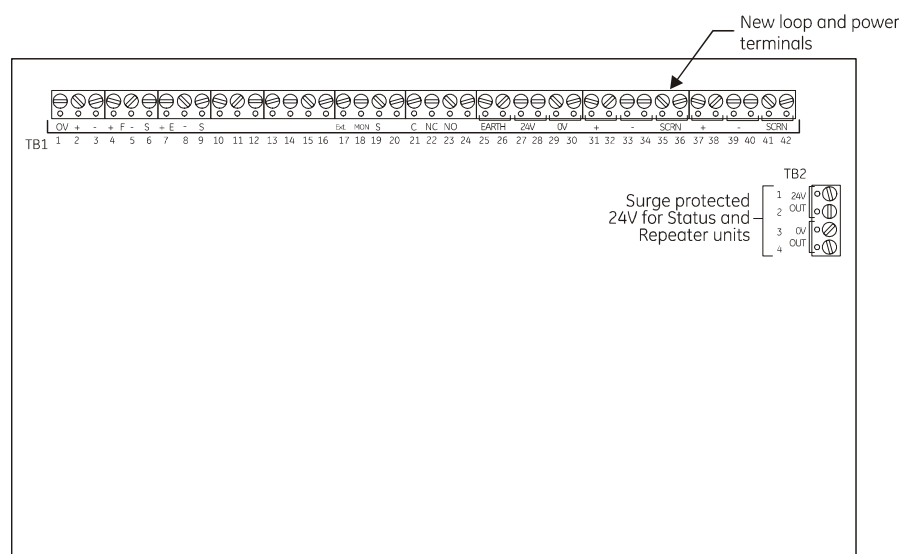
The following wiring connections are described:

- Extinguishing Control Unit to ZP Address Line connection
- Connections to the ZP3-ECU Extinguishing Control Unit
- Connection of ZP3-ECU Extinguishing Control Unit to ZP3-ECUS Extinguishing Status Units
- Connection of ZP3-ECU Extinguishing Control Unit to ZP3-ECUR Extinguishing Repeater Units.

ZP3-ECU Surge Protection

The Extinguishing Control Unit is often connected to a power source, which has fluctuations and surges outside of the recommended operating voltage limits.

The ZP3-ECU Extinguishing Control Unit main board as shown in Figure 1 incorporates surge suppression and low voltage detection to try to compensate for any fluctuations and surges.



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Figure 1: ZP3-ECU Extinguishing Control Unit Main Board

24 VDC Power

See Figure 2. The external 24 VDC power connections are provided on the main board.

ZP Loop Wiring

ZP loop connections are provided on the main board as shown in Figure 2, and terminals are provided for the respective loop screens. **Screens must be properly connected at the fire panel.**

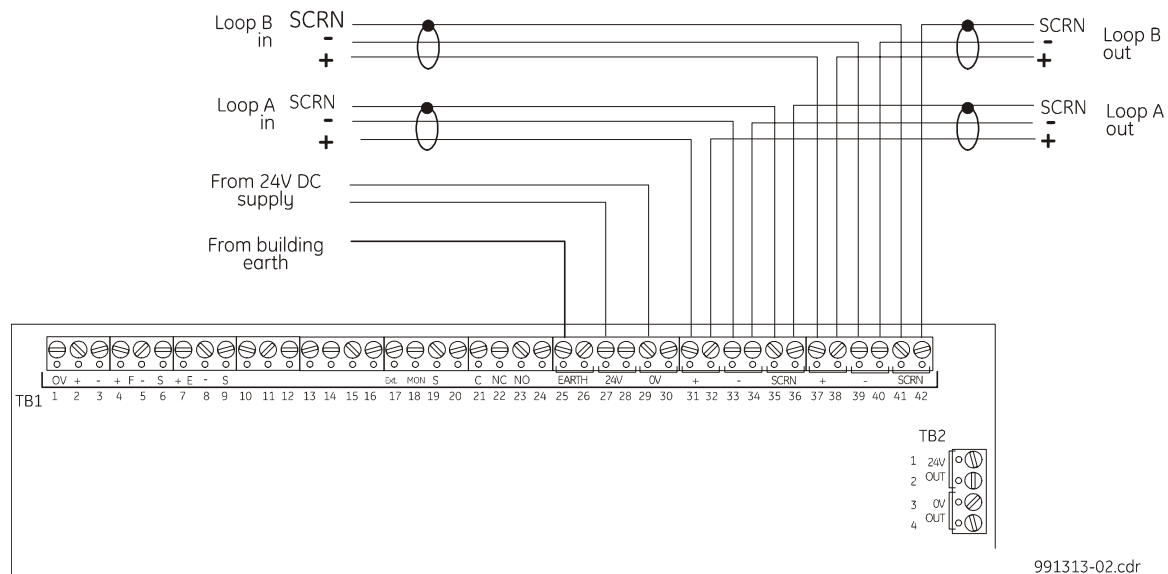


Figure 2: ZP Wiring Connections

Earth Connection

The Extinguishing Control Unit must be connected to a secure earth. Good wiring practice should be followed and the earth connection should be kept as short as possible. Earth is provided on pins 25 and 26, which makes connection to the chassis.

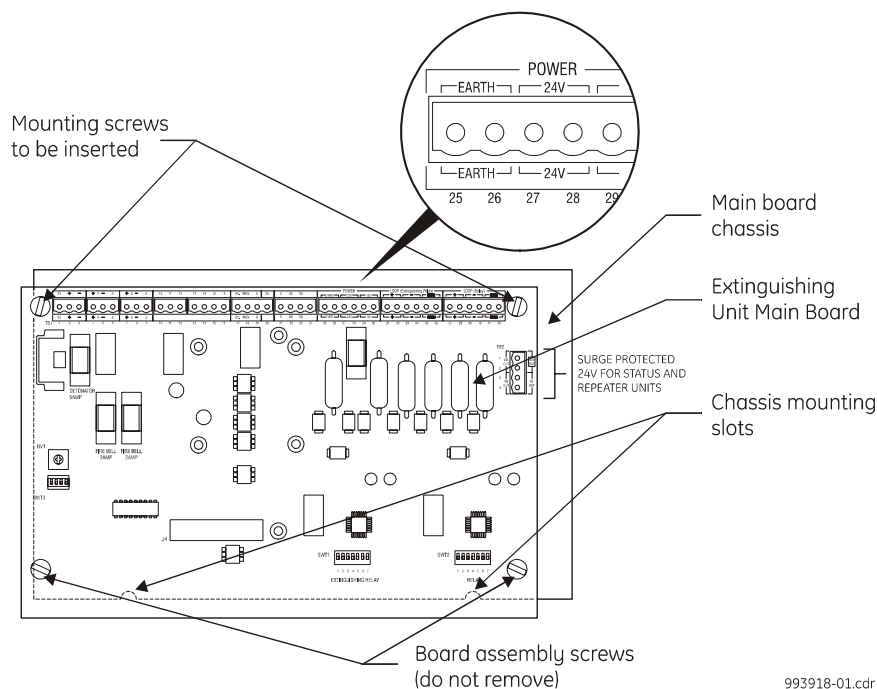


Figure 3: Mounting Diagram

Mounting Instructions

The Extinguishing Control Unit main board is supplied with two screws and two spring washers for mounting into the Extinguishing Control Unit box. The earth lug from the wiring loom must be earthed as shown in Figure 3 to ensure the effectiveness of the surge suppression board.

See Figure 3. Mount the Extinguishing Control Unit Main Board as follows:

1. Align the main board chassis mounting slots with the lower studs of the Extinguishing Unit box.
2. Insert the main board into the Extinguishing Unit box so that the main board chassis rests on the studs.
3. Insert the mounting screws, spring washers and the free earth lug of the wiring loom, and tighten screws.

Note: Do not disassemble the circuit boards from the chassis.

