CODESEC K4/K8/KA316
CONVENTIONAL FIRE ALARM PANEL
USERS AND INSTALLATION MANUAL

UM-K4-K8-KA316-1115-R5-EN

INDEX

TECHNICAL SPECIFICATIONS

	CODESEC K4	CODESEC K8	CODESEC KA316
Operating Voltage		180-240 Vac	
Power		100 Wmax	
Battery Type		Lead-Acid Sealed Battery	
Battery Capacity		2 x 12V/7Ah	
Number of Zones	4	8	16
Active Detectors per Zone		20 pieces/Zone	
Maximum Load per Zone		120R	
Pasive Detectors per Zone		Unlimited	
End of Line Resistor		6.8 KOhm	
Battery Short Circuit Protection		Yes	
Operating Temperature		-10°c +55°c	
Humidity		% 95	
Siren Output			
Output Type		Normally Open	
Contact Rate		1 A @ 30 Vdc	
Fuse		400 mA Automatic Reset	
End of Line Resistor		10 KOhm (6.8K-20K)	
Maximum Voltage		30V	
Alarm Relay Output			
Output Type		Normally Open (NO), Normally Closed (NC)	
Contact Rate		1 A @ 30 Vdc	
Error Relay Output			
Output Type		Normally Open (NO), Normally Closed (NC)	
Contact Rate		1 A @ 30 Vdc	
24V Output		Yes 400mA max	
Case Material		Plastic ABS + Metal Base	
IP Class		IP30 (See Page 10)	
Preffered Cable for Zone Connection		JY(St)Y 1x2x0.8+0,8 type Fire Cable	
Dimensions		26,5 x 31 x10 cm	
Weight		1.5 kg	
Recomended Power Connection Cable		3x2,5 NYM or NYA type	
Data Retention		10 years	

1. GENERAL FEATURES

CODESEC K4, CODESEC K8 and CODESEC KA316 Conventional Fire Centrals are designed by the leading technology and microprocessor based devices. The devices are user-friendly and simple to understand. CODESEC K4 is 4 zone, CODESEC K8 is 8 zone and CODESEC KA316 is 16 Zone Conventional Fire Alarm Panels.

All the system conditions are displayed on the central LCD and via seperate indicator leds as well. The central supervises system troubles and conditions and displays to the user. By the Reset, Alarm, Cancel Alarm, Silence, Test and Evacuate buttons user can perform simply the system functions. The general system indicators: Power, Ready, Prealarm, Fire Alarm, Cancel Alarm, Silence and Evacuate indicator leds are displayed on the lefthand of central and the Trouble indicator leds are Ac Loss, Battery Error, Siren Error, Line Cut and Line Short indications are displayed in the righthand on the central.

On both devices there seperate auxiliary power outputs 24V. For installation of additional functional devices there is no need a additional power source as they are available onboard.

There are Alarm Relay Output, Trouble Relay Output and Siren Output onboard.
CODESEC K4 is 4 zone and CODESEC K8 is 8 zone centrals. The devices are manufactured in SMD Technolgy and complie with EN 54-2/4 standard. The centrals are compatible with all detectors and devices that comply with EN54 standards.

The installer can connect 20 Smoke or Heat detectors and unlimited Manual Call Points per every zone to the CODESEC K4/K8/KA316 Series Fire Centrals. By the electronic filters on every zone, the device does not be affected by the high frequency interferance. There are hardwared and sofwared preventions from electromagnetic interferance, noises on the mains power, short circuits and faulty connection on the cabling.

2. INSTALLATION

2.1. Location and Mounting

While selecting the right place for the cabinet in a protection area, the installer must remember that;

1. Select an installation site that is not easily accessible to intruders
2. The installation site should be dry and free from humidity
3. The panel should be close to AC source, ground connection
4. Central power must be sourced from mains power unswitchable
5. when mounting, leave at least 10 cm around the panel box to permit adequate ventilation and heat dissipation.

Do not power the system until all the wiring has finished.

2.2. Grounding

Connect the central ground terminals from the control panel to the metallic enclosure and cold water pipe or grounding rod. The grounding of central and cable screens is for prevention from high voltage noise and interferences.

