JB-QB-ODH04

Conventional Fire alarm Control Panel

INSTALLATION and OPERATION MANUAL

NOTICE

All information, documentation and specification contained in the manual are subject to change without prior notice by the manufacturer.

ODH04 Ver 1.0

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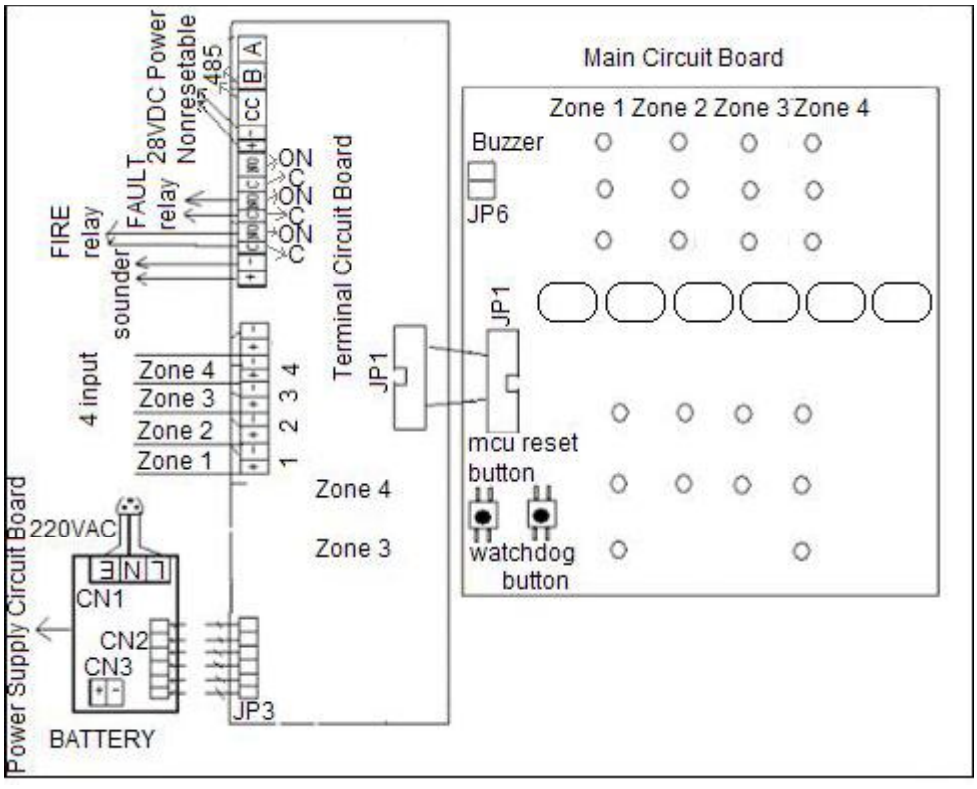
CHAPTER 1: *Product Description*

The ODH04 is a 1-zone to 4-zone FACP(Fire Alarm Control Panel), controlled by microprocessor, according to the current national standard GB4717-2005 . The panel is able to be connected with conventional two-wire smoke detectors, two-wire heat detectors, call points and other normally-open contact devices. The FACP supervises all wiring, AC voltage and battery level.

1.1 Product Features

- Connected with conventional detectors and normally open circuit device
- One Alarm Relay
- One Trouble Relay
- Manual Call point alarm
- 2.2 amps of system power
- Max 30 conventional detectors in one zone
- Manual active sound output enabled.
- Able to display short and broken circuit of detection zones.
- Designed with standby batteries and space provision for two sealed lead-acid batteries.
- Testing functions.

FIGURE 1.1: ODH04 Circuit Board



ODH04 Terminals and Connectors

1.2 Specifications

AC Power

AC187V～AC242V　50Hz± 1 Hz

Battery(lead acid only)

Maximum Charging Circuit: Normal Flat Charge—27.6V@0.8 amp

Output Device Circuits

General Alarm Zones 1 through 4

Operation: All zones

Normal Operating Voltage: Nominal 28VDC

Short Circuit Current: 42mA Maximum

Maximum Loop Resistance: 100 ohms

End-of-Line Resistor: 5.1K, 1/4 watt

Detector loop current is sufficient to ensure operation of two alarmed detectors per zone