Guidelines to Programming the ECU

All new protected areas MUST be wired using two ZP Loops. This is to ensure the highest level of security available against accidental discharge of extinguishant.

The two addresses assigned to the Extinguishing Control Unit MUST be at least TWENTY apart i.e. if ECU Loop A uses address A005 then ECU Loop B can only utilise addresses from B025 onwards. Note that any two ZP loops of the fire panel may be used for connecting the ECU. Any addresses may be assigned to the devices within the protected area.

The devices in a protected area must be equally divided into two-coincidence areas/patterns, namely CA1 and CA2.

A coincidence area may consist of a single detector or many detectors, dependent on the size of the protected area.

Diagrams 1 to 4 shown in Figure 4 represent a plan view of protected areas with the dotted lines encompassing detectors. The dotted lines form the two required coincidence areas/patterns CA1 and CA2, which zig-zag across the protected area, overlapping in certain places. It can be seen therefore that due to the coincidence pattern a fire in any part of the protected area will be as close as possible to both coincidence areas.

The ECU has two addresses each of which is associated to its own coincidence area/pattern. There must be a fire condition in both coincidence areas to initialise an extinguishant drop.

If you want to program a system on a Zone basis then the coincidence coverage patterns will inherently become fire zones i.e. CA1 becomes fire Zone 1 and CA2 becomes fire Zone 2.

If you want to program a system on a device basis then each detector in CA1 will be associated to the first ECU address and each detector in CA2 will be associated with the second ECU address.

The basic programming principle is that from coincidence area 1 a fire alarm will be mapped to the first ECU address and a fire alarm from coincidence area 2 will be mapped to the second ECU address resulting in an extinguishing drop. The devices MUST be programmed on a SKNS (single knock non-silencing) basis for correct operation.

Programming examples are provided on the following pages.

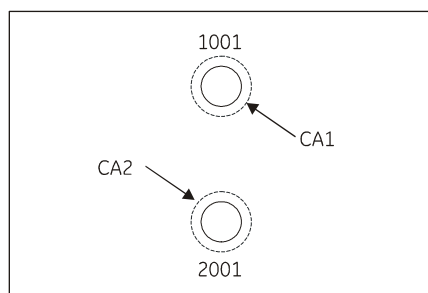


DIAGRAM 1

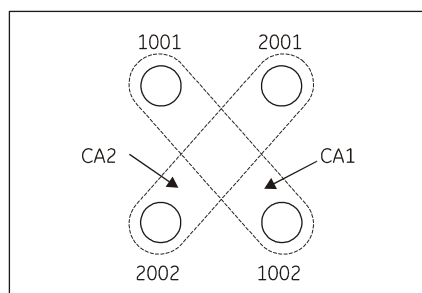


DIAGRAM 2

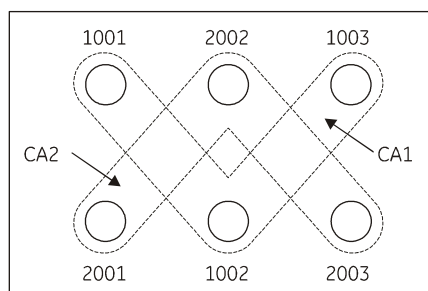


DIAGRAM 3

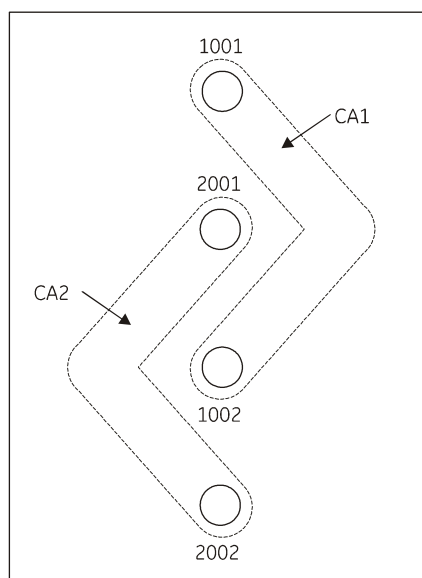


DIAGRAM 4

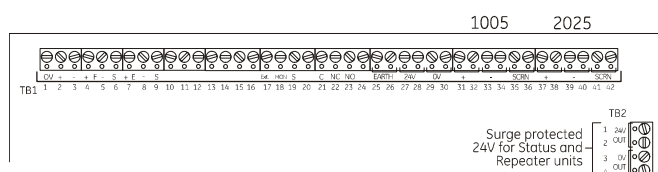


DIAGRAM 5

Extinguishing Control
Unit Addresses

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Figure 4: Examples of Cross-pattern Detection Areas

Programming on a ZONE Basis

The Extinguishing Control Unit shown in diagram 5 of Figure 4 is configured for its first address to be 1005 and its second address to be 2025.

- Diagram 1: Zone 1 consists of detector 1001 (coincidence area one)
Zone 2 consists of detector 2001 (coincidence area two)
- Diagram 3: Zone 1 consists of detectors 1001, 1002 & 1003 (coincidence area one)
Zone 2 consists of detectors 2001, 2002 & 2003 (coincidence area two)

Both areas are programmed identically:

Input	Output	Mode
Zone 1	1005 (ECU FIRST ADDRESS)	SKNS (Single knock non silencing)
Zone 2	2025 (ECU SECOND ADDRESS)	SKNS (Single knock non silencing)

Programming on a DEVICE Basis

The Extinguishing Control Unit shown in diagram 5 of Figure 4, is configured for its first address to be 1005 and its second address to be 2025.

Diagram 1: Coincidence area one consists of device 1001

Coincidence area two consists of device 2001

Diagram 3: Coincidence area one consists of devices 1001, 1002 & 1003

Coincidence area two consists of devices 2001, 2002 & 2003

Both areas are programmed in a similar manner:

Diagram 1

Input	Output	Mode
1001	1005 (ECU FIRST ADDRESS)	SKNS (Single knock non silencing)
2001	2025 (ECU SECOND ADDRESS)	SKNS (Single knock non silencing)

Diagram 3

Input	Output	Mode
1001	1005 (ECU FIRST ADDRESS)	SKNS (Single knock non silencing)
1002	1005 (ECU FIRST ADDRESS)	SKNS (Single knock non silencing)
1003	1005 (ECU FIRST ADDRESS)	SKNS (Single knock non silencing)
2001	2025 (ECU SECOND ADDRESS)	SKNS (Single knock non silencing)
2002	2025 (ECU SECOND ADDRESS)	SKNS (Single knock non silencing)
2003	2025 (ECU SECOND ADDRESS)	SKNS (Single knock non silencing)

The same format and rules apply for any protected area.

Additional Installation Information

Optional Door Monitor Board

Some Extinguishing Control systems are fitted with optional door lock monitor boards to report the locked/unlocked status of the doors to the protected area. This board is piggy-backed on top of the main board using the supplied hardware.

Planner and Maestro Graphics Software

When configuring Planner panel programming package, or Maestro graphics package, for use with an Extinguishing Control Unit, the LOOP A address is denoted by "ECU" and the LOOP B address is denoted by "LRY".

