

Installation Instructions

4 Zone Fire Panel



General Features

- Four fully controlled zones with test/ disable capability per zone.
- Two full controlled alarm lines with disable capability per line.
- 24V/800mA power supply with 12V/7.2Ah sealed lead acid battery as backup power source for 72h autonomy.
- 12V-24V DC voltage auxiliary outputs.
- Programmable into four operating modes with different function per auxiliary output per mode: Fire detection (1), Gas detection (output per zone, 2&4) and Extinguish (3).
- Differentiation on indicating short and open fault conditions of zones and alarm lines to simplify fault recognition during installation or maintenance.
- Class Change operation (alarm line activation by an external switch).
- Programmable alarm line activation delay up to approximately 2min by 15sec step.
- Alarm line activation delay override by Call point / double detector activation in any single zone.
- Programmable operation of alarm lines in parallel or alternative mode.

Compliant to EN54 2 & 4.

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2. Definitions

- **Zone:** input where call points and detectors, distributed over a stated partition of the protected premises, are connected. In each zone no more than 20 detectors and 32 total devices should be connected. Zone voltage is about 28Vdc in the normal operating condition (measured on the zone's terminal block).
- **Smoke Detector :** a device sensitive to particulate products of combustion and/or pyrolysis suspended in the atmosphere.
- **Heat detector:** a device which responds to an increase in temperature.
- **Call Point:** a device which is used for the manual initiation of an alarm.
- **Alarm line:** a 24Vdc output where fire alarm indicating devices (sirens/beacons) are connected. The maximum number of alarm indicating devices in both alarm lines is limited by their current consumption which should not exceed the total of 800mA that the panel can supply.
- **Siren/Beacon:** sound/light generating device intended to signal audible/visible warning of fire.

3. Panel Conditions

- **{Normal}:** the panel's normal condition.
- **{Fire}:** condition where at least one activated detector / call point in any of its zones has been acknowledged.
- **{Fault}:** condition where at least one fault on the controlled inputs/outputs or power supply circuitry has been acknowledged.
- **{Test}:** a user programmable condition which alters the 'normal' {fire} condition operations in order to simplify the operational testing procedure of detectors.
- **{Disable}:** a user programmable condition where at least one zone or alarm line or the auxiliary outputs are disabled.
- **{Cross Detector}:** it is a special {fire} condition where one zone has two detectors or one detector and a call point in "470" connection activated. It is also the case of an activated call point in "9300" connection. In this condition alarm line activation delay is by-passed.
- **{Prealarm}:** is a special Mode (3) {fire} condition where detectors/call points are activated but not in such a combination that cause the extinguishing operation.
- **{Alarm}:** is a special Mode (3) {fire} condition where detectors/call points are activated in such a combination that cause the extinguishing operation.

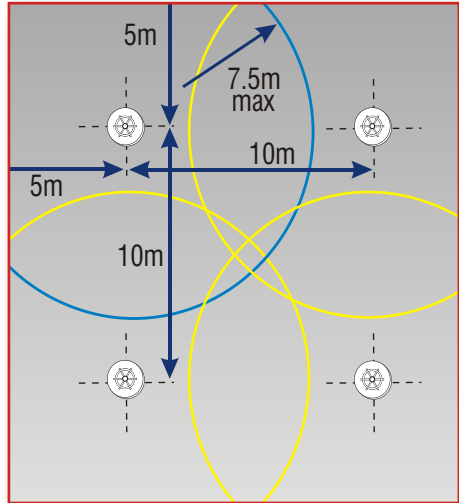
4. Fire detection system design and installation

- **4.1. Smoke detectors:** There are two principal methods of smoke detection, the ionisation chamber and the optical scatter chamber. Ionisation detectors are particularly sensitive to small particle smoke such as that produced in rapidly burning fire but are relatively insensitive to large particle smoke such as that produced by overheated PVC or smouldering polyurethane foam. Optical detectors are more sensitive to large particles found in optical dense smoke but are less sensitive to the small particle smoke.

Installation specifications:

Coverage area per detector: 100m^2

Max distance covered = 7.5m (for square layout is 5m from wall and 10m between detectors).



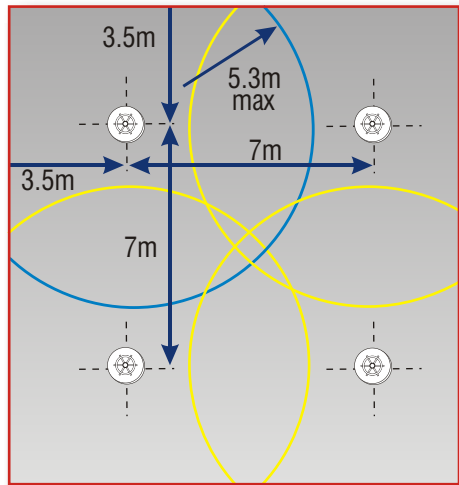
- **4.2 Heat Detectors:** Can be the point type (which responds to temperatures surrounding one particular spot), or the line type (which responds to temperature change along its line). They include a fixed temperature element operating at a pre-determined temperature and possibly a rate of rise element which responds to rapid rise of temperature.

Heat detectors are less sensitive than other types of detector and should not be used where a small fire can cause unacceptable losses.

