



DS80SC4A-004C

LBT81073

FAP54

Multiprocessor modular control panel for fire detection

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Programming manual



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TABLE OF CONTENTS

TABLE OF CONTENTS	3
GENERAL DESCRIPTION	5
1 INTRODUCTION	6
1.1 TERMINOLOGY	6
1.2 BASIC CONCEPTS.....	7
1.3 DETECTORS AND OUTPUT MODULES	8
1.4 DETECTION LINES AND CONTROL PANEL.....	8
1.5 ZONE	9
1.6 GROUP OF DEVICES.....	9
1.7 GROUP OF ZONES	10
1.8 OPERATING MODES OF ZONES AND GROUPS	10
1.9 OPERATING MODES	10
2 OPERATING MODES	13
2.1 SCANNING PHASE	13
2.1.1 Alarms display.....	14
2.1.2 General fault display	15
2.1.3 Field fault display	15
2.1.4 Exclusion display	16
2.1.5 Maintenance display	17
2.1.6 Slave control panel display	17
2.1.7 Generic events display.....	18
2.1.8 User's information display.....	18
2.1.9 Acquisition of Alarm, Fault or Maintenance event.....	18
2.1.10 General Reset.....	18
2.2 PROGRAMMING PHASE	19
2.3 FAP54 - MODULAR STRUCTURE	19
2.4 EMERGENCY OPERATION	20
2.5 INDICATORS, KEYS, RELAYS, JUMPERS.....	21
2.5.1 Front side indicators.....	21
2.5.2 Keys.....	22
2.5.3 Outputs and relays.....	23
2.5.4 Jumpers	23
2.6 MASTER AND SLAVE CONTROL PANELS (OPTIONAL)	23
2.7 CONNECTION WITH PERSONAL COMPUTER	23
2.8 CONTROL PANEL PROGRAMMING	24
2.8.1 Programming through control panel menu	24
2.8.2 Programming via PC.....	24
3 MENU PROG- CONTROL PANEL PROGRAMMING.....	25
3.1 CIRCUIT.....	26
3.1.1 Configure all the circuits.....	26
3.1.2 Configure single circuit.....	29
3.1.3 Manual circuit configuration	32
3.1.4 Include/Exclude.....	33
3.1.5 Verify.....	33
3.1.6 Delete all the associations	41
3.1.7 Delete expired associations	41
3.1.8 Event log.....	42
3.2 ZONES - ZONES PROGRAMMING	42
3.2.1 Name	42
3.2.2 Associate device to zone	43
3.2.3 Associate output module to zone	44
3.2.4 Delayed output modules	45
3.2.5 Mode.....	50
3.2.6 Include / Exclude.....	52
3.2.7 Verify.....	53
3.3 GROUP - GROUPS PROGRAMMING	54
3.3.1 Group of devices.....	54
3.3.2 Group of zones	60
3.4 DEVICE – DEVICES PROGRAMMING.....	66
3.4.1 Name	66
3.4.2 Configure device (detectors and input modules).....	67
3.4.3 Configure device (output module)	69
3.4.4 Include/Exclude.....	71
3.4.5 Verify.....	72
3.4.6 Read remote device	73
3.4.7 Configure remote device	79
3.4.8 Update device	96
3.4.9 Device replacement	97
3.5 PASSWORD	98

3.6	LANGUAGE	99
3.7	CONFIGURE DEVICES	99
3.7.1	Read local device	100
3.7.2	Configure local device	100
3.8	MISCELLANEOUS.....	102
3.8.1	Printer	102
3.8.2	Communications	103
3.8.3	Remote control unit.....	110
3.8.4	Control Panel.....	112
3.8.5	Clock.....	113
3.8.6	Outputs and Relays / Inputs	113
3.8.7	Alarm timers	116
4	SERVICE MENU	117
4.1	MAINTENANCE	118
4.1.1	Periodic Maintenance	118
4.1.2	Maintenance now	123
4.1.3	Verify by level	124
4.1.4	Verification by address	126
4.1.5	Set time/interval.....	126
4.1.6	Password.....	127
4.2	CLOCK.....	127
4.3	EVENT LOG.....	128
4.4	PRINT EVENT LOG.....	130
4.5	LEVELS	130
4.6	TEST.....	131
4.6.1	Zone test.....	131
4.6.2	Lamp Test.....	131
4.6.3	Device Test.....	131
4.7	FW VERSIONS.....	135
5	INCLUDE / EXCLUDE KEY.....	136
6	TECHNICAL AND ENVIRONMENTAL CHARACTERISTICS.....	137
6.1	ELECTRIC AND OPERATING CHARACTERISTICS	137
6.2	WEATHER CHARACTERISTICS	137
6.3	AESTHETIC AND MECHANICAL CHARACTERISTICS	137
7	APPENDIXES	137
7.1	APPENDIX 1 – ERROR CODES FOR FAULT OF DEVICES	137
7.2	APPENDIX 2 – FAULT CODES FOR CIRCUIT MODULE	139
7.3	APPENDIX 3 – FAULT CODES FOR THE COMMAND AND CONTROL MODULE	139
7.4	APPENDIX 4 – FAULT CODES FOR THE LCD ANNUNCIATORS	140
7.5	APPENDIX 5 – FAULT CODES FOR IP / LTE COMMUNICATOR.....	140
7.6	APPENDIX 6 – SYSTEM ERROR CODES.....	141
7.7	APPENDIX 7 – FAULT CODES FOR SLAVE CONTROL PANELS	142
7.8	APPENDIX 8 – PROCEDURE ERROR CODES.....	142
7.9	APPENDIX 9 – LINE FAULT BITMAPS	145
7.10	APPENDIX 10 – DEVICE TYPES	145
7.11	APPENDIX 11 – QUALIFIER OF DEVICE ATTRIBUTES.....	146
7.12	APPENDIX 12 – ALARM TYPES	146
7.13	APPENDIX 13 – ZONE TYPES	146
7.14	APPENDIX 14 – ERROR CODES FOR PRINTER MODULE	146
7.15	APPENDIX 15 – PS2 KEYPAD MAPPING	147
7.16	APPENDIX 16 – ERROR CODES FOR CIRCUIT FAULT (COMM. ERROR).....	147

GENERAL DESCRIPTION

FAP54 is a modular fire detection control panel and allows, thanks to its expandability of peripherals and functions, to adapt to the specific needs of the system.

The multi-microprocessor control panel integrates the following functions:

- Display and front keypad for direct interface with the operator.
- USB port for control panel configuration by PC.
- PS2 port for keypad connection for control panel configuration.
- Data base with programming data and event log.

The possible expansion boards, which can be inserted directly on the main (CPU) board, are the following:

- LAN interface.
- IP/WiFi interface.
- RS485 port (opto-isolated) for MASTER/SLAVE functions (optional).

The possible upgrades to allow high loads and specific system needs are as follows:

- Detection circuit modules.
- Module for printer connection.
- LCD annunciators.

1 INTRODUCTION

1.1 TERMINOLOGY

In order to clarify the concepts expressed in the rest of the document, a definition of the terms used throughout the manual is reported below.

Actuator = addressed output module connected to the detection line which is controlled by the control panel in case of alarm or fault. The actuator can be configured to control: an alarm box (type "C"), a fire fighting apparatus (type "G"), a fault warning device (type "J") or a technological device (type "T").

Adaptation = adjustment of the opacity average value detected by the optical smoke detector. Adaptation is required to adjust detection as a consequence of to the progressive accumulation of dirt inside the smoke analysis chamber.

Alarm 1 only mode = when it is in idle condition and detects one or more alarms from devices belonging to the same zone/group, the control panel switches to alarm state with siren output disabled. If other devices of the same zone/group notify further alarms, the siren output keeps being disabled.

Detection circuit = wired physical connections between devices and the control panel.

Detector = automatic detector (sensor) which can detect an alarm condition when the element under control exceeds a given alarm threshold.

Field fault = fault affecting the detection field (e.g., detectors, detection circuits, etc.).

Fire alarm zone = when an alarm condition occurs, all the output modules, siren outputs, alarm relays and indicators are activated according to the alarm level reached by the control panel.

General fault = hardware fault relating to the control panel or the peripherals connected with it.

Group of devices = abstract entity which allows to group detectors, manual keys and input interfaces/modules present on the detection lines and belonging to different or equal zones. It is useful to generate a higher level control offering more versatility in those cases requiring a cross check.

Group of zones = abstract entity which allows to group zones to generate a higher level control offering more versatility in those cases requiring a cross check.

Hotel (mode) = when the control panel detects a device in alarm, it switches to alarm condition with siren output disabled and activates the timer. If another device goes to alarm condition while the timer is running, the residual timer is compared with the hotel reload timer. If the hotel reload timer is lower than the residual timer, the latter is shortened to the hotel reload timer. In any case, when the timer expires the control panel activates the siren output.

Loop line (class A) = the topology of the detection circuit is a closed loop. Both ends of the detection circuit are connected to the control panel.

Manual call point = manual device which allows the user to force an alarm condition. The default alarm level associated with the manual call point is two units.

Master Alarm = the **MASTER ALARM** function allows the activation of all actuators, appropriately enabled, when the GENERAL ALARM key on the front of the control panel is pressed. The purpose is to activate alarm signals and implementations in the shortest possible time and with a single action. The Master Alarm function can be performed, after activation, also by manual keys or when a zone switches to the alarm condition.

Multiple knock = when the control panel is in idle condition and one or more alarm devices are detected in the same zone and the sum of their weights is below the weight assigned to that zone, the control panel switches to the alarm condition with the siren output disabled. When the sum of the alarm device weights in the same zone is equal to or higher than the weight of the zone, the control panel activates the siren output.

Multiple knock with delay = when the control panel is in idle condition and one or more alarm devices are detected in the same zone and the sum of their weights is below the weight of the zone, the control panel switches to the alarm condition with the siren output disabled. When the sum of the alarm device weights in the same zone is equal to or higher than the weight of the zone, the control panel enables the zone timer. When this timer expires, the control panel activates the siren output.

Multiple knock with reset = when the control panel is in idle condition and one or more alarm devices are detected in the same zone and the sum of their weights is below the weight of the zone, the control panel switches to the alarm condition with the siren output disabled and starts the reset timer; when the sum of the alarm device weights in the same zone is equal to or higher than the weight of the zone, the control panel goes to an alarm condition equivalent to the one with siren output activated. When the reset timer expires, the control panel cancels the alarm condition and returns to the idle state. This mode can be applied only to technological zones.

Open line (class B) = one end only of the detection circuit is connected to the control panel.

Point/Device = objet connected to the detection circuit which can transmit or receive information concerning the fire detection.

Single knock = when the control panel is in idle condition and detects a device in alarm, it switches to the alarm condition and activates the siren output.

Single knock with delay = when the control panel is in idle condition and detects one or more devices in alarm, it switches to the alarm condition with the siren output disabled and starts a timer. When the timer expires, the siren output is activated.

System = set of connected devices (control panel, expansion, sirens, detectors, keypads, wiring cables, etc.) which carry out a specific function.

The system interacts with the outside world through its inputs and outputs.

System fault = fault in the integrity of the data contained in the memories of the control panel or error in the execution of the software program contained in the control panel.

Technological zone = when an alarm condition occurs, all the output modules are activated according to the alarm level reached. The siren output, the relays and the alarm indicators are never enabled though.

Weight = it is the contribution brought by the device going in alarm condition to the alarm condition of the zone/group it belongs to. When the sum of the weights of the devices in alarm belonging to the same zone/group is equal to or higher than the one defined for that zone/group, the zone/group goes to alarm condition and, according to its programming mode, can start its timer.

The weight of a zone in fire mode has a fixed unmodifiable value and equals 2; conversely, the weight of a zone in technological mode can be modified. The weight of detectors is fixed and equals 1, whereas the weight of manual call points is 2 (it can be downgraded to 1, though). The weight of the remaining types of devices is programmable.

Zone = geographical subdivision of the premises and environments under surveillance where one or more devices (max 32) are installed and share the signalling equipment.

1.2 BASIC CONCEPTS

Normally a fire system is composed of several physical elements (detectors, manual call points, output modules, detection lines,...) and abstract elements (zones, groups of devices, groups of zones) which make up a complex control and surveillance system.

Therefore, it is necessary to briefly analyse the elements making up a fire system to better understand the performances of FAP54 control panel.

1.3 DETECTORS AND OUTPUT MODULES

These devices, installed on the detection lines, are subdivided into two categories:

- Detectors (smoke detectors, heat detectors, smoke-heat detectors, manual call points, etc.)
- Actuators (actuation modules, etc.)

When the control panel is in “field scanning” mode, the detectors constantly monitor possible alarm conditions (smoke presence due to fire, temperature increase or air opacity).

If a device detects an alarm condition, it sends the alarm information to the control panel through the detection line.

The control panel, in turn, activates the outputs associated with the alarm condition and the output modules associated with the zone which the alarming detector belongs to.

As a result, the output modules operate other devices for managing and/or signalling the alarm condition.

The devices which can be connected to the detection lines of FAP54 control panel are the following:

DEVICE	Abbreviation
SMOKE DETECTOR	SM
HEAT DETECTOR	HT
OUTPUT MODULE	OM
CONCENTRATOR MODULE	CM
MANUAL CALL POINT	MN
4-20mA INPUT MODULE	CI
BEAM DETECTOR	BD
SMOKE/HEAT DETECTOR	SH
LATCHED INPUT MODULE	LI
PULSED INPUT MODULE	PI
SMOKE/HEAT/GAS DETECTOR	XS
BATHROOM CALL CORD MODULE	TB
GAS DETECTOR	GS
LATCHED INPUT MODULE WITH SIREN OUTPUT	IS

Each device is characterized by the following basic information:

- type of the device.
- number of the circuit connected to the line where the device is located.
- address assigned to the device.

The maximum number of devices which can be connected to a detection line is 128.

Moreover, FAP54 control panel makes it possible to associate a 32-character text with each device for an easy identification.

1.4 DETECTION LINES AND CONTROL PANEL

The detection lines are the wired physical connections over which communication between the devices and the control panel takes place. They are also used by the control panel to power supply the devices.

The number of detection lines which can be connected to the control panel depends on the control panel configuration and each line can be configured in loop or open mode.

If the line is configured as a loop, the wire where the devices are connected “comes out and returns” to the control panel, whereas in the case of a line configured as open the wire “comes out” without returning to the control panel.

The control panel is equipped with circuit modules, which provide the interface between the detection lines and the control panel.

They communicate directly with the devices and notify the control panel about alarms or faults occurring on the field.

Besides, these modules are autonomous and can work also without the control panel supervision.

1.5 ZONE

The zone is an abstract entity composed of a set of detectors.

Each detector, regardless of the circuit it is connected to, can be associated with any zone.

The only limitation is that a detector can be associated with only one zone.

Therefore, different zones cannot share detectors.

In theory, all the devices (not output modules) of the system can be associated simultaneously to the same zone. Nevertheless, it is good practice to associate no more than 32 devices per zone, **otherwise the system would not be compliant with the standard EN 54-2.**

FAP54 control panel provides the user with **480 zones.**

The zone 480, in theory fully usable as the other zones, in practice covers the role of temporary storage area for the devices just acquired by the panel at the end of an initialization procedure.

Therefore, it is necessary to move the devices just acquired by the panel from the zone 480 to other zones which the user intends to use. For each of these zones the limit of 32 devices must not be violated.

If devices are left in zone 480, upon returning to scanning, the control panel will report a field fault.

It is possible to associate output modules with zones, these modules will be activated when the zone goes into alarm condition (the zone goes into alarm condition when one or more detectors belonging to the zone detect an alarm).

Up to 50 output modules can be associated with each zone and each module can be associated with more than one zone at the same time.

Each zone can be configured with either one of these operating modes:

- fire alarm
- technological

Each operating mode leads to a certain number of modes of activation of the alarm condition, the outputs and the relays; it is possible to assign a 32 characters name to each zone.

1.6 GROUP OF DEVICES

The group of devices is an abstract entity composed of a set of detectors.

Each detector, regardless of the line it is connected to, can be associated with each group of devices, without any limitation.

Each detector can be associated with as many groups of devices as the user wants at the same time. Therefore, different groups can share detectors.

FAP54 control panel provides the user with **240 groups of devices.**

It is possible to associate up to 50 detectors with each group of devices.

Moreover, up to 50 output modules can be associated with each group of devices, and each module can be associated with more than one group at the same time.

Each group of devices can be configured with either one of these operating modes:

- fire alarm
- technological

Each operating mode leads to a certain number of modes of activation of the alarm condition; it is possible to assign a 32 characters name to each group of devices.

1.7 GROUP OF ZONES

The group of zones is an abstract entity composed of a set of zones.

Each zone can be associated with each group of zones, without any limitation.

Each zone can be associated with as many groups of zones as the user wants at the same time.

Therefore, different groups can share zones.

FAP54 control panel provides the user with **240 groups of zones**.

It is possible to associate up to 50 zones with each group.

Moreover, up to 50 output modules can be associated with each group of zones, and each module can be associated with more than one group at the same time.

Each group of zones can be configured with either one of these operating modes:

- fire alarm
- technological

Each operating mode leads to a certain number of modes of activation of the alarm condition; it is possible to assign a 32 characters name to each group of zones.

1.8 OPERATING MODES OF ZONES AND GROUPS

Each zone, group of devices or group of zones can be programmed with one of the following operating modes:

Fire: when an alarm occurs, all the output modules, the fire alarm signalling outputs (siren outputs), alarm relays and indicators are enabled according to the alarm level of the control panel.

This mode is represented by the following acronym: FR.

Technological: when an alarm occurs, all the output modules are enabled according to the alarm level of the control panel. The fire alarm signalling outputs (siren outputs) are never enabled.

This mode is represented by the following acronym: TN.

1.9 OPERATING MODES

Each zone, group of devices and group of zones can be programmed to switch to the alarm condition with the siren output enabled or not.

The siren output, in turn, is activated when one or more detectors detect an alarm condition or because of the expiration of an activation timer, according to the programming mode of the zone or group.

The alarm condition with siren output disabled is characterized by:

- buzzer activated
- fire alarm LED blinking
- alarm relay activated
- siren relay deactivated
- siren output deactivated

The alarm condition with siren output enabled is characterized by:

- buzzer activated
- fire alarm LED steady ON
- alarm relay activated
- siren relay activated
- siren output activated

For the **zones** and **groups of devices**, the following applies:

Single knock	When the control panel is in idle condition and detects one or more devices in alarm, it switches to the alarm condition with siren output enabled.
Single knock with delay	When the control panel is idle condition and detects one or more alarm devices, it switches to the alarm condition with siren output disabled and starts an activation timer. When the timer expires, the control panel switches to the alarm condition with siren output enabled.
Multiple knock	<p><i>For zones programmed in "Fire" operating mode, the following applies:</i> when the control panel is in idle condition and one alarm from a device belonging to the zone is detected, the panel switches to the alarm condition with siren output disabled. As soon as an alarm from another device of the same zone is detected, the panel goes to the alarm condition with siren output enabled.</p> <p><i>For zones programmed in "Technological" operating mode and groups the following applies:</i> when the control panel is in idle condition and one or more alarm devices are detected in the same zone/group and the sum of their weights is less than the weight assigned to the zone/group, the control panel switches to the alarm condition with siren output disabled; when the sum of the alarm device weights in the same zone/group is equal to or greater than the weight assigned to the zone/group, the control panel switches to the alarm condition with siren output enabled.</p>
Multiple knock with delay	<p><i>For zones programmed in "Fire" operating mode, the following applies:</i> when the control panel is in idle condition and one alarm from a device belonging to the zone is detected, the panel switches to the alarm condition with siren output disabled. As soon as another alarm from a device of the same zone is detected, the panel activates the timer for the activation of the siren output. When this timer expires, the control panel switches to the alarm condition with siren output enabled.</p> <p>NOTE: if the control panel is in idle condition and a manual call point is pressed, the control panel switches to the alarm condition with siren output disabled and the activation timer is started at once.</p> <p><i>For zones programmed in "Technological" operating mode and groups the following applies:</i> when the control panel is in idle condition and one or more alarms from devices belonging to the same zone/group are detected and the sum of their weights is less than the weight of the zone/group, the control panel switches to the alarm condition with siren output disabled; when the sum of the alarm device weights in the same zone/group is equal to or greater than the weight of the zone/group, the control panel starts the timer for the activation of the siren output. When the timer expires, the control panel switches to the alarm condition with siren output enabled.</p>
Alarm 1 only	<p><i>This mode is only applicable to zones/groups programmed with "technological" mode:</i> When the control panel is in idle condition and one or more devices detect an alarm, the control panel switches to the alarm condition with siren output disabled. If further devices detect an alarm, the control panel keeps being in the state of alarm condition with siren output disabled.</p>
Multiple knock with reset	<p><i>This mode is only applicable to technological zones:</i> When the control panel is in idle condition and one or more alarm devices are detected in the same zone and the sum of their weights is less than the weight of the zone, the control panel switches to the alarm condition with siren output disabled and starts the reset timer; when the sum of the alarm device weights in the same zone is equal to or greater than the weight of the zone, the control panel switches to the alarm condition with siren output enabled. When the reset timer expires, the control panel cancels the alarm condition and returns to idle state.</p>
Hotel	<p><i>This mode is only applicable to zones programmed in "Fire" operating mode:</i> When the control panel detects a device in alarm, it switches to the alarm condition with siren output disabled and starts the timer associated with the device T_p. If another alarm is detected by another device before the expiration of T_p, the remaining amount of T_p is compared to the hotel reload time T_h. If $T_p > T_h$, T_p is reloaded with T_h, otherwise no reload is done. In any case, T_p keeps running and, on its expiration, the control panel switches to the alarm condition with siren output enabled.</p>

For the **groups of zones**, the following applies:

- If a zone belonging to a group goes to alarm condition with siren output disabled, its contribution to the alarm condition of the group is ignored.
- If the zone goes to alarm condition with siren output enabled, it contributes to the alarm condition of the group according to its programming mode, as reported in the table below:

Single knock	When a zone of the group goes to alarm condition with siren output enabled, the group switches to alarm condition with siren output enabled.
Single knock with delay	When a zone of the group goes to alarm condition with siren output enabled, the group switches to alarm condition with siren output disabled and starts an activation timer. When the timer expires, the group switches to alarm condition with siren output enabled.
Multiple knock	When a zone of the group goes to alarm condition with siren output enabled, the weight of the group is increased by one unit and the group switches to alarm condition with siren output disabled. As soon as the weight of the group is equal to or greater than the weight assigned to the group in the programming phase, the group switches to alarm condition with siren output enabled.
Multiple knock with delay	When a zone of the group goes to alarm condition with siren output enabled, the weight of the group is increased by one unit and the group switches to alarm condition with siren output disabled. As soon as the weight of the group is equal to or greater than the weight assigned to the group in the programming phase, an activation timer starts. When the timer expires, the group switches to alarm condition with siren output enabled.
Alarm 1 only	When a zone of the group goes to alarm condition with siren output enabled, the group switches to alarm condition with siren output disabled.

In general, in the delayed modes it is possible to:

- Assign different timers to detectors and manual call points.
- Increase the timer through the **INCREASE DELAY** key on the control panel keypad.
- Force the immediate expiration of the timer through the **SKIP DELAY** key on the control panel keypad.
- Assign a zero value to the timer through the “Clear delay” function in the case of manual call points and input modules provided with this functionality.

2 OPERATING MODES

The FAP54 control panel has two operating modes: *scanning phase* and *programming phase*.

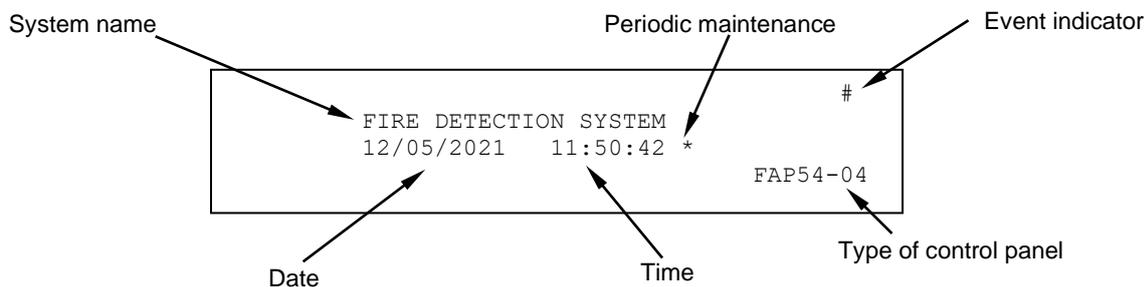
When FAP54 is powered on, the scanning phase will be always started and maintained until the installer or the user carries out an intervention.

2.1 SCANNING PHASE

In this operating mode the control panel monitors the devices scattered in the field and manages the following events:

- alarm
- general fault
- field fault
- maintenance
- exclusion
- events related to slave control panels (if the control panel is set as master)
- generic events (not classified into any of the previous categories)

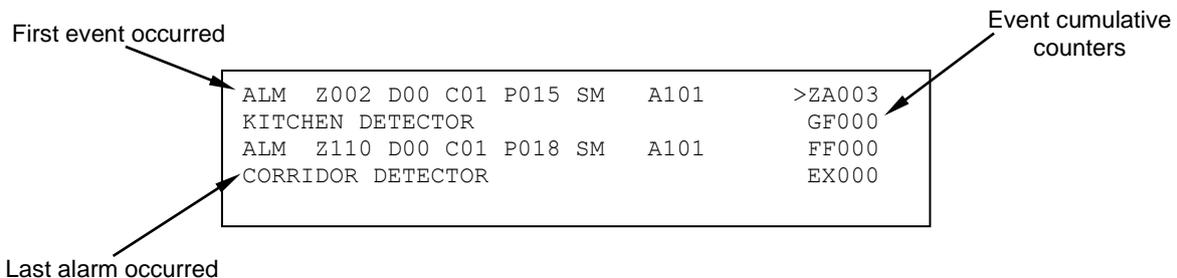
Normally, if there are not active events, the display on the control panel front side shows the following message:



The event indicator is shown when at least one event has occurred since the last time a level 2 password has been inserted. If no event has occurred, a blinking asterisk will be displayed instead of the event indicator.

The presence of the asterisk near the time indicates that the periodic maintenance is enabled.

If the control panel has not been programmed yet, the display shows the message "**MONITORING NOT POSSIBLE**". If an event occurs, the display shows the event, along with the cumulative counters for each type of event on the right-hand side.



Should more events occur, the display shows, in addition to the event counter increase, the first event occurred at the top and the most recent alarm (if present) at the bottom.

The events are displayed according to the following priority:

- Zones in alarms (ZA)
- General faults (GF)
- Field faults (FF)
- Exclusion (EX)
- Group of devices in alarm (GD)
- Group of zones in alarm (GZ)
- Maintenance (MN)
- Events related to SLAVE control panels (SP)
- Generic events (GE)

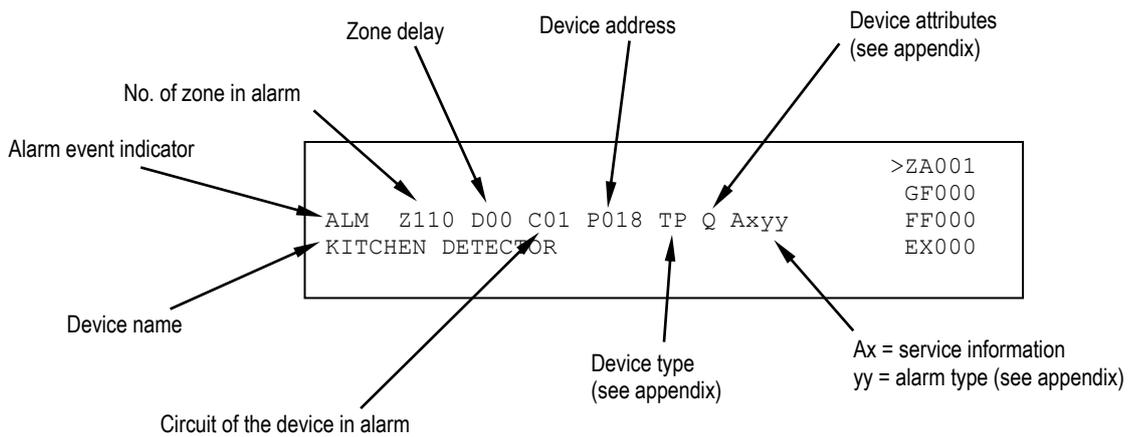
By using the keys \wedge and \vee it is possible to change the type of event displayed (the > symbol on the right selects the type of the event currently shown on the first two rows).

By using the keys < and > it is possible to go back and forth through the events of the selected type.

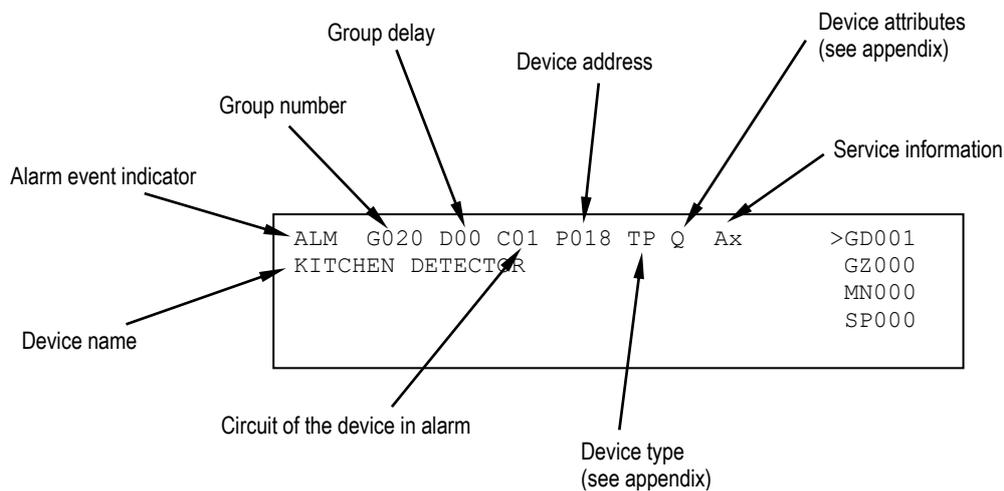
The selected event will be displayed at the top, while the most recent alarm event will be displayed at the bottom (if at least one alarm is present) or nothing will be displayed.

2.1.1 Alarms display

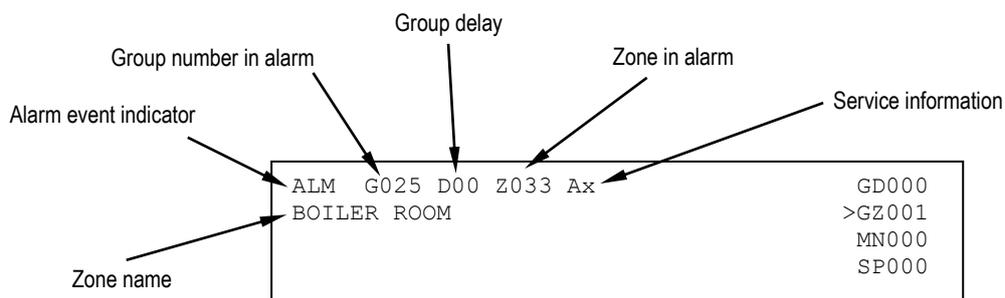
- **Display of Zone Alarm generated by detector associated with zone**



- **Display of alarm of group of devices generated by an associated device**



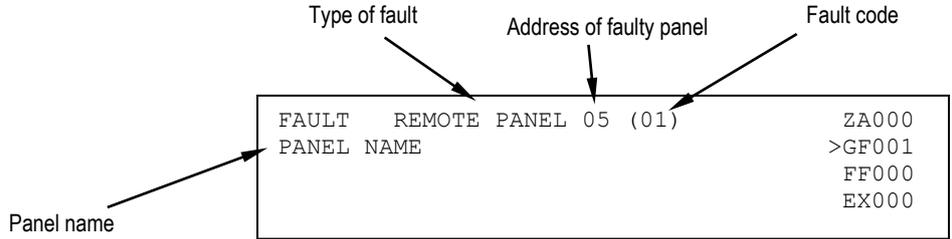
- **Display of alarm of group of zones generated by an associated zone**



2.1.2 General fault display

The display of a general fault depends on the type of event occurred and it usually allows the immediate recognition of the equipment or part of the control panel in faulty condition which can negatively affect the system operation. In any case, the display shows each event with all the data needed for the equipment identification (e.g. address) and the related error code.

Example:

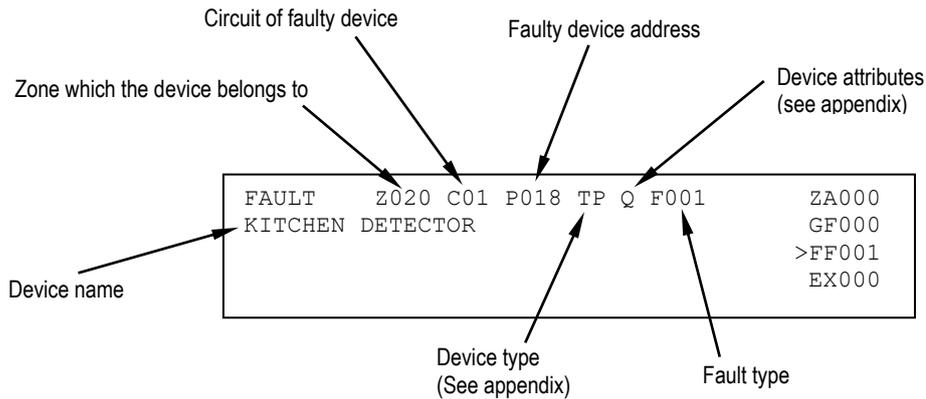


Note that some type of fault is notified with a self-explaining message, allowing the user to immediately understand what is going on. Other types of fault are notified instead with a message and an error code.

For a detailed explanation of these codes, please refer to the appendixes.

2.1.3 Field fault display

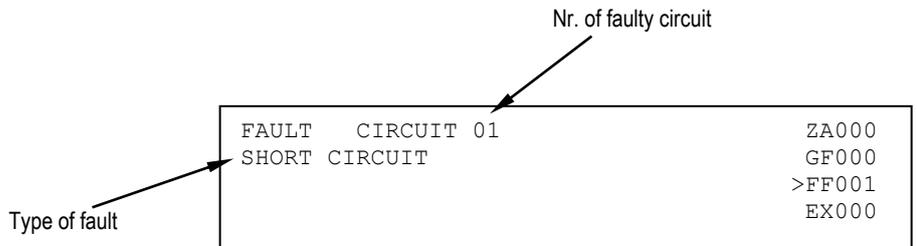
The display of a field fault depends on the type of fault. Usually, a field fault affects a detection circuit or a device connected to this circuit. A field fault due to a device is notified as follows:



The field fault on the detection circuit occurs when an event has changed the circuit connection structure, like for instance the line loop breaking or a short circuit on the line.

In any case, a self-explaining message will be displayed.

Below is reported an example of a field fault of type "short circuit" affecting circuit 1.



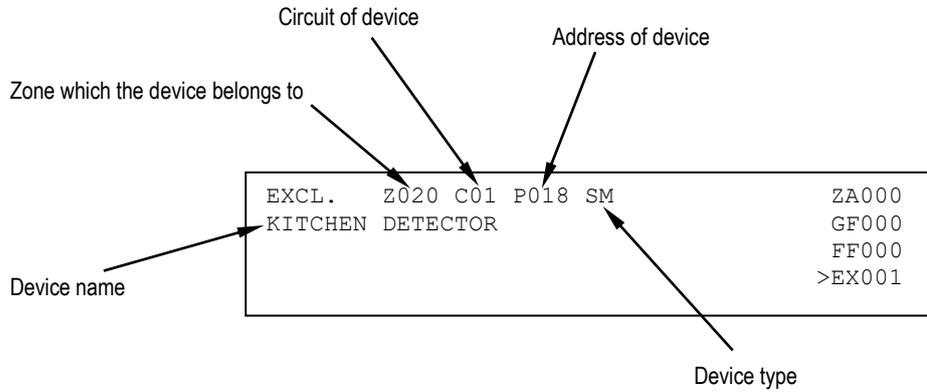
For a detailed description of the field faults and any error codes associated with them, please refer to the appendixes.

2.1.4 Exclusion display

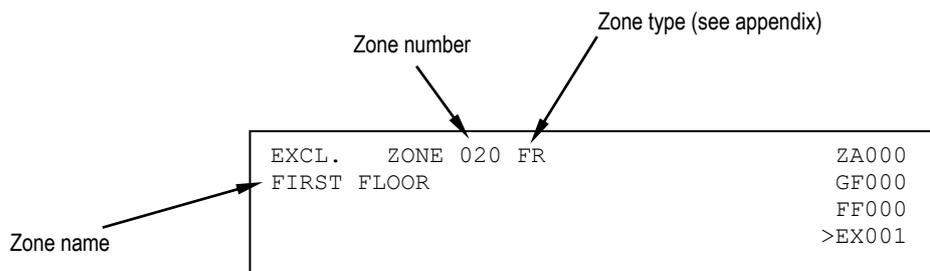
During the scanning phase it is possible to know the state of the active exclusions regarding the equipment connected with the control panel, the abstract entities (zones, groups), the devices and the detection lines.