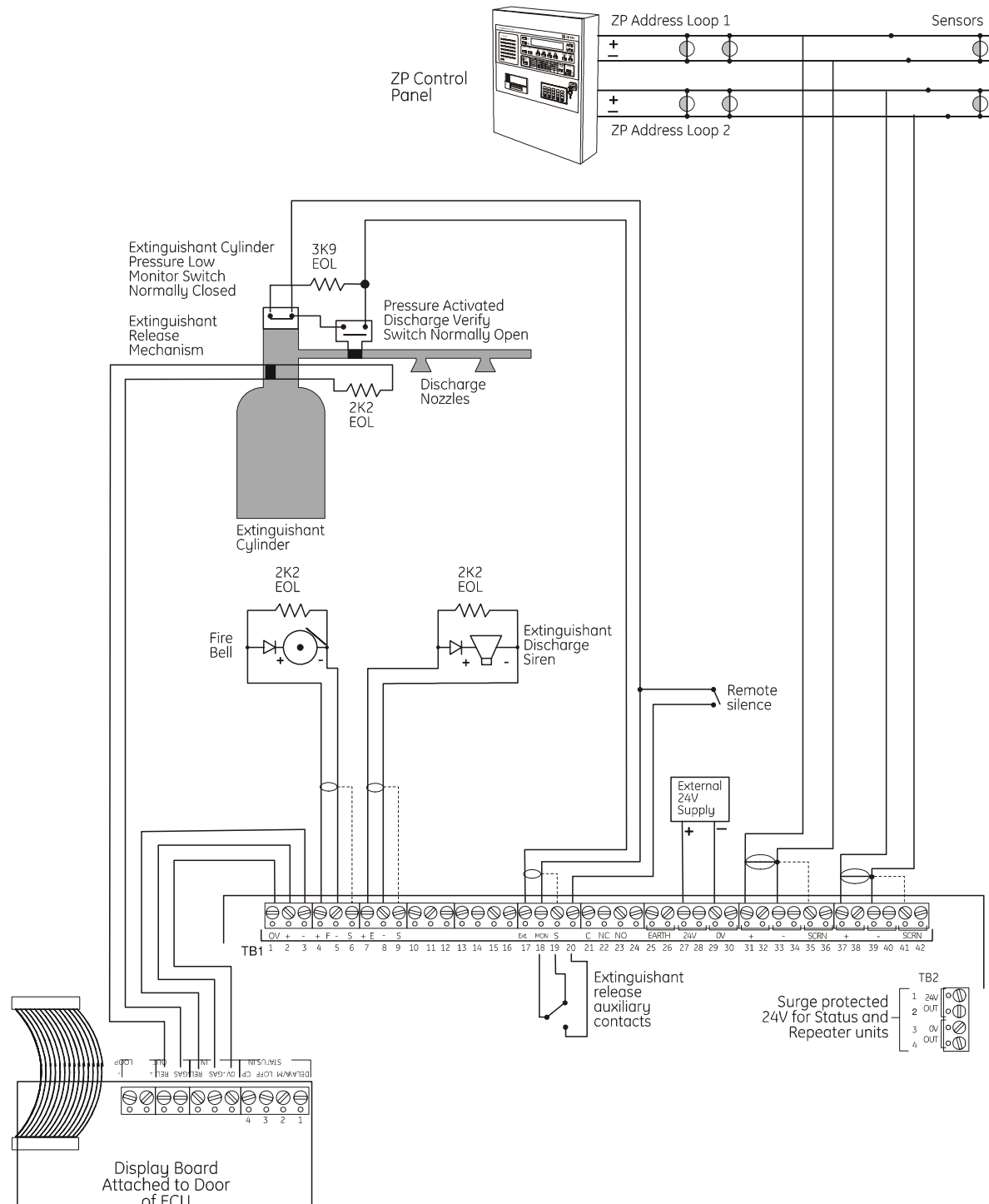
In the Maestro Graphics package, the LOOP A address reports the ECU status, and therefore it is not necessary to allow for an icon for the "LRY" LOOP B address.

Operation

There is a cosmetic software "bug" in the fire alarm panel. If the loop B address of the ECU is activated before the Loop A address, the fire panel reports "TRIGGR". The ECU is only "triggered" when both the loop A and loop B addresses are activated by fire conditions. If the Loop A address is activated first then the "bug" is not apparent. This "bug" in no way affects the correct operation of the ECU.

Connection to the ZP3-ECU Extinguishing Control Unit

Terminal functions are described in the ZP3-ECM Extinguishing Control Main Board installation sheet, document number 501-0803ZE-1-01 included in Appendix A of this manual. The connection wiring is shown in Figure 5.



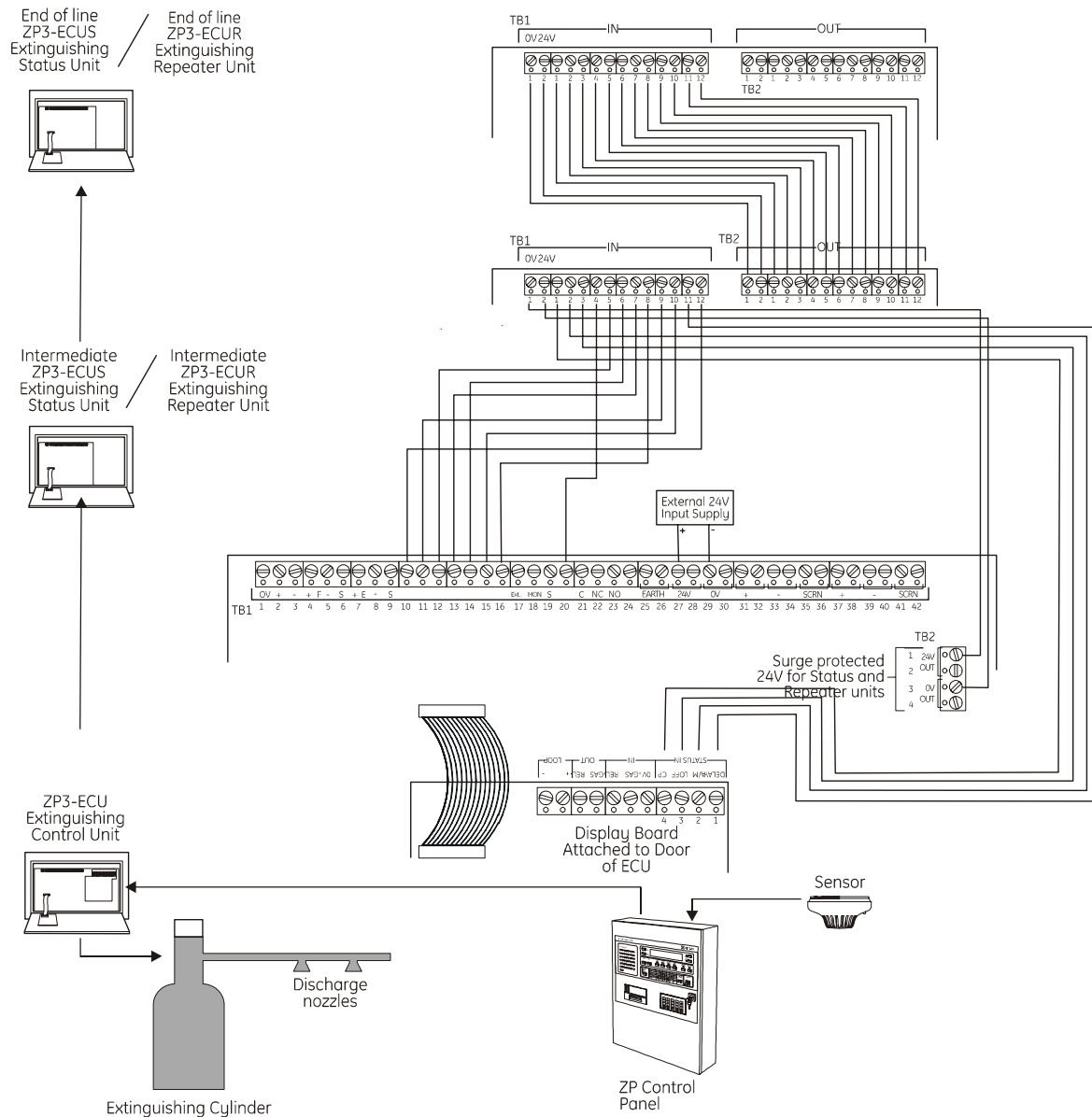
Note: Applicable to ECU Version 2

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Figure 5: Wiring Connection - Extinguishing Control Unit ZP3-ECU

Connection of the ZP3-ECU to Extinguishing Status Units ZP3-ECUS

The terminal functions are described in the ZP3-ESM Extinguishing Status Main Board installation sheet, document number 501-0805ZE-1-01, which is included in Appendix A of this manual. The connection wiring to the Extinguishing Status/Repeater Units is shown in Figure 6.