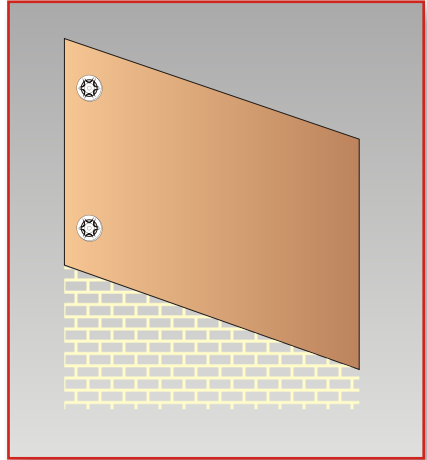
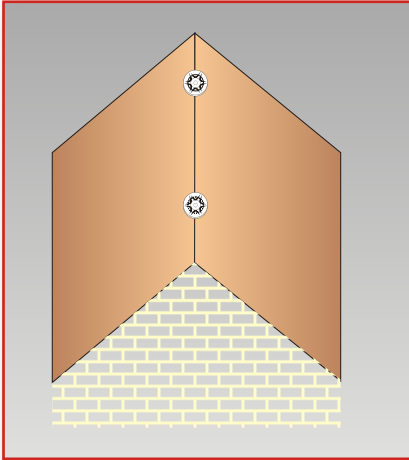
Installation specifications:

Coverage area per detector: 50m^2

Max distance covered = 5.3m (for square layout is 3.5m from wall and 7m between detectors).



In a building the greatest concentration of smoke and heat will generally collect at the highest part of the enclosed areas and it is here therefore, where detectors should normally be sited. Heat element of heat detectors should be from 25mm to 150mm below the ceiling or roof. Sensing element on smoke detectors should be from 25mm to 600mm below the ceiling or the roof.

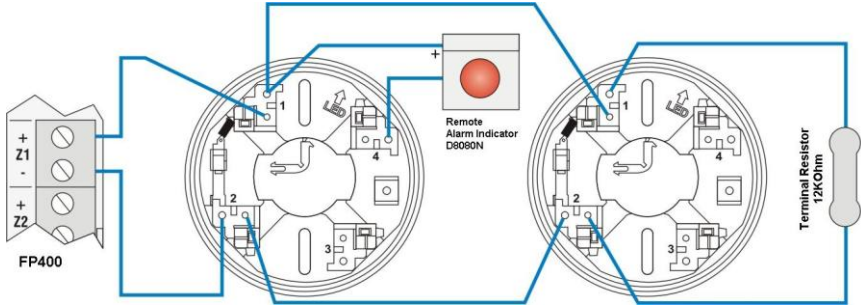


A row of detectors should be sited in the apex or at a highest point of the ceiling with a minimum distance of 0.5m from the vertical wall

- **4.3 Manual Call points:** They should be located at all ground floor exits from the building, close to and usually on the opening side of the door frame. They should be conspicuous and mounted 1.4m above the floor level. Occupants should not have to travel more than 30m within a building before encountering a manual call point.
 - **4.4 Sounders:** Alarm sounders must be all of the same type i.e. all provide the same sound. Ensure correct sound levels are maintained in all parts of the building. A minimum sound level of 65dBA or 5dBA above any background noise likely to persist for a period longer than 30sec, whichever is greater, should be produced by the sounders at any occupiable point of the building. If an alarm is required to wake sleeping persons then the sound level should be a minimum of 75dBA at the bed head. A maximum of one door or wall between sounders and any room is acceptable. Many small sounders give better sound distribution than a few larger ones. However small the fire alarm system, a minimum of two sounders is required.
 - **4.5 Control panel:** Always locate it in a low risk area, accessible to the local fire brigade in case of emergency. The area must also be well lit. The provision of emergency light units may therefore be necessary.
 - **4.6 Cable installation:** The wiring of each zone or alarm line should be in a 2 core cable. The total cable resistance in each zone must not exceed 50 Ohm. Any voltage drop across alarm lines will affect the sound level of alarm devices and should be kept to a minimum. The cables used for alarm devices must be of a type or protected by means to endure fire for at least 30min. All low voltage cables must be segregated from the mains cables.
- Attention!** A single two core cable should be connected to any of the zone and alarm line terminal blocks on the panel PCB and terminated by a 12k Ohm resistor initially. No 'spurs' are allowed. If a zone is not to be used the terminal resistor should be left connected in the corresponding zone terminal block.

5. Connections

- Detectors:** Pass zone (and possibly remote alarm indicator) cable(s) through the hole on the detector's base and fit base on its mounding position. Cut the zone cable and connect the positive and negative cable cores on the base terminals signed as (1) and (2) respectively. If it is the last detector of the zone, connect the terminal resistor between (1) and (2) base terminals. If a remote alarm indicator like D8080N is needed a two core cable should be used to connect its positive and negative terminal block pole to (1) and (4) base terminals respectively. Place and secure detector on its base.



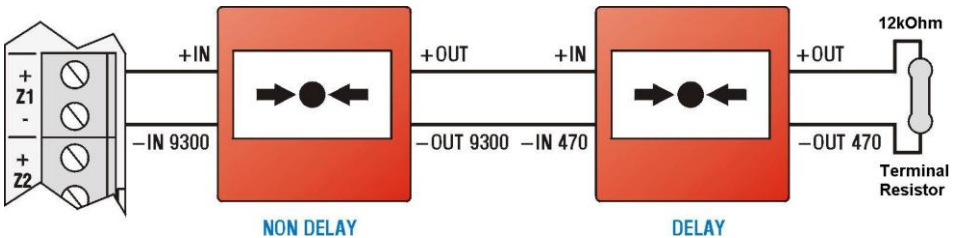
Connection diagram of the Menvier 800 series conventional detector base on an FP400 zone with or without a remote alarm indicator

- Manual Call Points (MCP):** Pass zone cables through the hole on the MCP's base and fit base on its mounding position. Cut the cable. There are two ways for connection of the zone cable to the MCP terminal block:

(+) and (-9300) connection where MCP activation overrides alarm line activation delay: Connect the positive and negative cores coming from the panel's side to the (IN +) and (9300 IN -) MCP terminal block poles respectively. Connect the positive and negative cores going to the next zone device to the (Out+) and (9300 Out -) poles respectively.

(+) and (-470) connection to allow alarm line activation delay after MPC is activated: Connect the positive and negative cable cores coming from the panel's side to the (IN +) and (470 IN -) MCP terminal block poles respectively. Connect the positive and negative cores going to the next zone device to the (Out+) and (470 Out -) poles respectively.

