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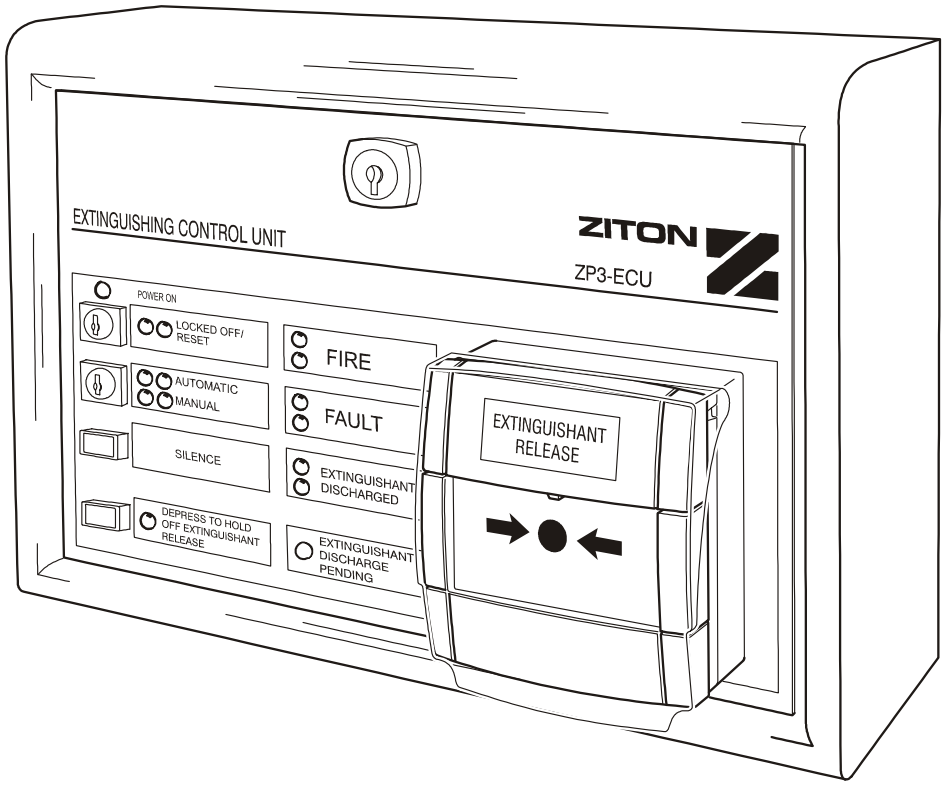
ZP3-ECU Extinguishing Control Unit
Maintenance Manual



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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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Table of Contents

Heading **Page**

List of Abbreviations, Acronyms and Terms v
Associated Publications and References v
Preface 1
Limitations 1
  Response Time 1
  Maintenance Faults 1
Maintenance Responsibilities 2
  General 2
  Preventive Maintenance 2
    Daily and Weekly Checks 2
    Quarterly Maintenance 2
  Fault Finding 3
Maintenance Pre-requisites 3
Log Books 4
Test Notification and Preparation 4
Preventive Maintenance 4
  Daily and Weekly Checks 4
  Quarterly Maintenance 5
    Extinguishing Control Unit 5
    Extinguishing Status/Repeater Units (Optional) 6
    Extinguishing Control Door Monitor Board (Optional) 6
  Arming the System after Completion of Quarterly Maintenance 7
Fault Finding - Communication ECU to Control Panel 7
  General Information 7
  Precautions 7
  Device Unaccepted 8
    Indications 8
    Possible Causes 8
    Corrective Actions 8
  Relay not Responding 9
    Indications 9
    Possible Causes 9
    Corrective Actions 9
  Device Type Fault 9
    Indications 9
    Possible Causes 10
    Corrective Actions 10
  Device Offline 10
    Indications 10
    Possible Causes 10
    Corrective Actions 10
Fault Finding - Extinguishing Control Unit Faults 11
  Extinguishing Control Unit General Faults 11
    Indications 11
    Possible Causes 11
    Corrective Actions 11
    Manual Extinguishant Release Faults 12
    Extinguishant Actuator Faults 12
    Extinguishant Pressure Faults 13
    Fire Bell Fault 13

Extinguishant Discharge Siren Fault 14
Extinguishant Pressure Verification Switch Fault 14
Extinguishing Control Unit Power Fault 15
Indications 15
Probable Cause 15
Corrective Actions 15
Extinguishing Status/Repeater Unit Fault (Optional) 15
Indications 15
Probable Cause 15
Corrective Actions 15
Extinguishing Door Monitor Unit "Fault" (Optional) 16
Indications 16
Probable Cause 16
Corrective Actions 16
Extinguishing Control Unit Main Board Fault Diagnostic LED's 16
Index 19

