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Figure 1: ZP3-ECM Extinguishing Control Unit Main Board

CE

Brief Description

The ZP3-ECM Extinguishing Control Main Board as shown in Figure 1 is incorporated inside the housing of the Ziton Extinguishing Control Unit ZP3-ECU. The board consists of two sections; an Extinguishing Relay section and a Relay section.

The extinguishing relay and relay sections both have a dipswitch, which allows the addresses of the individual sections to be set.

Relay controlled outputs are provided for extinguishing release valves or actuators, audible fire alarm sounders and separate extinguishant release sounders. Also provided are facilities for remote manual extinguishant release, and remote operation and status functions.

Extensive monitoring is provided for many functions, including power supply, fuses, and operation. The main control board has five diagnostic LED's that help with monitoring for extinguishant release valves/actuators, fire bell, extinguishant discharge siren, manual extinguishant release and low extinguishant pressure faults.

The Extinguishing Control Main Board communicates with ZP3 Control Panel through the ZP Line.

Notes: Polarising diodes must be fitted to all bells and sirens.

Fire alarm bell circuits (TB1-4 & TB1-5) and discharge siren (TB1-7 & TB1-8) utilise 2K2 ohm, 1 W, EOL resistors, which must be fitted after the last unit to be monitored.

The actuator/detonator circuit (TB1-2 & TB1-3) is monitored by a 2K2 ohm, 1 W EOL resistor, which must be fitted at the end of the actuator/detonator line. The main board actuator is wired to the display board. The EOL resistor is fitted to the display board 'EXT OUT' terminal.

The extinguishing monitoring circuit (TB1-17 & TB1 18), monitors the extinguishant discharge verification and extinguishant cylinder low pressure. An open circuit indicates a drop in the monitored cylinder pressure. A short circuit verifies extinguishant discharge. A 3K9 ohm EOL resistor is used.

To test the discharge switch, place a short circuit across terminals TB1-17 & TB1-18. This simulates an extinguishant drop and the Extinguishant Discharge LED's illuminate on the ECU front panel.

Specifications

General Information

Designation	Extinguishing Control Main Board
Model number	ZP3-ECM
Part number	0803
Communication	ZP Polling System
Compatibility	ZP addressable control panels
Environmental	For indoor application – IP not applicable

Primary Supply

Operating voltage	22 to 29 VDC
Current (quiescent)	80 mA **
Current (alarm)	100 mA (excl ext. devices) **
Current (fault)	150 mA (excl ext. devices) **

Outputs

Extinguishant release outputs	5 A, 24 VDC intermittent
Sounder outputs	0.5 A, 24 VDC
Auxiliary relay contacts	1 SPDT
(Voltage free)	1 A, (resistive)/30 VDC

Mechanical Details

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Dimensions (W x H)	170 x 255 mm
Weight	367 g

** Dependent on capacity of the power supply unit.

Removing the Extinguishing Control Main Board (ECM)

Caution: The extinguishing system will not be operational for the duration of this task. Make sure that the actuators have been disabled. Take effective precautions while the system is not operational.

Remove the ECM as follows:

1. Remove power to the ECU by disconnecting the relevant 24 VDC power leads on the associated ZP3 Panel or from the external power supply (as applicable).
2. Unlock and open the front panel with the key provided.
3. Disconnect the earth connection on the main board.
4. Disconnect all wires connected to TB1 and TB2 on the main board, taking note of the positions of each wire (see Figure 2).
5. Disconnect the front panel by unplugging the ribbon cable connector (J4) on the ECM (see Figure 2).
6. Remove the front panel by sliding it out of the two slots on the unit.
7. Loosen the three (3) bolts (see adjacent illustration) that secure the chassis plate assembly and ECM to the housing.
8. Remove the chassis plate assembly together with the ECM.
9. Remove the screws securing the ECM to the chassis plate assembly and remove the ECM.
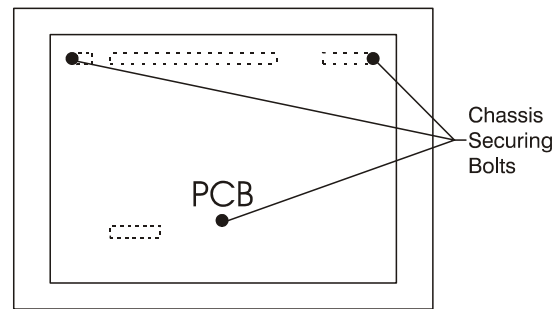
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Installing the Extinguishing Control Main Board (ECM)

Install the replacement ECM as follows:

1. Align replacement ECM on the chassis plate to its mounting holes on the chassis plate assembly.
2. Secure ECM to chassis plate assembly using the securing screws.
3. Refit the chassis plate assembly (with ECM) to the Extinguishing Control Unit and secure with three (3) screws.
4. Reconnect the ribbon cable connector to connector J4 on the ECM.
5. Reconnect all wires removed from TB1 and TB2 on the main board (see Figure 2). See also Table 1 for more details about the functions of the terminals and components.
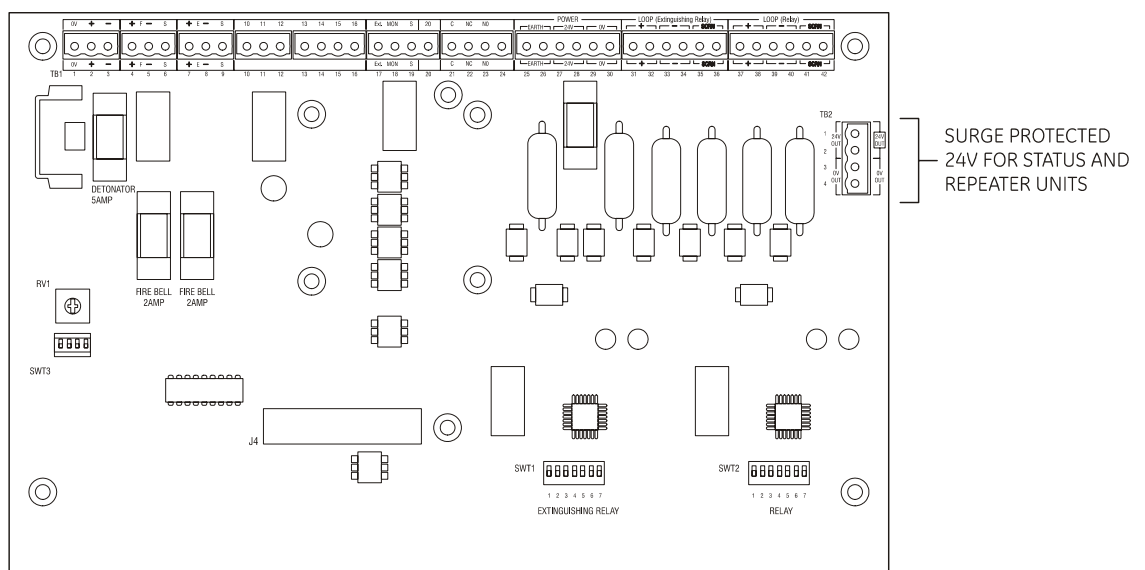6. Refit the front panel and lock with the key provided.

Figure 2: ECU Main Board Component Layout

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Terminal/Component Functions

Table 1: ECU Main Board Terminal/Component Functions

Component / Terminal	Function
Fuses	
Detonator 5 A	Detonator/actuator fuse
Fire Bell, 2 A	Fire bell fuse
Ext. Bell, 2 A	Extinguishing siren fuse
24 V IN, 6.3 A	24 V input fuse
Connectors	
J4	20-way ribbon cable connection to display
Terminal Board TB1	
TB1-1	Internal extinguishant release (GND)
TB1-2	Internal extinguishant release (+)
TB1-3	Internal extinguishant release (-)
TB1-4	Fire alarm bell (normal -, alarm +)
TB1-5	Fire alarm bell (normal +, alarm -)
TB1-6	Fire bell screen
TB1-7	Extinguishant discharge siren (+)
TB1-8	Extinguishant discharge siren (-)
TB1-9	Ext. discharge screen
TB1-10	Extinguishant release pending output
TB1-11	Fault LED
TB1-12	Manual LED
TB1-13	Locked off
TB1-14	Auto LED
TB1-15	Extinguishant release LED
TB1-16	Fire LED
TB1-17	External extinguishant monitor switch
TB1-18	Earth
TB1-19	Screen
TB1-20	Remote silence
TB1-21	Common
TB1-22	Normally closed
TB1-23	Normally open
TB1-24	Door input
TB1-25	From building earth
TB1-26	From building earth
TB1-27	24 VDC supply IN
TB1-28	24 VDC supply IN

Component / Terminal	Function
TB1-29	0 VDC supply IN
TB1-30	0 VDC supply IN
TB1-31	Address line 1 Extinguishant relay (+)
TB1-32	Address line 1 Extinguishant relay (+)
TB1-33	Address line 1 Extinguishant relay (-)
TB1-34	Address line 1 Extinguishant relay (-)
TB1-35	Screen
TB1-36	Screen
TB1-37	Address line 2 relay (+)
TB1-38	Address line 2 relay (+)
TB1-39	Address line 2 relay (-)
TB1-40	Address line 2 relay (-)
TB1-41	Screen
TB1-42	Screen
Terminal Board TB2	
TB2-1	24 VDC +
TB2-2	24 VDC +
TB2-3	24 VDC -
TB2-4	24 VDC -
Switch Functions	
SWT1-1	Extinguishant relay address 1
SWT1-2	Extinguishant relay address 2
SWT1-3	Extinguishant relay address 4
SWT1-4	Extinguishant relay address 8
SWT1-5	Extinguishant relay address 16
SWT1-6	Extinguishant relay address 32
SWT1-7	Extinguishant relay address 64
SWT2-1	Double-knock relay address (1)
SWT2-2	Double-knock relay address (2)
SWT2-3	Double-knock relay address (4)
SWT2-4	Double-knock relay address (8)
SWT2-5	Double-knock relay address (16)
SWT2-6	Double-knock relay address (32)
SWT2-7	Double-knock relay address (64)

Component / Terminal	Function
SWT3-1	Sets local and/or remote extinguishant release sense
SWT3-2	Configures time delay options
SWT3-3	Selects timer reset options for hold off button in conjunction with SWT3-4
SWT3-4	Selects timer reset options for hold off button in conjunction with SWT3-3
Timer Adjust	
RV1	Time delay adjust for automatic double knock extinguishant release