REDBAN AP304/AP104 ADDRESSABLE FIRE ALARM CONTROL PANEL USER MANUAL

Doc No:UM-AP304-1222-R4-EN

İndex

CE

REDBAN

REDBAN ELEKTRONİK LTD.

AP304/AP104 ADDRESSABLE FIRE ALARM PANEL INSTALLATION AND USER MANUAL

Model: AP304

Standard Number: EN54-4 / EN54-2

Operating Voltage: 180-240 Vac

Operating Temperature: -10°c +55°c

Relative Humidity: % 95

24V Output: Yes, Limited 400mA max

Loop Current: 200mA maximum (29V-17V)

Loop Impedance: 120R

Batch: 1 PCS

Dop. No: 01

Made in Turkey

REDBAN AP304/AP104 TECHNICAL SPECIFICATIONS

OPERATING VOLTAGE	180-240v AC
POWER CONSUMPTION	100 watt
BATTERY TYPE	Sealed Lead Acid Battery
BATTERY CAPACITY	2 X12V 7Ah
NUMBER OF LOOP	1-4
NUMBER OF DEVICES IN THE LOOP	250
MAXIMUM NUMBER OF DEVICES OF THE PANEL	1000
ETHERNET CONNECTION	NO
NETWORK OPERATION	YES
BATTERY SHORT-CIRCUIT PROTECTION	YES
OPERATING TEMPERATURE	-10 °C ≈ +55°C
OPERATING HUMIDITY	%0 ≈ %95 RELATIVE HUMIDITY
SIREN OUTPUTS 1 and 2	
OUTPUT TYPE	Relay Normally Open Contact
CONTACT STRENGTH	2A @ 30V DC
FUSE	400 mA, Auto Reset
OUTPUT VOLTAGE	At the most 28 V DC
END OF LINE RESISTANCE	6.8 K Ω 1/4 watt
GENERAL PURPOSE OUTPUTS 1, 2, 3 (SOUND ALARM AND INDICATOR LED OUTPUTS)	
OUTPUT TYPE	Open Collector
OUTPUT CURRENT	400mA
OUTPUT VOLTAGE	At the most 28 v DC
ALARM RELAY OUTPUT	
OUTPUT TYPE	Normally Open (NO), Normally Closed (NC) 2 A @ 30 Vdc
CONTACT STRENGTH	2 A @ 30 v DC
ERROR RELAY OUTPUT	
OUTPUT TYPE	Röle Normally Open (NO), Normally Closed (NC)
CONTACT STRENGTH	1 A @ 30 v DC
24V DC PROTECTED VOLTAGE OUTPUT	yes, At the most 400mA
24V DC NOT PROTECTED VOLTAGE OUTPUT	yes, At the most 2A
LOOP CURRENT	En fazla 300mA
LOOP LOAD	120 Ω
SERIAL DATA OUTPUTS (USB & RS485)	
BAUDRATE	9600 BPS
DATA BITS	8
PARITY BIT	None
STOP BIT	1
FLOW CONTROL	None
CASE MATERIAL	AP304 Metal 1.2mm / AP104 ABS Plastic
ENVIRONMENTAL CATEGORY	IP30
DIMENSIONS	35 x 45 x 11,5 cm / 35 x 37,5 x 9,5 cm
WEIGHT	7,5 kg / 5,5kg
DATA RETENTION	10 Year
GK120 POWER SUPPLY (Parameters)	
Battery Resistance	400 mΩ
EN54-4 Test Parameters Imin, Imaxa, Imaxb	27mA, 1.5A, 1.8A

1. GENERAL FEATURES

REDBAN AP304/AP104 Addressable Fire Alarm Panels are microprocessor based devices designed with modern technology. Panel, network and repeater panel connections are built into the mainboard. By connecting your computer to the USB connector, you can program your device and back up your data. During the design of the device, ease of use and longevity were aimed.

The user interface is equipped with a 128 x 64 dot graphic LCD display, function keys and warning LEDs. There are separate status indicator leds, fault leds, voice warning module, power indicator, system ready indicator and other mandatory indicators specified in EN54-2/4 Standards for 32 zones on the device. All status information of the device is shown by the LCD screen and/or LEDs. The panel checks for system errors and displays them in the user interface so that the user can detect them. The user can control and set system functions with Reset, Evacuate, Alarm Cancel, silence, Test and four arrow keys.

Visual status indicators of the system; Power, Ready, Disabled, Zone Disabled, Pre-Alarm and Fire alarm leds (built in vertically from top to bottom, respectively, on the left side of the panel). LEDs indicating the active/passive status of the Alarm cancel, Evacuation, Silence and Test buttons. (listed on the bottom left side of the panel under the buttons). For AP304: System, General, AC Loss, Battery, Siren 1 and Siren 2 leds (in vertical direction from top to bottom on the right side of the panel). For AP104: General, AC Loss, Battery, Siren 1, Siren 2, System and Test leds (vertical direction from top to bottom on the right side of the panel). The zone is the Status leds (built into the lower side of the panel) and in addition the LCD display.

On the device there are terminal blocks for 24 volt output. These are two separate types of outputs, fused and unfused. If the unfused output is to be used for external devices, the connected loads must be strong enough not to draw excessive current, so as not to affect the operation of the system. Usually powers up to 1 ampere do not affect the operation of the system, for the currents to be drawn above it, share your system configuration with the manufacturer to find out the maximum current that can be drawn. The output with 24V fused is limited to 400 mA, does not allow more current to be drawn, does not limit the current by reducing the voltage in excess currents, but on the contrary, completely cuts off the output voltage. In order for it to be reactivated, it is necessary to remove the load that draws current. With these connections, other peripherals operating with 24 volts can be connected to the system without external power supplies.

The Panel Has Error and Alarm Relay outputs, 3 Open Collector Outputs and 2 supervised siren outputs on the mainboard.

REDBAN AP304/AP104 Addressable Fire Alarm Panel is manufactured in accordance with EN 54-2/4 standards with SMT technology. The panel is designed to work with REDBAN brand peripherals. Compliance with EN 54 standards cannot be guaranteed with other brand devices to be connected, it is possible that the panel will be damaged over time. In this case, the panel will be out of warranty.

The device has 2 serial ports, one for network card connection and one for printer or monitoring software connection and a USB port for computer connection.

The electronic filters on the loop cards prevent the device from being affected by high-frequency ambient noises from the detector connections. Thanks to the measures taken with hardware and software, the system is protected against electromagnetic interference, noise, short circuit and incorrect cable connections at all inputs and outputs.

The control panel is in one cabinet and themeans to limit the consequences of faults is the number of items on the perception circuit and perception time is under 100 seconds. The transmission path is a loop as described in installation manual and every item fault, missing and alarm knowledge perceived from every node, as power every node. Short Circuit Isolators or Built-in Short Circuit Isolated devices can be used which limits the consequences of short circuit between 32 detectors in the loop.The declaration is for the standart EN54-2 Clause 12.

2. SETUP

2.1. INSTALLATION

The place to be chosen during installation should be safe and the person who installs the system should pay attention to the following issues;

- The selected place is a place that cannot be easily reached by unauthorized persons,
- the selected place is dry and free from the risk of flooding,
- The panel is close to the mains voltage and the healthy grounding line, the supply voltage is not switchable,
- Ensure that at least 10 cm of space is left on 4 sides of the panel during installation and that the installation site is chosen in accordance with ventilation and heat dissipation.
- Do not energize the system before the system is finished installing and all cable connections have been tested.

WARNING: The Environmental Category of the panel is IP30. It is the responsibility of the installers to isolate the cables to be connected during installation in a way that does not violate the IP30 rules. The manufacturer does not guarantee the healthy operation of the system and compliance with IP – EN standards in case of errors made at this stage.

2.2. GROUNDING

Ensure that the panel's grounding terminals are connected to the metal panel box and, if applicable, to the cabinet that houses the panel, and that they are grounded by a grounding line or a metal pipe with a sibling function. Grounding the cable screens and panel prevents high-frequency/high-voltage disruptive interactions. Make sure that the screens of all cables carried out of the panel are connected to the ground line and not to the ground line from other points.

2.3. AC POWER CONNECTIONS

The panel consumes a nominal 100 watts of energy during operation. Do not use a switch-controlled connection on the supply line. The power supply of the panel works with 220V / 50 Hz alternating current. Do not energize the system without making all connections and checking all wiring. The cable to be used in the supply line must be 3 x 2.5 mm2 section, NYM or NYA type. For IEC 61000 compliance, use the supply line with 3 turns of winding on the toroidal core coded K1-T-40x12.5x27.

2.4. BATTERY CONNECTIONS

In case of insufficiency of the mains voltage, which is the primary power source, backup power is provided with 2 units of 12 volt / 7 Ah rechargeable lead acid batteries as shown in Figure 1 in order to maintain the operation of the system. The REDBAN AP304/AP104 requires these batteries to be connected in series at the correct polarities. Connect the batteries to the system after connecting the AC power line and operating the system. Until the primary power supply is connected, the batteries will not operate the system.

The batteries are connect to system as shown in Figure 1A and the battery fixing cover is screw together shown in Figure 1B.

2.5. AUXILIARY POWER OUTPUTS

Auxiliary power outputs are power outputs that give a voltage of 24 volts to be used in the supply of additional devices to be connected to the system. One of these outputs is fused by a 400 mA auto-resettable fuse, and the other is an unfused output. Typical auxiliary equipment/additional devices are automatic phone seekers, communication terminals, various sensors, solenoid valves and similar devices. The 24V unfused output is the direct output of the power supply, with a voltage of approximately 27.6Vdc. In order to meet the requirements of IEC 61000 in using this output, the power cable to be connected to the terminal must be used with 2 windings on the VAC W868-01 Toroid element. Power outputs should be used taking into account their polarity.