A few examples are reported below.

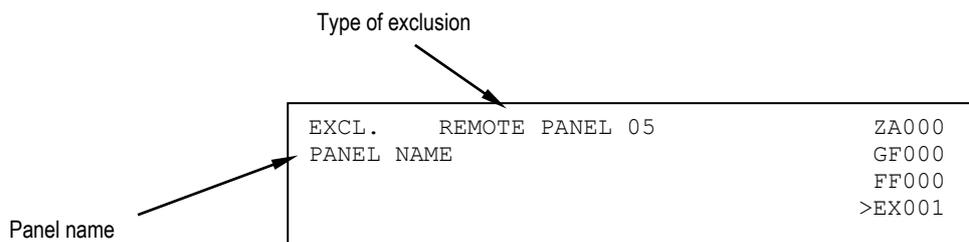
- **Display of excluded device**



- **Display of excluded zone**



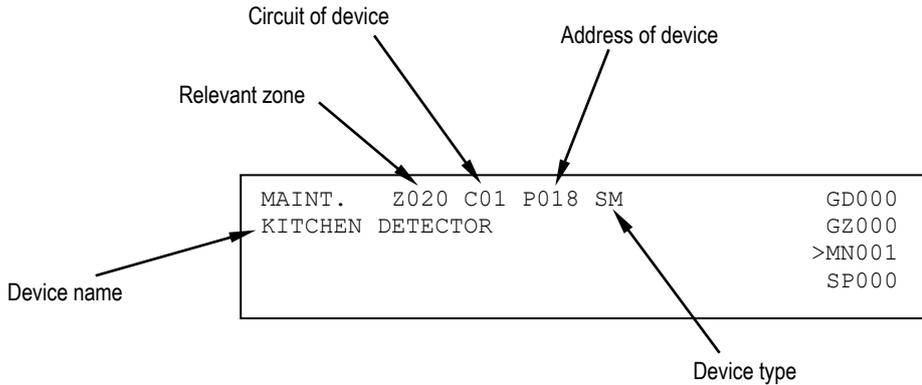
- **Display of excluded remote panel**



2.1.5 Maintenance display

The display of a device requiring maintenance allows the immediate recognition of an optical smoke detector which needs to be replaced or cleaned as it is no longer reliable.

Therefore, the display will show the information necessary to identify the device on the circuit.



2.1.6 Slave control panel display

This paragraph is valid only if the control panel is configured as a MASTER and it is connected to a network of SLAVE control panels.

Any event occurring on a SLAVE control panel is notified to the MASTER control panel, which shows it by using two rows, according to the following rules:

- the first row shows the address and name of the SLAVE control panel affected by the event,
- the second row equals the first row used by the SLAVE control panel to show the event on its own display.

For instance, suppose that the SLAVE control panel with address 50 and named "HANGAR" is affected by a maintenance event on a detector. This SLAVE control panel, then, shows the following message on its display:

```

MAINT.   Z020 C01 P018 SM           GD000
KITCHEN SMOKE DETECTOR             GZ000
                                     >MN001
                                     SP000
    
```

The MASTER control panel to whom the SLAVE control panel is connected shows the following information:

```

SLAVE 050 HANGAR                   GD000
MAINT.   Z020 C01 P018 SM           GZ000
                                     MN000
                                     >SP001
    
```

This message says to the user that the smoke detector, located on circuit 1 in the SLAVE 50 and having the address 18, requests a maintenance intervention.

Alarms, faults and maintenance events occurring on a SLAVE control panel are displayed on the MASTER control panel's display according to the aforementioned rule (address and name of the SLAVE control panel plus the first row of the event shown in the SLAVE control panel).

The events of exclusion/inclusion occurring on a SLAVE control panel are handled in a different way:

If a SLAVE control panel is affected by at least one exclusion, the MASTER control panel shows a message like this:

```

SLAVE 050 HANGAR                   GD000
ACTIVE EXCLUSIONS 007             GZ000
                                     MN000
                                     >SP001
    
```

This message indicates the number of elements currently excluded on the SLAVE control panel (in the example, there are 7 active exclusions on the SLAVE control panel).

If all the currently excluded elements are re-included, the above message is not shown anymore.

In the case the user wants to receive further information on the events occurring in the SLAVE control panel (for instance, the name of the device requiring maintenance, or detailed information on the excluded elements), it is necessary to get to the event log of the SLAVE control panel.

The event log of the SLAVE control panel can be accessed directly from the MASTER control panel's display. In order to do this, it is necessary to view any event of the SLAVE control panel of interest in the MASTER control panel's display and then press **OK**.

By pressing **OK** again when the log of the SLAVE panel is shown in the MASTER panel's screen, a menu (protected by level 2 password) is shown which allows the MASTER to send commands (e.g. GENERAL RESET, ACKNOWLEDGEMENT, SILENCE/REARM SIREN, etc.) to the SLAVE panel.

For further information on this topic, please refer to *paragraph 4.3 EVENT LOG* of this manual.

NOTE: consider the following condition:

- the panel is a MASTER and it is connected to one or more SLAVE panels.
- the MASTER contains local events ((there are folders other than SP which are not empty).
- the SP folder is not empty and the events are all generated by the same SLAVE panel.
- the MASTER is currently showing events from the SP folder.

Under the aforementioned conditions, if the SLAVE panel undergoes a GENERAL RESET the MASTER switches temporarily to the following screen:

EVENT NOT AVAILABLE	GD000
	GZ000
	MN000
	>SP000

After 20 seconds, the MASTER shows the events of the first not empty local folder.

2.1.7 Generic events display

The folder of generic events is suited for events which must be displayed but cannot be classified in any of the previous categories.

They are:

- Events of block/resume of actuations for output modules.
- Transmission of alarms and faults via E/J type communicator to a remote fire alarm receiving centre.

2.1.8 User's information display

In FAP544, FAP548 and FAP 5416, it is possible to display two user messages, each one spread over 4 lines rather than the ELKRON logo.

These messages must be programmed by the user via PC in order to be displayed (the ELKRON logo will be shown in the bottom part of the display until these user messages are programmed).

The user can program two messages: one to be displayed when the control panel is in monitoring phase with no event active, the other one to be displayed when at least one event is in progress.

2.1.9 Acquisition of Alarm, Fault or Maintenance event

When an alarm, fault or maintenance event takes place, the control panel carries out all the actions concerning the event (e.g. activation of actuators, relays, etc.), displays the event and activates the internal buzzer with a continuous sound to signal the alarm and with an intermittent sound to signal faults and maintenance events.

In these conditions, the user can press **ACK** in order to acknowledge the event and silence the buzzer.

However, the event is still present and the relevant outputs are still active.

2.1.10 General Reset

By pressing **RESET** (after inserting the password, if enabled) the control panel normal operating conditions will be restored: all the pending alarms and faults will be cancelled, while the controlled outputs and relays will be forced back to idle condition.

At the end of this procedure, the control panel will resume the monitoring of the field.

If the cause of an event detected before **RESET** is still present after **RESET** has been pressed, the event will be detected again.

When the control panel is in programming phase, the "General Reset" will reset only the faults and the field monitoring will not be resumed. Each time General reset is invoked, an event is stored in the event log.

2.2 PROGRAMMING PHASE

In this operating mode, the control panel can be programmed by a user/technician.

During the programming phase, the control panel does not perform the field monitoring and the detection lines are powered off (there are procedures though, run by the user in the programming phase, which can temporarily power on the detection lines).

The transition in programming phase involves the intermittent activation of the buzzer, the turn-on of the general fault indicator and the activation of the fault relay.

2.3 FAP54 - MODULAR STRUCTURE

FAP54 is a fire detection control panel with a completely modular structure which makes it possible to meet all field requirements also in the event of further system expansion.

To meet these needs, FAP54 consists of different internal modules which can be “added” or “removed”.

Below is reported a list of the modules making up FAP54 with a description of each single one:

- **CPU board**

A microcontroller based on ARM7 32-bit core managing all the control, programming and actuation functions. The CPU communicates with the control board and the circuit modules through an internal communication bus (RS485). This communication bus includes all the information coming from the detection fields and the controls transmitted from the CPU to the modules.

- **Control board**

This board, located on the control panel bottom part, is fitted with a microprocessor (8 bit) and carries out slave functions in relation to the CPU board, converting the serial commands received on the internal bus into electrical commands to the outputs.

In addition, it monitors the absorption and management of the overall current to field and siren outputs.

The Control board is fitted with the warning relays and the terminals for the connection of:

- detection lines
- LCD annunciators (enabled through an additional module)
- master slave (which can be enabled through an additional module)
- alarm outputs
- field output
- siren output

The Control Board is also fitted with 2 expansion slots, one used for the battery charger board and the other for further expansions.

- **Backplane board**

This board, located on the control panel bottom part, is electrically connected with the Control Board. The circuit modules shall be put on it.

- **Battery charger board**

This board, fitted on the Control Board, manages the battery charge in compliance with EN 54-04.

- **Circuit module board**

This module, inserted in a slot placed on the Backplane, is the interface between the detection line and the CPU. It is an independent module managed internally by an 8-bit microprocessor.

The purpose of this module is to monitor the devices connected to the detection line and notify the control panel about alarm or fault events.

- **AC power supply**

This function is carried out by an AC/DC converter which transforms V~ (from 98 to 264) input into 26V⁼⁼ output. The AC / DC converter is capable of supply 5.5A.

- **Display**

It shows all the information processed by the CPU board.

Considering the type of control panel, the displays provided are:

- 4x40 display for FAP541 control panel.
- 240x128 graphic display for with colour backlighting for FAP544, FAP548 and FAP5416 control panels.

- **ITS500 Printer module (optional)**

This module allows the connection of a parallel printer based on continuous module and ASCII standard of Centronics type.

This module is installed on the RS485 communication line used for the LCD annunciators and therefore requires the RS232/485 module (mentioned below) in order to enable the communication with the control panel.

- **RS232/485 module (optional)**

Module to be installed directly to the CPU board in order to enable the communication between:

- MASTER panel and SLAVE panels
- FAP panel and the LCD annunciators
- FAP panel and the printer module

- **LAN / TCP / IP500 module (optional)**

Module which makes it possible to connect the control panel to a LAN. It is installed directly on the CPU board. This module operates as an E/J type communicator for transmission of alarms and faults to a remote fire alarm receiving centre.

- **IT500F Interface (optional)**

Interface which makes it possible to connect the control panel to a LAN via Ethernet (wired) or WiFi (radio). This interface operates as an E/J type communicator for transmission of alarms and faults to the “My Elkron Family” APP installed on a Smartphone or Tablet.

2.4 EMERGENCY OPERATION

The modular structure of FAP54 allows the complete control of the detection field also if the CPU board is faulty. In this case, as a result of the smart circuit modules, both the monitoring of the field and the notification of alarms are ensured through the relays and alarm indicators.

However, it is important to bear in mind that this mode does not replace the normal control panel operation, but it is an emergency operation.

It is also necessary to specify that all the zone/group associations of the devices are no longer valid: each module signals the alarm condition when a detector on its line reveals an alarm condition and the same module activates all the type “C” actuators present on its lines of revelation.

2.5 INDICATORS, KEYS, RELAYS, JUMPERS

2.5.1 Front side indicators

	INDICATOR	COLOR	FUNCTION
ALARMS	FIRE ALARM	RED	Blinking: the control panel is in alarm condition and the siren output is not active. Fixed ON: the control panel is in alarm condition and the siren output is active.
	MASTER ALARM	RED	When turned ON, a general alarm condition has occurred.
COMMUNICATOR	COMMUNICATOR ACTIVE	RED	With communicator inserted: Blinking: ongoing alarm transmission from E type communicator towards the fire alarm receiving centre. Steady ON: ACK alarm received from the fire alarm receiving centre via E type communicator. Steady OFF: no alarm transmitted yet.
	COMMUNICATOR STATUS	YELLOW	With communicator inserted: Blinking: communicator fault. Steady ON: communicator excluded.
FAULTS	GENERAL	YELLOW	When turned ON, it indicates a fault condition. Further information on the type of fault is provided through the display and the dedicated LEDs. This LED provides a cumulative fault indication.
	SYSTEM	YELLOW	When turned ON, it indicates a system fault. Usually, when this LED is ON it indicates a fault affecting the functionality the CPU of the control panel.
	BATTERY	YELLOW	When ON, it indicates a control panel battery fault or malfunctioning.
	SIREN	YELLOW	When ON, it indicates a fault on the line controlling the siren or a fault on an actuator driving an alarm signalling device ("C" type).
	EARTH	YELLOW	When ON, it signals an earth dispersion.
MAINTENANCE	MAINTENANCE	YELLOW	When ON, it indicates that the "self-adjustment" procedure has found one or more optical smoke detectors which require maintenance.
	TEST SYSTEM	YELLOW	When ON, it indicates that a zone test is in progress or that the periodic maintenance is in progress.
	MAIN/BATTERY	GREEN	Steady ON: the control panel is powered on by the main AC. Blinking: the control panel is powered on by batteries.
EXCLUSIONS	LINE	YELLOW	When ON, it indicates that one or more circuits are excluded.
	ZONE	YELLOW	When ON, it indicates that one or more zones are excluded.
	GROUP	YELLOW	When ON, it indicates that one or more groups of devices or groups of zones are excluded.
	DEVICE	YELLOW	When ON, it indicates that one or more devices are excluded.
	SIREN	YELLOW	When ON, it indicates the exclusion of a siren or an actuator driving an alarm signaling device ("C" type).
	ACTUATORS	YELLOW	When ON, it indicates the exclusion of an actuator driving fire-extinction equipment ("G" type).
GENERAL	EXCLUSION	YELLOW	When ON, it indicates that something is excluded in the control panel. This is an exclusion cumulative indicator.
	REMOTE DEVICE	YELLOW	When ON, it indicates a communication error during communication with an LCD annunciator or a SLAVE control panel, or a communication problem during communication with a PC via LAN.
	SILENCE SIREN	YELLOW	When ON, it indicates that the siren output has been turned off by using the SILENCE SIREN key.
	ACTION DELAYED	YELLOW	When ON, it indicates that the timer of a zone or group in time mode is running or has expired and the zone or group has undergone an alarm condition.

In the FAP544, FAP548 and FAP5416 control panels that have a graphic display with colour backlighting, the status of the control panels is indicated both by a specific icon in the lower part of the display and by the colour of its background:

- Control panel in scanning phase and in normal operating condition: no icon, green background.
- Control panel in scanning phase and in fire alarm condition: flame icon, green background.
- Control panel in scanning phase and in fault condition: triangle icon, yellow background.
- Control panel in scanning phase and in active exclusion condition: "X" icon, yellow background.
- Control panel in scanning phase and in maintenance condition: fixed key icon, yellow background.
- Control panel in scanning phase and with active service menu: gear icon, light blue background.
- Control panel in programming phase: gear icon, light blue background.

2.5.2 Keys

KEY	FUNCTION
ACK (←)	This key must be pressed to acknowledge the events (alarms, faults, maintenance) detected by the control panel.
RESET	This key starts the "General Reset" procedure. Whenever the user presses this key, an event is stored in the event log and, if the passwords are enabled, the level 2 password is required.
SILENCE / REARM SIREN	This key stops and restarts the siren output and the alarm outputs of the actuators after the occurrence of an alarm. Whenever the user presses this key, an event is stored in the event log and, if the passwords are enabled, the level 2 password is required.
INCREASE DELAY	In order for this key to have an effect, the timer of a zone/group alarm in time mode must be running. In this situation, when this key is pressed the current value of the running timer is increased by 1 minute. The maximum overall time (initial delay + increments due to the key) is 10 minutes. Whenever the user presses this key, an event is stored in the event log and, if the passwords are enabled, the level 2 password is required.
SKIP DELAY	This key makes the siren output activation delay expire immediately when the control panel is in alarm condition of a zone/group alarm in timer mode and the timer is running. By pressing this key the control panel will ignore the delay and will activate the siren output immediately.
INCLUDE/EXCLUDE	When the control panel is in monitoring phase, this key allows the user to include/exclude circuits, zones, groups, devices or any other equipment connected to the control panel. When the user presses this key, the level 2 password is required (if passwords are enabled).
MASTER ALARM	When the control panel is in monitoring phase, this key triggers the general alarm condition. Whenever the user presses this key, an event is stored in the event log and, if the passwords are enabled, the level 2 password is required.
MENU	When the control panel is in the monitoring phase, it allows the user to access to the PROGRAMMING and SERVICE menus.
ESC	This key takes the system back to its previous condition (e.g., when in a menu, it goes back to the previous menu) and in some cases it makes it possible to interrupt some procedures.
OK	Key confirming the data entry.
Keypad	Alphanumeric keypad with 12 keys for input of digits/characters.
∨, ∧, <, >	Directional arrows.
*	Decrease sharpness (only working during monitoring mode).
0	Increase sharpness (only working during monitoring mode).

2.5.3 Outputs and relays

Siren output

The siren output controls two outputs used for the self-powered siren and siren/bell activation.

Alarm relay

This relay is activated when the control panel switches to an alarm condition, whether the siren output is activated or not. The relay is deactivated when a "General Reset" is carried out.

It is also activated when the CPU board is faulty and an alarm in the field is detected by a circuit module.

Siren relay

This relay is activated when the control panel switches to an alarm condition with siren output active.

The relay is deactivated when a "General Reset" is carried out.

The relay is also activated when the CPU board is faulty and an alarm in the field is detected.

Programmable relay

This relay can be programmed with either one of the following functions:

- **AC presence relay**

This relay is activated when the control panel detects absence of power supply.

The relay returns to idle condition when a "General Reset" is carried out.

It is possible to associate a delay to its activation.

- **Exclusion relay**

This relay is activated immediately when any exclusion is present on the control panel.

The relay is deactivated when no exclusion is present.

Fault relay

This relay is activated when the control panel detects either a field fault or a general fault.

The relay returns to idle condition when a "General Reset" is carried out.

It is possible to associate a delay time with its operation. This relay is activated also in case of faulty CPU board.

2.5.4 Jumpers

The FAP54 control panel is equipped with a few jumpers which enable functions such as the control panel programming via PC or backlight steady ON.

For detailed information, please refer to the installation manual.

Do not change the state of the jumpers not mentioned in the manuals.

2.6 MASTER AND SLAVE CONTROL PANELS (OPTIONAL)

With FAP54 control panel it is possible to connect up to 32 SLAVE control panels to a MASTER control panel.

The MASTER control panels will notify to the user any alarm/fault/maintenance events occurring in the SLAVE control panels connected with it.

The control panel connection is carried out through 2-wire RS485 at a speed of 57600 Bit/sec by using the optional RS232/485 module present in each control panel.

It is possible to perform specific actions on the SLAVE control panels directly from the MASTER control panel which the SLAVES are connected to. For further information, please refer to *paragraph 4.3 EVENT LOG* of this manual.

2.7 CONNECTION WITH PERSONAL COMPUTER

The FAP54 control panel can be completely programmed by the personal computer through the suitable application. By using this program, running in Windows® environment, the installer has the possibility to set, activate and program the control panel and all the elements connected with it without having it really connected with the PC.

Then, once programming is complete, the installer can connect the PC to the control panel and transmit the previously set configuration.

Moreover, the application can get the current configuration from the control panel and store it in the PC.

This configuration copy, saved on the PC, can be used by the installer as "backup" (e.g. in case it is necessary to reset the configuration as a result of wrong programming).

The PC, connected to the control panel via USB, must be powered on with a battery or must be insulated from earth. Otherwise, the control panel will notify an earth dispersion fault.

2.8 CONTROL PANEL PROGRAMMING

After installing the control panel, the lines and detectors, the installer can choose whether programming the control panel through the graphic user interface provided by the control panel or through PC.

2.8.1 Programming through control panel menu

After providing power supply to control panel and checking that no electrical faults are present, switch in programming mode and proceed according to the following points:

1. Start the auto-addressed circuit initialization or, if wishing to enter manually each single point, proceed with the manual mode initialization.
The **auto-addressed circuit initialization** is strongly recommended as the control panel, at the end of this operation, will show the real devices detected.
2. Program each single zone/group configuration (name, fire, single/multiple knock...) and device (detector, input module, manual call point, output module) connected with it according to the system characteristics.
3. Program each single device according to the system characteristics.
4. Enable the peripherals connected with the control panel (printer, LCD annunciators...).
5. Exit programming and start scanning.
6. Check the system functions: make sure there is a correct association between devices and actions in case of alarm.
7. Save configuration on the personal computer through the program.

2.8.2 Programming via PC

After editing the configuration on the personal computer, power on the control panel and activate the configuration download option from PC to control panel.

At the end of the transfer, the control panel will start the scanning phase: any discrepancies between the programmed configuration and the real field will be immediately highlighted through field faults or general faults or false alarm conditions.

In this case, enter the programming menu, then fix the panel configuration issues or operate directly on the field.

It is recommended to configure the control panel and install the devices in permanent mode, proceeding as follows:

1. Carry out point 1 of programming through control panel menu.
2. Exit programming and start field scanning: if everything is correct no field/general faults or alarms shall occur. If any malfunctioning occurs, remove the event that has caused the fault.
3. Download the configuration from the control panel to the PC by using the suited application.
4. Switch off the control panel.
5. Operate on the previously downloaded configuration by using the PC application and complete it by adding further information for each device, zone and group (eg. names, associations, etc.).
6. Power on the control panel, wait until it enters the scanning phase, then download the configuration from the personal computer to the control panel.
7. Check the system functions: make sure there is a correct association between devices and actions in case of alarm.
8. Save the final configuration, if changed, on the personal computer.

3 MENU PROG- CONTROL PANEL PROGRAMMING

To access the programming menu press the **MENU** key:

```
[1] PROGRAMMING
[2] SERVICE
```

By selecting "PROGRAMMING", the following message will be displayed:

```
WARNING  CIRCUITS WILL BE SWITCHED
          OFF AND MONITORING WILL BE STOPPED

[OK] CONTINUE                [ESC] BACK
```

By confirming with **OK**, the protection password will be requested (if enabled) and finally the main programming menu will be displayed.

Please note that when the control panel is being programmed, the lines and the devices ARE NOT CONTROLLED. Therefore, if during programming an alarm occurs on a detection line, it will be detected only when the scanning phase is restarted.

Conversely, a General fault can be detected also during the programming phase and it is possible to acknowledge it by using the **ACK** key.

The **main programming** menu is composed of two sections, reported below:

```
[1] CIRCUIT
[2] ZONE
[3] GROUP
[4] DEVICE          v
```

```
[5] PASSWORD          ^
[6] LANGUAGE
[7] CONFIGURE DEVICES
[8] MISCELLANEOUS
```

Through keys \wedge and \vee you can move from one section to the other.

Below is reported a very short description of each possible selection:

[1] CIRCUIT

Use this option to operate the detection line configuration.

[2] ZONE

Use this option to define the characteristics and associations of a zone.

[3] GROUP

Use this option to define the characteristics and association of the groups of devices and groups of zones.

[4] DEVICE

Use this option to define the characteristics (pertaining to the control panel only) of each single device.

[5] PASSWORD

Use this option to enable/disable or set the password.

[6] LANGUAGE

Use this option to select the language to be used.

[7] CONFIGURE DEVICES

Use this option to read or program the field device parameters inside the device.

[8] MISCELLANEOUS

Use this option to access other control panel programming options.

To return to the monitoring phase, press **ESC**, then select option [1] in the following menu and confirm with **OK**.

```
RESTART MONITORING

[1] # YES
[2]  NO
```

3.1 CIRCUIT

You can access this menu by pressing key 1 on the main programming menu:

[1] CONFIGURE ALL THE CIRCUITS	
[2] CONFIGURE SINGLE CIRCUIT	
[3] MANUAL CIRCUIT CONFIGURATION	
[4] INCLUDE/EXCLUDE	∨

[5] VERIFY	∧
[6] DELETE ALL THE ASSOCIATIONS	
[7] DELETE EXPIRED ASSOCIATIONS	
[8] EVENT LOG	

Through keys ∧ and ∨ you can move from one section to the other.

The line initialization menu includes the following options:

[1] CONFIGURE ALL THE CIRCUITS

Use this option to initialize all the circuits connected with the control panel at the same time.

[2] CONFIGURE SINGLE CIRCUIT

Use this option to initialize a single circuit in open or loop mode.

[3] MANUAL CIRCUIT CONFIGURATION

Use this option to enter the hardware configuration manually (open/loop) and all the devices on the detection line.

[4] INCLUDE/EXCLUDE

Use this option to include/exclude a circuit.

[5] VERIFY

Use this option to check the configuration and composition of each single circuit.

This option can also be used to check the operation of each single device on the selected circuit.

[6] DELETE ALL THE ASSOCIATIONS

Use this option to cancel all the tables of the existing associations in the system.

[7] DELETE EXPIRED ASSOCIATIONS

Use this option to cancel only the associations which are no longer valid.

[8] EVENT LOG

Use this option to read the log of the local events.

3.1.1 Configure all the circuits

The user can select the configuration of each circuit separately (loop or open).

Keys ∧ and ∨ are used to select the circuit, while keys < and > are used to select the initialization method.

The latter can be selected only for present and working modules (neither faulty nor excluded).

Possible modules not present will be indicated with dashes.

CIRCUIT 1:	OPEN	
CIRCUIT 2:	LOOP	
CIRCUIT 3:	-----	
CIRCUIT 4:	FAULTY	∨

CIRCUIT 5:	EXCLUDED	∧
CIRCUIT 6:	OPEN	
CIRCUIT 7:	-----	
CIRCUIT 8:	-----	∨

After selecting the configuration of each circuit, press **OK** to pass to the selection of the addressing mode:

[1] AUTO-ADDRESSED MODE
[2] PRE-CONFIGURED MODE
[3] UPDATE

The user can select separately:

Auto-addressed mode: the whole device field is re-addressed according to the physical position occupied by the single device. The previous addresses are replaced by new addresses assigned by the control panel.

Pre-configured mode: the devices in the field are acquired by the control panel without any modification of the field. However, the control panel accepts only the devices with valid addresses (1÷128). A new or non-configured device is not accepted by the control panel which will abort the procedure.

Update: This initialization is used in the event of system expansion. The previous devices already configured are not changed, while the new ones are automatically assigned a valid address, starting from the first one available. If any addresses of the previous configuration are removed, the control panel will automatically assign the address of the removed device to a new device.

If the auto-addressed mode is selected, a further confirmation is requested before proceeding:

```
WARNING! THIS PROCEDURE AFFECTS
THE ADDRESSES OF THE DEVICES

[OK] CONTINUE                [ESC] BACK
```

In fact, if this procedure is run accidentally on an already configured system, it will lead to the loss of the pre-existing configuration, as it implies the re-assignment of the addresses to all the devices in the field.

Regardless of the selected initialization mode, at the end of initialization the following information will be displayed:

```
|01 |02 o03 o04 |05 |06 o07 o08
010 000 011 MNP 000 ER2 005 000
|09 |10 |11 |12 |13 |14 |15 |16
MNP ER1 MNP 100 056 ESCL ESCL ER3
```

It summarizes the configuration data and the procedure outcome regarding each line (the example shown refers to a control panel with 16 lines) according to the following rules:

CXX
YYY

The configuration is represented by symbol C, which can be:

| = open mode circuit configuration

o = loop mode circuit configuration

XX is the circuit number

The procedure outcome is represented by string YYY, which can take on the following values:

a numerical value: the procedure for circuit XX has been successfully completed and YYY devices have been detected on the line.

ER1: a module error has occurred during the procedure execution.

ER2: a line error has occurred (field fault) during the procedure execution.

ER3: a procedure error has occurred during the procedure execution.

MNP: the module is not present.

ESCL: the module is excluded.

For example, with reference to what displayed in the screen above, at the end of the procedure:

- Circuit 1 has been initialized correctly in open mode and 10 devices have been detected on the line.
- Circuit 2 has been initialized correctly in open mode and there are no devices on the line.
- Circuit 3 has been initialized correctly in loop mode and 11 devices have been detected on the line.
- Module 4 is not present.
- Circuit 5: remarks similar to line 2.
- Circuit 6, in open mode, has not been initialized correctly because of a line error.
- ...
- Circuit 15 is excluded.
- Circuit 16, in open mode, has not been initialized correctly because of a procedure error.

Therefore, possible errors on one or more circuits do not compromise the procedure of the remaining circuits which will be completed successfully.

The circuits where the procedure has not been completed successfully shall be initialized individually to provide more accurate information on the failure reasons.

The initialization procedure consists of sub-procedures, some of which (usually the most time expensive) can be interrupted by the user.

The procedure phases which can be interrupted by the user usually display the following message:

```
PROCEDURE IN PROGRESS
PLEASE WAIT
[ESC] ABORT
```

In case of procedure interruption by the user, the control panel will carry out the following operations on each circuit module:

- restore of previous configuration, if the pre-configured or update initialization mode has been selected.
- **configuration cancellation, if the auto-addressed initialization mode has been selected. Therefore, if the auto-addressed initialization mode is started and then aborted, an empty configuration will be stored in the control panel.**

If the procedure is not interrupted by the user and is completed, by pressing **OK** in the summary screen the following menu will be displayed:

```
PROCEDURE COMPLETED
[1]  DELETE ALL THE ASSOCIATIONS
[2]  DELETE EXPIRED ASSOCIATIONS
[ESC] BACK
```

This menu is necessary because the initialization of an existing system may lead to a change of addresses and/or removal of devices or actuators previously associated with zones and/or groups.

Therefore, it might be necessary to cancel completely all the existing associations or simply cancel the ones no longer valid, i.e. the associations whose devices are no longer present or have acquired a type incompatible with the association itself (e.g. after auto-addressing a system already configured, an output module and a detector might exchange their addresses).

The menu above gives the user the possibility to choose whether to carry out these association cancellation/update operations.

Therefore, the circuit initialization on an existing configuration can change the type of the already acquired devices.

3.1.2 Configure single circuit

First, the user is asked to enter the number of the circuit to be initialized:

```
CIRCUIT: XX
```

After entering the circuit number and confirming it with **OK**, the user is asked for the type of configuration:

```
[1] SET SINGLE CIRCUIT IN LOOP MODE  
[2] SET SINGLE CIRCUIT IN OPEN MODE
```

After selecting the circuit configuration, the initialization mode is requested. The initialization modes depend on the circuit configuration.

If the loop mode configuration is selected, the circuit configuration menu is the following:

```
[1] AUTO-ADDRESSED MODE  
[2] PRE-CONFIGURED MODE  
[3] UPDATE
```

If the open mode configuration is selected, the circuit configuration menu is the following:

```
[1] AUTO -ADDRESSED MODE  
[2] PRE-CONFIGURED MODE  
[3] UPDATE  
[4] WALK ADDRESSING
```

Auto-addressed mode: the whole devices field is re-addressed according to the physical position occupied by the single device starting from the line terminals "A". The previous addresses of the devices are replaced by new addresses assigned by the control panel.

Pre-configured mode: the devices in the field are acquired by the control panel without any change. However, the control panel accepts only the devices with valid addresses (1÷128). A new or non-configured device is not accepted by the control panel which will abort the procedure.

Update: this type of initialization is used in case of system expansion. The previous devices already configured are not changed, while the new ones are automatically assigned a valid address, starting from the first one available. If any addresses of the previous configuration are removed, the control panel will automatically assign the address of the removed device to a new device.

Walk addressing: this type of initialization is carried out by removing and then reconnecting the devices, one at a time. The devices will be assigned the addresses in the order they have been removed.

The condition required to enable this type of initialization is that all the devices are already wired and connected in pure parallel (if modules or manual call points are used, insert the input/output short circuit jumper).

The operator shall remove one device at a time, keep it removed for at least 5 seconds and then put it back (for manual call points and modules, remove the related power supply jumper).

After the device has been reconnected, wait for the green LED blinking to confirm correct addressing.

For the auto-addressed mode the remarks are similar to those made for the configuration of all lines.

The user will be asked for a further confirmation before proceeding:

```
WARNING! THIS PROCEDURE AFFECTS  
THE ADDRESSES OF THE DEVICES  
  
[OK] CONTINUE [ESC] BACK
```

During the execution of the procedure, a message with the progress status represented by the number of devices recognized so far is shown:

```
PROCEDURE IN PROGRESS
PLEASE WAIT
N. DEVICES: XX [ESC] ABORT
```

At the end of the initialization in auto-addressed, pre-configured or update mode, the configuration of the circuit will be displayed along with all the devices detected on the selected line, subdivided per quantity and type.

Type “**ER**” refers to devices with problems of communication with the control panel or to devices with duplicated addresses.

Type “**??**” refers to a device whose address is recognized by the control panel, but whose type is not listed in the control panel configuration.

```
CONFIGURATION CIRCUIT: XX TYPE: XXXXX
TOT. DEVICES: XXX
XXX/SM XXX/HT XXX/OM XXX/CM
XXX/MN XXX/CI XXX/LN XXX/SH v
```

```
CONFIGURATION CIRCUIT: XX TYPE: XXXXX
TOT. DEVICES: XXX
XXX/LI XXX/PI XXX/XS XXX/TB ^
XXX/GS XXX/IS XXX/ER XXX/??
```

By pressing **OK**, the new configuration will be confirmed and stored.

At the end of storage, it is possible to carry out the total cancellation of the associations or only of those no longer valid (similar remarks to the ones made for the configuration of all the lines):

```
CONFIGURATION STORED
[1] DELELE ALL THE ASSOCIATIONS
[2] DELETE EXPIRED ASSOCIATIONS
[ESC] BACK
```

If the walk addressing mode is selected, a further confirmation will be asked to the user:

```
WARNING! THIS PROCEDURE IS VALID ONLY
FOR DEVICES CONNECTED IN PURE PARALLEL
[OK] CONTINUE [ESC] BACK
```

If the user confirms with **OK**, the procedure will be started and the following message displayed:

```
PROCEDURE IN PROGRESS
*****
[OK] FINISH [ESC] ABORT
```

By pressing **ESC**, the procedure is interrupted and **the control panel cancels the circuit configuration**.

Cancellation is due to the fact that the path addressing mode changes the addresses of the devices in the field which now are misaligned with a possible old configuration potentially restorable by the control panel.

By pressing **OK**, the control panel is informed that the procedure is finished (the operator has removed and then re-inserted the various devices in the order he wanted them to be addressed).

In this last case the screen will display the devices initialized up to that moment, subdivided per type and number.

```

CONFIGURATION CIRCUIT: XX   TYPE: XXXXX
TOT. DEVICES: XXX
  XXX/SM  XXX/HT  XXX/OM  XXX/CM
  XXX/MN  XXX/CI  XXX/LN  XXX/SH
  v
    
```

```

CONFIGURATION CIRCUIT: XX   TYPE: XXXXX
TOT. DEVICES: XXX
  XXX/LI  XXX/PI  XXX/XS  XXX/TB
  XXX/GS  XXX/IS  XXX/ER  XXX/??
  ^
    
```

By pressing **ESC** the configuration is cancelled (**in such a case, an empty configuration will be stored in the module**), while by pressing **OK** the new configuration is confirmed and stored.

At the end of storage, the control panel gives the possible to carry out the total cancellation of the associations or only of those no longer valid:

```

CONFIGURATION STORED
[1]  DELELE ALL THE ASSOCIATIONS
[2]  DELETE EXPIRED ASSOCIATIONS
[ESC] BACK
    
```

If, during the initialization procedure, regardless of the type of selected initialization, a module fault occurs, the procedure would be interrupted and the following screen view would be displayed with:

- the number of the circuit whose module is faulty.
- error code (reported in appendix 2).

```

FAULT ON CIRCUIT MODULE XX
ERROR CODE: YYY

[OK]
    
```

If a procedure error occurs, the procedure will be interrupted and the following screen view will be displayed with:

- the number of circuit whose module is faulty.
- error code (reported in appendix 8).
- address or physical position of the device which has generated the error.

```

ERROR ON CIRCUIT Nr: XX
ERROR CODE: YYY
ADDRESS/POSITION: ZZZ
[OK]
    
```

Finally, if a line error occurs (regarding specifically the field), the following screen view will be displayed.

Appendix 9 contains all the necessary information for interpreting the screen above.

```

FAULT ON CIRCUIT XX
BMP1: 01234567      BMP2: 01234567
  -----*-----      *-*-----
TYPE: XXXX          A = D---   B = D---
    
```

During the phases of the initialization procedure interruptible by the user, the following message is displayed:

```

          PROCEDURE IN PROGRESS
          PLEASE WAIT
N. DEVICES: XX          [ESC] ABORT
    
```

If the procedure is interrupted, the control panel will carry out the following operations on the involved line module:

- restore of previous configuration, if the pre-configured or update initialization mode has been selected.
- **cancellation of configuration if the auto-addressed or walk addressing initialization mode has been selected.**

3.1.3 Manual circuit configuration

Enter the circuit number and confirm with **OK**:

```
CIRCUIT: XX
```

Then select the circuit configuration:

```
[1] SET SINGLE CIRCUIT IN LOOP MODE  
[2] SET SINGLE CIRCUIT IN OPEN MODE
```

The following message will be displayed:

```
CIRCUIT: XX  
TYPE: XXXX  
DEVICE: YYY  
TYPE: SM
```

It shows:

- the circuit being initialized.
- the circuit configuration.
 - OPEN/LOOP if the user, in the previous step, did NOT change configuration.
 - OPEN => LOOP if the circuit was previously configured as OPEN and now the LOOP configuration has been selected.
 - LOOP => OPEN if the circuit was previously configured as LOOP and now the OPEN configuration has been selected.
- the generic device under configuration.
- the type of device.

