FIRE CONTROL PANEL

AE/C5-8-16

INSTALLATION AND USER MANUAL

Contents

1. GENERAL INFORMATION

The AE/C5-8-16 is a conventional microprocessor fire control panel, designed according to EN54 Standard requirements. The panel provides for monitoring and reporting fire events in up to 16 separate zones, depending on the installed configuration.

The AE/C5-8-16 must be installed according to the Fire Alarm Installation Regulations, mandatory for the territory of the respective country. The electrical power supply to the panel must be isolated and must not be capable of being accidentally switched off. The power switch-off board should display a clear FIRE ALARM - DO NOT SWITCH OFF label.

2. TECHNICAL SPECIFICATIONS

2.1 General Tecnical Specifications of AE/C5-8-16

- **Maximum number of detectors per zone:** - Up to 32 conventional detectors with consumption < 200μA at a normal mode;
  - Unlimited number of manual call points.
- **Thresholds for zone conditions:**
  - 0 ÷ 2 mA - Open circuit fault condition.
  - 2 ÷ 10 mA - Normal condition.
  - 10 ÷110 mA - Fire alarm condition.
  - > 110 mA - Short circuit condition.
- **Power Supply:**
  - Main Power Supply: ~ 230V AC ±10%, 2A Fuse, F-Type.
  - Standby Power Supply: 1 Accumulator battery 12V/ 18Ah; Dimentions - 167x181x76mm; Voltage Output - U_{CHARGE} = 13,8V; Current Output - I_{MAX} = 2A; 7A Fuse, Automotive type; Battery connection: with a flat terminal lug Ø5mm
- **Consumption from 230V in normal working mode and a fully charged battery:**
  - At 4 zones (1 Zone Expander) 2,1VA
  - At 16 zones (4 Zone Expanders) 4,2VA
- **Consumption from the battery at mains power supply failure in normal working mode:**
  - With connected 1 Zone Expander 130mA
  - With connected 4 Zone Expanders 260mA
- **Consumption from the battery in Fire alarm condition:**
  - At 1 Zone Expander, Fire in 1 zone 330mA
  - At 1 Zone Expander, Fire in 4 zones 720mA
- **Outputs:**
  - Sounder circuits SND1÷SND4 (control module): +24V/ 0.3A, Fuse, self-recoverable

• Sounder circuits SND1÷SND4 (4 Sounder Expander)	+24V/ 0.15A Fuse, self-recoverable
• Fault Relay, volt free changeover contacts*	+12V/ 1A or 24V/ 0.5A U_{MAX} = 125V; I_{MAX} = 2A
• Fire Relay, volt free changeover contacts*	+12V/ 1A or 24V/ 0.5A U_{MAX} = 125V; I_{MAX} = 2A

* ***Note:*** *These functions may not be used to provide any "Options with requirements" as specified in EN54-2.*

• Auxiliary autput	+24V DC/ 0,3A Fuse, self-recoverable

▪ **Cabling of the main power supply:**

• Recommended wires cross section	1.5mm^2
• Terminal maximum wire diameter	Ø2.5mm

▪ **Environment:**

• Working temperature	-5 ÷ +40ºC
• Storage temperature	-20 ÷ +60ºC
• Humidity	Up to 93% (non condensing)

2.2 General Tecnical Specifications of Relay Module

▪ **Number of relays:**	8
▪ **Power supply:**	24V
▪ **Current consumption in normalcondition:**	8mA
▪ **Additional current consumption for every relay switched ON:**	10mA
▪ **Maximum ratings of volt-free changeover contacts::**	12V/ 1A или 24V/ 0.5A
▪ **Maximum voltage:**	125V
▪ **Maximum consumption:**	2A
▪ **Cabling:**	
• Recommended wires cross section	1.5mm^2
• Terminal maximum wire diameter	Ø2.5mm
▪ **Environment:**	
• Working temperature	-5 ÷ +40ºC
• Storage temperature	-20 ÷ +60ºC
• Humidity	Up to 93% (non condensing)

WARNINGS:

Prior to connecting the AE/C5-8-16 Fire Alarm Panel, perform a thorough test of the all wiring integrity of the entire system.

Should a fault arise during installation and connection, which cannot be removed, stop the installation and call the producer or his regional authorized representative!

3. INSTALLING THE AE/C5-8-16

• Select the best location for the panel away from sources of heat, environmental dust and potential water ingress, with an ambient temperature of between -5°C and + 40°C, Figure 1.

• Undo the two secure bolts - Figure 2. Use the instrument supplied for the purpose in the set (hexagonal tool No. 2).

• Open the front panel and disconnect the earth cables: from the 230 V clamps, from the metal bottom clamps and from the chassis.

• Disconnect the indication ribbon cable.

• Remove the front panel by undoing the screws of the hinges - Figure 3. (***NB.*** *The screws at the metal bottom can also be undone. What is special here is that there are two plastic pads under the very hinges. These pads need to be placed back again under the hinges when mounting the front panel.*)

• Select the input openings for the cables and place a plastic cap, provided with the panel accessories, on those which are not going to be used, see Position 13 from the spare parts kit on page 31.

• Perform an exposed or flushed mounting - see §3.1 and §3.2.

• Run all external cables into the box to establish connection **but do not connect them at this stage yet. Run the mains cable through the chosen opening but keep it away from the low voltage wirings.**

• Connect the mains supply and earth to the main terminal block but **do not** switch the main electrical supply on at this stage.

• Position the battery and secure it with the clamp - Positon 1, Figure 9.

• Place the plastic light guides (see Positions 11, 15 and 19, page 31), provided with the spare parts kit, at their designated locations on the main module, zone and/or sounder expanders.

• Connect the zone and sounder circuits and program the panel according to the specific application.

• Mount the front panel back onto the hinges and connect the indication ribbon cable and the earth cables: to the 230 V clamps, to the metal bottom clamps and to the chassis.

• After all system programming and testing operation are complete, screw both secure bolts with the help of the hexagonal tool supplied.

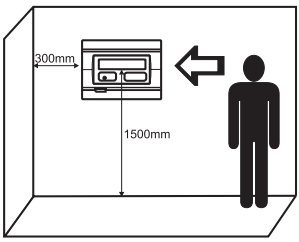


Figure 1.

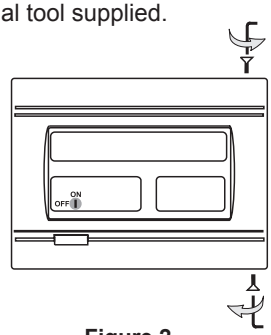


Figure 2.

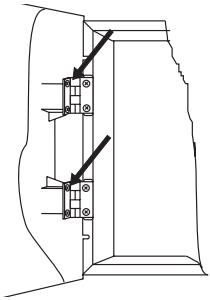


Figure 3.

3.1 Wall Mounting

• Use the template supplied to determine the openings of the metal bottom onto the wall - Figure 4.

• Drill Ø6-8mm diameter openings in the wall and fix the box using the provided anchors and screws (Positions 2 and 6, page 31) - Figure 5.

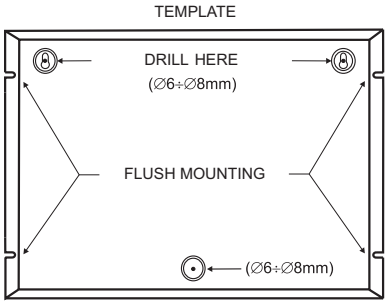


Figure 4.

