Ravel®

Fire Alarm Control Panel

**Installation, Commissioning & Operating
user Manual**

Fire Alarm System Limitations

An automatic fire alarm system–typically made up of smoke detectors, heat detectors, manual Call Points, audible warning devices, and a fire alarm control with remote notification capability–can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire. The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use
of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not
function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot
reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire
may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls,
  or chimneys may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not
  reach the ceiling or upper walls where detectors are
  located.
- Smoke particles may be blown away from detectors by
  air outlets.
- Smoke particles may be drawn into air returns before
  reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

While a fire alarm system may lower insurance rates, it is not a substitute for fire insurance!

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. *Heat detectors are designed to protect property, not life.*

IMPORTANT! *Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power.* If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication.

RE / DD / UM / RE-900 1.0-0

Please note that:

o Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
o Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
o In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of fire alarm malfunction is inadequate maintenance. To keep the entire fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspections should be kept.

NOTES:

Table of Contents

Chapter 1: Introduction

This manual is intended as a complete guide to the 1 Zone Conventional Fire Control Panel. User operating Instructions are provided in the first part of this manual. This is followed with sections describing installation and commissioning procedures and full technical details are provided.

1.1 System Design and Planning

It is assumed that the system, of which this control panel is a part, has been designed by a competent fire alarm system designer in accordance with the requirements of IS 2189: 1988 and any other local codes of practice that are applicable. The design drawings should clearly show the positions of the field devices and the control equipment.

1.2 General

The panel is self-contained with integral power supply and space provision for two sealed lead-acid standby batteries and comply with the requirements of IS 2189: 1988. The panel functions are microprocessor controlled and test and isolate functions are included. Provision is made for a repeater function of panel status output. The panel can accept, per zone, automatic detectors with a total maximum loading of 2.4mA quiescent current rating (refer to chapter 2.2), and an unlimited number of manual call points.

End of Line (EOL) devices

The panels can continue to monitor manual call points with detectors removed, providing the detectors are fitted with a Schottky diode and an a EOL device is used.

Installation

The panel is easy to install and operate. Control functions Programming functions are enabled by using password. The panel fascias are retained by tamper-proof screws.

1.3 Fire Alarm Procedures

In accordance with IS 2189: 1988, written procedures should be laid down for dealing with alarms of fire, fault warnings, and the isolation of any part of the system. The responsible person should ensure that users of the system are instructed in its proper use and are familiar with the procedures.

On hearing the fire alarm:

CARRY OUT THE PRESCRIBED PROCEDURE Subsequent actions will depend on the circumstances, and may include silencing the audible alarms and resetting the system, as described later.

To Evacuate the premises:

Press the Evacuate key and enter the password to OPERATE SOUNDERS.

Fault Indication:

If the control panel indicates a Fault condition, make a note of all illuminated indicators, refer to the chart on page 36, and call the engineer.

1.4 User Responsibility

In addition to the routine testing described on routine test, the user has a responsibility for ensuring certain actions are taken following a fire or fault, and for implementing remedial action following a specified incidence of false alarms. As a minimum, the user shall record any incident and inform the service organization, who may be required to retest the system. The user's responsibilities are described fully in IS 2189: 1988.

1.5 Routine Testing

In order to ensure that the system is fully operational, and to comply with the requirements of IS 2189: 1988, the following routine attention is recommended:

Daily - Check the panel to ascertain that it indicates normal operation. If any fault is indicated check that it has been recorded and that the appropriate actions have been taken, e.g. informing the maintaining company.

Weekly - Test at least one detector or call point to confirm the operation of the panel and the audible alarms. Test a different zone each week and, if possible, a different device. Keep a record of the device and zone tested each week. Record and report any malfunction.

Quarterly - The responsible person should ensure that every three months the system is checked by a competent person. Check the standby batteries and the charger voltage Test at least one device in each zone to check the panel functions. Check the operation of the audible alarms and any link to a remote manned centre, Central Station, etc. Carry out a visual inspection of the installation to check for alterations or obstructions and issue a certificate of testing.

Annually - The responsible person should ensure that, in addition to the quarterly checks, each device on the system is tested and that a visual inspection is made of the cable fittings and equipment.

Note: The control panel case should be cleaned periodically by wiping with a soft, damp cloth. **Do not** use any solvents.

16 Zone Terminals

Rs485 Communication port

ZONE-16 ZONE-15 ZONE-14 ZONE-13 ZONE-12 ZONE-11 ZONE-10 ZONE-9 ZONE-8 ZONE-7 ZONE-6 ZONE-5 ZONE-4 ZONE-3 ZONE-2 ZONE-1 B A RS 485

MOV19 MOV18 MOV17 MOV16 MOV15 MOV14 MOV13 MOV12 MOV11 MOV10 MOV9 MOV8 MOV7 MOV6 MOV5 MOV1

R86 R85 R82 R78 R77 R74 R73 R70 R69 R66 R65 R62 R61 R58 R57 R54 R53 R50 R49 R46 R45 R42 R41 R38 R37 R34 R33 R30 R29 R26

R84 R80 R76 R72 R68 R64 R60 R56 R52 R48 R44 R40 R36 R32 R28

20 Pin FRC to Power Supply Board

CN4 +24V GND — **24V to Add on board**

CN1

24V to Power Supply Board
+24V GND CN2

CN5 — **20 Pin FRC to next addon Mother board**

+24V

U9 U5 +5V U7 U2

U8 U4 U6 U10 U1

GND

CN3 — **26 Pin FRC output to display board**

D1 R8 R9 C9 C8

R6 D2 R7 MOV4 U3 Lk1

RAVEL RE-900-16Z-MB

Mother Board Terminals and connectors

Notification Appliance Circuit

24V Output

Fault Relay

Fire Relay

Primary Source Input 220V A.C, 50Hz

24V O/P   NAC - 2 NAC - 1   RELAY - 2   RELAY - 1   POWER SUPPLY
− +   − + − +   NC NO CO   NC NO CO NC NO CO   P N E

D11

24V from Master Board
+24VDC CN7

R2 R3

20 Pin FRC from Master Board

MOV5 MOV4 MOV3

Q2 RI2 RL1 RL4 RL3 Br1 C2

C16 D5 D4 C14

C25 C24

D9

Tx1

Standard Transformer

C10

R16
R17
R18

Cn8 BATT I/P   Cn8 BATT I/P   C9 C8   **RAVEL RE-900-PS**
+ −   + −

24V Input from Battery

Power Supply Board Terminals and connectors

16 Zone Terminals

Rs485 Communication port

Notification Appliance Circuit

24V Output

Fault Relay

Fire Relay

Primary Source Input 220V A.C, 50Hz

POWER SUPPLY

P N E

20 Pin FRC to next addon Mother board

24V to Add on board

26 Pin FRC output to display board

Standard Transformer

RAVEL RE-900-PS

Ravel

FIRE ALARM PANEL   **RE - 900**

FIRE	FAULT
COMMON FAULT	
SYSTEM ON	CHARGER FAULT
MAINS FAIL	SYSTEM FAULT
BATTERY FAULT	EARTH FAULT
SILENCED	NAC FAULT

SILENCE RESET 1 ABC 2 DEF 3 GHI

MENU ENTER 4 JKL 5 MNO 6 PQR

◄ ► 7 STU 8 VWX 9 YZ

ACK EVACUATE ★ 0 #

| ZONES | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| FIRE |
| FAULT |
| DISABLE/W.T |

12v 7Ah Sealed Lead Acid Battery

12v 7Ah Sealed Lead Acid Battery

Chapter 2: Product Description

The RE – 900 is a 12 – 128 zone microprocessor based conventional Fire Alarm Control Panel. The Panel accepts water flow devices, conventional input devices like 2 wire smoke detectors, pull stations and other normally open contact devices. The Outputs include notification appliance circuits (NACs / sounders), Two Form –C relays for Fire and one relay for fault. And also communication port RS485 to interface with remote annunciator. This panel is field programmable via the front panel keypad. It supervises all wiring, AC voltage and Battery level.

2.1 Product Features:

- Touch Keypad for user friendly operation.

- Complies with UL -864 and NFPA-72.

- Epoxy powder coated finish.

- Operates on 120 - 220v 60 /50 Hz, AC Mains power supply.

- 12 -128 Class B Style 'B 'or Style 'C' initiating device circuit (IDC).

- All zones accept smoke detectors and any normally open contact device.

- Class B Notification Appliance Circuits (NAC).

- NAC shall be programmed as auto silence / Silence Inhibit.

- Standby (battery) backup 24v DC power supply with builtin charger.

- Error free Fire / Fault status in unambiguous colored LED indication.

- 1000 Event storage with RTC.

- Main, Standby status with audible and visual indication.

- Two FormC relays for fire and fault.

- Resettable / Steady 24V D.C. Output.

- RS 485 Communication facility (Optional).

- TCP/IP (Optional) facility.

- Walk Test facility.

- Zone Wise Sounder/Contact via RS 485.

- All field wiring circuits are Power limited except 110 - 220v AC and Battery.

- All field wiring circuits are supervised.

- Zone Isolation facility with loop voltage cut off.

- Earth fault annunciation facility at 0 ohms.

- Programmable AC loss delay.

- Programmable Trouble reminder.

- Peer to Peer Networkable

- Repeater connectivity via Rs485.

2.2 Specification
AC Power

110 - 220 VAC, 50 Hz, +10%, -15%.

Wire size: 1.5 Sq. mm with 600 V insulation

Standby power

24VDC as required

Operating Condition:

Operating Temperature 0 - 49° C/32-120° F.

Relative Humidity 93 ± 2% RH (noncondensing)

at 32 ±2° C/90 ±3° F.

Battery (Lead Acid only)

Constant Voltage – 28.0v± 0.5V

Charging Current as required

Charging Capacity: 7 Amp Hour Battery (Higher size are request).

System Quiescent Current: 50mA + (4.4 – 6.8mA per zone)

D.C. output

Operating Voltage: 24VDC(Resettable / Steady), 500mA Max.

Initiating Device Circuits (Zone Circuit)

All zones are Class B, Style B / C operation

Normal Operating Voltage: 14 - 24 VDC

Alarm Current: 15 – 35mA threshold

Short Circuit Current: 45mA Maximum

Loop resistance: 100 ohms Maximum

End-Of-Line Resistor: 4K7, 1/2 watt

Standby Current: 7 mA (2.5 mA for Detectors)

Notification Appliance Circuits (Sounder Circuit)

Class – B, Style – Y wiring

Operating Nominal Voltage: 24 VDC Special Application

Current for all NACs: 2A (1 A per Circuit)

Line Drop: 1.8V

End-Of-Line Resistor: 4K7, 1/2 watt

Common Relays:

Type   : Form C

No of Relays   : 2

Relay Contact Rating   : 2Amps @ 30VDC

                                          0.5Amps @ 125VAC

Power factor   : 1.0

RS485 Communication Port

Max. Distance: 1.5Km Max.

2.3 Control and Indications
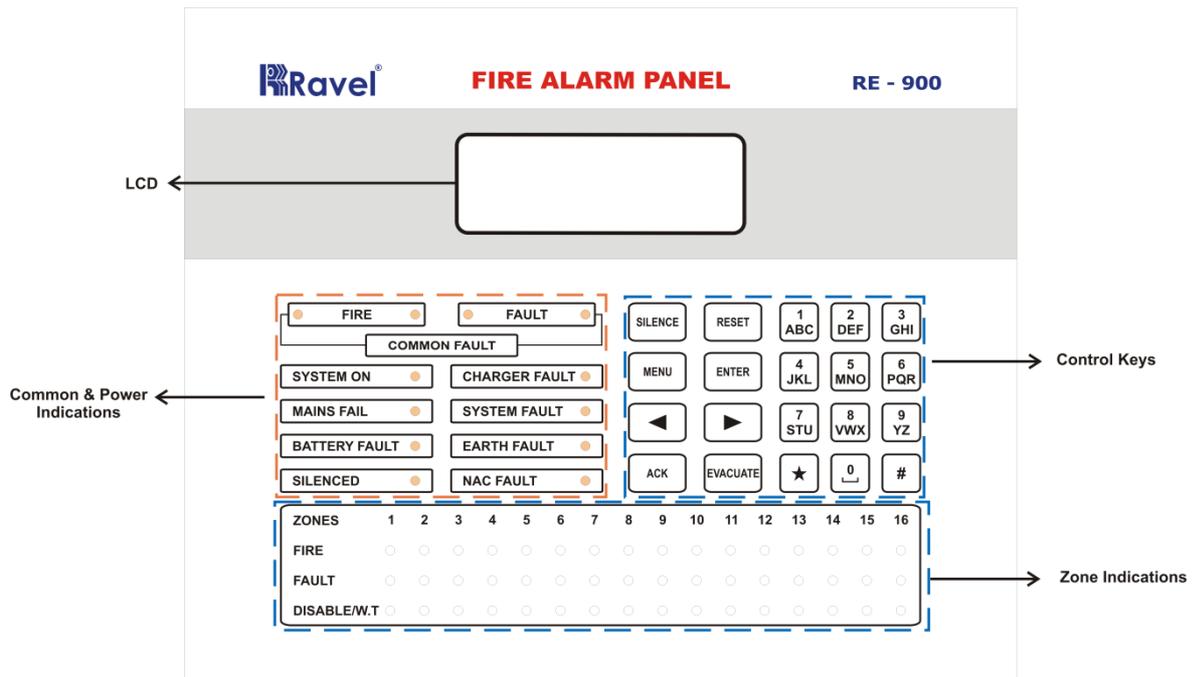
2.3.1 Controls

ACK. Key:

- ✓ To mute local buzzer in alarm condition.
- ✓ To mute local buzzer in Supervisory or fault condition.
- ✓ User or Admin password protected.