List of Illustrations

Figure **Page**

Figure 1: ECU Main Board 16

List of Tables

Table **Page**

Table 1: ECU Fault Diagnostic LED's 17

List of Abbreviations, Acronyms and Terms

Abbreviation/Acronym/Term	Definition
DC	Direct Current
Extinguishant	Generic term to describe an extinguishing agent (for example water, dry chemical, foam etc.) used to combat fires.
GND	Ground
LCD	Liquid Crystal Display
LED	Light Emitting Diode
mA	milliampere
PC	Personal Computer
RX	Receive
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
Installation Sheet, Extinguishing Control Door Monitor Board	501-0077ZE-1-01
ZP3 Fire Control Panel Installation and Commissioning Manual	503-1160ZE-I-00

Preface

This manual is intended for use by the ZP3-ECU Extinguishing Control System maintenance personnel. It provides the following information about maintaining the Extinguishing Control System and its associated equipment, and making sure that it operates to its optimum effect:

- Preventive maintenance (see page 4)
- Fault finding and Corrective Maintenance (see pages 7 to 16.)

Limitations

Response Time

In designing the extinguishing system, take cognisance of inherent delays between fire detection and extinguishant release plus deliberate delays to allow for personnel evacuation.

Maintenance Faults

As with most Extinguishing Systems, the most common cause of their malfunction is lack of routine maintenance. All routine maintenance stipulated in this manual must be completed routinely and within the scheduled time limits.

Maintenance Responsibilities

General

The owner of a fire detection system is responsible for making sure that it is correctly maintained so that it is in proper working condition at all times. This involves arranging for the system to be checked, tested and serviced as described in this manual.

The maintenance procedures described are Ziton recommendations. There may be additional requirements or regulations imposed by local authorities. Where these conflict with the Ziton recommendations (for example stipulating more frequent servicing) then the local authority regulations should be followed.

Preventive Maintenance

Preventive maintenance is divided into the following categories:

- Daily Checks
- Weekly maintenance
- Quarterly (three-monthly) maintenance

Daily and Weekly Checks

The daily and weekly checks require no technical expertise and should be carried out by the panel operator. The following checks are required:

Daily

The Extinguishing Control Unit must remain clean at all times. Perform the following:

- Clean the outer surface of the extinguishing control unit to remove any excess dust using a damp cloth.
- Check for correct and smooth operation of the key switches. Lubricate sticky key switches if required using 2 or 3 drops of a general purpose lubricant, for example 3 in 1 oil.

Weekly

- Check any reports sent from the Extinguishing Control Unit to the main Fire Control Panel. Under normal conditions no abnormal reports should be detected.
- Check the front panel of the Extinguishing Control Unit, and any attached optional Status/Repeater Units. Only the POWER and AUTO/MANUAL LED's should be illuminated.
- Test the function of the MANUAL/AUTO key switch by operating the switch. Check that the printer on the main Fire Control Panel indicates the change in switch position.
- Restore the system to previous configuration.
- Log the test in the system log.

Quarterly Maintenance

Quarterly maintenance must be carried out by suitably trained personnel. Such personnel may be direct employees of the company, or may be contracted from the maintenance company responsible for servicing.

Quarterly maintenance is designed to pre-empt any problems that may arise and to check that the system is functioning to its installation specifications. The services should be arranged through a maintenance contract with a servicing company. This agreement should specify how to contact the service company and how they can access the premises.

Repair services should be available within 24 hours. For premises in continuous use, an engineer should be on call at all times. The servicing company should have engineers trained in servicing Ziton equipment. The owner of the fire alarm system is responsible for ensuring that the company contracted is competent to carry out the work.

Fault Finding

Faults that occur on the Extinguishing Control Unit or in building wiring are reported by the ZP3/ZP5 Control Panel. The fault LED on the Extinguishing Control Unit illuminates. When a fault occurs, it should be dealt with as quickly as possible. In some cases the operator will be able to rectify the fault, but usually a call will be made to the servicing company.

A comprehensive guide to faults that can be raised by the panel is provided under "Fault Finding - Extinguishing Control Unit Faults" on page 11. Information is also given as to the appropriate actions to take in each case.

Maintenance Pre-requisites

Before performing any maintenance on the Extinguishing Control System, make sure that:

- Small hand tools are available for testing, connecting, disconnection, etc.
- A good multimeter (preferably digital) is available.
- The available drawings indicate correct device positions, device addresses and types with all relevant wiring runs.
- A record is available of how the fire system has been configured. The system specification should provide a detailed description of all aspects of the extinguishing system such as:
    - Assumptions about the environment in which the fire system is to operate.
    - The model of the control panel to which the extinguishing unit is connected.
    - The version number of panel software used.
    - Type of extinguishing cylinders/equipment and extinguishant details.
    - Physical layout of lines and devices. The type and the address applicable to each extinguishing control unit should be recorded.
    - The organisation of devices into logical zones as affects the extinguishing system.
    - Cause and affect rules programmed into the panel (input/output mappings), which affect the extinguishing control unit.
    - Any custom controls or features.
    - Field Wiring drawings for the system.

