

**ZEUS**



# Fire Suppression System for Professional Kitchens

Instruction Manual



# Typical "ZEUS" fire suppression system

Dark Blue Cable: 138°C | Light Blue Cable: 180°C | White Cable: 250°C



## Technical Description

The equipment functions in both professional and domestic kitchens with the use of Electrical Power and/or of Gas-Propane. In these areas, large quantities of flammable materials are used, such as cooking oils and fats, which are especially dangerous to ignite.

Based on the relevant legislation, the appropriate extinguishing agent used for such fires has to be of category (F) – Cooking Oils & Fats.

The fire extinguishing agent we use, commercially named as FClass Solution/Wet Chemical, is approved by the Fire Brigade Headquarters (Protocol Number 56404F.701.6, 9/11/2009) for suppression of category (F) and (A) fires – Cooking Oil & Fats and Solid Fuels.

This fire extinguishing material (F-Class Solution/Wet Chemical) is a carboxylic acid salt solution which suspends fires by creating a saponified layer (crust) that prevents oxygen from interacting with the burning surface, cools down the area and eliminates the possibilities for re-ignition. The low acidity level (PH: 9 at 20°C) prevents any damage caused to surfaces made of stainless steel.

The Electromechanical Fire Suppression System with the commercial name “ZEUS” uses the F-Class Solution/Wet Chemical extinguishing agent and the most Advanced, Efficient, Reliable & Certified Fire Detection Solution resulting in the Direct & Effective (F) category fire suppression for Professional Kitchens.

Fire is detected by an approved (UL/FM) Linear Heat Detection Cable of activation temperatures 138°C, 180°C or 250°C, the installation of which is particularly quick & simple. This Cable is connected with a Fire Detection Panel that controls the Automatic Operation of the System. More precisely, the Certified Cable offers unique Reliability & Safety since it can detect the potential base of the fire in all the surface of the protected Kitchen and the Exhaust Hood, as well as in the Exhaust Airways.

The great advantage of the detection cable, compared to the detection pneumatic cables, is that it is not under pressure, and as a result the possibilities for alterations due to temperature changes in the Exhaust Hood are minimal. Its life cycle is 10 years and it is almost maintenance free.

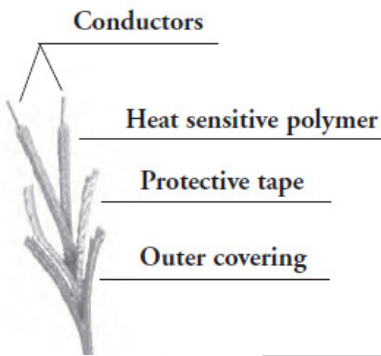
The Detection Cable support mounting is realized with stainless steel cable ties on to the Hydraulic Extinguishing Agent Distribution Network. Especially simple is the connection of cables of different activation temperatures using porcelain splice connectors.

The big competitive advantage of the Fire Detection Panel is based on the fact that it is designed in order to be the simplest of its kind regarding installation procedures and the most reliable regarding performance - *extremely simple external wiring connections with simple Electrical System Components as well as continuous monitoring of the Linear Heat Detection Cable.*

Fire Suppression System “ZEUS” for Class (F) fires destined to Professional Kitchens is the most Reliable and Convenient Solution for the End User, whereas it offers by far the Safest, Fastest, Simplest & most Efficient Installation Process.

# System Operation

Linear Heat Detection Cable is a proprietary cable that detects heat anywhere along its length. The sensor cable is comprised of two steel conductors individually insulated with a heat sensitive polymer. The insulated conductors are twisted together to impose a spring pressure between them, then wrapped with a protective tape and finished with an outer jacket suitable for the environment in which the Detector will be installed.



*Linear Heat Detection Cable* is a fixed temperature sensor and is therefore capable of initiating an alarm once its rated activation temperature is reached. At the rated temperature, the heat sensitive polymer insulation yields to the pressure upon it, permitting the inner conductors to move into contact with each other thereby initiating an alarm signal. This action takes place at the first heated point anywhere along the Detector's length. It does not require that a specific length be heated in order to initiate an alarm nor is system calibration necessary to compensate for changes in the installed ambient temperature. Linear Heat Detection Cable provides the advantages of line coverage with point sensitivity.

In case of fire, during the Automatic Operation of the System, the Detection Cable activates the Fire Detection Panel which executes constant visual and acoustic alarm warning.

Then, after a preconfigured time delay of 40" (40 seconds), which offers to the user the possibility to extinguish the fire using other means (i.e. 2Lt F-Class Portable Fire Extinguisher or Fire Blanket), the Panel activates the Detonator of the Fire Extinguisher's Valve.

Detonator's impact opens the valve and the extinguishing agent starts flowing from the fire extinguisher through the Hydraulic Copper Pipe Network to Discharge Nozzles (of different flow rates depending on the protected device-area), from which it is discharged on the protected devices-areas in the kitchen in the form of spray. The discharge of the Extinguishing Agent is realized simultaneously from all the Nozzles, thus preventing the fire transmission.