Note: If all keyswitches are on MANUAL, then systems will be on MANUAL.

If one keyswitch is on AUTO, then systems will be on AUTO.

L1, L2 and L3 to be placed on end of line extinguishing status unit display board.

L1, L3 and L4 on the ECU display board to be removed when status/repeater units are used.

Applicable to ECU version 2

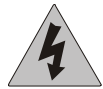
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Figure 6: Connection Wiring to Extinguishing Status/Repeater Units

Physical Installation

Extinguishing Control Unit

General Information



WARNING: THE WIRING CONNECTION TO THE EXTINGUISHANT CYLINDER ACTUATOR IS A LOW IMPEDANCE CIRCUIT, WHICH CAN DRAW UP TO 1 A DURING ACTUATION. MAKE SURE THAT WIRING TO THE ACTUATOR IS OF SUFFICIENT CAPACITY TO AVOID WIRING RESISTANCE VOLTAGE LOSS.

We recommend that the Extinguishing Control Unit is located outside the protected area in close proximity to the exit and to the extinguishant cylinders. If this is not possible, then the above warning regarding impedance of the actuator line must be taken into account. The control devices in the protective area, such as sounders, are connected directly to the Extinguishing Control Unit.

The Extinguishing Control Unit is designed to be either surface mounted or recessed semi-flush into a wall as shown in Figure 7.

Note: Rear conduit entry is provided; top entry is allowed, while bottom entry is not allowed.

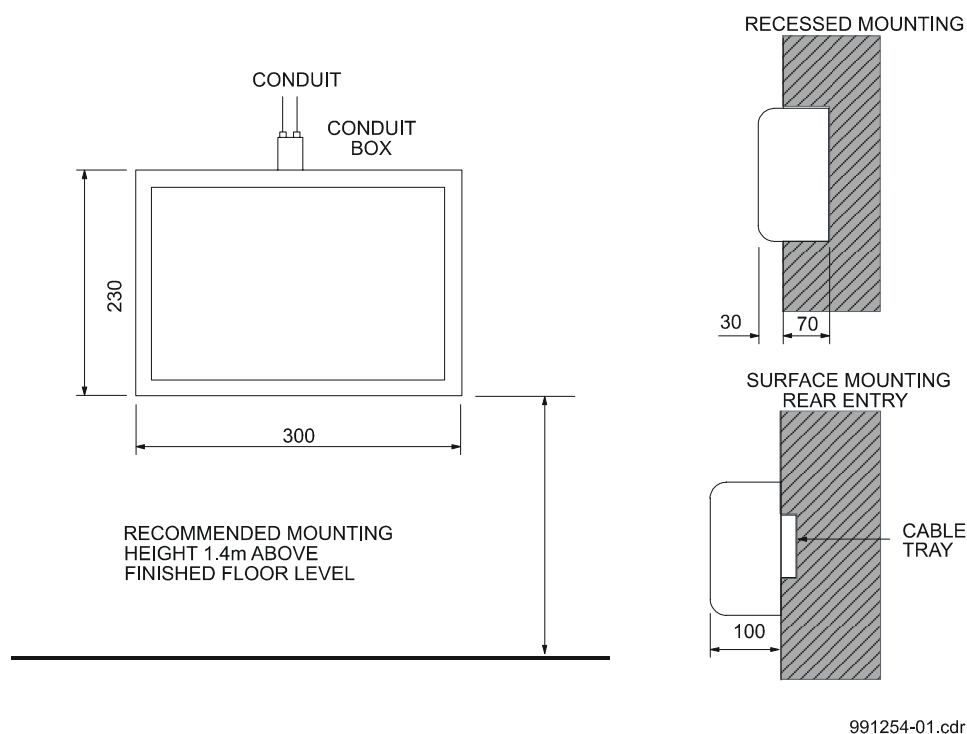


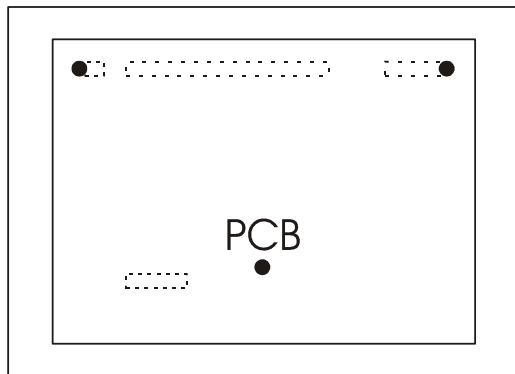
Figure 7: Mounting Arrangements

Note: The Extinguishing Status Units and Extinguishing Repeater Units are mounted the same way.

Installation Procedure

Install the Extinguishing Control Unit as follows:

1. Unlock and open the front panel with the key provided.
2. Disconnect the front panel by unplugging the ribbon cable connector on the main PCB.
3. Remove the front panel by sliding it out of the two slots on the unit.
4. Loosen the three (3) bolts indicated below.



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5. Remove the PCB-chassis plate assembly.
6. Mount the housing as per the attached sheet.
7. Re-fit the PCB-chassis plate assembly.
8. Wire the Extinguishing Control Unit according to the terminal schedule.
9. Refit the front panel.
10. Plug in the ribbon cable connector.

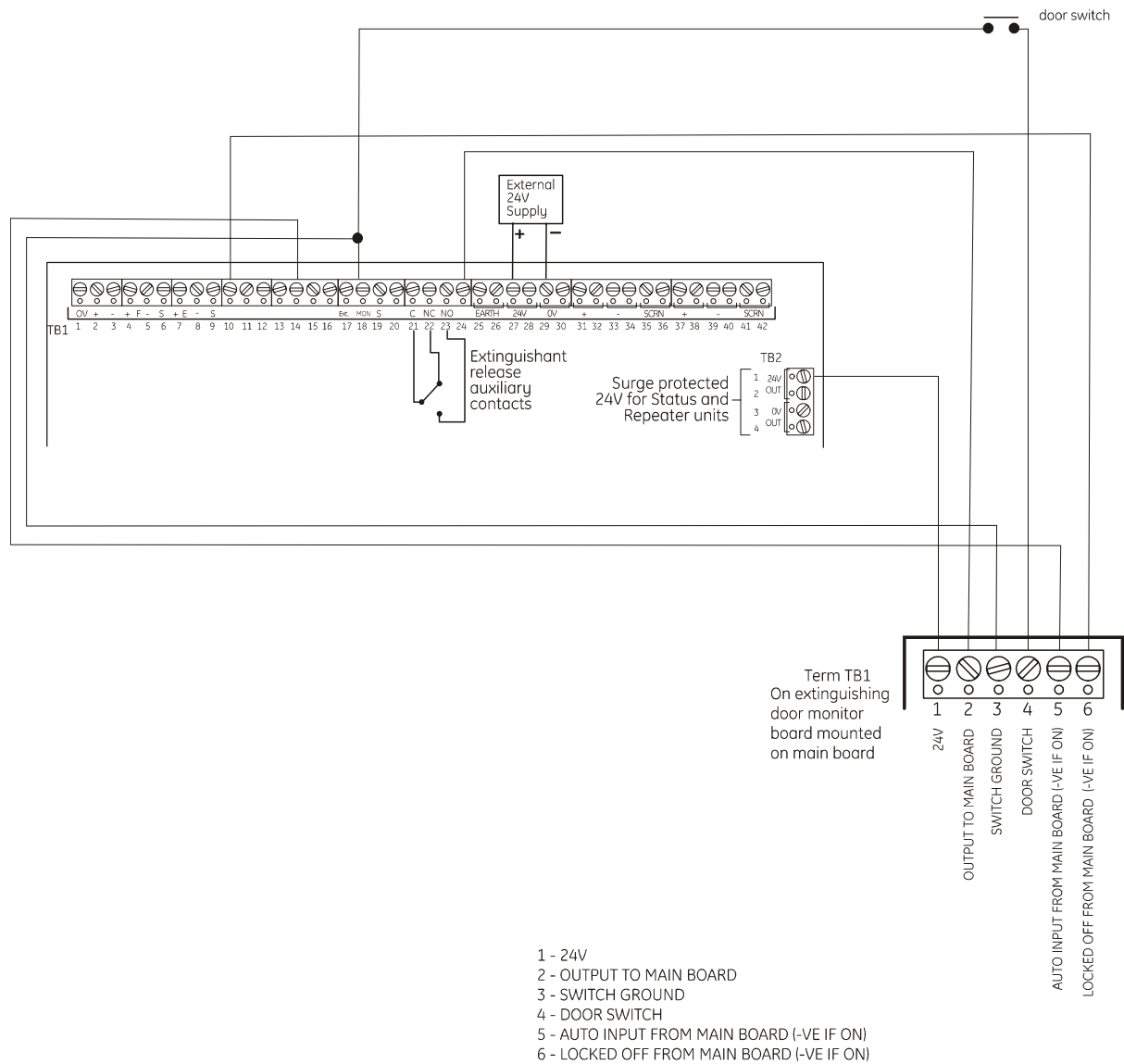
Extinguishing Control Door Monitor Board (Optional)