If it is the last device connected to the zone connect the terminal resistor to its output terminals. Place and secure MCP on its base.



- Sounders and beacons:** Pass alarm line cable through the hole on the device's base and fit base on its mounding position. Cut cable and connect its positive and negative cores on the device (+) and (-) pcb terminals. If it is the last device of the line, connect the terminal resistor between (+) and (-) terminals. Assemble the device.
- Control Panel:** Remove the front cover and fix the metal back box to the wall using the 3 fixing holes (No8 screws are recommended). Connect zone and alarm line cables to the respective panel terminals. With the mains power off connect the mains cable to the mains terminal block indicated as (L- Gnd-N).

6. Operations.

6.1 Panel Power Up.

Connect battery cables to battery (12 V / 7,2 Ah) [Red wire = battery(+) & black wire = battery(-)].

Turn on mains supply. **Panel will perform a three step RESET:**

STEP 1: Buzzer sounds and for approximately two seconds the following indications are activated:

[SYSTEM FAULT], showing first step of RESET procedure.

[POWER], showing panel operation

[ALARM1] and [ALARM2], showing continuous operation of alarm lines.

[Zone1 Fire], showing panel operation in Mode (1) (factory setting).

STEP 2: Buzzer and all indications are turned off for approximately 2 seconds showing no delay programmed on panel (factory setting).

STEP 3: Buzzer and all panel indications are turned on for approximately 2 seconds (Lamp Test function), then they are all turned off except [POWER].

If the buzzer continues to sound or there is any indication active other than [POWER] after step (3) check for installation faults (Description of indications, p. 12).

After having all possible installation problems corrected, execute the installation (Test) procedure.

Finally, fill in the installation details in the table of page (1).

6.2 Test procedure - {Test} condition.

After installation it is mandatory to perform a test of proper connection and operation of detectors and call points by activating each device separately and checking whether panel has detected it. In order to do this testing procedure, you can choose the {Test} operation where each detector's activation energizes the alarm lines only for a period of 5 seconds. Then the panel restarts (RESET operation).

Attention! Each time panel resets it will detect activation signal from its detection zones after a period of 30sec, wait for such a period before activating the following detector.

Attention! Fault signal in a zone under {TEST} condition turns on [General Fault] and Buzzer indications while fault indication of the corresponding zone keeps showing that zone is in test condition.

Procedure of programming panel zones into {TEST} condition:

1. Press keys <2-1-1-3>. [Supervisor] indication should start blinking. Panel enters Supervisor state.

2. Press twice key <1>. [Test], [Zone1Fault], [Zone2Fault], [Zone3Fault] and [Zone4Fault] indications should start blinking. Panel enters TEST-programming state with all its zones selected to be programmed. In this case the following actions are performed by pressing the respective keys:

Pressing key <1> turns off [Test] indication and makes [Supervisor] to start blinking. Panel goes from TEST-programming state into Supervisor state.

Pressing key <2> causes zones with their corresponding fault indications blinking to be programmed into {TEST} condition.

Pressing key <3> repeatedly changes the selection of zones to be programmed. Table below shows this change according to the times key <3> is pressed.

Pressing key <4> causes panel RESET.

Therefore keep pressing key <3> until [Fault] indications of all zones needed to be programmed into {TEST} condition are blinking (or no indication blinking to exit {TEST} condition), then press key <2> to accept programming and finally press key <4> to restart.

Example 1: Program all zones in {TEST} condition: Press <2-1-1-3>, then <1> twice, then <2>

| <3> | Zones Selected | <3> | Zones Selected | <3> | Zones selected | <3> | Zones Selected |
|-----|----------------|-----|----------------|-----|----------------|-----|----------------|
| 1 | None | 5 | 3 | 9 | 4 | 13 | 3,4 |
| 2 | 1 | 6 | 1,3 | 10 | 1,4 | 14 | 1,3,4 |
| 3 | 2 | 7 | 2,3 | 11 | 2,4 | 15 | 2,3,4 |
| 4 | 1,2 | 8 | 1,2,3 | 12 | 1,2,4 | 16 | All |

and finally <4>.

Example 2: Exit test condition: Press <2-1-1-3>, then <1> twice, then <3>, then <2> and finally <4>.

6.3 Alarm line activation delay programming.

It is possible to program the panel with a delay, counting from the moment the panel enters {fire} condition to the moment alarm lines are activated. Programming sequence is as follows:

1. Press keys <2-1-1-3>. [Supervisor] indication should start blinking.
2. Press key <5> continuously. After a couple of seconds [Supervisor] indication should stop blinking and as long as key <5> is pressed the [Fault] and [Fire] Zone indications should be successively activated. Each of these indications corresponds to a delay of approximately 15sec. [Zone 1 Fault] is activated first while [Zone 4 Fire] is activated last, then all indications are turned off (no delay indication) and the cycle is repeated.
3. Wait until the number of activated indications corresponds to the desired delay, then release key <5>. Panel should RESET.

Attention! Alarm line activation delay also affects activation of General Fire auxiliary delayed output [C]. In case of double detector or a "9300" connected Call Point activation in any zone alarm activation delay is bypassed.

Alarm line activation delay indication is provided in step (2) of RESET procedure (paragraph 6.1).

6.4 Disable-enable inputs/outputs.

It is possible to disable each zone, each alarm line and all the auxiliary outputs of FP400. Disable sequence is as follows:

1. Press keys <2-1-1-3>. [Supervisor] indication should start blinking.
2. Press key <1>. [Supervisor] indication should turn off while [Disable] indication turns on and [Zone 1 Fault] indication starts blinking. Panel is in zone 1 disable programming state.
3. Press key <3> repeatedly until the fault indication of the input/output we wish to toggle its disable state becomes blinking, then press key <2>.
4. Repeat step (3) to change the disable state of any other input/output or press key <4> to RESET the panel.