SILENCE Key:

- ✓ To silence the external NACs in Fire Condition.
- ✓ User or Admin password protected.

RESET Key:

- ✓ To reset the particular zones in Fire alarm or Latched Supervisory condition.
- ✓ User or Admin password protected.
- ✓ Possible to access only after silence in alarm condition.

EVACUATE:

- ✓ To activate External NACs Manually.
- ✓ User or Admin password protected.

CURSOR KEYS:

✓ To move the cursor point in the LCD as required.

ENTER Key:

✓ To accept the programmed or edited menu, mode or value in the LCD.

MENU Key:

✓ To enter into the Main Menu in the LCD.

2.3.2 Indications
2.3.2.1 LED Indications

Fire - Red

Fault-Yellow

System On – Green

Charger Fault - Yellow

Mains Fail-Yellow

System Fault-Yellow

Battery Fault-Yellow

Earth Fault-Yellow

Silenced-Yellow

NAC Fault-Yellow

Zone Disable/W.T – Yellow

2.3.2.1 LCD Indication

The LCD is mainly used for the programming of the panel. It also indicates all events along with the LED indications except system on and system fault.

2.3.2.2 Local Buzzer

A piezo buzzer provides separate and distinct sounds for alarm, trouble and supervisory conditions:

▪ Alarm – Continuous
▪ Fault – pulse 0.5sec ON and 5sec OFF

2.4 Mechanical Construction

The enclosure of the Panel is constructed by 18 gauge (1.22mm) CRCA sheet with powder-coated finish. The 19mm [20No's] for Indian Std.) 20no's of knockouts are given for cable entry at the top of the cabinet. The lockable hinged door is provided to access the inside the cabinet. The panel also has sufficient space to accommodate 2 Nos. of 12v, 7Ah batteries.

Top View

Φ 19 mm 20 No's

120mm

340mm

7mm

FIRE ALARM PANEL   RE - 900

18mm

LHS View

Front View   440 mm

RHS View

Botton View
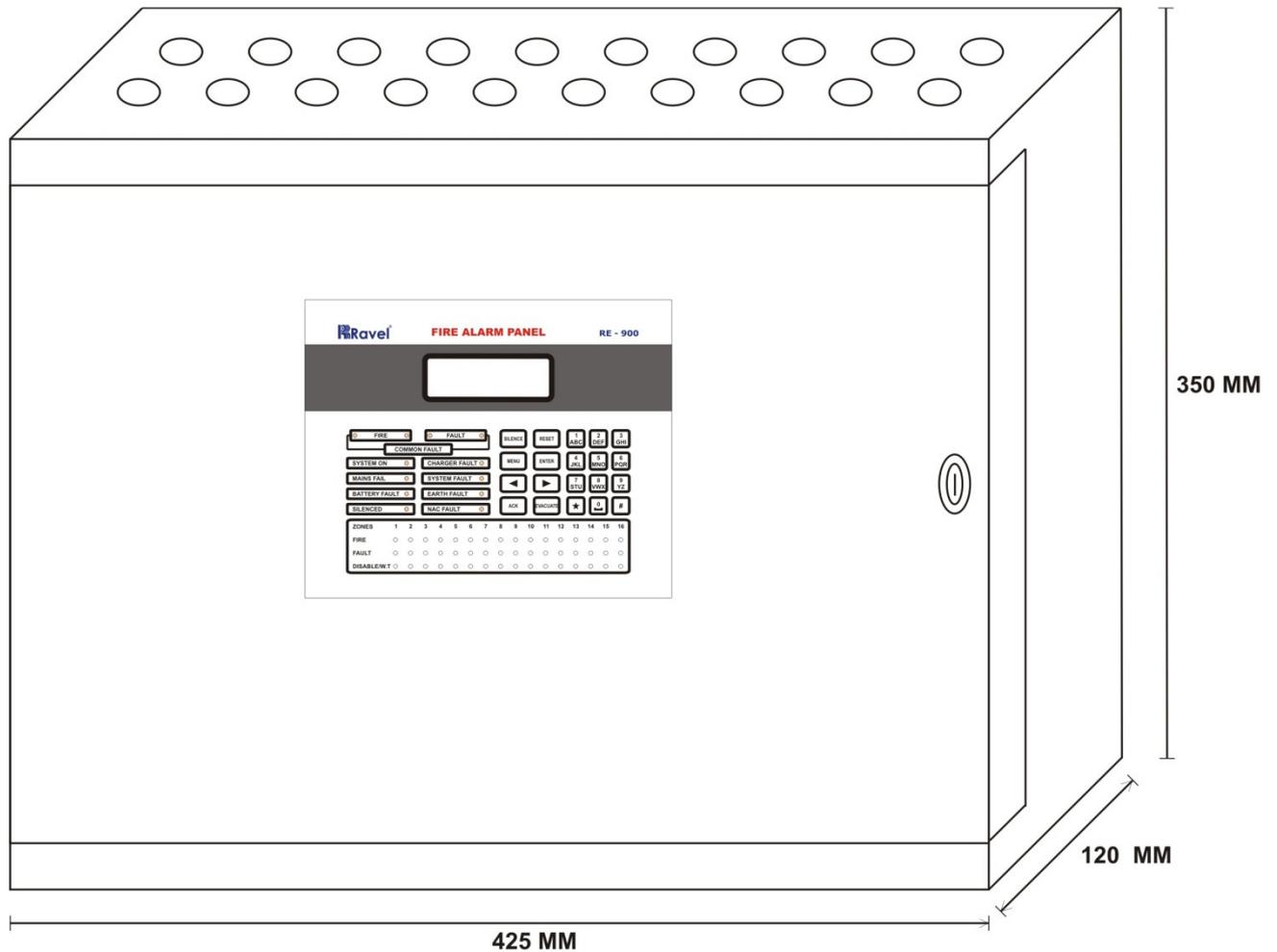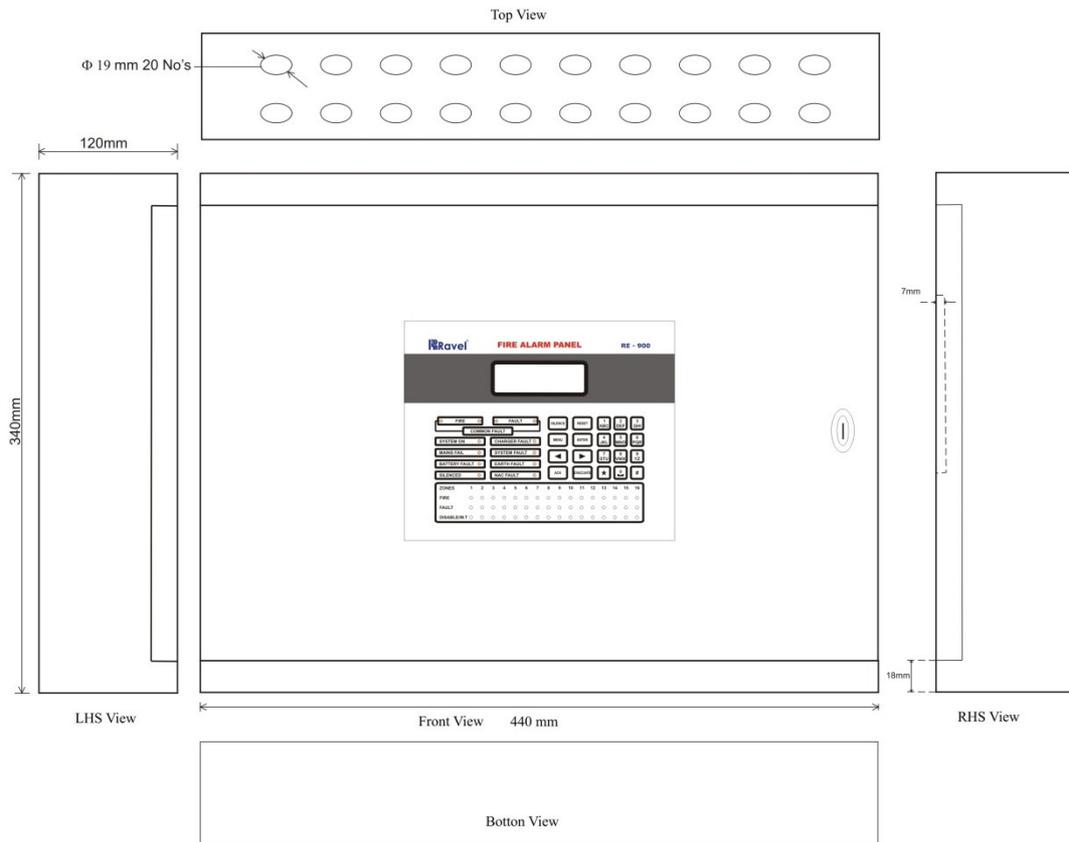
2.6   Internal Arrangement

Display & Control Board

(RAVEL-RE-900 - DISP-R1.1)

Master Board

RAVEL RE-900-16Z-MB

CN 1

CN 6

Power Supply Board
5A
RAVEL RE-900-PS

12v 7Ah
Sealed Lead Acid Battery

12v 7Ah
Sealed Lead Acid Battery
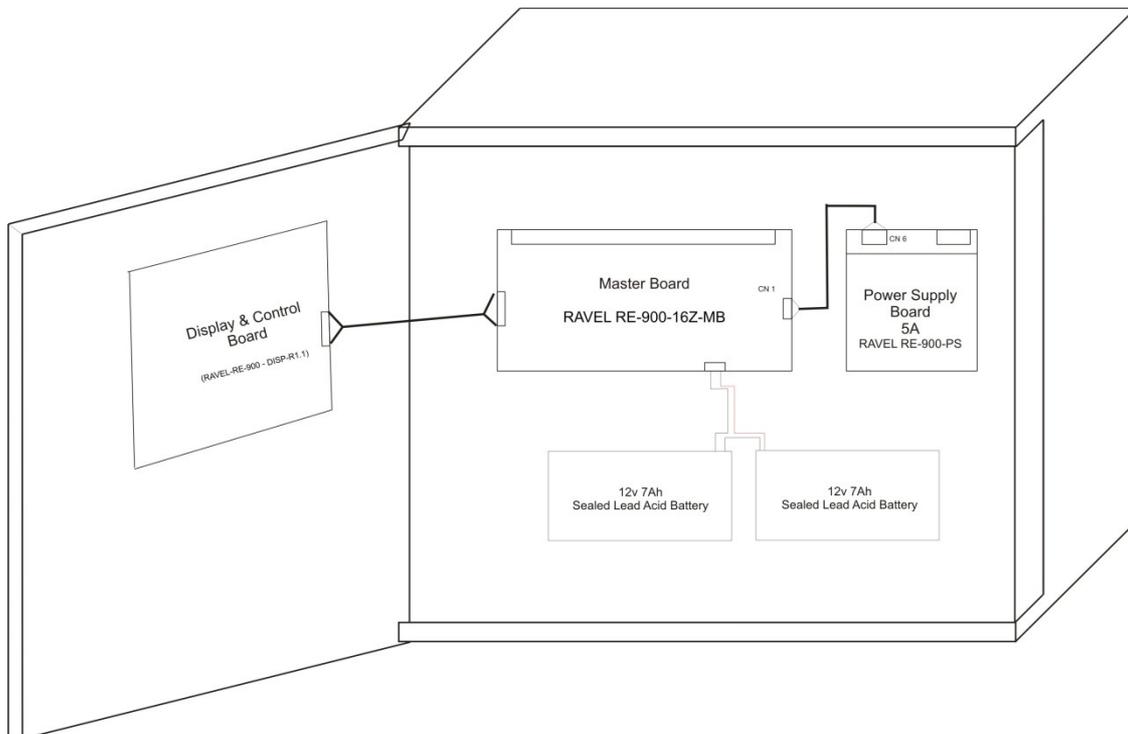
2.7 Components