Two Relays output

Relay contact rating: 1.0 amps @ 28VDC(resistive)

Nonresettable 28VDC Power

Maximum ripple voltage: 20 mV_{RMS}　　Operating Voltage nominal: 28V

Total DC current available from this output is up to 2.2A

Operating Environment

Temperature: 0～55℃

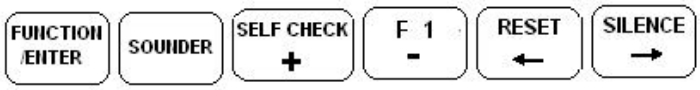
Relative humidity: ≤95%(40℃±2℃)

Dimension: 370mm x 240mm x 60mm

1.3 Control and indicators

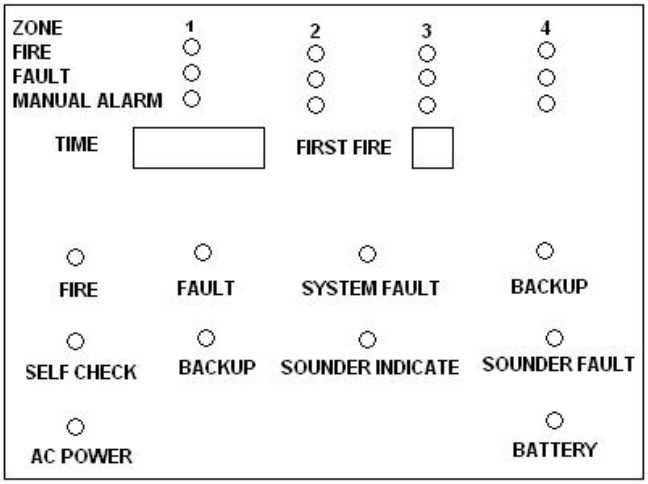
Front Panels keys in Normal Mode

- FUNCTION/ENTER
- SOUNDER
- SELF CHECK / +
- F1/ —
- RESET/ ←
- SILENCE →



LEDs

- FIRE - **red LED**
- FAULT **- yellow LED**
- SYSTEM FAULT **- yellow LED**
- SELF CHECK - **yellow LED**
- SOUNDER INDICATE **- red LED**
- SOUNDER FAULT - **yellow LED**
- AC POWER **- yellow or green LED**
- BATTERY **- yellow or green LED**



Local Sounder

A sounder provides separate and distinct sound for fire alarm and trouble conditions:

- Fire Alarm- pulse 0.3 second On and 0.3 second off
- Fault- pulse 0.8 second on and 4 second off