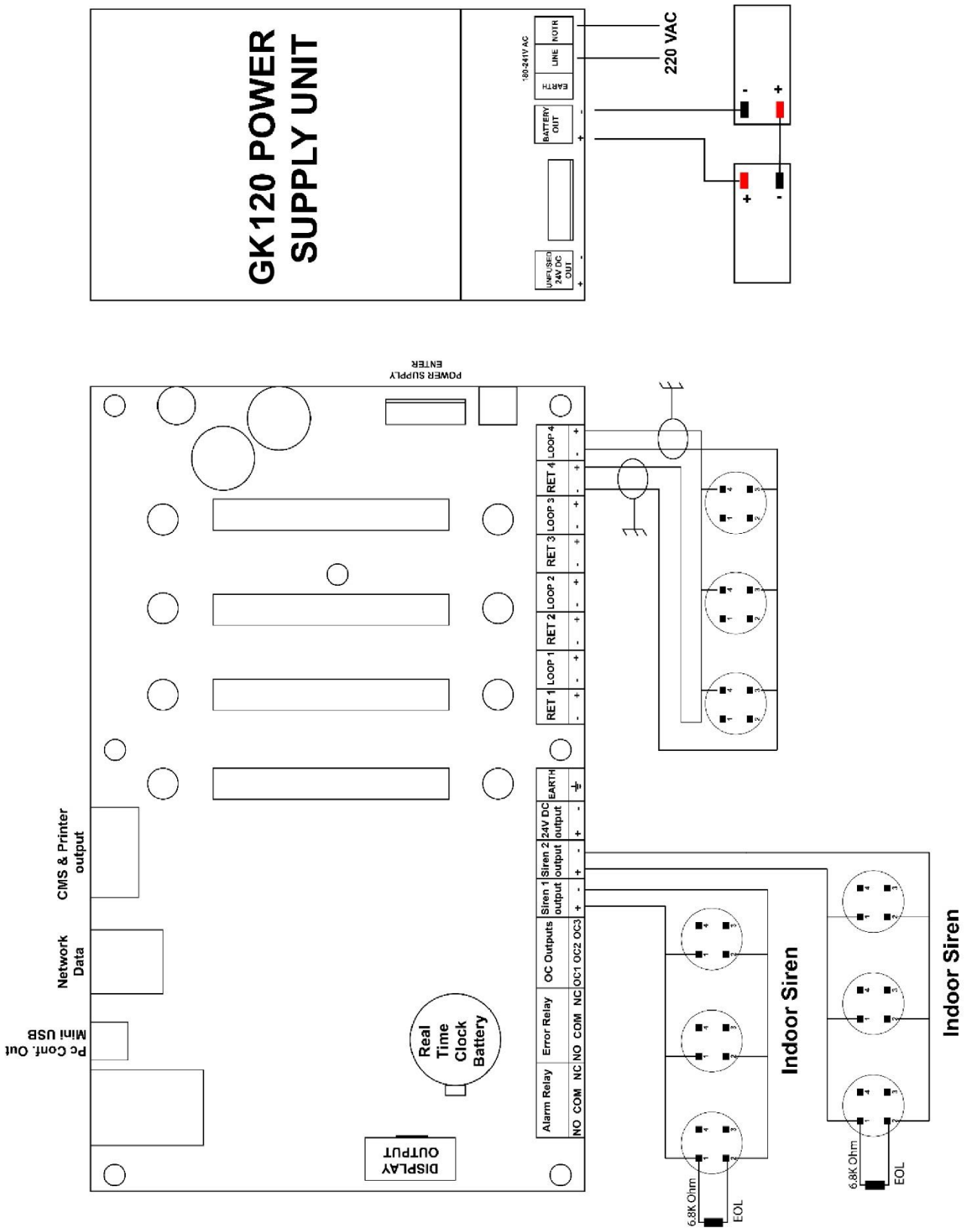

***Figure 1** General Connection Diagram*

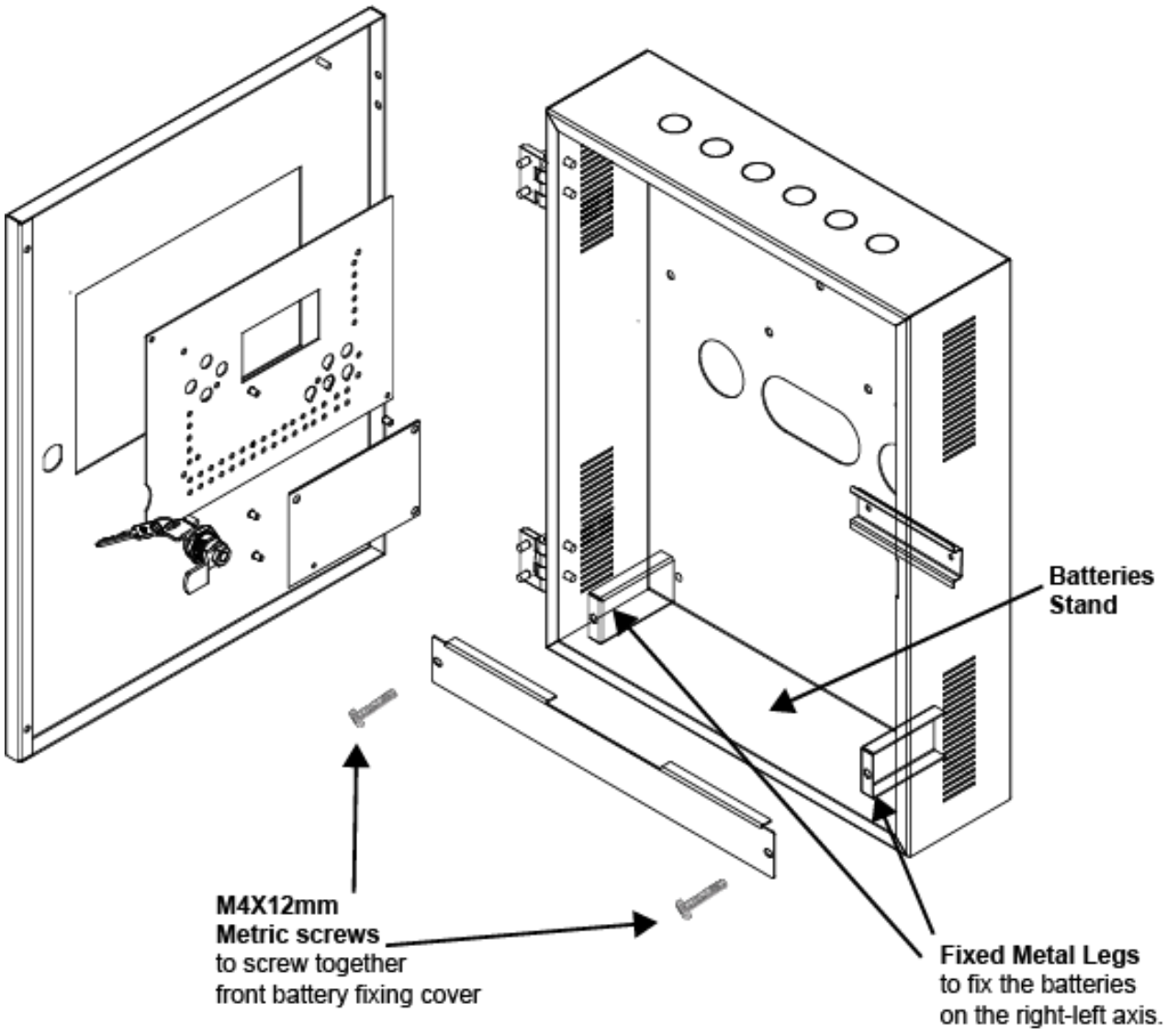

Figure 1B AP304 Batteries Fixing Inside

2.6. SIREN OUTPUTS

AP304/AP104 Panel has 2 supervised siren outputs. These outputs become active in case of evacuation and fire alarm. After any activation, the siren output will remain active until the system is restarted or the alarm cancel button is pressed.

The siren output is 24 V and it is protected by a 400 mA resettable fuse. When the siren output is not active, a voltage of 1,2 V is measured at reverse polarity. When connecting sirens, attention should be paid to polarity and for IEC 61000 compliance, the connected siren cables should be used with 2 windings on the VAC W868-01 Toroid.

The REDBAN AP304/AP104 fire alarm panel monitors the siren output. Detects if there is a short circuit or an open circuit on the line. At the end of the line should be terminated with a 6,8 K Ω 1/4 watt resistor (Figure 2). If this is not achieved, the panel will detect the siren error and give Siren Error warnings on the screen and led indicators.

When connecting voice warning devices to the siren output, it is necessary to calculate how many devices can be connected. The total current to be drawn should not exceed 400 mA. This limitation is due to the fact that the siren output is protected by insurance. When more power is needed, the connection can be made using auxiliary power supplies.

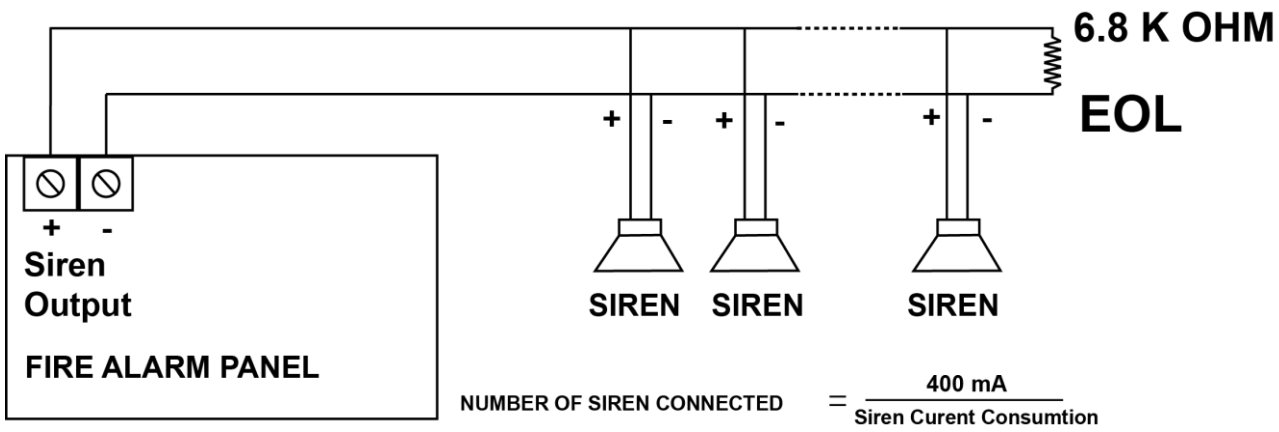

Figure 2 Siren1 and 2 Connection Diagram

2.7. OPEN COLLECTOR OUTPUTS

Each of the 3 OC outputs on the mainboard has a current draw capacity of 400 mA. These outputs are typically designed to drive a relay or internal sirens. The current capacity can be increased through the relays to be connected from the outside (Figure 3). OC outputs 1, 2 and 3 in the system must have output channel routing in order to be active.

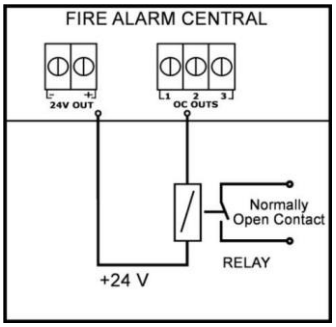

Figure 3 Open Collector Connection Diagram

Detailed information about the use of these outputs is described in the section on output devices. See. To meet the requirements of IEC 61000 compliance, the cables to be connected to the outputs must be connected by 2 windings via the toroid VAC W868-01.

2.8. ALARM RELAY OUTPUT

REDBAN AP304/AP104 There is an alarm relay on the panel board. The relay is normally inactive, i.e. COM-NC is shortcircuit, COM-NO is open circuit (Figure 4). In case of alarm and evacuation, the relay will become active. This output can be used to control other systems. The evacuation status is formed by pressing the Evacuation button on the panel and the alarm is caused by the fire alarm from the sensors connected to the system. In order for the relay to be disabled, if the alarm situation has occurred, the alarm state must be eliminated and then the system must be restarted. However, when programming with the computer, the alarm relay silent box can be selected to work with the alarm cancellation. Contact capacity is 2A @30Vdc.

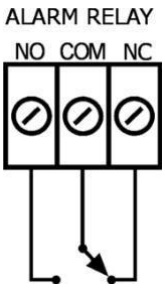

Figure 4 Alarm Relay Connection

2.9. ERROR RELAY

REDBAN AP304/AP104 There is a system fault relay on the panel board. The relay is normally active, i.e. COM-NO shortcircuit, COM-NC is open circuit (Figure 5). Any abnormal situation detected by the panel, which is considered as an error in the EN 54-2 standard, will cause the relay to change position. The relay will automatically return to its normal operating position when the fault condition is eliminated.

The system fault relay is towed during normal operation. In the event that the panel is not working, the relay will not be energized because the fault relay cannot be pulled. This will allow the system to be monitored by other devices or systems in the environment.

When the fault relay is drawn in the system, an audible warning will be heard every 15 seconds for 1/2 second. This warning can be canceled by pressing the silence button on the panel. However, each new line added to existing errors will make the voice prompt active again. Canceling the audible alert does not affect the position of the relay. Since the System Error Relay is only the contact output, these outputs do not generate power. The ignition capacity is 1A@30Vdc. Terminals NO, NC and COM can be reached by terminal blocks.

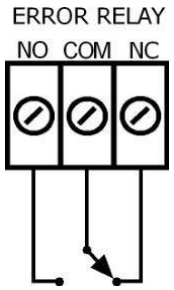

Figure 5 Error Relay Connection

2.10. LOOP CONNECTION

Each loop has connectors marked LoopX and RetX on the motherboard, and these connectors have terminals "+" and "-". This means that 4 wires are connected to the panel for each loop (Figure 6). In normal operation, LoopX output connectors provide the energies of the devices connected to the loop and the signals required for two-way communication. In case of any breakage in the wiring, the signal to the RetX terminal will be lost, so it is perceived that the line is broken. Similarly, the short circuit or overcurrent pull that occurs on the line is also detected by the system and error signals are generated. These errors activate the System error relay and voice alert. At the same time the LCD is also displayed, the system error led lights up and is processed in the system event records.