Through this menu it is possible to assign a type to each device.

Through keys \wedge and \vee it is possible to select the device number, through keys $<$ and $>$ it is possible to select the type to be assigned to the device.

To remove an already existing device or to cancel a wrong selection, select “—”.

After setting all the required devices, press **OK** to store the new configuration.

At the end of storage, the user can cancel completely all the associations or only those no longer valid (consider the remarks made for the configuration of all lines):

```
CONFIGURATION STORED  
[1] DELELE ALL THE ASSOCIATIONS  
[2] DELETE EXPIRED ASSOCIATIONS  
[ESC] BACK
```

By pressing **ESC** at any time, you will stop the procedure and reset the original configuration.

It is possible to change the configuration of a line without initializing it.

To carry out this operation, select the line configuration (LOOP/OPEN) and then press **OK** in the device type setting menu without changing any existing device.

It is possible to change the type of device on the detection line, even if physically it is different from the programmed device.

It is not possible to change the type of device if it is **excluded**.

3.1.4 Include/Exclude

Enter the circuit number to be included or excluded and then confirm with **OK**:

```
CIRCUIT: XX
```

The following message will be displayed:

```
CIRCUIT: XX  
  
[1] # INCLUDED  
[2] EXCLUDED
```

where the user can choose whether including or excluding a circuit through keys 1 and 2.

By pressing **OK** the inclusion/exclusion is confirmed.

By pressing **ESC** you will go back to previous menu.

The circuit exclusion is not only signalled by the control panel front indicators, but also by the display and stored in the event log. The exclusion also implies the activation of the programmable relay, if it is programmed as exclusion relay.

3.1.5 Verify

When you access this menu, the following items are displayed:

```
[1] DEVICE VERIFICATION  
[2] DEVICE ADDRESSES (SINGLE LINE)  
[3] DEVICE ADDRESSES (ALL LINES)  
[4] CABLE LENGTH (LOOP MODE CIRCUITS)      v  
  
[5] SEARCH FOR MULTIPLE ADDRESSES          ^  
[6] SEARCH SHORT CIRCUIT  
[7] SEARCH OPEN LOOP
```

3.1.5.1 Device verification

The user shall specify and confirm with **OK** the circuit where the devices to be checked are located.

```
CIRCUIT:
```

The circuit type will be displayed (loop or open).

```
CIRCUIT: XX  
CONFIGURATION TYPE: XXXX
```

By pressing again **OK**, the number of devices per type available on the selected detection line will be displayed in two screen views where it is possible to move through keys \wedge and \vee (Type "ER" indicates the devices with duplicated addresses).

Next to the total number of devices on the circuit, the model of the circuit module is displayed which can assume the following values:

- **FA128** (module for FAP devices)
- **ML54** (ML54FAP module)

```

CONFIGURATION CIRCUIT: XX TYPE: XXXXX
TOT. DEVICES: XXX          FA128
  XXX/SM   XXX/HT   XXX/OM   XXX/CM
  XXX/MN   XXX/CI   XXX/LN   XXX/SH   v
    
```

```

CONFIGURATION CIRCUIT: XX TYPE: XXXXX
TOT. DEVICES: XXX          FA128
  XXX/LI   XXX/PI   XXX/XS   XXX/TB           ^
  XXX/GS   XXX/IS   XXX/ER   XXX/??
    
```

By pressing again **OK**, the line is powered on and controlled.

If during the power on of the circuit a module fault occurs, the user will be informed on the occurred fault through this screen view:

```

FAULT ON CIRCUIT MODULE XX
ERROR CODE: YYY
    
```

Appendix 2 contains a list of the possible error codes and the relevant explanation.

If a line error occurs (specifically regarding the field), the following message will be displayed:

```

FAULT OF CIRCUIT No.: XX
BMP1: 01234567 BMP2: 01234567
  ----**--          *-*-----
TYPE: XXXX  A = D---  B = D---
    
```

Appendix 9 contains all the necessary information for interpreting the screen above.

If the line is powered on and works correctly, all the existing devices are displayed.

```

  ADDR PR TYPE  INFO1  INFO2  TST   FA128
> 001 A  XX   XXXX   XXXX  ---
  002 A  XX   XXXX   XXXX  ---
  003 B  XX   XXXX   XXXX  ---
    
```

ADDR refers to the device address.

PR indicates the device presence and can have the following values:

- **LP**: the device is on a loop configured circuit.
- **A**: the device is on branch A of an open configured circuit.
- **B**: the device is on branch B of an open configured circuit.
- **--**: the device is not present.

TYPE indicates the type of device.

INFO1, **INFO2** are data depending on the type of test carried out.

TST is the number of to the test currently in progress.

FA128 indicates the type of circuit module.

These are the types of modules that can be viewed:

- **FA128** (module for FAP devices), as in the example.
- **ML54** (ML54FAP module)

To carry out tests on a device, select it through arrows **^** and **v** and then press key **>**.

On the display, TST section, the string **>00** will be viewed, meaning that test 0 for the selected device has started.

To change the type of test press one of the keys shown in the table, while to exit press **<**.

The following tables show the tests which can be carried out on the devices and the meaning of each test according to the type of device:

SMOKE DETECTOR (SM)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement (smoke level)	Tertiary measurement (temperature)	>0<
1	Calculation of device dirt percentage and sensitivity index of the device	Dirt percentage	Sensitivity index	>1<
2	Sample of alarm threshold (smoke threshold)	Display of alarm threshold (smoke threshold)		>2<
3	Red LED switching on	"OK" displayed		>3<
4	Green LED switching on	"OK" displayed		>4<
5	Activation of outputs and relays	"OK" displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	Detector adaptation (to be carried out when test 1 is in progress)	The dirt percentage is still displayed	The sensitivity index keeps being displayed	>7<
8	Check Smoke Alarm	"OK" or "FAIL" displayed	Primary measurement (smoke level)	>8<
9	----			>9<

HEAT DETECTOR (HT)

Test	Type of test	INFO1	INFO2	TST
0	Primary measurement	Primary measurement (temperature)		>0<
1	----			>1<
2	Sample of alarm threshold (temperature threshold)	Display of alarm threshold (temperature threshold)		>2<
3	Red LED switching on	"OK" displayed		>3<
4	Green LED switching on	"OK" displayed		>4<
5	Activation of outputs and relays	"OK" displayed		>5<
6	Check type of device and sub-type	Display of device type	Display of sub-type (A1R or A1S)	>6<
7	----			>7<
8	----			>8<
9	Check Thermal Alarm	"OK" or "FAIL" displayed		>9<

OUTPUT MODULE (OM)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement (to check line end presence)	Tertiary measurement (temperature)	>0<
1	Secondary measurement	Secondary measurement (input 2)		>1<
2	----			>2<
3	Red LED switching on	"OK" displayed		>3<
4	Green LED switching on	"OK" displayed		>4<
5	Activation of outputs and relays	"OK" displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

CONCENTRATOR MODULE (CM)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement	Tertiary measurement (temperature)	>0<
1	Secondary measurement	Secondary measurement (siren line output)		>1<
2	Send reset cmd to the device	"OK" displayed		>2<
3	Red LED switching on	"OK" displayed		>3<
4	Green LED switching on	"OK" displayed		>4<
5	Activation of outputs and relays	"OK" displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

LATCHED INPUT MODULE WITH SIREN OUTPUT (IS)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement	Tertiary measurement (temperature)	>0<
1	Secondary measurement	Secondary measurement (siren line output)		>1<
2	----			>2<
3	Red LED switching on	"OK" displayed		>3<
4	Green LED switching on	"OK" displayed		>4<
5	Activation of outputs and relays	"OK" displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

BATHROOM CALL CORD MODULE (TB)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement	Tertiary measurement (temperature)	>0<
1	----			>1<
2	----			>2<
3	Red LED switching on	"OK" displayed		>3<
4	Green LED switching on	"OK" displayed		>4<
5	--			>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

GAS DETECTOR (GS)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement (current, expressed in mA)	Tertiary measurement (temperature)	>0<
1	Reset device	"OK" displayed		>1<
2	Reading of alarm thresholds currently used by the device	Alarm threshold 1 (current, expressed in mA)	Alarm threshold 2 (current, expressed in mA)	>2<
3	Red LED switching on	"OK" displayed		>3<
4	Green LED switching on	"OK" displayed		>4<
5	Activation of outputs and relays	"OK" displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

4-20mA INPUT MODULE (CI)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement (current, expressed in mA)	Tertiary measurement (temperature)	>0<
1	----			>1<
2	Reading of alarm thresholds currently used by the device	Alarm threshold 1 (current, expressed in mA)	Alarm threshold 2 (current, expressed in mA)	>2<
3	Red LED switching on	“OK” displayed		>3<
4	Green LED switching on	“OK” displayed		>4<
5	Activation of outputs and relays	“OK” displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

BEAM DETECTOR (BD)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement (tersity level)	Tertiary measurement (temperature)	>0<
1	Calculation of device dirt percentage and sensitivity index of the device	Dirt percentage	Sensitivity index	>1<
2	Reading of alarm thresholds currently used by the device	Alarm threshold 1 (obscurement percentage)	Alarm threshold 2 (obscurement percentage)	>2<
3	Red LED switching on	“OK” displayed		>3<
4	Green LED switching on	“OK” displayed		>4<
5	Activation of alarm repetition output	“OK” displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	Effective signal received	IR signal received value		>7<
8	Reserved			>8<
9	----			>9<

SMOKE-HEAT DETECTOR (SH)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement (smoke level)	Tertiary measurement (temperature)	>0<
1	Calculation of device dirt percentage and sensitivity index of the device	Dirt percentage	Sensitivity index	>1<
2	Sample of alarm threshold (smoke threshold and temperature threshold)	Display of alarm threshold (smoke threshold)	Display of alarm threshold (temperature threshold)	>2<
3	Red LED switching on	“OK” displayed		>3<
4	Green LED switching on	“OK” displayed		>4<
5	Activation of outputs and relays	“OK” displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	Detector adaptation (to be carried out when test 1 is in progress)	The dirt percentage is still displayed	The sensitivity index keeps being displayed	>7<
8	Check smoke alarm	“OK” or “FAIL” displayed	Primary measurement (smoke level)	>8<
9	Check heat alarm	“OK” or “FAIL” displayed		>9<

PULSED INPUT MODULE (PI)

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement	Tertiary measurement (temperature)	>0<
1	Secondary measurement	Secondary measurement (input 2)		>1<
2	----			>2<
3	Red LED switching on	“OK” displayed		>3<
4	Green LED switching on	“OK” displayed		>4<
5	Activation of outputs and relays	“OK” displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

OTHERS DEVICES

Test	Type of test	INFO1	INFO2	TST
0	Primary and tertiary measurement	Primary measurement	Tertiary measurement (temperature)	>0<
1	----			>1<
2	----			>2<
3	Red LED switching on	“OK” displayed		>3<
4	Green LED switching on	“OK” displayed		>4<
5	Activation of outputs and relays	“OK” displayed		>5<
6	Check type of device	Display of device type	Firmware revision	>6<
7	----			>7<
8	----			>8<
9	----			>9<

Smoke level: this value increases when some smoke is present in the detection chamber. Normally, in clean air conditions and with a new detector or the adaptation function recently performed, the value is close to 60; in alarm conditions the value is above 100. This values are dependent to the type of the detector.

Tersity level: in the beam detector this value indicates the tersity of the air crossed by the infrared light in the optical path. Typical value 200; the value 10 indicates the failed calibration of the detector; the value 20 indicates the self-calibration phase.

If, during a test execution, the device is removed or the control panel does not communicate with the device, field INFO1 will display the string “ERR”. In this case, any possible information displayed in field INFO2 is not significant.

NOTES:

- The dirt index of a smoke detector is defined as the ratio between the following entities:
 $numerator = (current\ smoke\ level - reference\ smoke\ level\ with\ the\ detector\ in\ idle) * 100.$
 $denominator = (maximum\ smoke\ level\ reference - reference\ smoke\ level\ with\ the\ detector\ in\ idle).$
- The sensitivity index of the device is defined as follows:
 $(average\ of\ the\ read\ smoke\ level - current\ reference\ smoke\ level) * 100 / \Delta\ of\ alarm\ threshold.$

3.1.5.2 Device addresses (single circuit)

This procedure makes sure that each device cyclically signals its address through a LED blinking sequence.

More specifically, every 20 seconds each device connected with the line will make a red blinking for each ten and a green blinking for each remaining unit.

For example, a device with address 47 will make 4 red flashes (4 tens) and 7 green flashes (7 units).

To start the procedure, type in the circuit number and confirm with **OK**:

CIRCUIT :

After some seconds, the procedure starts and the following message is displayed:

```
ADDRESS SIGNALLING IN PROGRESS  
[ESC] BACK
```

Then, the devices connected to the selected line will start signalling their addresses at the same time, as described above.

By pressing **ESC**, the procedure ends.

3.1.5.3 Device addresses (all circuits)

This procedure is the same address signalling procedure described in the previous paragraph applied to all lines.

Therefore the user does not longer have to enter the circuit number and the procedure will be started in parallel on all lines.

3.1.5.4 Cable length for loop mode circuits

This procedure allows the user to know the loop length in percentage compared to the max admitted length.

Type in the circuit number and then confirm with **OK**:

```
CIRCUIT:
```

If the circuit is present and has a loop configuration, the required result will be displayed:

```
CIRCUIT: XX  
LOOP LENGTH: XXX%
```

If the circuit is not present or has an open configuration, the user will be notified with the following messages:

```
CIRCUIT: XX  
CONFIGURATION TYPE: OPEN
```

or:

```
CIRCUIT NOT PRESENT
```

3.1.5.5 Search for multiple addresses

This procedure makes it possible to identify possible duplicated addresses on a detection circuit.

After entering the circuit number to be searched and confirming with **OK**, the procedure will start.

```
CIRCUIT:
```

During its execution the procedure can be interrupted by the user by pressing **ESC** key. If the procedure is completed, its outcome will be displayed.

If each address on the line is univocal, the following message will be displayed:

```
NO DUPLICATED ADDRESSES
```

Instead if duplicated addresses are identified, they will be indicated in a list, as shown below:

```
LIST OF MULTIPLE ADDRESSES  
003  
018  
022
```

3.1.5.6 Search short circuit

The purpose of this procedure is to find out a short circuit in the detection circuit.

The user is required to insert the number of the circuit over which the procedure will be run:

```
CIRCUIT: XX
```

Then, the procedure starts and the following message is displayed:

```
PROCEDURE IN PROGRESS  
PLEASE WAIT  
[ESC] ABORT
```

If the procedure ends and no short circuit is found, the following message is displayed:

```
PROCEDURE COMPLETED
```

If a short circuit is found or an error occurs while the procedure is in progress, the following message is displayed:

```
ERROR ON CIRCUIT Nr: XX  
ERROR CODE: YYY  
ADDRESS/POSITION: ZZZ  
[OK]
```

Please, look at Appendix 8 for an explanation of the error code.

If the error code indicates a short circuit, the address/position allows the user to locate the device in the line where the short circuit took place.

3.1.5.7 Search open loop

The user runs this procedure in order to find out the open device in a circuit configured in loop mode.

You insert the line number (which must be configured in a loop) on which to perform the procedure:

```
CIRCUIT: XX
```

If the circuit is configured in open mode, the following message is displayed:

```
CONFIGURATION TYPE: OPEN
```

If the circuit is configured in loop mode, the procedure starts and the following message is displayed:

```
PROCEDURE IN PROGRESS  
PLEASE WAIT  
[ESC] ABORT
```

If the procedure ends without finding any open section, the following message is displayed:

```
PROCEDURE COMPLETED
```

If the open section is found out or an error is detected during the procedure execution, the following message is displayed:

```
ERROR ON CIRCUIT Nr: XX  
ERROR CODE: YYY  
ADDRESS/POSITION: ZZZ  
[OK]
```

Please, look at Appendix 8 for an explanation of the error code.

If the error code indicates a short circuit, the address/position allows the user to locate the line where the short circuit took place.

3.1.6 Delete all the associations

Through this procedure all the associations in the system will be cancelled.

In particular, the following will be cancelled:

- associations between devices and groups of devices.
- associations between output modules and zones.
- associations between output modules and groups of devices.
- associations between output modules and groups of zones.
- associations between zones and groups of zones.

Even though this procedure affects data structures dealt with in other chapters of this manual, it has been decided to put it in the "circuit" menu.

In fact, this procedure is typically used after circuit initialization which may have changed the addresses of some devices and/or caused device removal.

3.1.7 Delete expired associations

Through this procedure only the associations which are no longer valid will be cancelled.

In particular, an association is no longer valid when it makes reference to a device which is not present anymore or whose type has been changed (maybe as a result of an address mixing up) and the new type is incompatible with the association (e.g. removed device, output module becoming a detector or vice versa, etc.).

The associations are controlled and removed where necessary:

- associations between devices and groups of devices.
- associations between output modules and zones.
- associations between output modules and groups of devices.
- associations between output modules and groups of zones.

Even though this procedure affects data structures dealt with in other paragraphs of this manual, even in this case it has been decided to put this procedure in the "circuit" menu.

In fact, this procedure is typically used after circuit initialization which may have changed the addresses of some devices and/or caused device removal.

3.1.8 Event log

This menu item lets the user access to the local event log of the control panel.

The local event log is the log of the events occurred on the control panel and the parts of system it is connected to.

For further information on this menu, look at *paragraph 4.3 EVENT LOG* but apply the following limitation:

if the control panel is configured as MASTER and it is connected to one or more SLAVES, it is not possible to gain access to the event log of SLAVE panels from the event log of the MASTER by pressing **OK**.

In fact, when the MASTER control panel is in the programming menus, the communication with SLAVE panels is not available and then the master cannot retrieve the strings of the events from any SLAVE.

3.2 ZONES - ZONES PROGRAMMING

Through this menu it is possible to configure the zones and program all the associations with the devices and the output modules.

[1] NAME	
[2] ASSOCIATE DEVICE TO ZONE	
[3] ASSOCIATE OUTPUT MODULE TO ZONE	
[4] DELAYED OUTPUT MODULES	▼

[5] MODE	▼
[6] INCLUDE/EXCLUDE	
[7] VERIFY	

The zones programming menu consists of the following options:

[1] NAME

It makes it possible to assign a name of max 32 alphanumeric characters to a zone.

[2] ASSOCIATE DEVICE TO ZONE

It makes it possible to associate the devices (excluding output modules) with a selected zone.

[3] ASSOCIATE OUTPUT MODULE TO ZONE

It makes it possible to associate the output modules with a selected zone.

[4] DELAYED OUTPUT MODULES

It makes it possible to enable and define some timed activations and deactivations on the output modules associated to the zone.

[5] MODE

It makes it possible to set the zone operating mode.

[6] INCLUDE/EXCLUDE

It makes it possible to include/exclude a zone.

[7] VERIFY

It makes it possible to verify the programming of a zone.

3.2.1 Name

Type in the number of the zone which must be named and confirm with **OK**.

ZONE:

The following screen will be displayed. Here it is possible to insert the name.

ZONE: XXX
NAME: XXXXX

While editing, press < key to delete the characters already typed in and press > key to enter spaces.

After entering the name, confirm by pressing **OK**.

Then the user is given the possibility to assign the zone name to all the devices belonging to that zone:

ZONE: XXX
NAME: XXXXX
[OK] ASSOCIATE ZONE NAME TO ALL DEVICES
[ESC] EXIT WITHOUT ASSOCIATING

3.2.2 Associate device to zone

Type in the number of the zone to be associated with the devices and then confirm with **OK**.

```
ZONE: XXX
```

Now enter the coordinated (circuit number and device address) of the first device to be associated and confirm with **OK**:

```
ZONE: XXX  
NAME: XXXXX  
CIRCUIT: XX
```

```
ZONE: XXX  
NAME: XXXXX  
CIRCUIT: XX    DEVICE:XX
```

The selected device will be displayed along with type and name.

```
ZONE: XXX  
NAME: Name of the zone  
CIRCUIT: XX  DEVICE: XX TP.: YY      ^  
NAME: XXXXXXXXXXXX                   v
```

Keys v ^ are used to scroll the valid devices on the selected circuit.

To confirm a device selection press **OK** Key.
The confirmation message will be displayed:

```
ZONE: XXX  
NAME: XXXXX  
CIRCUIT: XX    DEVICE: XX    TP.: YY  
CONFIRMED
```

By keeping **OK** pressed, the successive devices will be inserted in sequentially.

In theory, all the devices (not output modules) of the system can be associated simultaneously to the same zone. Nevertheless, **it is good practice to associate no more than 32 devices per zone** (in order to verify the number of devices currently associated to the zone, use the verification menu, *paragraph 3.2.7 Verify*), **otherwise the system would not be compliant with the standard EN 54-2.**

To delete the association between a device and a zone, it is necessary to associate the device with a different zone. In fact, a device always belongs to a zone (default zone = 480).

The zone 480, in theory fully usable as the other zones, in practice covers the role of temporary storage area for the devices just acquired by the panel at the end of an initialization procedure.

Therefore, it is advisable to move the devices just acquired by the panel from the zone 480 to other zones which the user intends to use. For each of these zones the limit of 32 devices must not be violated.

If one or more devices are left into the zone 480, when returning in the scanning phase the control panel will signal a field fault.

3.2.3 Associate output module to zone

Type in the number of the zone to be associated with the output modules and then confirm with **OK**.

```
ZONE: XXX
```

Now enter the circuit number where the output module to be associated is located and press **OK**.

```
ZONE: XXX  
NAME: XXXXX  
CIRCUIT: XX
```

If the circuit does not have any output module, the following message will be displayed:

```
ZONE: XXX  
NAME: XXXXX  
CIRCUIT: XX  
OUTPUT MODULES NOT PRESENT
```

Instead, if the circuit has at least one output module, the address of the first output module located on the circuit will be displayed.

If the module already belongs to the zone, the identifier ID takes on a meaningful value (1-50), otherwise the field remains empty.

In the following example, the output module on circuit 5 with address 12 is associated to the zone 113 and it is in the first position of the list of the max 50 output modules that can be associated to the zone:

```
ZONE: 113  
NAME: XXXXX  
CIRCUIT: 05 ADDR: 012 ID: 01 ^  
NAME: XXXXXXXXXXXX v
```

In this case, conversely, the output module on circuit 5 with address 15 is not associated to the zone 113:

```
ZONE: 113  
NAME: XXXXX  
CIRCUIT: 05 ADDR: 015 ID: -- ^  
NAME: XXXXXXXXXXXX v
```

If an output module is not associated to the zone, press **OK** to proceed with the association.

In this case, if the list of max 50 modules that can be associated to the zone is not full, the coordinates of the module are stored in first free position of the list and the index to this position is displayed in the ID field.

Press **<** to delete an already present association. In this case, the ID field for the currently displayed output module will be empty again.

NOTE: when the output modules are shared among several zones programmed with different modes, the module operation, as far as the general alarm function is concerned, will be controlled by the last association performed.

3.2.4 Delayed output modules

This function, which can be selectively enabled and configured on one or more zones chosen by the user, makes it possible to manage the output modules associated with the single zone according to two timed programming tables valid respectively for alarm 1 condition (alarm with siren output not active) and for alarm 2 condition (alarm with siren output active) of the zone. An example is given below:

Position in the list of modules associated with the zone	Coordinates of the module		PROGRAMMING TABLE IN ALARM 1			PROGRAMMING TABLE IN ALARM 2		
			T0(A1)	T1(A1)	T2(A1)	T0(A2)	T1(A2)	T2(A2)
ID	Circuit	Address	T0(A1)	T1(A1)	T2(A1)	T0(A2)	T1(A2)	T2(A2)
1	1	12	---	---	ON	OFF	---	---
2	1	15	ON	---	OFF	---	ON	---
3	5	1	---	ON	---	ON	---	---
4	5	20	ON	---	OFF	---	ON	OFF
5	5	32	---	---	---	---	---	ON
...								
...								
50	---	---						

Each triple (T0, T1, T2) of times must also satisfy the following constraints:

- $T0 < T1 < T2$
- T0 programmable range 0 ÷ 8 minutes
- T1 programmable range 1 ÷ 9 minutes
- T2 programmable range 2 ÷ 10 minutes

The generic output module associated to the zone will be activated (ON) or deactivated (OFF) by the control panel according to the times programmed in the reference table related to the alarm level reached by the zone of interest. When the zone moves directly from idle to alarm 2 condition, the activations and deactivations listed in the programming table for alarm 1 are not executed.

For example, consider the output module on circuit 5 with address 1, stored in position 3 of the list of the output modules associated to the zone. This module will be activated after T1 minutes (2 min) from the time in which the zone has moved from idle to alarm 1 condition.

Similarly, in the case of transition of the zone from idle to alarm 2 condition, the same module will be activated after T0 minutes (0 min, immediately - instant T0[A2]).

In a similar way, for the module stored in position 4 of the zone output modules list (circuit 5 with address 20) the following applies:

- when the zone moves from idle to alarm 1 condition, the module is activated after 1 minute (time T0(A1) = 1 min) and deactivated after 3 minutes (time T2(A1) = 3 min);
- when the zone moves from idle to alarm 2 condition, the module is activated after 2 minutes (instant T1(A2) = 2 min) and deactivated after 5 minutes (time T2(A2) = 5 min).

The programming tables in alarm 1 and alarm 2 are independent from each other, and the control panel will handle the output modules using one table or the other according to the transition of the zone from idle to alarm 1 or alarm 2 condition.

Particular attention is required when the zone moves from idle to alarm 1 first and alarm 2 afterwards.

In such a case, the table of the output modules for alarm 1 is used when moving from idle to alarm 1 condition.

Then, the table of the output modules for alarm 2 will be used when the zone moves from alarm 1 to alarm 2, **considering however the time already elapsed starting from the transition of the control panel from idle to alarm 1 condition and also considering the activations and deactivations of the modules (according to the programming table in alarm 2) in the interval already elapsed.**

Thus, when the zone moves from the alarm 1 to the alarm 2 condition, the control panel will activate/deactivate the output modules according to the table of alarm 2 of the zone and considering the values of the times T0(A2), T1(A2), T2(A2) and the time already elapsed from the transition of the zone in alarm 1: remember that the timers for both alarm 1 and alarm 2 condition start when the zone leaves the idle condition.

To better understand this last point, an example can help.
Consider the following table:

Position in the list of modules associated with the zone	Coordinates of the module		PROGRAMMING TABLE IN ALARM 1			PROGRAMMING TABLE IN ALARM 2			
			T0(A1)	T1(A1)	T2 (A1)	T0(A2)	T1(A2)	T2(A2)	
ID	Circuit	Address	T0(A1)	T1(A1)	T2 (A1)	T0(A2)	T1(A2)	T2(A2)	
1	1	12	---	---	ON	OFF	---	---	
2	1	15	---	---	ON	---	ON	---	
3	5	1	---	ON	OFF	OFF	ON	OFF	
4	5	20	ON	---	OFF	OFF	ON	OFF	
5	5	32	---	---	---	ON	---	---	
...									
...									
50	---	---							

When the zone goes to alarm 1:

- no output module is activated because T0(A1) = 1 minute.
- after 1 minute (T0(A1) expired), the output module with ID = 4 (circuit = 5, address = 20) is activated.
- after 2 minutes (T1(A1) expired), the output module with ID = 3 (circuit = 5, address = 1) is activated.
- after 3 minutes (T2(A1) expired), the output modules with ID = 1 and ID = 2 are activated and the modules with ID = 3 and ID = 4 are deactivated.

Now suppose that after 3.5 minutes from the transition of the zone in alarm 1, the zone goes to alarm 2. In these conditions, the programming table in alarm 2 is used, considering however the already elapsed time (3.5 mins) which is between T1(A2) and T2(A2).

The output modules will be driven by taking into account the most recent action provided in the table, so:

- the output module with ID = 1 will be deactivated according to the programming in T0(A2).
- the modules with ID = 2, ID = 3 and ID = 4 will be activated according to the programming in T1(A2).
- the module with ID = 5 will be activated according to the programming in T0(A2).

Referring once again to the same table, suppose now that the zone moves from idle to alarm 1 condition; when the first minute elapses (T0(A1) expires) the output module with ID = 4 will be activated.

Now, suppose that after few seconds the zone goes to alarm 2; in this condition, by taking into account that the time already elapsed (1 min and a few seconds) falls between T0(A2) and T1(A2), the modules with ID = 1, 3 and 4 will be deactivated and the module with ID = 5 will be activated.

NOTE: the output modules for which delayed programming can be applied are the ones configured for alarm 1 or alarm 2 activation.

The modules configured for fault or maintenance will be activated immediately when the relevant condition occurs.

The programming of the activation condition of a generic output module will be described in the paragraph "DEVICE".

Insert and confirm with **OK** the number of the zone involved in the configuration of the delayed output modules management:

ZONE :

The following menu is the displayed:

```

DELAYED OUTPUT MODULES
[1] PROGRAMMING
[2] VERIFY
                                     [ESC] BACK
    
```

3.2.4.1 Programming of delayed output modules

By selecting [1] PROGRAMMING, the following menu is displayed:

```
DELAYED OUTPUT MODULES

[1] ENABLE
[2] DISABLE
```

By selecting [1] ENABLE, the delayed output modules management functionality is enabled for the selected zone and the following screen is displayed:

```
#T0 (A1) : 1 m   T1 (A1) : 3 m   T2 (A1) : 4 m
  T0 (A2) : 1 m   T1 (A2) : 2 m   T2 (A2) : 3 m
```

This menu makes the user configure T0, T1 and T2 timers both in alarm 1 and alarm 2 condition. By using the arrow keys **LF/RG**, move the selector on the previous or next timer; with the **UP/DOWN** keys, the current value of the timer can be set.

Please note that when a specific value of a timer is set, the control panel will automatically change the value of the remaining timers in order to satisfy the constraints described before and reported below for convenience:

- T0 < T1 < T2.
- T0 programming range 0, 8 minutes – boundaries included.
- T1 programming range 1, 9 minutes – boundaries included.
- T2 programming range 2, 10 minutes – boundaries included.

By pressing **OK**, the following screen with the configuration of the programming tables in alarm 1 and alarm 2 of the output modules associated to the zone is shown:

```
Z002 ID01 L04 D012 OM(C)
NAME:XXXXXXX
# PROG (A1) : T0:---   T1:---   T2:---
  PROG (A2) : T0:---   T1:---   T2:---
```

where:

- Z002** = number of the zone involved in the programming.
 - ID01** = identification of the current position of the list of output modules associated to the zone (when this screen is shown for the first time, the information of the first element of the list is displayed).
 - L04, D012** = circuit and address of the output module under programming.
 - OM(C)** = device type (output module) and its specialization (C/G/J/T) – for further information on module specialization, please refer to the section “DEVICE” below in the document.
 - NAME: XXXXX** = name of the output module.
 - PROG(A1), PROG(A2)** = programming of alarm 1 and alarm 2 timings for the selected output module.
- The selector “#” indicates the programming (in alarm 1 or alarm 2) which can be currently modified.

Using the **LF/RG** keys, the selected programming can take on one sequence, according to the following table which shows the valid programming sequences for the generic output module, in the three instants T0, T1, T2 (regardless of the alarm condition 1 or 2):

Programming allowed	T0 (x min)	T1 (y min)	T2 (z min)	String displayed in the control panel		
EMPTY	-	-	-	T0:---	T1:---	T2:---
T0 ON	ON	-	-	T0:ON	T1:---	T2:---
T1 ON	-	ON	-	T0:---	T1:ON	T2:---
T2 ON	-	-	ON	T0:---	T1:---	T2:ON
T0 ON T1 OFF	ON	OFF	-	T0:ON	T1:OFF	T2:---
T0 ON T2 OFF	ON	-	OFF	T0:ON	T1:---	T2:OFF
T1 ON T2 OFF	-	ON	OFF	T0:---	T1:ON	T2:OFF
T0 OFF	OFF	-	-	T0:OFF	T1:---	T2:---
T0 OFF T1 ON	OFF	ON	-	T0:OFF	T1:ON	T2:---
T0 OFF T2 ON	OFF	-	ON	T0:OFF	T1:---	T2:ON
T0 OFF T1 ON T2 OFF	OFF	ON	OFF	T0:OFF	T1:ON	T2:OFF

The **UP/DOWN** keys make the selector move between alarm 1 and alarm 2 programming of the output module displayed and move to the next or previous output module.

As a matter of fact, it is possible to program alarm 1 and alarm 2 timings only for the output modules associated to the zone and programmed for alarm 1 or alarm 2 activation condition.

If an output module is currently programmed for fault or maintenance activation condition, it cannot be programmed with delayed activation and the following screen is displayed:

```

Z002 ID01 L04 D012 OM(J)
NAME:XXXXXXXX
> PROG (A1) : -----
   PROG (A2) : -----

```

Finally, if the coordinates of any module are not present in the currently selected position of the list of output modules associated to the zone, the following screen is displayed:

```

Z002 ID05 L--- D---

```

In the example shown above, position 5 of the list of output modules associated to the zone is empty (therefore, it does not contain any pair of valid coordinates of any output module).

Once the delayed programming in alarm 1 and alarm 2 of the output modules has been configured, it is necessary to press **OK** in order to confirm the entered data.

The following confirmation screen will be displayed for a couple of seconds:

```

          DELAYED OUTPUT MODULES: ON
          PROCEDURE COMPLETED

```

By pressing **ESC**, instead, the configuration entered up to that time will be discarded.

3.2.4.2 Verifying the programming of the delayed output modules

By selecting [2] VERIFY, if the functionality is disabled the following menu will be shown:

```
DELAIED OUTPUT MODULES: OFF
[ESC] BACK
```

Conversely, if the functionality is enabled, the screen with T0, T1 and T2 timers for alarm1 and alarm 2 will be shown:

```
T0 (A1) : 1 m   T1 (A1) : 2 m   T2 (A1) : 3 m
T0 (A2) : 2 m   T1 (A2) : 4 m   T2 (A2) : 5 m
```

By pressing **OK**, the configuration of delayed output modules for alarm 1 and alarm 2 is shown, starting from the first element of the list of the output modules associated to the zone :

```
Z002 ID01 L04 D012 OM(C)
NAME:XXXXXXXX
PROG (A1) : T0:---   T1:---   T2:---
PROG (A2) : T0:---   T1:---   T2:---
```

By pressing **UP/DOWN** keys, the configuration of the previous/next output module of the list of the modules associated to the zone is shown.

If there is no module in the position specified by the identifier of the list of output modules associated to the zone, a screen like this is displayed:

```
Z002 ID05 L--- D---
```

Finally, if the module is present but it is configured to be activated due to a fault or maintenance (therefore, for this module, no delayed programming is possible), the following is displayed:

```
Z002 ID01 L04 D012 OM(J)
NAME:XXXXXXXX
PROG (A1) : -----
PROG (A2) : -----
```

3.2.5 Mode

Enter and confirm the zone number with **OK**:

```
ZONE :
```

Then the selection menu of the operative mode will be displayed:

```
OPERATIVE MODE

[1] FIRE ALARM
[2] TECHNOLOGICAL
```

[1] FIRE ALARM

When an alarm condition occurs, all the output modules, the alarm relays and the indicators are activated.

[2] TECHNOLOGICAL

When an alarm condition occurs, all the output modules are activated.

If the user selects the FIRE ALARM mode, the following menu (alarm zone mode) will be shown:

```
[1] SINGLE KNOCK
[2] SINGLE KNOCK W/DELAY
[3] MULTIPLE KNOCK
[4] MULTIPLE KNOCK W/DELAY      v

[5] HOTEL                       ^
```

In TECHNOLOGICAL mode, instead, the following menu is shown:

```
[1] SINGLE KNOCK
[2] SINGLE KNOCK W/DELAY
[3] MULTIPLE KNOCK
[4] MULTIPLE KNOCK W/DELAY      v

[5] ALARM 1 ONLY                ^
[6] MULTIPLE KNOCK W/RESET
```

Depending on the chosen mode, the user will be asked to insert a certain number of configuration parameters, according to the following table (the **X** indicates the parameters required for the selected mode; for example, if the zone is programmed in FIRE ALARM mode/MULTIPLE KNOCK WITH DELAY, the following parameters must be inserted: detector delay, manual call points delay and general alarm option).