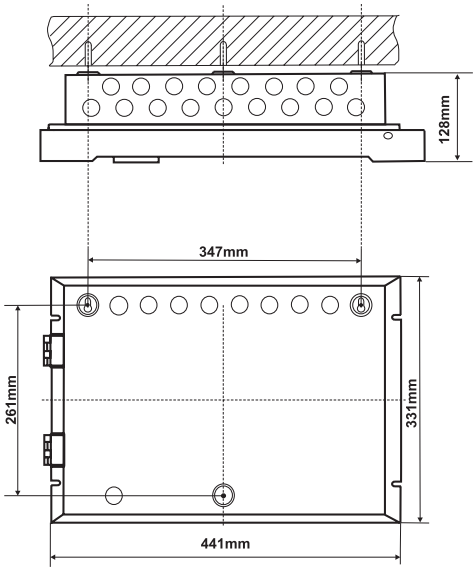


Figure 5.

3.2 Flush Mounting

The accessory set provided contains two special hangers for flushed wall mounting of the fire alarm panel on 25 mm thick drywall.

• Use the dimension shown in Figure 6 to draw and cut out the mounting openings in the drywall.

• Attach the hangers to the internal side of the wall and fix them with the screws (Position 8, page 31), as shown in Figure 7, Position 1.

• Run all external cables in the box and then place it into the mounting opening. Fix the bottom using the mounting screws and washers (Positions 5 and 7, page 31) - Figure 7, Position 2.

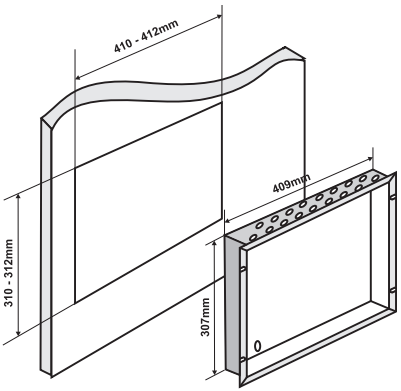


Figure 6.

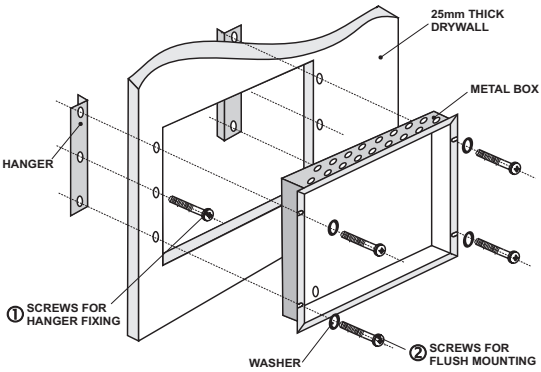


Figure 7.

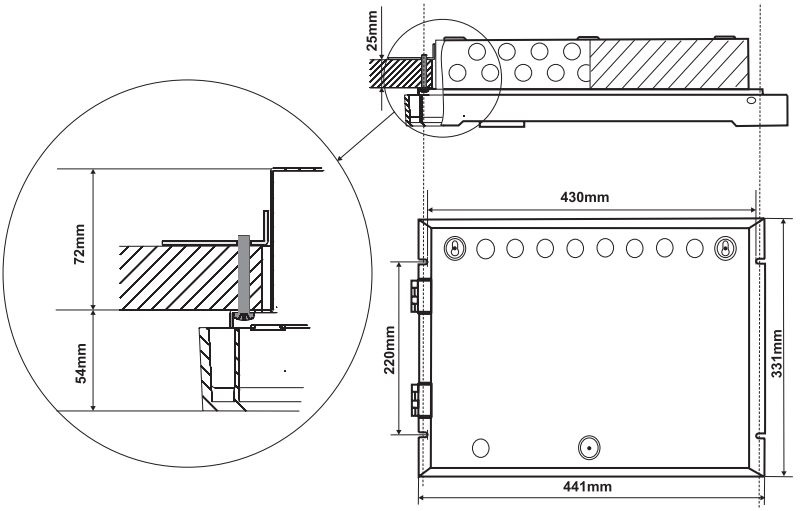


Figure 8. Flush mounting holes. Main view of the fixed to the wall hangers and the bolts supporting the metal box.

3.3 Configuration of the Basic Modules

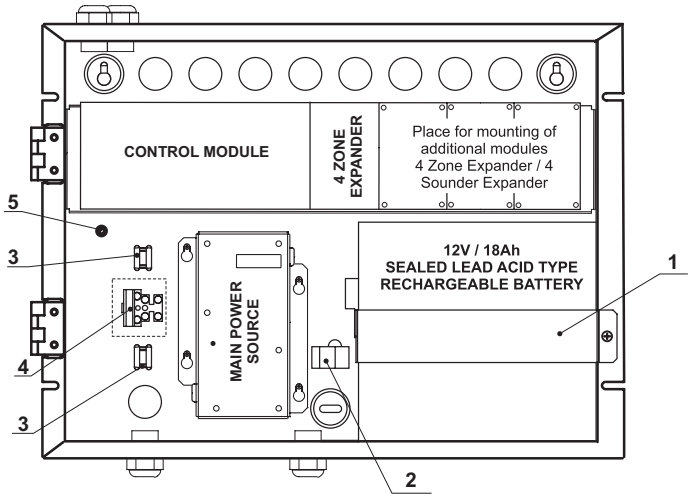


Figure 9.

- **1** - Metal clamp for supporting the battery.
- **2** - 7A Fuse, Automotive type (Position 4, page 31).
- **3** - Clamp for supporting the main power supply cable.
- **4** - Terminal for connecting between the mains power supply and the power source. F-type fuse 2A (Position 3, page 31).
- **5** - Earting point.

3.4 Control Module

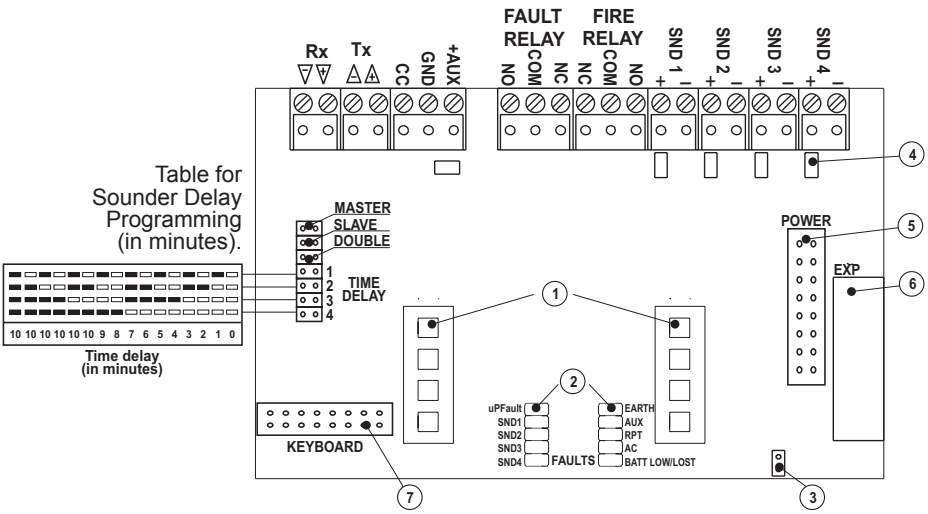


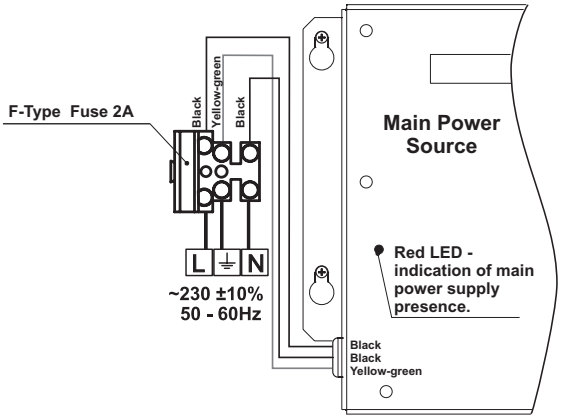
Figure 10.