Master Board (RE-900-16Z-MB)

The Master board contains the primary components and wiring interface connectors.   Display Board (RE-900-DISP-R1.1)The Display Board contains the system CPU, LED Display, LCDunit and Control keys.
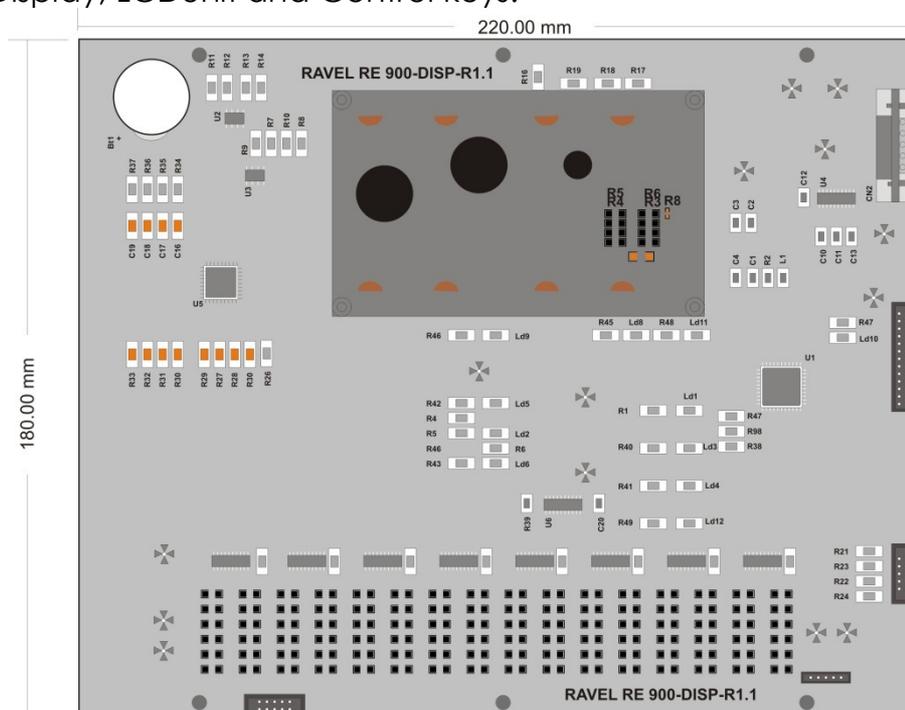
Display Board (RE-900-DISP-R1.1)
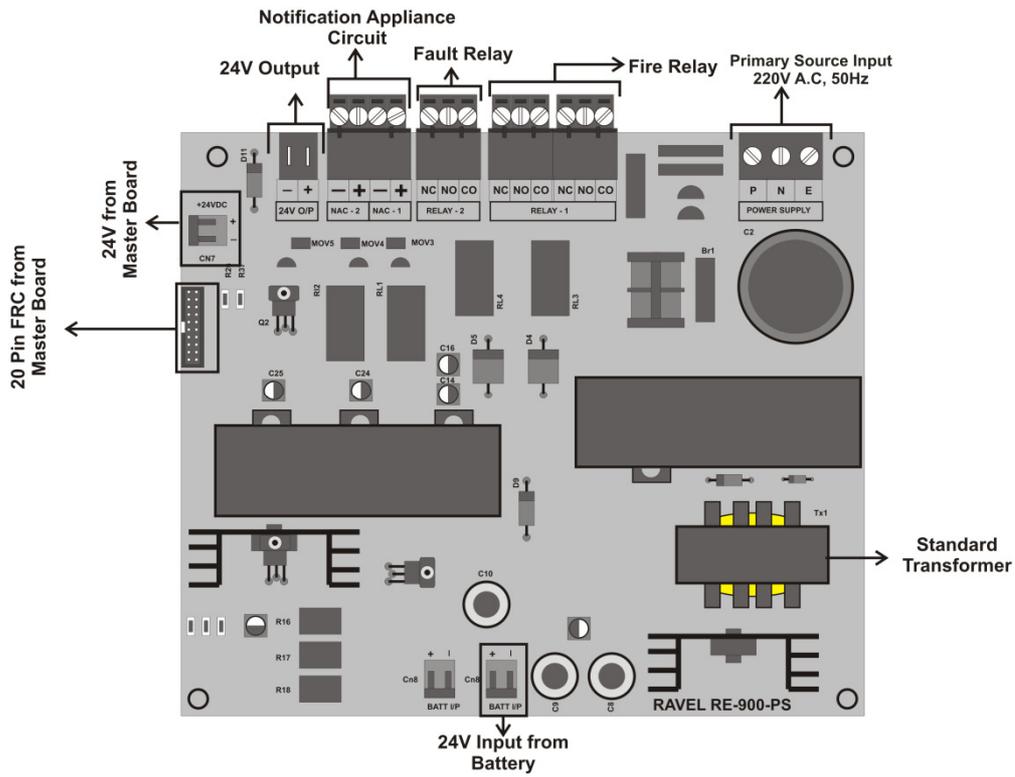
Power Supply Board (RE-900-PS)

Chapter 3: Installation

3.1Installation Precaution

n Precautions

WARNING - *Several different sources of power can be connected to the fire alarm control panel.* Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.

CAUTION - *System Reacceptance Test after Software Changes.* To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of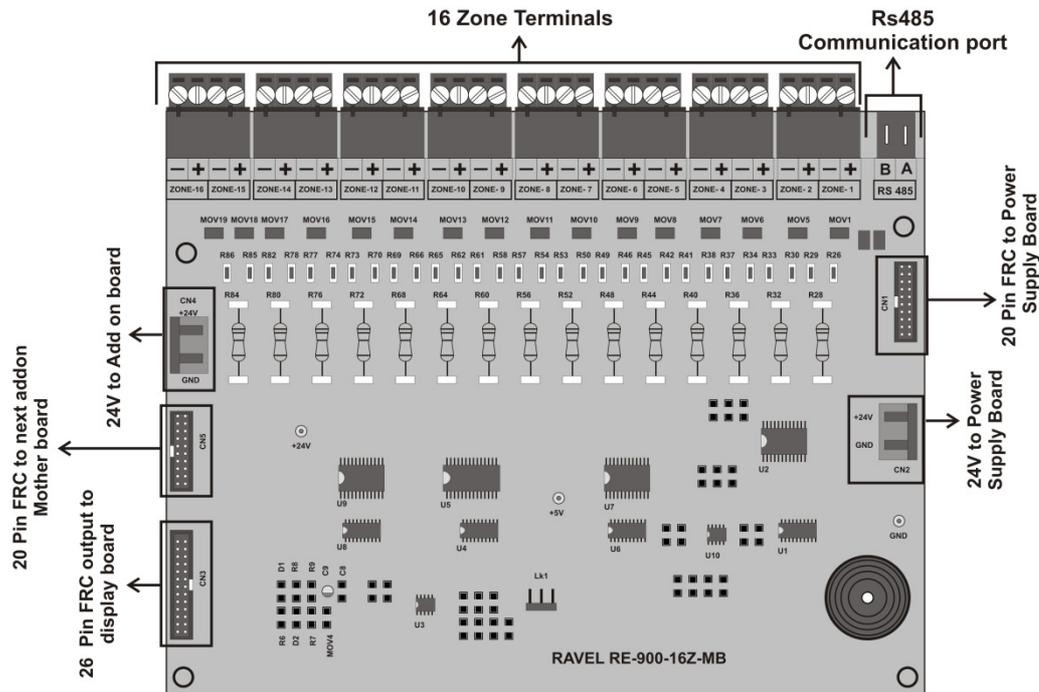 system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.
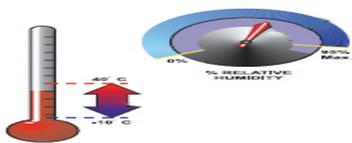
This system meets NFPA requirements for indoor dry operation at 0-49° C/32-120° F and at a relative humidity of 93 ±2% RH (non-condensing) at 32 ±2° C/90 ±3° F. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15-27° C/60-80° F.
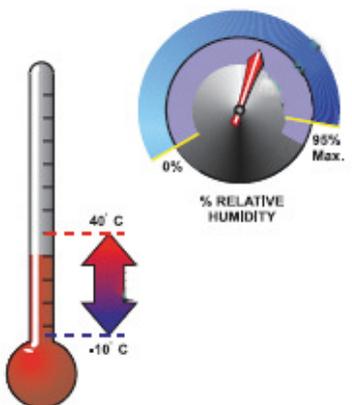
Verify that wire sizes are adequate for all initiating and Indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Adherence to the following will aid in problem-free installation with long-term reliability:

Like all solid-state electronic devices, this system may operate erratically or can be damaged when subjected to lightning-induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

Though designed to last many years, system components can fail at any time. This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static-suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation by authorized personnel.

3.2 Input Circuits

The control panel has 12 – 128 zone input circuits. The maximum loop resistance limit for each input circuit is 100 ohms. All field wiring of each zone is supervised for opens and ground faults. Both conditions are visually and audibly (toggle tone) annunciated.

Each zone is a Class B Initiating Device Circuit (IDC – Zones) designed to accept any normally open contact devices and conventional 2-wire, 24 volt smoke detectors.

It is allowable to mix an assortment of device types (i.e. smoke detectors, heat detectors, pull stations, etc.) on any zone.

EOL RESISTOR 4.7K OHMS   EOL RESISTOR 4.7K OHMS

2 Wire Smoke Detector

Manual Pull Station

Heat Detector

2 Wire Smoke Detector

Manual Pull Station

Heat Detector

| ZONE-16 | ZONE-15 | ZONE-14 | ZONE-13 | ZONE-12 | ZONE-11 | ZONE-10 | ZONE-09 | ZONE-08 | ZONE-07 | ZONE-06 | ZONE-05 | ZONE-04 | ZONE-03 | ZONE-02 | ZONE-01 |
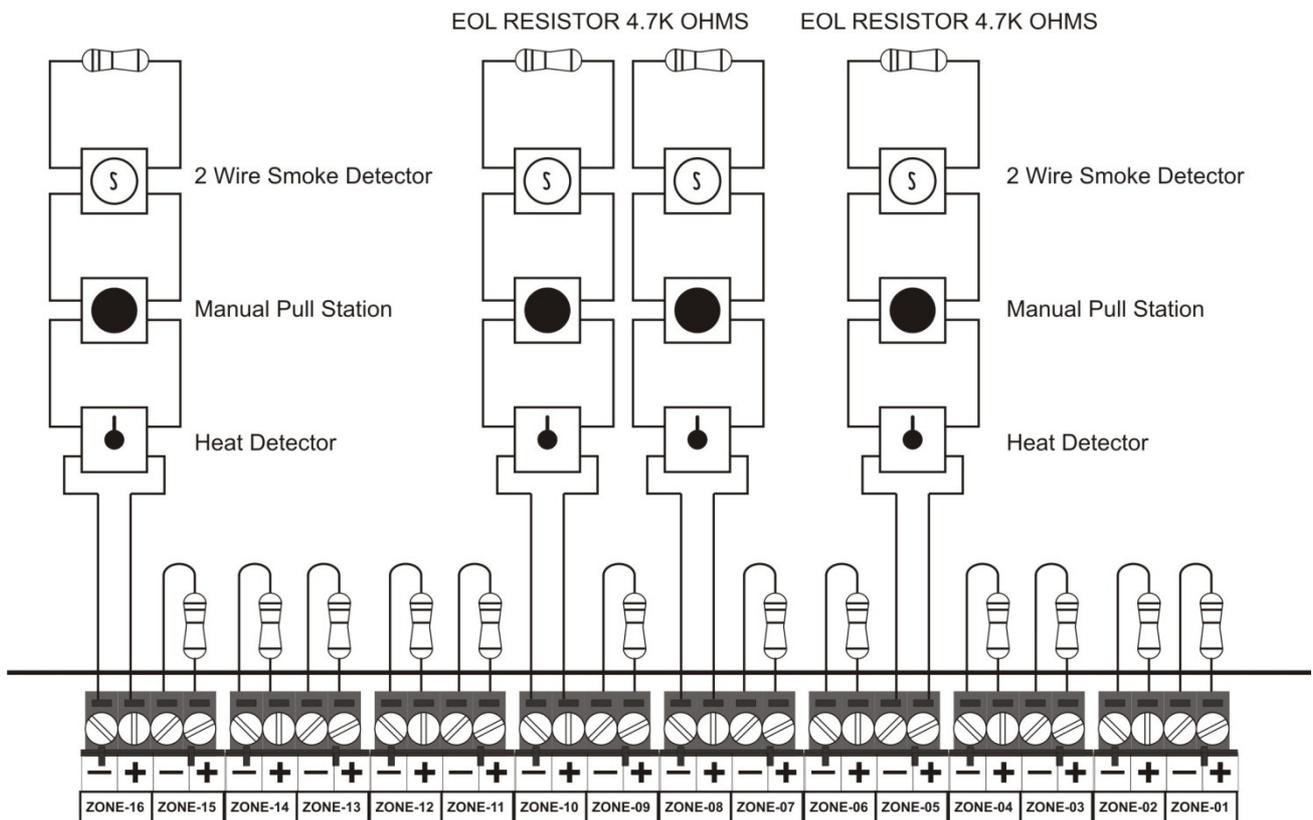
Nonresettable Power (500mA) 24 VDC filtered, nonresettable power can be obtained from 24v DC out Terminals.