The unit is described in the Extinguishing Control Door Monitor Board installation sheet, document number 501-0077ZE-1-01, which is found in Appendix A of this manual. When fitted with a Door Monitor Board, the Extinguishing Control Unit must be located next to the door being monitored, that is the entrance door to the protected area.

Installing the Door Monitor Board

Note: Refer also to the Extinguishing Control Door Monitor Board Installation Sheet, document number 501-0077ZE-1-01 located in Appendix A of this manual.

1. Switch off power to the Extinguishing Control Unit.
2. Mount the Door Lock Monitor Board on the Extinguishing Control Main Board. The door lock monitor board mounts on four posts provided on the Extinguishing Control Main Board. The orientation of the board is such that the terminal block on the door monitor board is orientated the same way as the terminal block on the Extinguishing Control Board.
3. Wire the connections between the two boards as shown in Figure 8.
4. Connect the wiring to the monitoring switch on the door of the area being protected (contacts open when door is unlocked).
5. Re-apply power to the Extinguishing Control Unit and check operation.



Note: Applicable to ECU Version 2

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Figure 8: Door Monitor Board to Extinguishing Control Main Board Connections

Commissioning

Introduction

This section covers the programming of ZP5 Mk2-5 and ZP3 Fire Panels using the ZP3-ECU Extinguishing Control Unit.

For programming the Extinguishing Control Unit of ZP5 Mk1 Fire Panels refer to the applicable Commissioning Manual.

The commissioning of an Extinguishing Control Unit is done by performing a number of logical steps. These must be done in the sequence provided to successfully complete the task.



CAUTION: Once the extinguishing control unit is connected, the wiring must NOT be meggered. This will cause irreparable damage to the circuit.

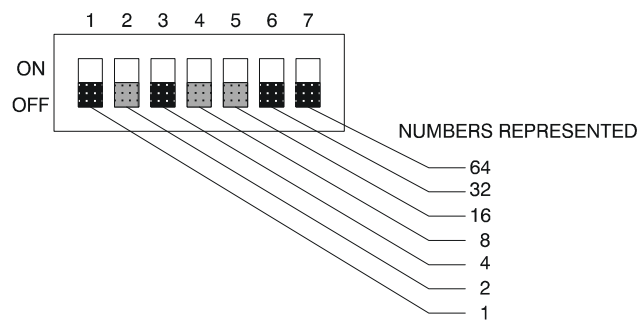
Pre-requisites

Before commissioning an extinguishing control system, make sure of the following:

- The small hand tools are available for testing, connecting, disconnection, etc.
- That a good Multimeter (preferably digital) is at hand.
- That you have all information relating to system zoning, relay mapping, relay operating parameters, device sensitivity settings, etc. properly documented.
- That the drawings on hand indicate correct device positions, device addresses and device types with all relevant wiring runs.
- That the ACTUATOR is NOT connected to the extinguishing control unit. For commissioning purposes, use a 2K2 ohm EOL (end of line) resistor in series with a LED, or the Multimeter across the resistor, to monitor the voltage at the location of the actuator.
- That you do NOT connect power to the extinguishing control unit.
- That you do NOT connect power to the ZP Fire Panel to which the extinguishing control unit is connected.

Addressing

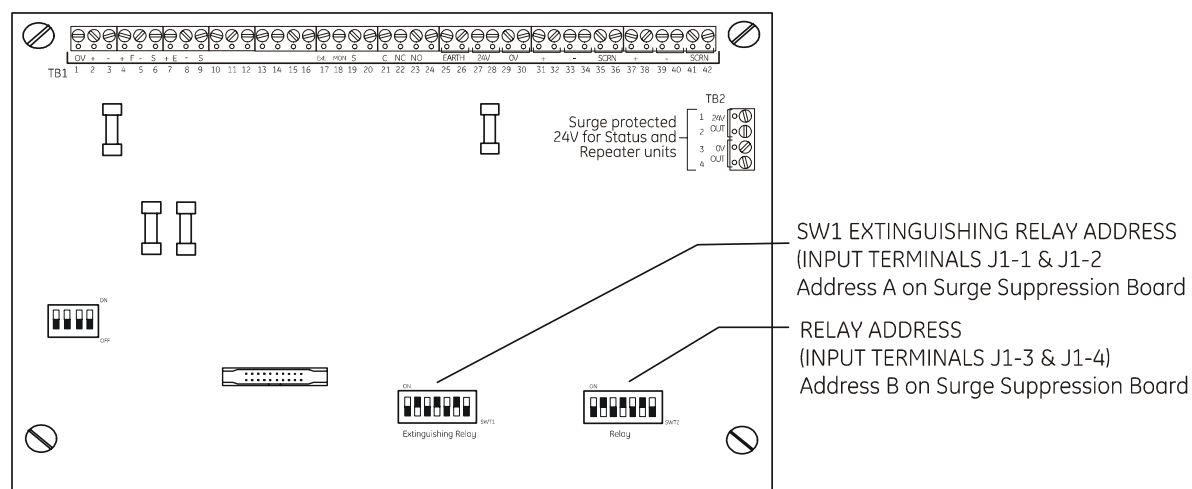
The Extinguishing Control Unit uses two addresses on the address line. These are selectable via the two sets of address settings switches on the main board of the Extinguishing Control Unit as shown in Figure 9. Any two addresses may be used but it is recommended that the two addresses are spaced at least twenty address numbers apart as security against short-term random noise interference.



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Figure 9: Switch Address Representation

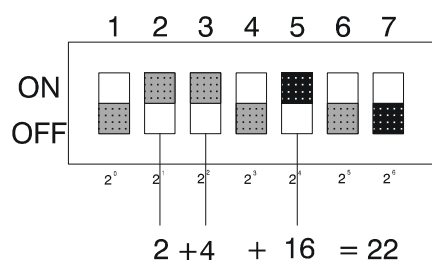
The ZP5 and ZP3 Control Panels identify the extinguishing relay address as an extinguishing unit. The ZP5 Control Panel identifies the coincidence connection relay address as a line relay. The switches are used to set the ZP device address. The switches are numbered 1 to 7, and may be coded to represent all addresses from 1 to 127. Switch positions and codes are shown in Figure 10.



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Figure 10: Address Switch Positions on ZP3-ECU Main Board

A switch represents a particular number only when it is in the ON position. In the OFF position, it represents 0. To determine the address number of a device, ADD the representative numbers of all the switches, which are in the ON position. An example is given in Figure 11.