• **Rx/Tx** - Terminals for connecting of Repeater, Relay Module or a combined connection between them (see §4.1 and §4.2);
• **CC** (Class change) - Terminal for connecting of a switch (see §4.3);
• **GND** - Grounding;
• +**AUX** - Auxiliary output, +24V DC / 0,3A;
• **FAULT RELAY** - Fault Relay, +12V / 1A or +24V / 0,5A;
• **FIRE RELAY** - Fire Relay, +12V / 1A or +24V / 0,5A;
• **SND 1 ÷ SND 4** - Sounder outputs, +24V / 0,3A;
• **DOUBLE** - Double Action Mode (see §5.3);
• **MASTER** - Master Panel Mode (see §5.4);
• **SLAVE** - Repeater Panel Mode (see §5.5);
• **TIME DELAY** - Sounder Delay Programming.

• ① - LED Indication of the operation modes, light guide mounted (Position 11, page 31);
• ② - Faults LED indication, see §7.1;
• ③ - Jumper for enable/disable Earth Fault Indication;
• ④ - Self-recoverable fuses;
• ⑤ - Flat cable connector for connecting the main power source;
• ⑥ - Flat cable connector for connecting 4 zone / 4 sounder expander;
• ⑦ - Flat cable connector for connecting the control panel keypad.

3.5 Main Power Source

Connecting of the Main Power Supply



The yellow-green earthing cable of the main power source must be connected to the middle point of the terminal!

Figure 11.

Connecting of the Battery

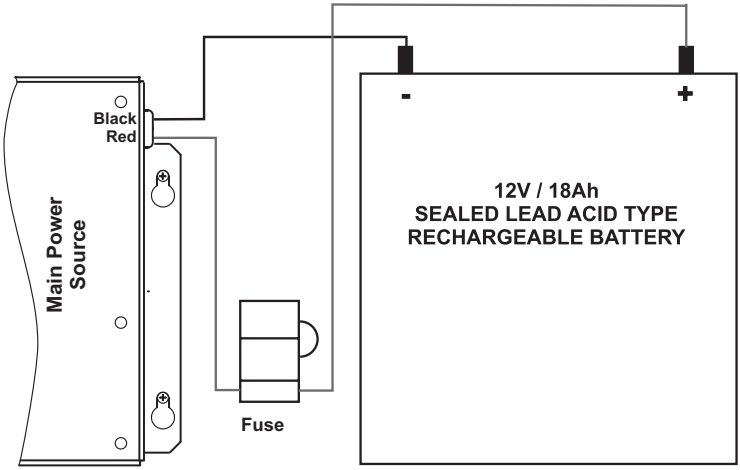
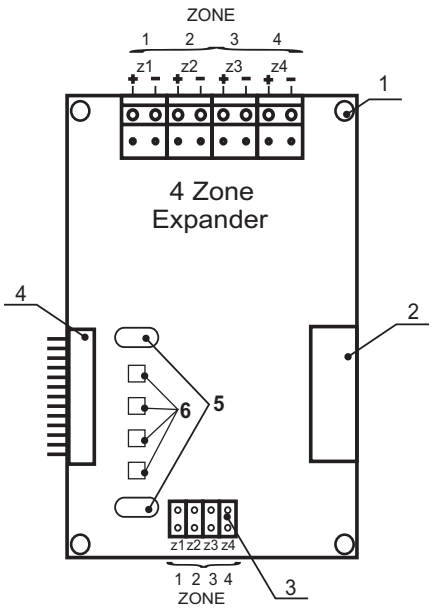


Figure 12.

Attention: It is possible that the battery might not be charged at the panel initial start-up. In this case the ***BATT LOW/LOST*** at the control module and the ***GENERAL FAULT*** at the front panel will light on until the battery will be charged up to the required level.

Note: The accumulator battery fuse is 7A (7,5A), automotive type and is sutueted in the holder connected to the red cable of the main power source - Figure 12!

3.6 4 Zone Expander



• **1** - Mounting holes for fixing the expander to the chassis.

• **2** - Flat cable connector for connecting of additional 4 zone / 4 sounder expander.

• **3** - Jumpers for Immediate action mode programming.

Example: To program ZONE1 in immediate action mode put a jumper on the z1 terminal.

• **4** - Flat cable connector for connecting:

a) To the control module, when the 4 zone expander is the first module in the panel configuration.

b) To a previous 4 zone expander;

• **5** - Mounting holes for placing a light guide for the front panel LED indication, see Position 11 of the additional components included, page 31.

• **6** - LEDs Zone status indication.

Figure 13.

Connecting of Additional 4 Zone Expander

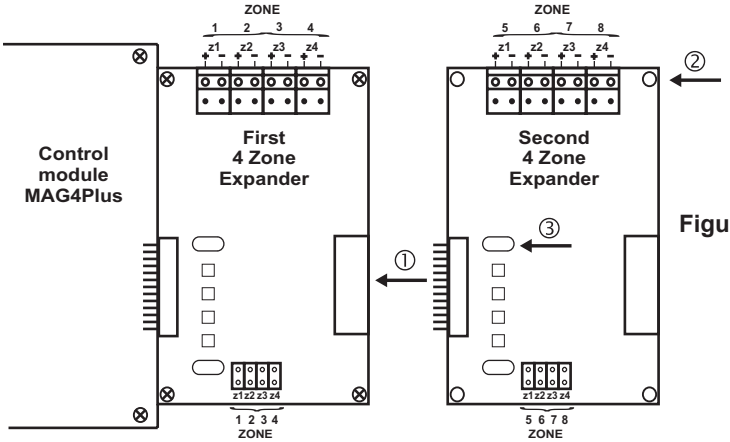
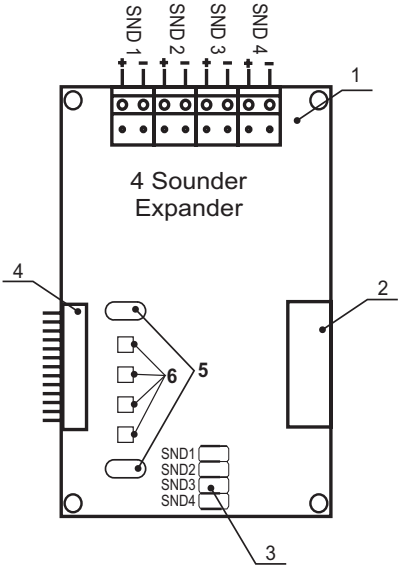


Figure 14.

• 1 - Connect the flat cable connectors of the expanders.
• 2 - Fix the second 4 zone expander with screws to the metal box frame.
• 3 - Place the light guide (Position 15, page 31)

The metal box of AE/C5-8-16 can accommodate up to 4 zone expanders. To each zone can be connected up to 32 conventional detectors with consumption <200μA at normal operation mode and unlimited number of manual call points.

3.7 4 Sounder Expander



• **1** - Mounting holes.