The system specification is the blueprint for how the system should be configured and how it should perform. The system specification is essential for when the system is extensively tested and checked during servicing. Without such a specification there is no final arbitration as to what is the correct behaviour of the system.

It is important to keep the specification up-to-date. Whenever changes are made to the system the specification should be updated to reflect those changes.

Log Books

Every Extinguishing Control System should have a logbook associated with it. This logbook is used to record events raised by the Extinguishing Control Unit or events concerning the Extinguishing System as reported by the connected ZP3/ZP5 panel. The following type of information should be recorded in a logbook:

- A description of each event along with the name of the responsible person on duty at the time of the event.
- Brief details of any servicing arrangements arising from events.
- Dates and times of all extinguishant discharges, whatever the cause. The cause of the discharge should be noted etc.
- Dates and times of all alarms. The cause of the alarm should be noted. If the cause is not known then this should be stated. The devices activated and their locations should be recorded. Any actions taken should also be recorded.
- Dates, times and types of all defects and faults and the corrective actions taken.
- Dates, times and types of all tests undertaken.
- Dates, times and types of all servicing undertaken, whether routine or for corrective purposes.
- Dates and times of all periods of device, zone or system isolation, for whatever purpose.
- Dates of all changes and upgrades to the system along with the names of those that carried them out.

Note: The system specification should also be updated.

Test Notification and Preparation

It is critical that the relevant personnel are notified about any testing BEFORE starting with the tests.

Occupants of the building and anyone receiving remote alarm signals, such as the fire department must be informed of when the test is to begin and when it is over. No alarms should be sounded before notifying these personnel.

CAUTION: All systems that were disconnected for testing/maintenance purposes MUST be reconnected at the end of testing.

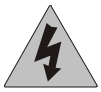
Preventive Maintenance

Daily and Weekly Checks

Daily and weekly checks are performed by the panel operator. For more details see “Daily and Weekly Checks” on page 2.

Quarterly Maintenance

Extinguishing Control Unit



WARNING: EXTREME CAUTION MUST BE TAKEN WHEN WIRING OR UNWIRING THE EXTINGUISHING CONTROL UNIT WHEN IT IS LIVE.

Inspect the actuation voltage as follows:

1. Turn the Lock off key to "LOCKOFF". Check that the locked-off LED's have illuminated.
2. Replace the transit pin at the Extinguishing Cylinder (if applicable), and remove the actuator connections from terminal block TB3 terminals 7 and 8 marked "release out" on the ECU display board.
3. Connect an 18 ohm, 5 W resistor across terminals 7 and 8 of terminal block TB3. Reset the control panel and check that no fault is indicated.
4. Turn the Lockoff/Reset key to "RESET". Check that the Lock-off LED's extinguish.
5. Switch the Auto/Manual key switch and check that the indicating LED's indicate appropriately. Leave the switch in AUTO.
6. Prepare the building for a test alarm.
7. Connect a voltmeter across the 18 ohm resistor.
8. Activate one of the inputs mapped to activate the Extinguishing Control Unit (use a Ziton Z-SDT2 to activate a smoke sensor if required).
9. Check that the monitored Fire Bell output on terminal block TB1 terminal 4 and 5 is activated (if measuring with a meter, terminal 1 is +24 V with respect to terminal 2)
10. Check that the red Fire LED's on the front fascia of the Extinguishing Control Unit illuminate.
11. Wait for at least forty five (45) seconds and make sure that a 24 V output is NOT detected across the actuator terminals 7 and 8.
12. Silence the Fire Bell output by pressing the "Silence" pushbutton on the front fascia of the Extinguishing Control Unit. Check that the bell output responds accordingly.
13. Activate the second input mapped to activate the Extinguishing Control Unit (use a Ziton Z-SDT2 to activate a smoke sensor if required).
14. Check that the Fire Bell output is again activated.
15. Wait 45 seconds and then check that a 24 V output is detected across actuator terminals 7 and 8.
16. Check that the "Extinguishant Discharged" LED on the front fascia of the Extinguishing Control Unit is illuminated.
17. Check that the "Extinguishant Discharged Siren" output on terminal block TB1 terminals 6 and 7 is activated (measure 24 V at terminal 6 with respect to 7).
18. Check that the Main Fire Control Panel reports the "Discharge" condition.
19. Turn the "Lockoff" key switch on the front fascia and check that the "Locked off" LED's illuminate. Check that the Extinguisher Discharged Siren silences.
20. Reset the unit by turning the Lockoff/Reset to RESET check that the Lockoff LED's go off.
21. Re-activate the extinguishing unit with a double knock as above.
22. Wait ten seconds then press the hold off more time button.
23. Confirm that the delay time after releasing the hold off button is the delay time as configured. The hold off button resets the delay time to the full delay time.
24. Clean the triggered devices, reset the panel and then reset the extinguishing control unit with the locked off key.

