

FEATURES :

- Solid State Design
- Compact Modular Design
- Electrically Supervised Detection and Signaling Circuits
- Alarm Resound With Acknowledge
- Self-contained Power Supply
- Emergency Battery Standby with Built-in Automatic Charger

INTRODUCTION :

The PYRGARD 7000 series is a fully assembled, self-contained, easy to operate conventional fire alarm system that provides all the necessary, alarm/control functions to meet a wide variety of industrial, commercial and institutional applications.

These Fire Alarm Control Panel series has a variety of models available depending on the requirements of the area to be covered, from models #7002 to #7200 (from 2-zones to 200 zones capacity).

Its a 24VDC panel (model #7006 up) in modular design and is expandable by the addition of plug-in zone boards. All models have its initiating device circuit (I.D.C.) in Class B (style B) and it has one (1) general alarm notification appliance circuit (NAC) in Class B (Style Y).

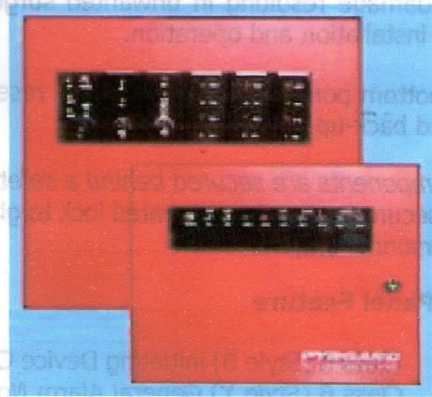
Solid state printed circuit boards are extensively used throughout to minimize interconnections & add reliability plus provide low power usage. The control panel's motherboard is designed with plug-in connectors to accomodate all other control boards (baby board i.e., zone, signal, charger modules, etc.).

Location of any alarm or trouble condition is simplified through the use of red and yellow LED's individually displayed on the front panel. A green "power on" LED's is also provided to indicate that the primary power is present.

The panel's power supply circuit produces a 16 to 30 VDC for panel operation and to supply other external devices. The input operating voltage is 220 to 240VAC 50/60hz. Power failure circuitry is incorporated to ensure a fully operable system if the normal power fails.

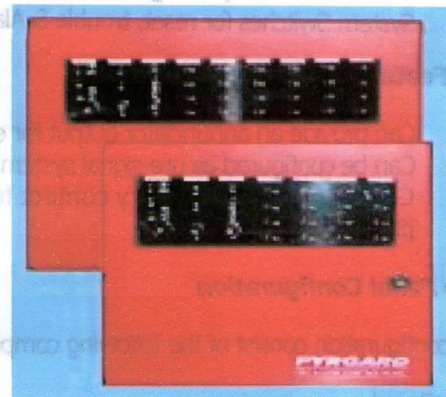
Automatic charging of panel mounted back-up batteries is done by combination of high rate and maintenance float system.

6-zones F.A.C.P.



4-zones F.A.C.P.

12-zones F.A.C.P.



8-zones F.A.C.P.



28-zones F.A.C.P.

Safety fuses are also provided to protect the circuits from serious damage resulting in unwanted surge of current and improper installation and operation.

The bottom portion of each cabinet is reserved for the panel mounted back-up batteries.

All components are secured behind a safety glass door of which it is secured with a key operated lock to give access to authorized personnel only.

1.1 Control Panel Feature

- 1.1.1 Class B (Style B) initiating Device Circuits (IDC)
- 1.1.2 Class B (Style Y) General Alarm Notification Appliance Circuit (NAC)
- 1.1.3 Power Supply Circuit
- 1.1.4 Automatic Battery Charger
- 1.1.5 System Switches for reset, trouble & Alarm Silence

1.2 Optional Feature

- 1.2.1 Can provide an annunciator output for every zone.
- 1.2.2 Can be configured as pre-signal system.
- 1.2.3 Can be modified with dry contact for auxiliary purposes.

1.3 Minimum Panel Configuration

The minimum configuration consist of the following components :

- 1.3.1 **MotherBoard**
The main board is mounted in a bracket which holds all the other boards. For model 7002 and 7004, the main board provides the termination points for the initiating circuits and the signal circuit including the automatic charger for the back up batteries and the 24VAC terminal.
- 1.3.2 **Trouble Circuit Board**
The trouble circuit board provides the LED indicator for common trouble indicator, internal sounder, the system reset switch and the trouble silence switch.
- 1.3.3 **Charger Circuit Board**
The charger circuit board provides the charging of the back up batteries and the automatic transfer of power in case of power failure including LED indicators for "Power On" and back-up power.
- 1.3.4 **Signal Circuit Board**
The Signal Circuit Board (NAC) provides the control output devices or the notification appliances (ex. bell, horn, siren etc.) It also provides the common alarm indicator and signal silence switch.

- 1.3.5 **Zone Circuit Board**
The zone circuit board controls all the initiating devices (smoke detector, heat detector, manual station etc.). Every zone board provides two (2) class B (style B) initiating circuits. It also provides red and yellow LED indicators for alarm and trouble condition respectively.