• **2** - Flat cable connector for connecting of additional 4 sounder expander.

• **3** - LED indication for troubles in the sounder circuits. In case of a trouble in any of the sounder circuit ***SND1 - 4*** the LED of the respective sounder circuit will light on together with ***GENERAL FAULT*** and ***SOUNDER FAULT/DISABLE*** indicators on the front panel.

• **4** - Flat cable connector for connecting:

a) To a 4 zone expander.

b) To a previous 4 sounder expander.

c) To the control module.*

• **5** - Mounting holes for placing a light guide for the front panel LED indication, Position 19, page 31.*

• **6** - LEDs Sounder status indication.*

**** Note: Just in case,*** *when the panel is in Repeater Mode (a jumper is put on the* ***SLAVE*** *terminal).*

Figure 15.

Performance of the 4 Sounder Expander

There is a correspondence between the zone numbers and the sounders - ZONE 1 of the 4 zone expander corresponds to SOUNDER 1 of the 4 zone expander, ZONE 2 to SOUNDER 2, and so on. In case of fire in ZONE 1, SOUNDER 1 will operate continuously and Sounders 2 ÷ 4 of the expander will be pulse activated – 2 sec. sound / 2 sec. silent.

Connecting of 4 Sounder Expander

The method of adding of 4 sounder expander is analogical to that of adding a 4 zone expander module, see Figure 14.

Note: Only a module of the same type can be added to the 4 sounder expander. For the proper performance of the fire alarm panel observe the connection sequence presented in Figure 16a. In the case of improper connection (Figure 16b), an error signal will be generated when the power supply is switched on - the LEDs of the zones connected after the 4 sounder expander begin to blink and the *GENERAL FAULT* LED remains permanently lit.

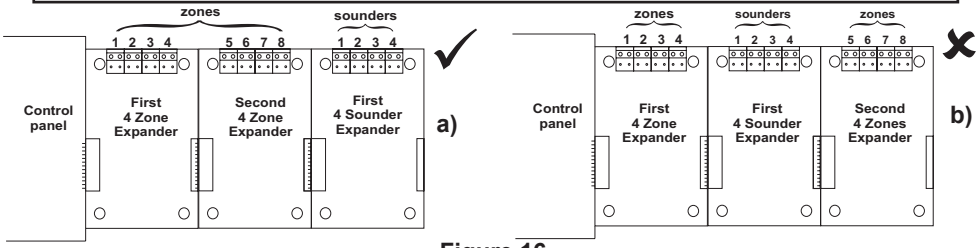


Figure 16.

4. CONNECTING

4.1 Relay Module

MR8 is a supplementary module which is located outside the AE/C5-8-16 Alarm Panel box. It contains 8 changeover contact relays. When using all 16 zones, the AE/C5-8-16 needs two relay modules. The technical specifications of the module relays are described in §2.2.

Configuring the outputs

The Module Relays helps configure the zones that are to be connected to. Should zones numbered 1 to 8 be used, a jumper is placed at outputs 1÷8 of the module mother board; should the jumper be placed at outputs 9÷16, zones numbered 9 to 16 will be used - Figure 17.

The module relay contact type (normally closed or normally open) is determined by configuring the NO/NC outputs. Placing the jumper at the NO output will normally open the contact; placing the jumper at the NC output will normally close the contact - Figure 17.

Special jumper J1 - when this jumper is placed, the first zone relay is activated by the module relays after the button SILENCE ALARM on the control panel is pressed upon an alarm event.

Performance of the Module Relays

The module Relays are activated upon an alarm event (fire) in the respective zone they are connected to.

• Given that a delay is set for the alarm cycle (enabling the sounders) in the main control panel, this delay will also reflect on the relay activation of the first alarm - it shall delay by the same duration.

• The relay activation delay is eliminated by pressing the SOUND ALARM button - the relay and the sounders are immediately enabled.

• Once a fire signal has been generated and there is a sounder delay set off, the following module relays will be activated immediately.

• The respective relay is enabled immediately after the sounders are activated. Where there is any delay, it shall apply only to the relay of the zone that first entered the alarm mode.

• The active relays are disabled immediately after an initial reset of the station. Pressing the stop sounder button will not restore the relays.

In order to operate together with the AE/C5-R8, the AE/C5-8-16 Fire Alarm Panel must be in the Master Panel mode – a jumper is placed at the Master terminal.

The connecting between one Relay Module AE/C5-R8 and Master Panel is shown on Figure 18.

The connecting between two Relay Module AE/C5-R8 and Master Panel is shown on Figure 19.

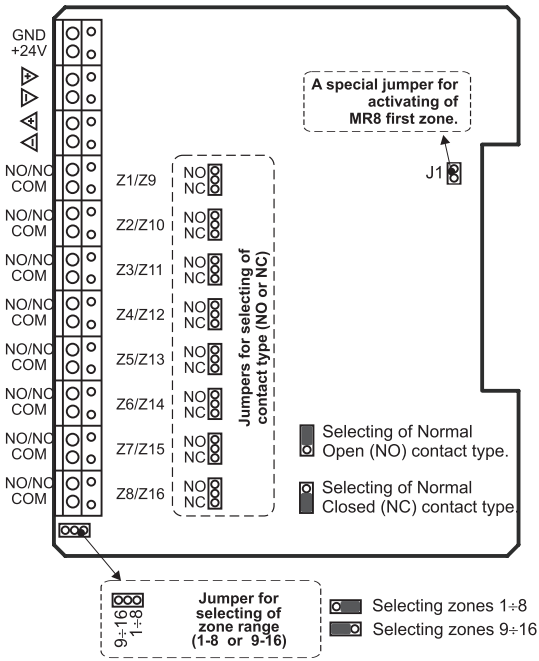


Figure 17.
Terminals and jumper configuration of AE/C5-R8.

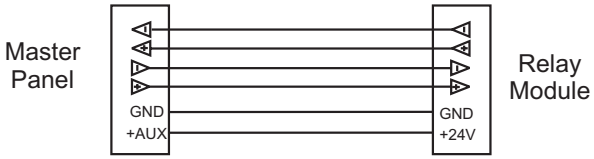


Figure 18. Connecting between one Relay Module and Master Panel.

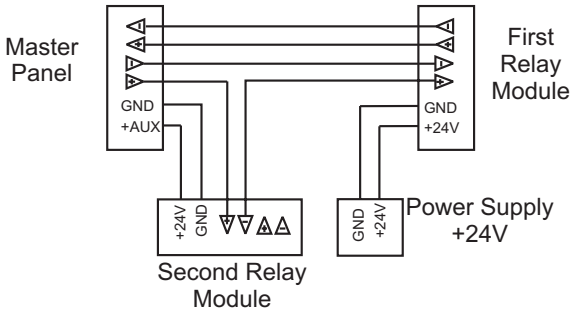


Figure19.
Connecting between two Relay Modules and Master Panel.

4.2 Repeater Panel

A second Panel can be connected to the AE/C5-8-16 Fire Alarm panel as Slave.
The function of the Slave is to double the light and sound indications and the button control of the first panel at a distance of up to 1000 m. For the purpose, both panels have to be assigned specific priorities: The first fire alarm panel shall be the system Master and the second - Slave.

The Master panel is configured by placing a jumper on the **Master** terminal of the main module, and the Slave - on the **Slave** terminal (see Figure 10).

Figure 20 shows the connection between the Master and Slave AE/C5-8-16 panels.

