GB

FAP54

Multiprocessor modular control panel for fire detection

User's manual

CE 09 00 51

ELKRON

DS80SC61-001F LBT80096

DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE)

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Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment.
The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.
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TABLE OF CONTENTS

1 OPERATING MODES

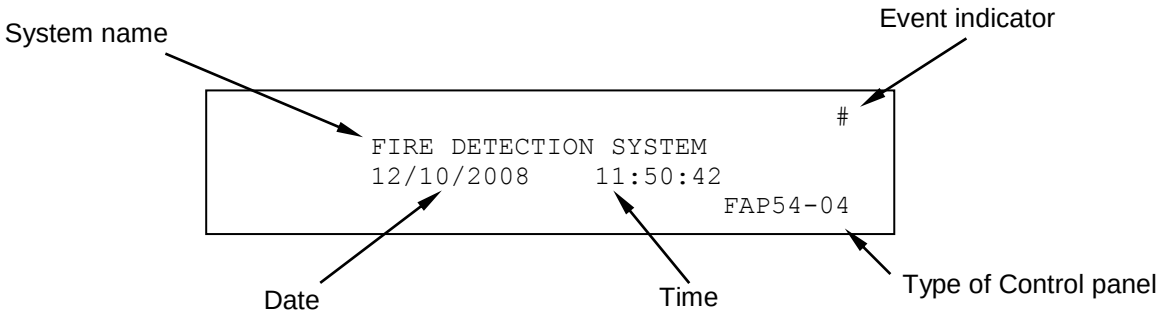
The FAP54 control panel has two operating modes: ***scanning phase*** and ***programming phase***.
When FAP54 is powered on, the scanning phase will be always started and maintained until the installer or the user carries out an intervention.

2 SCANNING PHASE

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

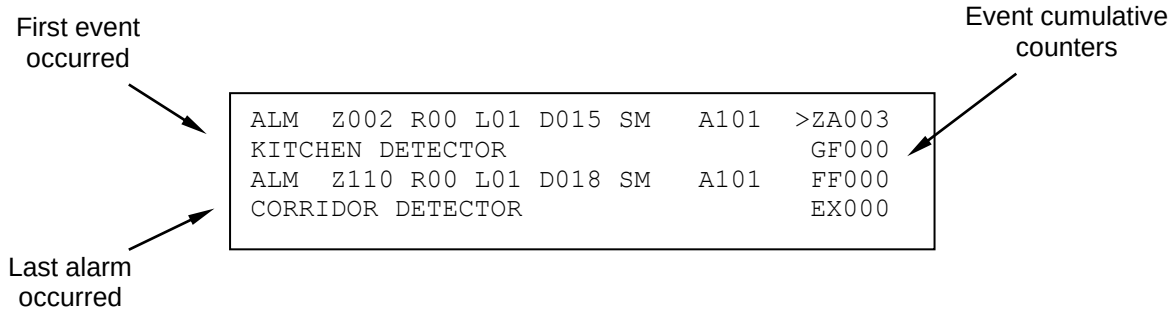
- alarm
- general fault
- field fault
- maintenance
- exclusion
- events related to slave control panels (if the control panel is set as master)
- generic events (not classified into any of the previous categories)

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.
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.

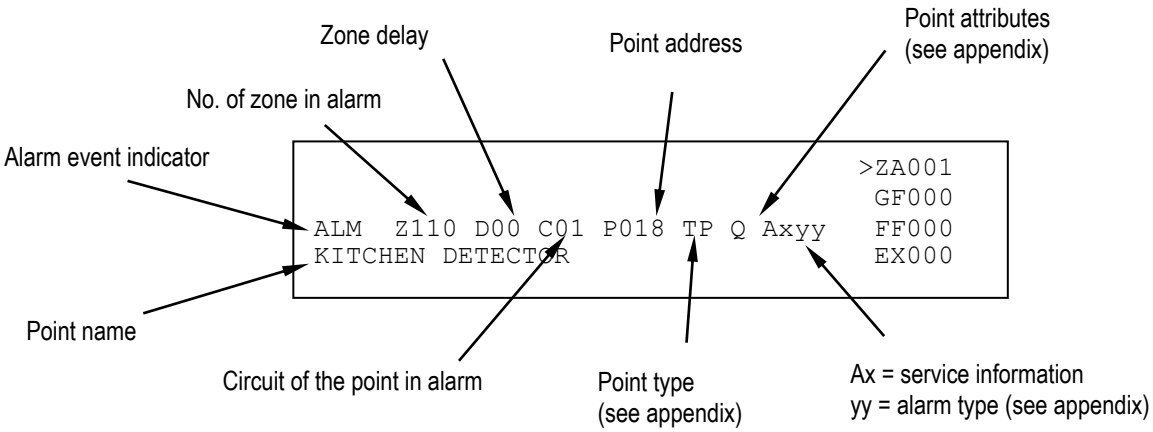
The events are displayed according to the following priority:

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

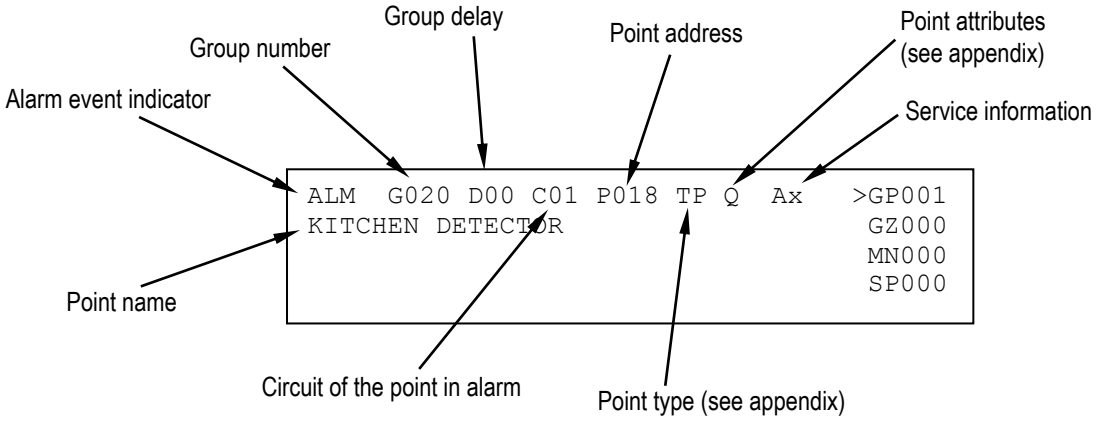
By using the keys ∧ and ∨ it is possible to change the type of event displayed (the > symbol on the right selects the type of the event currently shown on the first two rows).
By using the keys **<** and **>** it is possible to go back and forth through the events of the selected type.
The selected event 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.

3 ALARM DISPLAY

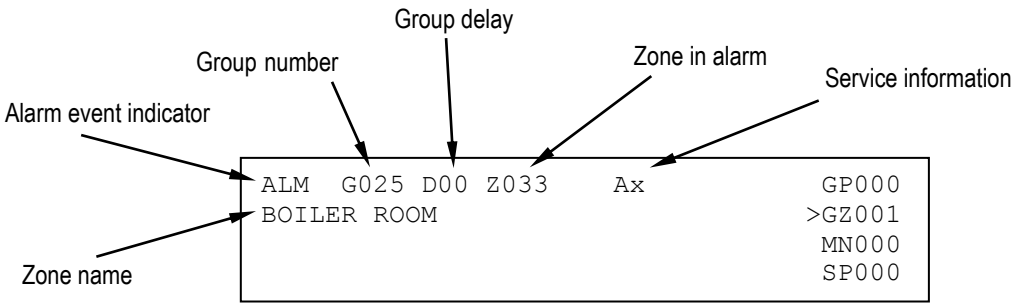
Display of Zone Alarm generated by detector/pushbutton associated with zone



Display of alarm of group of points generated by an associated point



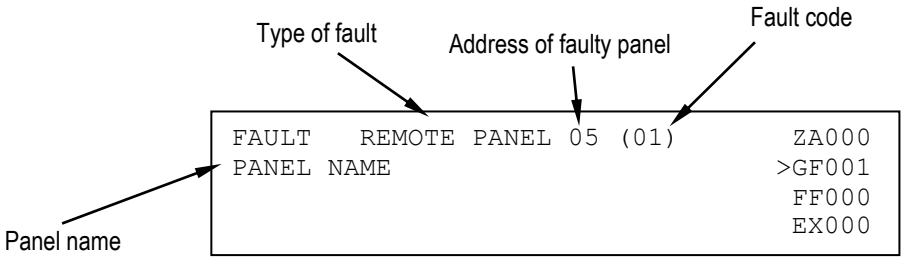
Display of alarm of group of zones generated by an associated zone



4 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.

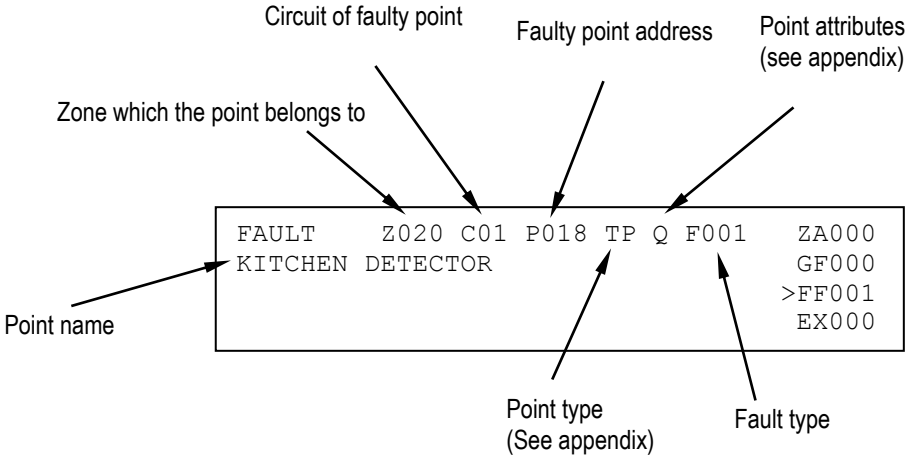
Example:



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.