Extinguishing Status/Repeater Units (Optional)

If Extinguishing Status or Repeater Units are attached to the Extinguishing Control Unit, check that their LED indicators mirror those of the Extinguishing Control Unit as the service tests under “Extinguishing Control Unit” on page 5 are conducted.

In the case of Extinguishing Status units, with the actuator still disconnected, do the following checks:

1. Remove link L1 from the Extinguishing Display board of the Status Unit most remote from the Extinguishing Control Unit. Check that the "FAULT" LED’s illuminate on both the Extinguishing Status Unit and the Extinguishing Control Unit. Check that the Fire Control Panel indicates a fault.
2. Reinsert link L1 that was removed in the above step. Check that the "FAULT" LED’s go out on both the Extinguishing Status Unit and the Extinguishing Control Unit. Accept and Reset the fault on the Fire Control Panel.
3. Repeat steps 1 and 2 above, but using links L2 and L3 instead of link L1.
4. Activate one of the inputs mapped to activate the Extinguishing Control Unit (use a Ziton Z-SDT2 to activate a smoke sensor if required).
5. Check that the red Fire LED’s on the front fascia of the Extinguishing Status Units illuminate.
6. Silence the Fire Bell output on the Extinguishing Control Unit by means of the "Silence" pushbutton on the front fascia of the Extinguishing Status Unit. Check that the bell output responds accordingly.
7. Activate the second input mapped to activate the Extinguishing Control Unit (use a Ziton Z-SDT2 to activate a smoke sensor if required).
8. Check, after the delay time, that the "Extinguishant Discharged" LED on the front fascia of the Extinguishing Status Unit is illuminated, while monitoring the time taken for this operation.
9. Turn the "Lockoff" key switch on the front fascia of the Status Unit and check that the "Locked off" LED’s on the Extinguishing Control, Status and Repeater Units illuminate. Check that the Extinguishant Discharge Siren connected to the Extinguishing Control Unit silences.
10. Accept and reset the Fire Control Panel by turning the Lockoff/Reset key on the Status Unit to RESET. Check that the Lockoff LED’s go off on the Extinguishing Control, Status and Repeater Units.
11. Test the hold off operation by completing tests in steps 1, 2, 4, 5, 6 and 7 above. Wait 10 seconds and press the “More Time” button. Measure the time between the activation of the “Extinguishant Discharged” LED’s and releasing the hold off button. The measured period, which is the configured delay setup by VR1 (on the main board), should be the same as the time noted in step 8. Confirm that this is the correct delay time required.
12. Repeat steps 9 and 10 to reset the unit.

Extinguishing Control Door Monitor Board (Optional)

If a Door Monitor Board is fitted, make sure that it is installed according to the Extinguishing Control Door Monitor Boards installation sheet, document number 501-0077ZE-1-01.

1. Check that this function is working correctly by turning the AUTO/MANUAL key switch to Auto and leaving the door open. The Extinguishing Control Unit buzzer should sound, and after approximately thirty (30) seconds the ZP3/ZP5 Control Panel reports a fault.
2. Close the Door Lock Monitoring Switch by locking the door. The buzzer should silence automatically. Reset the ZP3/ZP5 Control Panel.
3. Record the results of the maintenance check in the system log.

Arming the System after Completion of Quarterly Maintenance

After successfully completing the maintenance check do the following:

- Submit a report of the findings to the system owner or his delegated representative.
- Restore the system to normal and reset.
- Lock the system off while restoring the actuator.
- Remove the transit pin from the extinguisher cylinder (if applicable).

Fault Finding - Communication ECU to Control Panel

General Information

When tracing and correcting faults, observe the following guidelines and precautions:

- Before starting any fault finding procedures, make sure that the system as a whole is calibrated correctly. Check the high reference analogue (reading 1) from several devices covering the length of the line. The reference value should be between 205 and 218.
- If there appears to be a problem, disconnect the line and connect a single sensor to the panel. Check that the reading is within the above parameters.
- When tracing a fault on a device or alarm line, the recommended procedure is to split the line in half and check in which half the problem is located. Continue this procedure, dividing the suspect region of the line in half until the exact location of the problem is identified.

Precautions

- Never use a megger, or any other high voltage instrument, on detection or alarm lines while there are any devices connected to them. This causes irreparable damage to the devices.
- Never replace a panel PCB, or any other components while the power is connected. This could damage them irreversibly.
- Never replace a fuse with one that has a higher amperage rating than that which is specified.
- Whenever replacing line devices make sure that the address settings on the replacement units match those of the units they are replacing.