An input/output in disable state is indicated by its corresponding fault indication being constantly activated





























6.5 Select continuous or alternative mode of alarm lines when activated:







Alarm lines when activated can operate in two different modes: either in continuous (which is the factory setting) or alternatively with alternation frequency of about 6sec. In order to change the mode of operation the following steps should be taken:

Remove 230VAC mains and battery fuses.

- Press key <5> continuously and place back 203VAC mains fuse, panel should RESET
- As soon as [Alarm 1 Fault] indication is activated release key <5>. Place back battery fuse.
- If during step (1) of panel RESET only [Alarm 1 Fault] indication is activated, alternative mode has been selected. If both [Alarm 1 Fault] and [Alarm 2 Fault] indications are activated then continuous mode is selected.

7. Description of Indications and key functions

| Indication | | Description | Action Required |
|--|---|--|---|
| POWER |  | Panel operates. | |
| SUPERVISOR |  | Panel in Supervisor condition. | Leave Supervisor conditions by pressing key <3>. |
| DISABLE |   | Panel in {Disable} or {Disable} programming condition | Leave {Disable} condition (p. 11). |
| TEST |   | Panel in {Test} or {Test} programming condition. | Leave {Test} condition (p. 10-11). |
| FIRE |   | Panel has detected fire. | In combination with Zone indications define fire signal origin. |
| Z1 or Z2 or Z3 or Z4 Fire |   | Panel has detected fire in corresponding zone | 1. Check for fire in the area covered by the corresponding zone. 2. RESET the panel (press <2-1-1-3> and <4>). |
| FAULT |   | Panel has detected fault | In combination with the other fault panel indication define fault origin. |
| Z1 or Z2 or Z3 or Z4 or Alarm1 or Alarm2 Fault |   | Zone / Alarm Line in {Disable} condition. | Leave {Disable} condition (p. 11). |
| |   | Zone/ Alarm Line in {Test} condition. | Leave {Test} condition (p. 10-11). |
| |   | Short circuit fault. | Contact the authorized technical personnel. |
| |   | Open circuit or lose of terminal resistor or detector removal from base. | 1. Inspect detectors and call points. 2. Contact the authorized technical personnel. |
| POWER FAULT |   | 230V AC mains voltage fault | 1. Check fuse in mains cable connection terminal block. 2. Contact the authorized technical personnel. |
| |   | Battery of battery charger circuit fault | 1. Check Battery. 2. Contact the authorized technical personnel. |
| REMOTE |   | Auxiliary inputs /outputs in {Disable} condition. | Leave {Disable} Condition (pg. 11). |
| |   | Fault in cancel button supervisor line (mode 3) | 1. Check for any Cancel key pressed 2. Contact the authorized technical personnel. |

| | | |
|---|---|---|
|  Indication continuously on |  Indication flashes: turns on the same time buzzer starts sounding |  Buzzer sounds continuously. |
|  Indication flashes: turns on before buzzer begins to sound in each working period. |  Indication flashes: turns on after the beginning of buzzer sounding |  Buzzer in remind mode. |

Functions of keys

| Key | Normal Condition | Supervisor Condition (After Supervisor code <2-1-1-3>) |
|-----|-------------------------|---|
| 1 | Part of Supervisor code | Toggle between Supervisor or Disable or TEST condition |
| 2 | Part of Supervisor code | Alarm On/Off. Program selected inputs/outputs into Disable/TEST condition. |
| 3 | Part of Supervisor code | Lamp test - Exit Supervisor Condition Select inputs/outputs for Disable/TEST condition programming |
| 4 | | Panel keyboard RESET. |
| 5 | Silence Buzzer | Silence Buzzer Alarm line activation delay selection |

Description of Modes of operation.

FP400 can be programmed to work in one of four available modes of operation which differentiate in the way auxiliary inputs/outputs and alarm lines operate. Alarm lines can also be programmed to operate alternatively (except in mode 3).

8. Mode (1), typical fire detection operation.

Mode (1) is the factory setting operation for a typical 4 zone -2 alarm line fire detection panel with 2 general fire outputs (one delayed and one non delayed), one general fault output and a Class Change input.

8.1 Programming panel in Mode (1):

- Cut off panel's power sources by removing 230V AC line and battery fuses.
- Press and hold key <1>. Place back 230V AC line fuse. Panel will RESET.
- As soon as [Zone 1 Fire] indication is activated, release key <1>. Place back battery fuse.