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Figure 11: Calculation of Switch Address

Checks

Extinguishing Control Unit

Make sure that:

1. All field wiring is tested and correct and is connected, except the actuator and power.
2. The display PCB is connected via ribbon cable connector.
3. SWT3 settings on main PCB are correctly configured:
 - Switch 1 OFF = Extinguishant released signal not verified.
 - Switch 1 ON = Extinguishant released signal sensed via pressure switch in extinguishant distribution piping and reported to Panel.
 - Switch 3 ON = for the more time function to operate on the double knock automatic actuation.
 - Switch 4 ON in with link L5 (on display board) OUT = No delay between Break Glass activation and actual extinguishing.
 - Switch 4 OFF with link L5 (on display board) IN = Delay as per the setting of VR1 of the display board between Break Glass activation and actual extinguishing.

Note: VR1 on the main board sets the activation delay for double knock automatic discharge.

4. Fuses have the correct ratings:
 - F1 – 6.3A
 - F2 – 2A
 - F3 – 2A

Bells/Sounders

Make sure that the:

- Fire Alarm sounders (if connected to the Extinguishing Control Unit) are fitted with polarizing diodes.
- Last Fire Alarm sounder in the circuit (if connected to the Extinguishing Control Unit) is fitted with a 2K2 ohm EOL resistor.

Note: If the Fire Alarm sounder is not connected to the Extinguishing Control Unit (i.e. it is connected to the ZP Fire Panel), then connect a 2K2 ohm resistor across terminals TB1.4 & TB1.5 on the Extinguishing Control Unit.

- Extinguishant discharge sounders are fitted with polarizing diodes.
- Last extinguishant discharge sounder in the circuit is fitted with a 2K2 ohm EOL resistor.

Actuator Wiring

Make sure that:

- The actuator is NOT connected.
- A 2K2 ohm EOL resistor is fitted at the point of actuator connection.
- For the purpose of commissioning, connect a 24 VDC lamp or use the multi-meter to monitor the voltage across the EOL resistor at the point of actuator connection.

Pressure Switches (Optional Fitting)

Check the following:

- If the extinguishing cylinder pressure and extinguishing discharge (via pressure switch) are monitored, then connect a 3K9 ohm EOL resistor in series with the low cylinder pressure monitor at the cylinder (see "Connection to the ZP3-ECU Extinguishing Control Unit" on page 8 for wiring details).
- If extinguishing discharge and extinguishing pressure are not being monitored (with link SWT3-1 ON), then fit a 3K9 ohm resistor across terminals TB1.15 and TB1.16.

Remote Functions

If one or more extinguishing status unit or repeater units are connected, then make sure that:

- They are connected according to the respective wiring schematic.
- The EOL links are inserted on the last Status / Repeater unit and are removed from the ECU and other Status/Repeater units in the chain.

Extinguishing Control Door Monitor Board (Optional Fitting)

If a Door Monitor Board is fitted make sure that it is installed according to the Extinguishing Control Door Monitor Board installation sheet, document number 501-0077ZE-1-01 in Appendix A at the end of this manual).

Extinguishing Release Break Glass Units

Make sure that the glass panes on the Extinguishing Release Break Glass Units are intact.

ZP Fire Panel

This must be done at the ZP Fire Panel to which the Extinguishing Control Unit is connected in accordance with the relevant ZP commissioning manual.

Apply Power

1. Apply 24 VDC to the Extinguishing Control Unit.
2. Apply power to the ZP Fire Panel to which the Extinguishing Control Unit is connected.
3. Allow ZP Panel to initialise and calibrate as per normal start up.

After a short period the panel reverts to normal running mode and displays the date and time. If any faults are displayed, remove power, rectify the fault and repeat steps 2 and 3 above.

Programming the Extinguishing Control Unit (ZP5 Mk2-5 and ZP3 Panels)

The Extinguishing Control Unit uses two addresses on the address line. These are selectable via the two sets of address setting switches provided on the main board of the Extinguishing Control Unit.

For programming purposes, the examples illustrated on the following pages are for ZP5 Mk2-5 and ZP3 Fire Panels. For earlier versions of fire alarm panels, refer to the appropriate commissioning manual.

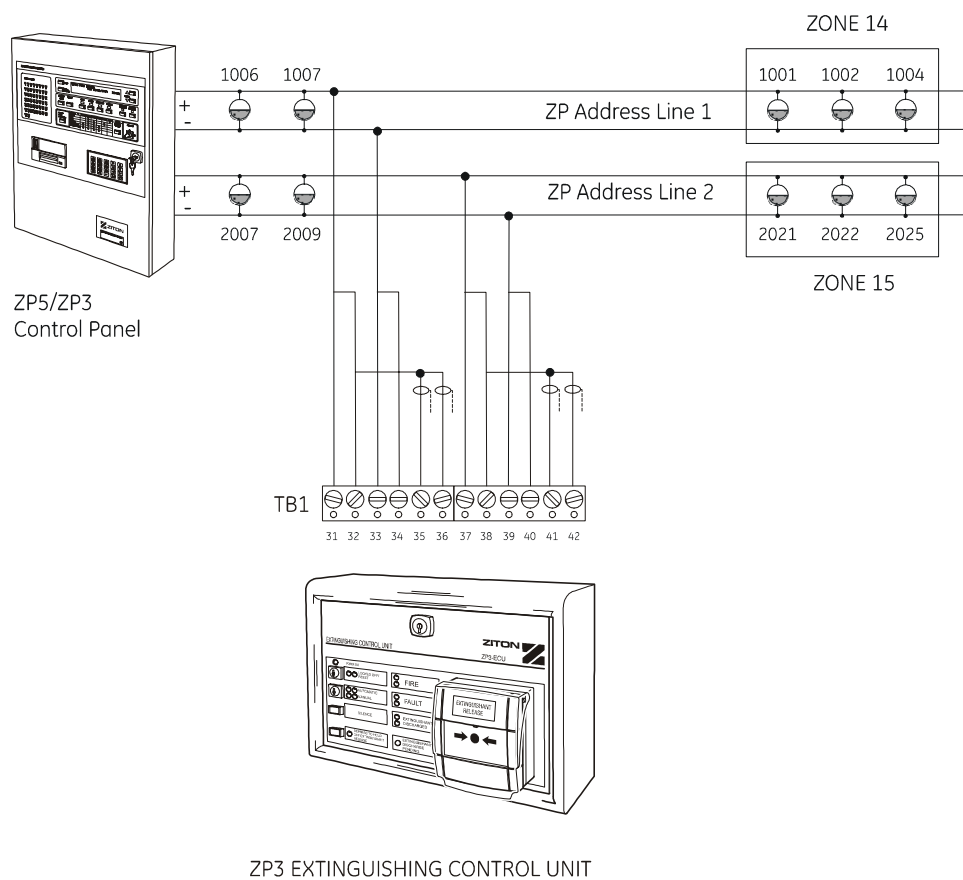
Note: The output address prefixes are determined by which lines connect to the Extinguishing Control Unit. That is; the prefix for the Extinguishing Relay address is determined by the line number connected to ADD A (+) & (-) terminals of the surge suppression board. The prefix for the coincidence connection relay address is determined by the line number connected to ADD B (+) & (-) terminals of the surge suppression board.

The examples below illustrate the following configurations:

- Two address lines used with the extinguishing control unit activated from one zone on each line.
- Two address lines used with the extinguishing control unit activated by groups of individual sensors on each line.
- One address line used with the extinguishing control unit activated by groups of individual sensors on the same line.
- One address line used with the extinguishing control unit activated by zones defined for sensors on the same line.

Note: The double knock facility is mechanically provided by relays connected to the two addresses used by the Extinguishing Control Unit. All software programming to these addresses used by the Extinguishing Control Unit is for single knock activation.