Figure 1.3.1: ODH04- 4 ZONE LEDS and Keypad

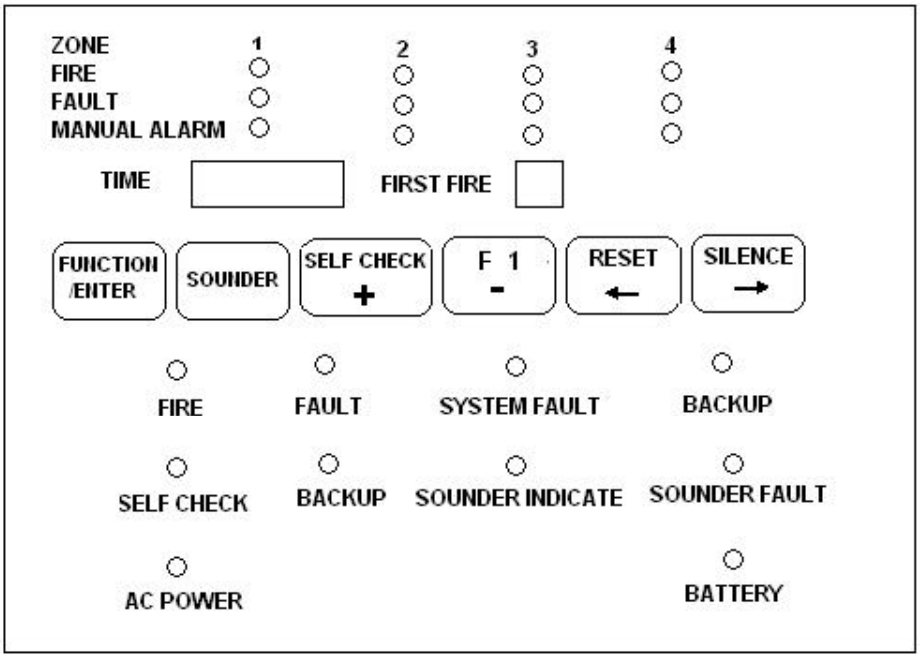
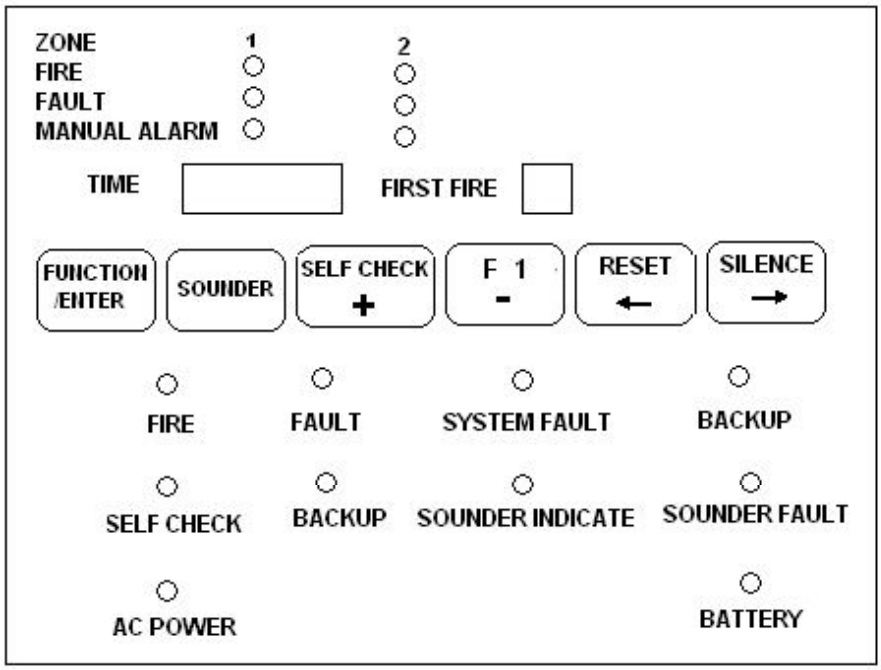


Figure 1.3.2: ODH04- 2 ZONE LEDS and Keypad



1.4 Circuits

Input Circuits

4 input circuits provide configuration. Input circuits 1 through 4 may be used as standard fire alarm control panel zones. All 4 initiating device circuits accept normally-open contact devices and two-wire detectors.

Output Circuits

28 Volt Nonresettable Power output 1500 mA

28 Volt Battery Charger (up to 7 AH batteries)

RS-485 Port (interfaces to Annunciators)

Sound Circuits

One Notification Appliance Circuit

Relays

Two dry relays for system alarm, system trouble are provided standard. Contacts are rated 1.0 amps @ 28 VDC（resistive）and 1.0 amps @ 110VAC(resistive).

RS-485 Port

RS-485 compatible port supports up to 4 different device addresses which can consist of remote annunciators.

Battery Charger

Battery charger will charge up to 2.2 AH batteries. he external box is required to hold 7 AH batteries. The charger is rated for 500mA maximum current.