MODE	DETECTORS DELAY	MANUAL CALL POINTS DELAY	GENERAL ALARM	ALARM CONFIRMATION	WEIGHT	SIGNALLING
FIRE ALARM SINGLE KNOCK			X	X		
FIRE ALARM SINGLE KNOCK W/DELAY	X	X	X	X		
FIRE ALARM MULTIPLE KNOCK			X			
FIRE ALARM MULTIPLE KNOCK W/DELAY	X	X	X			
FIRE ALARM HOTEL	X	X	X	X		
TECHNOLOGICAL SINGLE KNOCK						X
TECHNOLOGICAL SINGLE KNOCK W/DELAY	X	X				X
TECHNOLOGICAL MULTIPLE KNOCK					X	X
TECHNOLOGICAL MULTIPLE KNOCK W/DELAY	X	X			X	X
TECHNOLOGICAL ALARM 1 ONLY						X
TECHNOLOGICAL MULTIPLE KNOCK W/RESET	X	X			X	X

DETECTOR DELAY and MANUAL CALL POINT DELAY are the delays whose expiration makes the zone switch from the alarm condition with siren output disabled to the alarm condition with siren output enabled.

These delays (range 1÷10, in minutes) are inserted through the following menus:

```

DETECTOR DELAY: XX
    
```

After inserting and confirming with **OK** the detector delay, the user is required to insert the manual call points delay:

```

DETECTOR DELAY: XX
MANUAL CALL POINT DELAY:
    
```

The GENERAL ALARM functionality, which can be enabled through the following menu, makes the control panel activate the GENERAL ALARM as soon as it switches to the alarm condition with siren output enabled:

```

GENERAL ALARM

[1] YES
[2] # NO
    
```

The ALARM CONFIRMATION functionality is described in **paragraph 7.12.1 of the EN 54-2 standard**. It can be enabled through the following menu:

```

ALARM CONFIRMATION (EN54-2 7.12.1)
(T1 = 60s T2 = 60s)
[1] YES
[2] # NO
    
```

When this functionality is enabled in the zone, the alarms detected by smoke detectors associated to the zone are handled as follows:

- Initial condition: the zone is in IDLE state and no timer is running.
- If a smoke detector signals an alarm, the zone starts timer T1 (alarm inhibition timer – 60 sec).
- While T1 is running, any alarm signalled by smoke detectors associated to the zone is ignored.
- When T1 expires, the control panel resets all the smoke detectors associated to the zone which have notified an alarm condition while T1 was running. Then, timer T2 (alarm confirmation timer – 60 sec) starts.
- If a smoke detector signals an alarm while T2 is running, the zone switches to the alarm condition with the siren output enabled or not (according to its programming mode), otherwise – at T2 expiration – the zone switches back to the initial IDLE condition.

The ALARM CONFIRMATION functionality **can only be applied to zones 1–64**.

The WEIGHT (range 1÷5) can be inserted via the following menu. This parameter is meaningful only for zones programmed in TECHNOLOGICAL MODE and represents the value which the sum of weights of the devices in alarm associated to the zone must reach in order to make the zone switch to the alarm condition with siren output enabled or start the zone timer delay:

```
WEIGHT: XX
```

For zones programmed in TECHNOLOGICAL MODE, the user can activate the signalling during the alarm condition:

```
SIGNALLING  
[1] # YES  
[2]  NO
```

If the user chooses to deactivate them and the zone switches to an alarm condition, the buzzer and the backlight will not be activated.

After confirming with **OK** the last configuration menu for the selected mode and type, the user will be asked whether to confirm the set configuration:

```
[OK] STORE CONFIGURATION  
[ESC] EXIT WITHOUT STORING
```

By pressing **OK**, the configuration just entered in the previous menus will be stored. By pressing **ESC**, the procedure is abandoned without storing the configuration.

In both cases, after the selection by the user, it will return directly to the initial menu for the zone number entry.

3.2.6 Include / Exclude

Enter the number of zone to be included or excluded and then confirm with **OK**:

```
ZONE:
```

The following message will be displayed and the user can choose whether include or exclude the zone (the selection must be confirmed with **OK**):

```
ZONE: XX  
[1] # INCLUDED  
[2]  EXCLUDED
```

If the zone is excluded, the exclusion is notified to the user by means of special LED indicators on the control panel. Also, when the control panel returns in the scanning phase, a relevant message is displayed on the screen. The AC/Exclusion relay is activated immediately if it is programmed as an exclusion relay. Any time a zone is included or excluded, an event is stored in the event log.

3.2.7 Verify

Enter the number of zone to be checked and then confirm with **OK**:

```
ZONE:
```

If no device is associated with the zone, the following message will be displayed:

```
ZONE: XXX
NAME: XXXXX

NO ASSOCIATED DEVICE
```

If the zone includes at least one device (any type but output module), the following message will be displayed:

```
ZONE: XXX      N.DEVICES: XXX
NAME: ZONE NAME
CIRCUIT: XX   DEVICE: XXX TI.:XX      ^
NAME: DEVICE NAME                      v
```

N. DEVICES is the total number of devices associated with the zone. The last two lines show the information concerning the generic device associated with the zone.

By pressing **^** and **v** keys it is possible to scroll all the devices associated with the selected zone.

To view the output modules, press **OK** key.

If no output module is associated with the zone, the following message will be displayed:

```
ZONE: XXX
NAME: ZONE NAME

NO ASSOCIATED OUTPUT MODULE
```

If at least one output module is associated with the zone, the following message will be displayed:

```
ZONE: XXX      OUTPUT MOD: XX/50
NAME: Name of the zone
ID: YY   CIRCUIT: XXX   ADDR: XXX      ^
NAME: name of the output module        v
```

XX/50 represents the number of output modules (out of max 50 modules which can be associated) currently associated with the zone.

The last two lines contain the circuit, address and name of the generic output module associated to the zone and stored in the YY-th position (ID: YY) of the list of output modules associated to the zone.

By pressing **^** and **v** keys it is possible to view all the elements of the list of the max 50 output modules associated with the zone.

If the YY-th element of the list is empty, a screen like this will be displayed:

```
ZONE: XXX      OUTPUT MOD: XX/50
NAME: Name of the zone
ID: YY   CIRCUIT: ---   ADDR: ---      ^
NAME: name of the output module        v
```

By pressing **OK**, you will switch between the device display and the display of the output modules associated with the zone.

By pressing **ESC** you will exit one of the above mentioned screen views and go back to the zone number input menu.

By pressing > in one of the above mentioned screen views, the current zone settings will be displayed:

```
ZONE: 18      INCLUDED
OPERATIVE MODE: FIRE ALARM
SINGLE KNOCK W/DELAY
ALARM CONFIRMATION (EN54-2 7.12.1)
```

In the example above, the zone number 18 is included and has been programmed in FIRE ALARM , single knock w/delay mode. moreover, the alarm confirmation option is enabled.

By pressing again the > key another screen is displayed with further information on the programmed parameters, depending on the mode.

For example, for a zone programmed in fire alarm, single knock w/delay mode, the following screen will be shown:

```
DETECTOR DELAY: 1
MANUAL CALL POINT DELAY: 2
GENERAL ALARM NO
```

By pressing again > key you will go back to the screen view of the devices associated with the zone.

3.3 GROUP - GROUPS PROGRAMMING

The functions of this menu are used to program the configurations and associations of groups of devices (not output modules) and groups of zones.

From the main menu you can access the following submenus:

```
[1] GROUP OF DEVICES
[2] GROUP OF ZONES
```

[1] GROUP OF DEVICES

It makes it possible to group the devices on equal or different detection circuit.

[2] GROUP OF ZONES

It makes it possible to group different zones.

3.3.1 Group of devices

From the device group menu you can access the following submenu:

```
[1] NAME
[2] ASSOCIATE DEVICE TO GROUP
[3] ASSOCIATE OUTPUT MODULE TO GROUP
[4] MODE v
[5] INCLUDE/EXCLUDE ^
[6] VERIFY
```

The group of devices programming menu is composed of the following items:

[1] NAME

It makes it possible to assign a name composed of up to 32 alphanumeric characters to a group.

[2] ASSOCIATE DEVICE TO GROUP

It makes it possible to associate the devices with the selected group.

[3] ASSOCIATE OUTPUT MODULE TO GROUP

It makes it possible to associate the output modules with the selected group.

[4] MODE

It makes it possible to set the group operative modes.

[5] INCLUDE/EXCLUDE

It makes it possible to include/exclude a group.

[6] VERIFY

It makes it possible to perform a verification of a group.

3.3.1.1 Name

Enter the group number and confirm with **OK**:

```
GROUP: XXX
```

The following screen will be displayed where the user can type in the group name:

```
GROUP: XXX
NAME: _
```

Press < key to delete the existing characters and > key to enter spaces. Go on until the whole name has been entered, then press **OK**.

The following screen will be displayed:

```
GROUP No: XXX
NAME: XXXXXXXXXXXXXXXXX
[OK] PRESS TO CONFIRM
[ESC] CANCEL
```

Press **OK** to confirm.

3.3.1.2 Associate device to group

Enter the group number and then press **OK** to confirm:

```
GROUP: XXX
```

Enter the circuit where the device to be associated is located:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT:
```

Then enter the address of the device to be associated and confirm with **OK**:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX      DEVICE: XX
```

The selected device will be displayed along with type and name.

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX      DEVICE: XXX      TP.: XX
NAME: XXXXXXXXXXX
```

To confirm the selected device press **OK** key (**YY** = number of devices associated with the group after that the device under consideration has been added):

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX      DEVICE: XXX      TP.: XX
CONFIRMED YY/50
```

If the user wants to delete an existing association between a group and a device, the user must press < key from the screen showing the type and name of the device.

In this case after the association is cancelled the following screen is displayed (YY = number of devices associated with the group before deletion occurs):

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX    DEVICE: XXX    TP.: XX
                DELETED YY/50
```

It is possible to insert up to 50 devices in a group. If the user tries to insert a devices in an already full group, the following message is displayed:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX    DEVICE: XXX    TP.: XX
CONFIGURATION COMPLETE
```

3.3.1.3 Associate output module to group

Enter the group number and then press **OK** to confirm.

```
GROUP:
```

Now enter the number of the circuit where the output module to be associated with the group is located and confirm with **OK**:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT:
```

If the circuit does not include any output modules, the following message will be displayed:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX
OUTPUT MODULES NOT PRESENT
```

Instead if the circuit includes at least one output module, the address and name of the first module present on the circuit will be displayed.

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX    OUTPUT MOD.: XX_
NAME: XXXXXXXXXXXX
```

The address is editable so that the user can enter the address of another output module. In any case, after pressing **OK**, it is possible to scroll the output modules available in the circuit by pressing v ^ keys.

```
GROUP: XXX
NAME: XXXXX
CIRCUIT:XX    OUTPUT MOD.: XXX    ^
NAME: XXXXXXXXXXXX                v
```

To confirm the insertion of the output module, press **OK** key.

The following confirmation message will be displayed:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX    OUTPUT MOD.: XXX    ^
                CONFIRMED XX/50
```

To delete a previously created association, press < when the relevant output module is selected:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX  OUTPUT MOD: XXX      ^
DELETED XX/50
```

It is possible to associate up to 50 output modules to a group of devices. If you try to enter other modules, the following message will be displayed:

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX  OUTPUT MOD: XXX
CONFIGURATION COMPLETE
```

3.3.1.4 Mode

Enter the group number and press **OK** to confirm.

```
GROUP:
```

The following operative mode selection menu will be displayed:

```
OPERATIVE MODE

[1] FIRE ALARM
[2] TECHNOLOGICAL
```

[1] FIRE ALARM

When an alarm condition occurs, all the output modules, alarm relays and indicators are activated.

[2] TECHNOLOGICAL

When an alarm condition occurs, all the output modules are activated.

If the FIRE ALARM mode is selected, the following menu will be shown:

```
[1] SINGLE KNOCK
[2] SINGLE KNOCK W/DELAY
[3] MULTIPLE KNOCK
[4] MULTIPLE KNOCK W/DELAY
```

For groups programmed in TECHNOLOGICAL mode, instead, the following menu will be shown:

```
[1] SINGLE KNOCK
[2] SINGLE KNOCK W/DELAY
[3] MULTIPLE KNOCK
[4] MULTIPLE KNOCK W/DELAY      v

[5] ALARM 1 ONLY                ^
```

Depending on the chosen mode, the user will be asked to insert a set of configuration parameters, according to the table below (X indicates the parameters to be inserted for each mode; e.g., for a group programmed in FIRE ALARM – MULTIPLE KNOCK W/DELAY mode, it is necessary to program detector delay, manual button delay, weight and general alarm option).

MODE	DETECTOR DELAY	MANUAL CALL POINT DELAY	WEIGHT	GENERAL ALARM	SIGNALLING
FIRE ALARM SINGLE KNOCK				X	
FIRE ALARM SINGLE KNOCK W/DELAY	X	X		X	
FIRE ALARM MULTIPLE KNOCK			X	X	
FIRE ALARM MULTIPLE KNOCK W/DELAY	X	X	X	X	
TECHNOLOGICAL SINGLE KNOCK					X
TECHNOLOGICAL SINGLE KNOCK W/DELAY	X	X			X
TECHNOLOGICAL MULTIPLE KNOCK			X		X
TECHNOLOGICAL MULTIPLE KNOCK W/DELAY	X	X	X		X
TECHNOLOGICAL ALARM 1 ONLY					X

The DETECTOR DELAY and MANUAL CALL POINT DELAY are the delays whose expiration makes the panel switch from alarm condition with siren output disabled to alarm condition with siren output enabled.

They are specified in the modes with delay through the following menu (range 1÷10, expressed in minutes):

```

DETECTOR DELAY: XX
    
```

After inserting and confirming with **OK** the detector delay, the user is required to insert the manual call point delay:

```

DETECTOR DELAY: XX
MANUAL CALL POINT DELAY:XX
    
```

The weight of the group (range 1÷5), to be inserted via the following menu, is the value which must be reached by the sum of weights of the detectors belonging to the group and in alarm condition in order to make the group switch to the alarm condition with siren output enabled or activate the group delay:

```

WEIGHT: XX
    
```

The GENERAL ALARM option, i.e. the automatic activation of GENERAL ALARM when the group switches to the alarm condition with siren output enabled, is enabled through the following menu:

```

GENERAL ALARM

[1] YES
[2] # NO
    
```

For groups programmed in TECHNOLOGICAL mode, the user is required to specify the signalling option:

```

SIGNALLING

[1] # YES
[2] NO
    
```

If the user chooses to deactivate the SIGNALLING option and the group goes into alarm condition, neither the buzzer nor the backlight will be activated.

After confirming with **OK** the last configuration menu for the selected mode and type, the user will be asked whether to confirm the set configuration:

```
[OK] STORE CONFIGURATION
[ESC] EXIT WITHOUT STORING
```

By pressing **OK**, the configuration set with the previous menu screens will be stored.
By pressing **ESC**, the procedure is concluded without storing.

In both cases, after the user has made his choice, the system will return directly to the initial menu for the group number entry.

3.3.1.5 Include/Exclude group

Enter the number of the group to be included or excluded and then press **OK** to confirm:

```
GROUP :
```

The following message will be displayed:

```
GROUP: XX
[1] # INCLUDED
[2] EXCLUDED
```

The user can choose whether to include or exclude the group.
Selection must be confirmed with **OK**.

Press **ESC** to return to the previous menu.

The exclusion of a group of devices is signalled by the control panel LEDs and it is shown on the display and stored in the event log.
Also, the programmable relay is activated immediately if is programmed as exclusion relay.

3.3.1.6 Verify

Enter the number of the group to be verified and then press **OK** to confirm:

```
GROUP :
```

If the group is empty, the following message will be displayed:

```
GROUP: XXX
NAME: XXXXX
NO ASSOCIATED DEVICE
```

If the group includes at least one device, the following screen will be displayed with all the devices associated with the selected group which can be viewed by pressing keys \wedge and \vee .

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX DEVICE: XXX TI.: XX YY/50 ^
NAME: XXXXX v
```

The coordinates, type and name are shown for each device.
The number of devices associated with the group is also indicated (YY/50).

By pressing the **OK** key in the device screen view it is possible to view the output modules associated with the group.

If there are no output modules associated with the group, the following message will be displayed:

```
GROUP: XXX
NAME: XXXXX

NO ASSOCIATED OUTPUT MODULE
```

If at least one output module is associated with the group, the following screen will be displayed where the user can scroll the module list through keys \wedge and \vee .

```
GROUP: XXX
NAME: XXXXX
CIRCUIT: XX      OUTPUT MOD.: XXX      YY/50  ^
NAME: Name of the output module                v
```

The coordinates and name are shown for each module.

The number of modules associated with the group is also indicated (YY/50).

By pressing **OK** you will pass from the devices screen view to that of the output modules associated with the group.

By pressing **ESC** in one of the previous screens it is possible to return to the menu for the group number entry.

By pressing **>** in one of the screen views of the associated devices or output modules, the current group settings will be displayed:

```
GROUP: XXX INCLUDED
OPERATIVE MODE: FIRE ALARM
MULTIPLE KNOCK W/DELAY
```

By pressing the **>** key again, the current settings of the parameters related to the programmed mode will be shown. For example, if the group is programmed in FIRE ALARM – MULTIPLE KNOCK W/DELAY mode, the following screen will be displayed:

```
DETECTOR DELAY: 1
MANUAL CALL POINT DELAY: 2
WEIGHT: 2
GENERAL ALARM: NO
```

By pressing **>** again, the panel goes back to the initial screen showing the devices associated to the group.

To go back to the previous menu, press **ESC**.

3.3.2 Group of zones

The group of zones programming menu is composed of the following items:

```
[1] NAME
[2] ASSOCIATE ZONE TO GROUP
[3] ASSOCIATE OUTPUT MODULE TO GROUP
[4] MODE v

[5] INCLUDE/EXCLUDE ^
[6] VERIFY
```

[1] NAME

It makes it possible to associate the group with a name consisting of max 32 alphanumeric characters.

[2] ASSOCIATE ZONE TO GROUP

It makes it possible to associate the zones with the selected group.

[3] ASSOCIATE OUTPUT MODULE TO GROUP

Consente di associare i moduli uscita al gruppo selezionato.

[4] MODO

It makes it possible to set the group operative modes.

[5] INCLUD/EXCLUDE

It makes it possible to include/exclude a group.

[6] VERIFY

It makes it possible to verify the programming settings of a group of zones.

3.3.2.1 Name

Enter the group number and then press **OK** to confirm:

```
GROUP:
```

The following screen view will be displayed to type in the name to be assigned to the group:

```
GROUP: XXX  
NAME: XXXXX
```

Press **<** to delete the existing characters and press **>** to enter spaces.
Go on until the whole name has been entered and then confirm with **OK**.

The following will be displayed:

```
GROUP: XXX  
NAME: XXXXXXXXXXXXXXXXX  
[OK] PRESS TO CONFIRM  
[ESC] CANCEL
```

Then press **OK** to confirm.

3.3.2.2 Associate zone to group

Enter the group number and then press **OK** to confirm:

```
GROUP:
```

Now enter the number of the zone to be associated and confirm with **OK**:

```
GROUP: XXX  
NAME: XXXXX  
ZONE:
```

The name associated with the zone will be displayed:

```
GROUP: XXX  
NAME: XXXXX  
ZONE: XXX  
NAME: XXXXXXXXXXXXX
```

By pressing **OK**, the zone is associated with the group (if it was not already associated) and the success of the operation is notified to the user through the following message:

```
GROUP: XXX  
NAME: XXXXX  
ZONE: XXX  
CONFIRMED XX/50
```

Instead, if the zone is already associated with the group, it is possible to cancel the association by pressing **<** key. Also in this case a confirmation message will be displayed:

```
GROUP: XXX  
NAME: XXXXX  
ZONE: XXX  
DELETED XX/50
```

A group of zones can contain up to 50 zones. If you try to insert other zones, the following message will be displayed:

```
GROUP: XXX  
NAME: XXXXX  
ZONE: XXX  
CONFIGURATION COMPLETE
```

3.3.2.3 Associate output module to group

Enter the group number and then press **OK** to confirm:

```
GROUP: XXX
```

Now enter the number of the circuit where the output module to be associated to the group is located and press **OK**.

```
GROUP: XXX  
NAME: XXXXX  
CIRCUIT:
```

If the circuit does not include any output modules, the following message will be displayed:

```
GROUP: XXX  
NAME: XXXXX  
CIRCUIT: XX  
OUTPUT MODULES NOT PRESENT
```

If the circuit includes at least one output module, the address and name of the first output module on the circuit will be displayed.

```
GROUP: XXX  
NAME: XXXXX  
CIRCUIT: XX   OUTPUT MOD.: XXX  
NAME: XXXXXXXXXXXX
```

The user can enter directly the address of another module or press **OK** and pass to the screen view where it is possible to scroll the output modules present on the circuit:

```
GROUP: XXX  
NAME: XXXXX  
CIRCUIT: XX   OUTPUT MOD.: XXX           ^  
NAME: XXXXXXXXXXXX                       v
```

To scroll the output modules on the circuit press **>** and **<** keys.

Once the output module to be associated is shown, press **OK** to carry out the association.

```
GROUP: XXX  
NAME: Name of the group  
CIRCUIT: XX   OUTPUT MOD.: XXX           ^  
CONFIRMED YY/50
```

YY indicates the number of output modules associated up to that moment, including the module which has just been associated.

To cancel an existing association, select the output module to be removed and press **<**. The following confirmation message will be displayed:

```
GROUP: XXX  
NAME: Name of the group  
CIRCUIT: XX   OUTPUT MOD.: XXX           ^  
DELETED YY/50
```

YY indicates the number of output modules associated with the group before cancellation.

The max number of output modules which can be associated with a group is 50.

If you try to enter another module in a group already full, the following message will be displayed:

```
GROUP: XXX  
NAME: Name of the group  
CIRCUIT: XX   OUTPUT MOD.: XXX           ^  
CONFIGURATION COMPLETE
```

3.3.2.4 Mode

Enter the group number and then press **OK** to confirm:

```
GROUP :
```

The group operative mode selection menu will be displayed:

```
OPERATIVE MODE

[1] FIRE ALARM
[2] TECHNOLOGICAL
```

[1] FIRE ALARM

When an alarm condition occurs, all the output modules, alarm relays and indicators are activated.

[2] TECHNOLOGICAL

When an alarm condition occurs, all the output modules are activated.

If the FIRE ALARM mode is selected, the following menu will be shown:

```
[1] SINGLE KNOCK
[2] SINGLE KNOCK W/DELAY
[3] MULTIPLE KNOCK
[4] MULTIPLE KNOCK W/DELAY
```

For groups programmed in TECHNOLOGICAL mode, instead, the following menu will be shown:

```
[1] SINGLE KNOCK
[2] SINGLE KNOCK W/DELAY
[3] MULTIPLE KNOCK
[4] MULTIPLE KNOCK W/DELAY      v

[5] ALARM 1 ONLY                ^
```

Depending on the chosen mode, the user will be asked to insert a set of configuration parameters, according to the table below (X indicates the parameters to be inserted for each mode; e.g., for a group programmed in FIRE ALARM – MULTIPLE KNOCK W/DELAY mode, it is necessary to program the GROUP DELAY, the WEIGHT and the GENERAL ALARM option).

MODE	GROUP DELAY	WEIGHT	GENERAL ALARM	SIGNALLING
FIRE ALARM SINGLE KNOCK			X	
FIRE ALARM SINGLE KNOCK W/DELAY	X		X	
FIRE ALARM MULTIPLE KNOCK		X	X	
FIRE ALARM MULTIPLE KNOCK W/DELAY	X	X	X	
TECHNOLOGICAL SINGLE KNOCK				X
TECHNOLOGICAL SINGLE KNOCK W/DELAY	X			X
TECHNOLOGICAL MULTIPLE KNOCK		X		X
TECHNOLOGICAL MULTIPLE KNOCK W/DELAY	X	X		X
TECHNOLOGICAL ALARM 1 ONLY				X

The GROUP DELAY is the delay whose expiration makes the group switch from alarm condition with siren output disabled to alarm condition with siren output enabled.

It must be specified in the modes with delay through the following menu (range 1÷10, expressed in minutes):

```
GROUP DELAY: XX
```

The weight of the group (range 1÷5), to be inserted via the following menu, is the number of zones of the group which must go to alarm condition with siren output enabled in order to make the group switch to the alarm condition with siren output enabled or activate the group delay.

```
WEIGHT: XX
```

Please note that the weight of a single zone depends on its state: if the zone is in alarm with siren output disabled, its weight is 1 unit; if it is in alarm with siren output enabled, its weight is 2 units.

The GENERAL ALARM option, i.e. the automatic activation of GENERAL ALARM when the group switches to the alarm condition with siren output enabled, is enabled through the following menu:

```
GENERAL ALARM  
[1] YES  
[2] # NO
```

For groups programmed in TECHNOLOGICAL mode, the user is required to specify the signalling activation option:

```
SIGNALLING  
[1] # YES  
[2] NO
```

If the user chooses to deactivate the SIGNALLING option and the group goes into alarm condition, neither the buzzer nor the backlight will be activated.

After confirming the last configuration menu for the selected mode by pressing **OK**, the following menu is displayed:

```
[OK] STORE CONFIGURATION  
[ESC] EXIT WITHOUT STORING
```

By pressing **OK**, the configuration set in the previous menu screens will be stored.

By pressing **ESC**, the procedure will be concluded without storing.

In both cases, after the user has made his choice, the system will return directly to the initial menu for the group number entry.

3.3.2.5 Include / Exclude

Enter the number of the group to be included or excluded and then confirm with **OK**:

```
GROUP:
```

The following menu will be displayed:

```
GROUP: XX  
[1] # INCLUDED  
[2] EXCLUDED
```

By pressing **OK** inclusion/exclusion is confirmed. By pressing **ESC** it is possible to return to the previous menu.

The exclusion of a group of zones is notified to the user by means the appropriate LED indicators and also by a message displayed during the scanning phase.

If the programmable relay is programmed as exclusion relay and it is currently deactivated, the exclusion of the group of zones makes it activate immediately. Any time an inclusion or exclusion is carried out, an event is stored in the event log.

3.3.2.6 Verify

Enter the group number and then press **OK** to confirm:

```
GROUP:
```

If there are no zones associated with the group, the following message will be displayed:

```
GROUP: XXX
NAME: Name of the group

NO ZONE ASSOCIATED
```

If the group includes at least one zone, the following screen view will be displayed where the user can scroll all the zones present in the selected group by pressing **>** and **<**:

```
GROUP: XXX
NAME: Name of the group
ZONE: XXX                YY/50      ^
NAME: Name of the zone    v
```

YY = number of zones associated with the group.

By pressing **OK** in the associated zone display menu, you will pass to the display of the output modules associated with the group.

If no output modules are associated with the group, the following message will be displayed:

```
GROUP: XXX
NAME: Name of the group

NO ASSOCIATED OUTPUT MODULE
```

If at least one output module is associated with the group, the following screen view will be displayed where the user can scroll the list of associated output modules through keys **^** and **v**:

```
GROUP: XXX
NAME: Name of the group
CIRCUIT: XXX  OUTPUT MOD.: XXX  YY/50  ^
NAME: Name of the module        v
```

YY = number of modules associated with the group.

By pressing **OK** you will switch back and forth between the display of the associated zones and the display of the associated output modules.

By pressing **ESC** you will go back to the group number entering menu.

By pressing **>** in the screen view of the zones and output modules associated with the group, the current group settings will be displayed.

```
GROUP: XXX INCLUDED
OPERATIVE MODE: FIRE ALARM
MULTIPLE KNOCK W/DELAY
```

By pressing **>** again, further information depending on the group programming mode will be displayed. For example, if the group has been programmed in **TECHNOLOGICAL** and in **MULTIPLE KNOCK W/DELAY** mode, the following screen is shown:

```
GROUP DELAY: 1
WEIGHT: 2
SIGNALLING NO
```

By pressing **>** again, the control panel will go back to the initial display of the associated zones.

To go back to the previous menus, press **ESC**.

3.4 DEVICE – DEVICES PROGRAMMING

This menu is used for the complete programming of the device already acquired and present in the control panel configuration.

Enter the number of the circuit where the device is located and confirm with **OK**:

```
CIRCUIT:
```

Then enter the address of the device:

```
CIRCUIT: XX
DEVICE:
```

After confirming the address with **OK**, the type and name of the device will be displayed:

```
CIRCUIT: XX
DEVICE:
TYPE: YY
NAME: XXXXXXXXXXXX
```

By pressing **OK** again, the following programming menu is displayed.

```
[1] NAME
[2] CONFIGURE DEVICE
[3] INCLUDE/EXCLUDE
[4] VERIFY v

[5] READ REMOTE DEVICE ^
[6] CONFIGURE REMOTE DEVICE
[7] UPDATE DEVICE
[8] DEVICE REPLACEMENT
```

[1] NAME

It makes it possible to associate the device with a name consisting of at least 32 alphanumeric characters.

[2] CONFIGURE DEVICE

It makes it possible to set the typical functions of the selected device.

[3] INCLUD/ESCLUDI INCLUDE/EXCLUDE

It makes it possible to include/exclude a device.

[4] VERIFY

It makes it possible to check the current settings of the selected device.

[5] READ REMOTE DEVICE

This option makes it possible to check the programmed parameters of a device already configured and normally connected to the detection circuit.

[6] CONFIGURE REMOTE DEVICE

This option makes it possible to set the type and other typical parameters of a device already configured and connected with the detection circuit.

[7] UPDATE DEVICE

This option makes it possible to update a device on the field with the configuration stored in the control panel memory.

[8] DEVICE REPLACEMENT

This option makes it possible to change a faulty device inside the system with a brand new device.

3.4.1 Name

Through this screen view it is possible to type in the name to be associated with the device:

```
NAME: XXXXXX
```

Press **<** to delete the existing characters and **>** to insert spaces.

Go on until the whole name has been entered and then press **OK** to confirm.

Press **ESC** to return to the previous menu.

3.4.2 Configure device (detectors and input modules)

This menu depends on the type of device, as shown below:

MN, PI, IS typology:

```
[1] CLEAR DELAY
[2] GENERAL ALARM
[3] WEIGHT
[4] DEFAULT
```

LI typology:

```
[1] CLEAR DELAY
[2] GENERAL ALARM
[3] WEIGHT
[4] MEMBERSHIP TO MODULE 4I4O      v
```

```
[5] DEFAULT                        ^
```

TB typology:

```
[1] WEIGHT
[2] DEFAULT
```

BD typology:

```
[1] MULTIPLE THRESHOLD
[2] DEFAULT
```

The following paragraphs deal with each item of the menus above.

3.4.2.1 Clear delay

If this option is enabled and the zone the device belongs to is programmed with a mode with delay, when the device goes to alarm state the delay of the zone is cleared at once.

```
CLEAR DELAY

[1]   YES
[2] # NO
```

Press **1** to enable the functionality. Press **2** to disable it.

The currently active option is highlighted by the **#** symbol.

Press **OK** to confirm the choice. Press **ESC** to return the previous menu.

3.4.2.2 General alarm

If this option is enabled, when the device goes to alarm state it triggers the general alarm condition.

```
GENERAL ALARM

[1]   YES
[2] # NO
```

Press **1** to enable the functionality. Press **2** to disable it.

The currently active option is highlighted by the **#** symbol.

Press **OK** to confirm the choice. Press **ESC** to return the previous menu.

3.4.2.3 Weight

Through this option, the user assigns a weight to the device in alarm condition.

Insert the weight in the allowed interval (depending on the device type – see the table below) and confirm the inserted value with **OK**. Press **ESC** to return the previous menu.

Device type	Min weight	Max weight
MN	1	2
LI	1	5
PI	1	5
TB	1	5
IS	1	5

```
WEIGHT: X
```

The weight assigned to the device affects the behaviour of the zone or group of devices the device is associated with. More specifically, when the sum of weights of the devices associated with a zone or group of devices reaches the weight set for the zone or group, the zone/group switches to the alarm condition with siren output enabled or (if the zone or group is programmed in a mode with delay) the zone/group delay starts.

3.4.2.4 Membership to module 4I4O

This options says whether the LI module belongs to a multiple I/O module or not.

```
MEMBERSHIP TO MODULE 4I4O

[1]   YES
[2] # NO
```

Press **1** to say that LI belongs to a multiple I/O module.

Press **2** to say that LI is a single I/O module.

The currently active option is highlighted by the **#** symbol.

Press **OK** to confirm the choice. Press **ESC** to return the previous menu.

3.4.2.5 Multiple threshold

This option permits to force in control panel, the alarm signalization generated from the LN beam detector.

```
MULTIPLE THRESHOLD

[1]   OFF
[2] # ON
```

Press **1** to say that the detector always generates the signalization of the alarm 1.

Press **2** to say that the detector generates the signalizations of the alarm 1 and alarm 2.

The currently active option is highlighted by the **#** symbol.

Press **OK** to confirm the choice. Press **ESC** to return the previous menu.

3.4.2.6 Default

This option restores the default values (factory settings) of the parameters of the device.

```
RESTORE DEFAULT VALUES

[1]   YES
[2] # NO
```

Press **1** to restore the factory default values.

The currently active option is highlighted by the **#** symbol.

Press **OK** to confirm the choice. Press **ESC** to return the previous menu.

The following table shows the default values:

Device type	CLEAR DELAY	GENERAL ALARM	WEIGHT	MEMBERSHIP TO MODULE 4I4O	MULTIPLE THRESHOLD
Manual call point (MN)	NO	NO	2	--	--
Pulsed input module (PI)	NO	NO	1	--	--
Latched input module with siren output (IS)	NO	NO	1	--	--
Latched input module (LI)	NO	NO	1	NO	--
Bathroom call cord module (TB)	--	--	1	--	--
Beam detector (BD)	--	--	1	--	ON

3.4.3 Configure device (output module)

The programming menu for traditional output modules is composed of the following items:

[1] SILENCE SIREN	
[2] GENERAL ALARM	
[3] ACTIVATION	
[4] MEMBERSHIP TO MODULE 4I4O	▼
[5] DEFAULT	▲

In case of addressed bases, addressed sounders and/or sounder/visual devices (code **FW 0165, 0169** and **0179** respectively), the following menu is displayed:

[1] SILENCE SIREN	
[2] GENERAL ALARM	
[3] ACTIVATION	
[4] TONE A1/A2	▼
[5] DEFAULT	▲

3.4.3.1 Silence siren

By selecting this item, the following menu is displayed:

SILENCE SIREN	
[1] # YES	
[2] NO	

When this option is enabled, the **SILENCE / ARM SIREN** key operates also on the outputs of the output module. If this option is disabled, the outputs of the module work independently of the key.

When this menu is entered, the # symbol selects the currently active option.

Then, the # symbol can be moved on the desired option. Confirm the choice made using the **OK** key.

3.4.3.2 General alarm

By selecting this item, the following menu is displayed. With this menu, the output module can be programmed in order to be activated when a GENERAL ALARM condition occurs:

GENERAL ALARM	
[1] YES	
[2] # NO	

The # symbol indicates the chosen option. Once the choice is made, it must be confirmed with **OK**.

3.4.3.3 Activation

This menu shows the conditions under which the output module will be activated:

```
[1] ACTIVE FOR ALARM 1
[2] # ACTIVE FOR ALARM 2
[3] ACTIVE FOR ZONE / GROUP FAULT
[4] ACTIVE FOR MAINTENANCE
```

When **the first item** is selected, the output module is activated if a zone or group which the module is associated to switches the control panel in the alarm condition (with or without the siren output enabled).

The second item causes the module activation when the zone/group switches the control panel in the alarm condition with siren output enabled.

The third and fourth options cause the module activation because of a fault or a maintenance event related to a device associated to a zone or group of devices which the output module is associated to.

The # symbol indicates the currently active option. The choice must be confirmed with **OK**.

Once the activation mode of the output module is selected, the module type selection menu is displayed, depending on the chosen activation mode.

For output modules programmed to be activated for alarm 1 or alarm 2, the following menu is displayed:

```
TYPE
[1] # DRIVE ALARM DEVICE (C)
[2] DRIVE FIRE EQUIPMENT (G)
[3] TECHNOLOGICAL (T)
```

For output modules programmed to be activated for a fault or maintenance, the following menu is shown:

```
TYPE
[1] # DRIVE FAULT DEVICE (J)
[2] TECHNOLOGICAL (T)
```

The distinction of output modules by type allows an immediate identification in case of exclusions or faults of the output module, since the related LEDs are turned on and the type of output module is shown on the display:

- type C output module controlling an alarm signalling equipment
- type G output module controlling a firefighting equipment
- type J output module controlling a fault signalling equipment
- type T output module controlling a technological equipment

During the zone test, output modules of type other than “C” are not activated.

Output modules are pre-set by the control panel as “C”.

The # symbol indicates the active option. The choice made by the user must be confirmed with **OK**.

Press **ESC** to return to the previous menu.

If type **T** is selected, the following menu is shown:

```
ACTIVATION CHECK
[1] YES
[2] # NO
```

In this menu, the user can enable/disable the activation check parameter.

Before enabling this parameter, the output module, as reported in the relevant manual, must be properly connected to an external system/device.

When enabled, this parameter makes it possible to detect any malfunctioning occurring after activation of the external system/device.

This feature is used in the “delayed output modules” functionality.

More specifically, in case of problems during activation of the external system/device, all the output modules listed in the delayed output modules programming tables which had been turned off before activating the external system/device will be reactivated; therefore, these modules will keep signalling the alarm condition, despite the lack of activation of the external system/device.

3.4.3.4 Membership to module 4I4O

This options says whether the output module belongs to a multiple I/O module or not.