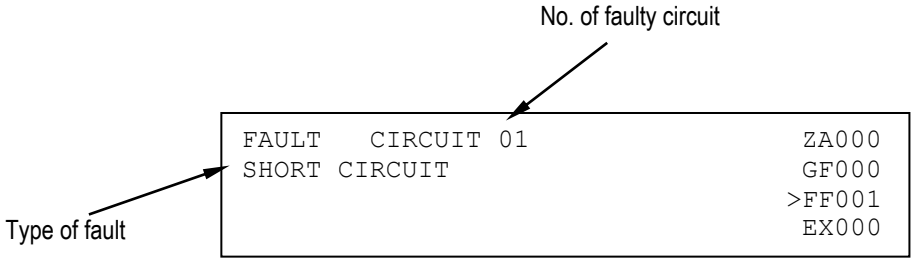
5 FIELD FAULT DISPLAY

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 can affect also the detection circuit and occur, for instance, because of a short circuit or when the circuit is configured in loop mode and the loop breaks.

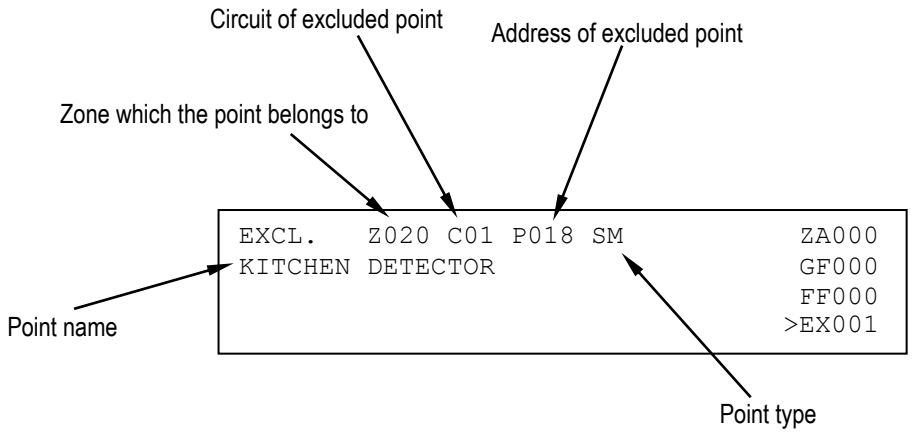
In any case, a self-explaining message will be displayed. Below is reported an example of a field fault of type “short circuit” affecting circuit 1.



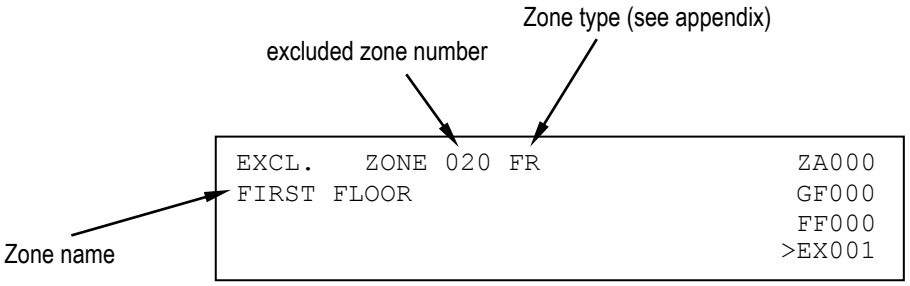
6 EXCLUSION DISPLAY

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.