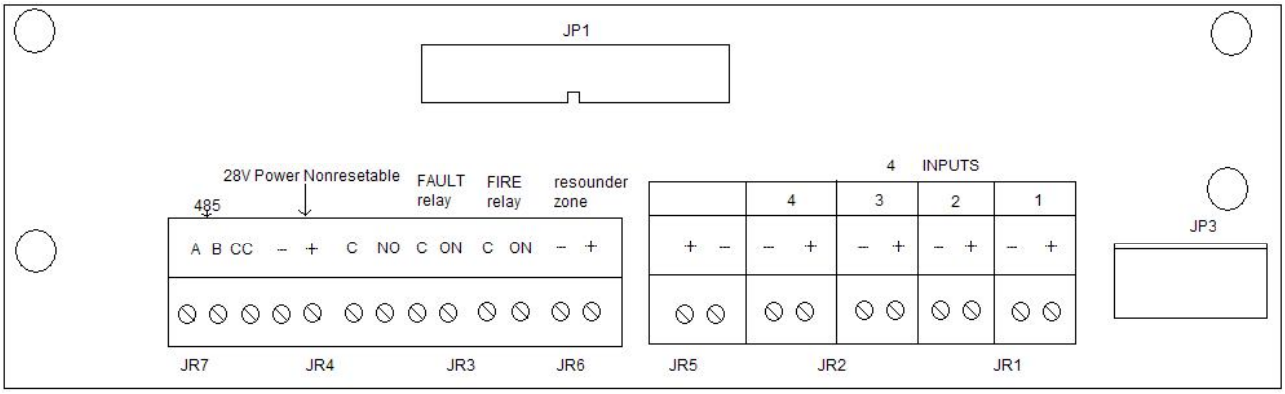
1.5 Components

Main Circuit Board

The main circuit board contains CPU, other primary components and wiring interface connectors. Optional modules plug in and are mounted to the main circuit board. The main circuit board is delivered pre-mounted in the cabinet.

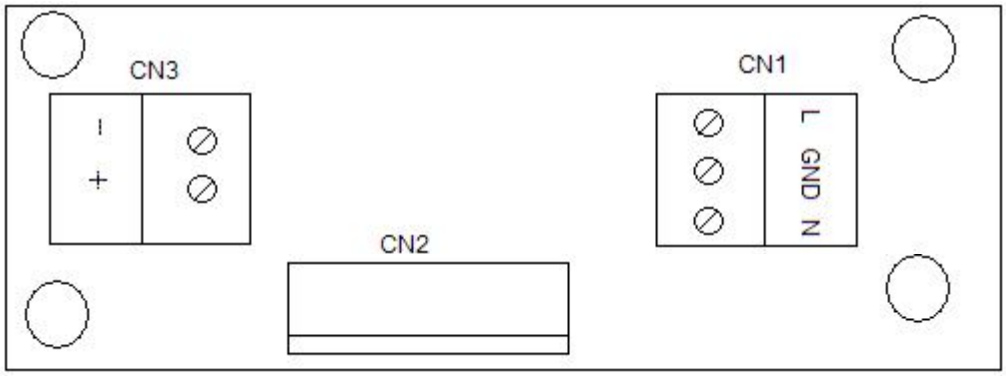
Terminal Circuit Board

The terminal circuit board contains 4 input circuits ,sound circuits, wiring interface connectors and other primary components, is delivered pre-mounted in the cabinet.



Power Supply Circuit Board

The Power Supply circuit board contains battery charger circuit, AC power supply and battery testing circuit and wiring interface connectors,.



Cabinet

The cabinet is blue and the backbox measures 370mm long X 240mm high X 600mmdeep and provides space for two batteries(2.2 Amp Hours).

Power Module Assembly

One 70VA power module is provided standard with the panel.

Batteries

The cabinet provides space for 2.2 Amp hour batteries（large batteries up to 7 Amp Hour batteries, use the external battery box）. Batteries must be ordered separately.

Chapter 2: *Installation*

2.1 Mounting Options

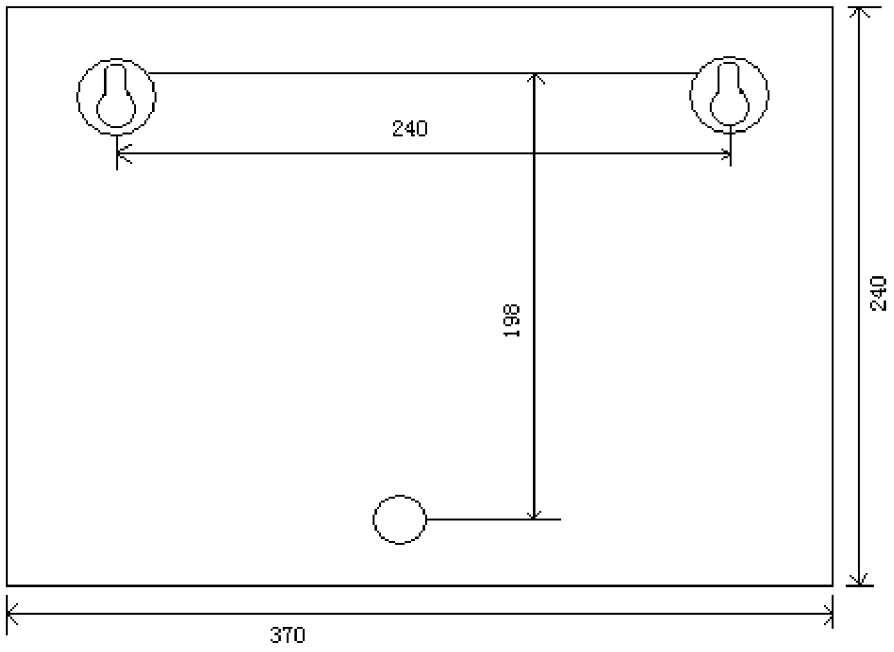
The cabinet may be either semi-flush or surface mounted. The cabinet mounts using three keyholes.