The fault list describes faults that can be raised by the control panel. The following information is given for each fault:

- Fault name
- Fault description
- Panel indications
- Probable cause or causes
- Corrective action

Panels are configured to sound a fault buzzer when a fault is raised. The buzzer sounds approximately every three (3) seconds. A yellow fault LED also illuminates. After acknowledging the fault by accepting it, the buzzer sounds only every fifteen (15) seconds. After correcting the fault, reset the panel, this returns the panel to normal and the fault LED goes out.

Device Unaccepted

During initialisation on power up the panel checks all devices, noting the device type at each address. This process can also be initiated through the Setup menu (see Installation and Commissioning Manual, document number 503-0800ZE-I-01). A "Device Unaccepted" fault is raised when a device cannot be accepted.

Indications

- Yellow Fault LED is lit.
- Fault buzzer sounds.
- Event is shown on the display, for example:

UNACCEPTED Zone 001 Dev 001	Event 001
Second Floor, Laundry Room	

- Event is printed (if printer configured).

Possible Causes

If the unaccepted devices refer to an Extinguishing Control Unit, the possible causes are:

- Open circuit, short circuit, or missing end-of-line (EOL) resistors on field wiring.
- Loop wiring out of specification resistance/capacitance.
- Loose or high resistance connection on the field wiring terminals.
- An Extinguishing Control Unit that is out of calibration or is faulty.
- Interference on the line to which the device is attached.

Corrective Actions

1. Press the ACCEPT button to accept the fault. If this fault has been raised for a number of devices on the same line then there may be interference on the line. If this does not apply then proceed to the next point.
2. Note the ECU in need of attention, and then show the analogues for the two addresses applicable to that device on the display by using the maintenance menu report analogue facility.
3. Check that slot 5 analogue reading is not less than 59 counts or more than 188 counts. Above or below would indicate an open circuit or shorts on the field wiring respectively.
4. The extinguishing relay reading should also have an analogue reading in slot 6 of between 39 and 198.
5. Take the appropriate actions to fix the problems identified in steps 3 or 4.
6. Remove power from the panel and then re-apply power. This initialises the panel and the devices and the previously unaccepted device should now be accepted.

Relay not Responding

This fault is raised when the ECU double knock relay does not switch when required. The relay is mapped as an output that is activated by a triggered input.

Indications

- Fault buzzer sounds.
- Display scrolls between two events, one showing the addressable relay device that has not switched, the other showing the event that has triggered it (usually a fire event). For example:

FIRE Zone 001 Dev 001 Event 001 Second Floor, Laundry Room

RELAY FAULT Zone 001 Dev 086 Event 002

- Events are printed (if printer configured).
- Zone in which the relay fault occurred is indicated by the appropriate red Zone LED.

Possible Causes

- ECU double knock relay is in an isolated state.
- ECU double knock relay is faulty.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. If the yellow Isolated LED is on, check whether the relay is isolated. If the relay is isolated then investigate the reasons for this. De-isolate the relay if it is safe to do so.
3. If no other reason can be found for the fault, replace the faulty ECU main board.
4. Reset the panel.

Device Type Fault

When the system is commissioned the panel notes the device type at each address. If this type should subsequently change then the panel raises a device type fault.

Indications

- Yellow Fault LED is lit.
- Fault buzzer sounds.
- Event is shown on the display, for example:

TYPE FAULT Zone 001 Dev 001 Event 001 Second Floor, Laundry Room

- Event is printed (if printer configured).

Possible Causes

- Device addresses have been swapped within the system after device acceptance.
- System interference caused by faulty wiring.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Check the system specification to see which type of device should be at the address in question. Replace the incorrect device with one of the correct type.
3. Reset the panel.

Device Offline

The panel checks all devices during initialisation on power up, and notes the device type at each address. This process can also be initiated through the Setup menu (see Commissioning Manual). If an ECU device is missing at an address that was previously occupied then the panel detects that it is offline.

Indications

- Yellow Fault LED is lit.
- Fault buzzer sounds.
- Event is shown on the display, for example:

DEV OFFLINE Zone 001 Dev 001 Event 001 Second Floor, Laundry Room

- Event is printed (if printer configured).

Possible Causes

- An isolator on the line has caused the device to open circuit.
- Field wiring is disconnected or there is an open circuit.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Note the faulty device and then show the analogues for that device on the display. Check the first analogue reading. If analogue reading 1 is almost at zero then the panel cannot communicate with the device.
3. Install a replacement if the device is missing. If the device is present then remove it and check the line for pulsing voltage on the device terminals. If there is no line voltage present then fix the fault in the field wiring or replace the appropriate line isolator.
4. Make sure the device is correctly in place and reset the panel.

Fault Finding - Extinguishing Control Unit Faults

Extinguishing Control Unit General Faults

There are a number of faults identified by the control panel as a general fault on the extinguishing control unit.