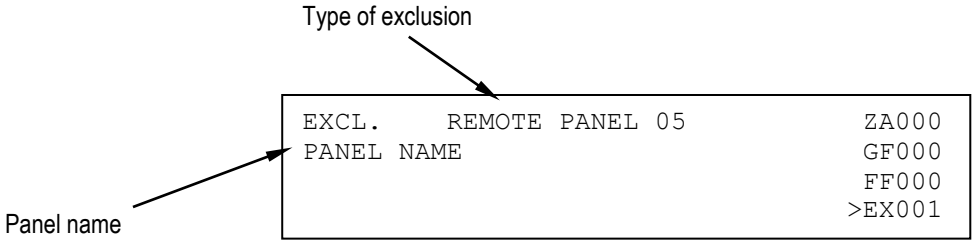
Display of excluded device



Display of excluded zone

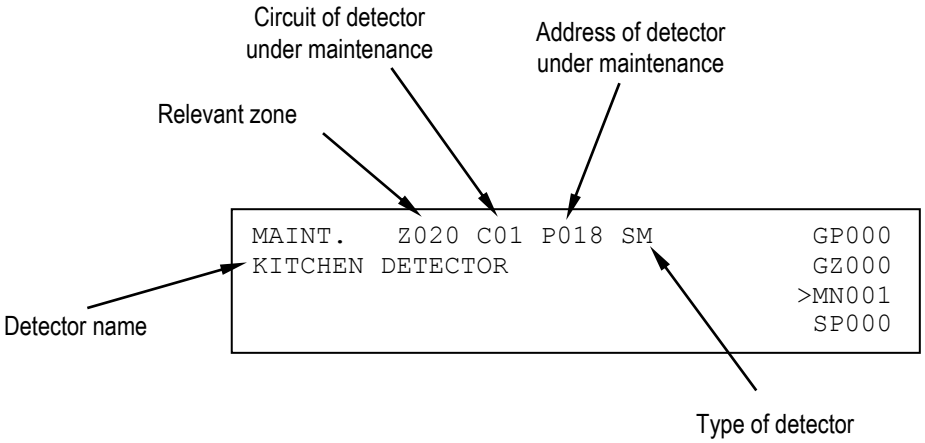


Display of excluded remote panel



7 MAINTENANCE DISPLAY

The display of a device requiring maintenance allows the immediate recognition of a 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.



8 SLAVE CONTROL PANEL DISPLAY

This section 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 smoke detector.
This SLAVE control panel, then, shows the following message on its display:

```
MAINT.   Z020 C01 P018 SM          GP000
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                  GP000
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.
Moreover, it says that the SLAVE control panel with address 50 is also named “HANGAR”.

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                  GP000
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 point 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. GLOBAL RESET, ACKNOWLEDGEMENT, SILENCE/REARM SIREN, etc.) to the SLAVE panel.
For further information on this topic, please refer to the programming 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 <u>all generated by the same SLAVE panel</u>
- the MASTER is currently showing events from the SP folder

Under the aforementioned conditions, if the SLAVE panel undergoes a GLOBAL 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.

9 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
- Events related to modem connections (incoming calls, outgoing calls for alarms/faults/maintenance)
- Alarms and faults transmission via E/J type communicator towards remote fire alarm receiving centre.

10 CONTROL PANEL FUNCTIONAL STATES

NORMAL: all the indicators are normally OFF but the following LEDs:

- AC: steady green if the control panel is powered on by the main power, blinking green if the control panel is powered on by batteries
- LEDs of the “EXCLUSIONS” group, if there are active exclusions
- TEST SYSTEM if there is a system test in progress

ALARM: when an alarm occurs, the control panel switches to the ALARM state and the following statements are true:

- the FIRE ALARM LED (located on the topmost left side of the panel) starts blinking (if the siren output is not activated) or is steady ON (if the siren output is activated);
- the ALARM relay is activated
- if the siren output is activated, the SIREN relay is activated as well
- all the actuator modules are activated (if properly programmed) according to the alarm level reached by the panel (alarm 1 = alarm with siren output OFF, alarm 2 = alarm with siren output ON)
- the control panel starts emitting a continuous whistle and the display notifies the user about the alarmed device/s;
- if the E type communicator is connected, the “MODEM ACTIVE” red LED blinks during alarm transmission towards the remote fire alarm receiving centre and becomes steady ON when the relevant ACK is received.

FAULT: in the case of fault, the control panel will emit an intermitting whistle; moreover, the yellow LED of the General Fault indicator plus another LED related to specific faults (e.g. System, Battery, Siren and Ground Dispersion) will be turned ON. The display will notify the user about the fault.
Moreover, if the fault is related to E type communicator, the “MODEM STATE” yellow LED blinks.

To stop the whistle press **ACK**.

Once the fault has been solved press **RESET**.

11 FIRST LEVEL OPERATIONS

ACK: by pressing **ACK** the control panel buzzer will be silenced and the event displayed will be acknowledged.

ALARM SILENCING: by pressing **SILENCE / RESTART SIREN** the active device (plates or sirens) sound will be temporarily stopped. The yellow LED associated with the **SILENCED SIREN** will turn on.
To restore the sound, press again the **SILENCE / RESTART SIREN**.

The yellow LED associated with **SILENCED SIREN** will turn off.

RESET: press **RESET** to restore the control panel normal operation. All the indicators (LEDs, displays) will be disabled and all the related functions restored.

DISPLAY DESCRIPTION: the control panel display is composed of 4 lines. The first two lines indicate initially the first alarm or the last non alarm event occurred, whereas the other two lines show the last alarm occurred (if any alarm exists).
In order to move back and forth on the list of events belonging to the currently selected category, press the buttons < and >. The currently selected event will be shown on the first two rows of the display.
The currently selected category is the one correspondent to the position of the event type selector **>** on the right-hand side of the screen.
In order to change the event category operate on the buttons ^ and v.

The counters referring to the type of events, located on the right-hand side of the display, are:

ZA	(Zones in alarm):	number of zones in alarm
GF	(General Fault):	number of general faults
FF	(Field Fault):	number of field faults
EX	(Exclusion):	number of exclusions in progress without distinguishing among circuits, zones, groups or devices
GP	(Group of points in alarm):	number of groups of points in alarm
GZ	(Group of zones in alarm):	number of groups of zones in alarm
MN	(Maintenance):	number of devices requiring maintenance
SP	(Slave control panel events):	number of alarm events + field fault events + general fault events + maintenance events occurred on the slave control panels
GE	(Generic events):	number of generic events (block/resume actuations, modem connections, alarms and faults transmission via E/J type communicator)

12 INCLUDE/EXCLUDE PUSHBUTTON

When the control panel is monitoring the field it is possible to include or exclude circuits, zones, groups, points, functions or equipment connected to the control panel without switching over to the programming phase.
The access to this menu requires the level 2 password, if enabled.

By pressing **INCLUDE/EXCLUDE**, the following menu will be displayed:

```
[1] INCLUDE/EXCLUDE CIRCUIT
[2] INCLUDE/EXCLUDE POINTS/ZONES
[3] INCLUDE/EXCLUDE PERIPHERALS
[4] INCLUDE/EXCLUDE OUTPUTS
```

By selecting **2**, the following menu will be displayed:

```
[1] INCLUDE/EXCLUDE POINTS
[2] INCLUDE/EXCLUDE ZONES
[3] INCLUDE/EXCLUDE GROUPS OF POINTS
[4] INCLUDE/EXCLUDE GROUPS OF ZONES
```

By selecting **3**, the following menu will be displayed:

```
[1] INCLUDE/EXCLUDE PRINTER
[2] INCLUDE/EXCLUDE MODEM
[3] INCLUDE/EXCLUDE LCD ANNUNCIATORS
[4] INCLUDE/EXCLUDE COM-E/J
```

```
[5] INCLUDE/EXCLUDE SLAVE PANELS
```

The item related to inclusion and exclusion of SLAVE control panels is only shown if the control panel is configured as MASTER.

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 during programming.
Please, refer to the Programming manual for further information.

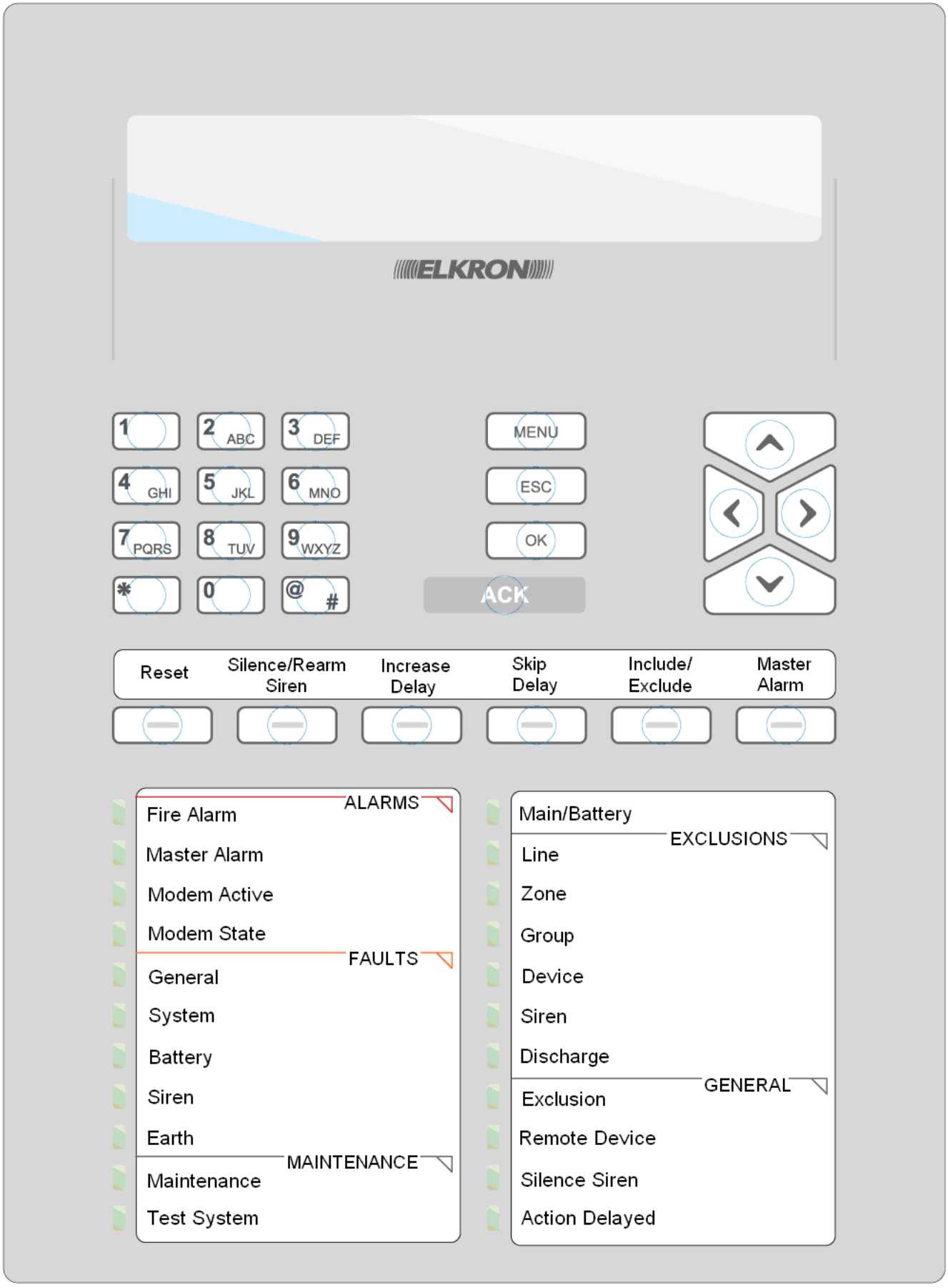
NOTE: if a circuit is included or excluded, the relevant detection line will be powered off in the case of exclusion and powered on as soon as the circuit is included again.
The power-on of the line could last long (even a few minutes) and during this time the control panel does NOT carry out any monitoring of the field. Therefore, possible alarms occurring on other lines during this time will not be detected.

13 KEYS AND INDICATORS FOR THE OPERATOR

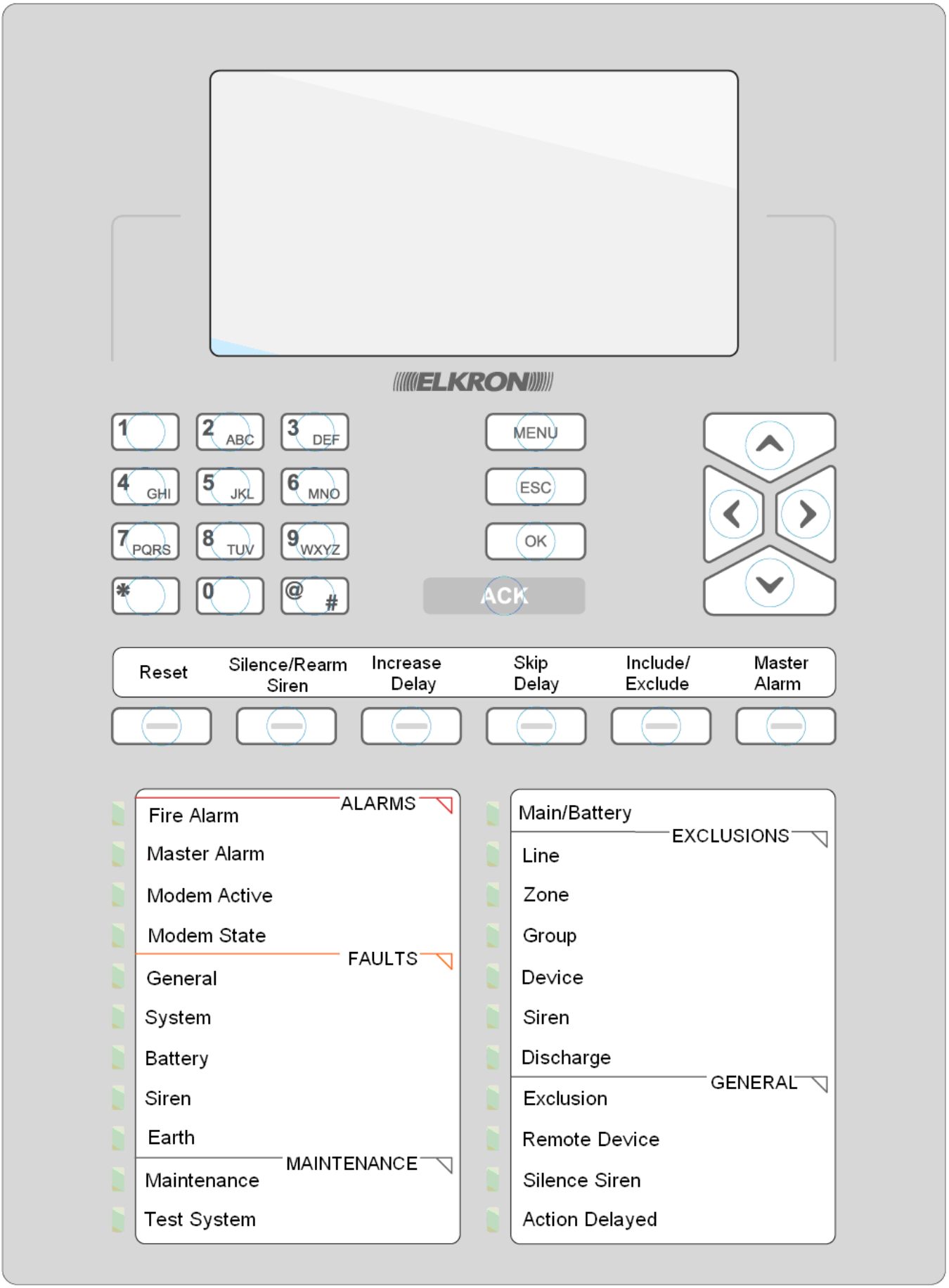
KEY	FUNCTION
ACK (↵)	This key must be pressed to acknowledge the events (alarms, faults, maintenance) detected by the control panel.
RESET	This key starts the “Global Reset” procedure. Whenever the user presses this key, an event is stored in the event log and, if the passwords are enabled, the level 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.
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.
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.
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.
INCLUDE/EXCLUDE	When the control panel is in monitoring phase, this key allows the user to include/exclude circuits, zones, groups, points 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).

	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
MODEM	MODEM ACTIVE	RED	**With modem inserted:** **Blinking**: the modem is attempting to setup a call **Steady ON**: the modem connection is active **Steady OFF**: the modem is not performing any activity
			With LAN module (E/J type 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.
	MODEM STATE	YELLOW	**With modem inserted:** **Blinking**: fault on the transmission line **Steady ON**: modem (or part of its functionality) excluded
			With LAN module (E/J type communicator) inserted: **Blinking**: E type communicator fault **Steady ON**: E type 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 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 maintenance procedure has found one or more smoke detectors which require maintenance.
	TEST SYSTEM	YELLOW	When ON, it indicates that a zone test 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 points or groups of zones are excluded.