- 1.3.6 **Transformer Assembly**
The transformer assembly is mounted in the backbox and provides the termination block for primary power 220 to 240VAC.

- 1.3.7 **Enclosure**
The enclosure is factory fabricated using B.I. sheet gauge and powder coated with Fire Red color and design to be mounted as recess type or semi-flush mounted. The bottom left part of the back box is reserved for the back-up batteries. 1/2" conduit knockouts are provided in the top and bottom part of the back box. The door assembly mounts with piano hinges and locks for service access.

1.4 General Specification

The PYRGARD 7000 SERIES Fire Alarm Control Panel incorporates mostly commonly used feature as standard equipments.

- 1.4.1 **Environmental Operating Temperature**
Normal Temperature : 68-77 °F (20-25 °C)
Extreme : 32-120 °F up to 3 hours
- Relative Humidity**
Extreme : 85 % @ 86 °F up to 24 Hours
- 1.4.2 **Primary Input Voltage**
220 - 240 VAC (50/60 Hz)
- 1.4.3 **Secondary Power Supply**
24 VDC Sealed Lead Acid Battery
Maximum Charge Voltage : 28 VDC
- 1.4.4 **Initiating Device Circuit**
Power Limited
Two (2) Class B (Style B) per zone module
Standby Voltage range : 16-28 VDC
Maximum ripple : 1 VAC
- 1.4.5 **Notification Appliance Circuit**
Power Limited
Maximum standby current : 3.4 mA

2.0 Installation and Wiring

2.1 Installation - it should be done by qualified personnel who have thoroughly read and understood these instructions.

- 2.1.1 It is recommended that the printed circuit boards be removed thru its bracket for any procedure that may cause dust, metal shavings, grease or any such matter that may affect the circuit boards and/or parts.
- 2.1.2 There maybe several sources of power into the control panel unit. Each source must be disconnected prior to installation and detaching modules, connecting or disconnecting wirings.

2.2 Panel Location

The control panel unit should be located in an area where the normal ambient temperature is maintained within the range of its specification. The unit should be in an area that is free of dust, vibration, moisture and condensation. The selected location should be always accessible to operating personnel.

2.3 Mounting the Enclosure

Follow the appropriate instruction for surface or semi-flush mounting.

2.3.1 Surface Mounting Instruction

To mount enclosure:

- 2.3.1.1 Mount the enclosure at a convenient height for viewing indicators and operating switches.
- 2.3.1.2 Use four minimum size of #8 tox and metal screws (not included in the package) to secure the control panel unit to the wall. The screw type and length must support up to 35 pounds (control panel unit, options and batteries). You may need a different type of screws, depending on the type of wall material.

2.3.2 Semi-flush Mounting Instruction

To mount the enclosure:

- 2.3.2.1 Mount the enclosure at a convenient height for viewing indicators and operating switches.
- 2.3.2.2 The backbox can be mounted up at least an inch away from the cover giving enough space for it to be opened fully through its hinges.
- 2.3.2.3 Use four minimum size of #8 tox and metal screw (not included in the package) to secure the control panel to the wall. The screw type and length must support up to 35 pounds. You may need a different kind of screws to use depending on the type of wall material.

2.4 Knock-outs and Power Limited Wiring.

- 2.4.1 Prepare the enclosure for the electrical wirings, breakout the appropriate conduit entry points. Segregation is

- 2.4.1 required between power limited and non-power limited conductors. In order to maintain the minimum separation, the following wire routing is suggested. Separation of at least 1/4" is required between the non-power limited and power limited conductors. Power limited and non-power limited wiring must be in separate conduits.
- 2.4.2 Attach conduit (if required) and run wires as required. Label each field wires for future reference.

2.5 Re-installation of the Printed Circuit Boards

- 2.5.1 After all the wirings are ready in the enclosure, re-install all the printed circuit boards.

2.6 Connect AC Supply Wire

Wire up the AC supply to the terminal block in the transformer assembly. Terminate also the wire leads from the transformer to the terminal block located at the main board for its 24 V.A.C. input. The primary source should originate from a separate fused breaker or other means of isolation.

WARNING : DANGEROUS VOLTAGES WILL BE PRESENT ON THE TERMINAL BLOCK AND WITHIN THE OTHER COMPONENTS SURROUNDING IT AND THE ATTACHED TRANSFORMER WHEN THE AC SUPPLY IS TURNED ON.

2.7 Battery Installation

Observe the correct polarity of the battery when connecting it to its battery lugs. Improper connection or shorting the battery terminals may damage the control panel unit and/or may cause personal injuries. Place the batteries in the space provided on the bottom left side of the back box. Route the battery leads properly in place. Battery leads are not power limited.