2.3. AC Power

The required transformer for the control panel is 180-240V 50/60Hz mains voltage. Do not use any switch controlled outlets to power the panel. Do not power the system until all the wiring has finished.
The mains power cable can be 3x2,5 NYM or NYA type.

2.4. Battery Connection

In order to provide power during a power loss, connect 24V 7Ah battery pack rechargeable acid/lead or gel type backup battery as shown in Figure 1. CODESEC K4/K8/KA316 control centrals need two 12V 7Ah batteries connected serially. Connect the backup battery after applying AC power. When installing verify proper polarity.

2.5. Auxiliary Power Terminals

Auxiliary Power Terminals are for additional devices that will added in the system as Telephone Automatic Dialer, Communicator, various sensors, selonoid valfs and etc. There is one output 24V. 24V output can outsource 400 mA current. When the current consumption exceed the rated values the outputs will be cut by automatic ressettable fuses. The fuses will be reset automaticaly when the overload condition disappears.

While doing connection to the auxiliary power outputs, care should be taken to polarity.
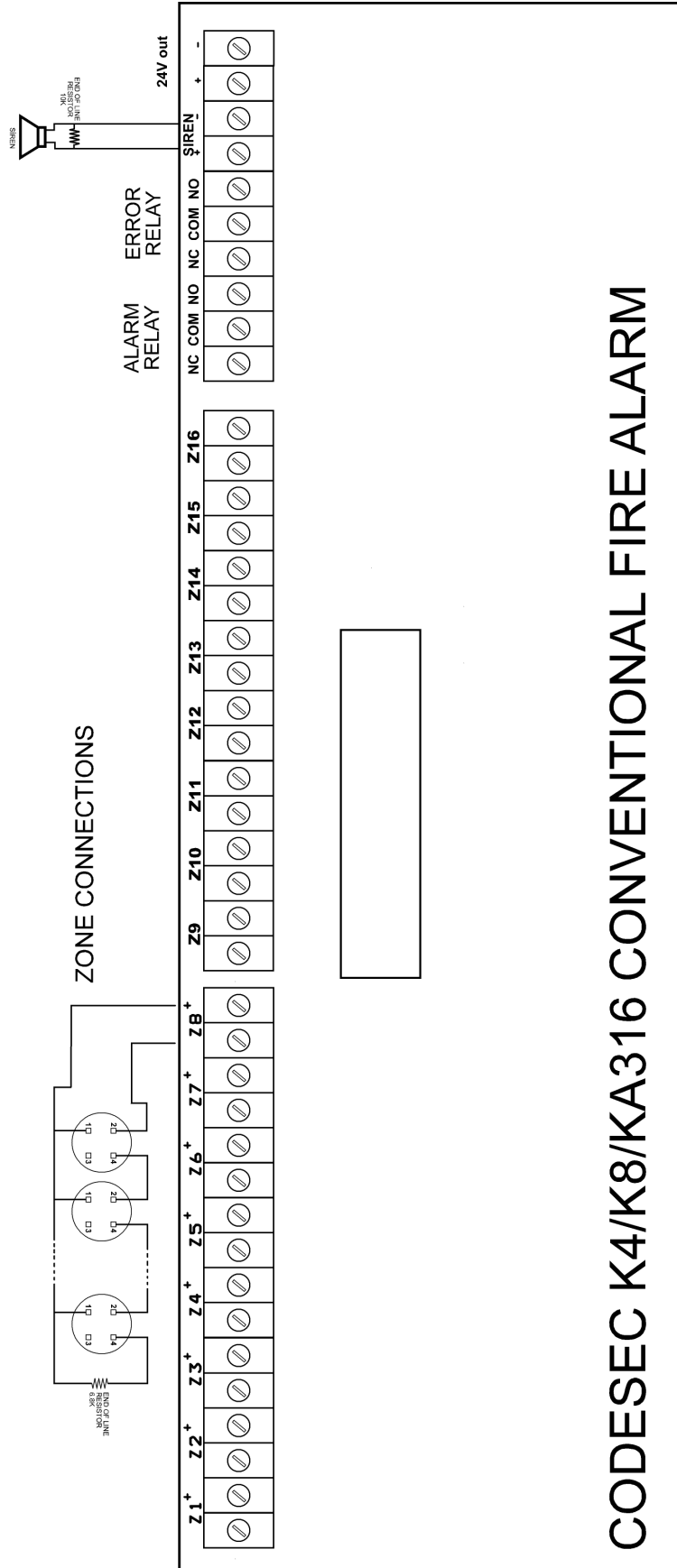
Figure 1- General System Connection Diagram

2.6. Siren Output

There is one siren output onboard in the central mainboard. This output activate during fire alarm. Siren output stay activated until Reset or Cancel Alarm buttons pressed. Siren output is 24V output and can drive 400mA current. While connecting siren output care must be taken to polarity.