```
MEMBERSHIP TO MODULE 4I4O

[1]   YES
[2] # NO
```

Press **1** to say that output module belongs to a multiple I/O module.

Press **2** to say that output module is a single I/O module.

The currently active option is highlighted by the **#** symbol.

Press **OK** to confirm the choice. Press **ESC** to return to the previous menu.

3.4.3.5 Tone A1/A2

This option, valid in the case of addressed bases, addressed sounders and sounder/visual devices, makes the device activate with a different acoustic mode depending on the alarm level (1 or 2) of the zone which the device belongs to.

```
TONE A1/A2

[1]   OFF
[2] # ON
```

In order to enable dual tone, press key **2**. To disable it, press key **1**.

The currently active option is highlighted by the **#** symbol.

Press **OK** to confirm the choice. Press **ESC** to return to the previous menu.

3.4.3.6 Default

```
RESTORE DEFAULT VALUES

[1]   YES
[2] # NO
```

Press **1** to restore the factory setting values. The currently active option is indicated by **#** symbol .

The **OK** key must be pressed in order to confirm the configuration. Press **ESC** to return to the previous menu.

Below we can find the factory setting values of the output module:

SILENCE SIREN: YES
GENERAL ALARM: NO
ACTIVATION: ALARM 2 (=>ALARM WITH SIREN OUTPUT ENABLED)
MEMBERSHIP TO MODULE 4I4O: NO
TYPE: C
TONE A1/A2: NO (applicability: addressed bases, addressed sounders and sounder/visual devices)

3.4.4 Include/Exclude

The following screen view is displayed which shows the device related information (coordinates, type and name) and where it is possible to include or exclude it.

```
CIRCUIT: XX  DEVICE: XXX  TYPE: XX
NAME: XXXXX
[1] # INCLUDED
[2]  EXCLUDED
```

The choice is confirmed by pressing **OK** key.

When a device is excluded and then the related zone is excluded and subsequently included, the device is still excluded.

The exclusion is signalled by the control panel front side LEDs, it is shown on the display and stored in the event log.

The exclusion also implies the activation of the exclusion relay, if the programmed relay is configured as exclusion relay.

If a device is included and then excluded or vice versa, the new configuration will be transmitted to the device at the end of the programming phase, when the system goes back to monitoring.

3.4.5 Verify

This menu item makes it possible to check the current settings of the selected device. The displayed information depends on the device type.

- Smoke detector (SM)
- Heat detector (HT)
- Smoke/Heat detector (SH)
- Concentrator module (CM)
- Gas detector (GS)
- 4-20mA input module (CI)

```
CIRCUIT: XX      DEVICE: XXX  TYPE:XX
NAME: XXXXX
ZONE: XXX
FW: XXX.XX
```

- Manual call point (MN)
- Pulsed input module (PI)
- Latched input module with siren output (IS)

```
CIRCUIT: XX  DEVICE: XXX      TYPE:XX
NAME: XXXXX
ZONE: XXX
FW: XXX.XX
```

```
CLEAR DELAY YES/NO
GENERAL ALARM YES/NO
WEIGHT X
```

- Latched input module (LI)

```
CIRCUIT: XX      DEVICE: XXX  TYPE:XX
NAME: XXXXX
ZONE: XXX
FW: XXX.XX
```

```
CLEAR DELAY YES/NO
GENERAL ALARM YES/NO
WEIGHT: X
MEMBERSHIP TO MODULE 4I4O YES/NO
```

- Bathroom call cord module (TB)

```
CIRCUIT: XX      DEVICE: XXX  TYPE:XX
NAME: XXXXX
ZONE: XXX
WEIGHT: X
FW: XXX.XX
```

- Beam detector (BD)

```
CIRCUIT: XX      DEVICE: XXX  TYPE:XX
NAME: XXXXX
ZONE: XXX
MULTIPLE THRESHOLD ON
FW: XXX.XX
```

- Output module (OM)

```
CIRCUIT: XX  DEVICE: XXX
NAME: XXXXX
TYPE: OM (C)
ACTIVATION CHECK YES/NO (*)
```

(*) Information displayed only for type T output module.

```
SILENCE SIREN YES/NO
GENERAL ALARM YES/NO
ACTIVE ON ALARM 1/2 /FAULT /MAINT.
MEMBERSHIP TO MODULE 4I4O YES/NO
```

The page above is replaced by the following page when the output module is an addressable base, an addressable sounder or sounder/visual device:

```
SILENCE SIREN YES/NO ^
GENERAL ALARM YES/NO
ACTIVE ON ALARM 1/2 /FAULT /MAINT.
TONES A1/A2 YES/NO
```

By pressing the key > from either one of the screens above, the following screen will be displayed with the associations of the output module with the zones, groups of devices and groups of zones.

```
CIRCUIT: XX      DEVICE: XXX TYPE: OM(C)
NAME: XXXXX
TYPE: OUTPUT MODULE
ASSOCIATED TO: XXXXXXXXXXXX
```

By pressing the key > the next associations is shown.

After displaying the last association, the first screen with the output module parameters is shown again.

3.4.6 Read remote device

This function is used to read the configuration parameters (address, type, FW revision, etc.) of a device already installed and normally working on a system detection circuit.

Enter the number of the circuit connected with the device and confirm with **OK**:

```
CIRCUIT: XX
```

The circuit is powered on (possible malfunctioning will be signalled).

If the circuit is powered on successfully, enter the address of the device to be read and confirm with **OK**:

```
CIRCUIT: XX
DEVICE: XXX
```

By pressing **ESC**, the control panel goes back to the previous menu for entering the circuit number.

After entering the device number, the control panel will collect the parameters to be displayed.

If any communication problems with the device arises in this phase, the following message will be displayed:

```
CIRCUIT: XX
DEVICE: XXX

COMMUNICATION ERROR
```

Instead, if the device is working and answered correctly, its parameters will be collected and the following information displayed:

```
CIRCUIT: XX
DEVICE: XXX
NAME: XXXXXXXXXXXX
[OK] CONTINUE

TYPE: XX
[ESC] BACK
```

By pressing **OK**, the typical parameters of the device will be displayed.

3.4.6.1 Read output module (OM, FW code 0126)

If the device is an output module, the following parameters will be displayed:

Screen for MODE 0/1/2

```
MODE 0/1/2
EXTERNAL POWER SUPPLY YES/NO
HOLD-OFF XXX
FEEDBACK XXX
```

Screen for MODE 3

```
MODE 3
EXTERNAL POWER SUPPLY YES/NO
RESET TIME XXX
ACTIVATION TIME XXX
```

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES/NO
REPETITION ACTIVE YES/NO
FW XXXX-XX
```

- **MODE:** is the output module operating mode.
- **EXTERNAL POWER SUPPLY:** indicates whether the module is self-powered or powered through the detection line.
- **HOLD-OFF:** it is the time in seconds (0÷255 sec.; step 1 sec.) which must elapse between the reception of the activation command by the module and the actual relay activation on the module.
- **FEEDBACK:** it is the time in seconds (0÷255 sec.; step 1 sec.) within which the input 1 control after activation must be activated on the output module. This time is valid only when the module is programmed for operating mode 2.
- **RESET TIME:** it is the switching time of the relay output. This function is valid when the module is programmed in mode 3.
- **ACTIVATION TIME:** it is the activation time of the supervised output (siren output); if set to 0 the activation is permanent, otherwise it follows the settings for the desired time (default 1 seconds). This function is valid when the module is programmed in mode 3.
- **LED ACTIVE:** it shows the LED blinking activation as a result of the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED blink every time the device receives a measurement command sent by the control panel.
- **REPETITION ACTIVE:** it shows the activation of the alarm repetition output; when the device is not in alarm condition the output is temporary activated upon a query from the control panel.
- **FW:** it is the device firmware code, revision included.

3.4.6.2 Read latched input module (LI)

If the device is an input module with memory, the following parameters will be displayed:

```
RESET OUTPUT YES /NO
RESET TIME X
RECOVERY TIME XXX
THRESHOLD SINGLE/MULTIPLE
```

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES /NO
REPETITION ACTIVE YES /NO
FW XXXX-XX
```

- **RESET OUTPUT:** it says whether the reset output in the module is enabled or not.
- **RESET TIME:** it is the time in seconds (1÷20 sec.; step 1 sec.) during which the reset output is active.
- **RECOVERY TIME:** when the module is in external fault, it is a time interval during which, after a reset of the control panel, inputs 1 and 2 will not be controlled by the module. Range of admitted values: 60÷255 sec, step 1 sec.
- **THRESHOLD:** it shows the single threshold or multi-threshold operating mode of the module.
- **LED ACTIVE:** it shows the LED blinking activation during the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **REPETITION ACTIVE:** it shows the activation of the alarm repetition output; when the device is not in alarm condition the output is temporary activated upon a query from the control panel.
- **FW:** it is the device firmware code, revision included.

3.4.6.3 Read pulsed input module (PI)

If the device is a pulsed input module, the following parameters will be displayed:

```
LOCAL RESET YES /NO
RESET OUTPUT YES /NO
RESET TIME X
LED ACTIVE YES /NO v

FREQUENT BLINKING YES /NO ^
REPETITION ACTIVE YES /NO
FW XXXX-XX
```

- **LOCAL RESET:** it says whether local reset input available on the module is enabled or not.
- **RESET OUTPUT:** it says whether the reset output in the module is enabled or not
- **RESET TIME:** it is the time expressed in seconds (1÷20 sec.; step 1 sec.) during which the reset output is active.
- **LED ACTIVE:** it shows the LED blinking activation during the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **REPETITION ACTIVE:** it shows the activation of the alarm repetition output; when the device is not in alarm condition the output is temporary activated upon a query from the control panel.
- **FW:** it is the device firmware code, revision included.

3.4.6.4 Read manual call point (MN)

If the device is a manual call point, the following parameters will be displayed:

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES /NO
FW XXXX-XX
```

- **LED ACTIVE:** it shows the LED blinking activation as a result of the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **FW:** it is the device firmware code, revision included.

3.4.6.5 Read concentrator module (CM)

If the device is a concentrator module, the following parameters will be displayed:

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES /NO
SINGLE/DOUBLE KNOCK
TYPE C YES /NO v

FW XXXX-XX ^
```

- **LED ACTIVE:** it shows the LED blinking activation as a result of the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **SINGLE/DOUBLE KNOCK:** it indicates whether the module activates or not the alarm condition and the siren output as a consequence of one or more detectors in alarm.
- **TYPE C:** it indicates whether the module is a type C one or not.
- **FW:** it is the device firmware code, revision included.

3.4.6.6 Read bathroom call cord module (TB)

If the device is a bathroom call cord module, the following parameters will be displayed:

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES /NO
FW XXXX-XX
```

- **LED ACTIVE:** it shows the LED blinking activation as a result of the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **FW:** it is the device firmware code, revision included.

3.4.6.7 Read latched input module with siren output (IS)

If the device is a latched input module with siren output, the following parameters will be displayed:

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES/NO
THRESHOLD SINGLE/MULTIPLE
RESET OUTPUT YES /NO
```

```
TYPE C YES /NO
RESET TIME X
FW XXXX-XX
```

- **LED ACTIVE:** it shows the LED blinking activation as a result of the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **THRESHOLD:** it shows the single threshold or multi-threshold operating mode of the module.
- **RESET OUTPUT:** it says whether the reset output in the module is enabled or not.
- **TYPE C:** it indicates whether the module is a type C one or not.
- **RESET TIME:** it is the time in seconds (1÷20 sec.; step 1 sec.) during which the reset output is active.
- **FW:** it is the device firmware code, revision included.

3.4.6.8 Read 4-20mA input module (CI)

If the device is a 4-20mA input module, the following parameters will be displayed:

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES /NO
FW XXXX-XX
```

```
DIP SWITCH 1-2-3: OFF/ON-OFF/ON-OFF/ON
THRESHOLD 1: XX.X (mA)
THRESHOLD 2: XX.X (mA)
```

- **LED ACTIVE:** it shows the LED blinking activation during the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **FW:** it is the device firmware code, revision included.
- **DIP SWITCH 1-2-3:** it indicates the current configuration of dip switches in the device.
- **THRESHOLD 1/2:** it indicates the user defined alarm thresholds 1 and 2. The device uses these thresholds when the dip switches are configured as OFF-OFF-OFF.

3.4.6.9 Read sounder (OM, FW code 0165 and 0169)

If the device is a sounder, the following parameters will be displayed:

HOLD-OFF XXX LED ACTIVE YES /NO FREQUENT BLINKING YES /NO FW XXXX-XX	▼
BASE BLINKING YES/NO VOLUME X TONES X SYNCHRONIZED ACTIVATION YES/NO	▲

- **HOLD-OFF:** delay (0÷255 sec.; step 1 sec.) which must elapse between the reception of the activation command by the sounder and the actual acoustic emission activation.
- **LED ACTIVE:** if set, the green LED blinks when the module receives a query from the control panel.
- **FREQUENT BLINKING:** if set, the green LED blinks when the module receives a measurement command.
- **FW:** firmware code and revision of the module.
- **BASE BLINKING:** if set, the red LEDs start blinking when the module is activated.
- **VOLUME:** sound volume (**0:** absent, **1:** low, **2:** medium, **3:** high).
- **TONES:** type of sound made by the module when it is activated (there are 4 available tones, numbered from 1 to 4).
- **SYNCHRONIZED ACTIVATION:** if this function is enabled, all the fire alarm sounders and visual alarm devices positioned on the same detection circuit will be activated at the same time.

3.4.6.10 Read sounder/visual fire alarm devices (OM, FW code 0179)

If the device is a sounder/visual fire alarm device, the following parameters will be displayed:

HOLD-OFF XXX LED ACTIVE YES /NO FREQUENT BLINKING YES /NO FW XXXX-XX	▼
VISUAL MODE X VOLUME X TONES X SYNCHRONIZED ACTIVATION YES/NO	▲

- **HOLD-OFF:** delay (0÷255 sec.; step 1 sec.) which must elapse between the reception of the activation command by the sounder and the actual acoustic/visual emission activation.
- **LED ACTIVE:** if set, the green LED blinks when the module receives a query from the control panel.
- **FREQUENT BLINKING:** if set, the green LED blinks when the module receives a measurement command.
- **FW:** firmware code and revision of the module.
- **VISUAL MODE:** the visual mode emission (there are 16 available modes, numbered from 0 to 15).
- **VOLUME:** sound volume (**0:** absent, **1:** low, **2:** medium, **3:** high).
- **TONES:** type of sound made by the module when it is activated (there are 4 available tones, numbered from 1 to 4).
- **SYNCHRONIZED ACTIVATION:** if this function is enabled, all the fire alarm sounders and visual alarm devices positioned on the same detection circuit will be activated at the same time.

3.4.6.11 Read beam detector (BD)

If the device is a beam detector, the following parameters will be displayed:

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES /NO
REPETITION ACTIVE YES /NO
ALARM THRESHOLDS: 35% (A1) 35% (A2)      v

FAULT SIGNALLING DELAY: 30 sec          ^
FW XXXX-XX
```

- **LED ACTIVE:** it shows the LED blinking activation during the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **REPETITION ACTIVE:** it shows the activation of the alarm repetition output; when the device is not in alarm condition the output is temporary activated upon a query from the control panel.
- **FW:** it is the device firmware code, revision included.
- **ALARM THRESHOLDS:** it shows the alarm 1 (A1) and alarm 2 (A2) obscuration thresholds of the infrared beam.
- **FAULT SIGNALLING DELAY:** it shows the time in seconds of the complete obscuration of the infrared beam for the signalization of fault condition from the detector.
- **FW:** it is the device firmware code, revision included.

3.4.6.12 Read other devices (SM, HT, SH, etc.)

For all the other types of devices not mentioned in the previous paragraphs, the following parameters will be displayed:

```
LED ACTIVE YES /NO
FREQUENT BLINKING YES /NO
REPETITION ACTIVE YES /NO
FW XXXX-XX
```

- **LED ACTIVE:** it shows the LED blinking activation during the control panel query.
- **FREQUENT BLINKING:** if it is set, the green LED will flash every time the device receives a measurement command.
- **REPETITION ACTIVE:** it shows the activation of the alarm repetition output; when the device is not in alarm condition the output is temporary activated upon a query from the control panel.
- **FW:** it is the device firmware code, revision included.

By pressing **ESC** in any device information screen view, if the control panel detects a misalignment between the device information stored inside the control panel's memory and the data collected from the device, the following message will be displayed before going back to the screen of input of the device address:

```
DEVICE CONFIGURATION DIFFERENT
THAN THE ONE STORED IN THE CONTROL PANEL
```

3.4.7 Configure remote device

This function is used to set the configuration parameters of a device already installed and normally operating on a system detection circuit.

Enter the number of the circuit connected with the device and confirm with **OK**:

```
CIRCUIT: XX
```

The circuit is powered on (possible malfunctioning will be signalled).

If the circuit is powered on successfully, enter the address of the device to be configured and confirm with:

```
CIRCUIT: XX  
DEVICE: XXX
```

By pressing **ESC**, the control panel goes back to the previous menu for entering the circuit number.

After entering the number of the device, the control panel will collect the current configuration parameters.

Should any communication problems occur with the device, the following message will be displayed:

```
CIRCUIT: XX  
DEVICE: XXX  
  
COMMUNICATION ERROR
```

If the device is working and answering correctly, the current parameters will be collected and the following message will be displayed:

```
CIRCUIT: XX  
DEVICE: XXX  
NAME: XXXXXXXXXXXX  
[OK] CONTINUE
```

```
TYPE: XX  
[ESC] BACK
```

Please note that while in the local configuration of a device it is possible to change the address of the device, here this operation is not allowed since the device is installed in a system already configured and whose devices have already been assigned an address.

By pressing **OK** you will access a set of configuration parameters menus depending on the type of connected device.

3.4.7.1 Configure I/O module (SINGLE MODULE)

If the device is a single I/O module (FW code **0126**) configured as an output module (OM) or a latched input module (LI) or pulsed input module (PI), the following screen is displayed:

```
CONFIGURE MODULE  
[1] # OUTPUT MODULE (OM)  
[2] LATCHED INPUT MODULE (LI)  
[3] PULSED INPUT MODULE (PI)
```

From the above screen view it is possible to change the type of device. In general, each device belonging to the OM, LI, PI family can be changed with a device of another type of the same family.

After selecting and confirming the type of device with **OK**, the configuration menu will be displayed for setting the parameters according to the type of device.

3.4.7.2 Configure I/O module (MULTIPLE MODULE)

If the device is an output module (OM) or latched input module (LI) belonging to a multiple I/O module (code FW 0132), the following screen is displayed:

```
CONFIGURE MODULE
[1] # OUTPUT MODULE (OM)
[2]   LATCHED INPUT MODULE (LI)
```

From the above screen view it is possible to change the type of device. When the I/O module belongs to a multiple I/O module, the only allowed types are OM and LI.

After selecting and confirming the type of device with **OK**, the configuration menu will be displayed for setting the parameters according to the type of device.

3.4.7.3 Configure output module (OM, FW code 0126)

The configuration menu in the case of mode 0, 1 or 2 output module, appears as follows:

```
[1] LED ACTIVE
[2] REPETITION ACTIVE
[3] FREQUENT BLINKING
[4] MODE v

[5] HOLD-OFF TIME ^
[6] FEEDBACK TIME
[7] EXTERNAL POWER SUPPLY
[8] DEFAULT
```

For a mode 3 output module, however, the following menu applies:

```
[1] LED ACTIVE
[2] REPETITION ACTIVE
[3] FREQUENT BLINKING
[4] MODE v

[5] RESET TIME ^
[6] ACTIVATION TIME
[7] EXTERNAL POWER SUPPLY
[8] DEFAULT
```

Press key 1 to define the device LED operation.

```
LED ACTIVE

[1] # YES
[2]   NO
```

To enable the LED blinking which signals communication between the control panel and the device, press 1. The active option is signalled by # symbol. To disable the LED blinking press 2.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key 2 to define the module alarm repetition output operation.

```
REPETITION ACTIVE

[1] # YES
[2]   NO
```

To enable the module alarm repetition output, press 1.

To disable the alarm repetition output at the LED blinking press 2.

The active option is signalled by # symbol.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to define the module frequent blinking operation.

```
FREQUENT BLINKING  
  
[1] # YES  
[2]  NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**.
The active option is signalled by **#** symbol.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **4** to configure the operation mode of the module:

```
[1] # MODO 0  
[2]  MODE 1  
[3]  MODE 2  
[4]  MODE 2
```

Press key **1** to configure the output module operation in mode 0.
Press key **2** to configure the output module operation in mode 1.
Press key **3** to configure the output module operation in mode 2.
Press key **4** to configure the output module operation in mode 3.
With **OK** you confirm selection. With **ESC** you go back to the previous menu and cancel changes.

Press key **5** to set the Hold-Off time in the case of a mode **0/1/2** output module or the reset time in the case of a mode 3 output module:

```
HOLD-OFF TIME: XXX
```

Enter the Hold-Off time in the range 0÷255 seconds and confirm with **OK**.
To go back to the previous menu without making any changes press **ESC**.

```
RESET TIME: XXX
```

Enter the Reset time in the range 1÷3 seconds (default = **1**) and confirm with **OK**.
To go back to the previous menu without making any changes press **ESC**.

Press key **6** to set the feedback time in the case of output modules programmed in mode **0/1/2** or the activation time in the case of output module in mode **3**:

```
FEEDBACK TIME: XXX
```

Enter the feedback time range in the range 0÷255 seconds and confirm with **OK**.
To go back to the previous menu without making any changes press **ESC**.

```
ACTIVATION TIME: XXX
```

Enter the activation time in the range 0÷10 seconds (default = **1**) and confirm with **OK**.
To go back to the previous menu without making any changes press **ESC**.

Press key **7** to define the presence of the module external power supply (i.e. the module is not powered by the detection line but by an external source).

```
EXTERNAL POWER SUPPLY
[1] YES
[2] # NO
```

To indicate the presence of external power supply press **1**.

To indicate the absence of external power supply press **2**.

The active option is signalled by **#** symbol. With **OK** you confirm the selection that is currently active.

With **ESC** you go back to the previous menu without changing the current state.

Press key **8** to access the menu for resetting the values established by factory in the device configuration:

```
RESTORE DEFAULT VALUES
[1] YES
[2] # NO
```

To reset default values press **1**. The active option is signalled by **#** symbol.

With **OK** you confirm the selection that is currently active.

With **ESC** you go back to the previous menu without changing any parameters.

The factory setting values of the output module parameters are listed below:

```
REPETITION ACTIVE: YES
LED ACTIVE: YES
FREQUENT BLINKING: YES
MODE: 0
HOLD-OFF: 0
FEEDBACK: 0
EXTERNAL POWER SUPPLY: NO
```

Moreover, the module will be set as type C.

3.4.7.4 Configure latched input module (LI)

The latched input module configuration menu is the following:

```
[1] LED ACTIVE
[2] REPETITION ACTIVE
[3] FREQUENT BLINKING
[4] SINGLE/MULTI THRESHOLD v
```

```
[5] RESET OUTPUT ^
[6] RESET TIME
[7] RECOVERY TIME
[8] DEFAULT
```

Press key **1** to define the device LED operation:

```
LED ACTIVE
[1] # YES
[2] NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**.

The active option is signalled by **#** symbol. To disable the LED blinking press **2**.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the module alarm repetition output operation:

```
REPETITION ACTIVE
[1] # YES
[2] NO
```

To enable the module alarm repetition output, press **1**.

To disable the alarm repetition output at the LED blinking press **2**. The active option is signalled by **#** symbol.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to define the module frequent blinking operation.

```
FREQUENT BLINKING
[1] # YES
[2]  NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**.
The active option is signalled by **#** symbol.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.
Press key **4** to configure the working mode, in single or multi threshold, of the module:

```
SINGLE/MULTI THRESHOLD
[1] # SINGLE THRESHOLD
[2]  MULTIPLE THRESHOLD
```

Press **1** to set the module operation with single threshold.
Press **2** to set the module operation with multiple threshold.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.
Press key **5** to enable/disable the reset output of the module:

```
RESET OUTPUT
[1] # RESET OUTPUT DISABLED
[2]  RESET OUTPUT ENABLED
```

Press **1** to disable the module reset output. Press **2** to enable the module reset output.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.
Press key **6** to configure the reset time:

```
RESET TIME: XX
```

Enter the reset time in the range 1÷20.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the previous value.
Press key **7** to set the recovery time:

```
RECOVERY TIME: XX
```

Enter the recovery time in the range 60÷255 seconds (default = 60 sec).
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the previous value.
Press key **8** to restore the factory settings in the device configuration.

```
RESTORE DEFAULT VALUES
[1]  YES
[2] # NO
```

To restore default values press **1**. The active option is signalled by **#** symbol.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.
The factory setting values of the parameters of the latched input module are listed below:

REPETITION ACTIVE: YES
LED ACTIVE: YES
FREQUENT BLINKING: YES
THRESHOLD: SINGLE
RESET TIME: 3
RESET OUTPUT: ENABLED
RECOVERY TIME: 60

3.4.7.5 Configure pulsed input module (PI)

The pulsed input module configuration menu is the following:

```
[1] LED ACTIVE
[2] REPETITION ACTIVE
[3] FREQUENT BLINKING
[4] LOCAL RESET          v

[5] RESET OUTPUT        ^
[6] RESET TIME
[7] DEFAULT
```

Press key **1** to define the device LED operation.

```
LED ACTIVE

[1] # YES
[2]  NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**. The active option is signalled by **#** symbol. To disable the LED blinking press **2**. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the module alarm repetition output operation.

```
REPETITION ACTIVE

[1] # YES
[2]  NO
```

To enable the module alarm repetition output, press **1**. To disable the alarm repetition output at the LED blinking press **2**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to define the module frequent blinking operation.

```
FREQUENT BLINKING

[1] # YES
[2]  NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **4** to enable or disable the local reset input:

```
LOCAL RESET

[1] # LOCAL RESET DISABLED
[2]  LOCAL RESET ENABLED
```

Press **1** to disable the module local reset input. Press **2** to enable the module local reset input. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **5** to enable or disable the reset output:

```
RESET OUTPUT

[1] # RESET OUTPUT DISABLED
[2]  RESET OUTPUT ENABLED
```

Press **1** to disable the module reset output. Press **2** to enable the module reset output. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **6** to configure the reset time:

```
RESET TIME: XX
```

Enter the reset time in the range 1÷20 seconds.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **7** to restore the factory settings in the device configuration.

```
RESTORE DEFAULT VALUES  
  
[1] YES  
[2] # NO
```

To reset default values press **1**. To **NOT** restore the default values, press **2**.

The active option is signalled by **#** symbol. With **OK** you confirm selection.

With **ESC** you go back to the previous menu without changing the current state.

The factory settings values of the pulsed input module parameters are listed below:

```
REPETITION ACTIVE: YES  
LED ACTIVE: YES  
FREQUENT BLINKING: YES  
LOCAL RESET: DISABLED  
RESERT TIME: 3  
RESET OUTPUT: ENABLED
```

3.4.7.6 Configure manual call point (MN)

The manual call point configuration menu is the following:

```
[1] LED ACTIVE  
[2] FREQUENT BLINKING  
[3] DEFAULT
```

Press key **1** to define the device LED operation.

```
LED ACTIVE  
  
[1] # YES  
[2] NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**.

The active option is signalled by **#** symbol. To disable the LED blinking press **2**.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the device frequent blinking operation.

```
FREQUENT BLINKING  
  
[1] # YES  
[2] NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**.

The active option is signalled by **#** symbol. With **OK** you confirm selection.

With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to restore the factory settings in the device configuration.

```
RESTORE DEFAULT VALUES  
  
[1] YES  
[2] # NO
```

To reset default values press **1**. The active option is signalled by **#** symbol.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

The factory setting value of the parameters of the manual call point are:

```
LED ACTIVE: YES  
FREQUENT BLINKING: YES
```

3.4.7.7 Configure concentrator module (CM)

The configuration menu of the concentrator module is shown below:

```
[1] LED ACTIVE
[2] FREQUENT BLINKING
[3] SINGLE KNOCK/DOUBLE KNOCK
[4] TYPE C                                v

[5] DEFAULT                                ^
```

Press key **1** to define the device LED operation.

```
LED ACTIVE

[1] # YES
[2] NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**.

The active option is signalled by **#** symbol. To disable the LED blinking press **2**.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the device frequent blinking operation.

```
FREQUENT BLINKING

[1] # YES
[2] NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**.

The active option is signalled by **#** symbol. With **OK** you confirm selection.

With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to configure the working mode (single/double knock) of the module:

```
SINGLE KNOCK/DOUBLE KNOCK

[1] # SINGLE KNOCK
[2] DOUBLE KNOCK
```

Press key **1** to configure the working mode in single knock.

Press key **2** to configure the working mode in double knock.

Confirm selection with **OK**. Press **ESC** to go back to the previous menu and keep the current configuration.

Press key **4** to establish whether the module is a Type C one or not:

```
TYPE C

[1] # OFF
[2] ON
```

Press **1** to establish that the module is NOT a Type C one. Press **2** to establish that the module is a Type C one.

Confirm selection with **OK**. Press **ESC** to go back to the previous menu and keep the current configuration.

Press key **5** to restore the factory values in the device configuration.

```
RESTORE DEFAULT VALUES

[1] YES
[2] # NO
```

To reset default values press **1**. The active option is signalled by **#** symbol.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

The default parameters of the concentrator module are listed below:

```
LED ACTIVE:                YES
FREQUENT BLINKING:        YES
SINGLE KNOCK / DOUBLE KNOCK:  DOUBLE KNOCK
TYPE C:                    YES
```

3.4.7.8 Configure bathroom call cord module (CN)

The configuration menu of the bathroom call cord module is shown below:

```
[1] LED ACTIVE
[2] FREQUENT BLINKING
[3] DEFAULT
```

Press key **1** to define the device LED operation.

```
LED ACTIVE

[1] # YES
[2] NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**. The active option is signalled by **#** symbol. To disable the LED blinking press **2**. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state. Press key **2** to define the device frequent blinking operation.

```
FREQUENT BLINKING

[1] # YES
[2] NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state. Press key **3** to restore the factory values in the device configuration.

```
RESTORE DEFAULT VALUES

[1] YES
[2] # NO
```

To reset default values press **1**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state. The default parameters of the bathroom call cord device are listed below:

LED ACTIVE: YES
FREQUENT BLINKING: YES

3.4.7.9 Configure latched input module with siren output (IS)

The configuration menu of the latched input module with siren output is shown below:

```
[1] LED ACTIVE
[2] FREQUENT BLINKING
[3] SINGLE/MULTI THRESHOLD
[4] RESET OUTPUT v

[5] TYPE C ^
[6] RESET TIME
[7] DEFAULT
```

Press key **1** to define the device LED operation:

```
LED ACTIVE

[1] # YES
[2] NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**. The active option is signalled by **#** symbol. To disable the LED blinking press **2**. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the module frequent blinking operation.

```
FREQUENT BLINKING

[1] # YES
[2]  NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**.
The active option is signalled by **#** symbol. With **OK** you confirm selection.
With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to configure the working mode, in single or multi threshold, of the module:

```
SINGLE/MULTI THRESHOLD

[1] # SINGLE THRESHOLD
[2]  MULTIPLE THRESHOLD
```

Press **1** to set the module operation with single threshold.
Press **2** to set the module operation with multiple threshold.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **4** to enable/disable the reset output of the module:

```
RESET OUTPUT

[1] # RESET OUTPUT DISABLED
[2]  RESET OUTPUT ENABLED
```

Press **1** to disable the module reset output. Press **2** to enable the module reset output.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **5** to establish whether the module is a Type C one or not:

```
TYPE C

[1] # OFF
[2]  ON
```

Press **1** to establish that the module is NOT a Type C one. Press **2** to establish that the module is a Type C one.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **6** to configure the reset time:

```
RESET TIME: XX
```

Enter the reset time in the range 1÷20 seconds.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the previous value.

Press key **7** to restore the factory values in the device configuration.

```
RESTORE DEFAULT VALUES

[1]  YES
[2] # NO
```

To restore default values press **1**.
The active option is signalled by **#** symbol.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

The default parameters of the latched input with siren output are listed below:

LED ACTIVE:	YES
FREQUENT BLINKING:	YES
THRESHOLD:	SINGLE
RESET OUTPUT:	ENABLED
TYPE C:	YES
RESET TIME:	3

3.4.7.10 Configure 4-20mA input module (CI)

The configuration menu of the 4-20mA input module is shown below:

```
[1] LED ACTIVE
[2] FREQUENT BLINKING
[3] THRESHOLD 1
[4] THRESHOLD 2          v

[5] DIP SWITCH 1        ^
[6] DIP SWITCH 2
[7] DIP SWITCH 3
[8] DEFAULT
```

Press key **1** to define the device LED operation:

```
LED ACTIVE

[1] # YES
[2]  NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**. The active option is signalled by **#** symbol. To disable the LED blinking press **2**. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the module frequent blinking operation.

```
FREQUENT BLINKING

[1] # YES
[2]  NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to assign a value to the alarm threshold 1 of the device:

```
THRESHOLD 1 (mA) : XX.Y
```

Insert the integer part of the alarm threshold (in mA), then move the cursor on the decimal digit by pressing the **>** key and finally insert the decimal part of the threshold.

Press **OK** to confirm the inserted value.

By pressing **ESC**, you go back to the previous menu without modifying the current value.

Press key **4** to assign a value to the alarm threshold 2 of the device:

```
THRESHOLD 2 (mA) : XX.Y
```

Insert the integer part of the alarm threshold (in mA), then move the cursor on the decimal digit by pressing the **>** key and finally insert the decimal part of the threshold.

Press **OK** to confirm the inserted value.

By pressing **ESC**, you go back to the previous menu without modifying the current value.

The assignment of values to the alarm thresholds is subject to the following restrictions:

- the admitted range for each threshold is 4.0÷20.0mA
- threshold 1 must be less than or equal to threshold 2; as a consequence, if threshold 1 is assigned a value greater than the current value of threshold 2, the latter is forced to the new value of threshold 1; also, if threshold 2 is assigned a value smaller than the current value of threshold 1, the latter is forced to the new value of threshold 2.

Press keys **5, 6, 7** to set up the position of the dip-switches 1, 2, 3:

```
DIP SWITCH 1/2/3

[1] # OFF
[2]  ON
```

Press key **1** to assign the OFF position to the dip-switch.

Press key **2** to assign the ON position to the dip-switch. Press **OK** to confirm the choice.

By pressing **ESC**, you go back to the previous menu without modifying the current value.

Press key **8** to restore the factory settings in the device configuration.

```
RESTORE DEFAULT VALUES

[1]  YES
[2] # NO
```

To restore default values press **1**. The active option is signalled by **#** symbol.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

The default parameters of 4-20mA input module are listed below:

```
LED ACTIVE:          YES
FREQUENT BLINKING:  YES
THRESHOLD 1:        6.4mA
THRESHOLD 2:        8.8mA
DIP SWITCH 1:       OFF
DIP SWITCH 2:       OFF
DIP SWITCH 3:       OFF
```

3.4.7.11 Configure sounder (OM, FW code 0165 and 0169)

The configuration menu is shown below:

```
[1] HOLD-OFF TIME
[2] LED ACTIVE
[3] FREQUENT BLINKING
[4] BASE BLINKING          v

[5] VOLUME                 ^
[6] TONES
[7] SYNCHRONIZED ACTIVATION
[8] DEFAULT
```

Press **1** to set the Hold-Off time:

```
HOLD-OFF TIME: XXX
```

Enter the Hold-Off time in the range 0÷255 seconds and confirm with **OK**.

Press **ESC** to discard the changes and go back to the previous menu.

Press **2** to configure the green LED operation.

```
LED ACTIVE

[1] # YES
[2]  NO
```

To enable the blinking of the LED that signals the dialogue between the control panel and the device, press **1**.

The active option is signalled by **#** symbol. Press **2** to disable it.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press **3** to configure the frequent blinking operation.

```
FREQUENT BLINKING
[1] # YES
[2] NO
```

Enable the green LED frequent blinking by pressing **1**. Disable it by press **2**. The currently selected option is marked by the **#** symbol. Press **OK** to confirm the selection. Press **ESC** to discard the changes and go back to the previous menu.

Press **4** to configure the behaviour of the red alarm signalling LEDs of the device:

```
BASE BLINKING
[1] # YES
[2] NO
```

Press **1** to enable the red alarm signalling LEDs to blink when the device is activated. The currently selected option is marked by the **#** symbol. Press **2** to disable it. Press **OK** to confirm the selection. Press **ESC** to discard the changes and go back to the previous menu.