Carefully unpack the system and check for shipping damage. Mount the cabinet in a clean, vibration-free area where extreme temperatures are not encountered. The area should be readily accessible with sufficient room to easily install and maintain the panel. Locate the top of the cabinet approximately five feet above the floor. All wiring should be in accordance with the National and/or Local codes for fire alarm systems.

2.2 Backbox Mounting

- ✓ Open the door
- ✓ Mark and predrill holes for the top two keyhole mounting bolts using the dimensions illustrated.
- ✓ Install two upper fasteners in the wall with the screw heads protruding.
- ✓ Using two upper keyholes, mount the backbox over the two screws.
- ✓ Mark and drill the lower one holes.
- ✓ Mount backbox, install remaining fasteners and tighten.

Figure 2-2 - Cabinet dimensions and knockout locations



2.3 Operating Power

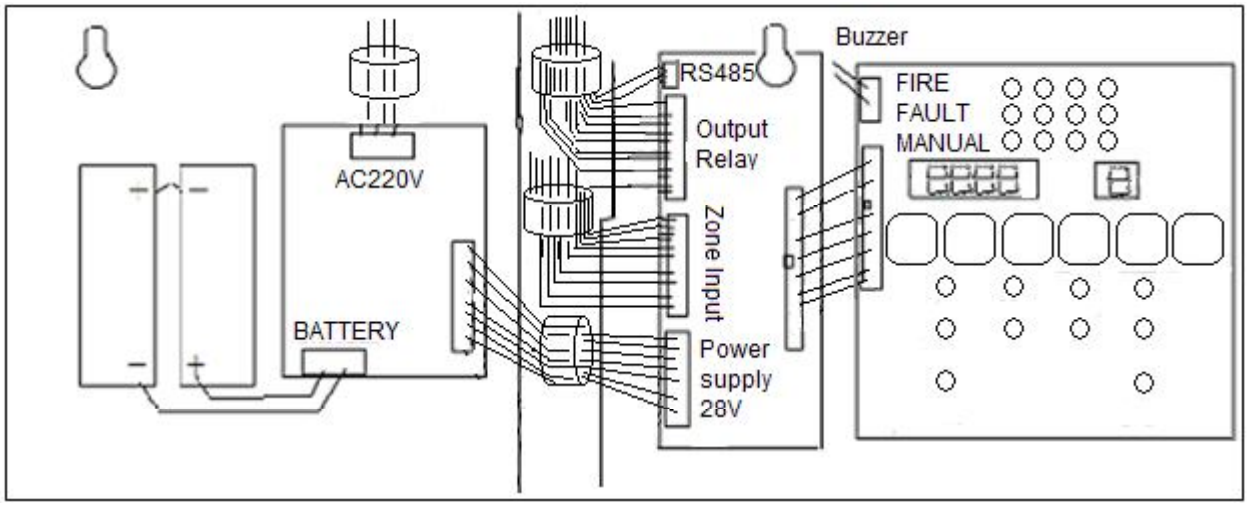
Primary Power Source(AC)

AC power connections are made inside the control panel cabinet. The primary power source for the ODH04 is 220VAC, 50Hz, 2.2 amps. Connect power supply wire to the CN1 terminal of the power supply board.

Secondary Power Source(Batteries)

Observe polarity when connecting the battery. Connect the battery cable to the CN3 terminal of the power supply board using the plug-in connector and cable provided.