CODESEC K4/K8/KA316 fire alarm central supervises siren output continiously. This output must be ended by a 10 KOhm End Of Line resistor. If the central can not see endofline resistor, a siren trouble is perceived and it will be display as Siren Error indication led on the central.

When connecting Sounders to the Siren output, there must be done calculation of how many sounders can be connected. For example from a 20mA current consumption device can be connected 20 pieces. This restriction is the power capacity of the siren output. If too many devices neded another power source must be used.

The End od Line resistor must be put at the farest sounder at the end of the line.

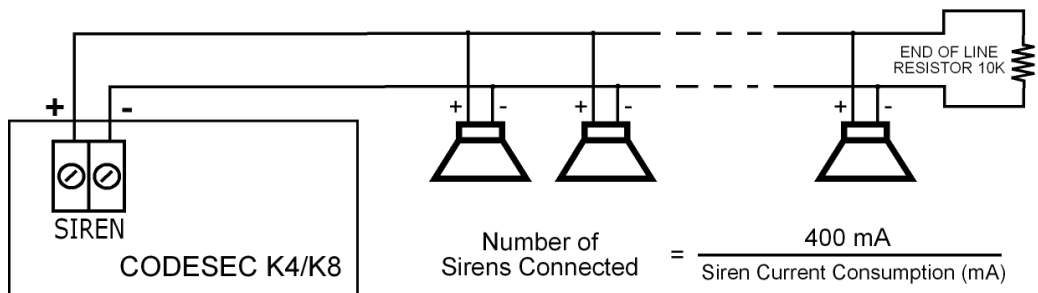$$\text{Number of Sirens Connected} = \frac{400 \text{ mA}}{\text{Siren Current Consumption (mA)}}$$

Figure 2- Siren Output Connection Diagram

2.7. Alarm Relay Output

There is an onboard alarm relay output on the CODESEC K4/K8/KA316 Fire Alarm Centrals. This output is normally unpowered. This means that COM and NC (Normally Closed) contacts are shorted. During fire alarm this relay will be activated and NO (Normally Open) and COM contacts will be shorted. By this output another system or device can be controlled or activated.

In order to activate output an alarm condition must be perceived or Alarm buton must be triggered whem the keylock is unlocked. To deactivate the alarm condition must be disappeared and Reset must be performed.

Alarm Relay output is relay contact outputs and no power driven from the system Contact capacity is 1 A at 30Vdc. Normally Closed, Common and Normally Open terminals exist on the panel.
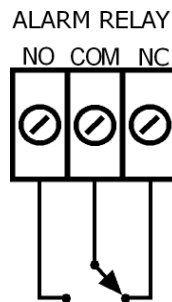

Figure 4- Alarm Relay

2.8. System Error Relay Output

There is an onboard Error relay output on the CODESEC K4/K8/KA316 Fire Alarm Centrals. This output is normally powered. This means that COM and NO (Normally Open) contacts are shorted. Central supervises system troubles continiously and when an AC Loss, Battery Low or Siren Fault perceived the relay is deactivated. If there is an error in the system, this relay will be deactivated and NC (Normally Closed) and COM contacts will be shorted.

System Error relay is normally energized so when the central is not working, the relay will be off sof rom this relay output the system is working properly can be perceived by another control unit or supervision system.

When there is a system error in the system a buzzer sound will be heard every 10 seconds.