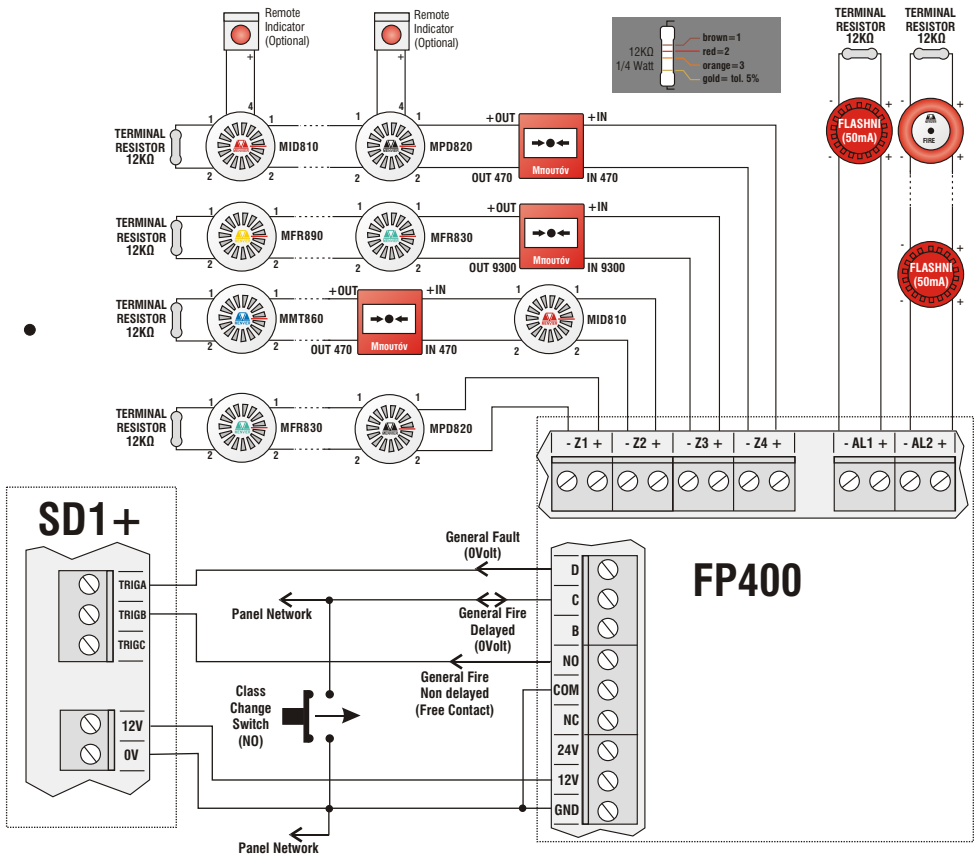
8.2 Indication of Operation Mode (1): [Zone 1 Fire] indication must be activated along with [System Fault] and [Power] indications each time panel RESETS (step 1 of paragraph (6.1)).

8.3 Description of Zones: All four are identical zones used for normal connection of fire detectors and manual call points.

8.4 Description of Alarm Lines: Both are identical alarm lines used for normal connection of fire alarm devices. They are activated as soon as panel enters {Fire} condition unless there is an alarm line activation delay programmed in it, in which case alarm line activation will occur when delay elapses.

8.5 Description of Inputs / Outputs:

- Output [A] (NO/COM/NC relay free conduct): Auxiliary non delayed general fire output, activated as soon as panel enters {fire} condition.
- Output [B] (open collector): Not Used.
- Output [C] (open collector): Auxiliary delayed general fire output, activated when panel is in {fire} state and alarm line activation delay elapses.
- Input [C]: Class Change input, it triggers the activation of the alarm lines as long as it is connected to 0V output.
- Output [D] (open collector): Auxiliary general fault output, activated as long as panel enters {fault} condition.



**Connection diagram of a typical installation operating in Mode (1) (normal fire detection):
Typical connection of 4 detection zones - 2 alarm lines, an (Sd1+) speech dialler and a
Class Change switch**

9. Mode (2) & (4), Gas and Fire detection operation.

FP400 in Mode (2) or (4) operates as a typical fire detection panel with four zones, two alarm lines and a fire output per zone. Those fire outputs are immediately activated when a fire signal (gas or smoke detector or call point activation) is detected in the corresponding zone except Zone 2 output in Mode (4) which is normally activated and deactivates in the presence of the fire signal.

9.1 Programming panel in Mode (2) or (4):

- Cut off panels power sources by removing 230V AC line and battery fuses.
- Press and hold key <2> for Mode (2) or key <4> for Mode (4). Place back 230V AC line fuse. Panel will RESET.
- As soon as [Zone 2 Fire] indication in Mode (2) or [Zone 4 Fire] indication in Mode (4) is activated, release key <2> or <4>. Place back battery fuse.

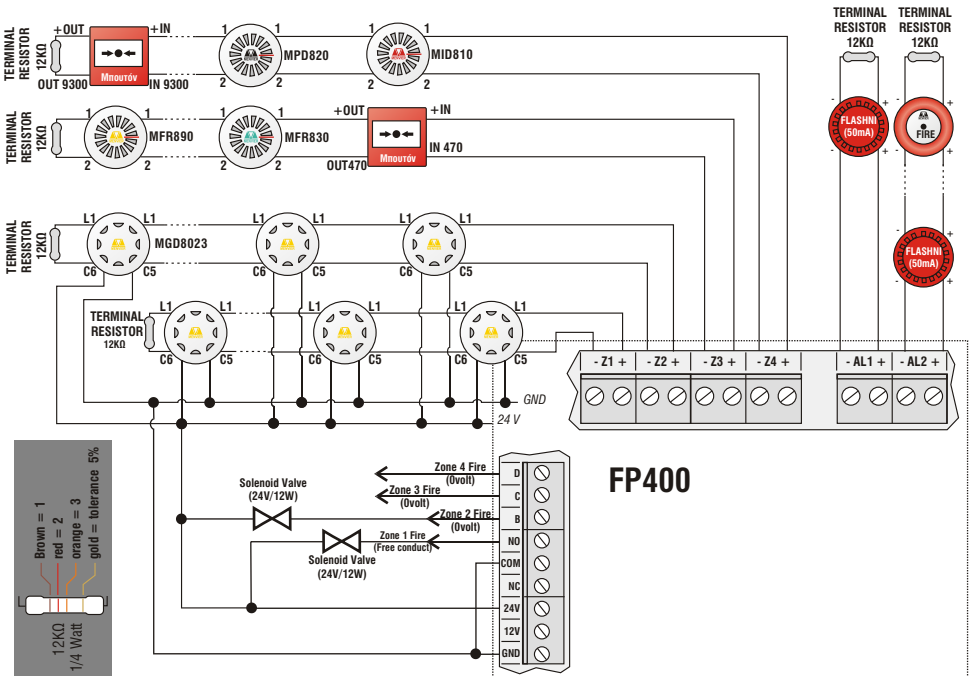
9.2 Indication of Operation Mode (2) or (4): [Zone 2 Fire] indication in Mode (2) or [Zone 4 Fire] indication in Mode (4) must be activated along with [System Fault] and [Power] indications each time panel RESETS (step 1 of paragraph (6.1)).