Figure 2-3: Typical operating power connections



2.4 Input Circuits

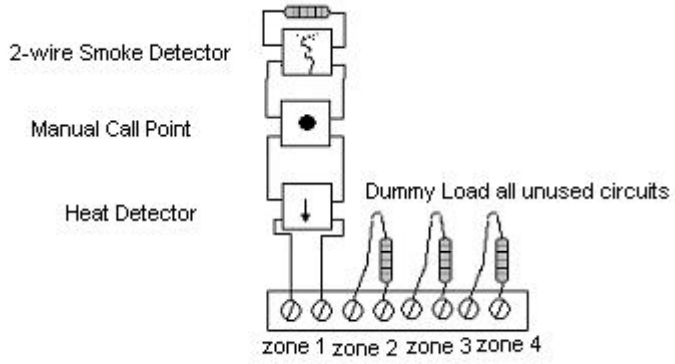
The control panel has 1-4 zone input circuits. The maximum loop resistance limit for each input circuit is 100 ohms. All field wiring of each zone is displayed for faults. Both conditions are visually and audibly annunciated.

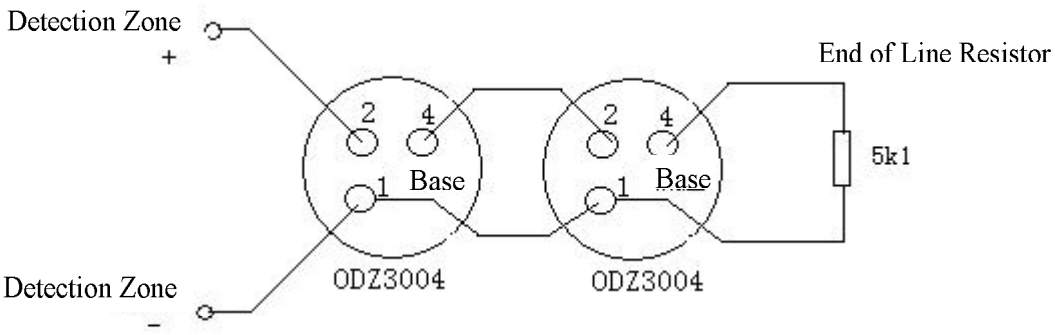
Each zone is a device circuit designed to accept any normally-open contact devices and conventional 2-wire, 28 volt smoke detectors.

All zones may be configured for general fire alarm applications.

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

Figure 2-4: Initiating device circuit connections



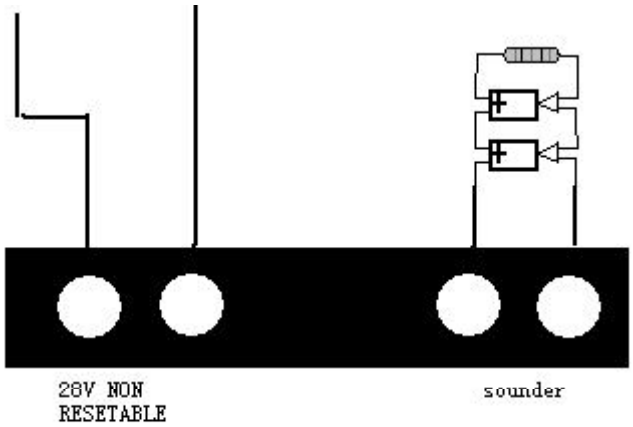


2.5 Output Circuits

DC Power Output Connections

Nonresettable Power(1500 mA) 28VDC filtered, nonresettable power can be obtained from terminal 28V (+)and (-).

Figure 2-5-1: Initiating device circuit connections



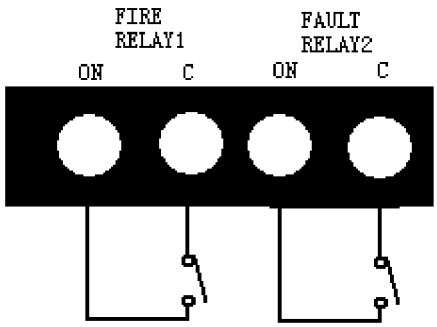
Notification Appliance Circuits

The ODH04 provides one notification appliance circuit standard. Each circuit is capable of 2.0 amps of current. Total current drawn from these as well as other DC power output can't exceed 2.2 amps with the standard transformer. Circuits are supervised.