System Error Relay output is relay contact outputs and no power driven from the system Contact capacity is 1 A at 30Vdc. Normally Closed, Common and Normally Open terminals exist on the panel.
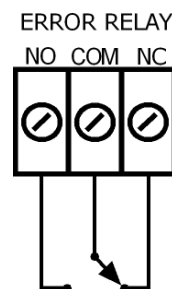

Figure 4- System Error Relay

2.9. Zone Connections

CODESEC K4 is 4 zone, CODESEC K8 is 8 zone and CODESEC KA316 is 16 Zone Conventional Fire Alarm Panels. The two wire detector and Manual Call point connections are done to the zone inputs as shown in the Figure 6. Every zone terminal provides 24V power and return. By the End Of Line Resistor 6.8KOhm the connections must be terminated. By EOL Resistor connection Alarm, Line Cut and Line Short Circuits can be defined.
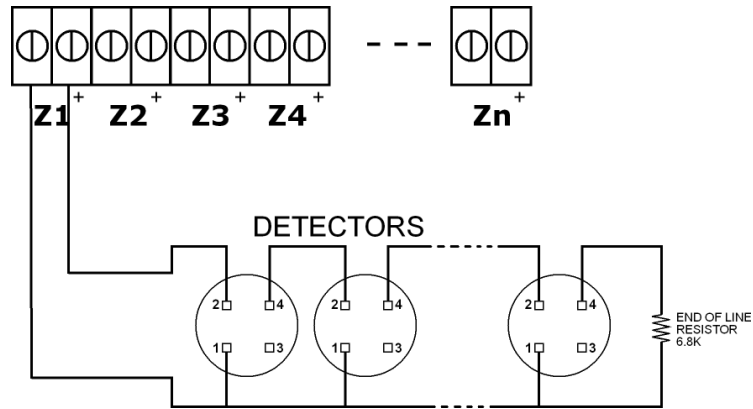
Figure 6- Zone Detector Connections
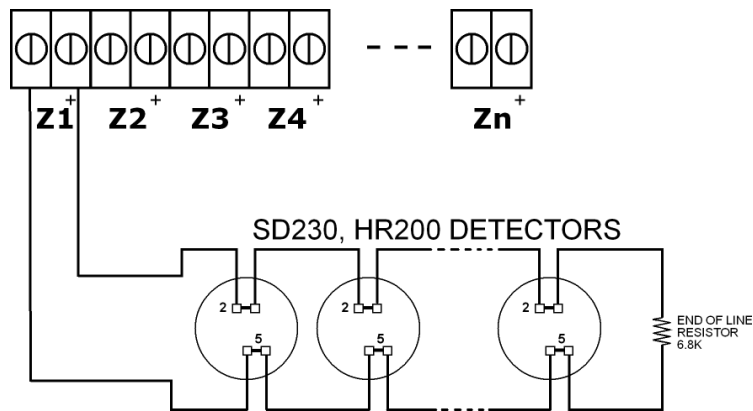
Figure 7- Zone Detector Connections (CODESEC SD230,HR200)

Maximun 20 pieces of active detectors (as Smoke Detector/ Heat Detector) and unlimited passive node (as Manual Call Points) per zone can be connected in CODESEC K4/K8 Fire Alarm Central. The preferred cable type is JY(St)Y 1x2x0.8+0,8 type cable for 0-500 meters distances. Above cable section must be choosen greater.

CODESEC K4/K8/KA316 Central supervises zones continiously. Every zone must be terminated by 6.8 KOhm End of line resistor. Else the central will perceive the trouble condition and the related system trouble led will be lit and Error relay will be off.

Generally most detectors manufactured non polarized but if using polarized detectors care must be taken to polarity connections.

CAUTION:

When installing panel and doing wire connections if the wire holes on the top and on the side of the panel has been drilled, the IP of the panel will be disappeared. So, the operation of the panel will not be guaranteed if the isolation is not supplied when the wire holes opened.

When a seperate Indicator light will be used with the detector, the connection diagram is shown in Figure 8. The connection must be done according to polarity.
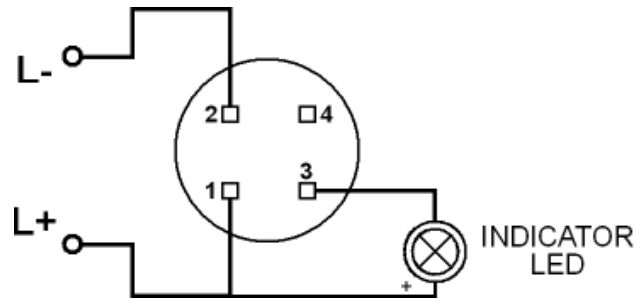

Figure 8- External Indicator connection

3. OPERATION

CODESEC K4/K8/KA316 Fire Alarm Centrals are composed of two parts; mainboard and case cover. The mainboard is the main part that all the external connections as power and control circuitry. All the displays areon the mainboard. On the display panel there are control buttons and indication leds as shown in Figure 9.