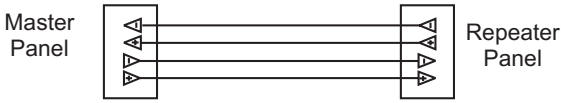


Figure 20. Connecting between Repeater and Master Panel.

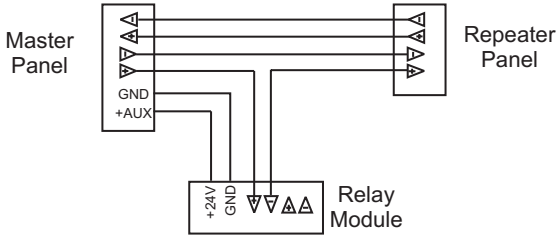


Figure 21. Connecting between one Relay Module, Repeater and Master Panel.

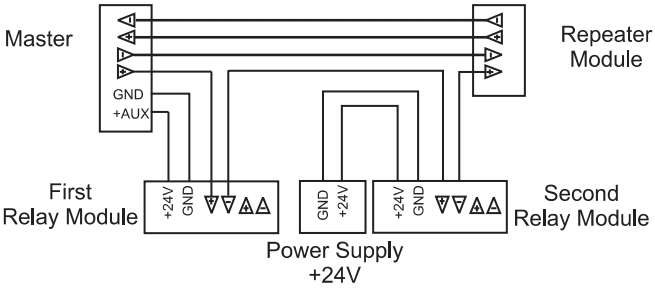


Figure 22. Connecting between two Relay Modules, Repeater and Master Panel.

4.3 Remote Reset Mode

To use the class change function connect the terminals of a switch with normally open contacts to the **CC** clamps of the main module terminal (Figure 10).

When the switch is depressed the start-up procedure begins.

4.4 Connecting the Zone and Sounder Circuits

Verify the normal functioning of the panel before connecting circuits to zones and sounders:

• Connect the battery to the power unit terminals - Figure 12 and check the availability and condition of the fuse, a 7A automotive type, located in the clamp.

• Check the availability and condition of the fuse, a 2A F-type, located in the clamp for connecting the power unit to the main electric network.

• Turn on the main power supply.

In normal working mode only the *"POWER SUPPLY 230V"* LED lights up on the front panel of the fire alarm station.

NOTE: In case other indicators are also lit and the internal buzzer has been activated:

• Disable the buzzer signalization with the SILENCE BUZZER button on the front panel.

• Check the mains and the battery fuses.

• Check the electrical connections within the station box.

• Check for any activated ***FAULTS*** LEDs of the main module, see Figure 10. Specify the faults according to the Fault Indications Table on page 26.

• Press the RESET button on the front panel to reset the system (the button is active if the switch is in an ON position).

Connecting the Zone Circuits

Up to 32 conventional fire detectors and an unlimited number of manual fire alarm buttons can be connected to each circuit. Figure 23 shows how to connect detectors within a zone.

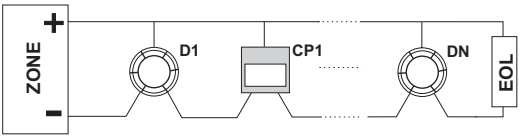


Figure 23. Connecting of detectors (D1÷N) and manual call points (CP1÷N) to the zone circuit.

Attention: During DOUBLE ACTION mode of work of the panel, where the zone expander has NO jumper on the terminal for immediate action of any zone, ONLY detectors can be connected to its circuit, and if a jumper has been placed - detectors and call points.

Example: If there are call points connected in ZONE 1, for the system to function properly there must be a jumper at its zone expander at z1 terminal, see also Figure 25.

In order to connect the zone circuits:

• Shut down the mains supply and disconnect the terminals of the main power source to the battery.

• Remove the EOL-modules from the clamps of all used zones and fit them on the last detectors.

• Connect each circuit to a separate zone on the terminal of the 4 zone expander.

• Connect the battery to the power source and apply mains power to the panel.

After powering up the panel should be in normal working mode and the *"POWER SUPPLY 230V"* LED lights up on the front panel of the fire alarm station.

NOTE: If the ***GENERAL FAULT*** **LED** lights up and a fault indicator has been activated for one or more zones on the front panel, the problem lies with the connection of the circuits in these zones. Check the polarity of the connection of the devices and whether any detector has been removed from its base.

• Activate one or more detectors to each connected zone to verify that fire signals are generated and also that the panel functions correctly.

Connecting of FAULT and FIRE Relays

The relays with changeover contacts are intended for control of low voltage devices.

Attention: No mains power should be supplied to the clamps of the FAULT and FIRE relays.
After the connection is established, test each of the circuits for external device control.

Connecting of Sounder Circuits

Figure 24 shows how to connect the sounders. One R=10K resistor is connected to the end of each circuit as shown in the diagram.

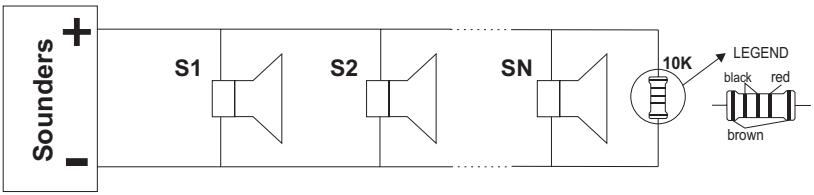


Figure 24. Connecting of sounders to SND1÷SND4 outputs of the control module and the output of the 4 sounder expander.

In order to connect the sounder circuits:

• Shut down the mains supply and disconnect the terminals of the power unit to the battery.

• One by one remove the resistors (R-10K) from the sounder connecting clamps **(SND1÷SND4)** on the main module and connect them in parallel to the last sounder of each of the circuits. Connecting the sounders to outputs of 4 sounder expander is done in an analogical manner.

• Connect the sounder circuits to the **SND1÷SND4** clamps on the main module and/or on the 4 sounder expander by observing the polarity.

• Connect the battery to the power unit and apply the main power supply.

After powering up the panel should be in normal working mode and the "Power Supply 230V" LED lights up on the front panel of the fire alarm station.

NOTE: If the ***GENERAL FAULT*** LED lights up on the front panel together with any of the **FAULTS** LEDs of the main module and/or the 4 sounder expander - **SND1÷SND4**, perhaps there is a problem in the connection. Check the polarity of the connection to the terminal of the main module of the panel, as well as the connection to the 4 sounder expander.

5. SYSTEM PROGRAMMING

5.1 Sounder Delay

This is an option for setting a delay on the Sounders activation when the panel enters "Fire" mode. The indication on the front panel - the ***FIRE*** LED, however, will light up immediately in case of a fire event, regardless of whether a delay has been set to enable the sounders. After the programmed delay period expires, during which the user can possibly find out the cause for the alarm event, the panel enables the sounders. The sounders can be silenced by pressing the SILENCE ALARM on the front panel.

In case of a false fire alarm the user must press the RESET button to return to normal working mode.

In order to program MAG4 Plus for Sounder Delay over an interval between 1 and 10 minutes:

• Examine the Table of Instructions for programming sounder delay, shown on Figure 10.

• Depending on the selected time delay, place a jumper at the **TIME DELAY** terminals, marked in Figure 10 as 1, 2, 3, and 4.

• Press RESET to introduce changes.

Example: In order to program sounder delay of 3 minutes, place jumpers on terminals 1 and 2.