9.3 Description of Zones: All four are identical zones used for normal connection of fire detectors, manual call points and compatible gas detectors. In the case of gas detection with provision of controlling solenoid valves it is recommended to use Zones (1) and (2) for the connection of gas detectors since solenoid valves can be directly driven from outputs [A] and [B].

9.4 Description of Alarm Lines: Both are identical alarm lines used for normal connection of fire alarm devices. They are activated as soon as panel enters {Fire} condition unless there is an alarm line activation delay programmed in it, in which case alarm line activation will occur when delay elapses.

9.5 Description of Inputs / Outputs:

- Output [A] (NO/COM/NC relay free conduct): Auxiliary non delayed Zone1 fire output, activated as soon as panel detects gas or fire alarm signal from Zone 1.
- Output [B] (open collector): Auxiliary non delayed Zone2 fire output, activated as soon as panel detects gas or fire alarm signal from Zone 2.
- Output [C] (open collector): Auxiliary non delayed Zone3 fire output, activated as soon as panel detects gas or fire alarm signal from Zone 3.
- Output [D] (open collector): Auxiliary non delayed Zone4 fire output, activated as soon as panel detects gas or fire alarm signal from Zone 4.



Connection diagram of a typical installation operating in Mode(2):
 Gas detection in Z1 & Z2, fire detection in Z3 & Z4 and control of a 24V/12W solenoid valve.
 For use of a second valve or for one of a greatest wattage or working voltage different from 24VDC the use of an external power supply is needed

10. Mode (3), Extinguish operation.

In this mode FP400 operates as an extinguish panel where extinguish output is activated by cross detection in zones [1] and [2] (automatic) or by activation of a call point in zones [3] or [4] (manual extinguishing). Furthermore, alarm line [1] acts as a fire alarm indication while alarm line [2] acts as an extinguishing initiation warning. Finally general fire and fault outputs, extinguish output and cancel button supervisor line input are provided.

10.1 Programming Panel in Mode (3):

- Cut off panel power sources by removing 230V AC mains and battery fuses.
- Press and hold key <3>. Place back 230V AC main fuse. Panel will RESET.
- As soon as [Zone 3 Fire] indication is activated, release key <3>. Place back battery fuse.

10.2 Indication of operation mode: [Zone 3 Fire] indication must be activated along with [System Fault] and [Power] indications each time the panel RESETS (step 1 of paragraph (6.1)).

10.3 Conditions in Mode (3): In this mode and for zones [1] and [2] *{Fire} condition is same to {Cross detector / Call point} condition and is referred as {prealarm} condition together with the a new {alarm} condition.* Furthermore alarm line activation delay changes to extinguish output activation delay which is also the time panel stays in {prealarm} condition.

10.4 Description of zones:

10.4.1 Zones [1] and [2] (automatic extinguish in cross zone condition) are used for connection of fire detectors and manual call point devices where:

- Detection of any fire signal (single or double detector or call point in "470" or "9300" connection) in one of those zones will drive panel into *{Prealarm}* condition where Alarm Line [1] and General Fire Output [C] are immediately activated.
- Detection of any fire signal from the other zone will drive panel into *{Alarm}* condition where Alarm Line [2] is immediately activated.
- Panel will stay in *{Alarm}* condition for a period equal to programmed delay, then it will enter *{extinguish}* condition where Extinguish Output is activated.

10.4.2 Zones [3] and [4] (manual extinguish): are used for connection of call point devices where:

- Detection of fire signal of any call point device in "470" connection in any zone will drive panel into *{Alarm}* where both Alarm Lines are immediately activated. Panel will stay in this condition for a period equal to the delay programmed in it, then it will enter *{extinguish}* condition where Extinguish input is activated.
- Detection of fire signal from any call point device in "9300" connection will drive panel directly into *{extinguish}* condition regardless of any delay programmed on it. There both all Alarm Lines and Extinguish Output are immediately activated.

10.5 "Zone 4 Fast Disable" Operation: In Mode (3), pressing the keys <2-1-2-3> and <1> will cause Zone [4] to be disabled or re-enabled. This is useful in installations where call points that need to be frequently turned On or Off are connected in Zone [4].

10.6 {Test} Condition: In Mode (3) the following rule applies to avoid accidental extinguishing while testing the installation: If at least one zone is in {Test} condition panel will never enter {Extinguish} condition even if there are appropriate fire signals from other zones.

10.7 Description of Alarm Lines: Alarm Line [2] property in Mode (3) is different from any other mode:

- Activation of the alarm devices connected to [ALARM1] line indicates panel being in {fire} condition (as in all other modes).
- Activation of alarm devices connected to [ALARM2] line indicates that panel has entered {extinguish} condition and extinguishing actions happen or are about to happen. So alarm devices connected in one line should produce different alarm signal from those connected to the other line.

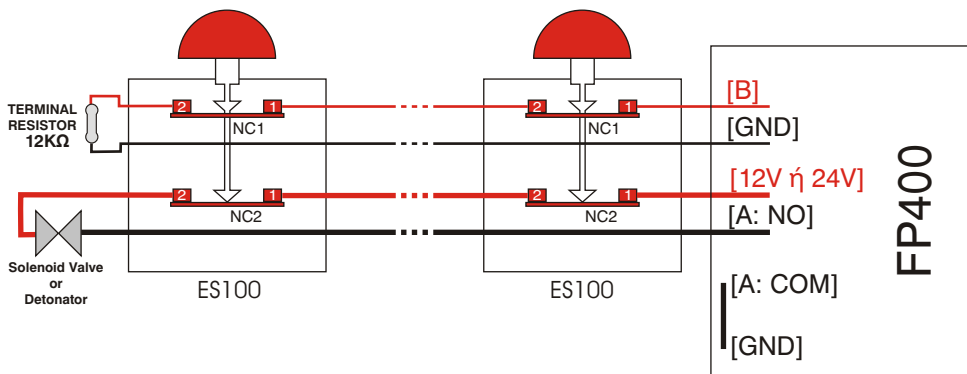
10.8 Activation - deactivation of alarm lines in Mode (3): [ALARM1] is activated when panel enters {Fire} condition. Pressing keys <2-1-1-3> and <2> can also activate or deactivate [ALARM1] line. [ALARM2] is activated only when panel enters {Alarm} condition and is deactivated only by cancelling fire detection signals and resetting the panel.