Figure 9- CODESEC KA316 front display

On CODESEC KA316 display panel there are 16 zones on the bottom of the display. Fire and Prealarm leds indicates the fire condition. Power leds shows there is power on the system and Ready led indicates the system is ready for perception. There are two indication leds for indication of disablement in the system. Zone Disable led is active only a zone or multiple zones disabled in the system. Out Disable led will indicates that any output or any zone is disabled in the system Out disable shows as general Disablement. There are seperate indicators for trouble indicators and system condition indicators. There is a seperate Fire Alarm indicator that animates when in alarm.

There are six different function buttons on the display; Reset, Silence, Alarm, Test, Cancel Alarm and Evacuate. For the function buttons Silence, Cancel Alarm and Evacuate there are indication leds below the buttons.

On the central there are alarm predelays can be modified from the program menu. When an alarm perceived the central counts the predefined delay seconds and during this period Prealarm indicator led lit.

On CODESEC K4 and K8 display panel there are 4 zone leds for K4 and 8 zone leds for K8 When an alarm perceived from the zone the corresponding alarm indicator will be lit. If there is a trouble condition or zone by-pass the corresponding zone indicator will be lit seperately to display user. There are seperate indicators for trouble indicators and system condition indicators. There is a seperate Fire Alarm indicator that animates when in alarm.

CODESEC K4/K8/KA316 Fire Alarm Central contains a buzzer. By the buzzer sounds the user is informed different conditions of the panel. Besides while alarm and reset conditions the buzzer will sound. The buzzer sounds meanings are as follws;

Two beeps every 20 seconds : There is a trouble in the system
Long beep : Confirmation Signal
Intermittent four beeps 4 bip : Wrong entering signal
Continious beep : Fire Alarm

CODESEC K4/K8/KA316 Conventional Fire Alarm Panel has 2 rows and 16 characters graphic lcd display in order to explain detailed information to the user. On the left hand side there are system information leds as Power, Ready, Out Disabled, Zone Disabled, Predelay and Fire Alarm indicators. These indicators gives the macro system informations to the user. On the right hand side there are System Trouble Indicators. Ac Loss, Battery Low, Siren faults, Line Cut and Line Short can be seen from seperate leds. For the other faults there is System trouble led in order to indicate some other faults in the system. On the bottom side on the front panel there are 16 different zone leds for CODESEC KA316. These leds indicate from which zone the fire alarm perceived for KA316. 4 zone leds for CODESEC K4 and 8 zone Leds for CODESEC K8.

There are five different function buttons on the left hand display; Reset, Test, Cancel/Alarm, Evacuate and Silence. Cancel/Alarm, Evacuate and Silence buttons have their own leds in order to inform they are pressed. There are four buttons on the right hand side of the display. These are menu buttons for functions that will guide by the graphic lcd display. These buttons are Enter, Escape, Up and Down buttons.

On the display the status of the panel, the system date-time and Access Level are shown. If there is a fault in the system the fault explanation will be displayed on the display also. If more than one faults occured in the system, they will be displayed by interval of 2 seconds. If there is no fault in the system, there will be shown System Normal on the display.

When the alarm is perceived from any zone or Evacuate Button has pressed, the indicator for the related zone alarm indicator led lit and prealarm delay has started. The alarm display has higher priority from all other information, so when alarm perceived the display will show the alarm data on the display. If more than one alarm occured, teh alarms will be displayed in two seconds interval rotation.

In order to access menu and functions, there are three Access levels for untrained user, authorized user and service & maintenance engineer. On the right bottom side of the alfanumeric display, the Access level can be seen. AL:2 means Access Level 2.

3.1 Access Levels

The panel operation is protected from inadvertent and erroneous misuse by means of three access levels. These levels are Level 1: Untrained User, Level 2: Authorized User, Level 3: Service and Maintenance Engineer, Level 4: Manufacturer technical engineer. The functions that the related user can do, are explained below.