5.2 Immediate Action Mode

Where in the armed site there are zones, which need the sounders and the light indicators to be enabled instantaneously, the panel provides Immediate Action working mode. This mode can be programmed individually for every single zone, depending on its designation. In Immediate Action mode, in case of an alarm event occurring in the zone, the sounders are immediately enabled, *i.e. this mode is of priority by zones compared to Double Action and Sounder Delay modes.*

In DOUBLE action mode of work of the panel, where there is NO jumper on immediate action terminals of the zone expander, ONLY detectors can be connected to each zone circuit, and if a jumper has been placed - that allows connecting both detectors and call points.

In order to program Immediate Action mode for a selected zone:

• Place a jumper on the terminal that corresponds to the number of the zone - Figure 13.

• Press RESET to introduce changes.

Example: If there are call points connected in ZONE 1, for the system to function properly there must be a jumper at its zone expander at z1 terminal.

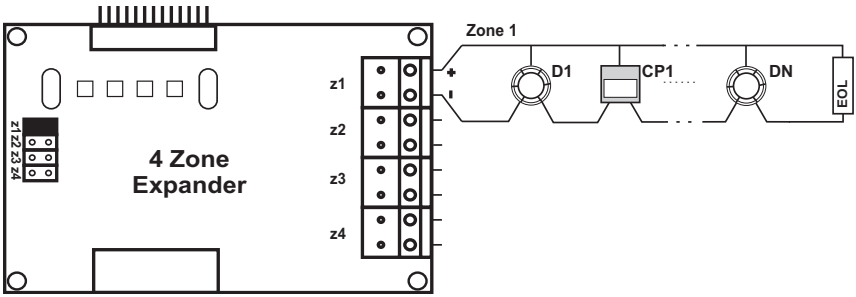


Figure 25. Example for Immediate Action Mode Programming.

5.3 Double Action Mode

The purpose of introducing a DOUBLE Action mode is to avoid false alarms. Where the Panel has been programmed to function in this mode, in the case of a fire signal, the panel does not alarm at once but waits for the alarm event to be repeated within a specific time interval - Figure 26. The time interval has been set by default and cannot be adjusted. For AE/C5-8-16 it is 3 minutes.

In order to program the fire alarm panel for Double Action mode:

• Place a jumper on the **DOUBLE** terminal of the main module - Figure 10.

• Press RESET to introduce changes.

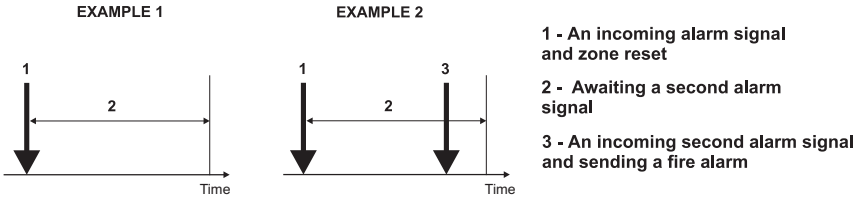


Figure 26.

EXAMPLE 1: In this case the fire panel will not activate the sounders and the signalization on the front panel because during time interval 2 no second alarm signal is generated.

EXAMPLE 2: In this case the fire panel will activate the sounders and the signalization on the front panel because during time interval 2, two alarm signals are generated.

5.4 Master Panel Mode

When connecting two AE/C5-8-16 panels in a common system, the first must be programmed as Master and the second as Slave.

In order to program the Master Panel mode:

• Place the jumper on the **Master** terminal of the main module - Figure 10.

• Press RESET to introduce changes.

The connection between the Master Panel and the AE/C5-R8 module relays is described in §4.1, and the connection between the Master Panel and the Slave - in §4.2.

5.5 Repeater Panel Mode

In order to program the Repeater Panel mode:

• Place the jumper on the **Slave** terminal of the main panel module - Figure 10.

• Press RESET to introduce changes.

The connection between the Master Panel and the Slave is described in §4.2.

5.6 Single Panel Mode

No jumper is placed on the Master or Slave terminals in Single Panel Mode of the AE/C5-8-16.

In order to program the Single Panel mode:

• Check whether there are jumpers placed on the **Master** or **Slave** terminals. Remove them if any.

• Press RESET to introduce changes.

6. OPERATION INSTRUCTIONS

6.1 Initial Start-Up

The panel is enabled by supplying main power. An initial start-up procedure will begin to execute, which runs as follows:

1. **For about 2 seconds all LEDs** will light up; it is possible for a sound signal to be activated.

2. **All LEDs light up for 1 second** - on the main panel (except for ***uPFault***) and for the zone or sounder expanders (the dichromatic LEDs of the zone/ sounder expanders light up in orange). The sound signalisation is activated.

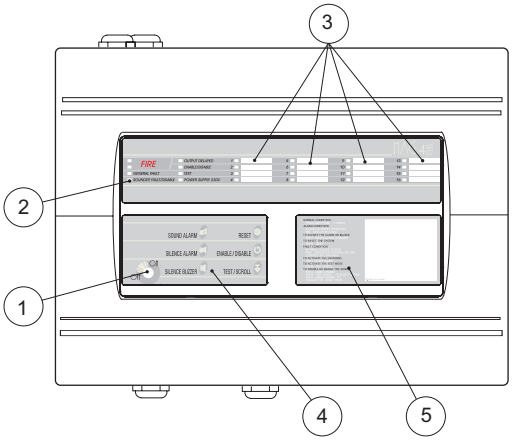
3. **For about 5 seconds** the following LEDs light up:
   - **On the main module** - all but ***uPFault***;
   - **On the 4 zone expanders** - the LEDs of zones programmed in Immediate Action mode (i.e. with a placed jumper) light up in orange, and all the rest - in red;
   - **On the 4 sounder expanders** - the Fault LED (***SND1 - SND4***).

4. **The following LEDs light up for 1 second**:
   - **On the main panel** - all but ***uPFault*** and ***Fire***;
   - **On the 4 zone expanders** - all LEDs are extinguished;
   - **On the 4 sounder expanders** - the Fault LED (***SND1 - SND4***).

After the initial setting procedure is over all LEDs, except for the green ***POWER SUPPLY 230V*** LED must go out.

The Fire Alarm panel is in **Normal Operating mode**.

6.2. Front Panel



① - Switch for changing over between Access Levels 1 and 2. In **OFF** position (**Access Level 1**) only the SILENCE BUZZER button is active and in **ON** position (**Access Level 2**) all buttons are active.

② - Working modes LED indication.

③ - LED indication on zone status.

④ - Control buttons.

⑤ - Instructions for working with the station.

6.3 Buttons

Button	*Description*
SOUND ALARM	Activating sounders.
SILENCE ALARM	Deactivating sounders.
SILENCE BUZZER	Deactivating the internal buzzer.
RESET	Initializing of the start-up procedure. Confirming the introduced changes.
ENABLE / DISABLE	Enabling / Disabling of zones / sounders.
TEST / SCROLL	Test Mode; scroll forward zones.