10.9 Description of Auxiliary Inputs/outputs:

- Output [A] (NO/COM/NC relay free conduct): Extinguishing output.
- Input [B] (open collector): Cancel button supervisory line input.
- Output [C] (open collector): Auxiliary general fire output, activated as soon as the panel enters {Fire} condition.
- Output [D] (open collector): Auxiliary general fault output, activated as soon as the panel enters {Fault} condition.

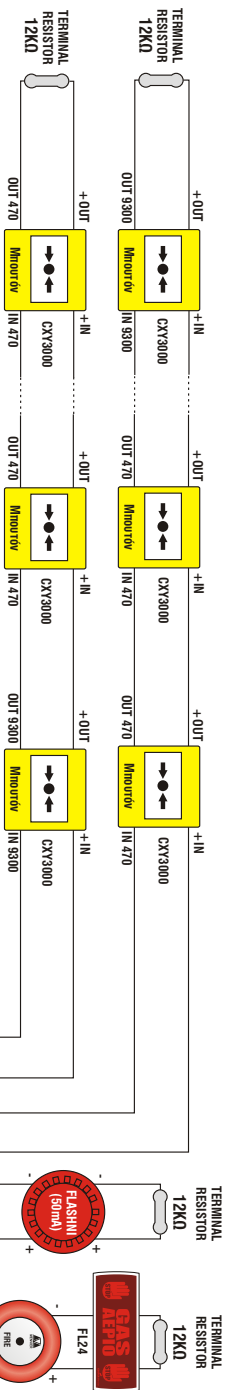
10.10 Connection of Extinguishing Cancel buttons: Extinguishing Cancel buttons must be mushroom type emergency cancel buttons (press to activate, turn to release) with two Normally Closed (NC) contacts connected according to the diagram below. When a button is pressed its first conduct opens the Emergency Cancel Button supervisory line between terminals [B] and [GND] while the second conduct opens the Extinguishing Activation line between terminals [12V] or [24V] and [NO].

ATTENTION!!! If an activated Extinguishing Cancel button is released while the panel is in {extinguishing} state, extinguishing device will be activated.

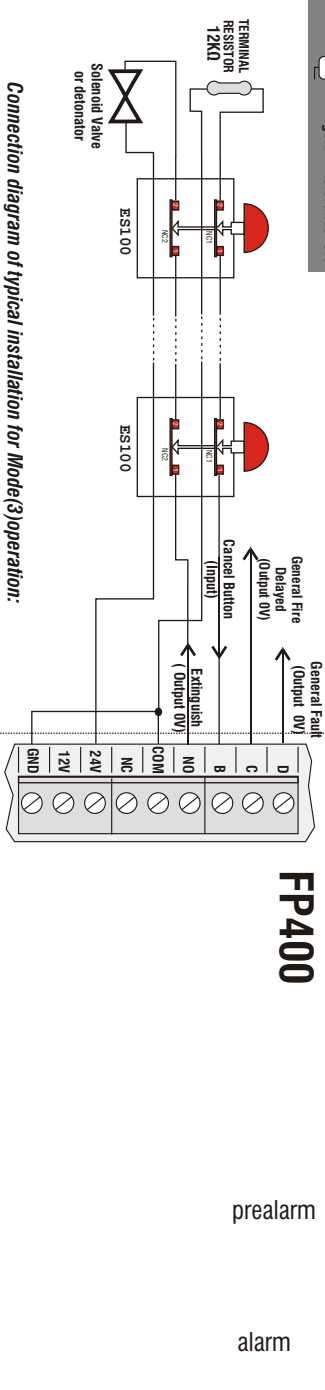
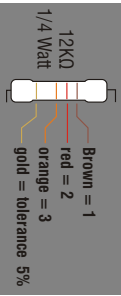
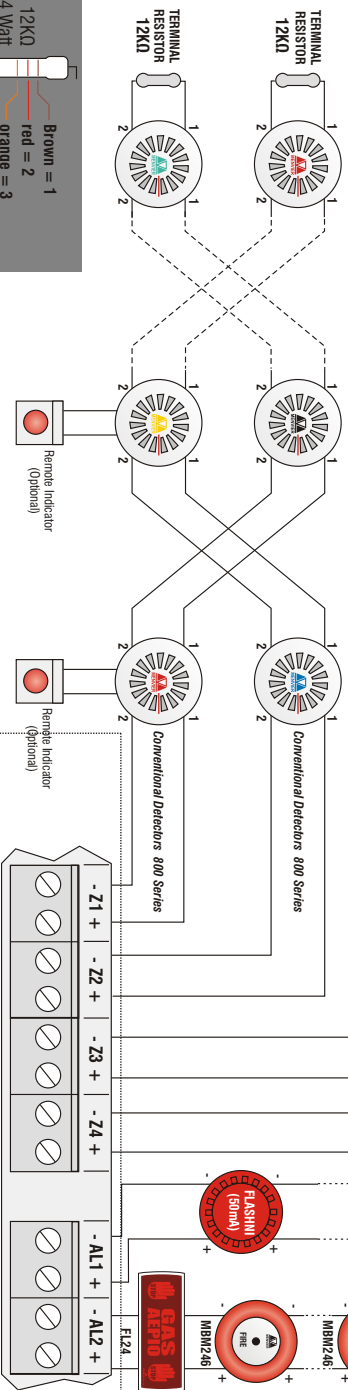