Standard Relays

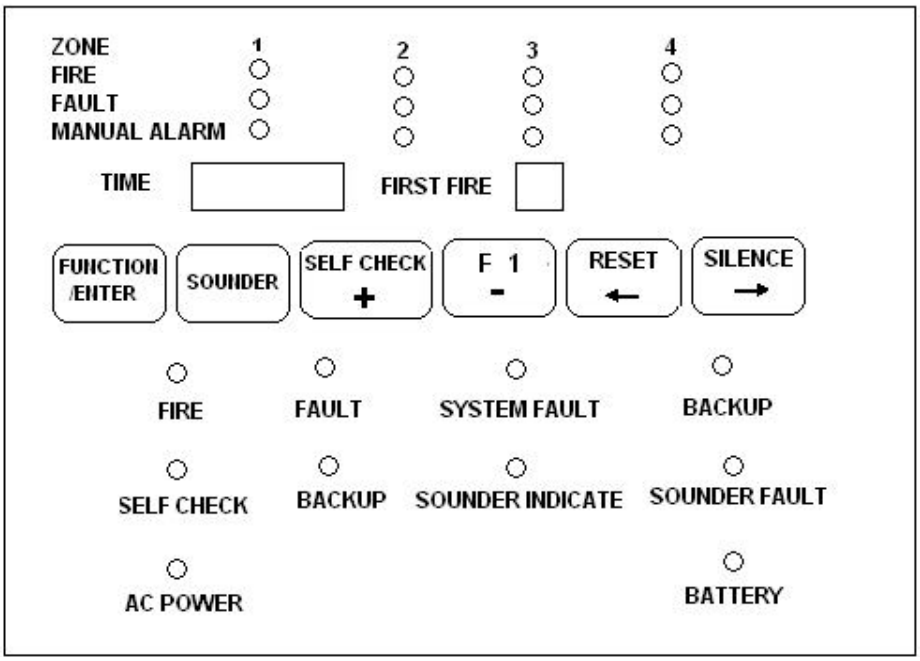
The control panel provides two relays rated for 1.0 amps @28 VDC(resistive) and 1.0 amps @ 120VAC(resistive)

Figure 2-5-2 : Relay terminals



Chapter 3: *Operating Instructions*

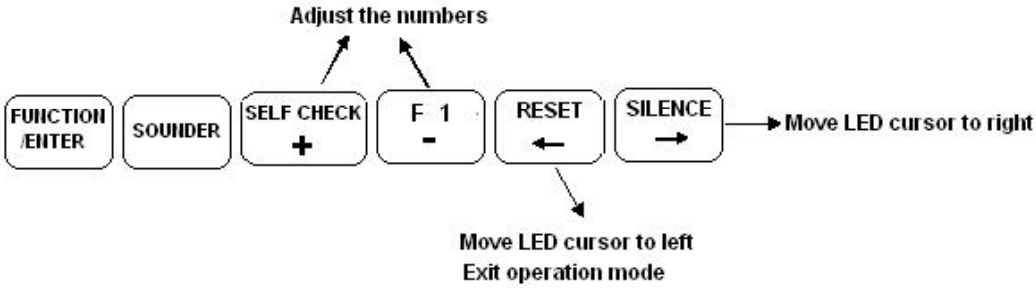
Figure 3-1-1 Led indicators and Keypad



Upon initial power-up, the system will be on Normal Mode. *This section discusses operation of the control panel in the* ***Normal Mode.***

3.1 Key Functions in Normal Mode

Figure 3-1-2: Led indicators and Keypad



FUNCTION/ENTER

Password "119 " should be entered. Press "+" and "-" to adjust the number. Press "<—" and "—>" to move the cursor. Press **FUNCTION/ENTER** to confirm it. if the password you entered is wrong, it will display "Please enter the password". Press "<—" to return to the normal mode.

SOUNDER

Silencing/resounding the sounders

SELF CHECK

If the key is pressed, the unit will perform a lamp test. All panel LEDS will be turned on. Output contact and sounder strobe will not be activated. The buzzer will beep.

F1

If the key is pressed, The current fire event can be inquired. If it displays 08:31 and it means that there is a fire event at that time. Press "—>" and it displays 08:34 and it means that there is another fire event at that time. Press "<—", it returns to the normal mode. If press "F1", it displays ---- and it means that there is no fire event. Press "<—", it returns to the normal mode.