Sounder Circuits

The RE - 900 provides Notification Appliance Circuits (NAC) standard as Class B. This circuit is capable of a maximum of 0.2 amps of current per zone.
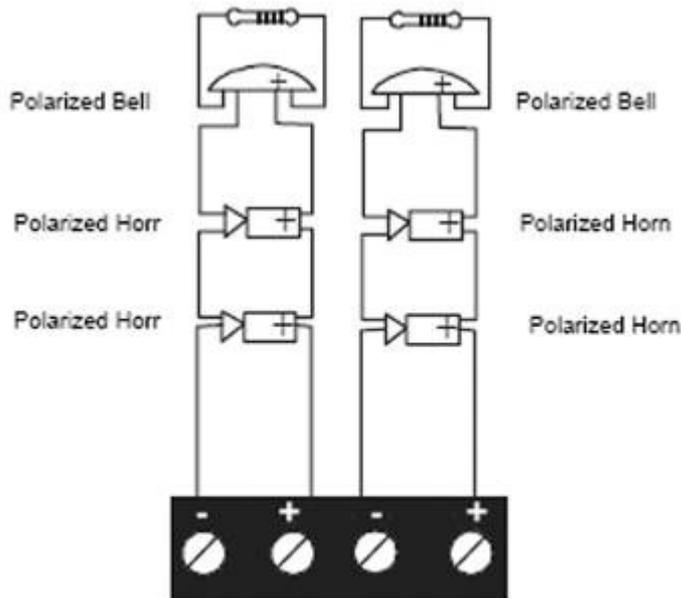
Standard Relay

The control panel provides three Form-C relays rated for 2.0 amps @ 30 VDC and 2.0 amps @ 30 VAC.

Relay connections may be power-limited or nonpower-limited, provided that a minimum of 0.25" is maintained between conductors of power-limited and nonpower-limited circuits.

Relay contacts shown with no power applied to panel

Relay contacts shown with power applied to panel and no active troubles, alarms or supervisories

CHAPTER 4: Programming Instructions
4.1 Menu Key Flow Diagram

MENU KEY - FLOW DIAGRAM

MENU

DEFAULT PASSWORD

USER - 1234
ADMIN - 54321
ADVANCED - 654321

ADMIN
PASSWORD REQUIRED
(Default: 54321)

1 — VIEW

2 — PROGRAM

3 — About

VIEW branch:

1. Suppressed Events
2. HISTORY
   [View]

1
1. Faults
2. Alarm
   [Suppressed Events]

Event
Suppressed Condition

2
1. View All Events
2. Alarm Events
3. Delete
   [History]

Evt No: XXX/ZZZ
Date: dd/mm/yy
Time: hh:mm:ss
Events : Event

PROGRAM branch:

1. Zone   3. Nacs
2. Relay   4. 24 V O/P
5. Common
   [Program]

1
1. Mode
2. Location Program
3. Wiring
   [Zone] → A

2
1. Relay 1 : Fire
2. Relay 2 : Fault
   [Relay O/P] → B

3
1. NAC 1 : Temporal
2. NAC 2 : Continue
   [NACs] → C

4
24 V O/P
<<Steady>>   Press #   24 V O/P
                                 <<Steady>>
                                    [24 V O/P*]

5
1. Settings
2. Features
3. Advanced
   [Common] → D

About branch:

Ravel Electronics
Fire Alarm Panel
Model : RE-900
16 Zone Panel

A ─1→ Enter No of Zone?004 → Zone 4
(#Edit)
[Mode] → Zone 4
Enable
[Mode]

A ─2→ Enter No of Zone?002 → Zone 2
First Floor   (#Edit) → Zone 2
Second Floor B wing

A ─3→ **Wiring** → Type: Class - B
Style : B
(#Edit)
[Wiring] → Type: Class - B
Style :C

B ─1→ **Relay 1: Fire** → Type: Fire
(Relay O/P1) ─#→ Type: Fault
(Relay O/P1)

B ─2→ **Relay 2: Fault** → Type: Fault
(Relay O/P2) ─#→ Type: Fire
(Relay O/P2)

C ─1 & 2→ **Mode**
<<Temporal>>
[#.Edit] [↵ Save]
[NAC1*] → **Mode**
<<Synchronized>>
[#Edit] [↵ Save]
[NAC1*]

↓

Mode
<<Continuous>>
[#.Edit] [↵ Save]
[NAC1*] → **Mode**
<<BPM 60>>
[#.Edit] [↵ Save]
[NAC1*]

D ─1→ 1. Caption
2. Date & Time
3. Password
[Setting] ─1→ Caption :
Ravel Electronics
(#. Edit)
[Caption] → Caption :   ABC
Ravel Electronics
[Caption]

─3→ **G**

─2→ Date : dd / mm / yy
Time: hh : mm : ss
[# Edit]
[RTC] → Date : dd / mm / yy
Time: hh : mm : ss
[↵ Save]
[RTC]

D ─2→ **AC Loss Delay**
Enabled : 120 Min
[↵ Save]
[Feature1 *] → **AC Loss Delay**
Disabled
[↵ Save]
[Feature1 *]

```
                                                                                      
    ┌───┐  3    ┌──────────────────┐  1   ┌────────────────┐  1  ┌──────────────────┐  1  ┌──────────────────┐
    │ D │────→  │ 1. Communication │────→ │ 1.Network      │───→ │ 1. N/W Addr:     │──→ │ N/W Addr ?       │
    └───┘       │ 2. Password Ctrl │      │ 2. Repeater    │     │ 2. Network Status│    │                  │
                │ 3. Factory Default│     │    Config      │     │ 3. N/W O/P Config│    │       [N/W Addr] │
                │        [Advanced] │     │      (Common)  │     │           [N/W]  │    └──────────────────┘
                └──────────────────┘      └────────────────┘     └──────────────────┘
```

1. Communication
2. Password Ctrl
3. Factory Default
[Advanced]

1.Network
2. Repeater Config
(Common)

1. N/W Addr:
2. Network Status
3. N/W O/P Config
[N/W]

N/W Addr ?
[N/W Addr]

2 — Enter Panel No ?
[Mode]

Panel No: 4
Enable
[# Edit]
{N/W PNL}

Panel No: 4
Disable
[# Edit]
{N/W PNL}

1. N/W Addr:05
2. Network Status
3. N/W O/P Config
[N/W]

3 — 1) Fire O.P:Disabled
2) Fault O/P: Disabled
3) NAC's : Disabled
[N/W O/P *]

1 — Fire O/P:<Disabled>
[N / W O/P FR]

— Fire O/P:<Enable>
[N / W O/P FR*]

2 — Fault O/P : <Disabled>
[N / W O/P FT*]

— Fault O/ P : <Enable>
[N / W O/P FT*]

3 — NAC's O/P : <Disabled>
[N/W O/P NAC*]

— Fault O/ P : <Enable>
[N / W O/P NAC*]

2 — Enter Rep. Panel No?
[Rep Config]

Repeater Panel No : 05
Disabled
[# Edit]
[Rep Pnl]

— Repeater Panel No : 05
Enable
[# Edit]
[Rep Pnl]

2 — 1. User Access Ctrl
2. Chg Config Pass
[Pass Ctrl]

1 — User Password
<<Disable>>
(#Edit) [↵ Save]

User Password
Disabled
[# Edit]
[User Pass Ctrl]

2 — Old Password?
[Chg Config Pass]

New Password?
[Chg Config Pass]

Re - New Password?
[Chg Config Pass]

Re - New Password
Updated

3 — Factory Default
Recovering ......

```
                              ( G )

        ┌───────────────────────────────────┐
        ▼                                   ▼
┌─────────────────┐              ┌─────────────────┐
│   1. USER       │              │   2. ADMIN      │
│   PASSWORD      │              │   PASSWORD      │
└─────────────────┘              └─────────────────┘
        │                                   │
        ▼                                   ▼
┌─────────────────┐              ┌─────────────────┐
│ 1.User1  4. User4 │            │ Old Password?   │
│ 2.User2  5. USer5 │            │                 │
│ 3.User3           │            │ [Chg Adm Pass]  │
│        [ User Pass ] │         └─────────────────┘
└─────────────────┘                      │
        │                                ▼
        ▼                      ┌─────────────────┐
┌─────────────────┐           │ New Password?   │
│ Old Password?   │           │                 │
│                 │           │ [Chg Adm Pass]  │
│ [chg Usr1 Pass] │           └─────────────────┘
└─────────────────┘                    │
        │                              ▼
        ▼                    ┌─────────────────┐
┌─────────────────┐         │ Re-Type New?    │
│ New Password?   │         │                 │
│                 │         │ [Chg Adm Pass]  │
│ [chg Usr1 Pass] │         └─────────────────┘
└─────────────────┘                  │
        │                            ▼
        ▼                  ┌─────────────────────────┐
┌─────────────────┐       │ Re-Type New? ****       │
│ Re-Type New?    │       │ New Password updated    │
│                 │       │ Press '#' to chge       │
│ [chg Usr1 Pass] │       └─────────────────────────┘
└─────────────────┘
        │
        ▼
┌─────────────────────────┐
│ Re-Type New? ****       │
│ New Password updated    │
│ Press '#' to chge       │
└─────────────────────────┘
```

4.2 Programming:

Menu Key

Menu is accessed by both user and admin, but user can enter into test mode only using user password. The configuration changing is done using admin password (level 3). The various steps involved in this menu are shown as flow chart. After entering into the menu, screen will shown as follows,

```
1. View
2. Program
3. About
```

4.2.1 View:

View Option can be accessible by User. By this option user can view the past history and exiting configuration, however they cannot change preserved settings. By selecting '1' when in Main menu, the system enters into View mode and shows the viewing category options as like below,

```
1. Suppressed Events
2. History
                    [View]
```

4.2.1.1.Suppressed Events

Suppressed Events option is used to view the suppressed events during Fire condition. The suppressed events like PreAlarm, Supervisory and faults events can be viewed from this menu using corresponding number keys. By selecting '1' from view menu brings the suppressed events and shows the suppressed events category options as like below.

```
1. Faults
2. Alarm
   [Suppressed Events]
```
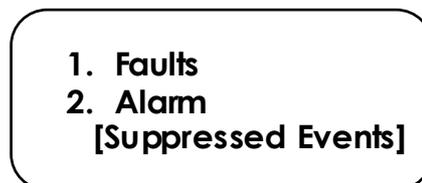
4.2.1.2.History

History option is used to view the past panel event logs such as Alarm, Supervisory, Fault, Silence Reset and etc., with Real Time Clock. By pressing the key '2' from View menu brings the History mode. The history mode provides the following event filtering option,

```
┌─────────────────────────────────┐
│   1.  View All Events           │
│   2.  Alarm Events              │
│   3.  Delete          [History] │
└─────────────────────────────────┘
```

By selecting a number from the list in the the history menu, respected subject relevant logs alone displayed in the screen as like below,

```
┌─────────────────────────────────┐
│   1.  Event No:  abcd / ABCD    │
│   2.  Date: dd / mm / yy        │
│   3. Time:   hh / mm / ss       │
│   4. Events:   Type of Event    │
└─────────────────────────────────┘
```

4.2.2 Program:

By selecting the number 2 from the main menu screen, the system enters into program mode. This mode is protected by password and it requires admin password (Default – 54321). In this mode, changing the zone, Relay, NAC and password setting can be changed or modified. After entering into the view mode, screen will be as below.

```
┌─────────────────────────────┐
│   1. Zone                   │
│   2. Relay                  │
│   3. NAC's                  │
│   4. 24V O/P                │
│   5. Common                 │
│            [Program]        │
└─────────────────────────────┘
```

4.2.2.1 Zone

By selecting the number 1 in the keypad from Program mode screen, it enters into the zone screen. It is shown as below:

```
┌─────────────────────────────┐
│   1. Mode                   │
│   2. Location Program       │
│   3. Wiring                 │
│            [Zone]           │
└─────────────────────────────┘
```

4.2.2.1.1 Mode

By selecting the number 1 in the keypad, it enters into the Mode screen. It Displays as follows.

```
┌─────────────────────┐
│                     │
│  Enter Zone No.? AA  │
│                     │
│  Press # to change   │
│  Press Enter to Set  │
│                     │
└─────────────────────┘
```
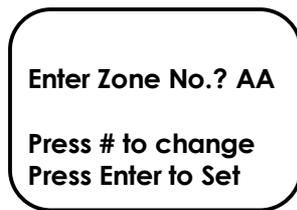
AA = Number of panel to be selected.