3.1.1 Access Level 1

a. Test

Press this button to illuminate all front panel indicators and validate correct operation.

b. Silence Buzzer

This button will silence the internal buzzer, and will illuminate the Buzzer Silenced panel indicator. No other sounder outputs will be affected by this button operation.

c. Menu Navigation (up / down / left(escape)/ right (enter))

These are used to enter the password for Access level 2 and are also used to navigate the Access 2 Facilities Menu.

3.1.2 Access Level 2

Access level 2 can be reached by pressing any of the menu navigation (Up, Down, Escape or Enter) buttons. Pressing a menu button will then request the user to enter the correct Access level 2 password (a 4 digit number) followed by the Enter button.

The factory **default password** for Access level 2 is **1111**.

The Access level 2 password can be changed at commissioning to meet customer's requirements. Access level 2 will be required by the end user to acknowledge alarms and reset the system. Any persons responsible for the fire alarm system should be aware of the Access level 2 password to enable the panel controls. Without this password it will not be possible to acknowledge alarms or reset the system so it is <u>most important</u> that the responsible person knows the password.

In Access Level 2, it is possible to read or interrogate the site specific data on the panel.

a. Cancel / Alarm

This button is normally used to mute any fire warning sounders fitted to the panel. These sounders are installed throughout the protected premises and are used to evacuate the premises. In some cases, the fire warning sounders may be delayed; to allow a search time before building evacuation commences. In this case, the predelay on lcd panel indicator will be illuminated. If the Cancel/Alarm button is pressed during the Delay Active period, the sounders can be permanently muted. If Cancel/Alarm buton pressed while alarm, the related led will lit continuously.

b. Re-sound Alarm

If any fire warning sounders have been muted using the Cancel/Alarm button, then pressing Cancel/Alarm Button again will re-energise all muted sounders. In order to indicate it is pressed for resound, the Cancel/Alarm led will flash.

c. Reset

This button is used to reset any activation that is defined as a latching input type. These will include fire and pre-alarm events. In general, fault events are non-latching and cannot be cleared by operation of the Reset button. These events will clear when the fault input is cleared. Performing Reset will not change the Access Level.

d. Evacute Buton

Operation on the Evacuate button will cause all sounders on the system that are configured to respond to an evacuate command (default) to sound continuously.

3.1.3 Access Level 3

Access Level 3 can be reached from the Menu when in Access Level 2. By entering menu and rolling down with up-down buttons, enter Menu item 9 is Access Level. To change Access Level 2 to 3 or 3 to 2, the panel will ask for 4 digit Access Level 3 password.

The factory **default password** for Access level 3 is **2222**.

By Entering Access Level 3 the installer can do all facilities and programming in the Menu.
If one can not enter the correct password, panel will warn the user as wrong password and wait the correct pasword entry.
To change Access Level passwords the Programming Software must be connected to the panel.
The alteration of site specific data can only be at Access Level 3 and 4. The alteration of site specific data will not affect the structure of the program. In these levels it is possible to read or interrogate the site specific data on the panel.

3.1.4 Access Level 4

The manufacturer Access level. Only manufacturer or autorized technical person of distributor can intervene to the panel. If the panel shows Safe Mode (See Section 5. Safe Mode) the panel must maintenance at Access Level 4. Also return to factory defaults can be done only in Access Level 4.
The alteration of site specific data can only be at Access Level 3 and 4. . The alteration of site specific data will not affect the structure of the program.
Program memory can only be changed by a programmer at Access Level 4.

3.2 PANEL OPERATION

3.2.1 Fire Alarm Event

In the event of a fire, the red FIRE lamp and the appropriate Fire Zone indicator will lit. Details of the fire activation (address and location text) will be given in the LCD Status display.

The fire warning sounders will sound throughout the building and the panel fire contact, alarm contact and fire routing outputs will be energised.

The panel buzzer will be pulsing, but can be silenced by pressing the **Silence** button.

Pressing the **Cancel/Alarm** button will now silence the sounders. The sounders can be started again if required by pressing the **Cancel/Alarm** button again. If pressed once more in order to resound , the led will flash in order to indicate re-sound condition.