2.8 Check Supervised Circuits

To check the supervised circuits of the control panel:

- 2.8.1 Place a 4.7k ohm resistor across each set of the initiating circuit terminals.
- 2.8.2 Place a IN4001 Diode across the signal output Terminal (NAC).
- 2.8.3 Energize the panel and put all the control switches to normal.
- 2.8.4 The system trouble L.E.D.'s and the trouble buzzer should be off.
- 2.8.5 Check the control panel for its proper operation and functions.

2.9 Door Mounting

Place the door assembly into the hinges of the back box.

2.10 System Wiring Diagram

Before connecting the field wirings, check it for opened, shorted, grounded and stray voltages. Terminate the field wirings to the main in accordance with the field wiring diagram and the system design documents.

WARNING: Damage may result if a high voltage insulation tester is used on the wiring while connected to the control unit and its devices.

NOTE: All wirings must be in accordance with the local codes and National Electric Code.

*Check for proper operation of all the system functions.

3.0 Systems Operation Instruction

3.1 Alarm Operation

An alarm is indicated by the following conditions:

- * A red zone alarm LED lights
- * The panel buzzer sounds a pulsating tone
- * The building notification appliances activate
- * If a remote annunciator is used, an alarm signal is transmitted to the unit.

3.1.1 How To Silence The Alarm

- 3.1.1.1 Unlock and open the panel door.
- 3.1.1.2 Operate the Signal Silence Switch. Put the switch to silence position. All the notification appliances should be silenced.
- 3.1.1.3 Operate the Trouble Silence Switch. Put the switch to silence. The panel sounder should stop giving pulsating sound.
- 3.1.1.4 Take note of the alarm indication (zone and area of the device that cause the alarm indication).

3.1.2 To Reset After The Alarm

- 3.1.2.1 When the alarm situation has been cleared, restored or replaced all affected alarm initiating devices.
Manual Pull Station - Resetting can be done by returning its lever to its normal position. Replace new glass rod for its lock.

Heat Detector - For restorable type of heat detector, the affected area must be restored to a lower temperature. For non-restorable heat detector, it must be replaced immediately with a new unit.

Smoke Detector - The affected area must be cleared of smoke and the detector must be cleaned.

- 3.1.2.2 Press and hold the reset switch for approximately 3 seconds. All alarm indications should be back to normal.
- 3.1.2.3 If the same alarm condition still exists, notify the proper personnel for servicing the system immediately.

3.2 Trouble Operation

A trouble is indicated by the following conditions:

- * The trouble buzzer sounds a pulsating tone.
- * The yellow trouble indicator lights up.

3.2.1 To Silence the Trouble Buzzer

- 3.2.1.1 Unlock and open the panel door.
- 3.2.1.2 Operate the trouble silence switch, just put it into silence position.
- 3.2.1.3 If the trouble condition has been restored, the system will return to normal standby condition. Upon fixing the trouble condition, one needs to put the trouble silence switch back into normal position.
- 3.2.1.4 Notify the proper personnel for servicing the system immediately.

WARNING: Leaving the control panel unit in a trouble condition may cause the system not to function properly & may cause it to go into false alarm mode.

3.3 System Testing

System testing and/or fire drills must be performed at the intervals required by the local fire authorities. When no local regulations exist, testing schedules for fire alarm systems are specified in NFPA Standard 72, Chapter 7.

- * All system tests should be documented. A complete log of device testing include the type of device, its location, the date of the test, and the operation should be maintained for the system.
- * Devices should be tested in accordance with the manufacturer's instructions.
- * When testing has been completed, all switches must be put into normal position.

4.0 Minor System Troubleshooting

CAUTION: Troubleshooting is to be done only by qualified personnel who have been trained to repair and test this fire alarm control panel unit.

Yellow LED indicator for trouble is flashing on a particular zone.	Open initiating loop.	Check particular zone for disconnected devices. Check also the end of line device if its intact.
Common yellow LED for trouble indicator is flashing in the signal module.	Signal line supervision.	Check end of line diode and observe correct polarity. Check also protection fuse for signal circuit.
Secondary power is on even if normal AC power is on.	Busted AC Fuse.	Check and replace busted fuse in transformer assembly and also in the main PCB power supply circuit.
Panel will not indicate an alarm even if initiating circuits are in good working condition.	Low operating voltage across	Adjust operating voltage through its trimmer in the main board.
No power during normal power failure. Did not transfer to secondary power source.	Low voltage or dead battery back-up .	Check & replace defective batteries. Inspect also the charger board for busted fuse.
All LED indicators continue to flash even all the initiating devices are back in normal status.	Power surge, very high initiating voltage.	Check for busted components in its power supply circuit. Adjust operating voltage through its trimmer in the main board. Check also the AC source for unwanted power surge.
Notification appliances did not sound upon initial testing. Devices are intact, signal out is working.	Incorrect connection of notification appliances.	Observe correct polarity of notification devices.

NOTE : Other problems concerning the operations and functions of this control unit should be reported immediately to the proper personnel or to PYRGARD CORP.