	DEVICE	YELLOW	When ON, it indicates that one or more points are excluded.
	SIREN	YELLOW	When ON, it indicates the exclusion of a siren or an actuator driving an alarm signaling device (“C” type).
	DISCHARGE	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 modem or 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.

14 FAP54-01 KEYPAD LAYOUT



15 FAP54-04/08/16 KEYPAD LAYOUT



16 OPERATIONS TO BE CARRIED OUT IN CASE OF ALARM

1. Press **ACK**.
2. Read the point in alarm on the display.
3. Go and check the possible alarm on the field. If no problems are detected or no real danger exists press **RESET**.

Should the alarm persist it is possible to exclude the point as follows:

1. Press **ACK**.
2. Read the point in alarm on the display.
3. Press **INCLUDE/EXCLUDE**.
4. Select the option **INCLUDE/EXCLUDE POINTS/ZONES**
5. Select the option **INCLUDE/EXCLUDE POINTS**
6. Select the circuit where the point to be excluded is located by operating ∧ and ∨
7. Press **OK**
8. Select the point to be excluded by entering the address or using keys ∧ and ∨ or typing in the address on the numerical keypad
9. Press **OK**
10. Select **EXCLUDED** through ∧ and ∨
11. Press **OK**
12. Press **ESC** until a message indicating the excluded point is displayed
13. Press **RESET**.

To include a previously excluded point proceed as follows:

1. Press **INCLUDE/EXCLUDE**.
2. Select the option **INCLUDE/EXCLUDE POINTS/ZONES**
3. Select the option **INCLUDE/EXCLUDE POINTS**
4. Select the circuit where the point to be included is located by operating ∧ and ∨
5. Press **OK**
6. Select the point to be included by entering the address or using keys ∧ and ∨ or typing in the address on the numerical keypad
7. Press **OK**
8. Select **INCLUDED** through ∧ and ∨
9. Press **OK**
10. Press **ESC** until the control panel goes back to the messages shown during the scanning phase and the message related to the excluded point is not shown anymore
11. Press **RESET**.

17 OPERATIONS TO BE CARRIED OUT IN CASE OF FAULT

1. Press **ACK**.
2. Read the cause of fault on the display.
3. Go and check the possible fault on the spot. If no problems are detected or no real danger exists press **RESET**.
4. Should the fault persist press **ACK** and contact service.

18 APPENDIX

18.1 APPENDIX 1 – ERROR CODES FOR FAULT OF POINTS

If a point 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 CYY PZZZ TT FWWW
NAME OF THE POINT

XXX = number of the zone which the point belongs to
YY = circuit which the point is connected to
ZZZ = address of the point
TT = type (in short) of the point
WWW = fault code

If the point 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 point 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 push button: 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 point 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 point does not answer to the cyclic polling during the monitoring phase
21	The point does not answer to a command