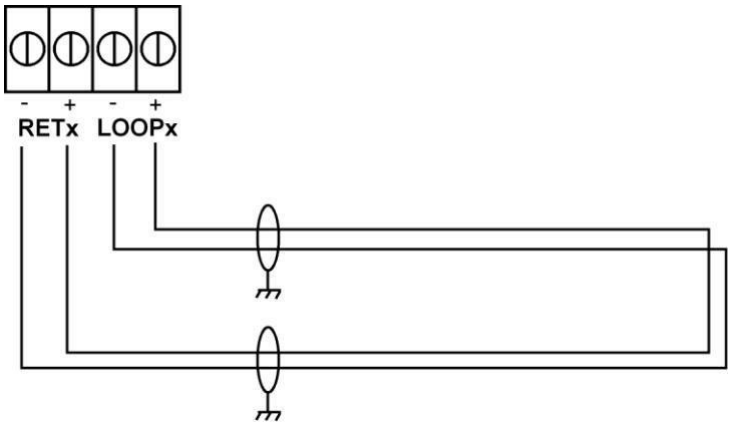

Figure 6 Loop Line Connection

In a correct wiring for the system, the loop resistance should not exceed 35 Ω. To measure this value, the "+" and "-" ends are temporarily short-circuited for test purposes on the final device of the loop. The cables connected to the RETx and LOOPx connectors on the panel are removed, and the impedance of the red and black cables to be connected to the LoopX connector is measured. Next, the impedance of the red and black wires to be connected to the RETx connector is measured. The sum of these two measurements is equal to the resistance (Rs) of the Loop line. To check that there is no short circuit in the cable, the measurement is repeated by opening the short circuit in the red and black wires of the last detector in the previously short-circuited loop. In this case (Ro) the open circuit resistor is noted.

If Rs is less than 35 Ω and Ro is open circuit, the line is healthy.

If Rs is higher than 35 Ω and Ro is open circuit, the line does not meet the standards. In this case, the panel may not work properly. The solution is provided by shortening the cable length or by using cables that are better conductors. Cable with better conductor means cable with larger conductor diameters.

The fact that the Ro value is not an open circuit, indicates a short circuit in the line. In this case, the cables should be rechecked. Sometimes a damaged device (smoke detector, button or others) can cause a short circuit. If the cable control does not give results, the devices should be removed from the circuit and the measurement should be repeated and the defective device should be found.

After the test, the cables should be reconnected to the panel, make sure that the red wires are connected to the "+" and the black cables to the "-" terminals when connecting.

The loop lengths accessible by cables made of pure copper are 1000 meters for 2x0.8mm² section cable and 2100 meters for 2x1.5mm² sectioned cable.

It is useful to check the problems in the cables by measuring with a multimeter before using the cables.

2.11. DEVICE CONNECTION

Devices must be connected as shown in Figure 7. Devices must be addressed before connecting, and there must be no more than one device with the same address on the same loop. Programming will be done with the PP1201 addressing device. In special cases, the sensitivities of the smoke detectors and the operating modes of the I/O modules can be adjusted with the same device. This is described in the user manual PP1201. After checking, laying and testing of cables, attention should be paid to the "+" and "-" poles when connecting devices. The red cable "+" and the black cable "-" will be connected to the terminals. Although the wrong connection does not damage the devices, it will cause them not to work until the connection is fixed.

The use of the PP1201 programmer should not be done while the devices are connected to the loop. Otherwise, all devices connected to the loop will receive the given address. This process may cause the programming device to malfunction due to its inability to operate under the specified operating conditions.

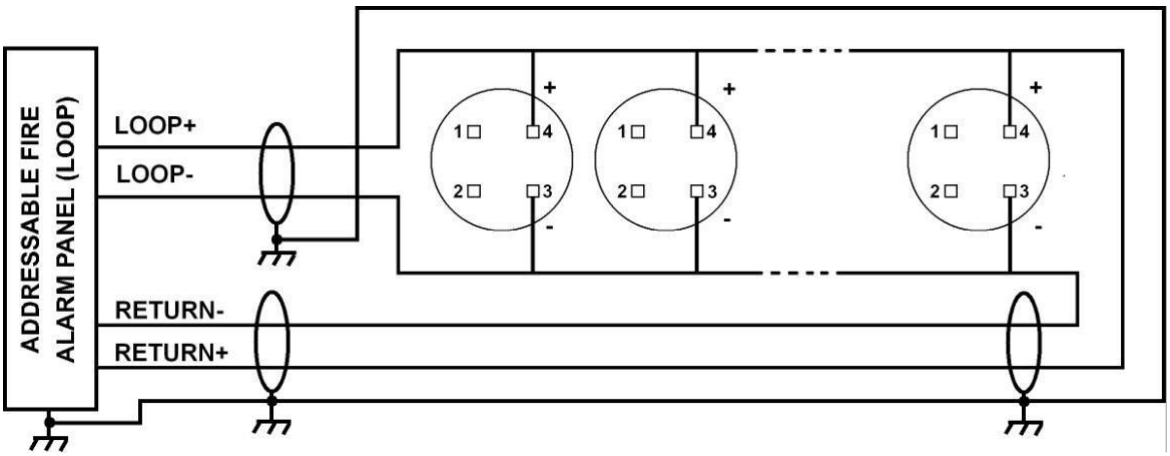

Figure 7 Devices Connection Diagram

2.12. NETWORK CONNECTION OF THE PANELS

If more than one AP304/AP104 is connected within the same project, or if the maximum number of loop on a panel is insufficient, AP304/AP104 can be networked and made to work together.

Up to 32 panels can be connected to a network system. To network with AP304/AP104, one NT122 must be connected to each panel. When multiple panels are networked, the operating system is the following: each panel transmits the data inside from the RS485 port to the NT122 network card. NT122 shares the data it receives from its panel with other NT122 network cards.

The panels are connected to the network with NT122 cards.

The connection is as follows: communication between the panel and NT122 is provided by a 4-wire flat cable. Communication between network cards is connected in the form of loops with two-wire RS485 twisted pair cable. The 2 wires coming out of port A of the first NT122 are connected to port B of the second NT122, and the 2 wires coming out of port A of the second NT122 are connected to port B of the third NT122, paying attention to their direction. The connection pattern continues and the 2 wires coming out of port A of the latest NT122 are connected to port B of the first NT122, thus completing the loop by going back to the beginning.

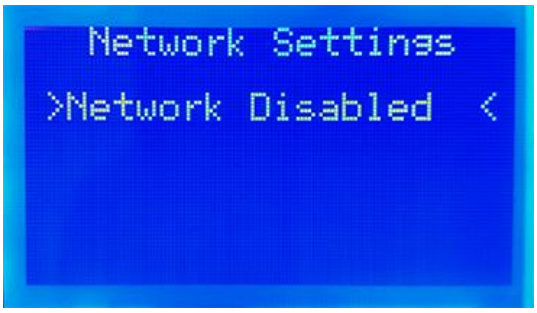

Figure 8 Network Enable/Disable Menu

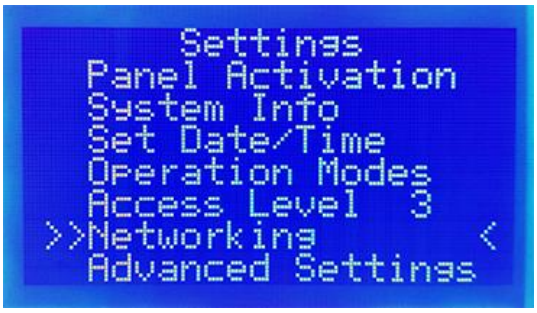

Figure 9 Settings Menu

The connection method is indicated below.

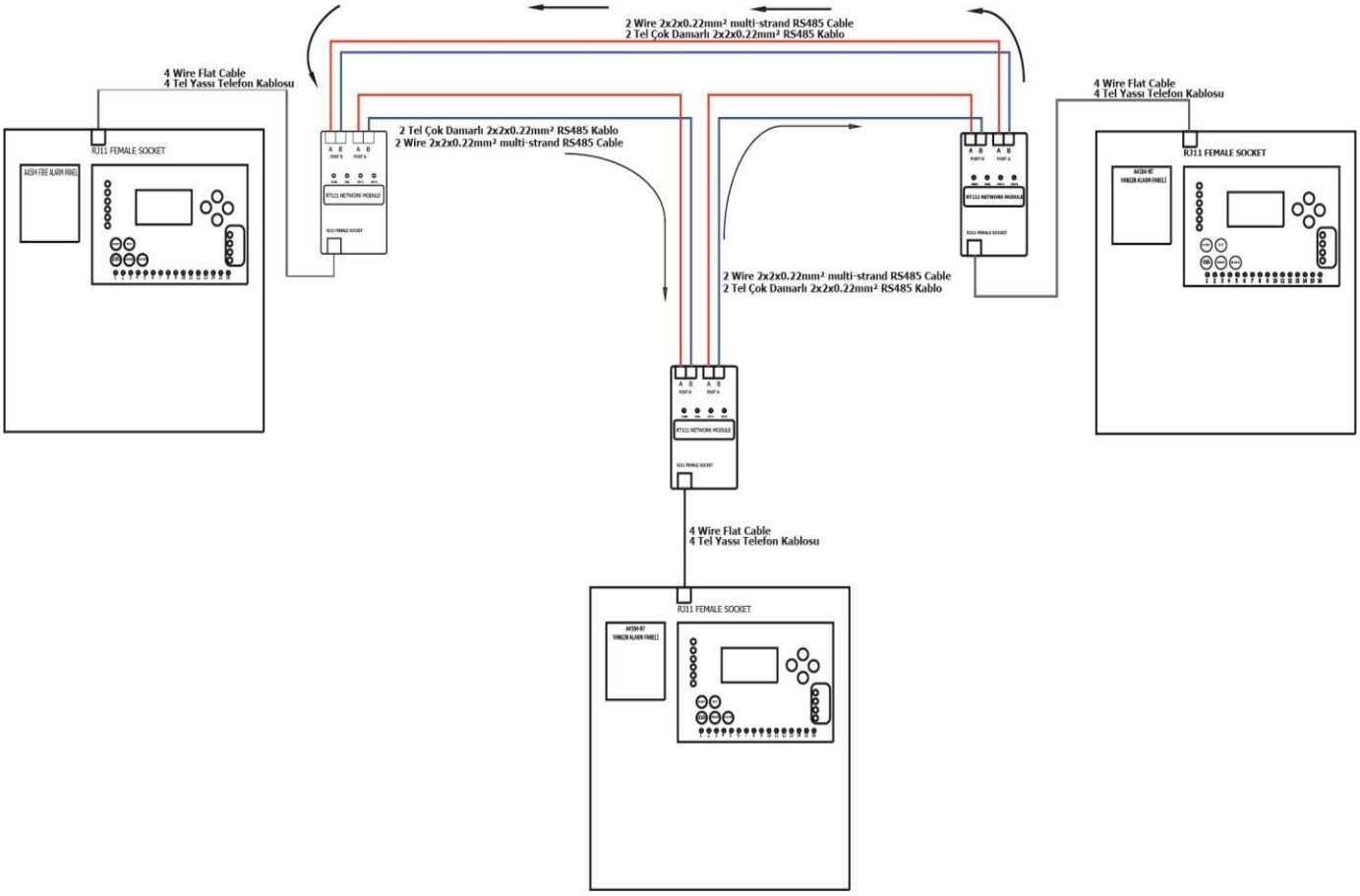

Figure 10 Network Connection Diagram

2.13. REPEATER PANEL

The repeater panel connection to the AP304/AP104 is made over the network. If the system is already a network system to which more than one panel is connected, monitoring is included in the existing network with the NT122 network card by installing a new panel at any desired point. No need to install a loop card (LK204) in this panel.

If the system is a single panel, NT122 is installed on both the main panel and the repeater panel and the system is networked and operated. The data exchange in the network of the repeater panel is regulated from the network settings.