4.2.2.1.2 Location Program

By selecting the number 2 in the keypad from setting , it enters into the location program Mode screen. When entering into this it will ask the zone number. After entering the zone number press ENTER key, cursors goes to next line. Then enter the location using the number / letter key pad, press ENTER key after entering location.

```
┌─────────────────────┐
│                     │
│  Enter Zone No.? AA  │
│                     │
│  Press # to change   │
│  Press Enter to Set  │
│                     │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│                     │
│                     │
│       Zone 1        │
│   <Loc. not entered>│
│                     │
└─────────────────────┘
```
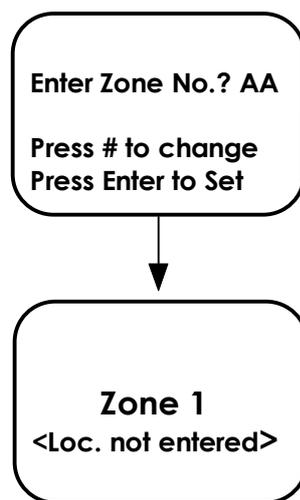
4.2.2.1.3 Wiring

From the Zone Wiring program screen, The zones circuit is designed for the class-B wiring. The style of wiring can be changed using this option. The Style of class-B can be changed as Style-B or Style-C by pressing '#' key from the panel key pad. When you enter into this mode the screen will be as below.

```
┌─────────────────────┐
│  Type: Wiring        │
│  Class : B           │
│          (# Edit)    │
│          (wiring)    │
└─────────────────────┘
```
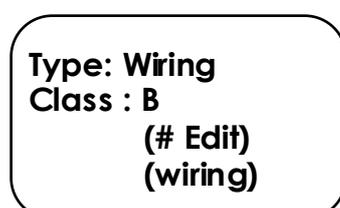
By selecting the number 2 in the keypad, it enters into the Relay screen. It Displays as follows.

```
1. Relay 1: Fire
2. Relay 2: Fault
        [Relay O/P]
```

By selecting the number 1 in the keypad, it enters into the Fire Relay screen. It Displays as follows.

```
1. Type : Fire

        [Relay O/P1]
```

4.2.2.3.1 NAC -1

The NAC1 output can be configured as Temporal, Synchronized, Continuous, 60 BPM. In Temporal and synchronize mode the NAC1 output will be as pulse as shown below. In these modes all the Sounders will be evacuated simultaneously.

To change the option press '#' key to toggle between the options Steady, Temporal, Synchronized. The NAC's should be in off condition to change the options.

TEMPORAL OUTPUT

3 Sec

0.5 Sec   1.5 Sec

0.5 Sec

STEADY OUTPUT

SYNCHRONIZED OUTPUT

20 ms   1 S
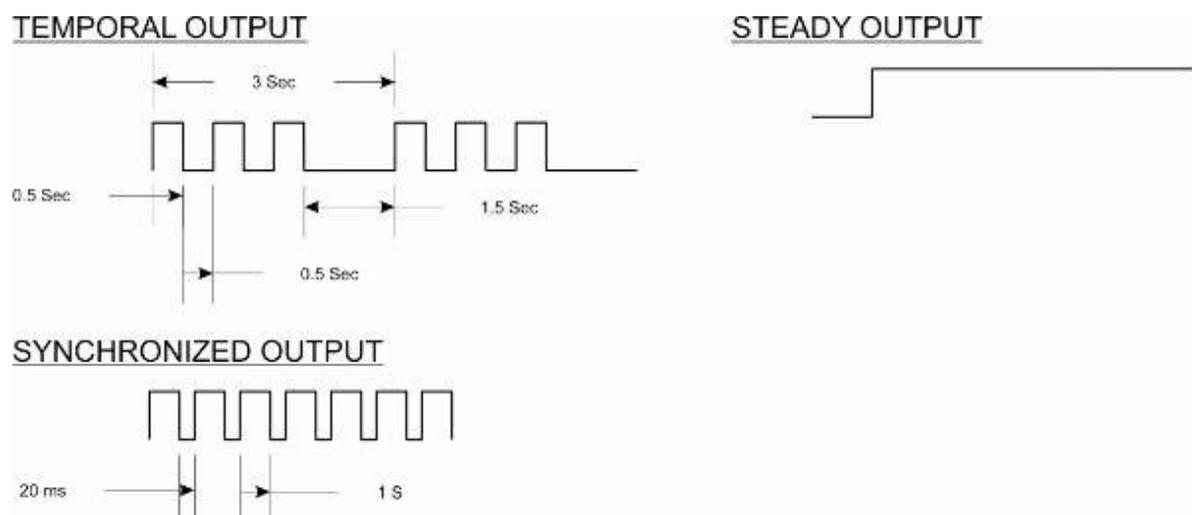
The NAC2 output can be configured as Continuos, Temporal, Synchronized & 60 BPM. In Temporal and synchronize mode the NAC2 Output will be as pulse as shown below. In these modes all the Sounders will be evacuated simultaneously.

To change the option press 'Change' key to toggle between the options Continuous, Temporal, Synchronized & 60BPM. The NAC's should be in off condition to change the options.

4.2.2.4 24V Output

The 24V output can be configured as Resettable or steady. If four wire detectors are used in the panel, then the 24V DC output should be configured as Resettable. While resetting the panel this output will cut off for the 3 seconds. . The default setting is Steady Output. In this mode screen display as below.

```
        24V Output
         Steady
```

To change the option press '#' key to toggle between the options Steady and resettable.

4.2.2.5 Common

By selecting the number 4 in the keypad, it enters into the Common screen. It Displays as follows.

```
    1. Settings
    2. Features
    3. Advanced
            [Common]
```

By selecting the number 1 in the keypad, it enters into the Setting mode. It Displays as follows.

```
┌─────────────────────────────────┐
│   1.  Caption                   │
│   2.  Date & Time               │
│   3.  Password                  │
│               [Setting]         │
└─────────────────────────────────┘
```

4.2.2.5.1   Caption

By selecting the number 1 from the system screen, the system enters into Caption editing mode. In this mode, caption is changed by using '#' key, maximum 20 characters can entered which will be display in front screen in system healthy mode. After entering into this mode, screen will be as below.

```
┌─────────────────────────────────┐
│  Caption:                       │
│  Ravel Electronics              │
│                  (#Edit)        │
│                  [Caption]      │
└─────────────────────────────────┘
```

4.2.2.5.2   Date & Time

By selecting the number 2 from the setting screen, the system enters into RTC settings mode. In this mode, time and date settings are changed by using '#' key. After entering into this mode, screen will be as below.

```
┌─────────────────────────────────┐
│  Date: DD / MM / YY             │
│  Time: HH / MM / SS             │
│                  (#Edit)        │
│                  [RTC]          │
└─────────────────────────────────┘
```

.

4.2.2.5.3.1   User Password

By selecting the number 3 from the Setting screen, the system enters into user password change mode. In this mode, admin password can be changed by selecting corresponding number, after entering into this mode, screen will be as below.

```
┌─────────────────────────────────┐
│  1.  User 1        4.  User 4   │
│  2.  User 2        5.  User 5   │
│   3. User 3              [Chg Pass] │
└─────────────────────────────────┘
```
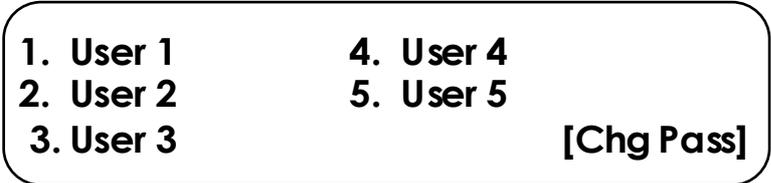
After selecting corresponding number, password changing screen as follows:

> **Old Password ?**
>
> **[Chg XXX Pass]**

XXX – User 1/2/3/4/5

⇩

> **New Password ?**
>
> **[Chg XXX Pass]**

⇩

> **Re type New Password ?**
>
> **[Chg XXX Pass]**

⇩

> **New Password Updated**
>
> **[Press # to change]**
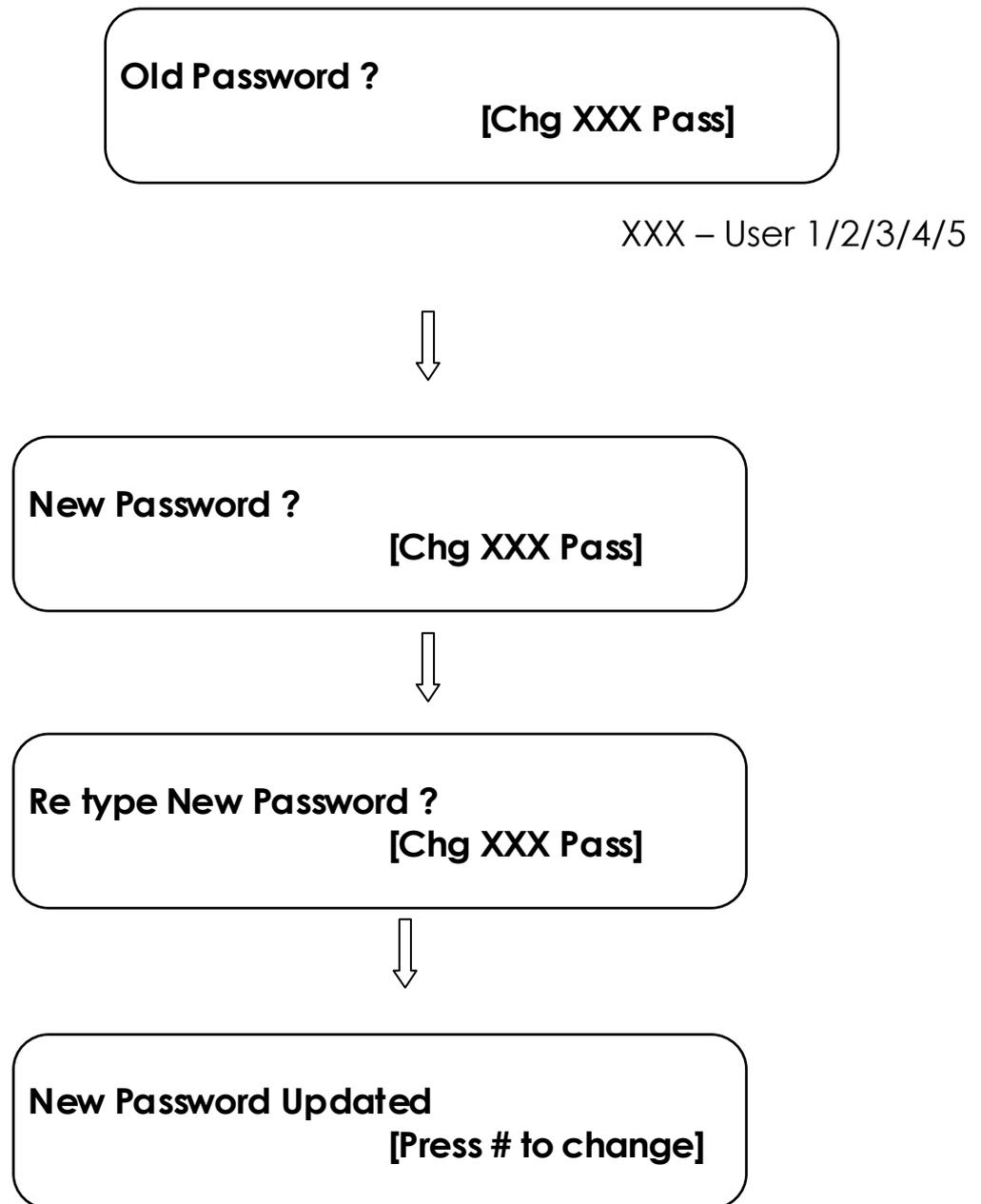
4.2.2.5.3.2   Admin Password