Indications

- Panel buzzer sounds.
- Display indicates a fault as GNFLT, for example:

GNFLT Zone 001 Dev 5002 Event 012 Carbon dioxide ECU storage room

- Events are printed (if printer configured).
- Appropriate red Zone LED illuminates to indicate the zone in which the fault occurred.

Possible Causes

A fault on the control system falls into one of the following categories:

- Manual Extinguishant Release Faults.
- Extinguishant Actuation Faults.
- Extinguishant Pressure Faults.
- Fire Bell Fault.
- Extinguishant Discharge Siren Fault.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Refer to the paragraphs below with regard to the type of fault displayed.
3. Reset the panel.

Manual Extinguishant Release Faults

Indications

- Call Point LED on the Extinguishing Control Unit illuminates.
- Fault LED on the Extinguishing Control Unit illuminates.
- Fault message is displayed on the ZP3/ZP5 Control Panel and the panel buzzer sounds. The Fault LED on the Control Panel also illuminates.

GNFLT	Zone 001 Dev 5001 Event 002

Probable Cause

SWT3-1 or link L3 on the Extinguishing Control or Status Units display PCB respectively is not correctly setup or the monitored circuit has gone open-circuit.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Check the number of Extinguishing Status Units on the system.
3. Make sure that SWT3-1 is OFF on the Extinguishing Control Unit and that L3 is removed from the Extinguishing Status Units.
4. Insert Link L3 in its appropriate position on the last Extinguishing Status Unit only. This causes the EOL resistor to engage.
5. If there are no Extinguishing Status Units on line then switch SWT3-1 ON, on the Extinguishing Control Units display PCB.
6. Check the continuity of the monitored circuit.
7. Reset the panel.

Extinguishant Actuator Faults

Indications

- Detonator Fault LED on the Extinguishing Control Unit illuminates.
- Fault LED on the Extinguishing Control Unit illuminates.
- Fault message is displayed on the ZP3/ZP5 Control Panel and the panel buzzer sounds. The Fault LED on the Control Panel also illuminates.

GNFLT	Zone 001 Dev 5001 Event 002

Probable Cause

- EOL resistor across the actuator switch is not inserted or the circuit is an open circuit. See Figure 5 in ZP3-ECU Extinguishing Control Unit Installation and Maintenance Manual, document number 503-0800ZE-I-01 if required.
- Detonator Fuse on the Extinguishing Control Unit PCB is missing or blown.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Inspect the EOL resistor. If missing, insert one between terminals 7 & 8 of TB3 on the ECU display board.
3. Inspect Detonator fuse, replace fuse if it is missing or blown.
4. Check continuity of the monitored circuit.
5. Reset the panel.

Extinguishant Pressure Faults

Indications

- Extinguishant Pressure Low LED on the Extinguishing Control Unit illuminates.
- Fault LED on the Extinguishing Control Unit illuminates.
- Fault message is displayed on the ZP3/ZP5 Control Panel and the panel buzzer sounds. The Fault LED on the Control Panel also illuminates.

GNFLT	Zone 001	Dev 5001	Event 002

Probable Cause

- EOL resistor across the Extinguishant Pressure Low switch is not inserted.
- Extinguishant pressure is low.

Corrective Action

1. Press the ACCEPT button to accept the fault.
2. Inspect the EOL resistor. If missing, insert one between terminals 17 & 18 of TB1 and the ECU main board.
3. Reset the panel.
4. If the condition still exists, check the pressure in the extinguishant cylinder.

Fire Bell Fault

Indications

- Fire Bell Fault LED on the Extinguishing Control Unit illuminates.
- Fault LED on the Extinguishing Control Unit illuminates.
- Fault message is displayed on the ZP3/ZP5 Control Panel and the panel buzzer sounds. The Fault LED on the Control Panel also illuminates.

GNFLT	Zone 001	Dev 5001	Event 002

Probable Cause

EOL resistor across the Fire Bell is not inserted or the monitored circuit wiring is open or short-circuited.

Faulty Fire Bell Fuse, replace if necessary.

Corrective Action

1. Press the ACCEPT button to accept the fault.
2. Inspect the EOL resistor. If missing, insert one between terminals 4 & 5 of TB1 on the ECU main board.
3. Check continuity of the monitored circuit wiring.
4. Reset the panel.

Extinguishant Discharge Siren Fault

Indications

- Extinguishing Bell Fault LED on the Extinguishing Control Unit illuminates.
- Fault LED on the Extinguishing Control Unit illuminates.
- Fault message is displayed on the ZP3/ZP5 Control Panel and the panel buzzer sounds. The Fault LED on the Control Panel also illuminates.

GNFLT	Zone 001	Dev 5001	Event 002

Probable Cause

- EOL resistor across the Extinguishant Discharge Siren is not inserted.
- Monitored wiring is open or short-circuited.
- Faulty Fire Bell fuse.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Inspect the EOL resistor. If it is missing, insert one between terminals 7 & 8 of TB1 on the ECU main board.
3. Check the continuity of the monitored wiring.
4. Inspect Fire Bell fuse, replace if necessary.
5. Reset the panel.