3. OPERATION

The REDBAN AP304/AP104 Addressable Fire Alarm Panel is equipped with a 128 x 64 dot graphic LCD display (8 lines and 20 columns in character mode), function keys and warning LEDs. There are separate status indicator leds, fault leds, voice warning module, power indicator, system ready indicator and other mandatory indicators specified in EN54-2/4 Standards for 32 zones on the panel. All status information of the device is shown by the LCD screen and/or LEDs. The panel checks for system errors and displays them in the user interface so that the user can detect them. The user can control and set system functions with Reset, Evacuate, Alarm Cancel, Silence, Test and four arrow keys.

Visual status indicators of the system; Power, Ready, Disabled, Zone Disabled, Pre-Alarm and Fire Alarm leds (built in vertically from top to bottom, respectively, on the left side of the panel). LEDs indicating the active/passive status of the Alarm cancellation, Evacuation, Silence and Test keys. (listed on the bottom left side of the panel under the keys). For AP304: System, General, Supply, Battery, Siren 1 and Siren 2 leds (in vertical direction from top to bottom on the right side of the panel). For AP104: General, Supply, Battery, Siren 1, Siren 2, System and Test leds (vertical direction from top to bottom on the right side of the panel). The zone is the Status leds (built into the lower side of the panel) and in addition the LCD display.

On the screen, the status of the panel, the system time and date, and the Access level are shown. In the event of a system-related error, the panel also displays information about the system's error or errors. In case of more than one error, the errors are shown sequentially at intervals of 2 seconds. In the absence of errors, the system status will be seen as "Normal" and the "ready" green led indicator will light up. In case of a system error on the panel, the "ready" led indicator will turn off.

Fire alarm and evacuation have a higher priority than the other messages of the panel. Therefore, if there are other errors, they will not be seen on the LCD screen. Alarm signals from the zones will cause the signal leds of the respective zones to light up. If a pre-delay is defined for the zones, the Pre-Alarm will light up until the zones enter the alarm state. After the end of the pre-alarm, the "Fire" will light up and the "Pre-Alarm" will be extinguished.

In order to access the system menus, the user's access level must be determined. The panel is sent to the user after factory testing, setting it to Access Level 1. This Access level will appear as AL:1 on the status screen. The access level is changed by the "Advanced Settings>Access Level" sub-menu in the "Settings" menu in the main menu. When the access level is changed, it will remain the same until it is changed again.

Figure 8 Panel Normal

3.1. ACCESS LEVELS

In order to limit the use of the panel by unauthorized or incompetent persons, access levels have been implemented according to the EN54 standard. These levels are determined as ES1 = Untrained User, ES2 = Authorized User, ES3 = Service and Maintenance Engineer, ES4 = Production Engineer. The authorizations of access levels are detailed below.

The default Access Level is 1. When system powered-up or reset the access level is AL1.

!CAUTION!: After comissionning or user settings, means Al 2 or bigger, the Access Level should be set to AL1. Otherwise unauthorized persons can access panel.

3.1.1. Access Level 1 (AL1)

The operations that can be performed at access level 1 are as follows.

A. Basic Test

By pressing the test key more than 2 seconds in main screen, the leds of the panel, the LCD screen and the warning sound are tested. The operation of the panel is verified.

B. Menu Navigation (up / down / left (exit, cancel) / right (select, accept))

In Access Level 1, these keys are only used to enter a password to switch to access level 2. In addition, since only the first and last alarms are displayed on the screen in case of alarm, the alarm information other than these can be viewed with the down arrow key from the **Alarms->Alarm incoming loop list** (number of incoming alarm appears next to the loop).

3.1.2. Access Level 2 (AL2)

Access Level 2 is activated by entering the 6-digit access level password after the enter key. If the password is entered incorrectly, the user is notified by a message that will be displayed on the screen. In this case, the user can re-enter the password or give up with the esc key and return to the main menu. The cursor will automatically switch to the first character of the password.

The default password assigned for AL1 to AL2 in the factory is 111111.

If needed, the access level passwords can be changed with the configuration software during commissioning.

To stop alarms and reset the system, the ES2 password must be known. One or more persons responsible for the fire alarm system at the installation site must know this password.

The operations that can be performed at access level 2 are as follows.

A. Cancel Alarm

The main function of this button is to silence the sirens that are connected to the panel, which are sounding due to alarm or evacuation. If the alarm state is present, each time the key is pressed, the sirens change from active to passive, or from passive to active if they are in a passive state.

In some cases, a delay may be defined in the sirens, this delay is determined by the values given in the zones or settings of the detectors. After the alarm status is detected, only the voice alert

on the panel is activated during the pre-alarm period, and the sirens are not energized until the delay ends. If the alarm cancellation button is pressed during this delay period, the sirens will not be activated even if the delay period ends unless a new alarm occurs. This feature can be changed at Access level 3, automatically switching off when a new alarm arrives after the alarm has been canceled. When the key is pressed during the alarm, the alarm is canceled, it lights up continuously.

B. Reset

This key is used to restart the panel in the non-return modes of the panel, that is, in cases of alarm and evacuation. There is no need to use this key in error situations, since the panel will return to its normal state when the errors are fixed. Restarting the system does not affect the level of access.

C. Evacuate

It is used to make manual start-up without waiting for the panel to be activated by learning the fire at the exit stage. When the button is pressed, the siren output, panel buzzer and alarm relay are activated directly.

3.1.3. Access Level 3 (AL3)

Changing information about the area in which the system is installed, which affects the operation of the panel, is possible only in ES3 and ES4. Changing these values does not change the program that is running on the panel, it only changes the operating parameters. At these access levels, data related to the area where the installation is carried out can be read and modified. To access ES3, enter the "settings" sub-menu in the menu, change the "Access level" option, and press enter by entering the access level 3 password.

The default password assigned for AL2 to AL3 in the factory is 222222.

At access level 3, all programming functions on the panel are actively placed under the control of the user.

Figure 9 Access Level 3 Password Entery

The user is warned if the password is entered incorrectly. In this case, the esc key returns to the access level 2, or the password is re-entered and the enter key is pressed.

Figure 10 Access Level 3 Incorrect Password Warning

Access level passwords can be changed by connecting a computer running the control software to the panel.

3.1.4. Access Level 4 (AL4)

This access level is the access level at which the producer functions are located. It can only be used by authorized personnel of the manufacturer or distributor. At this level, the program of the panel can be changed, reloaded, panel data can be backed up to the computer, restored from the computer, system event records can be deleted, and the CMS program can be activated or disabled, factory settings can be restored, ground fault detection can be disabled, the working language of the panel can be changed. Program memory can only be changed in ES4.

The "BOOT" jumper on the panel is shortened to switch to access level 4. The boot jumper must be remove after enter the menu.

4. OPERATION OF THE PANEL

4.1. FIRE ALARM

In the event that a fire is detected, the Red "Fire" LED will activate along with the lipped of the corresponding area. In case of detection of fire in more than one zone, the leds of all fire zones from which an alarm comes from will light up. There are 250 zones on the panel, 32 of which are indicated by the led indicator. The details of all zones, including those with leds (address and zone description) are indicated on the LCD screen. In the case of more than one alarm, the first alarm appears at the top of the screen and the last alarm appears as fixed at the bottom. The devices in the other alarm appear as a list in the **Menu->Loops->Alarm has arrived->Devices in the alarm** or in the "**Alarms**" menu.

In case of detection of fire, the panel warning sound, the sirens installed in the building, the alarm relay on the panel and the siren output will be activated. If exits are assigned to the fire zone or detectors, these exits will also be activated. The panel warning sound can be canceled by pressing the "silence" button. Similarly, the "Alarm cancel" button will disable the alarm relay and siren outputs on the panel. The second press of the "Alarm cancel" button allows the alarm relay and the siren output to be reactivated.

The system can be restarted with the "Reset" key. When the conditions that caused the alarm do not disappear (such as smoke in the chamber of the smoke detector, leaving the button pressed), the system will enter the alarm state again in case of restart.

4.2. ERRORS

In case of one or more errors detected in the system, the yellow colored general fault led will light up. If the detected fault is due to a lack of supply, Battery or Siren, the leds related to these errors will also light up. All errors that can and cannot be shown with the LED are reported with details with the messages to be written on the LCD screen. As long as the error persists, a warning sound of 1/2 sec will be heard on the panel every 15 seconds. The error relay contacts located on the panel will switch to the fault position. The sound prompt on the panel can be deactivated by pressing the silence key. In case of more than one error, the errors will be displayed intermittently on the screen.

4.2.1. General Errors

The REDBAN AP304/AP104 Fire alarm panels continuously checks for possible system errors. When any error is detected, the "General Fault" indicator and other relevant indicators, if any, are lit. these errors are described below.

4.2.1.1. Mains Voltage Error

The 230 volt main voltage input to the panel and the fuses on the power supply should be checked.

4.2.1.2. Battery Error

The AP304/AP104 fire alarm panel checks the battery connection inside every 10 seconds. If there is no battery connection, if the battery supply fuse in the power supply is burned, if the battery voltage is less than 20 volts or if the battery internal resistance is higher than 100 mΩ, the battery will burn out with error. The condition for this test is that the AC supply is sufficient. In the event that the AC supply is insufficient, the system will be fed from the battery and the battery will start to discharge. The battery will continue to supply the system up to 18.8 volts. If the AC supply becomes sufficient before the battery drops to 18.8 volts, the battery will start charging. When the level of 18.8 volts is lowered, the system will automatically shut down to prevent deep discharge.

4.2.1.3. Siren Error

One or more sirens with a total impedance of 5 kΩ or more must be connected to the siren output of the panel. If the impedances of the connected sirens are less than 5kΩ, a resistor of 6,8 kΩ should be connected to the end of the line to enable the system to detect the sirens. If the panel does not detect the specified impedance, this is considered a siren error and the "Siren Error" signal start flash. The flash frequency is 0,5 sec. When disabled, related siren led lits contuniously. Typically, this occurs due to the rupture of the cables leading to the siren. When the siren returns to the normal state again, this error ledder turns off and the panel returns to normal operation mode.

4.2.1.4. Ground Error

When the panel detects insufficient grounding, a ground fault condition occurs. This error can be suppressed by adjusting the settings in ES4. The grounding fault lights up the general fault LED and shows the message "Ground Error" on the display.

4.3. EVACUATE

When the evacuation button is pressed, the red fire alarm will light up, the audible warning, alarm relay and siren output on the panel will be activated. The evacuation status will be displayed on the screen. The sound prompt on the panel can be deactivated by pressing the silence button. Similarly, the "Alarm cancel" button will disable the alarm relay and siren outputs on the panel. In addition, if the "Evacuation" button is pressed while the panel counts the fire alarm delay time at access level 1, the delay is canceled and the panel goes into alarm state.

5. MENU

While on the status screen, press enter to the system's main menu. You need to be at least AL2 to go to the main menu. Some of the functions related to service, maintenance and settings in the menu in AL2 do not work, the authorized user can see and change all menu functions in AL3.

Figure 11 Main Menu

The double arrows that appear in the menu indicate the navigation mode, indicate the menu to be selected. You can switch to other menu options with the up and down keys. In this case, the ESC key will return to the status screen, or enter the menu marked with the enter key.

5.1. ZONES

When the zones menu is selected, details about the current zone are seen.

Figure 12 Zone Details Menu

Figure 13 Zone List Menu

The first line shows the zone number and the number of devices for the zone. By pressing Enter, more detailed information appears by entering the zone at the level of the right left cursor.

The up and down keys will show detailed information of the zone entered. By doing it up and down, the cursor is moved over the desired option to make changes and the Enter key is put into edit mode. Here the desired parameters are entered and saved.

5.1.1. Zone Test Mode

If the "Test" button is pressed after entering a zone, that zone will enter the test mode. The test mode can be entered only in zone details screen.