From the Admin Password Mode screen, By pressing the 'enter' key from the change Admin Password screen, system enters into the Admin Password change mode. The display screen of this mode showed as below. The Default Password is"54321". The Password should be five digit.

```
┌─────────────────────────────────┐
│                                 │
│  Old Password ?                 │
│                                 │
│                 [Chg Adm Pass]  │
│                                 │
└─────────────────────────────────┘
                 ⇓
┌─────────────────────────────────┐
│                                 │
│  New Password ?                 │
│                                 │
│                 [Chg Adm Pass]  │
│                                 │
└─────────────────────────────────┘
                 ⇓
┌─────────────────────────────────┐
│                                 │
│  Re Type New Password ?         │
│                                 │
│                 [Chg Adm Pass]  │
│                                 │
└─────────────────────────────────┘
                 ⇓
┌─────────────────────────────────┐
│                                 │
│  New Password Updated           │
│                                 │
│               [Press # to change] │
│                                 │
└─────────────────────────────────┘
```
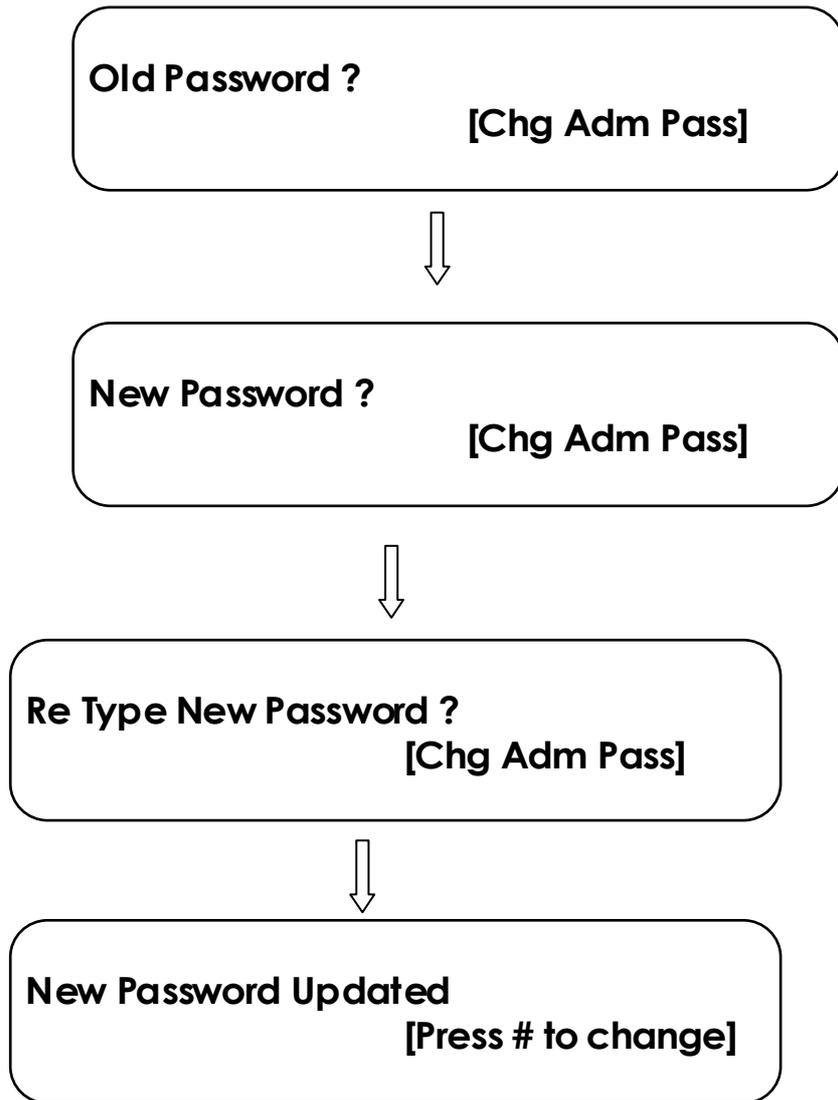
4.2.2.4.2   AC Loss Delay

When AC power is lost, the control panel trouble relay will activate. The factory default option for this feature is Enabled, the trouble relay activation on AC loss after the time delay setting. Press 'Change' key to toggle between enabled / disabled option. The AC Loss Delay timing can set 001 to 999min. After setting the required time press Enter key to accept the time. The default time is 120 Seconds. When you enter into this mode the screen will be as below.

```
┌──────────────────────┐
│                      │
│   9. AC Loss Delay   │
│    <120 (Min)>       │
│                      │
└──────────────────────┘
```
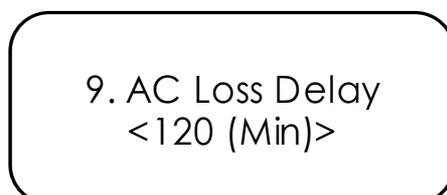
In AC Loss Delay is enabled condition, to change the time press enter key and use left /right key to increase/ decrease the timing.

4.2.2.4.3 Advanced

By selecting the number 3 from the Screen, it system enters into the Advanced setting mode. It required the configuration password. In this mode the system up gradation like Network selection, Changing the configuration password & Factory resetting can be done. The default configuration password is "654321". After entering into the mode, screen will be shown as below.

```
1.  Communication
2.  Password Control
3. Factory Default
          [Advanced]
```

By selecting the number 1 from the Advanced screen, the system enters into communication mode. In this mode, network and repeater configuration can be done. After entering into this mode, screen will be as below.

```
1. Network
2 .Repeater Config


          [Common]
```
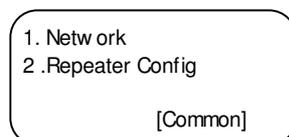
4.2.2.4.3.1.1

By selecting the number 1 from the Communication screen, the system enters into communication mode. After entering into this mode, screen will be as below.

```
1. N/W Addr:
2. Network Status
3. N/W O/P Config
          [N/W]
```
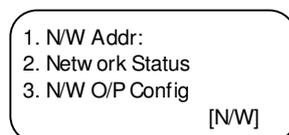
4.2.2.4.3.1.1.1 Network Address

By selecting the number 1 from the network screen, the system enters into the network address changing mode. In this mode the address of the panel shall be changed using the alphanumeric key

pad. The address of the panels should be in the range 1 to 32. After entering into this mode, the screen will as shown below.

```
N/W Addr ?

          [N/W Addr]
```
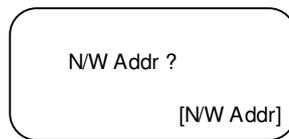
Note: Make sure the address of the panel is not repeated.

4.2.2.4.3.1.1.2   Network Status

By selecting the number 2 from the network screen, the system enters into the network status mode. In this mode the network selection can be enabled / disabled by using up and down arrow keys in the selected panel address. After entering into this mode, screen will as shown below.

```
Enter Panel No: ?                Panel No: 4
                                 Enable
                                                [Edit]
                   [Mode]                    [N.W Panel]
```
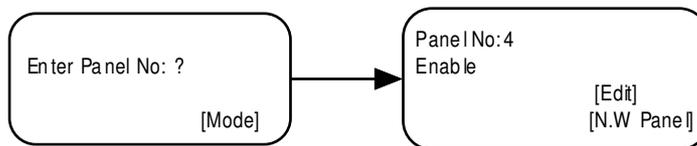
4.2.2.4.3.1.1.3   Network Output Config

By selecting the number 3 from the network screen, the system enters into the network Output configuration. After entering into this mode, screen will as shown below.

```
1) Fire O.P:Disabled
2) Fault O/P: Disabled
3) NAC's : Disabled
              [N/W O/P *]
```
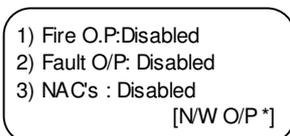
4.2.2.4.3.1.2 Repeater Configuration

The Repeater configuration is used to configure the repeater panel. The repeater panel can be enable or disable by switching the # key. The LCD display of the screen is shown below.

```
Enter Rep. Panel No?        Repeater Panel No : 05    #    Repeater Panel No : 05
                            Disabled                       Enable
           [Rep Config]              [# Edit]                       [# Edit]
                                     [Rep Pnl]                      [Rep Pnl]
```
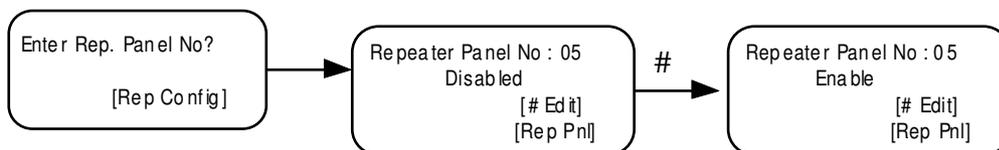
4.2.2.4.3.2 Password Control

By selecting the number 2 from the advanced screen, the system enters into the password control. In this stage user & Advance password can be reset. After entering into this mode, screen will as shown below.

```
┌─────────────────────────┐
│ 1. User Access Ctrl      │
│ 2. Chg Config Pass       │
│              [Pass Ctrl] │
└─────────────────────────┘
```
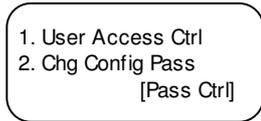
4.2.2.4.3.2.1 User Access Control

In this mode user password can be controlled by enable or disable options by '#' key.

```
┌──────────────────────┐        ┌──────────────────────┐
│ User Password         │        │ User Password         │
│ <<Disable>>           │───────▶│      Disabled         │
│ (# Edit)  [⏎  Save]   │        │          [# Edit]     │
│                       │        │    [User Pass Ctrl ]  │
└──────────────────────┘        └──────────────────────┘
```
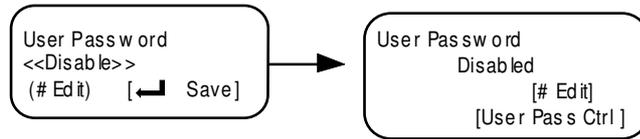
4.2.2.4.3.2.2 Change Config Password

From the Change config Mode screen we can reset the advance password. The display screen of this mode showed as below. The Default Password is"654321". The Password should be five digit.

```
┌────────────────┐    ┌────────────────┐    ┌────────────────┐    ┌────────────────┐
│ Old Password?   │    │ New Password?   │    │ Re - New Password? │  │ Re - New Password │
│                 │───▶│                 │───▶│                 │───▶│                  │
│ [Chg Config Pass]│    │ [Chg Config Pass]│    │ [Chg Config Pass]│    │      Updated     │
└────────────────┘    └────────────────┘    └────────────────┘    └────────────────┘
```
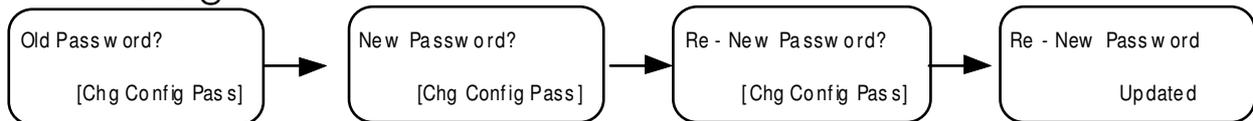
4.2.2.4.3.2   Factory Default

By selecting the number 3 from the advanced screen, the system enters into the factory default setting mode. After entering into this mode, screen will be as below.

```
┌──────────────────────┐
│ Factory Default       │
│ Recovering ......      │
└──────────────────────┘
```
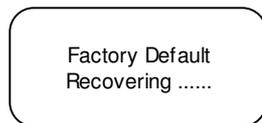
4.2.3 About

It shows the details of the panel by pressing enter key in the about menu. The LCD display will show as below. The model shown with respect to the no. of zones, for 16 zone RE – 900-16Zone, 32Zone RE-900

```
┌──────────────────────┐
│   Fire Alarm Panel    │
│   Model: RE-900       │
│   Ver 1.0             │
│   16 Zone Panel       │
└──────────────────────┘
```
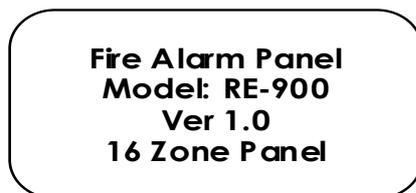
Note: Version shown is software version.