Extinguishant Pressure Verification Switch Fault

Indications

- Fault LED on the Extinguishing Control Unit illuminates.
- Fault message is displayed on the ZP3/ZP5 Control Panel and the panel buzzer sounds. The Fault LED on the Control Panel also illuminates.

GNFLT	Zone 001	Dev 5001	Event 002

Probable Cause

a. SWT3-1 on the main PCB of the Extinguishing Control Unit is set to ON and the Extinguishant Pressure Verification Switch is NOT connected.

b. SWT3-1 on the main PCB of the Extinguishing Control Unit is set to OFF and the Extinguishant Pressure Verification Switch IS connected.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Switch OFF SWT3-1 on the main PCB of the Extinguishing Control Unit (cause a) or alternatively switch ON SWT3-1 on the main PCB of the Extinguishing Control Unit (cause b).
3. Reset the panel.

Extinguishing Control Unit Power Fault

Indications

- Fault message is displayed on the ZP3/ZP5 Control Panel and the panel buzzer sounds. The Fault LED on the Control Panel also illuminates.
- Display indicates a fault as PWRFLT Zone 001 Dev 5001 Event 002.

Probable Cause

- Total loss of power to the Extinguishing Control Unit.
- Loss of power to a section of the Extinguishing Control Main Board.

Corrective Actions

1. Press the ACCEPT button to accept the fault.
2. Check if the Green Power LED indicates on the Extinguishing Control Unit. If not it would indicate a complete loss of 24 Volt power supply. Repair or replace as required.
3. If the Green Power LED illuminates, then check for local power loss on the PCB. Rectify or replace the board.
4. Reset the panel.

Extinguishing Status/Repeater Unit Fault (Optional)

Indications

- The indicating LED's that should display on the Extinguishing Status Unit or Extinguisher Repeater Unit are not illuminating.
- Operation of Controls on the Status Unit does not evoke appropriate response on the Extinguishing Control Unit.

Probable Cause

- Wiring connections to the Status or Repeater Unit are open circuit or incorrect.
- Ribbon cable connected from Status Unit Main Control Board to Display board is loose.

Corrective Actions

Inspect and/or rectify terminal wiring and/or ribbon cable connection. Once corrected, the unit will respond appropriately.

Extinguishing Door Monitor Unit "Fault" (Optional)

Indications

The Door Monitor buzzer sounds when it should not sound or does not sound when it should sound.

Probable Cause

- Incorrect wiring to the board or door switch.
- A misunderstanding of the logic being applied.

Corrective Actions

1. Read the description of the function in the manual thoroughly and check that the operation is well understood.
2. Inspect wiring and correct any faults.
3. Replace the door monitor board if you can't correct the fault.

Extinguishing Control Unit Main Board Fault Diagnostic LED's

Six LED's are provided on the ECU main board for fault diagnosis as shown in Figure 1.

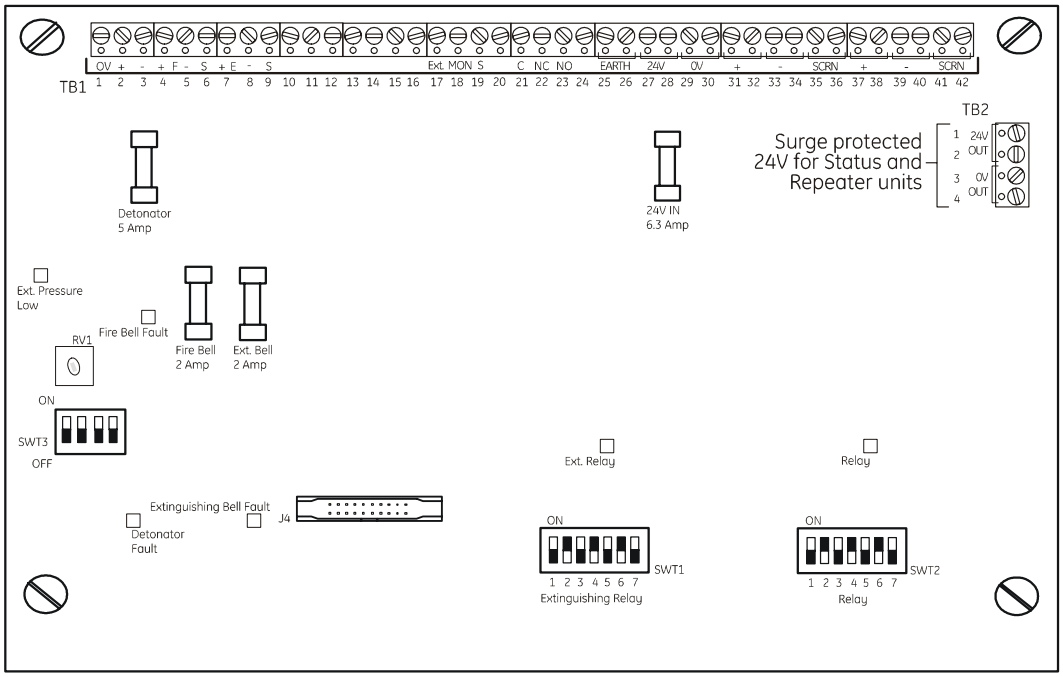


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Figure 1: ECU Main Board

If a LED comes on, it indicates a fault in the extinguishing system as described in Table 1.