Detections from devices assigned to the zone while in test mode are not considered alarms. However, incoming detection information is processed into the Event logs. If the test button is pressed again while in the zone details, the test mode is canceled. When the zone is put to test, the Test indicator led lit. In addition, in the Zone list, the zone taken to the test is marked with the letter "T". Also "in_test" will be seen on the bottom of main screen.

Figure 14 Zone Test Mode

When in zone test mode, pressing Test button in main screen, the panel go directly to zone menu. The zones in test can be explored.

5.1.2. New Zone Name

Once the "New Zone Name" is selected, the screen will switch from navigation mode to edit mode. The top row from this mode is the information that the user is changing the zone name. A bottom line shows what the value entered is. On the 3rd line, the cursor and the currently used Zone name will appear, and the up and down keys will increase or decrease the letter or number above the cursor. The Enter key will shift the cursor to the next letter. Zone names have a total of 16 letters and only, and these letters can be Latin characters, numbers and punctuation marks. Turkish characters cannot be used (Ç,Ş,Ğ,İ,ı). When the replacement process is finished, the user presses the ESC key, if you want to save, press ENTER, if you want to give up, press the ESC key again, and finishes the process. When the name change is made, the panel warns the user with an information message.

Figure 15 Zone Name Change

5.1.3. Zone Delay

Each device introduced on the panel is defined in a zone as default. When an alarm comes from the devices, the delay in activating the alarm is provided by the zone. After the delay time entered in the zone, the system is alarmed. For this operation, the zone delay option is changed by

entering the corresponding zone from the zones menu. The delay is entered with the enter key inside the zone to be changed. The cursor is aligned with the "Zone Delay" option, and the enter key switches to replacement mode. The delay time is set in 3 characters and seconds using the up and down arrow keys. It is saved by pressing Enter. The Esc key returns to the previous navigation mode.

Figure 16 Zone Delay

5.1.4. Zone Enable/Dısable

The third option in the menu is used to enable or disable the zone.

After entering the desired zone, the cursor is moved with the up and down keys to move over the "Zone is enable" option and the change is made with the enter key. Each time you press Enter, the action repeats. It is finished with the Esc key. When a zone is disabled, alarms from devices defined in that zone are not shown, but are added to the event log list. In addition, the "Zone Disabled" and "Disabled" leds are activated. If all of the devices defined in a zone are disabled, that zone will also be disabled and the zone will be disabled and the zone disabled LED indicator will light up.

Figure 17 Zone Enable / Disable

5.1.5. Multıple Trigger

Click on step 4 of the Zones menu. The option is Multiple Trigger On and Off. When this feature is turned on, if an alarm comes from devices defined in the zone, the system waits for an alarm from another device defined in the same zone to be alarmed. In this way, the accuracy rate of the alarm is increased. It can be made on or off by hovering over the option with the up and down arrow keys in the relevant zone and pressing the enter key. It will change as the Enter key is pressed.

Figure 18 Multiple Trigger on/off

5.1.6. Outputs

Section 5 of the menu Outputs with an option are a section that will be used quite a lot for the event scenarios that we will create in our panel. The exits are used to get various works done in the zones with different delays. The outputs are set to the 250 zones available on the panel and to the output devices (such as Relay Module, Siren Control Module, Addressable sounder Base, Addressable Siren, etc.) that will be triggered by alarms from these zones. The individual output channel cannot be defined for the devices that will trigger it. Three different output groups can be defined in the AP304/AP104 zones. In this way, we can have 3 different works done in each zone with 3 different delays. Each group contains a different number of output channels with different features and characteristics.

Output 1: 250 Output Channels
Output 2: 64 Output Channels
Output 3: 32 Output Channels

Figure 19 Outmapping

5.1.6.1. Output 1:

This output group contains 250 output channels. Each channel means a job to do. For example, when the command to open the turnstiles at the alarm moment is given, it is a task to open the turnstiles and a channel is directed for this job. With Output 1, 250 different jobs like this can be done. In addition, with this output, not only opening and closing, but also different operations such as the following can be done.

- Set -Set-Reset
- Reset -Reset-Set

An output delay of 1 to 250 sec. can be defined for this output.

In networked extended systems, the Output 1 Group acts directly. In the case of an alarm from any area of any panel in the network, regardless of any zone or device layout, the output units on one or more of the other panels in the network can be activated.

Note: In a system with more than one networked panel, when a channel from Output 1 Group is directed to one area of panel A, it is necessary to route to the output unit of panel B from Output 1 Group.

5.1.6.2. Output 2:

An output delay of 1 to 250 sec. Can be defined for this output.

In networked extended systems, the Output 2 Group acts directly. In the case of an alarm from any area of any panel in the network, regardless of any zone or device layout, the output units on one or more of the other panels in the network can be activated.

Note: In a system with more than one networked panel, when a channel from Output 2 Group is directed to one area of panel A, it is necessary to route to the output unit of panel B from Output 2 Group.

5.1.6.3. Output 3:

A separate output delay cannot be defined for this output. The egress delay defined in the zone also applies to this group.

In networked and extended systems, the Output 3 Group acts directly. In the case of an alarm from any area of any panel in the network, regardless of any zone or device layout, the output units on one or more of the other panels in the network can be activated.

Note: In a system with more than one networked panel, when a channel from Output 3 Group is directed to one area of panel A, it is necessary to route to the output unit of panel B from Output 3 Group.

5.2. LOOPS/DEVICES

5.2.1. Loops

In the Loops menu, the panel lists the loop interfaces detected. If an interface is not detected, it appears in the list as "----------". The status of the loop units that are detected or being used will also be included in the list. These states can be either Inaccessible, Normal, Short Circuit, Open Circuit, New loop, and Reset. You can navigate the list with the up and down keys and select the loop with the enter key. Descriptions of the situations are as follows:

Resetting **:** The loop is restarted, in which case the devices in the loop are not energized. This process takes about 20 seconds.

Short **:** The (+) and (-) outputs of the loop are in a short-circuit state, in which case the loop has entered the overcurrent protection mode and since there is no communication with the devices in the loop, there is no data coming or going from the loop. The problem must be examined, found and resolved by the service engineer.

Dirty **:** It means that pollution has been detected in a device in the loop, in which case the fault status appears with the letter "K" in the device list opposite the dirty device and warns that "dirty service is required" in the details.

Open **:** There is a disconnect in any of the (+) or (-) outputs of the loop. In this case, some devices on the device might be inaccessible. Inaccessible devices are not reported separately in the system. The problem must be examined, found and resolved by the service engineer.

Missing : The loop card has been removed from the system or has failed. Loop tasks cannot be performed. This situation should be examined by the service engineer, problems should be found and eliminated.

Normal : It refers to the state in which the loop card and the devices on the loop are working healthily. After the normal article, in parentheses, the total number of devices in that loop will be included.

New Loop : When the panel detects a new loop, it is displayed as such until the first search is performed. Even if the devices on the loop are operational, the information received from the devices will not be evaluated by the panel. In this case, the user must initiate an automatic search and introduce the devices that are online to the system.

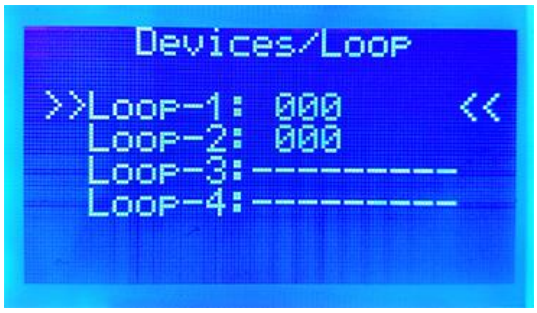

Figure 20 Loops Menu

In the Loops menu, move the cursor over the desired loop and press Enter to see the details of any loop. Here the details of that loop are displayed.

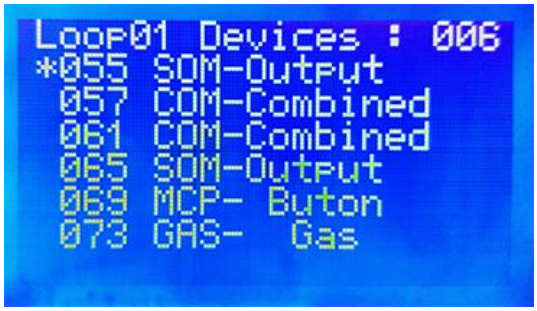

Figure 21 Any Loop Details

All Devices : It shows all the devices that are connected in the loop that has been entered and that have been searched and found by the panel.

Disabled : Shows the number of devices that have been disabled by the user online.

Faulty Devices : Shows the number of devices that detected errors in the loop.

Alarm Devices : The alarm indicates the detected devices.

Loop Settings : Is a menu where some settings related to the loop can be made.

Loop X Enabled : From this menu, the loop can be Disabled and Enabled. Once Disabled, alarms and faults from that loop will not be shown.

Figure 22 Loop Settings

All Devices Leds On: It continuously lights up the alarm leds of all devices connected in the corresponding loop. In this way, the location of the devices in the lop can be determined more easily. The cursor is hovered over the script for processing. The Enter key is pressed. After changed, the alarm leds of all devices remain lit. The function turns off, and the enter key is pressed while the cursor is on it to extinguish it again.

Cancel All Tests **:** Finishes all tests started in the loop.

Walk Test Mode **:** Once this mode is activated, the panel starts to light up the lights of all devices in order of address. The device light turns on for the specified period of time and passes to the next address at the end. This process continues until all the devices in the loope are finished, and after it is finished, it returns to the beginning and does the same operation again. If you do not want to wait for the end of the test, the test is terminated by returning to a sub-menu with esc.

Walk Period **:** is the duration of each device's active activity in the gait test.

Automatic Search **:** It is the mode of learning the devices connected to the loop by the panel. The automatic search command is only visible at access level 3. The up and down keys will be used to navigate through the menu and the enter key will be used in the menu selection. In this mode, the panel search the loop line for about 80 Seconds and records the devices it finds. When it's done, it appears in the All devices section.

When "Auto Search" is selected with the enter key, it starts the search process on the corresponding loop card. A new search that is initiated deletes previously obtained data about that loop. Automatic search does not start or end successfully in the case of translation errors. Loop errors are open circuit and short circuit. Failed calls are automatically terminated within 120 seconds and the corresponding record is added to the system error logs. During the call, as the devices are detected, the number of devices in the loop is refreshed and written to the screen. The percentage completed part is also indicated on the screen.

Normally, the search process will take about 80 seconds. Detectors detected during longer search are a sign of cable quality, grounding problem, excessive electrical or electromagnetic noise.

This situation will lead to serious problems during operation, it must be investigated by the service engineer and necessarily corrected. The third problem is that some of the detectors are not detected, and the fourth problem is the incorrect detection of the types of devices. These problems need to be solved before the panel is deployed.

When "All Devices" is selected, all detected devices, their types and abnormal status information, if any, will be listed in writing next to them in order of address. The status information is listed after the detector's address. These status codes are:

M : Missing
D : Disabled
O : Open
S : Short
P : Prealarm
A : Alarm

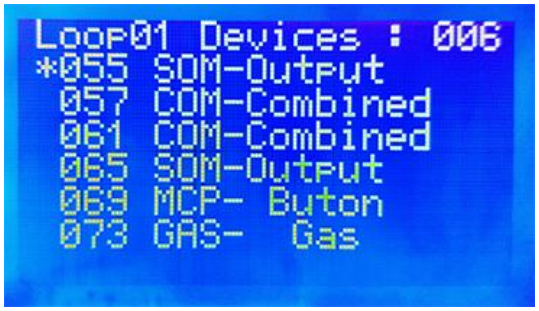

Figure 23 All Device List

Device Types of FACP :

type 1	HRD	(Heat Detector)
type 2	ION	(Ionized Smoke Detector)
type 3	OSD	(Optical Smoke Detector)
type 4	COM	(Combined Detector)
type 5	BEA	(Beam Detector)
type 6	MCP	(Manual Call Point)
type 7	SIM	(Single Input Module)
type 8	SOM	(Single Output Module)
type 9	GAS	(Gas Detector)

5.2.2. Devices

More information about devices can be found by hovering the cursor over a desired device in the All devices menu and pressing enter twice.