Press **5** to set the sound volume level:

```
VOLUME: XXX
```

Enter the volume level (**0**: sound off, **1**: low, **2**: medium, **3**: high) and confirm with **OK**. Press **ESC** to discard the changes and go back to the previous menu.

Press **6** to set the tone played by the device upon its activation:

```
TONES: X
```

Enter the tone (range 1÷4) and confirm with **OK**. Press **ESC** to discard the changes and go back to the previous menu.

Press key **7** to enable or disable the synchronized activation function.

```
SYNCHRONIZED ACTIVATION
[1] # YES
[2] NO
```

To enable synchronized activation of the bases and the sounders and/or sounder/visual devices, press **1**. To disable it, press **2**. The active option is signalled by **#** symbol With **OK** you confirm the configuration. With **ESC** you go back to the previous menu without changing the current state.

Press **8** to restore the factory configuration:

```
RESTORE DEFAULT VALUES
[1] YES
[2] # NO
```

Press **1** to restore the default values. The currently selected option is signalled by the **#** symbol. Press **OK** to confirm the currently active option. Press **ESC** to discard the changes and go back to the previous menu.

The factory settings are listed below:

- HOLD-OFF: 0
- LED ACTIVE: YES
- FREQUENT BLINKING: YES
- BASE BLINKING: YES
- VOLUME: 3
- TONES: 3
- SYNCHRONIZED ACTIVATION: NO

3.4.7.12 Configure sounder/visual device (OM, FW code 0179)

The configuration menu is shown below:

```
[1] HOLD-OFF TIME
[2] LED ACTIVE
[3] FREQUENT BLINKING
[4] VISUAL MODE          v
```

```
[5] VOLUME              ^
[6] TONES
[7] SYNCHRONIZED ACTIVATION
[8] DEFAULT
```

Press **1** to set the Hold-Off time:

```
HOLD-OFF TIME: XXX
```

Enter the Hold-Off time in the range 0÷255 seconds and confirm with **OK**.
Press **ESC** to discard the changes and go back to the previous menu.

Press **2** to configure the green LED operation.

```
LED ACTIVE
[1] # YES
[2] NO
```

To enable the blinking of the LED that signals the dialogue between the control panel and the device, press **1**.
The active option is signalled by **#** symbol. Press **2** to disable it.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press **3** to configure the frequent blinking operation.

```
FREQUENT BLINKING
[1] # YES
[2] NO
```

Enable the green LED frequent blinking by pressing **1**. Disable it by press **2**.
The currently selected option is marked by the **#** symbol.
Press **OK** to confirm the selection. Press **ESC** to discard the changes and go back to the previous menu.

Press **4** to configure the alarm visual mode of the device:

```
VISUAL MODE: X
```

Enter the visual mode (range 0÷15) and confirm with **OK**.
Press **ESC** to discard the changes and go back to the previous menu.

Press **5** to set the sound volume level:

```
VOLUME: XXX
```

Enter the volume level (**0**: sound off, **1**: low, **2**: medium, **3**: high) and confirm with **OK**.
Press **ESC** to discard the changes and go back to the previous menu.

Press **6** to set the tone played by the device upon its activation:

```
TONES: X
```

Enter the tone (range 1÷4) and confirm with **OK**.
Press **ESC** to discard the changes and go back to the previous menu.
Press key **7** to enable or disable the synchronized activation function.

```
SYNCHRONIZED ACTIVATION  
  
[1] # YES  
[2]   NO
```

To enable synchronized activation of the bases and the sounders and/or sounder/visual devices, press **1**.
To disable it, press **2**. The active option is signalled by **#** symbol. With **OK** you confirm the configuration.
With **ESC** you go back to the previous menu without changing the current state.

Press **8** to restore the factory configuration:

```
RESTORE DEFAULT VALUES  
  
[1]   YES  
[2] # NO
```

Press **1** to restore the default values.
The currently selected option is signalled by the **#** symbol.
Press **OK** to confirm the currently active option.
Press **ESC** to discard the changes and go back to the previous menu.

The factory settings are listed below:

```
HOLD-OFF:           0  
LED ACTIVE:         YES  
FREQUENT BLINKING: YES  
VISUAL MODE:        9  
VOLUME:             3  
TONES:              3  
SYNCHRONIZED ACTIVATION: NO
```

3.4.7.13 Configure beam detector (BD)

The configuration menu of the beam detector is shown below:

```
[1] LED ACTIVE  
[2] FREQUENT BLINKING  
[3] REPETITION ACTIVE  
[4] ALARM THRESHOLDS      v  
  
[5] FAULT SIGNALLING DELAY  ^  
[6] DEFAULT
```

Press key **1** to define the device LED operation:

```
LED ACTIVE  
  
[1] # YES  
[2]   NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**.
The active option is signalled by **#** symbol. To disable the LED blinking press **2**.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the module frequent blinking operation.

```
FREQUENT BLINKING

[1] # YES
[2]   NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**.
The active option is signalled by **#** symbol. With **OK** you confirm selection.
With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to define the module alarm repetition output operation:

```
REPETITION ACTIVE

[1] # YES
[2]   NO
```

To enable the module alarm repetition output, press **1**.
To disable the alarm repetition output at the LED blinking press **2**.
The active option is signalled by **#** symbol. With **OK** you confirm selection.
With **ESC** you go back to the previous menu without changing the current state.

Press key **4** to set the alarm thresholds of the device:

```
ALARM THRESHOLDS

[ ] 20%(A1) 35%(A2)      [ ] 25%(A1) 35%(A2)
[ ] 30%(A1) 35%(A2)      [#] 35%(A1) 35%(A2)
```

With **<** and **>** keys select the alarm 1 and alarm 2 combination of the infrared beam obscuration thresholds in the optical path; the active option is signalled by **#** symbol.

With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **5** to set the fault signalling delay of the device when the infrared beam is obscured.

```
FAULT SIGNALLING DELAY

[ ] 6 sec      [#] 30 sec
[ ] 60 sec     [ ] 90 sec
```

With **<** and **>** keys select the desired value; the active option is signalled by **#** symbol.
With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press **6** to restore the factory configuration:

```
RESTORE DEFAULT VALUES

[1]   YES
[2] # NO
```

Press **1** to restore the default values. The currently selected option is signalled by the **#** symbol.
Press **OK** to confirm the currently active option.
Press **ESC** to discard the changes and go back to the previous menu.

The factory settings are listed below:

- LED ACTIVE: YES
- FREQUENT BLINKING: YES
- REPETITION ACTIVE: YES
- ALARM THRESHOLDS: 35%(A1) 35%(A2)
- FAULT SIGNALLING DELAY: 30 sec

3.4.7.14 Configure the other types of devices

The configuration menu of the devices not already considered in the previous sections is the following:

```
[1] LED ACTIVE
[2] FREQUENT BLINKING
[3] REPETITION ACTIVE
[4] DEFAULT
```

Press key **1** to define the device LED operation.

```
LED ACTIVE

[1] # YES
[2] NO
```

To enable the LED blinking which signals communication between the control panel and the device, press **1**. The active option is signalled by **#** symbol. To disable the LED blinking press **2**. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **2** to define the device frequent blinking operation.

```
FREQUENT BLINKING

[1] # YES
[2] NO
```

To enable the module LED frequent blinking, press **1**. To disable it, press **2**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **3** to define the device alarm repetition output operation.

```
REPETITION ACTIVE

[1] # YES
[2] NO
```

To enable the device alarm repetition output, press **1**. To disable the alarm repetition output at the LED blinking press **2**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

Press key **4** to restore the factory values in the device configuration.

```
RESTORE DEFAULT VALUES

[1] YES
[2] # NO
```

To reset default values press **1**. The active option is signalled by **#** symbol. With **OK** you confirm selection. With **ESC** you go back to the previous menu without changing the current state.

The factory settings values of the programming parameters are listed below:

REPETITION ACTIVE: YES
LED ACTIVE: YES
FREQUENT BLINKING: YES

3.4.7.15 Save configuration

After setting the device configuration parameters described in the previous paragraphs, press **ESC** in the device main configuration menu and the following message will be displayed:

```
[OK]  STORE CONFIGURATION
[ESC] EXIT WITHOUT STORING
```

Therefore, the user can choose whether to implement the changes made up to that moment or cancel everything, keeping the old device configuration.

If the user decides to store configuration, the following message will communicate the programming outcome:

```
PROGRAMMING DONE/FAILED
```

Please note that the above mentioned device configuration is stored in the device under consideration and affect the data in the circuit module and the control panel.

Also note that when the type of device is changed (which can occur for MU, LI, PI groups), all the parameters (delay, operating modes, etc.) of the device which has been assigned a new type are restored from the factory values.

3.4.8 Update device

This menu makes it possible to align the configuration of any device stored in the control panel, the circuit module and the device itself.

More specifically, the configuration stored in the control panel is transmitted to the circuit module and the device.

Enter the number of the circuit where the device to be updated is located and confirm with **OK**:

```
CIRCUIT: XX
```

The circuit is powered on (possible malfunctioning will be signalled).

If the circuit is powered on successfully, you can enter the address of the device to be updated and confirm with **OK**:

```
CIRCUIT: XX
DEVICE: XXX
```

In order to prevent undesired accidental updates, there is a further check level which asks the user to press **1** to confirm the device update procedure:

```
CIRCUIT: XX
DEVICE: XXX

[1] UPDATE DEVICE
```

By pressing **1**, the update procedure will be started and the final outcome will be displayed as shown below:

```
CIRCUIT: XX
DEVICE: XXX
DEVICE UPDATED / NOT UPDATED
```

3.4.9 Device replacement

This function allows the user to change a faulty device with a brand new one.

In order to carry out the procedure successfully, the following conditions must be met:

- a device previously working is now broken.
- the faulty device is physically replaced with a new device (address 241) of the same type (if the type of the faulty device is either OM or LI or PI, the new device does not necessarily have to be of the same type, but it must belong to the OM, LI, PI group).
- there are no other new devices connected with the circuit except the one replacing the faulty device.

First, enter the circuit where the faulty device is located and confirm with **OK**:

```
CIRCUIT: XX
```

The circuit is powered on (possible malfunctioning will be signalled).

If the circuit is powered on successfully, enter the address of the device to be replaced and confirm with **OK**:

```
CIRCUIT: XX  
DEVICE: XX
```

If the device to be changed is already present and working, the procedure ends with the following notification to the user:

```
DEVICE ALREADY PRESENT
```

If the device to be changed has not been replaced by the new device or the latter is faulty as well, the following message will be displayed:

```
BRAND NEW DEVICE NOT PRESENT OR FAULTY
```

If the new device has an incompatible type with the one to be replaced, the following message will be displayed:

```
TYPE MISMATCH (XX/YY)
```

where

XX = type of device to be changed.

YY = type of new device.

If the faulty device has been removed and correctly replaced by a new device of a compatible type, the procedure will be completed successfully and the following message will be displayed:

```
DEVICE REPLACED SUCCESSFULLY
```

Finally, this procedure makes it possible to replace both the single device and the 4140 device.

In the latter case, it is necessary to specify the address of the first device in the group, otherwise the following message will be displayed:

```
INVALID DEVICE
```

3.5 PASSWORD

The control panel manages 10 passwords on 3 different levels:

- one password of level 1 (password 1): currently not used.
- four passwords of level 2 - users (password from 2 to 5): all the functions, but access to the programming menu, are enabled.
- four password of level 2 - advanced (password 6 to 9): like level 2 users + event indicator.
- one password of level 3 (password 10): total control (administrator).

When the user accesses the password menu, the following screen is displayed:

```
ENABLE PASSWORD

[1] # YES
[2]   NO
```

By pressing **OK** key to confirm configuration, the active option is marked by # symbol.

By pressing **ESC** it is possible to return to the previous menu.

If the passwords are enabled, the following menu is displayed:

```
[1] ENTER PASSWORD
[2] VIEW PASSWORD
```

If you choose to enter (change) a password, you will be asked to specify the number of the password to be changed:

```
PASSWORD Nr:
```

After entering the number of the password to be changed and confirming with **OK**, the following screen view will be displayed where the password can be edited:

```
PASSWORD No: XX
(LLEVEL XX)
ENTER PASSWORD: XXXX_
```

The password has a fixed format and can only consist of 5 digits.

If you want to view existing passwords, they are shown in the following four screens:

```
PASSWORD Nr: 1 (LEVEL 1): XXXXX
                                                                    v
```

```
PASSWORD Nr: 2 (LEVEL 2): XXXXX      ^
PASSWORD Nr: 3 (LEVEL 2): XXXXX
PASSWORD Nr: 4 (LEVEL 2): XXXXX
PASSWORD Nr: 5 (LEVEL 2): XXXXX      v
```

```
PASSWORD Nr: 6 (LEVEL 2+): XXXXX     ^
PASSWORD Nr: 7 (LEVEL 2+): XXXXX
PASSWORD Nr: 8 (LEVEL 2+): XXXXX
PASSWORD Nr: 9 (LEVEL 2+): XXXXX     v
```

```
PASSWORD Nr: 10 (LEVEL 3): XXXXX     ^
```

To move from one screen to another, use the arrows ^ and v.

The default passwords (factory setting) are the following:

LEVEL	PASSWORD
1	11111
2 Users	22222
2 Advanced	99999
3	33333

Whenever a password is entered, the control panel stores the event of entering a password, along with the number (NOT the value) of password used in the log event.

When the control panel is in monitoring phase and the password request is disabled, an error condition is generated.

3.6 LANGUAGE

The following menu is shown:

```
[1] ITALIANO
[2] ENGLISH
[3] FRANCAIS
[4] ESPANOL          v

[5] SLOVENSKO
[6] PORTUGUES
[7] ROMANA
[8] BULGARIAN      ^
```

After selecting the required language, the user is asked to confirm selection:

```
CONFIRM?

[1] # YES
[2]  NO
```

After confirmation, the messages will be immediately displayed in the language just chosen.

3.7 CONFIGURE DEVICES

Through this menu it is possible to configure the typical parameters of each device that is not present in the configuration of the control panel.

Through this menu it is possible to program each device before it is installed on the detection line.

The programmed parameters (such as, for instance, address, type, etc.) are saved inside the device in a non-volatile memory.

Only the device to be programmed must be connected on the selected detection circuit; the programmed parameters will have no effect on the configuration present in the control panel.

The device configuration menu is shown below:

```
[1] READ LOCAL DEVICE
[2] CONFIGURE LOCAL DEVICE
```

[1] READ LOCAL DEVICE

This option makes it possible to read the address, the type and other typical parameters of a device connected locally with the control panel.

[2] CONFIGURE LOCAL DEVICE

This option makes it possible to configure the address, the type and other typical parameters of a device connected locally with the control panel.

3.7.1 Read local device

The reading of the device configuration parameters, such as address, type, revision and specific parameters, can be carried out directly by the control panel.

Before accessing the related programming menu, connect the device directly with a circuit module.

Enter the number of the circuit connected with the device and confirm with **OK**:

```
CIRCUIT: XX
```

The circuit will be powered on (possible line malfunctioning will be notified) and then the following screen view will be displayed if the device is not present:

```
CIRCUIT: XX  
DEVICE: ---  
  
COMMUNICATION ERROR
```

or the following if the device is correctly detected:

```
CIRCUIT: XX  
DEVICE: XXX  
TYPE: XX  
[OK] CONTINUE [ESC] BACK
```

In this last case, the address and type of device will be displayed.

By pressing **OK**, a list of parameters depending on the type of device is displayed.

If the device is an output module, make reference to *paragraph 3.4.6.1* for the information displayed.

If the device is a latched input module, make reference to *paragraph 3.4.6.2* for the information displayed.

If the device is a pulsed input module, make reference to *paragraph 3.4.6.3* for the information displayed.

If the device is a manual call point, make reference to *paragraph 3.4.6.4* for the information displayed.

If the device is a concentrator module, make reference to *paragraph 3.4.6.5* for the information displayed.

If the device is a bathroom call cord module, make reference to *paragraph 3.4.6.6* for the information displayed.

If the device is a latched input module with siren output, make reference to *paragraph 3.4.6.7* for the information displayed.

If the device is a 4-20mA input module, make reference to *paragraph 3.4.6.8* for the information displayed.

If the device is a fire alarm sounder, please refer to *paragraph 3.4.6.9* for the information displayed.

If the device is a fire alarm sounder/visual device, please refer to *paragraph 3.4.6.10* for the information displayed.

If the device is a beam detector, please refer to *paragraph 3.4.6.11* for the information displayed.

For the remaining types, make reference to *paragraph 3.4.6.12* for the information displayed.

By pressing **ESC** in one of the device typical parameter screen views, you will go back to the display of the address and type of the connected device

3.7.2 Configure local device

This menu makes it possible to program the address and configuration parameters of a device directly connected with a circuit module.

Enter the number of the circuit directly connected with the device to be programmed and confirm with **OK**:

```
CIRCUIT: XX
```

The control panel will power on the local circuit connected with the device (possible malfunctioning will be signalled) and then collect some information from the device.

Should any communication problems occur with the device, the following message will be displayed:

```
CIRCUIT: XX  
DEVICE: ---  
  
COMMUNICATION ERROR
```

Instead, if the communication with the device is successful, the following screen view will be displayed:

```
CIRCUIT: XX
DEVICE:XXX           [>] CHANGE ADDR
TYPE: XX
[OK] CONTINUE       [ESC] BACK
```

This screen view shows the address and type of device.

By pressing > key it is possible to access a screen view where the device can be assigned a new address:

```
CURRENT ADDRESS: XXX
NEW ADDRESS: XXX

[OK] STORE           [ESC] CANCEL
```

In this screen view the new address can be edited, confirmed and assigned to the device by pressing **OK** or it is possible to exit without changing the address by pressing **ESC**.

In both cases, you will go back to the previous screen view where, by pressing **OK**, you will access some configuration menus for setting the parameters according to the type of connected device.

NOTE: *the user can assign to the device an address in the range (1÷128). Any attempt to program an address external to this range will result in the programming of the address 241 (address of a brand new device).*

If the device is an I/O module, please refer to *paragraphs 3.4.7.1, 3.4.7.2, 3.4.7.3, 3.4.7.4, 3.4.7.5.*

If the device is a manual call point, please refer to *paragraph 3.4.7.6.*

If the device is a concentrator module, please refer to *paragraph 3.4.7.7.*

If the device is a bathroom call cord module, please refer to *paragraph 3.4.7.8.*

If the device is a latched input module with siren output, please refer to *paragraph 3.4.7.9.*

If the device is a 4-20mA input module, please refer to *paragraph 3.4.7.10.*

If the device is a fire alarm sounder, please refer to *paragraph 3.4.7.11.*

If the device is a fire alarm sounder/visual device, please refer to *paragraph 3.4.7.12.*

If the device is a beam detector, please refer to *paragraph 3.4.7.13.*

For the remaining types of devices, different than the ones already taken into account above, please refer to *paragraph 3.4.7.14.*

In order to save the device changed configuration, please refer to *paragraph 3.4.7.15*, with the difference that the device configuration, once stored inside the device, does not affect the configuration present in the circuit module and in the control panel.

In these conditions the fire system can work correctly only if the device information contained in the devices, circuit modules and control panel is always aligned.

3.8 MISCELLANEOUS

Through this menu, shown below, it is possible to program and manage the control panel fringe functions.

[1] PRINTER	
[2] COMMUNICATIONS	
[3] REMOTE CONTROL UNIT	
[4] PANEL	▼

[5] CLOCK	▲
[6] OUTPUTS AND RELAYS	
[7] ALARM TIMERS	

[1] PRINTER

It makes it possible to manage the external printer.

[2] COMMUNICATIONS

It makes it possible to manage the communicator, the MASTER / SLAVE configurations, the control panel identifier, the control panel programming by PC and the ETHERNET port settings. To use the communicator module or the ETHERNET board and for the MASTER / SLAVE configuration, it is necessary to install additional modules.

[3] REMOTE CONTROL UNIT

It makes it possible to configure remote LCD annunciators. Communication between the control panel and the remote LCD annunciators is possible only if the control panel is equipped with the interface module RS232/RS485.

[4] PANEL

It makes it possible to configure the control panel parameters.

[5] CLOCK

It makes it possible to set date and time.

[6] OUTPUTS AND RELAYS / INPUTS

Allows configuration of outputs, relays and PS CTRL input.

[7] ALARM TIMERS

It makes it possible to set the alarm general timers.

3.8.1 Printer

This menu is used to enable/remove/exclude/include the printer.

In order to use the printer in the system, it is necessary to fulfil the following requirements:

- connect the printer module ITS500 on the same bus used for communication with the LCD annunciators.
- insert the expansion board RS232/RS485 in the CPU board in order to enable the communication with the printer module ITS500.
- connect a continuous feed, ASCII standard, Centronics type, parallel printer to the printer module ITS500.
- enable the printer through the relevant programming menu.

Once the printer is enabled and recognized by the system, all the events occurring in the system are sent to the printer module for immediate print.

[1] ENABLE
[2] DELETE
[3] INCLUDE/EXCLUDE
[4] VERIFY

By selecting **1**, the printer recognition is activated and the user is notified with the following message:

RECOGNITION ACTIVATED

If the printer has already been enabled (whether it has been already recognized or not), the user is notified with the following message:

PRINTER ALREADY ENABLED

By selecting **2**, the previously enabled printer is now deleted and the following message is shown:

```
PRINTER DELETE
```

By selecting **3**, the inclusion/exclusion menu is shown:

```
PRINTER  
[1] # INCLUDED  
[2]   EXCLUDED
```

The # symbol indicates the active option. The user choice must be confirmed with **OK**.

By selecting **4**, a message with the current printer status is shown.

For example, after the printer is enabled and before it is recognized, the following message is shown:

```
PRINTER TO BE RECOGNIZED
```

Finally, the attempt to delete/include/exclude/verify a printer not present makes the panel show the following message:

```
PRINTER NOT PRESENT
```

3.8.2 Communications

Through this menu, shown below, it is possible to enable, check and manage communications of FAP54 control panel with other systems or control panels.

```
[1] PC PROGRAMMING  
[2] PANEL ID  
[3] MASTER/SLAVE  
[4] ETHERNET PORT      v  
  
[5] COMMUNICATOR      ^  
[6] CYBER SECURITY
```

3.8.2.1 PC programming

By selecting this option, the following menu is displayed:

```
PC PROGRAMMING  
  
[1] # YES  
[2]   NO
```

By selecting **1**, programming of the control panel via PC commands is enabled.

By selecting **2**, programming via PC is disabled.

3.8.2.2 PANEL ID

Through this function it is possible to assign to the control panel an ID consisting of 5 digits (after entering it, confirm with **OK**):

```
PANEL ID: 00000
```

The control panel ID is used to distinguish a control panel inside a network of control panels.

3.8.2.3 Master / Slave

With FAP54 control panels it is possible to create a network of control panels. Inside this network, one control panel is a MASTER and all the others are SLAVE. A MASTER control panel can control up to 32 SLAVE control panels. Each SLAVE control panel is an independent entity, but supervised by the MASTER control panel which groups and communicates locally a set of events occurred on a SLAVE control panel.

To create a MASTER/SLAVE network, each control panel must be equipped with an optional RS232/RS485 board.

To access the menu item MASTER/SLAVE, it is necessary that the control panel is programmed as MASTER (see *paragraph 3.8.4 Control Panel*).

If the control panel has been programmed as SLAVE, there is nothing to be configured and the access to the MASTER/SLAVE menu will lead to the following message:

```
PANEL CONFIGURED AS SLAVE
```

Instead, if the control panel has been programmed as MASTER, the access to the MASTER/SLAVE menu will lead to the following menu display:

```
[1] INSERT SLAVE
[2] DELETE
[3] INCLUDE/EXCLUDE
[4] VERIFY
```

INSERT SLAVE

Through this menu it is possible to insert the SLAVE control panels to be controlled by the MASTER control panel.

Enter the address of the SLAVE control panel to be controlled and confirm with **OK**:

```
SLAVE ADDRESS: ____
```

Then enter the name to be assigned to the SLAVE control panel to be controlled and confirm with **OK**.

```
SLAVE ADDRESS: XXX
NAME: ____
```

Then, the user is required to specify whether the slave control panel is equipped for fire extinction management or not (the # symbol indicates the option currently selected):

```
SLAVE ADDRESS: XXX
NAME: XXXXXXXXXXXX
EXTINGUISHMENT: [1] YES [2] # NO
```

Then, the following message will be displayed:

```
SLAVE ADDRESS: XXX
NAME: XXXXXXXXXXXX
EXTINGUISHMENT: YES /NO
EQUIPMENT TO BE RECOGNIZED /PRESENT
```

By pressing **ESC** you will go back to the address menu, so that another SLAVE control panel can be inserted.

The SLAVE control panels can be added even though they are not physically present. In fact, as soon as a new SLAVE control panel is added, it is considered as "to be recognized".

The MASTER control panel will try to recognize the SLAVE control panels added and not yet acquired once it returns to the scanning phase.

When the SLAVE control panel is connected to the MASTER/SLAVE network and is turned on, it will reply to the polling by the MASTER control panel and, from that moment on, the SLAVE control panel has been recognized.

If an already recognized SLAVE control panel is disconnected by the network, the MASTER control panel detects the missing communication and generates a general fault.

Please note that in order for a SLAVE control panel to be successfully recognized it is necessary that the address assigned to the SLAVE control panel by the MASTER is the same address assigned locally to the SLAVE control panel through the suited menu (see *paragraph 3.8.4 Control Panel*).

DELETE

With this function it is possible to remove a SLAVE control panel from the list of SLAVE control panels controlled by a MASTER.

Enter the address of the SLAVE control panel to be removed and confirm with **OK**:

```
SLAVE ADDRESS :
```

After selection, the following screen view will be displayed:

```
SLAVE ADDRESS: XXX
NAME: XXXXX
[OK]  DELETE
[ESC] CANCEL
```

To confirm removal, press **OK**, to cancel press **ESC**.

If removal is confirmed, the following message will be displayed:

```
EQUIPMENT DELETED
```

Press **ESC** to go back to the address menu for removing the next SLAVE control panel.

INCLUDE/EXCLUDE

With this function it is possible to temporarily exclude a SLAVE control panels controlled by the MASTER control panel. Unlike removal, the exclusion allows to keep the address assigned to the SLAVE control panel for its subsequent re-inclusion.

Enter the address of the SLAVE control panel to be excluded and then confirm with **OK**:

```
SLAVE ADDRESS :
```

After entering the address, the following screen view will be displayed:

```
SLAVE ADDRESS: XX
NAME: XXXXX
[[1] # INCLUDED
[2]  EXCLUDED
```

Select the required option (The #symbol identifies the selected option) and confirm with **OK**.

The exclusion is signalled by the control panel LEDs and by a message shown during the scanning phase.

Moreover, in the case the programmable relay is programmed as the exclusion relay, the programmable relay is activated. Any time an exclusion/inclusion occurs, an event is stored in the event log.

VERIFY

This menu, shown below, makes it possible to check the current state of the SLAVE control panels controlled by the MASTER.

SLAVE ADDRESS	STATE	EXTIN.
034	TO BE RECOGNIZED	NO
099	EXCLUDED	YES
230	PRESENT	NO

By using the keys \wedge and \vee it is possible to scroll the list of all the SLAVE control panels controlled by the MASTER.

3.8.2.4 Ethernet port

Through this menu it is possible to set the communication parameters of the ETHERNET port.

In order to access this menu, the control panel must be equipped with an external expansion board for communication via LAN.

This module operates as a set of E type communicator (for transmission of alarms to a remote fire alarm receiving centre and reception of the relevant ACK) and J type communicator (for transmission of faults to a remote fire alarm receiving centre).

If the card is not present, any attempt to access to this menu will lead to the following message:

```
EXPANSION CARD UNDETECTED
```

If the expansion board is present, the following menu will be displayed:

```
[1] ENABLE/DISABLE MODBUS
[2] MAC ADDRESS
[3] NETWORK PARAMETERS
[4] INCLUDE/EXCLUDE COM-E/J      v

[5] TCP CONNECTION FAULT NOTIFICATION  ^
```

By selecting **1**, the user can enable the ModBus communication protocol to operate instead of the proprietary protocol (factory setting) on the Ethernet port:

```
ENABLE/DISABLE MODBUS

[1] # DISABLED
[2]  ENABLED
```

By selecting **2**, the user can read and modify the MAC address of the network card (this address will be provided together with the card):

```
MAC ADDRESS XXX.XXX.XXX.XXX.XXX.XXX
```

Please note that each figure of the MAC address is expressed in decimal format.

Instead by selecting **3**, you will access the network parameter configuration menu:

```
[1] IP ADDRESS:      XXX.XXX.XXX.XXX
[2] GATEWAY:        XXX.XXX.XXX.XXX
[3] SUBNET MASK:    XXX.XXX.XXX.XXX
[4] PRIMARY DNS:    XXX.XXX.XXX.XXX  v
```

```
[5] SECONDARY DNS:  XXX.XXX.XXX.XXX  ^
[6] DHCP ON/OFF
[7] HOST NAME: XXXXXXXXXXXXXXXXXXXX
[8] TCP SERVER PORT: XXXX
```

This menu displays the information concerning the current configuration of the network parameters, with the possibility to access the menu for changing the parameters.

Press **1** to enter the control panel IP address:

```
IP ADDRESS: XXX.XXX.XXX.XXX
```

Enter the address and confirm with **OK**. Press **ESC** to go back to the previous menu.

Press **2** to enter the gateway address:

```
GATEWAY: XXX.XXX.XXX.XXX
```

Enter the address and confirm with **OK**. Press **ESC** to go back to the previous menu.

Press **3** to enter the subnet mask:

```
SUBNET MASK: XXX.XXX.XXX.XXX
```

Enter the subnet mask and confirm with **OK**. Press **ESC** to go back to the previous menu.

Press **4** to enter the IP address of the primary DNS server:

```
PRIMARY DNS: XXX.XXX.XXX.XXX
```

Enter the address and confirm with **OK**. Press **ESC** to go back to the previous menu.

Press **5** to enter the address of the secondary DNS:

```
SECONDARY DNS: XXX.XXX.XXX.XXX
```

Enter the address and confirm with **OK**. Press **ESC** to go back to the previous menu.

Press **6** to enable or disable the DHCP function:

```
[1] # DHCP ON
[2]   DHCP OFF
```

Select by pressing **1** or **2** and then confirm with **OK**.

Press **7** to set the host name:

```
HOST NAME: XXXXXXXXXXXXXXXXX
```

Enter the name (max length 15 characters) and confirm with **OK**.

Press **8** to enter the TCP server port:

```
TCP SERVER PORT: XXXX
```

Enter the TCP server port and confirm with **OK**. Press **ESC** to go back to the previous menu.

By selecting **4** from the main configuration menu of the Ethernet port, the following menu related to inclusion/exclusion of E and J type communicators is displayed:

```
INCLUDE/EXCLUDE  
[1] COM-E  
[2] COM-J
```

Each choice leads to the following submenu:

```
COM-E (or COM-J)  
[1] # INCLUDED  
[2]   EXCLUDED
```

which allows to exclude or re-include the communicators independently from each other.

Finally, by selecting **5** from the main configuration menu of the Ethernet port, it is possible to enable or disable the TCP connection fault notification option:

```
TCP CONNECTION FAULT NOTIFICATION  
[1] # YES  
[2]   NO
```

When enabled, this option (disabled by default) makes the control panel signal any loss or drop of the TCP connection with a remote fire alarm receiving centre, by generating a specific fault (GENERAL FAULT 33).

More specifically, this fault is generated for either one of the following reasons:

- TCP connection close or abort;
- lack of TCP connection setup with the remote fire alarm receiving centre within a predefined amount of time since the moment the control panel was turned on.

3.8.2.5 Communicator

This menu is used to enable, disable and exclude an optional IP or LTE communicator connected to the proper slot of the CPU board.

```
COMMUNICATOR  
[1] IP  
[2] LTE
```

Press key **1** to select the IP communicator or press key **2** to select the LTE communicator. Then, the following menu will be shown:

```
[1] ENABLE  
[2] DELETE  
[3] INCLUDE/EXCLUDE  
[4] VERIFY
```

Press key **1** to enable the communicator to operate, then the control panel will detect and take charge of it.

```
RECOGNITION ACTIVATED
```

If the communicator is already enabled, the control panel notifies this and aborts the operation.

```
COMMUNICATOR PRESENT
PROCEDURE ABORTED
```

Press key **2** to remove the communicator from the control panel configuration.

```
COMMUNICATOR DELETED
```

If the communicator is not present in the control panel configuration, the operation will be aborted.

```
COMMUNICATOR NOT PRESENT
PROCEDURE ABORTED
```

Similarly, if the communicator was previously excluded, the deletion cannot be carried out:

```
COMMUNICATOR EXCLUDED
PROCEDURE ABORTED
```

By selecting **3** from the communicator configuration main menu, if the communicator was previously enabled, the inclusion / exclusion menu is displayed:

```
INCLUDE/EXCLUDE
[1] COMMUNICATOR IP (or LTE)
[2] COM-E
[3] COM-J
```

By selecting the element to include or exclude, either one of the corresponding screens is shown:

```
COMMUNICATOR IP (or LTE)

[1] # INCLUDED
[2]   EXCLUDED
```

```
COM-E

[1] # INCLUDED
[2]   EXCLUDED
```

```
COM-J

[1] # INCLUDED
[2]   EXCLUDED
```

Each element can be included or excluded independently from the others.

By selecting **4** from the main menu it is possible to check the presence or absence of the communicator which will be shown on the display as indicated below:

```
COMMUNICATOR PRESENT
FW: XXX.XX
```

or

```
COMMUNICATOR NOT PRESENT
```

or again (in the case of an communicator excluded):

```
COMMUNICATOR EXCLUDED
FW: XXX.XX
```

Or (if the communicator is in a fault state):

```
COMMUNICATOR FAULT
FW: XXX.XX
```

In the screens that show it, the code and the revision of the firmware loaded in the communicator module are also displayed. For the IP or LTE communicator installation refer to its installation manual. For the communicator functionality and configuration refer to the suited applicative PC software and its user manual.

3.8.2.6 Cyber Security

Selecting this option, the following menu is displayed:

```
CYBER SECURITY
[1] YES
[2] # NO
```

By selecting **1**, Cyber Security functionality is enabled: some configuration commands, received on the Ethernet port, are not accepted in order to safeguard the configuration of the control panel.

By selecting **2**, the Cyber Security functionality is disabled.

For further information please contact ELKRON technical support.

3.8.3 Remote control unit

The configuration menu of the remote control unit is the following:

```
[1] INSERT REMOTE CONTROL UNIT
[2] DELETE
[3] INCLUDE/EXCLUDE
[4] VERIFY

[5] REMOTE TOUCH SCREEN
```

To enable communication with the remote control units, the control panel must be equipped with an RS232/RS485 expansion board (optional).

A remote control unit can be enabled also if not physically present: the control panel will identify it when it is installed, i.e. when it is physically connected with the communication line.

After the unit installation and once identified by the control panel, the possible physical removal from the communication line will generate a fault.

Therefore, if you want to physically remove a unit, first it is necessary to cancel the unit from the control panel configuration if the unit is removed definitively, or exclude it if it is removed temporarily.

3.8.3.1 Insert remote control unit

Through this item it is possible to add a unit not present in the configuration.

Enter the number of the panel or unit to be enabled and confirm with **OK**:

```
REMOTE CONTROL UNIT:
```

Enter the name of the unit to be controlled and confirm with **OK**:

```
REMOTE CONTROL UNIT Nr.: XX  
NAME:
```

After entering the name, the following screen view will be displayed:

```
REMOTE CONTROL UNIT: XX  
NAME: YYYYYYY  
  
EQUIPMENT TO BE RECOGNIZED
```

Press **ESC** to go back to the previous menu.

It is possible to enable up to 16 remote control units.

3.8.3.2 Delete

Through this menu it is possible to remove a unit already present in the configuration.

Enter the number of the panel or unit to be removed and confirm with **OK**.

```
REMOTE CONTROL UNIT:
```

The following menu will be displayed:

```
REMOTE CONTROL UNIT: XXX  
NAME: XXXXX  
[OK] DELETE  
[ESC] CANCEL
```

Press **OK** to remove, **ESC** to cancel.

Cancellation will be stored as an event in the event log.

3.8.3.3 Include / Exclude

Through this item it is possible to include or exclude a unit already present in the configuration.

Enter the number of the panel or unit to be excluded/included and confirm with **OK**:

```
REMOTE CONTROL UNIT: XX
```

After entering the unit number, the following menu will be displayed:

```
REMOTE CONTROL UNIT: XX  
NAME: XXXXX  
[1] INCLUDED  
[2] # EXCLUDED
```

Selection (through keys **1** and **2**) must be confirmed with **OK**.

The exclusion is signalled by the control panel LEDs and by a message shown during the scanning phase.

Moreover, in the case the programmable relay is programmed as the exclusion relay, it is activated.

Any time an exclusion/inclusion occurs, an event is stored in the event log.