Two Lines with One Zone in Each Line



991259-02.cdr

Figure 12: Example Illustration – 2 Lines with 1 Zone in each

Based on the example shown in Figure 12, configure the extinguishing control unit as follows:

1. Select the two addresses for the Extinguishing Control Unit, for example:
 - Extinguishing Relay = Address 005 on Line 1
 - Coincidence connection Relay = Address 026 on Line 2

Refer to "Guidelines to Programming the ECU" on page 5 if required.

2. Use the Zone Allocation routine to allocate the following devices:

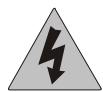
- 1001, 1002 and 1004 into Zone 14
- 2021, 2022 and 2025 into Zone 15

Refer to the "Commissioning" section in the ZP5 Mk4 or ZP3 Fire Control Panel Manual as listed under "Associated Publications and References" on page v of this manual.

3. Use the I/O Mapping routine to map the following:

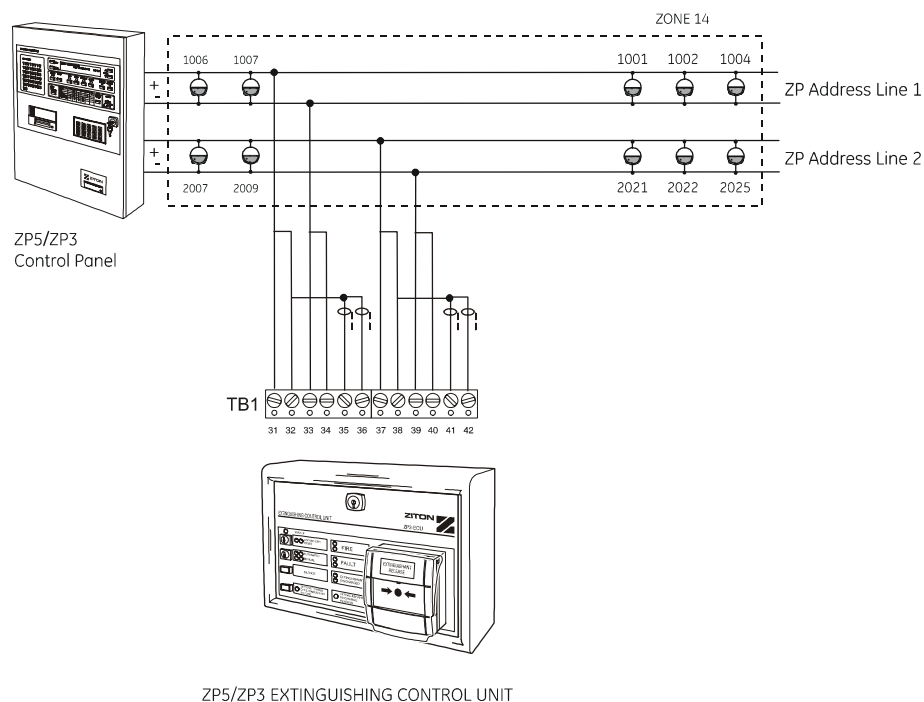
- Zone 14 to operate the Extinguishing Relay (1005)
- Zone 15 to operate the ECU coincidence connection relay (2026)
- Programme both the ECU Extinguishing Relay (1005) and ECU Coincidence connection Relay (2026) to single-knock/non-silencing operation mode.

4. Verify the programming by triggering a sensor in each zone and checking that the Extinguishing Control Unit functions correctly.



WARNING: MAKE SURE THAT THE ACTUATOR IS DISCONNECTED SO AS NOT TO DISCHARGE THE CYLINDER.

Two Lines - Sensors in Two Lines



991260-02.cdr

Figure 13: Example Illustration 2 Lines – Sensors in 2 Lines

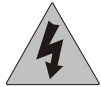
Based on the example shown in Figure 13, configure the extinguishing control unit as follows:

1. Select the two addresses for the Extinguishing Control Unit, for example:

- Extinguishing Relay = Address 005 on Line 1
- Coincidence connection Relay = Address 026 on Line 2

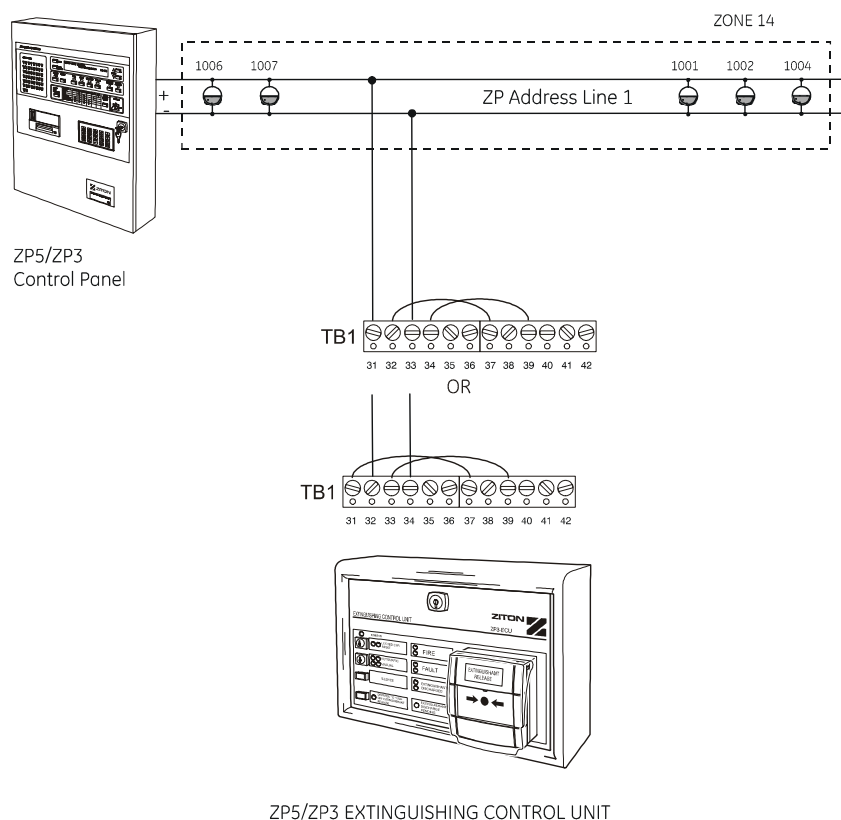
Refer to "Guidelines to Programming the ECU" on page 5 if required.

2. Use the I/O mapping routine to map the following devices:
 - 1001, 1002 and 1004 to operate the Extinguishing relay (1005)
 - 2021, 2022 and 2025 to operate the Coincidence Connection relay (2026)
3. Program both the ECU Extinguishing Relay (1005) and the ECU Coincidence Connection Relay (2026) to single-knock/non-silencing operation mode. Refer to the “Commissioning” section in the ZP5 Mk4 or ZP3 Fire Control Panel Manual as listed under “Associated Publications and References” on page v of this manual.
4. Verify the programming by triggering a sensor in each line and checking that the Extinguishing Control Unit functions correctly.



WARNING: MAKE SURE THAT THE ACTUATOR IS DISCONNECTED SO AS NOT TO DISCHARGE THE CYLINDER.