Figure 24 Device Details

The first 2 lines show the loop in which the device is located and the address of the device.

3. The line indicates whether the device is enabled or not. Pressing enter once while the cursor is over the option changes the status and the device is disabled. If the Enter key is pressed again, it will

be activated. The "Disabled" leds will be active when the device is disabled. Also, if all devices in a zone are disabled, they will automatically be disabled in that zone as well. This can be monitored from the "Disabled" and "Zone Disabled" indicators.

4. The line is used to turn on the alarm lights of the device individually. The lights are turned on by pressing enter once on the option, and by pressing again to turn it off.

5. The line allows you to show and change the name of the device. Enter switches to replacement mode. The desired name is written with more or less arrow keys, after each letter, the next letter is passed by pressing the enter key and after the name to be written is finished, the esc key is pressed.

6. In the line, if the device is an output unit (such as relay module, Siren Module) it is the menu that shows the directed output channels and allows them to be changed.

This menu is also often needed when creating scenarios. The job of directing the alarm information from the zone to the output units will be done from this menu.

If the device entered in the All devices menu is an output unit (SOM), it must be triggered by a zone in order to be active. This triggering is done by means of the output channels mentioned earlier in the zones menu. The output group of the zone that will trigger and the output channel selected from that group are also activated from the exit module that the zone will trigger. In this way, the paired zone and output unit are activated when the desired situation occurs.

For example: In the following screens, if the output channel 1 in the output group 1 of 1st device of loop 1 will be activated As a result of this process, if an alarm comes from any zone where the same group and same channel is directed, this output device will be active.

Figure 26 Output Channels

Figure 25 Output Groups

7. In the line, again if the device is an output unit, it is selected whether it will be active with the evacuation command.

8. In the line, it is possible to access the engineering parameters related to the device.

5.3. DISABLED MENU

The Disabled menu lists disabled exit modules, zones, loops, and devices. The number of units that are not in operation is also indicated. loops provide information on the number of loop detected in the system. loops can be disabled in the loop settings section of the loops submenu in the main menu.

Figure 30 shows that Loop2 and a device in Loop3 are disabled. In order to detect the disabled device in Loop3, it is necessary to go to the loops from the Main menu and then into the relevant loop and look inside the "disabled" tab. In this case, there will be no data exchange from Loop2 and the disabled device in Loop3. To commission the disabled units, it is necessary to go to the menu related to that unit. To correct the disabled in Figure 30, it is necessary to go to the "loops" menu.

If any of the zones are disabled, all outputs set in that zone are disabled. All devices in that area are disconnected from exchanging data. To reactivate the zone, go to the "zones" menu.

If all devices included in a zone are disabled, the zone where those devices are located is also disabled.

Figure 27 Disabled Menu

Note: Any resource that is disabled will cause the disabled router to light up.

5.4. ERRORS

In the Errors menu, system errors are listed in categories.

Figure 28 Errors Menu

These categories are:

5.4.1. General Errors:

This section shows secondary power supply (battery system), primary power supply (supply with mains voltage), Siren error, Grounding error, System clock errors. Siren error occurs if the siren line is not terminated with a End Of Line resistance of 6,8 KΩ, the siren output is short-circuited, or the siren cable is broken. Battery group errors may be caused by the fact that the battery is not connected, the battery fuse has blown, the battery internal resistance is not in the desired range (the battery is faulty), AC error, the mains voltage is not within the specified characteristics, or the AC fuse has blown. The clock error will be seen when the clock battery is exhausted and replaced, until the clock is adjusted again.

At access level 4 settings, ground fault reporting can be disabled. This option prevents the single fault from being shown if it is a ground fault. In the event that another fault occurs the ground fault will be shown along with the fault that occurred.

Note: The presence of any of the errors mentioned above will cause the overall fault rating to burn.

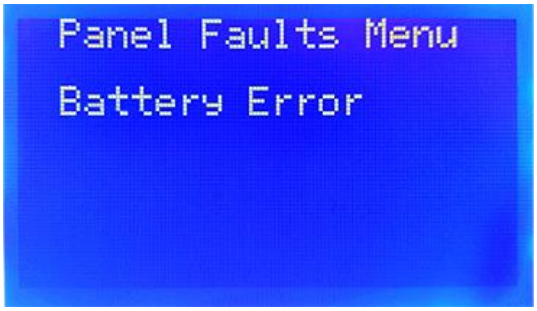

Figure 29 General Errors

When the General Errors option is entered, the error details will be seen in the following format.

5.4.2. Loop Errors:

Possible loop errors are when the (+) and (-) outputs of the line are short-circuited, open circuit or the loop board cannot be detected.

5.4.3. Device Error:

For input modules, it occurs in the event that the termination resistor is not connected, in smoke detectors, it is detected that the chamber is affected by light and it is determined that smoke detection cannot be done in a healthy way.

In Device Open Circuit failures, the loops in which the faulty devices are located will be shown respectively. Next to the loop number, it will be seen how many faulty devices there are in that loop. In the example below, there is 1 device open error in loop 3. Details can be accessed with the Enter key.

Figure 30 Faulty Devices

When this line is selected with the enter key, more details will be seen. In the list that will come to the screen, the open faulty devices in the selected loop will be listed in order of address. In the top row, the "Open" message will be seen, indicating the loop number, the number of devices with open circuit failures and the type of error. In the following lines, the address, type, zone and location name of the device will be shown, changing every 2 seconds.

5.4.3.1. Device Short-Circuit: Detection of short circuit in the conventional input modules. It occurs when the termination resistance in digital input modules is 0 Ω.

5.4.3.2. Device open-Circuit: Detection of open circuit in conventional input modules. It occurs in the absence of termination resistance in the input modules.

5.4.3.3. Device Missing: occurs when any devices that are currently in use on the system are inaccessible.

5.4.4. Network Error:

NT122 Network cards provide the communication of the panels with each other in the networked systems. These cards receive data from the panel they are connected to and share it with other network cards. The data in the network is also taken by other network cards and processed on the panel. The communication of the network cards with the panel is controlled. It is shown on the panel when there is a break or shortcircuit. In this case, the connection between the panel and the network card is checked.

5.4.5. Network Comm. Error:

The panel will give this error if the communication between the network cards themselves is broken. In this case, the communication between the network cards is checked.

5.4.6. Error Event Logs

All errors that will occur in the panel will be recorded in the event records with time, date and detailed information. However, only records of errors are kept separately in this menu.

5.5. ALARMS

When an alarm comes from any of the detection devices connected to the panel, it appears in a dominant way on the home screen. However, if more than one alarm is received, not all alarms can be shown at the same time on the home screen. In this case, if the user has access level 2 or 3, all the devices with alarms will be able to access from this menu.

In addition, the user will be able to see the last incoming alarm and the alarm from any other panel on the network from this menu.

5.6. SETTINGS

When the access level is 2, 3 or 4, the system settings menu will be accessible. The menu will look like the following.

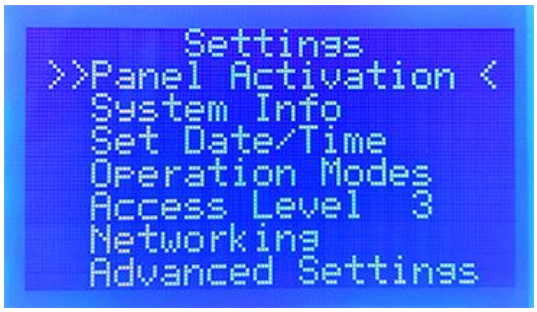

Figure 31 Settings Menu

5.6.1. Panel Activation

Panel activation is the first thing to do during installation. Without activation, the panel will work with limited features and will not be fully activated. The manufacturer must be contacted in order to perform the activation process.

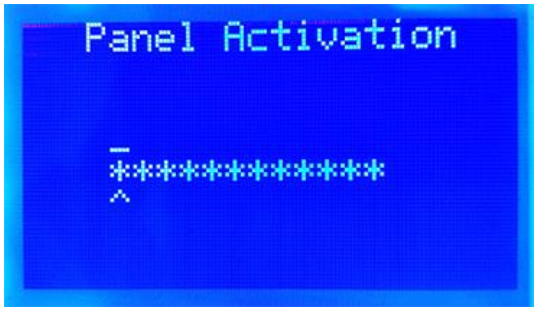

Figure 32 Panel Activation

5.6.2. System Info

Visible only at access level 3 or 4. The hardware version of the panel, the software version, the serial number, the observation center account number, the Field data (fixed data recorded to see the changes that will occur after the commissioning of the system) are shown on this screen. This information cannot be modified. However, it can be changed by computer with configuration software.

5.6.3. Set Date and Time

To set the time and date, press enter while "Set Time/Date" is selected. Then the following menu will appear. When first entered, the cursor will be on the line where the year digit will be set. With the up and down buttons, the year can be increased or decreased. When the year is finished being set, the Enter key moves the cursor to the other areas.

After all fields are set, pressing enter again, saving the new values, and pressing the escape key exits without saving data. The old values are loaded again.

Figure 33 Date and Time Setting Menu

5.6.4. Operating Modes

Day/Night Mode: In day mode, the alarm delays defined in the system are used. In night mode, alarm signals are processed without delay, ignoring delays. When night mode is activated, "NM" will appear at the bottom right of the main screen. "DM" will be shown on display when in Day Mode. The position of the panel's Day/Night mode can be viewed here. Even in case of alarm, this indicator is not suppressed.

Auto-Resound Mode: At access levels 3 and 4, this option can be selected. The panel is in the "ON" position as default. If the alarm cancellation button is pressed during the alarm, the outputs are silenced until a second alarm. If a second alarm comes, the outputs will be active again. When "OFF" is set to the "OFF" position, the outputs are silenced until the "alarm cancel" button is pressed once and then the button is pressed again. It does not activate a second alarm output. The "Auto-Resound" option is used to turn this feature on or off.

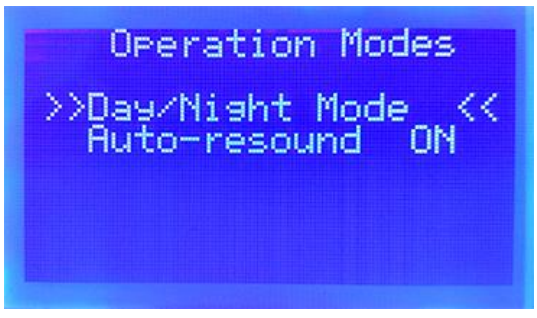

Figure 34 Operation Mode

5.6.5. Access Levels

Detailed information to change the access level is given in section 3.1.

5.6.6. Network Settings

When AP304/AP104 is connected as a network, it comes with the network settings turned off as default. It is done in the network circuit from the network settings of the panel to be activated This process should be done to each panel.

For this process, respectively; Network is activated by following the **Enter(main menu)>Settings>Network settings** steps. An ID is then assigned to each panel included in the network. All panels that are correctly connected to the network should look like in Figure 39 with the ID assigned in the Network map submenu under the Network Settings menu of all other panels connected to that network.

For example; In a system that runs a network with 3 panels, 3 panels are listed on the network map of each connected panel, including itself.

At this stage, the network has been active, but all permissions are closed and data exchange is broken. After this step, the functions of the connected network panels should be determined and these functions should be applied on the network map of each panel.

For each panel, from the other panels connected to the network, the functions such as **Discard Alarms / Receive Alarms, Discard Errors / Receive Errors, Discard Infos / Receive Infos, Enable / Disable Panel, Allow Control / Omit Control** must be set from the menu in Figure 40.

These settings must be made within each panel for all other network panels that appear on that panel.

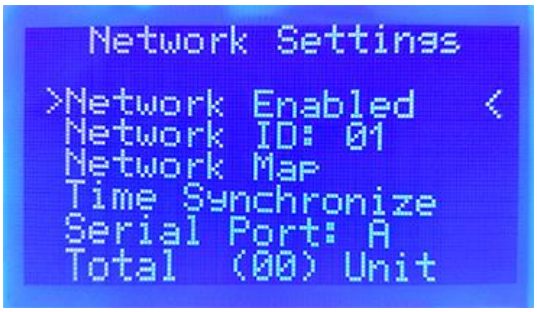

Figure 35 Network Settings

A) Network Enable/Disable

Specifies whether the feature is on or off and is changed.