CHAPTER 5: Operating Instructions
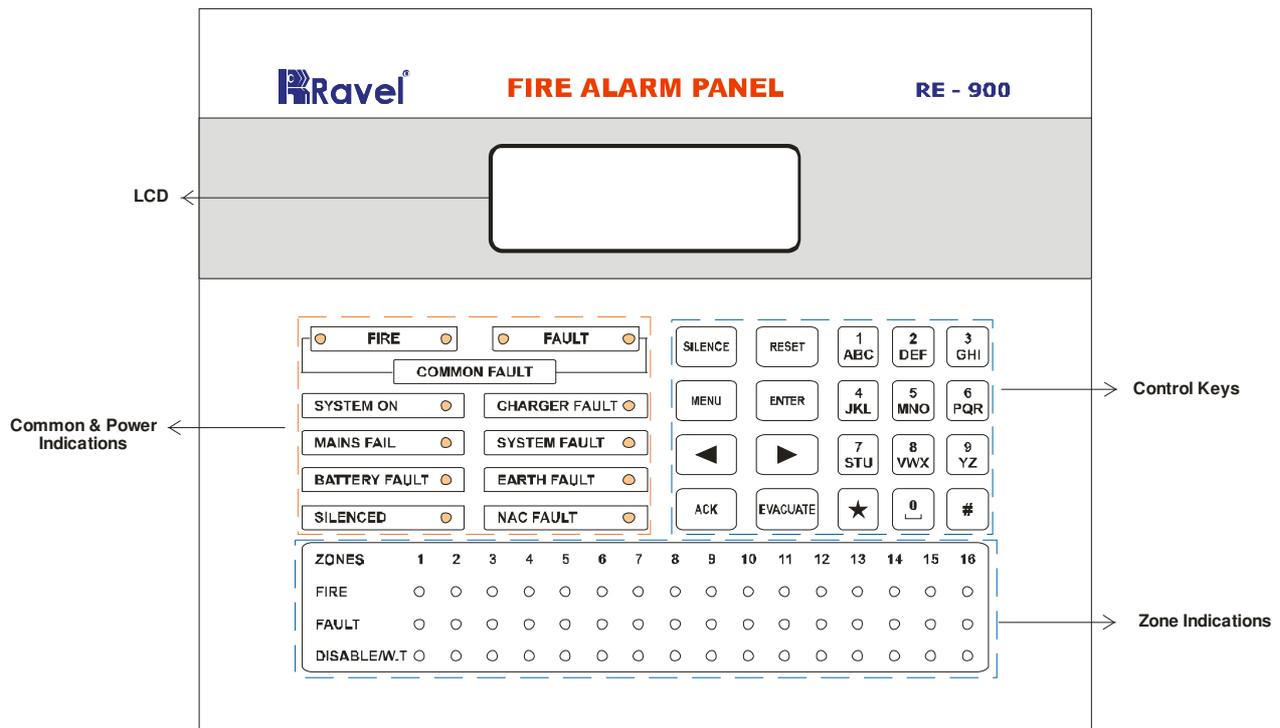
5.1 Switch Functions

The Keys, which are non-masked, are used for the general operation of the Fire Alarm Panel. The Non-masked keys are Silence, Reset, Ack., Evacuate and Enter keys.

SILENCE Key: This key is used in Fire / Fault Condition. To acknowledge the external sounder / internal buzzer press this key. And the internal buzzer tone is changed from continues tone to toggle tone for fire condition.

RESET Key: This key is also used in only Fire Condition. The panel is reset by pressing this key and during reset condition, all the detector input voltages are cut off up to 3 seconds for Detectors and MCP's, Then voltages are put on to the loop.

EVACUATE Key: This key is used to energize the external hooters without actual fire.

ENTER KEY: This key is used to accept the password during silence, reset in Fire Condition And also used for the Evacuate. This key is used to check the all LED's in panel is in good condition with continues buzzer tone.

MENU Key: This key is used to get into the program menu and get back to the previous menu screen.

ACK. Key: This key is used to acknowledge the buzzer tone during the fault and fire condition. This key can be operated with user or admin password.

5.2 Indications

SYSTEM ON: This LED will glow when the panel is energized by primary and standby power. This is the only LED glowing in the normal monitoring condition. The LCD Display as shown below.

```
FIRE ALARM
SYSTEM HEALTHY
```

MAINS FAIL: Whenever the Main Supply (110 - 220v A.C) fails, the Mains fail LED will be illuminated and it also indicated in LCD with toggle Buzzer tone. The LCD Display as shown in the figure 22, 'Mains fail' will be displayed in the fault screen.

```
Fault [ x/y ]
Type of Fault
```
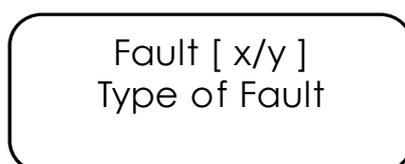
x – n^{th} no. of fault; y – Total no. of fault.
Figure – 22

BATTERY FAULT: Whenever the backup battery fails, the battery fault LED will be illuminated and it also indicated in LCD with toggle Buzzer tone. Similarly the same LED will be illuminated when the battery voltage goes down below the 21.6v (Battery Low). The LCD Display as shown in the figure 22 'Battery Fail / Battery Low' will be displayed in the Battery fail / Battery low fault screen respectively.

CHARGER FAULT: Whenever the battery charger section is fails, the charger fault LED will be illuminated and it also indicated in LCD with toggle tone.

EARTH FAULT: Whenever the Initiating Device circuits (IDCs) and Notification Alarm Circuits (NACs) are gets contact with the Earth or Body of the cabinet, the corresponding fault LED, earth fault LED and common fault LED will be illuminated and it also indicated in LCD as corresponding circuit is earth fault with toggle Buzzer tone. The Earth fault can be created through 0 Ohms resistor.

SYSTEM FAULT: Glowing of this LED indicates the failure of the CPU.

SILENCED: This LED will glow when the silence key is pressed in fire condition only.

NAC FAULT: Whenever there is any fault in Notification Appliances Circuits like NAC loop Open / Short / Earth fault, it will be identified by COMMON NAC FAULT LED. The LCD Display as shown in the figure 22, 'NAC # Fault' will be displayed in fault screen.

FIRE: This twin fire LED will glow when any one or more of the zones are in fire condition.

FAULT: This fault LED will glow when any one or more of the zones are in fault condition.

ZONE FIRE: This fire LED will glow when the zones are fire condition. The first fired zone continuously in blink and other zone fire LED will glow steadily in fire condition. The fired zone is displayed in the LCD, first fire zone and total no. of zone is displayed separately.

ZONE FAULT: This fault LED will glow when there is an open or short or earth fault in that particular zone.

ZONE DISABLE/W.T: This zone wise LED glows steadily in disabled condition and blinking in the Walk test mode.

5.3 Operation

5.3.1 ZONE FAULT:

When faults like Open/ Short occurred in the loop, the corresponding ZONE FAULT LED would identify it.

And in the output to main panel shows high resistance (Open), hence in the main panel where this sector panel is connected shows fault.

During above condition LCD Show as follows and by using the curser key the suppressed fault can be viewed.

```
              [A/B]
    OPEN/SHORT IN ZONE X
        Zone Location
```
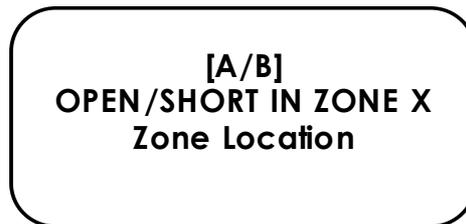
Where **A** – nth Fault; **B** – Total No. of Fault; **X** – Zone Number which is shown in LCD at present.

Note: During the above fault conditions, apart from the specific fault identification LED, common fault, common fault relay and Local buzzer with intermittent tone will be activated. During this time, if 'ACK.' is activated, intermittent tone will be silenced. By using '' key type of hidden fault can be viewed.*

5.3.2 ZONE FIRE:

When the control panel detects Fire via the Detector / MCP, the corresponding ZONE FIRE red LED will be illuminated. At the same time hooter, potential free contact and local buzzer (continuous tone) will be activated. The **common Fire LED** will illuminate whenever any zone is goes to fire condition.

And in the output to main panel shows Fire resistance (560 Ω), hence in the main panel where this sector panel is connected shows fire.

The LCD shows as follows. If there is more than one fire, the number of zones in fire (shown as (Z##)) and in which zone first or recent fire (Shown as Z##) occurred will be displayed on the fire screen.

```
        [A/B]
   FIRE IN ZONE X
   Zone Location
```
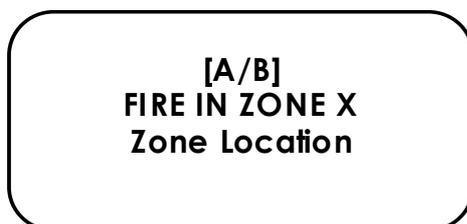
Where **A** – nth Fire; **B** – Total No. of Fire; **X** – Zone Number which is shown in LCD at present

The External hooter will be silenced by using the **Silence** Key and silenced LED indicates it. But the buzzer tone will change to toggle tone from continues tone.

Always the recent fired zone FIRE LED will blink continuously, rest of the fired zone FIRE LED's will glow constantly till it goes to RESET. **The FIRE LED indication will remain ON condition till the panel is RESET.**

Note:
1. *The Fire and Fault relay will be in ON condition till the fire and fault LED's go OFF.*
2. *By silencing, hooters are switched off and relay output for actuators will remains in ON Condition until reset.*
3. *Always Recent fire zone LED will blink.*
4. *The other fire zones can viewed by using the key '*'.*

5.3.3 ZONE Disable/W.T:

Disable: The any Zone can be Disabled / Enabled in zone mode through the programming section 4.2.1 Page 35. The ON status indicates, the zone is disabled and the OFF status of the LED indicates the enabled and blinking of that LED indicates the zone is in walk test mode. In LCD the suppressed events are viewed in suppressed events from menu screen.

```
   Fault [XX/YY]
   Zone X Disabled
```
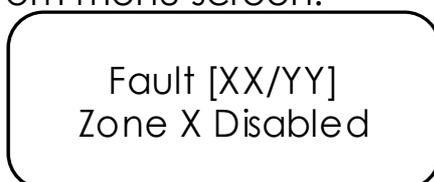
XX – nth no. of events; **YY** – Total no. of events; **X** – Zone No. Disabled.

Walk Test: Disable/W.T LED Blinking identifies the corresponding Zone, which is under walktest. If this LED is illuminates continuously then it identifies that particular zone is disabled. The walk test mode helps the user to test each device in that particular zone by a single person. During walk test mode, if any Fire is identified, the panel will be silenced and reset automatically after 4 seconds and 2 seconds respectively. In case of any other zone fire during this period, it is considered as actual fire and it comes out from the walk test mode. The LCD Display is as shown below.
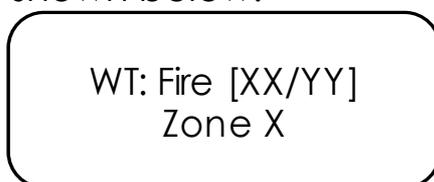
```
WT: Fire [XX/YY]
     Zone X
```

For More than One zone in Walk test fire condition, the screen as follows,
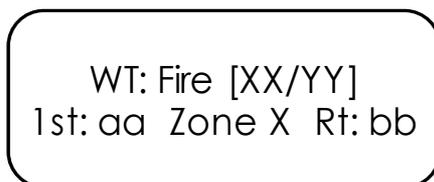
```
WT: Fire [XX/YY]
1st: aa  Zone X  Rt: bb
```

Note:

a. If there is no more testing please ensure that the zone is brought back to the normal Condition.
b. During in this mode, the Fire Relay will not be activated while in fire condition.
c. If the zone is kept in Walk test mode for 10 minutes with out any test the panel comes out of the walk test mode automatically.
d. In other zone gets fire, the walk test mode automatically removed.