6.4 LED Indication

LED	*Description*
FIRE *(two red)*	*Fire in the premises.*
GENERAL FAULT *(yellow)*	*Main Fault indicator.*
SOUNDER FAULT/DISABLE *(yellow)*	*Lights permanently at disabled sounders.* *Blinks at trouble in the sounder circuit.*
OUTPUT DELAY *(yellow)*	*Lights permanently at programmed outputs time delay (a jumper is put on the TIME DELAY terminal).*
ENABLE/DISABLE *(yellow)*	*Lights permanently at disabled zones/sounders.* *Blinks during enabling/disabling of zones or sounders.*
TEST *(yellow)*	*Blinks during "One Man" Test of a zone.*
POWER SUPPLY 230V *(green)*	*Blinks permanently in normal operating mode, indicates presence of main power supply 230V.*
LED 1- 16 *(yellow-red)*	*Zone indication.* *Lights up in red at Fire in the zone.* *Lights up in yellow at disabled zone.* *Blinks in yellow:* *- 1 blink per second at trouble in the zone;* *- 2 blinks per second at "One Man" Test and disabling of zones.*

6.5 Sound Signalization

• **Short beeps** - After pressing the RESET and upon the initial start-up of the panel

• **Continuous beep** - Fire and/ or Fault status. The signalisation can be stopped by pressing the SILENCE BUZZER button, but the LED indication remains.

• **Interrupted beep** - After pressing the ENABLE/DISABLE button to allow or disallow zones/ sounders and the TEST/SCROLL button to access “One Man” test mode of zones. The signalisation can be stopped by pressing the SILENCE BUZZER button, but the LED indication remains.

6.6 Service Modes

Zone Enable / Disable

Each zone of MAG4Plus can be enabled or disabled.

To disable a zone:

• Press ENABLE/DISABLE button:	***DISABLE/ ENABLE*** *LED blinks. The* ***ZONE 1*** *LED blinks in yellow (2 blinks per second) if* ***ZONE 1*** *is enabled and lights permanently if* ***ZONE 1*** *is disabled.*
• Press TEST/SCROLL button, until you reach the zone which has to be disabled:	*The respective zone LED blinks in yellow (2 blinks per second).*
• Press ENABLE/DISABLE button:	*The LED of the disabled zone lights permanently in yellow.*
• Press RESET button:	*That will run the procedure for initial start-up of the panel (§6.1). At this point the zone is disabled.*

To enable a zone:

• Press ENABLE/DISABLE button:	***DISABLE/ ENABLE*** *LED blinks. The* ***ZONE 1*** *LED blinks in yellow (2 blinks per second) if* ***ZONE 1*** *is enabled and lights permanently if* ***ZONE 1*** *is disabled.*
• Press TEST/SCROLL button until you reach the disabled zone:	*The LED of the disabled zone lights permanently in yellow.*
• Press ENABLE/DISABLE button:	*The zone LED will start blinking in yellow (2 blinks per second).*
• Press RESET button:	*That will initialize the start-up procedure and introduce the changes (§6.1). At this point the zone is enabled.*

Sounders Enable/Disable

To disable the sounders:

• Press ENABLE/DISABLE button: — ***DISABLE/ ENABLE*** *LED blinks. The* ***ZONE 1*** *LED blinks in yellow (2 blinks per second) if* ***ZONE 1*** *is enabled and lights permanently if* ***ZONE 1*** *is disabled.*

• Press TEST/SCROLL button until you reach the last zone in the system - 4, 8, 12 or 16.

• Press TEST/SCROLL button once again: — *The* ***SOUNDER FAULT/ DISABLE*** *LED will start blinking.*

• Press ENABLE/DISABLE button: — *The* ***SOUNDER FAULT/ DISABLE*** *lights up permanently.*

• Press RESET button to exit the sounder disabling mode: — *That will initialize the start-up procedure and introduce the changes (§6.1). At this point the sounders are disabled.*

You can exit the sounder disabling mode and by pressing the TEST/SCROLL button, as in that case the procedure for initial start-up will not run.

To enable the sounders:

• Press ENABLE/DISABLE button: — ***DISABLE/ ENABLE*** *LED blinks. The* ***ZONE 1*** *LED blinks in yellow (2 blinks per second) if* ***ZONE 1*** *is enabled and lights permanently if* ***ZONE 1*** *is disabled.*

• Press TEST/SCROLL button until you reach the last zone in the system - 4, 8, 12 or 16.

• Press TEST/SCROLL button once again: — *The* ***SOUNDER FAULT/ DISABLE*** *LED lights up permanently in yellow.*

• Press ENABLE/DISABLE button: — *The* ***SOUNDER FAULT/ DISABLE*** *will start blinking.*

• Press RESET button to exit the sounder enabling mode: — *That will initialize the start-up procedure and introduce the changes (§6.1). At this point the sounders are enabled.*

You can exit the sounder enabling mode and by pressing the TEST/SCROLL button, as in that case the procedure for initial start-up will not run.

“One Man” Test

The “One Man” Test mode gives the installer the possibility to test the efficiency of the system - whether the detectors react to smoke, heat, etc.

To “One Man” Test a zone:

• Press TEST/SCROLL button:	***TEST*** *LED will start blinking.* *The* ***ZONE 1*** *LED blinks in yellow (2 blinks per second).* ***ZONE 1*** *is in test mode.* *Test a detector from this zone whether it react to smoke, heat, etc.* *MAG4 Plus will activate the sounders for about 2 seconds to confirm the provoked fire alarm.*
• Press TEST/SCROLL button to continue with the system testing:	***TEST*** *LED will continue blinking.* *The* ***ZONE 1*** *LED lights out (the zone is not longer in test mode).* *The* ***ZONE 2*** *LED blinks in yellow (2 blinks per second).* ***ZONE 2*** *is in test mode.* *Test a detector from this zone whether it react to smoke, heat, etc.* *MAG4 Plus will activate the sounders for about 2 seconds to confirm the provoked fire alarm.*

Continue the system testing by pressing the TEST/SCROLL button. The exit from the “One Man” Test mode is automatic after the end of the test procedure in the last zone, or at any time by pressing RESET button.

A sound signalization is activated at every Service Mode entering . The signalization is deactivated by pressig SILENCE BUZZER button.

7. INDICATION

7.1 Fault Indication

Indication on the front panel	Indication on the control module	Fault description
GENERAL FAULT + blinking in yellow (1 blink per second) LED of the zone, where the fault is occurred.*	-	- Zone fault - open or short circuit. - Detector head removed.
GENERAL FAULT On + blinking ***SOUNDER FAULT/ DISABLE***	LED ***SND1***, ***SND2***, ***SND3*** or ***SND4***, depending on the number of the circuit.**	Sounder circuit fault - open or short circuit.
GENERAL FAULT On + ***POWER SUPPLY 230V*** Off	***AC*** LED lights permanently.	Mains supply loss.
GENERAL FAULT On + ***POWER SUPPLY 230V*** On	***AC*** LED blinking.	Battery charging fault.
GENERAL FAULT	***BATT LOW/LOST*** LED lights permanently.	Battery loss.
GENERAL FAULT	***BATT LOW/LOST*** LED blinking.	Low battery charge level.
GENERAL FAULT	***RPT*** LED***	- No connection with the Repeater panel. - Repeater fault.
GENERAL FAULT	***AUX*** LED	Auxiliary supply fault.
GENERAL FAULT	***EARTH*** LED	Short circuit to earth.
GENERAL FAULT	***uPFAULT*** LED	Processor fault.

* It is possible for a fault to arise simultaneously in several zones - the LEDs of the zones with fault will blink.

** Where the fault has occurred in the sounder circuit of the expander, the **SND1**, **SND2**, **SND3** or **SND4** LEDs of the specific module, depending of the number of the circuit.