Connection Diagram of Extinguish Line for Mode (3) operation

manual



auto

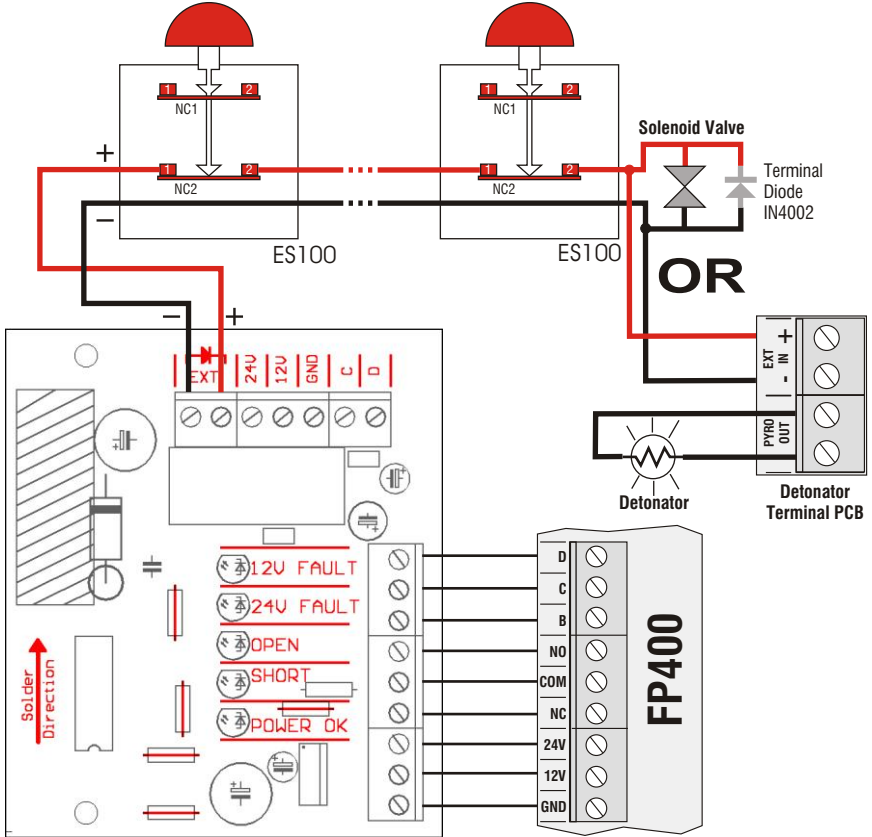


Connection diagram of typical installation for Mode(3)operation:

Automatic extinguish by Z1&Z2 cross zone, manual extinguish by fire signal in zones Z3 or Z4
Pream alarm signal in A11, alarm signal in A12.

11. Supervised Extinguishing operation, Mode (3+).

Mode (3) operation is sufficient for installations where supervision of extinguishing line is not necessary (like secured areas with cables and cable connections to equipment well protected). Supervision of the extinguishing line is realized by the use of the extension pcb FP403 which is connected to the terminal blocks of the FP400 auxiliary outputs and offers the following outputs: Extinguish line (EXT), auxiliary DC voltage outputs (24V, 12V and GND) and the general fire and fault auxiliary outputs (C and D). The connection of the Extinguishing Cancel buttons and the solenoid valve OR the detonator at the Extinguishing line is presented in the following diagram



Connection diagram of FP403 pcb in Mode (3+) operation.

The presence of open or short fault in extinguish line is indicated by the [OPEN] or [SHORT] led indication on FP403 and the [REMOTE] led indication on FP400 pcb. Further indications on FP403 are [POWER OK] for pcb operation, and [12V FAULT] - [24V FAULT] for faults on the respective auxiliary outputs.

Placement or not of jumper S2 determines whether voltage in extinguish line when energized will be 24V or 12V.

Placement or not of jumper S1 determines whether extinguishing activation output when activated will supply constant or pulsed voltage to the extinguishing line.

Technical Specifications

| | |
|---------------------------------------|--|
| Number Of Zones | 4 |
| Number of Alarm Lines | 2 |
| Zone Voltage | 30V DC |
| Alarm Line Voltage | 24V DC +5% -15% |
| AC Line Supply Voltage | 230V AC +10% -15% |
| Fire Indications | Red general indication + Buzzer + Red indication per Zone. . |
| Fault Indications | Yellow general indication + Buzzer + 9 yellow indications of various faults. |
| Power On Indication | Green indication |
| Zone Fault Indication | Open circuit, Short circuit, detection removal, reverse polarity connection. |
| Alarm Line Fault Indication | Open circuit, Short circuit, reverse polarity connection. |
| Power Supply Fault Indication | Lost of 230V AC, line voltage, battery charger circuit fault, battery fault. |
| Zone Terminal Resistor | 12 K Ω . |
| Alarm Line Terminal Resistor | 12K Ω . |
| Entry to Supervisor Condition | Keyboard password <2113> |
| Fast Zone 4 disable (extinguish Mode) | Keyboard password <2123> & <1> |
| Max Number of Detectors per Zone | 20 (type 24V 30uA) |
| Max Alarm Line Load | 800mA mer zone in alternative activation mode* |
| Max Load on AUX 12V-24V | 400mA* per output continuous, 800mA* for 1min. |
| Auxiliary output types | A: Free Conduct (Relay 24V/2A), B: Transistor (0V 2A open collector), C: Transistor (0V 50mA open collector) D: Transistor (0V 50mA open collector) |
| Auxiliary Power Source | Sealed Lead Acid Battery 12Volt / 7,2Ah . |
| Battery Charge Time | 24 hours |
| Backup power Autonomy | 72 hours |
| Panel Dimensions | 300mm x 300mm x 75mm |

* The maximum amount of current that panel can supply is 800mA.
In detail : (Alarm Line 1) + (Alarm Line 2) + (12V/24V AUX DC) = 800mA max.