3.8.3.4 Verify

Through this menu item it is possible to access the list of Remote Control Units and their state:

REMOTE CONTROL UNIT	STATE
01	PRESENT
02	TO BE RECOGNIZED
03	NOT PRESENT

By pressing keys \wedge and \vee it is possible to view the state of each unit.

3.8.3.5 Remote touch screen

Through this menu item it is possible to select the type of the remote control units connected to the control panel:

REMOTE TOUCH SCREEN	
[1] #	YES
[2]	NO

By pressing key **1**, the type of device in use is touch screen: only Elkron remote control units with code FKP500T may be connected to the control unit. Operating mode FKP500T must be selected in the configuration menu of each unit.

By pressing key **2**, the type of devices in use is not touch screen and Elkron remote control units with code FKP500 (EN 54-2 version) may be connected to the central panel. It is possible to connect Urmet remote control units FKP500T but on these panels the "emulation FKP500 EN 54-2" mode must be set (see remote unit configuration menu and its installation manual).

Please note that the touch screen remote control units can communicate with the control panel at the data rate of 115200bps or 57600bps; the communication data rate setting must be the same for both the control panel and all the remote units. To change the communication data rate on the control panel, access the "PANEL" menu and select "RS485 RA BAUD RATE"; to change the communication data rate on the remote unit access to its configuration menu. When using remote control unit FKP500 (EN 54-2 version) or FKP500T unit in 'emulation FKP500 EN 54-2' the communication data rate is fixed at 9600bps and cannot be changed.

WARNING: do not connect control units, devices and/or their modes of operation other than those indicated on the communication line.

3.8.4 Control Panel

The control panel menu is shown below:

[1] PANEL ADDRESS:	XXX
[2] MASTER/SLAVE:	SLAVE
[3] BUZZER:	ENABLED
[4] CIRCUIT MODULES SEARCH	\vee
[5] PANEL NAME	\wedge
[6] EVENT LOG: Nr. EVENTS	
[7] RS 485 RA BAUD RATE	

By pressing **1**, the control panel address can be edited (range 0-254) and it is possible to change it and then confirm with **OK**.

By pressing **2**, it is possible to switch between the MASTER and SLAVE type to be assigned to the control panel.

By pressing **3**, it is possible to enable or disable the buzzer.

Disabling only affects the "beep" heard when keys are pressed. The buzzer will keep working regularly every time an event (e.g. alarm, fault) occurs.

By pressing **4**, the procedure for detection of circuit modules connected to the control panel is run.

Please note that the physical addition/removal of circuit modules can be carried out only when the control panel is powered off.

Once the control panel has been turned off and circuit modules have been added/removed, turn the control panel on again and run the circuit modules search procedure to make the control panel detect the new configuration.

By pressing **5**, it is possible to access the panel name programming menu:

```
PANEL NAME
NAME: XXXXX
```

Press **<** to delete the existing characters and **>** to insert spaces.

To exit the menu without changing the name press **ESC**.

Go on until the whole name is typed in and then press **OK** to confirm.

By pressing **6**, the following menu which allows the user to set the size of the event log is shown:

```
EVENT LOG: Nr. EVENTS

[1] # 1014
[2] 10008
```

It is possible to choose between the default size of 1014 events and an extended size of 10008 events.

If the user wants to modify the size of the event log, one further confirmation must be entered:

```
EVENT LOG: Nr. EVENTS
1014 -> 10008

[OK] CONTINUE [ESC] BACK
```

WARNING: if the event log size is changed, all the events already stored will be deleted. To enable the change of chronological capacity, please contact ELKRON technical support.

It is strongly recommended to let the event log size at its default value (1014 events) in order to maintain compatibility with the PC applications (Configurator, Monitoring software) already working with the previous firmware versions. In fact, these applications will not work if the 10008 size is chosen.

By pressing **7**, the following menu is shown.

This menu allows the user to set the data rate (baud rate) used in the serial protocol for communication between the control panel and the touch screen remote units. This menu is only vible when the touch screen type is selected for remote control units.

```
RS 485 RA BAUD RATE

[1] # 115200
[2] 57600
```

It is possible to choose between a default communicaztion data rate (defayult) of 115200bps and a slower one of 57600bps. Changing the data rate is subject to further confirmation by the user::

```
RS 485 RA BAUD RATE
115200 -> 57600

[OK] CONTINUE [ESC] BACK
```

NOTE: *When the touch screen type of remote unit is not selected, the communication speed is automatically set to 9600bps.*

3.8.5 Clock

Please refer to *paragraph 4.2 CLOCK*, with the following exception: in this case, the clock menu is not affected by inactivity timer.

3.8.6 Outputs and Relays / Inputs

The output and relay configuration menu is shown below:

```
[1] SIREN OUTPUT
[2] SIREN RELAY
[3] AC/EXCLUSION RELAY
[4] FAULT RELAY

[5] PS CTRL INPUT
```

3.8.6.1 Siren output

The siren output programming menu allows the user to include/exclude this output:

```
SIREN OUTPUT

[1] # INCLUDED
[2]   EXCLUDED
```

Select the required option and confirm with **OK**.

3.8.6.2 Siren relay

The siren relay programming menu allows the user to include/exclude it:

```
SIREN RELAY

[1] # INCLUDED
[2]   EXCLUDED
```

Select the required option and confirm with **OK**.

3.8.6.3 Fault relay

The fault relay has the following configuration menu:

```
[1] SET
[2] VERIFY
[3] INCLUDE/EXCLUDE
```

SET

This menu makes it possible to edit the activation delay timer of the relay:

```
DELAY: XX
```

The delay value is included in the range 0÷10 and is expressed in minutes.

VERIFY

Through this item it is possible to check the delay timer set for the relay:

```
DELAY: XX
```

Press **ESC** to go back to the previous menu.

INCLUDE/EXCLUDE

Through this menu it is possible to include or exclude the relay operation:

```
FAULT RELAY

[1] # INCLUDED
[2]   EXCLUDED
```

Selection must be confirmed with **OK**.

3.8.6.4 Programmable relay (ac/exclusion)

The configuration menu of the programmable relay is the following:

```
[1] SET
[2] VERIFY
[3] INCLUDE/EXCLUDE
```

SET

This screen view makes it possible to set the relay programming mode:

```
PROGRAMMABLE RELAY

[1] # AC DETECTION
[2]   EXCLUSION
```

Confirm selection with **OK**.

If the relay is programmed in AC DETECTION mode, an activation delay must be specified (range 0÷10 minutes):

```
DELAY: XX
```

Enter delay and confirm with **OK**.

VERIFY

This screen view makes it possible to check the relay programming mode (AC/exclusion) and the associated delay (for the AC DETECTION relay).

```
PROGRAMMABLE RELAY
AC DETECTION
DELAY: XX
```

Or:

```
PROGRAMMABLE RELAY
EXCLUSION
```

INCLUDE/ESCLUDE

Through this menu it is possible to include/exclude the programmable relay:

```
PROGRAMMABLE RELAY

[1] # INCLUDED
[2]   EXCLUDED
```

3.8.6.5 PS CTRL input

When the PS CTRL input, which is present on the command and control module of the control panel, goes from the closed to open condition, the control panel generates a general fault event to which an explanatory text can be associated.

The configuration menu of the PS CTRL input is as follows:

```
[1] SET TEXT
[2] VERIFY TEXT
```

Press key **1** to digit the text to be confirmed with **OK**.

Press key **2** to display the text which is associated with the event. Exit by pressing the **ESC** key.

The associated text can have a maximum length of 25 characters and is saved in the control panel's non-volatile memory.

In the default condition the associated text is "EXTERNAL SUPPLIES".

3.8.7 Alarm timers

The programming menu for the alarm general timers is the following:

```
[1] ALARM VERIFICATION TIME
[2] HOTEL RELOAD TIME
```

3.8.7.1 Alarm verification timer

When a zone or group is in alarm condition and the siren output activation delay is running, by pressing the **ACK** key the Alarm Verification timer is added to the residual delay.

The increment occurs only the first time **ACK** is pressed.

Further pressure of **ACK** will not affect the residual delay for the zone.

Enter the desired value (range 0÷10, expressed in minutes) and confirm with **OK**:

```
ALARM VERIFICATION TIME XX
```

To disable the alarm verification time, set the value on **0**.

When the timing of a group or zone reaches the value 0 and the passage to the new alarm condition occurs with the siren output active, the intervention on the ACK key no longer involves loading the timer.

3.8.7.2 Hotel reload time

The Hotel Reload timer is used when a zone programmed in HOTEL mode switches to alarm condition.

For further details, please refer to *paragraph 1.9 OPERATING MODES* which describes the operating modes of the zones.

Enter the desired value (range 0÷10, expressed in minutes) and confirm with **OK**:

```
HOTEL RELOAD TIME XX
```

The maximum loading time is **9** minutes.

When the reload time is set on **0**, at the second device in alarm, the zone will automatically switch to the alarm condition; when the set value is **10**, the reload time is disabled and the zone timer is not changed.

4 SERVICE MENU

When the control panel is in scanning phase, it is possible to access some functions which can be carried out also when scanning is in progress.

These functions are included in the service menu which can be accessed by pressing **MENU** when the control panel is in scanning phase and then selecting the second item of the following menu:

```
[1] PROGRAMMING
[2] SERVICE
```

Access to the service menu requires the level 2 password, if enabled.

```
[1] MAINTENANCE
[2] CLOCK
[3] EVENT LOG
[4] PRINT EVENT LOG      v
```

```
[5] LEVELS                ^
[6] TEST
[7] FW VERSIONS
```

The service menu is composed of the following items:

[1] MAINTENANCE

It makes it possible to handle the smoke detectors during their maintenance.

[2] CLOCK

It makes it possible to set time and date.

[3] EVENT LOG

It displays the events stored in a non volatile memory in chronological order.

[4] PRINT EVENT LOG

It makes it possible to print the event log.

[5] LEVELS

Technical menu used to monitor voltage levels and current values useful for HW test.

[6] TEST

It makes it possible to carry out functional checks of the zones and devices.

[7] FW VERSIONS

Menu used to view the firmware version and revision of the control panel and some other boards composing the fire detection system.

4.1 MAINTENANCE

The maintenance operation consists of a set of operations for the control/reset of the system performances. More specifically, these operation consist of the automatic adaptation of optical smoke detectors to compensate for possible dirt in the detection chamber which might worsen the detector performance.

When, as a result of adaptation, a detector reaches a max pre-established value of maintenance, the control panel reports this event and declares that it is necessary to carry out the detector maintenance (which usually consists in cleaning the detector).

The maintenance menu consists of the following options:

[1] PERIODIC MAINTENANCE [2] MAINTENANCE NOW [3] VERIFY BY LEVEL [4] VERIFICATION BY ADDRESS
[5] SET TIME/INTERVAL [6] PASSWORD

[1] PERIODIC MAINTENANCE

It allows the execution of the periodic maintenance of the devices in the field.

[2] MAINTENANCE NOW

It starts immediately the maintenance operation.

[3] VERIFY BY LEVEL

This procedure finds out the detectors whose average read smoke level is greater (less) than a predefined user level and, for each one of these detectors, several related information are shown.

[4] VERIFICATION BY ADDRESS

The same information shown in the "VERIFY BY LEVEL" procedure is retrieved and shown for a device whose coordinates are explicitly specified by the user.

[5] SET TIME/INTERVAL

It allows to set the time and interval for the automatic execution of maintenance.

[6] PASSWORD

This menu temporarily disables the request for entering level 2 passwords.

4.1.1 Periodic Maintenance

The periodic maintenance allows scheduling, management and traceability of maintenance operations performed by the maintenance technician of the fire detection system.

In order to perform correctly this functionality by the control panel, the system date must be set correctly.

Therefore the following will apply:

- Each time the control unit is powered on, a general "date / time check" failure event is generated with the relative signalling.
- The general failure event of "date / time check" becomes clearable (through GENERAL RESET) only after setting the date in the clock setting menu (if you try to clear it before setting the date, the event is signalled again).

After entering the advanced level 2 password, the user accesses the following periodic maintenance main menu, if this feature is enabled:

[1] INSTALLATION DATE [2] LAST PERIODIC CHECK DATE [3] CONFORMITY DECLARATION DATE [4] NUMBER OF CIRCUITS AND DEVICES	▼
[5] PERIODIC CHECK [6] LIST OF ALARMS PER DATA [7] LIST OF DETECTORS STATE [8] DISABLE MAINTENANCE	▲

NOTA: if the graphic display is present, a bar will appear in the lower part of the display indicating the percentage of tested devices, and the icon representing maintenance.

If the feature is disabled, the following menu is displayed through which the user can enable it:

```
ACTIVATION MAINTENANCE
CONFIRM?
[1] YES
[2] NO
```

By selecting **1**, the feature is enabled and the following confirmation message is displayed:

```
ACTIVATION MAINTENANCE
PROCEDURE COMPLETED

[OK] CONTINUE
```

Pressing **OK** displays the main periodic maintenance menu.

4.1.1.1 Installation date

To access to the menu for visualizing and entering the installation date, select **1** from the main periodic maintenance menu.

In this submenu it is possible to enter the installation date of the system, with the following characteristics:

- Manual input by the installer of the month and year of complete installation of the system.
- Possibility of changing the date afterwards, by simply accessing this menu again.
- Storage of the date in non-volatile memory.

It should be highlighted that the installation date is of no use for the operation of the control panel, but it is only a piece of information about the system.

If the installation date has never been entered since the first time the control panel was powered on, the following message is displayed:

```
INSTALLATION DATE
INVALID DATA
[OK]
```

Press **OK** to proceed with the data input, at the end of which the control panel displays a confirmation message:

```
INSTALLATION DATE
25/04/2021
PROCEDURE COMPLETED
[ESC] BACK
```

If the date is already present, it is displayed by the control panel:

```
INSTALLATION DATE
25/04/2021
```

In this screen, the date can be changed. Therefore, the user can modify it again if necessary.

4.1.1.2 Last periodic check date

The date of the last periodic check is the date in which the last periodic check of the system, i.e. the check of a minimum predetermined percentage of detectors, manual call points and input modules in signalling an alarm condition has been carried out.

This date is compared with the system date and makes the control panel generate a system maintenance request report after six months from the last date on which this maintenance was carried out.

NOTE: *this signalling DOES NOT make the maintenance LED turn on; this LED will be turned on only in the case of a maintenance event related to a single smoke detector.*

In order to access the display and the entry screen for this date, select **2** from the main periodic maintenance menu.

Input and handling of this date will be subject to the following:

- The first input takes place automatically when the system date is programmed (in case of subsequent restart of the control unit, the date of the last periodic check remains the one entered the first time).
- The date can be, in any case, changed manually by accessing the relevant menu, without any restrictions.
- The date will be, in any case, updated at the end of the periodic control procedure (described below).

If the date of the last periodic check has never been entered since the first power up of the control panel, and if the user has not re-entered the system date and time after the last power up of the control panel, the following message is displayed:

```
LAST PERIODIC CHECK DATE:
INVALID DATA
CHECK DATE AND TIME
[ESC]
```

In this case, the user must proceed with re-entering the system date and time through the "CLOCK" submenu of the "SERVICE" menu and then perform a general reset of the control panel. This operation is required to reset the date and time control fault that the control panel generates each time it is turned on.

Entering the system date also leads to initialization of the last periodic check date, if it has never been initialized before.

If the last periodic check date has been previously initialized, accessing the relevant menu makes the following information be displayed:

```
LAST PERIODIC CHECK DATE:
06/05/2021
```

In this screen, the date is still editable. Therefore, the user can edit a new date and confirm the entry by pressing **OK**. In this case, the control panel will display the following confirmation screen:

```
LAST PERIODIC CHECK DATE:
20/05/2021
PROCEDURE COMPLETED
[ESC] BACK
```

4.1.1.3 Conformity declaration date

In this submenu, you can enter the conformity declaration date obtained from an official Body approving the system (eg. Fire Brigade), with the following characteristics:

- Manual insertion by the installer of the conformity declaration date.
- Storage of information in non-volatile memory.
- Possibility of entering the conformity declaration date again only if the control panel has not run the field initialization procedure yet (devices have not been acquired yet in the system configuration).

Basically, the date can only be entered if the input has not occurred yet (invalid date) or if the system does NOT contain devices yet.

It should be noted that the conformity declaration date has no use for the operation of the control panel, but it is only a piece of information about the system.

Selecting **3** key from the main periodic maintenance menu, if the conformity declaration date has not been entered yet, the following screen is displayed:

```
CONFORMITY DECLARATION DATE
DD/MM/YYYY
```

The date can be edited and, after the user has entered it, the control panel displays a screen with an acknowledgment message:

```
CONFORMITY DECLARATION DATE
20/05/2021
PROCEDURE COMPLETED
[ESC] BACK
```

If the conformity declaration date has been entered already, by accessing to the relevant menu it is possible only to view it, and editing will not be possible:

```
CONFORMITY DECLARATION DATE
20/05/2021
[ESC]
```

4.1.1.4 Number of circuits and devices

This sub-menu, which can be accessed by selecting **4** from the main periodic maintenance menu, displays the number of detection circuits and the devices (total and divided by type) available in the system and, for each circuit, the number of devices available on it (overall and by type).

The purpose of this menu is to give information to the user related to the system on which maintenance must be carried out.

The first screen displayed is the overall one of the entire system:

```

NUMBER OF CIRCUITS: XX      TOT.DEVS: XXXX
SM:XXXX HT:XXXX OM:XXXX CM:XXXX MN:XXXX
CI:XXXX BD:XXXX SH:XXXX LI:XXXX PI:XXXX
XS:XXXX TB:XXXX GS:XXXX IS:XXXX      v
    
```

By selecting the arrow v, is it possible to access the detail menu of the first line.

Then, with the arrows v and ^, the summary screen of the next and previous circuit is displayed respectively.

```

CIRCUIT: XX  TYPE      TOT.DEVS: XXX      ^
SM:XXX  HT:XXX  OM:XXX  CM:XXX  MN:XXX
CI:XXX  BD:XXX  SH:XXX  LI:XXX  PI:XXX
XS:XXX  TB:XXX  GS:XXX  IS:XXX      v
    
```

TYPE: indicates whether the circuit is in open or loop mode.

4.1.1.5 Periodic check

In this submenu, it is possible to manage the periodic check procedure of the devices connected to the detection circuits of the control panel, through a series of choices that allow to start, suspend, restore and finish the periodic check:

```

[1] START PERIODIC CHECK
[2] STOP PERIODIC CHECK
[3] PAUSE PERIODIC CHECK
[4] RESUME PERIODIC CHECK
    
```

4.1.1.5.1 Start periodic check

In this submenu it is possible to start the periodic check procedure of the detectors, manual call points and input modules located on the detection circuits of the control panel.

Before this procedure starts, the user must choose whether to activate the alarm signalling or not, by using the proper menu displayed below:

```

SIGNALLING

[1] DO NOT ACTIVATE ALARM SIGNALLING
[2] ACTIVATE ALARM SIGNALLING
    
```

The selected choice is displayed on a confirmation screen:

```

SIGNALLING ON/OFF
    
```

A screen for selecting the circuits involved in the periodic check is displayed afterwards:

```

#L01:T    L02:T    L03:T    L04:T
L05:T    L06:T    L07:T    L08:T
L09:T    L10:T    L11:T    L12:T
L13:T    L14:T    L15:T    L16:T    [OK]
    
```

Where:

- # = selector of current circuit
- T = circuit in test
- = module not present
- N = normal operating mode (no test)

The following applies:

- The number of displayed circuits depends on the model of the control panel.
- When the above screen is accessed, all circuits are initially selected for testing (T).
- Using the LEFT/RIGHT arrows, it is possible to move to the previous / next circuit.
- Using the UP/DOWN arrows, it is possible to select between the circuit in test (T) and in normal operation (N).

Therefore, it is possible to apply the periodic check procedure selectively, on a subset of the circuits of the system.

By pressing **OK**, the following actions occur:

- the test LED of the control panel will be turned on.
- the maintenance event log and the detector status event log are reinitialized.
- the periodic check start event is stored in the event log.
- a periodic check watch timer (duration: 2 hours) is started.
- the periodic check is started.

When the periodic check is active, each alarm due to a device connected to a circuit in test is stored in the maintenance event log (viewable via the "LIST OF ALARMS PER DATE" item, described below) and any additional information is stored in the detector status event log (viewable via the item "DETECTOR STATUS LIST", described below as well).

Moreover, the following applies:

- The alarm of a device belonging to a circuit under test is ALWAYS managed immediately regardless of the programming of the zone which the device belongs to.
- The activation of signalling (output modules, etc.) when a device belonging to a circuit under test goes into alarm depends on the choice made by the user when starting the periodic check.
- A message indicating that the test is in progress is displayed on the control panel monitoring screen:
MAINTENANCE (XXX%) NTNTT-----TTTNT

Where

XXX = current percentage of tested devices

NTNTT-----TTTNT = status of the control panel circuits (one character per circuit, according to the following meaning: **N** = circuit in normal operation, **T** = circuit in test; - = circuit absent).

- The programming of the zones of the devices in test are ignored (e.g., alarm confirmation is ignored, otherwise a delay would be introduced in the management of the device).
- ALL alarms are stored in the maintenance event log, regardless of the type of device which generated them.
- The groups of devices and groups of zones are NOT managed.
- When a device belonging to a circuit under test goes into alarm, the control panel turns on the backlight of the display; conversely, the buzzer will not be activated.
- If the control panel enters the programming phase with a periodic check in progress (or paused), the periodic check will be terminated prematurely.

The periodic check guard timer is reloaded each time a device belonging to a circuit under test signals an alarm condition. In case of absence of alarm signals from devices belonging to circuit under test for a period of 2 hours, the periodic check is paused by the control panel. The guard timer will be reloaded when the user restores the periodic check (the pause and reset operations will be described below).

During the periodic check, the percentage of devices already tested will be shown in the lower part of the display for control panels with graphic display.

The devices taken into account in the calculation of this percentage are of the following types:

- Smoke detector with chamber
- Concentrator module
- Beam detector
- Smoke/heat detector
- Latched input module
- Smoke/heat/gas detector
- Latched input module with siren output

Finally, it is important to highlight that the periodic check CANNOT be started if a zone test is already in progress. The periodic check and test zone are mutually exclusive.

4.1.1.5.2 Stop periodic check

By selecting this item, it is possible to terminate the periodic check procedure.

At the end of the periodic check, the control panel stops recording alarm events on the maintenance event log and automatically updates the date of the last periodic check using the system date.

4.1.1.5.3 Pause periodic check

By selecting this item, the periodic check is temporarily paused. As previously highlighted, the periodic check can be paused by the control panel automatically when the periodic check guard timer expires.

While the periodic check is in pause, the test LED of the control panel blinks.

4.1.1.5.4 Resume periodic check

By selecting this item, a periodic check previously paused automatically due to the inactivity timer expiration or manually by the operator is resumed.

Once the periodic check is resumed, the test LED is turned ON again.

4.1.1.6 List of alarms per data

By selecting this item, the operator can see the content of the maintenance event log containing the events listed below:

- Periodic check start event, logged when the user selects the item "START PERIODIC CHECK."
- List of the alarm events related to each of the devices connected to circuits under test.
- Periodic check stop event (along with the percentage of devices tested up to that time), logged when the user selects the item "STOP PERIODIC CHECK".

4.1.1.7 List of detectors state

This item makes the operator access the detectors status event log, which contains a specific event for each smoke detector with optical section that underwent an alarm condition during the periodic check.

The generic event has this format:

```
Z002 L01 D082 RIF:087
TEST DETECTOR
```

Where:

- **Zxxx** = zone of the device
- **LXX** = circuit number
- **DXXX** = device address
- **RIF:106** = current reference of the device (remember that "ref + delta alm threshold = alarm threshold")

4.1.1.8 Disable periodic maintenance

This menu allows the user to disable periodic maintenance.

When this feature is disabled, the request of periodic maintenance is not generated; conversely, if enabled, the request will be generated after 6 months from the last periodic maintenance.

```
DISABLE PERIODIC MAINTENANCE
CONFIRM?
[1] YES
[2] NO
```

By selecting 1, the periodic maintenance will be disable and the following message will be displayed:

```
DISABLE PERIODIC MAINTENANCE
PROCEDURE COMPLETED

[OK] CONTINUE
```

NOTE: *enabling of periodic maintenance is indicated by the presence of an asterisk near the time shown on the display when the control panel is in the idle state.*

4.1.2 Maintenance now

If the user chooses the manual mode, the following screen view will be displayed:

```
SYSTEM MAINTENANCE IN PROGRESS
PLEASE WAIT
```

At the end of maintenance, you will go back to the related menu.

If the procedure finds out any detector requiring maintenance, the control panel returns to the scanning screen and the user is notified via maintenance events.

NOTE: *during the maintenance procedure, the battery dynamic test will be carried out as well.*

4.1.3 Verify by level

This function applies to smoke detectors with chamber and smoke/heat detectors and makes it possible to run a check on a specific detector or a cumulative check on all the detectors of a circuit.

The single level verification makes it possible to find out all the smoke detectors of a circuit whose smoke level, in idle condition, is higher (or lower) than a predefined threshold set by the user and also to view the detailed information of each single device.

The verification by cumulative level makes it possible to view cumulative information on the number of smoke or smoke/heat detectors in the circuit and whose reference level is higher than a predefined threshold set by the user.

This function whether single or cumulative, is particularly useful for programmed maintenance, as it makes it possible to find out beforehand the detectors about to undergo maintenance. The average read smoke level of a clean detector without smoke is around 60 points.

As time goes by, the accumulation of dirt inside the detector raises the read value.

The control panel automatically notifies the devices requiring maintenance, i.e. the devices whose average read smoke level is above 120 points. During maintenance, with the support of this function, it is possible to search for the detectors which have reached high levels close to maintenance, before the control panel actually detects them.

During preventive maintenance it is advisable to set search on a level value greater than 100 points.

In addition, in the case of single level verification, from the same screen view it is possible to check that the smoke level measured for all the smoke devices or smoke/heat devices is lower than an established threshold:

Once the user selects the "Verify by level" item, the following menu is shown:

```
VERIFY BY LEVEL
[1] SINGLE
[2] CUMULATIVE
```

By selecting 1 (verify by level for single detector), the following screen, showing the time and frequency of automatic maintenance, is displayed.

```
MAINTENANCE TIME: HH:MM
OCCURS DAILT/WEEKLY/MONTHLY
REFERENCE FOR MAINTENANCE: __
```

After entering the threshold, the user shall indicate whether starting search for the devices whose level is above or below the established threshold:

```
MAINTENANCE TIME: HH:MM
OCCURS DAILT/WEEKLY/MONTHLY
REFERENCE FOR MAINTENANCE: XX
SEARCH FOR LEVEL: Y
```

Through keys < and >, the user can choose whether to start search for the devices whose level is respectively below or above the threshold.

The Y symbol in the screen above can take on the values '<' o '>'.

After entering and confirming the search criterion with **OK**, the user will be asked to enter the circuit where this operation is to be performed:

```
CIRCUIT: XX
```

The system will check all the smoke and smoke/heat detectors meeting the search criteria set by the user.

If the search does not produce any results, the following message will be displayed:

```
REFERENCE FOR MAINTENANCE: < 40

DEVICE NOT FOUND
[ESC] BACK
```

Instead, if some devices are found, the information concerning the first device in the list will be displayed:

```
REFERENCE FOR MAINTENANCE: < 70
CIRCUIT: XX   DEVICE: XXX   TYPE: SM
NAME:XXXXX
MSR:059 ALM:109 REF:059 SI:+000% DI:000%
```

To show the previous/next device that meets the search criteria, press keys \wedge and \vee . To go back to the previous menus, press **ESC**.

For each device whose average read smoke level is greater/less than the threshold set by the user, the following information is retrieved and shown:

- Coordinates (circuit and address)
- Type (smoke or smoke/heat)
- Name of the device
- Average read smoke levels (MSR)
- Alarm threshold (ALM)
- Reference level (REF)
- Sensitivity index (SI)
- Dirt index (DI)

During the search of detectors meeting the required conditions, the field monitoring on the selected circuit is not active. The cumulative level verification, accessed by selecting **2** from the “Verify by level” menu), carries out the level verification procedure in a cumulative way on ALL smoke detectors in a circuit.

First, enter the circuit where the procedure will be applied, then enter the threshold to be compared with the reference value of all the detectors of the circuit:

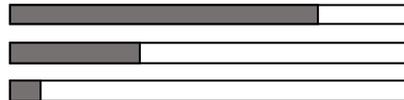
```
CIRCUIT: XX
```

```
CIRCUIT: XX
REFERENCE FOR MAINTENANCE: xx
```

After entering these parameters, the control panel stops scanning the selected circuit and starts reading the current reference level of each smoke or smoke/heat detector. The reference levels, then, will be compared with the previously set threshold and the following information will be displayed:

- The total number of detectors with optical section available on the circuit.
- The number of detectors whose reference value > threshold set.
- The total number of critical detectors (reference value > 120).
- The maximum reference value reported by a detector (its address is shown as well).

```
TOTAL NUMBER OF SMOKE DETECTORS:      XXX
NUMBER DETECTORS WITH REF > XXX:      XXX
NUMBER OF CRITICAL DETECTORS > XXX:    XXX
REF MAX: XXX (ADDR: XXX)
```



In the case of control panel with graphic display, the lower part of the display shows three histograms representing, in graphical form, the information reported in the textual part of the display, i.e.:

- The total amount of smoke or smoke/heat detectors of the circuit.
- The number of smoke or smoke/heat detectors with current reference value > threshold set by the user.
- The number of smoke or smoke/heat critical detectors.

The total area of each histogram shows the maximum capacity of the circuit (128 devices).

4.1.4 Verification by address

This menu makes the control panel retrieve from a smoke or smoke/heat detector whose coordinates are specified by the user the following information:

- Type (smoke – SM or smoke/heat – SH)
- Name of the device
- Average read smoke levels (MSR)
- Alarm threshold (ALM)
- Reference level (REF)
- Sensitivity index (SI)
- Dirt index (DI)

The user is required to insert the number of the circuit:

```
CIRCUIT: XX
```

and then the address of the device:

```
CIRCUIT: XX  
DEVICE: XXX
```

If the selected device is not a smoke or smoke/heat detector, the actual type of the device is shown for a couple of seconds:

```
CIRCUIT: XX  
DEVICE: XXX  
TYPE: XX
```

If the selected device is a smoke or smoke/heat detector, the required information is retrieved from the device and is shown as follows:

```
CIRCUIT: XX  
DEVICE: XXX                TYPE: SM  
NAME:XXXXX  
MSR:059 ALM:109 REF:059 SI:+000% DI:000%
```

For the meaning of each value shown, please refer to the previous paragraph.

By pressing **ESC**, the user goes back to the insertion of the device address.

4.1.5 Set time/interval

In order to set the maintenance time, insert the hour in the hh:mm format, confirming each entry with **OK**:

```
MAINTENANCE TIME: HH:MM
```

Then, choose the automatic maintenance frequency:

```
[1] # OCCURS MONTHLY  
[2]  OCCURS WEEKLY  
[3]  OCCURS DAILY
```

Confirm the selection with **OK**.

4.1.6 Password

This function allows the user to temporarily disable the request for entering level 2 passwords (both normal and advanced).

To access to this feature, select **6** from the maintenance main menu:

```
PASSWORD (LEVEL 2+): *****
```

After entering the level 2 advanced password, the following submenu will be shown:

```
DISABLED PASSWORD (L2 & L2+)
CONFIRM?
[1] YES (60 min)
[2] NO
```

By selecting **1**, a 60 minutes timer starts during which the normal and advanced level 2 password are disabled and the control panel displays the following confirmation screen:

```
PASSWORD (L2 & L2+) OFF(60 min)
PROCEDURE COMPLETED

[OK] CONTINUE
```

The same menu makes it possible to re-enable the previously disabled passwords.

Indeed, if the passwords have been disabled, by selecting **6** from the maintenance main menu, the following menu is displayed:

```
ENABLE PASSWORD (L2 & L2+)
CONFIRM?
[1] YES
[2] NO
```

By selecting **1**, the passwords are re-enabled and the control panel shows the following confirmation screen:

```
PASSWORD (L2 & L2+) ON
PROCEDURE COMPLETED

[OK] CONTINUE
```

Note that, if the control panel enters the programming phase during the disabling period of the normal and advanced level 2 passwords, the passwords are enabled again automatically.

4.2 CLOCK

The date and time configuration menu is the following:

```
[1] TIME
[2] DATE
```

By selecting **1**, the time setting screen will be displayed:

```
TIME
hh:mm
```

Enter the hour, then move to the input of minute by pressing **OK**.

Press the **ESC** key to return to the previous data.

By pressing **OK**, the inserted time will be confirmed.

By selecting **2**, the date setting screen will be displayed:

```
DATE: dd/mm/yyyy
```

Enter the required date (for the year only the last two figures are required, as the first two are set on 20) and move to the next figure by pressing **OK**.

Press the **ESC** key to return to the previous data. Confirm the inserted date with **OK**.

After the last entry, the entered date is displayed, together with the corresponding day of the week and confirmation of the completion of the operation, after which it automatically exits the menu:

```
DATE
SAT 24/05/2021
PROCEDURE COMPLETED
```

NOTE: *The automatic change between Daylight Summer Time and Solar Time is not handled.*

Each time the control panel is switched on, a general fault is always generated which forces the user/installer to enter/confirm the time and date present in the control panel.

4.3 EVENT LOG

This menu makes it possible to view the events stored up to that moment in a dedicated area of the control panel non volatile memory.

If the control panel has been set as **SLAVE** (see *paragraph 3.8.4 Control Panel*), you can directly access the display of the last recorded event, as shown below:

```
XXXXX/YYYYY/ZZZZZ          -/+
DD/MM/YY      HH:MM:SS
STRING 1 EVENT
STRING 2 EVENT
```

The event is displayed on two strings (STRING 1 EVENT and STRING 2 EVENT).

DD/MM/YY and **HH:MM:SS** represent date and time when the event occurred.

ZZZZZ = total event counter.

YYYYY = general event counter.

XXXXX = partial event counter.

The total event counter is the total number of events occurred since the control panel was switched on for the first time.

The general event counter is the absolute event counter (range 1-ZZZZZ).

The partial event counter indicates the number of events occurred since the last time the control panel was switched on.

This counter can be reset by the user. In this case it represents the number of events occurred in the control panel since the last time it was reset.

To reset this counter, select the last event and press **0**.

During the scroll, the counter is replaced by "----" for all the events prior to the one corresponding to partial event counter = zero.

Through keys \wedge and \vee it is possible to scroll the events.

The event log can store up to N events (N = 1014 or 10008, according to the programming settings described in *paragraph 3.8.4 Control Panel*). After the Nth event is stored, the most recent event replaces the oldest one.

When the printer is connected with the control panel and it is active, each event stored in the event log is transmitted also to the printer.

If the control panel has been set as **MASTER** (see *paragraph 3.8.4 Control Panel*), access to the event log will generate the following menu:

```
EVENT LOG
[1] MASTER
[2] SLAVE
```

By selecting **1**, the local event log will be displayed following the same rules described for SLAVE control panels, with the following exception:

When the event log of a MASTER displays an event occurred on a SLAVE (and notified to the MASTER), by pressing **OK** the control panel jumps directly to the event log of the relevant SLAVE control panel, starting with the most recent event occurred on that SLAVE.

By selecting **2**, it is possible to access to the event log of any SLAVE control panels connected with the MASTER and already acquired by the latter:

```
SLAVE ADDRESS: XX
```

After entering and confirming with **OK** the address of the SLAVE control panel whose event log is to be displayed, if the SLAVE control panel is present and has already been identified by the MASTER, its name will be displayed and the confirmation to proceed will be asked:

```
SLAVE ADDRESS: XX
NAME: XXXXXXXXXXXXXXXX

[OK] CONTINUE                [ESC] BACK
```

By pressing **OK**, the event log of SLAVE will be displayed starting from most recent one:

```
XXXXX/YYYYY/ZZZZZ SLAVE XX          -/+
DD/MM/YY      HH:MM:SS
STRING 1 EVENT SLAVE
STRING 2 EVENT SLAVE
```

The information displayed here is similar to the one shown in the local event log, the only difference being the indication, beside the counters, of the address of the SLAVE control panel whose event log is currently being displayed.

By pressing **OK** when the event log of a SLAVE control panel is displayed in the MASTER control panel's screen, the menu reported below is shown.

```
[1] GENERAL RESET
[2] ACKNOWLEDGEMENT
[3] SILENCE SIREN
[4] REARM SIREN          v

[5] GENERAL ALARM      ^
[6] LAMP TEST
[7] SKIP DELAY
[8] INCREASE DELAY    v

[9] MAINTENANCE        ^
```

This menu makes it possible to perform a set of operations in the SLAVE control panel directly from the MASTER panel, via specific commands.

NOTE: the command [9] MAINTENANCE is **not** handled by the SLAVE control panels with firmware rev. lower than 11.

4.4 PRINT EVENT LOG

This menu lets the user start and stop the print of the event log.