RESET

The system key resets the system, any detectors and annunciators. A RESET key is located on keypad (illustrated in Figure 3-1). If the System RESET keys are pressed, the control panel will:

- √ Clear the status of LEDs
- √ Turn off the Notification Appliance Circuits
- √ Reset all zones by temporarily removing power
- √ Silence the onboard sounder
- √ Restore all system relays to normal
- √ Temporarily remove power from the resettable power output terminals

SILENCE

If the key is pressed, the buzzer will be silenced.

3.2 Status of LEDs

FIRE LED

A red LED that turns on when a system fire alarm condition is detected.

FAULT LED

A yellow LED that turn on to indicate that a system fault or abnormal condition exists and that the fire alarm system may be inoperative. It turns on steady when a signal SILENCE key is pressed.

SYSTEM FAULT LED

A yellow LED that remains on while the panel has some faults.

SELF CHECK LED

A yellow LED that turn on to indicate that a system is in the process of testing unless there is a fire in other zone or after 5s.

SOUNDER INDICATE LED

A red LED that turn on to indicate that the corresponding Notification Appliance Circuits is activated. It turns off when the SOUNDER key is pressed.

SOUNDER FAULT LED

A yellow LED that turns on to indicate that one or more Notification Appliance Circuits have fault.

AC POWER LED

A green LED that remains on while the AC power supply is within correct limits. A yellow LED Remains on under battery powered condition. It turns on steady when SILENCE key is pressed. If this indicator fails to light under normal conditions, service the system immediately.

BATTERY

A green LED that remains on while the battery power supply is within correct limits. A yellow LED Remains on to indicate a low battery condition on the ODH04. It turns on steady when SILENCE key is pressed. If this indicator fails to light under normal conditions, service the system Immediately.

ZONE 1- 4 FIRE LED

Red LEDs remains on to indicate that an alarm exists on the corresponding zone. It turns on eady when SILENCE key is pressed.

ZONE 1- 4 FAULT LED

Yellow LEDS remains on to indicate that a fault or abnormal condition exist on the corresponding zone. It turns on steady when SILENCE key is pressed.

ZONE 1- 4 MANUAL ALARM

A red LED remains on to indicate that a manual call points is activated. It turns on steady when SILENCE key is pressed.

3.3 Operation

Normal mode is the standard mode of operation. Under this mode, the panel continuously monitors system status. The notification appliance circuits will be off, all relays are in their normal state and the onboard sounder will be off.

All alarms and system faults conditions are annunciated on the control panel's LEDs. The control panel will inquire a "last event list" which will consist of all alarms and system faults currently active and not cleared, requiring immediate service. When the system is cleared and restored to normal, the LEDs will be off except for the AC POWER LED AND BATTERY LED and status LED.

Higher priority events take precedence over lower priority events. Display and reporting of system status is done on a priority basis. Priority are, From highest to lowest:

1. Alarms
2. System Faults

3.3.1 Fire Alarm Response

Upon detection of an alarm condition, The control panel will cause the following:

- Turn on the FIRE LED
- Turn on the ZONE FIRE LED

- Turn on the Notification Appliance circuits
- Turn the sounder on steady
- Turn on alarm relay.
- The buzzer will beep
- Transmit fire information to annunciators.

3.3.2 Fire Alarm Restoral

The control panel returns to normal after a system reset key has been pressed (Call points have been reset, smoke detectors have been reset and no smoke is present). The control panel will perform the following upon restoral of all alarms:

- Turn off the FIRE LED
- Turn off the ZONE FIRE LED
- Turn off the notification appliance circuits
- Turn off the sounder
- Turn off appropriate zone relay output
- Turn off alarm relay
- The buzzer will be off
- Transmit reset information to annunciators

3.3.3 Fault Condition Response

The control panel will perform the following upon detection of one or more fault conditions:

- Turn on the FAULT LED
- Turn on the ZONE FAULT LED if fault condition is on the zone
- Activate fault relay
- The buzzer will beep
- Transmit fault information to annunciators

3.3.4 Fault Condition Restoral

- Shut off the FAULT LED
- Shut off the ZONE FAULT LED(S)
- Deactivate the fault relay
- The buzzer will be off
- Transmit restoral information to annunciators