Single Line - Multiple Sensors



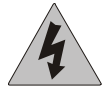
991261-02.cdr

Figure 14: Example Illustration – Single Line – Multiple Sensors

Based on the example shown in Figure 14, configure the extinguishing control unit as follows:

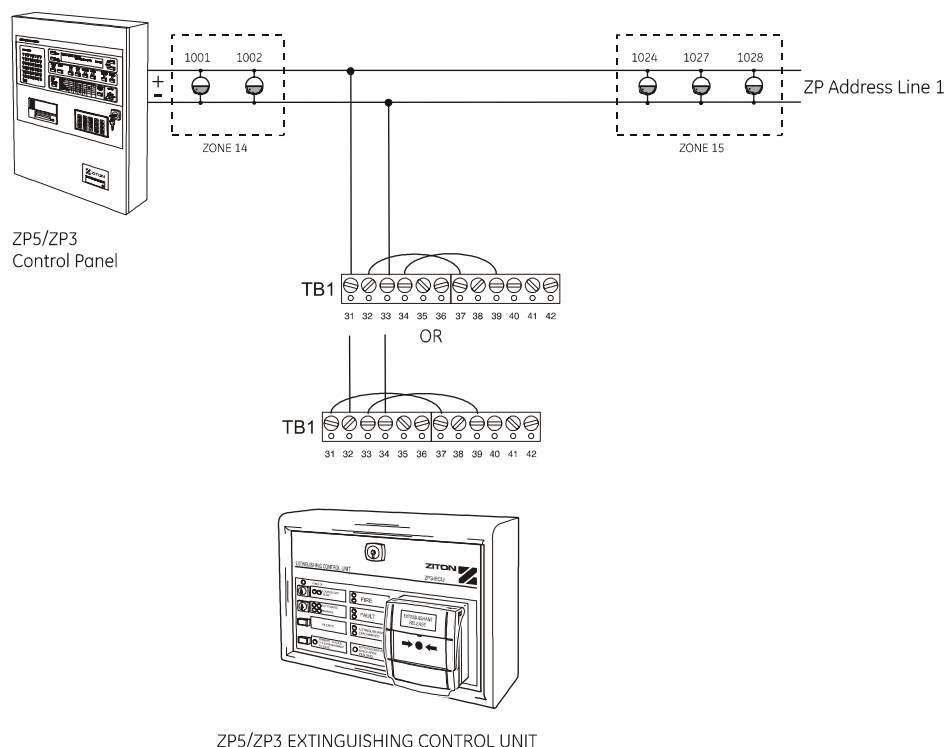
1. Select the two addresses for the Extinguishing Control Unit, for example:
 - Extinguishing Relay = Address 025 on Line 1
 - Coincidence connection Relay = Address 046 on Line 1
 Refer to “Guidelines to Programming the ECU” on page 5 if required.
2. Use the I/O mapping routine to map the following devices:
 - 1001, 1004 and 1008 to operate the ECU Extinguishing relay (1025)
 - 1022 and 1027 to operate the ECU Coincidence Connection relay (1046)

3. Program both the ECU Extinguishing Relay (1025) and the ECU Coincidence Connection Relay (1046) to single-knock/non-silencing operation mode. Refer to the “Commissioning” section in the ZP5 Mk4 or ZP3 Fire Control Panel Manual as listed under “Associated Publications and References” on page v of this manual.
4. Verify the programming by triggering two sensors, and one mapped to each output, and checking that the Extinguishing Control Unit functions correctly.



WARNING: MAKE SURE THAT THE ACTUATOR IS DISCONNECTED SO AS NOT TO DISCHARGE THE CYLINDER.

Single Line - Two Zones



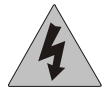
991262-n2 enfr

Figure 15: Example Illustration – Single Line – Two Zones

Based on the example shown in Figure 15, configure the extinguishing control unit as follows:

1. Select the two addresses for the Extinguishing Control Unit, for example:
 - Extinguishing Relay = Address 025 on Line 1
 - Coincidence connection Relay = Address 046 on Line 1
 Refer to “Guidelines to Programming the ECU” on page 5 if required.
2. Use Zone Allocation routine to allocate the following devices:
 - 1001 and 1002 to Zone 14
 - 1024, 1027 and 1028 to Zone 15
3. Use I/O Mapping routine to map the following:
 - Zone 14 to operate the ECU Extinguishing Relay (1025)
 - Zone 15 to operate the ECU Coincidence connection Relay (1046)

4. Program both the ECU Extinguishing Relay (1025) and the ECU Coincidence Connection Relay (1046) to single-knock/non-silencing operation mode. Refer to the "Commissioning" section in the ZP5 Mk4 or ZP3 Fire Control Panel Manual as listed under "Associated Publications and References" on page v of this manual.
5. Verify the programming by triggering a sensor in each zone and checking that the Extinguishing Control Unit functions correctly.



WARNING: MAKE SURE THAT THE ACTUATOR IS DISCONNECTED SO AS NOT TO DISCHARGE THE CYLINDER.

Tests

Verify Programming

- Verify that the zones are correctly programmed by taking a printout with the use of menu report facilities on the ZP5 Mk2-5 and ZP3 Panel.
- Verify that the relay mapping and operating parameters are correct by taking a printout using the menu maintenance report facility on the ZP5 Panel.
- Sample test a few mapping configurations.

System Test

Test the system by following the Quarterly maintenance test routine described in the Maintenance Manual, document number 503-0800ZE-M-01.

Arm the System

Once you are sure that the system is functionally correct, connect the actuator, and make sure that the transit pin (if fitted) is removed.

Specifications

Item	Description	Specification/ Remarks
Model	ZP3-ECU	
Activation Method	Software Link	
Communication	ZP Polling System	
Capacity	One Extinguishing Area	
Primary Supply	Operating Voltage	22 to 29 VDC
	Current - Quiescent	80 mA ** see note below
	Current - Fault	100 mA (excl ext. devices) * see note below
		150 mA (excl ext. devices) * see note below
Controls	Auto/Manual Control	
	Lock-off/Reset	
	Fire Sounder Silence	
	Extinguishant Discharge Sounder Silence	
	Manual Extinguishant Release	

Item	Description	Specification/ Remarks
Indications	Extinguishant Discharged	
	System in Auto	
	System in Manual	
	System Locked	
	Fire	
	Fault	
	Power ON	
Monitoring	Function	Low extinguishing pressure
		Extinguishing release verification
		Fuses
		Power Supply
	Status	Auto/Manual
		System Locked
		Door locked/unlocked
		Extinguishant Discharge-manual
		Extinguishant Discharge-auto
	Field Wiring	Fire Alarm Sounder Circuit
		Extinguishant Sounder Circuit
		Extinguishant Discharge Actuator Cct
		Extinguishant Release Break Glass Unit
		Extinguishant Pressure Monitoring Cct
Remote Status Units	Compatible with ZP3-ECUS Extinguishing Status Units and ZP3-ECUR Extinguishing Repeater Units (max. no. of 10 units can be connected)	
Outputs	Extinguishant discharge	5 A, 24 VDC intermittent
		1.5 A, 24 VDC continuous
	Fire Alarm Bell	0.5 A, 24 VDC
	Discharge Siren	0.5 A 24 VDC
	Auxiliary Relay Contacts	1 SPDT
	(Voltage free)	Changes state at discharge
		Max switch power 30 W, 50 VA
		Max switch current 1.5 A
		Max switch power 100 VDC / 90 VAC
Optional Input Board	ZP5-GDM	ECU Door Lock Monitor Board
Mechanical Details	Colour	Ash Grey
	Dimensions (W x H x D)	300 x 230 x 100 mm
	Mounting Method	Surface Mounting

Note: The above current ratings are dependant upon the capacity of the power supply unit.

Appendix A

Appendix A consists of the following documents:

Doument Number	Title
501-0800ZE-1-01	ZP3-ECU, Extinguishing Control Unit - Installation Sheet
501-0801ZE-1-01	ZP3-ECUS, Extinguishing Status Unit – Installation Sheet
501-0802ZE-1-01	ZP3-ECUR, Extinguishing Repeater Unit – Installation Sheet
501-0077ZE-1-01	ZP3-EDM, Extinguishing Control Door Monitor Board – Installation Sheet
501-0803ZE-1-01	ZP3-ECM, Extinguishing Control Main Board – Installation Sheet
501-0804ZE-1-01	ZP3-ECD, Extinguishing Control Display Board – Installation Sheet
501-0805ZE-1-01	ZP3-ESM, Extinguishing Status Main Board – Installation Sheet
501-0835ZE-1-01	ZP3-ESD, Extinguishing Status/Repeater Display Board – Installation Sheet

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