22	The point does not answer to the initial polling at the beginning of the monitoring phase
23	The point answers wrongly with a too high current to the polling during the monitoring phase (possible answer coming simultaneously from more than one point)
24	The point type is different than the programmed one
25	Point not accepted because of wrong manufacturer code
26	The point does not answer to the adaptation command
27	The point does not answer to the status request command for inclusion verification
28	The point 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 point programmed to work without it
34	External fault: external power supply missing on a point 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 point after a missing answer to the cyclic polling during the monitoring phase

18.2 APPENDIX 2 – FAULT CODES FOR LINE CIRCUIT CARDS

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 ELKRON Customer Service.

18.3 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 ELKRON Customer Service.

18.4 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

18.5 APPENDIX 5 – FAULT CODES FOR MODEM

If the modem undergoes a fault during the scanning phase, the user is notified with the following message:

FAULT MODEM (XX)
(XX = fault code)

The table below reports the fault codes along with the relevant explanation:

Code	Fault
1	Communication error: non answer from the modem
2	Modem removed
3	Modem type: mismatch between the detected type and the type programmed in the panel
4	*PSTN modem*: phone line check failed *GSM modem*: signal strength low

18.6 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 points) (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 trasmitter for communication with internal modules
17	Fault on transmitter for communication with the modem
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	Modem phone line integrity check failed
29	Internal memory error (stack of generic events) (1)
30	External USB card faulty
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.

(1) Please, contact the ELKRON Customer Service.

18.7 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/Modem)
4	Slave control panel not recognizing the command
5	The slave control panel deems an actually correct command with parameter errors

18.8 APPENDIX 8 – LIST OF PC SUBCOMMANDS (CMD "EXECUTE ACTION")

When the control panel in scanning phase is connected to a PC, it can receive the command "execute action".
By means of this command, the PC can ask the control panel to execute specific actions.
Every time this command is received, an event is stored into the event log and will be shown to the user with a message like this;

COMMAND EXECUTION XXX

Where:
XXX = identifier of the subcommand

The following table reports the subcommand identifiers.

Code	Action
0	Global Reset
1	Acknowledge
2	Silence Siren
3	Restore Siren
4	General Alarm
5	Testlamp
6	Cancel delay
7	Increase delay
8	Maintenance

18.9 APPENDIX 9 – POINT TYPES