*** Only in **Master** or **Slave** modes.

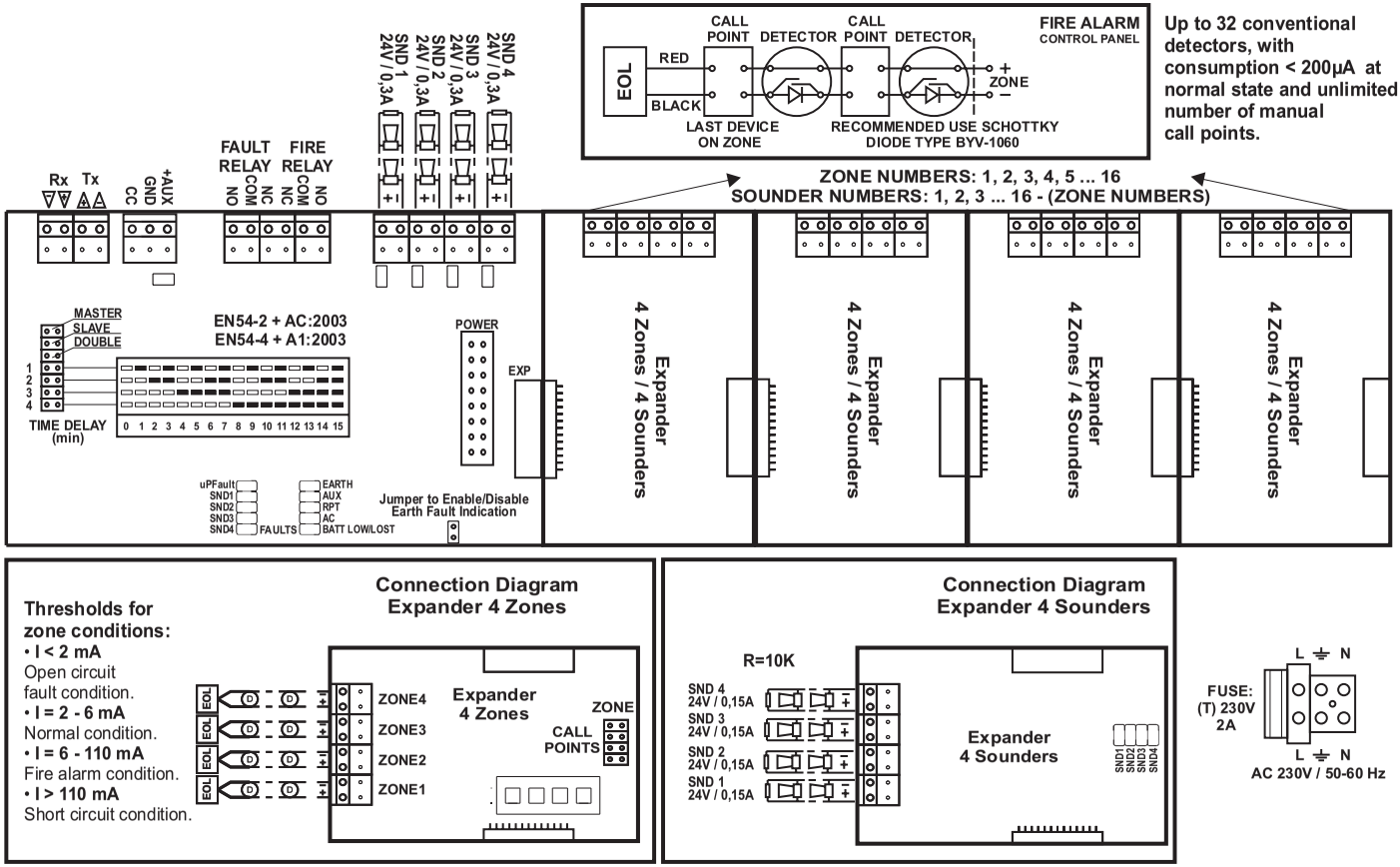
The fuses used by the system are self-recoverable with the exception of those for the central power supply and for the battery. The front panel records by indication on the ***GENERAL FAULT*** LED should any fuse be activated (interrupted), where the fuse is restored, the panel shall automatically return to **NORMAL MODE**.

NOTE: The fault indication does not show immediately. There is a delay in reporting depending on the type of the fault. After the cause of the fault is corrected the panel automatically returns to NORMAL MODE.

7.2 Indication of the Operation Modes

Operation Mode	LED Indication	Sound Signalization
Normal Mode	The ***POWER SUPPLY 230V*** green LED lights on the front panel.	-
FIRE A ***FIRE*** relay is activated.	• The two red ***FIRE*** LEDs light up simultaneously - the FIRE LED and the zone/zones LED (also in red) where the alarm occurred. • The LEDs will remain lit even after the SILENCE BUZZER button has been pressed.	• The sounders are activated. They can be disabled by pressing the SILENCE ALARM button and can then be enabled by pressing the SOUND ALARM. • The internal buzzer is activated. It is disabled by pressing the SILENCE BUZZER button.
FAULT A ***FAULT*** relay is activated.	• The ***GENERAL FAULT*** yellow LED and the fault LED according to the Table in §7.1. light up simultaneously.	• The internal buzzer is activated. It is disabled by pressing the SILENCE BUZZER button.
TEST Tests the system for proper operational efficiency	• The two yellow LEDs blink simultaneously - the ***TEST*** LED and the zone LED (also in yellow, 2 blinks per second) where the test is conducted.	• The internal buzzer is activated. It is disabled by pressing the SILENCE BUZZER button.
DISABLE Disabled zones and/or sounders.	• Yellow LED lights up ***ENABLE/DISABLE***. • The respective zone LEDs light up in yellow to indicate disabled zones. • The yellow ***SOUNDER FAULT/DISABLE*** LED lights up to indicate disabled sounders.	-

CONNECTION CIRCUIT



FIRE ALARM RECORD

Installation address.....
.....

Contact person:.....

Telephone:.....

Fax:.....

Date completed:.....

Commissioned by.....

Contract reference:.....

Sevice ontervals: Monthly / Quarterly / Half yearly / Annually.

ZONE №	LOCATION	DETECTOR TYPE and QUANTITY PER ZONE				
		Ion	Ph	RoR	F/T	CP
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
TOTAL:						

Ion - Ionisation sensor
Ph - Photoelectric sensor
RoR - Rate of Rise sensor
F/T - Fixed Temperature sensor
CP - Call Point

System installed by: .....

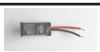
Telephone/Fax: .....

SERVICE RECORD

Date Visit Completed	Zones Tested	Faults Rectified	Signature of Engineer	Next Due
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		Name:	
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		Name:	
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		Name:	

FIRE ALARM EVENT LOG

Date	Time	Fire	Zone number	Fault yes/no and Type	Action Taken	Name

AE/C5-8-16 Spare Parts Kit			
1.		Resistor 10K ±1%, 0,25W	2
2.		Anchors 6x30mm	4
3.		Fuse 2A, F-Type 5x20mm	1
4.		Fuse 7A (7,5A), Automotive type	1
5.		Screw M4x40 cross slot DIN7985	4
6.		Self tapping screw M4,2x35 cross slot DIN7981	4
7.		Washer M4 DIN522	4
8.		Screw M4x30 cross slot DIN965	2
9.		Jumper	2
10.		Cable tie 2,5/160mm	2
11.		Light guide for indication	4
12.		EOL - module	2
13.		Plastic cap	21
4 Zone Expander Spare Parts Kit			
14.		Screw M3x6 DIN7985	4
15.		Light guide for indication	1
16.		4 Zone expander terminal module with EOL - modules	1
17.		Jumper	1
4 Sounder Expander Spare Parts Kit			
18.		Screw M3x6 DIN7985	4
19.		Light guide for indication	1
20.		4 Sounder expander terminal module with 10K resistors.	1

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