Restoral: When the zone restored to normal condition from disable / Walk test mode, the zone which are all in disable/W.T mode the corresponding LED's goes off.
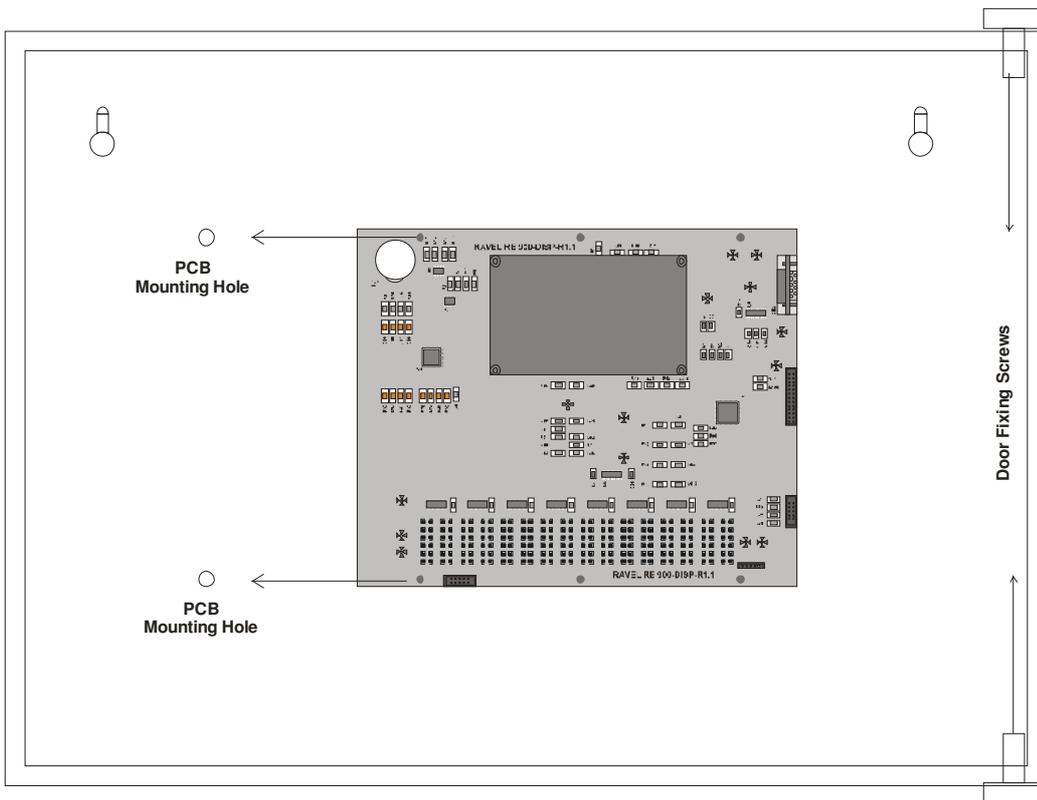
Chapter 6: Servicing:

6.1 Installation/Replacement of PCB:

Remove the screws of PCB, which has to be change and remove the PCB from the mounting position and place the new PCB in that same position as shown below.
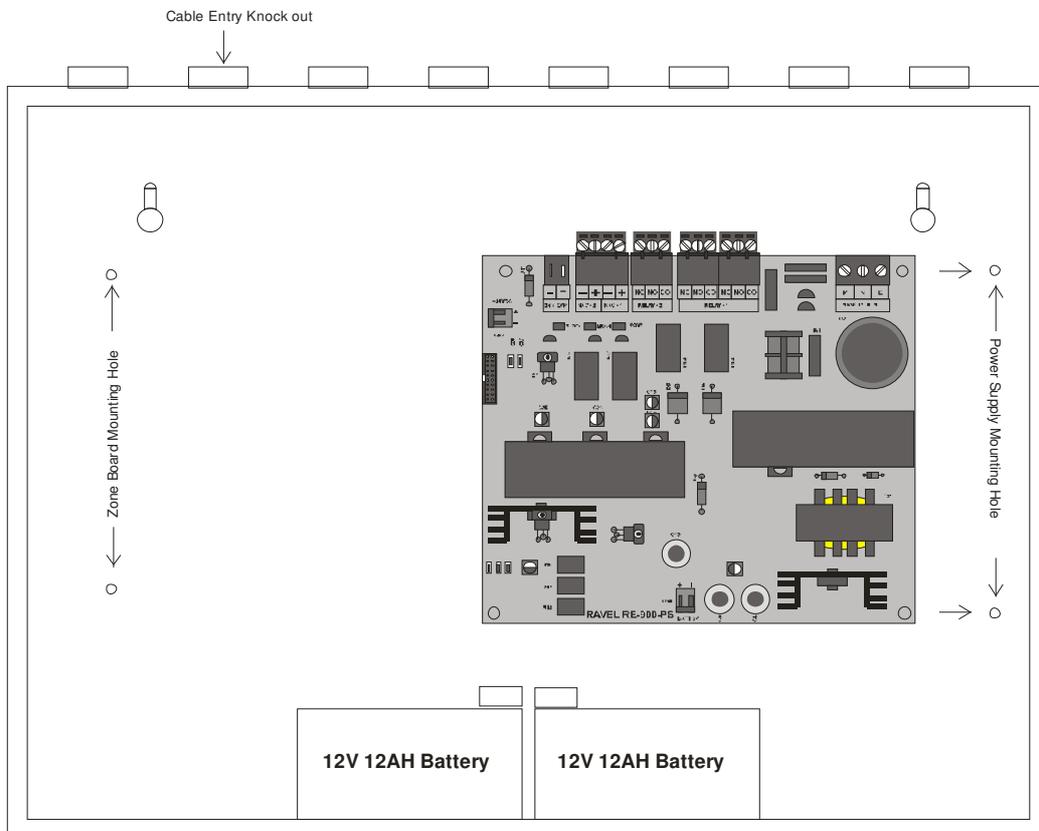
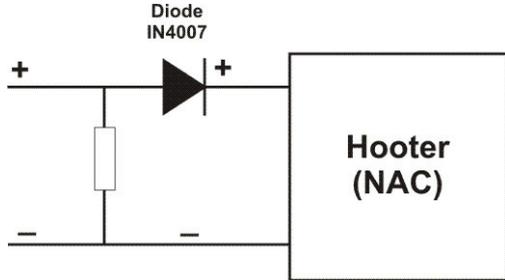**Mounting position for Main Circuit board (RE – 900 – 16Z – MB):**
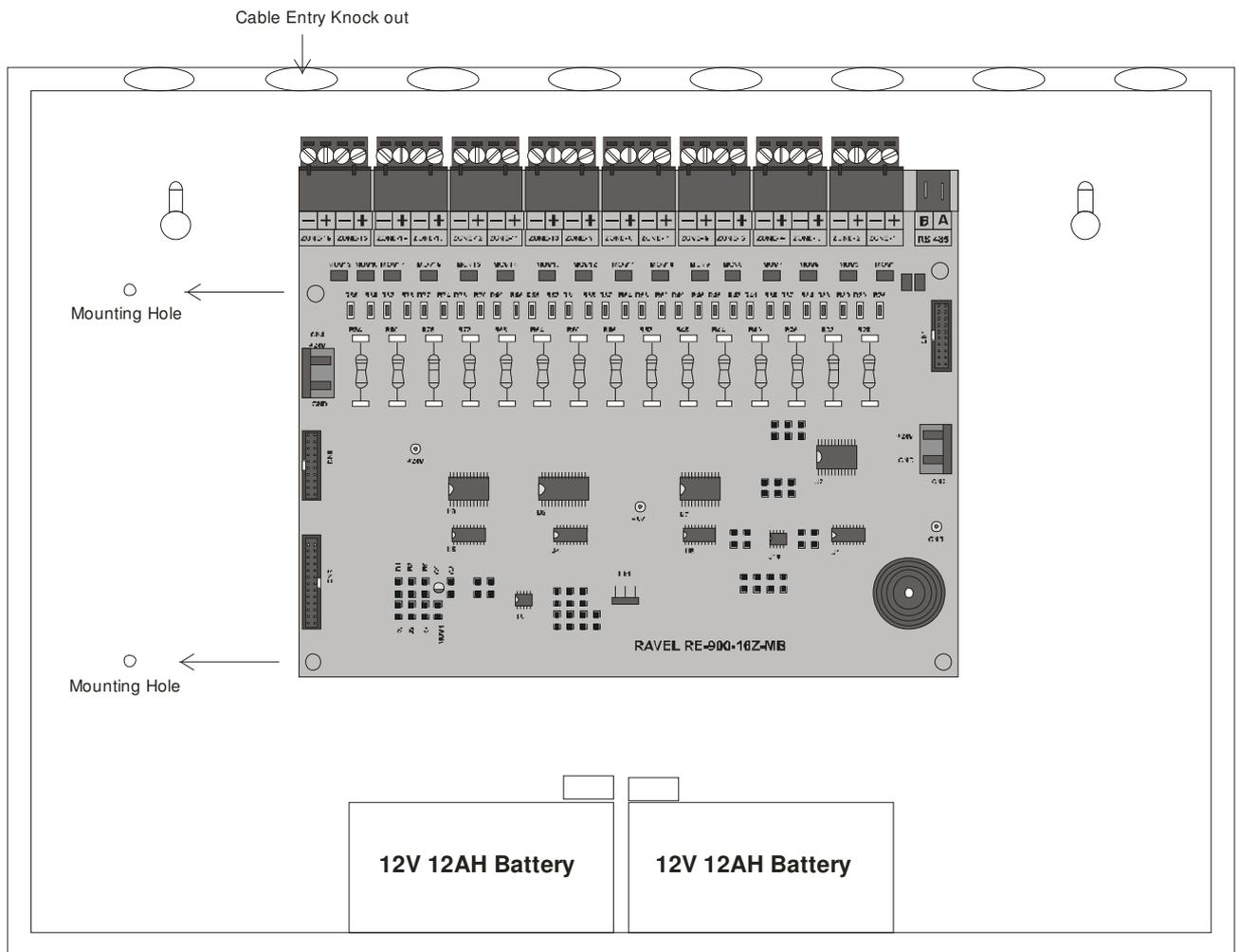
Mounting position for Display board (RE – 900 – DISP – R1.1):

PCB Mounting Hole

PCB Mounting Hole

Door Fixing Screws

Mounting position for Display board (RE – 900 – PS):

Cable Entry Knock out

Zone Board Mounting Hole

Power Supply Mounting Hole

12V 12AH Battery

12V 12AH Battery

Chapter 7: Trouble Shooting

Indication	Root Cause	Remedy
There is no indication on the panel	No power to the Panel	Check AC power and Standby power.
If there is any false alarm from the detector	May be the detector is faulty or check EOL resistor	
Detector OPEN is not detected by the panel	Total zone loop current exceed the rated value	Check number of detectors connected in the loop. Total detectors current should not go above 2.5mA
Hooter fault indication	There is no proper connection in the hooter Or loop Fault.	If there is no hooter connected to the output, check if EOL resistor connected there or not. Check loop wiring for short / open using a meter. If hooter is non-polarized, then ensure each hooter's +ve loop is connected to 1N 4007 diode's cathode and the hooter –ve loop connected to the anode of 1N 4007.

Connection Details for Non Polarized Hooter

Diode
IN4007

+ |+

+

_

_

Hooter
(NAC)

Chapter 8: Abbrevation

The short forms, which are given in this manual, are abbreviated below,

RE	-	**R**avel **E**lectronics
NFPA	-	**N**ational **F**ire **P**rotection **A**ssociation
AC	-	**A**lternating **C**urrent
DC	-	**D**irect **C**urrent
CRCA	-	**C**old **R**olled **C**arbon **A**lloy
LED	-	**L**ight **E**mitting **D**iode
O/P	-	**O**ut**p**ut
IP 54	-	**I**ndustrial **P**rotection
mm	-	**m**illi**m**eter
no(s).	-	**n**umber**(s)**
v	-	**v**olt(s)
Ah	-	**A**mpere per **h**our
IEE	-	**I**nstitute of **E**lectrical **E**ngineering
EOL	-	**E**nd **O**f **L**ine
PCB	-	**P**rinted **C**ircuit **B**oard
CPU	-	**C**entral **P**rocessing **U**nit
MCP	-	**M**anual **C**all **P**oint
S.No	-	**S**erial **N**umber**s**
mA	-	**m**illi **A**mpere
Kgs	-	**k**ilo **g**ram**s**
C,NO,NC	-	**C**ommon**, N**ormally **O**pen**, N**ormally **C**lose.

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