The following table shows the shortened strings related to the point types and the relevant explanation. These strings can be found in the messages of alarm events, faults and exclusions related to the point.

Point type (shortened)	Meaning
SM	Smoke detector
HT	Heat detector
MU	Output module
MC	Concentrator module
MN	Manual push button
GS	Gas detector
LN	Linear detector
SH	Smoke/Heat detector
LI	Latch input module
PI	Pulse input module
XS	Smoke/Heat/Gas detector
TB	Bathroom Call Cord
CI	4-20 mA current input module
IS	Latch input module with siren output

18.10 APPENDIX 10 – POINT ATTRIBUTES QUALIFIER

The visualization of an event of alarm/fault/exclusion/inclusion of a point contains a qualifier Q of the possible attributes of the point.
The meaning of this qualifier is reported in the table below:

Qualifier	Meaning
R	Point with Clear Delay function enabled
M	Point with Global Alarm function enabled
B	Point with both Clear Delay and Global Alarm functions enabled
d	Manual Push Button degraded
r	Manual Push Button degraded with Clear Delay function enabled
m	Manual Push Button degraded with Global Alarm function enabled
b	Manual Push Button degraded with Clear Delay and Global Alarm functions enabled

18.11 APPENDIX 11 – ALARM TYPES

The following table reports the alarm types signalled by a point.

Alarm type	Meaning
1	Alarm for smoke
2	Alarm for temperature
3	Alarm for smoke/temperature
4	Alarm for manual push button
5	Alarm for input 1
6	Alarm – undefined cause because of a communication problem with the point
7	Alarm for gas
8	Alarm from conventional detection circuit
9	Alarm for overtaking the current threshold of the 4-20 mA module

18.12 APPENDIX 12 – 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

18.13 APPENDIX 13 – 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 ELKRON Customer Service.

18.14 APPENDIX 14 – PS2 KEYBOARD MAPPING

The table below shows the list of the PS2 keys used and their mapping with the correspondent key in the internal keyboard.

PS2 key	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 keyboard)
+ (numerical keypad)	Increase LCD sharpness (**0** on the internal keyboard)
SHIFT	Enable uppercase letters
CAPS LOCK	Permanently enable upper case letters

18.15 APPENDIX 15 – ERROR CODES FOR CIRCUIT FAULT (COMMUNICATION 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 point

Code	Meaning
1	Lack of communication with a point in alarm.
2	Lack of communication with a point in external fault.
3	Lack of communication with a point in alarm or external fault.
4	At least one point with address 241 has been detected during the monitoring phase.
5	At least one point with address greater than 128 has been detected during the monitoring phase and is in alarm condition.
6	At least one point with address greater than 128 has been detected during the monitoring phase and is in fault/external fault condition.
7	At least one point with address greater than 128 has been detected during the monitoring phase and is being power supplied again because of a short circuit.

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