B) Network ID

It is the identification number of the panel to which it is connected in the network running system. Other panels recognize this panel by this ID.

C) Network Map

It is the section of the system where the connected panels appear and the information to be shared can be set. The screen in Figure 39- is a network map. All panels that have been connected and activated in this network are listed here. If the panel is connected to the network but the network feature is not active, it will not appear in the list. Figure 40 shows the information that panel 02 connected to the network will send to the local (studied) panel. The properties in this menu can be adjusted according to the conditions of the project.

Figure 36 Network Map

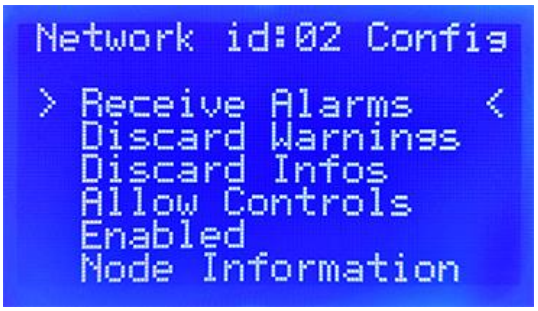

Figure 37 Network Panel Properties

D) Network Port

This section cannot be changed.

E) Time Sync

If this option is applied on the panel where the time is set correctly, this time setting is copied to all panels in the network, and it is not necessary to enter a time setting on all individual panels.

5.6.7. Advanced Settings

This menu will be used by the engineer performing the installation and can only be used when ES4 is active. Within this menu, the settings that appear on the screen below can be changed.

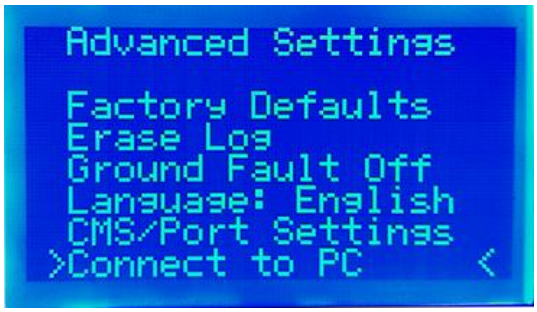

Figure 38 Advance Settings

5.6.8. Output Control

In this menu, which is designed for the control of relays located on the panel, you can deactivate and activate the relays. When the relay is disabled, the system continues without making changes, ignoring it, when it needs to change the position of the relay. The Alarm Relay, the fault relay siren relay and the sirens on the Loop can be managed.

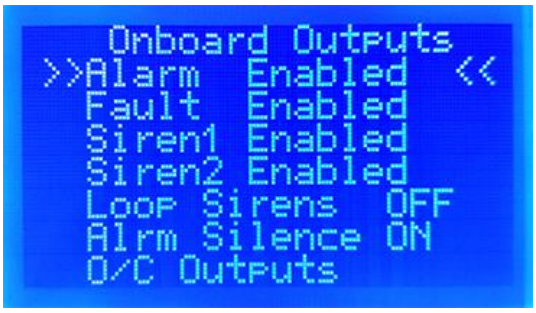

Figure 39 Output Units

Navigation mode is entered with the enter key. The desired relay is selected with the up and down arrows and enter-change mode is entered. In this mode, the arrow keys are used to change options. The Esc key returns to the previous menu.

In this menu, the output devices used in the panel can be seen and changes can be made without entering the loops menu. Routing of output channels can be made. Open collector outputs can be programmed.

Figure 41 Output Devices

Figure 40 Outputs

5.7. EVENT LOG

AP304/AP104 Fire Alarm Panel has an event recording system that is permanently kept in itself. The total number of events that can be retained is limited to 65536. The memory region in which event logs are kept is circular. So when the 65536th record is reached, the oldest record will be deleted, always the last 65536 records will be visible. When system event records are selected in the main menu, the event records menu will open, and the top row will show the description of the event records and the total number of records, and the number of records and the number of records that are selected. Error events If there is no event record, the message "No event log" will be displayed in the top row.

The record to be selected is marked with "*". Previous or next records can be selected with the arrow keys. When the Enter key is pressed, details about the recording will be seen. The keys will work in auto-repeat mode.

The last event record is the number written at the top, while the previous ones continue to decrease. Small numbers are shown at the bottom.

The events that happened on the current day are listed with time information and the events that happened in the previous days are listed with date information. It appears in the following example.

Figure 43 Event Log List

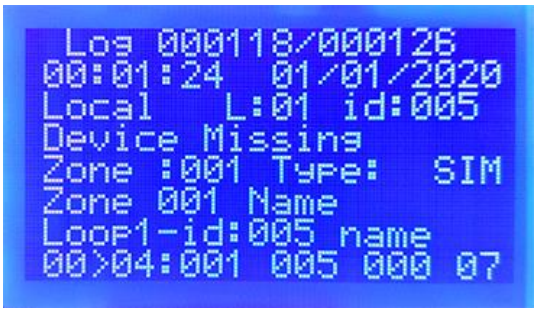

Figure 42 Event Log Details

Pressing Enter displays the details of the selected event. For example, on the screen in Figure 46 we can see that there are a total of 126 records, and the record shown is record number 118. Registration number 118 occurred on 01.01.2020 at 00:01:24 and is the warning "device missing". The error code for this event is 04.

The meanings of the parameters at the bottom on the screen in Figure 46-are as follows.

00: Panel local or network (if the panel is a networkable one the number is looking as network ID. if the panel is a networkable one the number is looking as network ID. if it is a local panel the number looking as 00.)

04: Event Code

001: Loop number

005: Device Address

07: Device type number (07 Single input Module)

Below the Event records are listed in order of number.

Event Code	Log Short Spelling	Log Long Spelling	Description
0	"Alarm",	"Detector Alarm"	Detector alarm
1	"Restart"	"Reboot",	Panel Restarted.
2	"S.circuit"	"Device Short Circuit",	One of the devices was short-circuited in the loop.
3	"O.circuit"	"Device Open Circuit",	One of the Devices became Open Circuit in the loop.
4	"Missing"	"Device Missing",	Unable to Access One of the Devices Online.
5	"Short Ok"	"Short-circuit Fixed",	The short circuit in the device has been fixed.
6	"Open OK"	"Open Circuit Fixed",	The open circuit in the device has been fixed.
7	"Missing Ok"	"No Answer Fixed",	The Missing device is now accessible.
8	"found",	"New Device Found",	An undetected device was detected after Searching.
9	"Test OK",	"Test ok",	Test Successful
10	"Alarm"	"Device Fire Alarm"	Alarm Signal Detected.
11	"Set LED",	"Device Led on",	Device Leds On.
12	"Relay On",	"SOM Relay Set",	Output Module Relay Changed Position.
13	"RelayOFF",	"SOM Relay Reset",	Output Module Relay Restored.
14	"D. Dis."	"Device Disable",	One of the Devices Has Been Disabled.
15	"Dev.On",	"Device On",	Disabled device has been activated.
16	"Test ON",	"Test Mode",	It was put into test mode.
17	"Test OFF",	"Test Mode Ended",	Removed from test mode.
18	"Test Alarm"	"Alarm in Test Mode",	Alarm detected while test mode is active.
19	"",	"",	
20	"Loop S.circuit"	"Loop Short-circuit"	One of the loop with + - shorted
21	"Loop O. circuit"	"Loop Open",	One of the loop was Loop and Return open circuit.
22	"Loop Missing"	"Loop Missing",	Detected loop cannot be accessed. Loop card is faulty or missing.
23	"Loop Short Ok"	"Loop Short C. Fixed\0",	Loop short circuit fixed.
24	"Loop Open Ok"	"Loop Open C. Fixed\0",	Loop open circuit fixed.
25	"Loop MissOk"	"Loop Missing Ok",	The inaccessible loop card is now accessible.
26	"Loop Data E."	"Loop Data Error",	Loop data error
27	"Loop Chk. E."	"Loop Checksum Error",	loop checksum error
28	"Loop CTS E1."	"Loop CTS Error 1",	
29	"Loop CTS E2."	"Loop CTS Error 2",	
30	"Loop Activated"	"Loop Activated"	The disabled loop is now active
31	"Loop Dis."	"Loop Disabled",	One of the loops is disabled.
32	"New Loop"	"New Loop Detected",	A new loop card is detected.
33	"Loop Not Exist"	"Loop Not Exist",	Loop card removed.
34	"Loop Exist"	"Loop Exist",	Loop card inserted
35	"Loop Search"	"Loop Search End"	Loop scan finished.
36	"Dis.Lp On",	"Diss. Loop Open",	Disabled loop became open circuit
37	"Dis.Loop Ok",	"Diss Loop ok",	Disabled loop open circuit Fixed
38	"Dis.Lp Short",	" Diss Loop S.circuit"	Disabled loop Shorted
39	" Walking Test"	"Start Walking Test"	Walk test started

40	"Panel Reset"	"Panel Reset"	Panel Reset
41	"Evacuate"	"Evacuate"	The Evacuation Button was pressed.
42	"Cancel Alarm"	"Alarm Cancel",	Alarm Cancel Button Pressed.
43	"Alarm Active"	"Alarm Resound",	Alarm restarted.
44	"Loop CtsLow"	"Loop CtsLow",	
45	"Loop Cts High"	"Loop CtsHigh",	
46	"Loop Cts L Ok"	"Loop CtsL ok",	
47	"Loop CtsH OK"	"Loop CtsH OK",	
48	"PanelRestart"	"Panel Restart"	Panel Restarted.
49	"Delete Log"	"Log Deleted",	Event logs have been deleted.
50	"Start"	"Panel first opening",	Panel first opening
51	"Batt. Error"	"Battery Error",	Battery low or absent
52	"Batt. Ok"	"Battery Error Fixed",	Battery Fixed.
53	"AC Error"	"Mains AC Failure",	Mains Down.
54	"AC Fixed"	"Mains AC Improved",	The network has been fixed.
55	"GND Error"	"Ground Fault",	Grounding is interrupted.
56	"GND Fixed"	"Earth Correct",	Grounding Improved.
57	"Factory Default"	"Factory settings"	Restored to factory settings.
58	"Siren Open"	"Siren Line On",	Siren line is open circuit.
59	"Siren S.circuit"	"Siren Line S.circuit",	Siren Line Shorted.
60	"Siren OK"	"Siren Line Ok",	Siren Line Fixed.
61	"GND Off"	"Ground Off",	Do not show Ground Fault.
62	"GND Gozet"	"Show Grounding",	Show Ground Fault.
63	"RT121 com Err"	"RT121 Communication Error"	Network card does not send information to the panel.
64	"RT121 Com ok",	"RT121 Communication Arrow"	Network card communication improved
65	"NW RxTx Failure"	"NW RxTx Transmission Error"	NW card is not sending information to other NW cards.
66	"NW RxTx OK",	"NW RxTx Transmission Arrow"	NWcard Sends information to other NW cards.

6. PROGRAMMING

6.1. AUTOMATIC SEARCHING OF DEVICES IN THE LOOP

The technician performing the installation must ensure that the loops connections are made in a healthy way. Addresses must be used by only one device per loop, and all devices must be connected to the cast. Before naming the zones, the zones where the devices will be located should be defined. While in ES3, a list of LK204 loop cards will appear when entered in the loops menu. When one of them is selected, a similar submenu will appear, which appears below:

Figure 44 Loop Details

Searching for existing devices in the system is described in the Loops section "In automatic search".

During the search for devices that exist in the loop, the progress of the process will be shown as a percentage next to the % sign. The number of devices found during the search and the address and type of the last device found will also be displayed.