The system can be reset by pressing the **Reset** button.

3.2.2 Fault Event

If there is a fault on the system, the yellow **System Trouble** indicator will be lit and there may be other fault LED indications which identify the nature of the fault.

The Fault Contact will be energised and the panel buzzer will beep every 20 seconds. Details of the fault will be described in the text display.

The panel buzzer can be silenced at any time by pressing the **Silence** button.

If there are more than one fault event on the system, than, these may be viewed in the text display by rotation for 2 seconds.

3.2.3 Evacuate Event

Operation of the Evacuate button will cause the red FIRE lamp to illuminate and all sounder devices to be operated contuniously.

The panel buzzer will sound continuously and the source of the Evacution event will be shown in the LCD status display. The panel buzzer can be silenced at any time by pressing the **Silence** button.

Pressing the **Cancel/Alarm** button will now silence the sounders.

3.2.4 System Troubles

CODESEC K4/K8/KA316 Conventional Fire Alarm Central conttiniously supervises the troubles in the system. If any trouble, just explained below, has been detected, "System Trouble" indicator led will illuminate at the same time with related error indicator.

3.2.4.1 Ac Loss Error

The mains power lost or the mains fuse in the Central blowed. 220V mains power or the mains fuse have to be checked.

3.2.4.2 Battery Error

The control panel performs a dynamic battery test every 10 seconds. If the back up battery is disconnected or the battery voltage is under 20V, Battery Error indicator led will illuminate. This error can be analyzed according to the presence of AC supply. If AC supply is connected, this means that there is no back-up battery connected or the battery fuse is blocked. If AC supply is not connected, this means the back-up battery was feeding the system for a while and battery voltage is going down. If the AC supply doesn't come back, the system will automatically shut down itself under 17V battery voltage. The aim of this auto shut down is to prevent batteries from deep discharge.

3.2.4.3 Siren Error

In the siren ouput there must be a sounder connected and the equivalent resistor value must be above 5kOhms. If the sounder impedance is not above 5kOhm, an end of line resistor 10kOhm must be connected. If the control panel can not see this impedance, it will perceive siren error. The Siren Error indicator led will illuminate until the error condition disappears.

3.2.4.4 Line Short Circuit Error

There are seperate leds for every zone line short circuit error. If any short circuit is perceived in the zone wiring, related incator led will be on. When there is Short Circuit error in the zone, the wiring has to be rechecked and controlled by the installer.

3.2.4.5 Line Cut Error

There are seperate leds for every zone line cut error. If any open circuit is perceived in the zone wiring, related incator led will be on. When there is Open Circuit error in the zone, this means that there is a cut in the wiring or End Of Line Resistor not connected. The wiring and the End Of Line resistor have to be checked and controlled by the installer.

3.3 Menu

By pressing Enter or Down Button, one can enter the Menu either in Alarm condition. The Maın Menu items are as follows. In Access Level 2, the autorized User can see parameters but can not see some menu items that need service and maintenance in the system. In Access Level 3 the service engineer can see and change all the parameters of the device.

The 2 x16 digit LCd shows the menu Item number and the header of the menu. By scrolling up and down and pressing Enter, can enter the menu item.

The dropdown menu is like this;
1. Zones
2. Zone Disable
3. Out Disable
4. Operation Mode
5. Delays
6. Event Log
7. Date/Time
8. Passwords
9. Access Level
10. Language/Dil
11. Software
12. Alarm Count

Access Level 2 can see and modify some Menu Items, Access Level 3 can see and modify all the parameters.

3.3.1 Zones (Menu Item 1)

In Zones menu the zone name can be seen. After entering Zones submenu, scrolling up down will change the zone numbers. By pressing menu at Access Level 3, the zone name can be changed and restored to on-volatile memory. Zone names can be maximum 16 digit long. In order to change the zone name less than 16 characters, by pressing Enter more than 5 seconds, will store the data.

3.3.2 Zone Disable (Menu Item 2)

In Zone Disable Submenu scrolling up and down will change the zone numbers and display the zone disabled or enabled. By pressing Enter, the arrows will be displayed in order to change the condition of the zone. Up or Down buttons will change the condition of the Zone. When Enter pressed, the last selected condition of the zone will be saved. If disabled, the Disabled and Zone Disabled Leds will illuminate.