Table 1: ECU Fault Diagnostic LED's

LED	Cross Reference	Remarks
Ext. Pressure Low	Refer to "Extinguishant Pressure Faults" on page 13	-
Fire Bell Fault	Refer to "Fire Bell Fault" on page 13	-
Detonator Fault	Refer to "Extinguishant Actuator Faults" on page 12	Make sure the ECU is NOT in the Locked-off state.
Extinguishing Bell Fault	Refer to "Extinguishant Discharge Siren Fault" on page 14	-
Ext. Relay	-	The Ext. Relay comes on when its configured address is activated
Relay	-	The Relay LED comes on when its configured address is activated

Index

Abbreviations, Acronyms and Terms, v
Actuation Voltage Inspection, 5
Associated Publications and References, v
Device Offline Fault
  Corrective Actions, 10
  Fault Indications, 10
  Possible Causes, 10
Device Type Fault
  Corrective Actions, 10
  Fault Indications, 9
  Possibhle Causes, 10
Device Unaccepted Fault
  Corrective Actions, 8
  Fault Indications, 8
  Possible Causes, 8
Door Lock Monitor Board Wiring Check, 6
Extinguishant, v, 6, 11, 12, 13, 14, 17
Extinguishant Actuator Faults
  Corrective Actions, 12
  Fault Indications, 12
  Possible Causes, 12
Extinguishant Discharge Siren Fault
  Corrective Actions, 14
  Fault Indications, 14
  Possible Causes, 14
Extinguishant Pressure Faults
  Corrective Actions, 13
  Fault Indications, 13
  Possible Causes, 13
Extinguishant Verification Pressure Switch Fault
  Corrective Actions, 14
  Fault Indications, 14
  Possible Causes, 14
Extinguishing Control Unit General Faults
  Corrective Actions, 11
  Fault Indications, 11
  Possible Causes, 11
Extinguishing Control Unit Main Board Layout, 16
Extinguishing Control Unit Power Fault, 15
  Corrective Actions, 15
  Fault Indications, 15
  Possible Causes, 15
Extinguishing Door Monitor Unit Faults
  Corrective Actions, 16
  Fault Indications, 16
  Possible Causes, 16
Extinguishing Status/Repeater Unit Fault
  Corrective Actions, 15
  Fault Indications, 15
  Possible Causes, 15
Extinguishing Status/Repeater Units
  LED Indicators Check, 6
Fault Diagnostic LED's, 17
Fault Finding
  Communication ECU to Control Panel, 7
    Device Offline, 10
    Device Type Fault, 9
    Device Unaccepted, 8
    General Information, 7
    Precautions, 7
    Relay not Responding, 9
  Extinguishing Control Unit Faults, 11
    Extinguishant Actuator Faults, 12
    Extinguishant Discharge Siren Fault, 14
    Extinguishant Pressure Faults, 13
    Extinguishant Pressure Switch Fault, 14
    Extinguishing Control Unit Main Board Fault Diagnostic LED's, 16
    Extinguishing Door Monitor Unit Fault, 16
    Extinguishing Status Repeater Fault, 15
    Fire Bell Fault, 13
    General Faults, 11
    Manual Extinguishant Release Faults, 12
  Introduction, 3
Fire Bell Fault
  Corrective Actions, 13
  Fault Indications, 13
  Possible Causes, 13
Limitations
  Maintenance Faults, 1
  Response Time, 1
Log Book, 4
Maintenance
  Pre-requisites, 3
  Responsibilties, 2
Manual Extinguishant Release Faults
  Corrective Actions, 12
  Fault Indications, 12
  Possible Cause, 12
Precautions for Fault Finding, 7
Preventive Maintenance
  Daily, 2
  Daily and Weekly Checks, 2
  Quarterly Maintenance, 2
  Weekly, 2
Quarterly Maintenance
  Arming the System after Completion of Quarterly Maintenance, 7

Extinguishing Control Unit, 5
Extinguishing Door Lock Monitor, 6
Extinguishing Status/Repeater Units, 6
Relay not Responding Fault
Corrective Actions, 9
Fault Indications, 9
Possible Causes, 9
Test Notification and Preparation, 4