If the printer has not been enabled, when the user selects this menu, the following message is displayed:

```

PRINTER NOT PRESENT
    
```

If the printer has been enabled and recognized by the control panel, and the print of the event log is not already in progress, the following message is shown:

```

[OK] START PRINTING
    
```

By pressing **OK**, the print is started and the user is notified with this message:

```

EVENT LOG PRINTING STARTED
    
```

If the print of the event log is in progress, this menu lets the user stop the print.

In fact, by accessing this menu the user is notified with the following message:

```

[OK] STOP PRINTING
    
```

By pressing **OK**, the print is stopped and the following message is displayed:

```

EVENT LOG PRINTING STOPPED
    
```

4.5 LEVELS

Through this screen view it is possible to view the different voltage levels and current values, useful for the diagnosis of malfunctioning probably due to the hardware:

```

VAC = 26.1   VETH = 6.7   V25  = 25.0
VBAT = 27.6   ICBAT = 84    VCBAT = 26.2
VSIR = 24.5   ISIR  = 76    VLSIR = 11.8
VCMP = 24.6   ICMP  = 278   VLSIA = 24.5
    
```

All the voltages (starting letter= **V**) are expressed in Volts, whereas all the currents (starting letter= **I**) are expressed in mA.

The table below reports the voltages and currents which can be monitored through this menu:

Symbol	Meaning
VAC	Supply voltage
VBAT	Battery voltage
VSIR	Siren output voltage
VCMP	Field voltage
VETH	Earth dispersion control voltage
ICBAT	Battery loader current
ISIR	Siren output current
ICMP	Field current
V25	Internal voltage
VCBAT	Battery charger intermediate voltage
VLSIR	Siren line voltage
VLSIA	Self-powered siren line voltage

4.6 TEST

Through this menu, shown below, it is possible to carry out some tests concerning the control panel and the devices during the normal control panel operation:

```
[1] ZONE TEST
[2] LAMP TEST
[3] DEVICE TEST
```

4.6.1 Zone test

It is possible to carry out a zone test to verify the zone/detector correspondence: when a detector belonging to a zone under test is in alarm, the control panel switches over to the alarm condition for 10 seconds and then it goes back to idle position, thus cancelling the alarm condition.

Enter the number of the zone to be tested and confirm with **OK**:

```
ZONE: XX
```

Then the user will be asked whether to enable alarm signalling when a device belonging to the zone switches to alarm condition:

```
ZONE: XX

[1] ACTIVATE ALARM SIGNALLING
[2] DO NOT ACTIVATE ALARM SIGNALLING
```

If the alarm signalling is not activated, when the zone goes to alarm condition the following outputs are not enabled:

- alarm relay.
- siren relay.
- siren output.
- alarm LED (also on remote LCD annunciators, if connected to the control panel).
- output modules associated to the zone under test.

After selection, the test starts and the user is informed with the following message:

```
PROCEDURE COMPLETED
TEST ON ZONE XX
IN PROGRESS
```

The same message is displayed if the user accesses the zone test menu when a zone test is already in progress.

The zone test ends when scanning is stopped to enter the programming phase or when the **RESET** key is pressed during the scanning phase.

4.6.2 Lamp Test

The lamp test is necessary to verify the warning lamp (LEDs on the control panel front side) and sound indicator operation (control panel buzzer) which will turn on for a couple of seconds generating the following message:

```
LAMP TEST IN PROGRESS
```

4.6.3 Device Test

FAP54 makes it possible to monitor, during time, 10 devices and to save the measurements made in a specific storage area. Each storage area can store up to 1024 values, and the acquisition time between a value and the next one can be defined by the user with a minimum time of 60 seconds.

The values acquired can be viewed through the suitable menu.

If a device turns to the alarm condition, its monitoring will start immediately and the measurements made by this device will be stored in a dedicated area of the memory.

Besides the 10 storage areas reserved for the tests manually started by the user, there are also 10 additional areas reserved for the storage of the measurements carried out by the same number of devices in alarm.

Finally, when a device is in alarm, there is a function which makes it possible to view the measurements made by this device in a time range around the alarm device.

The device test menu consists of the following items:

```
[1] START DEVICE TEST
[2] STOP DEVICE POINT TEST
[3] VIEW TEST DATA
[4] VIEW ALARM DATA
```

4.6.3.1 Start device test

Enter the circuit over which the device to be tested is connected and confirm with **OK**:

```
CIRCUIT: XX
```

Then enter the address of the required device and confirm with **OK**:

```
CIRCUIT: XX          DEVICE: XXX
```

The name of the device will be displayed and the user will have the possibility to scroll the other device of the same circuit:

```
CIRCUIT: XX          DEVICE: XXX          ^
NAME: XXXXXXXXXXXXXXXX                    v
```

After selecting with **OK** the device to be tested, enter the time interval between two consecutive measures (range 1÷255, in units of 60 seconds), the type of measurement to be carried out (measure 1 or measure 2) and the data area (1÷10) where the test data must be stored.

Each typed in character shall be confirmed with **OK**.

```
CIRCUIT: XX          DEVICE: XXX          ^
NAME:XXXXXXXXXXXXXXXXX                    v
MEAS. ITVL: X              MEASURE: X
DATA AREA: XX
```

After entering the storage area, if it is already used by another test in progress (or previously started and already finished), the following message will be displayed:

```
AREA XX ALREADY BUSY

[OK]  OVERWRITE
[ESC] BACK TO PREVIOUS MENU
```

If you press **OK** in the screen view above or if the storage area previously entered is free, the test will start and the following message will be displayed for a couple of seconds, and then it will go back to the initial menu:

```
DEVICE TEST STARTED
```

The test will end automatically when all the 1024 values are acquired.

4.6.3.2 Stop device test

The user can stop a test in progress before it ends.

By selecting this option, a screen view with all the information on the test in progress will be displayed for data area 1.

If this area includes a test in progress, the following screen view will be displayed:

```
DATA AREA: 1                                ^
CIRCUIT: XX                                DEVICE: X
NAME: XXXXXXXXXXXXXXXXXXXX
MEAS. ITVL: XXX    MEASURE: X              v
```

Instead if it does not include any test data, the following screen view will be displayed:

```
DATA AREA: 1                                ^
DATA AREA NOT IN TEST
v
```

Through keys ^ v it is possible to scroll all the storage areas, both those concerning the manual tests (areas 1÷10) and those concerning the automatic tests (areas 11÷20).

If the storage area includes test data, by pressing **OK** the user is further required a confirmation:

```
STOP DEVICE TEST ?
[OK] CONTINUE                [ESC] BACK
```

If the user confirms once again, the corresponding test will be interrupted and the following message will be displayed for a couple seconds:

```
DEVICE TEST STOPPED
```

4.6.3.3 View test data

This option makes it possible to view the data collected up to that moment for a test in progress or already completed.

By selecting this option a screen view will be displayed with all the information on the test in progress for data area 1.

If this area includes a test , the following screen view will be displayed:

```
DATA AREA: 1                                ^
CIRCUIT: XX                                DEVICE: X
NAME: XXXXXXXXXXXXXXXXXXXX
MEAS. ITVL: XXX    MEASURE: X              v
```

Instead if it does not include any test data, the following screen view will be displayed:

```
DATA AREA: 1                                ^
DATA AREA NOT IN TEST
v
```

Through keys ^ and v it is possible to scroll all the storage areas, both those concerning the manual tests (areas 1÷10) and those concerning the automatic tests (areas 11÷20).

After selecting an area including some test data and pressing **OK**, the following screen view will be displayed:

```
C: XX P: XXX MEAS. ITVL: XXX MEASURE: X
NAME: XXXXXXXXXXXX
[1] TEXT VIEW
[2] GRAPHIC VIEW
```

By selecting **1**, the stored data will be displayed as follows:

```
C: XX P: XXX MEAS. ITVL: XXX MEASURE: X
NAME: XXXXXXXXXXXXX
START TEST:      DD/MM/YYYY   HH/MM/SS
NSAMPLE:  SAMPLE DD/MM/YYYY   HH/MM/SS
```

NSAMPLE is the sample number (starting from 0); **SAMPLE** is the sample value.

To view the previous or next sample use keys **^** and **v**.

By selecting **2** in the selection menu, a chart will be created with the time progress of the acquired values.

In this chart press keys **<** and **>** to select whether to view the first 32, 64, 128, 256, 512 samples or the whole set of 1024 samples.

To go back to the previous menu press **ESC**.

4.6.3.4 View alarm data

Through this option the user can view the measurements made by a device around an alarm device.

More precisely, if a device is in alarm condition, it is possible to view the 30 measurements before and the 30 measurements after the alarm.

The control panel collects the 60 measurements to be viewed by communicating directly with the device.

To make this communication possible, it is necessary to stop the line scanning.

Enter the coordinates of the device in alarm and confirm with **OK**:

```
CIRCUIT: XX          DEVICE: XXX
```

The user is now requested to confirm the retrieval of data:

```
CIRCUIT: XX          DEVICE: XXX
WARNING! MONITORING ON THE CIRCUIT
WILL BE STOPPED
[OK] CONTINUE          [ESC] BACK
```

By pressing **OK** to continue, the data will be collected from the device.

During this operation the monitoring on the circuit is interrupted.

At the end of this operation, the following screen view will be displayed:

```
[1] TEXTUAL VIEW
[2] GRAPHICAL VIEW
```

If you select the text view, the list of samples will be displayed along with the alarm threshold:

```
THRESHOLD 115
N : SAMPLE n
N+1: SAMPLE n+1
N+2: SAMPLE n+2
```

Using the **^** and **v** keys you move to the previous or next group of 3 samples.

If the graphical view is selected, the samples will be displayed as a histogram where the generic sample can be highlighted through keys **<** and **>**.

4.7 FW VERSIONS

This screen view is used to view the versions, along with the revisions, of the firmware loaded in the control panel boards.

```
CPU BOARD FW VERSION: XXXX.YY  
  
CIRCUIT MODULE N           FW: XXXX.YY
```

In the top area of the display, the information concerning the CPU is shown, while in the bottom part there are the versions and revisions of the modules connected with the CPU.

XXXX represents the firmware code, while **YY** is the revision.

To check modules of the same type, operate keys \wedge and \vee .

To change the type of module, press **OK**.

MODULE	Range
Circuit module	1-16
Command and control module	1
Remote Control Unit	1-16
Printer module	1

5 INCLUDE / EXCLUDE KEY

When the control panel is monitoring the field it is possible to include or exclude the circuit, zones, groups, devices, functions or equipment connected with the control panel without switching over to the programming phase. The access to this menu requires the advanced level 2 password, if enabled.

By pressing **INCLUDE/EXCLUDE**, the following menu will be displayed:

```
[1] INCLUDE/EXCLUDE CIRCUIT
[2] INCLUDE/EXCLUDE DEVICES/ZONES
[3] INCLUDE/EXCLUDE PERIPHERALS
[4] INCLUDE/EXCLUDE OUTPUTS
```

Key **1** allows you to exclude and include a circuit.

By selecting **2**, the following menu will be displayed:

```
[1] INCLUDE/EXCLUDE DEVICES
[2] INCLUDE/EXCLUDE ZONES
[3] INCLUDE/EXCLUDE GROUPS OF DEVICES
[4] INCLUDE/EXCLUDE GROUPS OF ZONES
```

By selecting **3**, the following menu will be displayed:

```
[1] INCLUDE/EXCLUDE PRINTER
[2] INCLUDE/EXCLUDE LCD ANNUNCIATORS
[3] INCLUDE/EXCLUDE COM-E/J
[4] INCLUDE/EXCLUDE SLAVE PANELS
```

```
[5] INCLUDE/EXCLUDE COMMUNICATOR IP
```

By selecting **4**, the following menu will be displayed:

```
[1] INCLUDE/EXCLUDE SIREN OUTPUT
[2] INCLUDE/EXCLUDE SIREN RELAY
[3] INCLUDE/EXCLUDE AC/EXCL RELAY
[4] INCLUDE/EXCLUDE FAULT RELAY
```

After selecting the required option, the inclusion or exclusion operation will be carried out in the same way and with the same menus used in the programming phase.

NOTE: *the inclusion or exclusion of a circuit leads the circuit to be powered off in the case of exclusion, and powered on again when it is included. In particular, during power on, the control panel does NOT carry out field monitoring, therefore possible alarms occurred during this time will not be detected*

6 TECHNICAL AND ENVIRONMENTAL CHARACTERISTICS

6.1 ELECTRIC AND OPERATING CHARACTERISTICS

Power supply rate voltage (network):	100 ÷ 240V~ - -15/+10% - 50/60 Hz
Max absorption :	3A
AC/DC output rated voltage:	26V $\overline{=}$
Max AC/DC deliverable current:	4.85A
Placeable lead battery:	2x12V - 12Ah

KEY TO SYMBOLS

Symbol	Description
$\overline{=}$	Direct input voltage
~	Alternating input voltage
	See the installation manual of the device

6.2 WEATHER CHARACTERISTICS

Operating temperature range:	- 5 ÷ +40°C U.R. 95% @ 40°C
Storage temperature range:	-20 ÷ +70°C

6.3 AESTHETIC AND MECHANICAL CHARACTERISTICS

The control panel consists of a metal base and a plastic cover where the keypad is housed, together with the display and the CPU.

The cover is hinged on the base short side.

The control boards, the Backplane, the AC/DC converter and the batteries are fitted on the metal base.

7 APPENDICES

7.1 APPENDIX 1 – ERROR CODES FOR FAULT OF DEVICES

If a device undergoes a fault, this fault is detected by the control panel during the scanning phase and the user is notified about it with a message:

```
FAULT      ZXXX CY PZZZ TT      FWWW
NAME OF THE DEVICE
```

XXX = number of the zone which the device belongs to

YY = circuit which the device is connected to

ZZZ = address of the device

TT = type (in short) of the device

WWW = fault code

If the device is an output module, the user is notified about the fault with one of the following messages, depending on the fault:

```
FAULT      EXT.  CXX PYYY OM      FZZZ
NAME OF THE MODULE
```

or:

```
FAULT      CXX PYYY OM      FZZZ
NAME OF THE MODULE
```

XX = circuit which the module is connected to

YYY = address of the module

ZZZ = fault code

The following table contains the device error codes and the relevant explanation.

Code	Fault
1	Smoke/heat detector: internal fault of the optical section.
2	Smoke/heat detector: internal fault of the optical section (signal less than the fault threshold).
3	Internal fault of the temperature detection section.
4	Smoke detector: error at the end of the optical calibration procedure.
5	Smoke detector: optical calibration is missing because of out of range temperature.
6	Internal fault: non volatile memory access error.
7	Internal fault: testing not executed.
8	Internal fault: optical calibration not executed.
9	Internal fault: calibration failed.
10	Heat detector or smoke/heat detector: internal fault of the temperature detection section.
11	Manual call point: internal fault of the alarm switch.
12	External fault: analog input 1 is short circuited.
13	External fault: analog input 1 is open (end of line resistor is missing).
14	External fault; analog input 2 is short circuited.
15	External fault: analog input 2 is open (end of line resistor is missing).
16	External fault: missing short circuit of input 1 of a mode 2 actuator within the expected time (feedback time).
17	External fault: alarm repetition output is short circuited.
18	The device has notified an external fault, but it is not possible to read the cause because of a communication problem.
19	Type programming error.
20	The device does not answer to the cyclic polling during the monitoring phase.
21	The device does not answer to a command.
22	The device does not answer to the initial polling at the beginning of the monitoring phase.
23	The device answers wrongly with a too high current to the polling during the monitoring phase (possible answer coming simultaneously from more than one device).
24	The device type is different than the programmed one.
25	Device not accepted because of wrong manufacturer code.
26	The device does not answer to the adaptation command.
27	The device does not answer to the status request command for inclusion verification.
28	The device does not answer to the command of inclusion.
30	External fault: alarm repetition/siren output is open (end of line resistor is missing).
31	External fault: alarm repetition/siren output is short circuited.
32	External fault: electrical overloaded on the gemma output.
33	External fault: external power supply applied to a device programmed to work without it.
34	External fault: external power supply missing on a device programmed to work with it.
35	External fault: the value read is lower than the threshold of fault of the analog section (possible break of the electric connection with the measurement equipment).
36	External fault: conventional detection circuit is short circuited.
37	External fault: conventional detection circuit is open (end of line resistor is missing).
38	Dip-switch configuration on the device is different than the one programmed in the control panel.
40 - 43	Failure of the attempt to recovery communication with the device after a missing answer to the cyclic polling during the monitoring phase.
60	External device fault: analogue measurement above short circuit fault threshold.
61	External device fault: analogue measurement lower fault threshold 1.2mA.
100	External device fault: manual interruption of the actuation.
101	External device fault: restoring of manual interruption of the actuation.
102	External device fault: actuation active but input 1 not short-circuited.

7.2 APPENDIX 2 – FAULT CODES FOR CIRCUIT MODULE

If a circuit module undergoes a fault during the scanning phase, the control panel detects this fault and notifies the user with this message:

FAULT CIRCUIT MODULE XX (YY)

XX = module which underwent the fault

YY = fault code

The table below reports the fault codes along with the relevant explanation:

Code	Fault
1	Access error to the non volatile memory of the module.
2	Program supervision error (1).
3	Fault in the output analog section of the module.
4	The module does not answer to commands.
5	Module removed.
6	Module reset.
7	Unexpected answer from the module (1).
8	Unexpected answer from the module (1).
9	Unexpected answer from the module (1).
10	Unexpected answer from the module (1).
11	Unexpected answer from the module (1).
12	Unexpected answer from the module (1).
13	Module is blocked (1).
14	Module not usable because of a serious line fault (e.g. short circuit, overload).
15	Fault in the module transmitter.
16	Fault in the module transmitter.
17	Data memory corrupted (1).
18	System memory corrupted (1).
19	System memory corrupted (1).
20	Code memory corrupted.
21	Non volatile memory corrupted (1).

(1) Please, contact the Technical Support.

7.3 APPENDIX 3 – FAULT CODES FOR THE COMMAND AND CONTROL MODULE

If the Command & Control module undergoes a fault during the scanning phase, the user is notified with this message:

FAULT C&C MODULE (XX)

XX = fault code

The table below reports the fault codes of the Command and Control module and the relevant explanation:

Code	Fault
1	Access error to the non volatile memory of the module.
2	Program supervision error (1).
3	Internal fault: 25 V voltage is low.
4	Internal fault: 25 V voltage is high.
5	Internal fault: 8 V voltage is low.
6	Internal fault: 8 V voltage is high.
7	Internal fault in RAM: data area corrupted.
8	Internal fault in NVM: wrong default data.
9	The module does not answer to the commands.
10	Module reset.
11	The module does not accept the command (1).
12	Module blocked (1).

(1) Please, contact the Technical Support.

7.4 APPENDIX 4 – FAULT CODES FOR THE LCD ANNUNCIATORS

If an LCD Annunciator connected to and recognized by the control panel undergoes a fault during the scanning phase, the user is notified with the following message:

*FAULT LCD ANNUNCIATOR XX (YY)
NAME OF THE LCD ANNUNCIATOR*

XX = address of the LCD annunciator affected by the fault

YY = fault code

The following table reports the fault codes of LCD annunciators and the relevant explanation:

Code	Fault
1	The LCD annunciator does not answer to the cyclic polling command

7.5 APPENDIX 5 – FAULT CODES FOR IP / LTE COMMUNICATOR

If the IP / LTE communicator module undergoes a fault during the scanning phase, the user is notified with the following messages:

FAULT IP COMMUNICATOR (or LTE) (XXX,YY)

Where:

XXX = fault code

YY = auxiliary information

The table below shows the **XXX** error codes of the communicator:

Code XXX	Fault	Auxiliary information YY
0	Fault reported by the communicator module: no connection to the router.	---
1	Fault reported by the communicator module: no connection to the cloud.	---
2	Fault reported by the communicator module: ACK reception timeout.	---
3	Fault reported by the communicator module: configuration in NVM corrupted.	---
7	Fault reported by the communicator module: no communication with control panel.	---
8	Fault reported by the communicator module: SIM missing	---
9	Fault reported by the communicator module: Incorrect SIM PIN	---
10	Fault reported by the communicator module: LTE communicator error	---
11	Fault reported by the communicator module: failure to connect to the GSM network	---
12	Fault reported by the communicator module: configuration error	---
32	Fault reported by the communicator module: communication error	---
254	Fault reported by the communicator module: module reset.	Reset cause (not meaningful for the user): please the Technical Support.
255	No communication with the communicator module (lifetime timeout).	---

7.6 APPENDIX 6 – SYSTEM ERROR CODES

A system error is notified to the user with the following message:

```
FAULT      SYSTEM ERROR (XX)
```

XX = error code

The following table reports the error codes along with the relevant explanation:

Code	Fault
1	Internal memory error (stack of exclusions) [1].
2	Internal memory error (stack of zone alarms) [1].
3	Internal memory error (stack of general faults) [1].
4	Internal memory error (stack of field faults) [1].
5	Internal memory error (stack of maintenance events) [1].
6	Internal memory error (FIFO of alarms) [1].
7	Internal memory error (stack of slave panels events) [1].
8	Internal memory error (stack of alarms of groups of devices) (1).
9	Internal memory error (stack of alarms of groups of zones) [1].
10	Attempt to include an element already included
11	Internal memory error (stack of a task of the operating system *) [1].
12	Program supervision error (**) [1].
13	Data memory integrity check (according to EN54) failed [1].
14	Program memory integrity check (according to EN54) failed.
15	Access error to the external flash memory.
16	Fault on transmitter for communication with internal modules.
17	Fault on transmitter for communication with the communicator module.
18	Fault on transmitter for communication with remote LCD annunciators and printer module.
19	Fault on transmitter for Master/Slave communication.
20	Display blocked.
21	Control panel reset caused by the program supervisor [1].
22	Control panel reset caused by low supply voltage.
23	Not used.
24	Not used.
25	Startup up error of TCP server application (**).
26	Not used.
27	LAN cable removed.
28	Not used.
29	Internal memory error (stack of generic events) [1].
30	Not used.
31	Battery voltage check during temperature variation failed.
32	Alarm transmission timeout via LAN (****).
33	TCP connection interrupted.

(*) This fault is characterized by another parameter, indicating the task affected by the stack overflow:

```
FAULT      SYSTEM ERROR (11) XX
```

XX = identifier of the task whose stack has been affected by the overflow

(**) When this fault occurs, one further event is stored in the event log. This event contains the supervision mask of the tasks, containing the information on the tasks blocked:

```
FAULT      SYSTEM ERROR (12)
FW MASK   BMP3 BMP2 BMP1 BMP0
```

BMP3, BMP2, BMP1, BMP0 = bitmap of the supervision mask (32 bit)

(***) This fault occurs when the ethernet configuration parameters are wrong. To solve this issue, reconfigure these parameters from the relevant programming menu.

(****) This fault occurs when the communicator, following an alarm transmission via LAN, does not receive the alarm acknowledgment response (ACK) from the remote location as required by the EN 54-21 standard.

[1] Please, contact the Technical Support.

7.7 APPENDIX 7 – FAULT CODES FOR SLAVE CONTROL PANELS

If a slave control panel undergoes a fault during the scanning phase, the user is notified with the following message:

```
FAULT   SLAVE PANEL      XXX (YY)
NAME OF THE SLAVE CONTROL PANEL
```

XXX = address of the slave control panel affected by the fault

YY = fault code

The table below reports the fault codes along with the relevant explanation:

Code	Fault
1	Missing communication (the slave control panel does not answer).
2	Slave control panel continuously busy in not interruptible operations.
3	Slave control panel busy in processing commands received by other sources (USB/Ethernet/Communicator).
4	Slave control panel not recognizing the command.
5	The slave control panel deems an actually correct command with parameter errors.

7.8 APPENDIX 8 – PROCEDURE ERROR CODES

The table below reports the error codes returned by the circuit module after the failure of a procedure and the relevant explanation.

Code	Fault
0	Auto-addressed loop mode initialization: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
1	Auto-addressed loop mode initialization: unexpected voltage on line LB. A voltage on LB clamps has been detected at the beginning of the initialization procedure; this voltage is probably due to an unwanted connection between line LA and line LB (please, note that it is necessary to place at least one device in series between LA and LB).
2	Auto-addressed loop mode initialization: lack of 4 consecutive addresses to assign to a multiple I/O module.
3	Auto-addressed loop mode initialization: missing answer in current from the device or open line. The procedure completes correctly when a voltage on LB is detected.
5	Auto-addressed loop mode initialization: missing answer from a device with invalid address. The module could not communicate with the device: check the electrical connections.
6	Missing answer from a device with valid (1 – 128) address. The module could not communicate with the device: check the electrical connections.
7	Auto-addressed loop mode initialization: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
8	Auto-addressed loop mode initialization: maximum number of devices reached and lack of voltage on LB. The procedure completes correctly when a voltage is found on LB; warning: do not overcome the limit of max 128 devices per line.
10	Device too far from the line card (cable too long or cable resistance too high).
11	Auto-addressed loop mode initialization: no answer from the device during the address assignment phase. Check the electrical connections after the device.
12	Auto-addressed loop mode initialization: device with random address not found. Check the electrical connections.
13	Procedure stopped by the control panel (a stop command has been received).
20	Pre-configured loop mode initialization: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
21	Pre-configured loop mode initialization: unexpected voltage on line LB. A voltage on LB clamps has been detected at the beginning of the initialization procedure; this voltage is probably due to an unwanted connection between line LA and line LB (please, note that it is necessary to place at least one device in series between LA and LB).
23	Pre-configured loop mode initialization: missing answer in current from the device or open line. The procedure completes correctly when a voltage on LB is detected.
27	Pre-configured loop mode initialization: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
28	Pre-configured loop mode initialization: maximum number of devices reached and lack of voltage on LB. The procedure completes correctly when a voltage is found on LB; warning: do not overcome the limit of max 128 devices per line.
29	Pre-configured loop mode initialization: there is a device with invalid address. The procedure only works with devices having valid addresses (range 1 – 128).
40	Update loop mode initialization: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.

Code	Fault
41	Update loop mode initialization: unexpected voltage on line LB. A voltage on LB clamps has been detected at the beginning of the initialization procedure; this voltage is probably due to an unwanted connection between line LA and line LB (please, note that it is necessary to place at least one device in series between LA and LB).
42	Update loop mode initialization: lack of 4 consecutive addresses to assign to a multiple I/O module.
43	Update loop mode initialization: missing answer in current from the device or open line. The procedure completes correctly when a voltage on LB is detected.
46	Update loop mode initialization: missing answer from a device with valid (1 – 128) address. The module could not communicate with the device: check the electrical connections.
47	Update loop mode initialization: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
48	Update loop mode initialization: maximum number of devices reached and lack of voltage on LB. The procedure completes correctly when a voltage is found on LB; warning: do not overcome the limit of max 128 devices per line.
49	Update loop mode initialization: the maximum number of addressed devices has been reached and there are other devices not addressed yet on the line. Warning: do not overcome the limit of max 128 devices per line.
50	Update loop mode initialization: reached the maximum number of generated random addresses. Repeat the procedure and/or manually address the devices not yet addressed.
60	Auto-addressed open mode initialization: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
61	Auto-addressed open mode initialization: unexpected voltage on line LB. A voltage on LB clamps has been detected at the beginning of the initialization procedure; this voltage is probably due to an unwanted connection between line LA and line LB.
62	Auto-addressed open mode initialization: lack of 4 consecutive addresses to assign to a multiple I/O module.
65	Auto-addressed open mode initialization: missing answer from a device with invalid address. The module could not communicate with the device: check the electrical connections.
66	Auto-addressed open mode initialization: Missing answer from a device with valid (1 ÷128) address. The module could not communicate with the device: check the electrical connections.
67	Auto-addressed open mode initialization: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
70	Auto-addressed open mode initialization: unexpected voltage is found on LB while the procedure is in progress on line LA. Check that the detection line connected to LA is not connected to LB.
71	Auto-addressed open mode initialization: no answer from the device during the address assignment phase. Check the electrical connections after the device.
72	Auto-addressed open mode initialization: device with random address not found. Check the electrical connections.
80	Pre-configured open mode initialization: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
87	Pre-configured open mode initialization: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
88	Pre-configured open mode initialization: maximum number of devices reached. Warning: do not overcome the limit of max 128 devices per line.
89	Pre-configured open mode initialization: there is a device with invalid address. The procedure only works with devices having valid addresses (range 1÷128).
100	Update open mode initialization: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
107	Update open mode initialization: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
108	Update open mode initialization: maximum number of devices reached. Warning: do not overcome the limit of max 128 devices per line.
109	Update open mode initialization: the maximum number of addressed devices has been reached and there are other devices not addressed yet on the line. Warning: do not overcome the limit of max 128 devices per line.
110	Update open mode initialization: reached the maximum number of generated random addresses. Repeat the procedure and/or manually address the devices not yet addressed.
111	Update open mode initialization: the line is empty. Check the electrical connections.
160	Procedure of device programming: no answer from the device.
180	Walk addressing: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
182	Walk addressing: lack of 4 consecutive addresses to assign to a multiple I/O module.
184	Walk addressing: simultaneous answer from more than one device. Check the electrical connections, the connection of the detectors on their base and the power supply jumpers for each single module and manual call point.

Code	Fault
186	Walk addressing: missing answer from a device with valid (1÷128) address. The module could not communicate with the device: check the electrical connections.
193	Walk addressing: procedure stopped because of a stop command coming from the control panel
200	Search for multiple addresses procedure: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
201	Search for multiple addresses procedure: found a duplicated address.
205	Type match verification procedure: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
206	Type match verification procedure: mismatch between the configuration stored in the control panel and the configuration in the field.
207	Search short circuit: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
208	Search short circuit: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
209	Search short circuit: no answer from the device. Check the electrical connections.
210	Search short circuit: no answer from the device. Check the electrical connections.
211	Search short circuit: unexpected voltage on line LB. A voltage on LB clamps has been detected at the beginning of the procedure; this voltage is probably due to an unwanted connection between line LA and line LB (please, note that it is necessary to place at least one device in series between LA and LB).
212	Search short circuit: line fault (overload / short circuit) after brand new device addressing or acquisition. Check the electrical connections after the device.
213	Search short circuit: simultaneous answer from more than one device. Check the addressing of the devices (possible presence of duplicated addresses).
214	Search open loop: line fault (overload or shortcircuit) at power on. Check the electrical connections among the circuit line card and the devices connected directly with LA and LB.
215	Search open loop: unexpected voltage on line LB at power on. A voltage on LB clamps has been detected at the beginning of the initialization procedure; this voltage is probably due to an unwanted connection between line LA and line LB.
216	Search open loop: line fault (overload / short circuit) after device addressing or acquisition. Check the electrical connections after the just addressed/acquired device.
217	Search open loop: missing communication with the device. Check the electrical connections.
218	Search open loop: missing communication with the device. Check the electrical connections.
219	Search open loop: no answer from the device and lack of voltage on line LB, The last device which answered is located just before the section where the loop is open.
220	Search open loop: line fault (overload / short circuit) after brand new device addressing or acquisition. Check the electrical connections after the device.
221	Search open loop: simultaneous answer from more than one device. Check the address assignment (there could be duplicated addresses).

7.9 APPENDIX 9 – LINE FAULT BITMAPS

If a line fault occurs during an initialization procedure on a single circuit, the following screen will be displayed:

```

FAULT ON CIRCUIT XX
BMP1: 01234567      BMP2: 01234567
-----*-----      *-*-----
TYPE: XXXX          A = D--- B = D---
    
```

Where are indicated:

- number of the line affected by the fault.
- bitmaps with fault codes. The bits set are represented by asterisks and indicate the faults occurred, according to the following decoding table.

BMP1
Bit 0 – Fault on line A (1) isolated at clamps LA for short circuit/overload.
Bit 1 – Fault on line B (2) isolated at clamps LB for short circuit/overload.
Bit 2 – Fault on line A (1) isolated at the device XXX for short circuit/overload.
Bit 3 – Fault on line B (2) isolated at the device XXX for short circuit/overload.
Bit 4 – Fault: open circuit (positive cable).
Bit 5 – Fault: open circuit (negative cable).
Bit 6 – Unexpected voltage present on line A (1).
Bit 7 – Unexpected voltage present on line B (2).
BMP2
Bit 0 – Positive cable resistance too high.
Bit 1 – Negative cable resistance too high.
Bit 2 – Overload on line A (1).
Bit 3 – Overload on line B (2).
Bit 4 – Short-circuit on line A (1).
Bit 5 – Short-circuit on line B (2).
Bit 6 – Main voltage missing.
Bit 7 – Not used.

- circuit configuration (open / loop)
- A = D --- e B = D - - -, where:
 - the address involved in the fault in case of open configuration.
 - the physical position of the device involved in the fault in case of loop configuration.

7.10 APPENDIX 10 – DEVICE TYPES

The table below reports the meaning of the shortened strings containing the information on the device type. This information can be found in all the messages of the following categories related to the device: alarms, faults, exclusions.

Device type (short form)	Meaning
SM	Smoke detector.
HT	Heat detector.
OM	Output module.
CM	Concentrator module.
MN	Manual call point.
CI	4-20mA input module.
BD	Beam detector.
SH	Smoke/Heat detector.
LI	Latched input module.
PI	Pulsed input module.
XS	Smoke/Heat/Gas detector.
TB	Bathroom Call Cord module.
GS	Gas detector.
IS	Latched input with siren output.

7.11 APPENDIX 11 – QUALIFIER OF DEVICE ATTRIBUTES

The information relevant to an alarm, fault, exclusion/inclusion of a device, displayed during the monitoring phase or in the event log, may contain a qualifier **Q** of the attributes of the device.

If present, this qualifier takes on the meaning reported in the table below:

Qualifier	Meaning
R	Device with Clear Delay function enabled.
M	Device with General Alarm function enabled.
B	Device with both Clear Delay and General Alarm functions enabled.
d	Manual call point degraded.
r	Manual call point degraded with Clear Delay function enabled.
m	Manual call point degraded with General Alarm function enabled.
b	Manual call point degraded with Clear Delay and General Alarm functions enabled.

7.12 APPENDIX 12 – ALARM TYPES

The table below reports the meaning of alarm types returned by a device in alarm.

Alarm type	Meaning
0	Alarm of a device during periodic maintenance.
1	Alarm for smoke.
2	Alarm for temperature.
3	Alarm for smoke/temperature.
4	Alarm for manual call point.
5	Alarm for input 1.
6	Alarm – undefined cause because of a communication problem with the device.
7	Alarm for gas.
8	Alarm from conventional detection circuit.
9	Alarm for overtaking the current threshold of the 4-20mA input module.

7.13 APPENDIX 13 – ZONE TYPES

The table below reports the meaning of the shortened strings containing the information on the zone type.

Zone type	Meaning
FR	Fire alarm zone type.
TN	Technological zone type.

7.14 APPENDIX 14 – ERROR CODES FOR PRINTER MODULE

If a fault relevant to the printer occurs during the monitoring phase, the user is notified with the following message:

FAULT PRINTER XX

XX = error code

The table below reports the error codes of the printer module and the relevant explanation:

Code	Fault
1	Printer not connected.
2	Missing paper.
3	Printer continuously busy.
4	The printer module does not answer to the command.
5	Printer module: program supervision error (1).
6	Printer module: non-volatile memory access error.
7	Printer in fault (generic error).

(1) Please, contact the Technical Support.

7.15 APPENDIX 15 – PS2 KEYPAD MAPPING

The table below shows the list of the PS2 keys used and their mapping with the correspondent keys in the internal keypad.

PS2 key on keypad	Function
ESC	ESC
F1	RESET
F2	SILENCE REARM SIREN
F3	INCREASE DELAY
F4	SKIP DELAY
F5	INCLUDE EXCLUDE
F6	MASTER ALARM
F7	MENU
F8	ACK
ENTER	OK
DEL	Char cancellation (equivalent to LEFT arrow)
Directional keys (UP, DOWN, LEFT, RIGHT)	Directional keys (UP, DOWN, LEFT, RIGHT)
- (numerical keypad)	Decrease LCD sharpness (* on the internal keypad)
+ (numerical keypad)	Increase LCD sharpness (0 on the internal keypad)
SHIFT	Enable uppercase letters
CAPS LOCK	Permanently enable upper case letters

7.16 APPENDIX 16 – ERROR CODES FOR CIRCUIT FAULT (COMM. ERROR)

The table below reports the error codes relevant to the circuit fault notified with the following message:

```
FAULT CIRCUIT XX
COMM. ERR. YYY DZZZ
```

Where:

xx = circuit number

yy = error code (see the table below)

zzz = address of the device

Code	Meaning
1	Lack of communication with a device in alarm.
2	Lack of communication with a device in external fault.
3	Lack of communication with a device in alarm or external fault.
4	At least one device with address 241 has been detected during the monitoring phase.
5	At least one device with address greater than 128 and in alarm condition has been detected during the monitoring phase.
6	At least one device with address greater than 128 and in fault/external fault condition has been detected during the monitoring phase.
7	At least one device with address greater than 128 and power supplied again because of a short circuit has been detected during the monitoring phase.



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