3.3.3 Out Disable (Menu Item 3)

In Out Disable Submenu scrolling up and down will change the Output types and display selected output disabled or enabled. By pressing Enter, the arrows will be displayed in order to change the condition of the output. Up or Down buttons will change the condition of the Output. When Enter pressed, the last selected condition of the Output will be saved. If disabled, the Disabled Led will illuminate.

3.3.4 Operation Mode (Menu Item 4)

The Operation Mode can be selected in this menu Item DAY or NIGHT. If NIGHT selected no delays will be affective in prealarms. The alarms will come instantly even they have prealarm delays. In DAY mode the panel perceives alarms after predefined delays.

3.3.5 Delays (Menu Item 5)

In CODESEC K4/K8/KA316 Conventional Fire Alarm Panels every zone can be given different predelay. To enter the predelay Delays Menu has to be entered and by selecting Delay number, the predelay for zones can be determined. Scrolling up and down will change the Zone delay numbers and display selected delay time in seconds. By pressing Enter, the arrows will be displayed in order to change the delay. Up and Down buttons will increment and discrement the the delay. When Enter pressed, the last value will be saved. If Escape pressed the value will not saved while quit.

3.3.6 Event Log (Menu Item 6)

The panel has store up to 25 logs in nonvolatile memory with time and date stamp. When entered Event Log and pressing up/down, all the occured events can be seen from this menu. When pressed Enter, the detailed time stamp will be shown on the display.

3.3.7 Date/Time (Menu Item 7)

Date/Time menu is to set the date and time of the panel. When entered, the panel shows the current date and time. By pressing Enter the arrow heads will appear to indicate that data to be changed. By selecting date or time and pressing enter, the data can be changed and saved.

3.3.8 Passwords (Menu Item 8)

Passwords menu is to set the Access Level 2 and Access Level 3 passwords of the panel. Only can be entered in Access Level 3. While changing passwords, the installer must be sure to change.

Without these passwords it will not be possible to acknowledge alarms or reset the system or change any configuration in the system, so it is most important that the responsible person knows the password.

3.3.9 Access Level (Menu Item 9)

In order to change the Access level the user or installer must select the Access level and input the appropriate password. While down grading the Access Level be sure to know upgrade Access level passwords.

3.3.10 Language/Dil (Menu Item 10)

To Change the Language of the panel, this menu must be entered. The panel supports English and Turkish.

3.3.11 Software (Menu Item 11)

The software version can be seen from this menu item. The software version consists two knowledge about the version: Vx.yy. x indicates the software version and yy indicates the site specific data given a version reference, which is updated when each set of alterations is carried out.
It is possible to identify the version reference of the site specific data at access levels 2 and 3.

3.3.12 Alarm Count (Menu Item 12)

The Total Alarm Count can be seen from this menu item. Total Alarm Count can not be changed. The panel records all alarm count from the factory set.

4. MAINTENANCE

The batteries must be changed every 2 years. Lenght of service life of the batteries will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and discharging voltage. So the change period of the batteries can be more earlier if these conditions have occured.
Every year a cleaning process has to be done in order to clean from dust if the panel has installed where dust can be inside.

5. SAFE MODE

Any failure in the main operation in the panel or any mulfunction/corruption in the memory or non volatile memory will cause panel to enter Safe Mode. If safe mode the Ready/Fault Indicator will lit off and system error led will lit on and Safe Mode will be written on the LCD in order to indicate there fatal system fault on the panel. The user must call technical service and autorized tecnical maintenance must be operated.
The panel itself always checking the program and non volatile memory itself. Any alteration of site specific data shall not affect the structure of the program. The panel will indicate Safe Mode but continue to operate.
Program memory can only be changed by a programmer at Access Level 4.
There is a software mechanism which prevents the memory being written to during normal operation at access level 1 or 2, such that its contents are protected during a failure in program execution.
There is a monitoring mechanism that have a time base independent of that of the monitored system. The functioning of the monitoring device, and the signalling of a fault warning, are not be prevented by a failure in the execution of the program of the monitored system.
The software verification process is explained in Memory Document. Please refer to MDP-KA316-1115-R5_EN Document for detailed information.