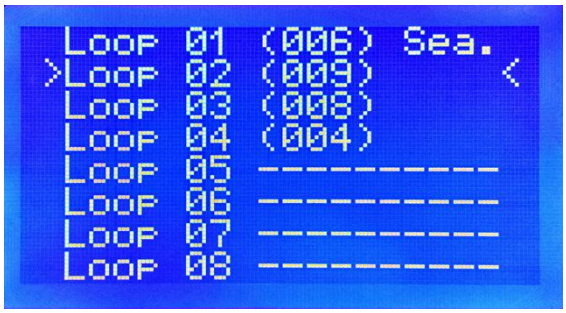

Figure 45 Loops List

6.2. ACCESS LEVEL 4, OPERATION OF THE CONFIGURATION PROGRAM, MANAGEMENT OF THE PANEL

Some functions related to the operation of the panel can only be controlled by configuration software installed on the personal computer. Although it is possible to control some functions via the panel, configuration software is preferred because users can do it faster and easier.

The configuration software connects to the computer via a Mini USB cable. The connection appears as a com port in the computer's device manager. In order to be able to communicate, the following parameters must be set on this com port: Output will be used according to 9600 baud, 1 stop bit, no parity, 8 data bit standards. Switch the access level of the panel from 3 to access level 4

and click Connect to computer from the menu below.

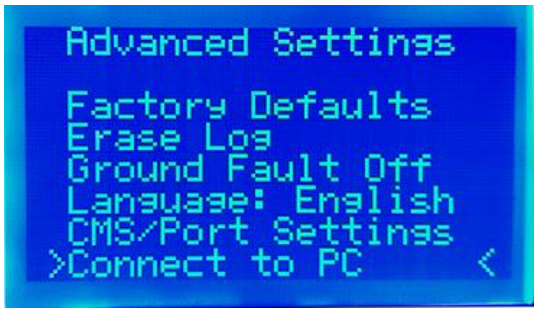

Figure 46 Advanced Settings

When Connect to computer is selected from this menu, the system will be controllable with the program on the PC. You need to press esc to exit this menu. Before contacting the PC, an automatic search for all loop cards should be performed and all missing devices should be corrected. The user will transfer this information to the computer and use it.

After installing the program, the following interface will appear when it is run.

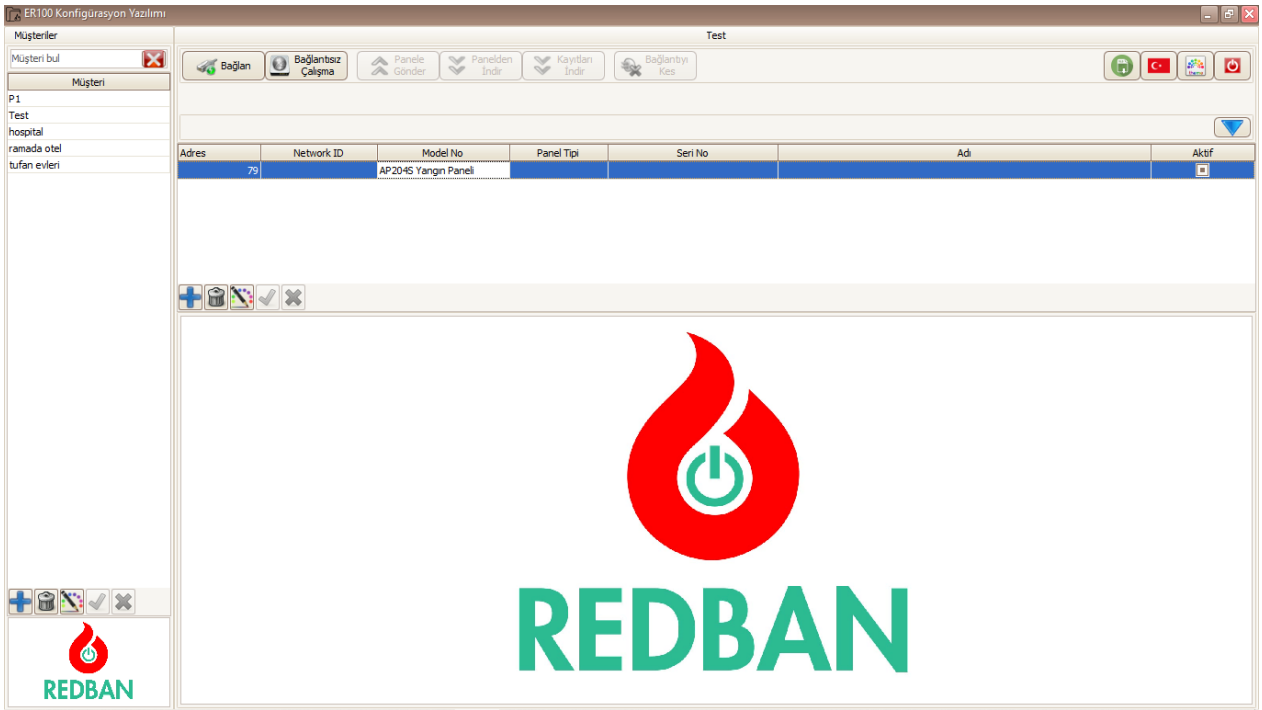

Figure 47 PY100 Configujration Software

By pressing the blue plus button under the "Customers" column, the name of the project where the system is installed is written and saved by pressing the green check button.

Then, in the middle row, the blue plus button is pressed from the panel list menu, the model of the panel we use is selected and added, and saved by pressing the green check button.

The saved panel is selected by clicking on the model and the "Connect" option is clicked. In the window that opens, the port and transfer speed that the panel receives from the computer are selected and confirmed. If the cable connections are made without any problems, the connection to the panel is done.

If desired, "Work Offline" is selected and information is entered without connecting to the panel. However, the data must be entered on top of the data taken from the panel.

After the connection is established, "Download from panel" is selected and all the data in the panel starts to be downloaded from the panel to PY100. This process can take around 10min.

After the data has finished downloading, the PY100 will automatically disconnect from the panel.

After the dissconnect, all the data can be entered.

After the information is processed, the panel is connected by pressing the "Connect" button again and the data we process by pressing the "Send to Panel" button is transferred to the panel.

During the installation of the system, it is recommended to back up the data, after the call, to transfer the information to the computer and save it to disk, so that the system can be monitored remotely. This information can then be opened and changed without a connection to the panel. In particular, zone names and device names are preferred by users because they can be changed more easily using the computer keyboard.

The working language of the panel, ground fault notification, CMS and Printer functions, deleting system event logs and restoring factory settings are also possible in the Access Level 4 menu.

6.3. OUTMAPPING

Meaning of assigning output; activation of output devices connected to the loop (Output Modules, Siren Control Modules, Loop Sirens and Open Collector outputs). These devices will not work unless the output assignment is made.

There are three outputs groups in this panel: Output-1, Output-2 and Output-3. Output-1 - 250 channels, Output-2 64 channels and Output-3 has 32 output channels.

Output-1 The outputs assigned from within can be used to activate both the output devices on the assigned panel and the output devices of a panel in the Network. Output latency works independently of zone delay.

Output-2 The outputs assigned from within can be used to activate both the output devices on the assigned panel and the output devices of a panel in the Network. Output latency works independently of zone delay.

Output-3 The outputs assigned from within can be used to activate both the output devices

on the assigned panel and the output devices of a panel in the Network. The difference from Output-1 and Output-2 is that the latency entered operates as the zone delay. The desired output channels are used according to the requirements of the scenario.

In complex scenarios, it will be easier to detail the script and write it down as a draft before the output assignments are made. In order to perform these operations, the project must be completed, the devices must be found complete and the "Normal" text must be seen on the panel display.

6.4. MANUAL TESTING OF OUTPUT MODULES

AP304/AP104 Panel is available at Access level 3 to test the output devices on the loop, on the detail screen of the output device in the \Devices\Loops\Device Address menu, pressing enter switches to navigation mode. The "Reverse Outputs" option located here will change the position of the relay of the output module. With the "Reverse Outputs" option, the relays are reinstated. The structure of the output modules is such that they maintain the last sent positions.

In the event that the first and second power supplies become insufficient while the system is running, all outputs except the outputs on the motherboard retain their positions.

6.5. ADDRESSING AND PROGRAMMING OF DEVICES

The PP1201 address programmer is needed to program the address information of all devices used in the system. All base-mounted detectors and loop sirens have four connection terminals on their backs. Of these terminals, the one marked with "4" is the (+) terminal and the one marked with "3" is the (-) terminal. For Input Modules, Output Modules and Manual Call Points , (+) and (-) terminals are specified on the terminal blocks to be used in the connection. The red terminal on the programming device is (+) and the black terminal is (-). The same terminals on the device and the programmer will be combined and the connection will be provided.

For more detailed information, refer to the "PP1201 Programmer User Manual". After the connection is made, start the system by pressing the "ON" button on the PP1201. Then press "READ" to see the address and type of device on the screen of the PP1201 to check that the connection of the device is correct and to find out the current address. If this process is not completed successfully, an "ERROR" message will appear on the PP1201 screen, in which case at least one of the devices may be defective, contact your product provider for technical support and information.

If the address and type of the device is read successfully, if you are going to change the address, press the "WRITE" key by pressing the new address. After writing, the device will check the address at which it is written, without the need for an additional command, if it detects an error, the message "ERROR" will appear on the LCD. In this case, the batteries may be depleted, or there may be a lack of contact with the cables. Try again by checking.

WARNING: The programmer terminals have a voltage close to 30 volts, although not dangerous to human health, but can cause an uncomfortable distortion sensation. So be careful not to touch two cables at the same time.

6.6. RESTORING THE PANEL TO FACTORY SETTINGS

After using the system, if it is necessary to delete the information in it, it is entered into the Advanced settings menu when the Access level is at 4, then it is possible to delete the logs, to return to factory settings, to block/activate the grounding error notification, to activate the CMS output. These functions should only be used by authorized service personnel, not by the user.

7. MAINTENANCE

Even if the batteries in the panel do not give any error, they should be replaced every two years. The service life of batteries depends on parameters such as discharge time, discharge rate, ambient temperature, discharge voltage. Depending on these parameters, battery replacement may also be required in a shorter time, if the operating conditions put the healthy operation of the panel at risk, the panel will detect this situation and warn the user. Every year, the general cleaning of the panel should be carried out, the working environment should be checked.

8. SAFE MODE

In the event of any disruption to the main functions of the panel, a detected error in the dynamic and persistent memory and program regions, the panel will switch to "Safe Mode". In this case the "System Error" LED located on the panel lights up continuously. The device enters the safe state and the menu code at the moment it enters the safe state, the function no processed at that moment and the function no that was previously performed appear on the LCD screen.

Figure 48 Safe Mode of Software Faulty

After the initial installation of the panel is completed, the configuration of the panel is encrypted with a specially created algorithm and shown in the system information. After the installation is complete, the panel continuously checks this data every 50 minutes and if there is a change in the field data, i.e. a deterioration in the configuration of the device, it records it in the field data memory and switches to safe mode. If Safe Mode is switched due to the control of site-specific memory performed every 50 minutes, "Field Data Error" is written on the screen.

Figure 49 Safe Mode Of Field Data Error

When fire alarm signals received from all fire detectors, manually controlled fire alarm buttons or input/monitoring modules are generated in the system, it does not affect the mandatory functions of the system devices. In the general fire alarm indicator, if there is an input delay, the general fire alarm is lit after the "pre-alarm" and a continuous warning sound is heard. Fire alarm relay and siren outputs are activated.

This is due to the fact that fire alarm signals are processed at a high priority level. When safe mode occurs, alarms are not shown on the LCD screen, but as specified in the standard, the fire alarmed and the necessary outputs work. In addition, the zone leds on the device are also updated and the alarm is lit up in the incoming zone.

REDBAN ELEKTRONİK LTD. ŞTİ.
Göztepe District. Demirci Faik Street Number:3
Kadıköy İstanbul
Phone :+90216 759 0159
WhatsApp :0542 298 48 38
Info :info@redban.com.tr
Technical Suppurt :teknik1@redban.com.tr