The Fire Detection Panel has a Built-In Autonomy Battery lasting a) 90 minutes fully operating and b) 72 hours in idle position, hence ensuring the system's activation in case of electric power shut down in the Kitchen area.

During the time delay, which may be reduced or increased by the installer (from 0sec up to 80sec), the end user can cancel the system's activation by pressing the Emergency Stop Button offering a) prevention of agent discharge in case of false alarm and b) time for suppressing the fire by other means (e.g. portable extinguisher or fire blanket).

"ZEUS" Fire Suppression System may be activated manually with the following ways:

1. Extinguish Button built-in the MOB-2001 Fire Detection Panel.
2. Remote Manual Call Button.
3. Pull down the fire extinguisher's valve rod.

Shut down of Electrical Power on selected Electrical Devices (including the Duct fans) and of Gas/Propane can be executed by a "Mains Interruption Relay" which is built-in the Detection Panel.

# System Components

- CE Approved Local Application Fire Extinguishers with Certified Valve of Automatic and Manual Activation
- Cylinders with Internal Plastic Coating of 6Lt, 9Lt, 11-16Lt, 17-20L and 21-35Lt Extinguishing Agent Capacity
- Stainless Steel Cylinders of 10Lt and 11-20Lt Extinguishing Agent Capacity
- Heavy duty Extinguisher brackets
- Certified Detonator used for the Automatic Activation of the Extinguisher
- Stainless Steel Flexible Hose for connecting the Extinguisher Valve Output to pipe network
- Linear Heat Detection Cable of Activation Temperatures 138°C, 180°C or 250°C
- Porcelain Splice Connectors for connecting Detection Cables of different Activation Temperatures
- 2.2K Resistor for monitoring the Proper Operation of the Detection Line
- Remote Control Extinguish Button
- ½" Male Thread Stainless Steel Discharge Nozzles of different Flow Rates with inflammable Silicon Caps
- Fire Detection-Suppression Panel with:
  - Autonomy Battery
  - Siren-Beacon.
  - Manual System Activation Button.
  - Detonator Time-delay set by factory to 40 seconds (it can be set from 0-80secs)
  - Factory connected System Emergency Stop button with 2m cable.
  - Factory connected White Cable for Power Supply with Suko Plug (2m length).
  - Factory connected White Cable with Plastic Splice Connector of 2 contacts for connecting the Detonator of the System (2m length).
  - Factory connected Orange Cable with Plastic Splice Connector of 2 contacts for connecting the Linear Heat Detection Cable (2m length).
  - Output Relay for Electrical Power Shut down of Selected Kitchen Appliances and Air Duct Fans as well as for Shut down of fuel (gas).

# Discharge Nozzles

The Discharge Nozzles (½" Male Thread) are made of Stainless Steel and come with white colour incombustible Silicon Protection Cap.



There are available five (5) nozzles of different flow rates A2 (1 Flow Unit), A3 (1.5 Flow Unit), A4 (1.5 Flow Unit), A8 (2 Flow Units) and A9 (2 Flow Units) discharging the extinguishing agent in mist propagation form (use of Internal Filter mounted by Metal Snap Ring).

Each nozzle is designed so that to protect kitchen devices/appliances according to the following table:

Device	Max Dimension	Discharge Nozzles	Flow Units
Air Duct	122cm Diam/381 Perim	3pcs-A3	4.5
Air Duct	81cm Diam/254 Perim	2pcs-A3	3
Air Duct	41cm Diam/127cm Perim	1pc-A3	1.5
Air Duct	61cm Diam/190cm Perim	1pc-A9	2
Exhaust Hood	305cm Length	1pc-A2	1
Deep Fryer	(48 x 64) cm	1pc-A9	2
Cooking Plate	(76 x 122) cm	1pc-A8	2
Cooking Plate	(76 x 107) cm	1pc-A9	2
Cooking Plate	(76 x 91) cm	1pc-A2	1
Electrical Oven	(31 x 61) cm	1pc-A2	1
Electrical Oven	(61 x 61) cm	1pc-A8	2
Oven	(72 x 72) cm	2pcs-A4	1.5
Electrical Grill	(52 x 61) cm	1pc-A2	1
Propane/Gas Grill	(52 x 61) cm	1pc-A2	1
Ceramic Grill	(52 x 61) cm	1pc-A2	1
Deep Frying Pan	(35 x 61) cm	1pc-A2	1
Grill-Charcoal	(61 x 72) cm	1pc-A3	1.5
Grill-Wood	(61 x 72) cm	1pc-A3	1.5
Kebab Device	(78 x 73) cm	2pcs-A4	1.5

# Calculation Method

The engineer that elaborates the design of the system has to choose between Local or Total Flooding method.

On a Local Flooding System, the Number and the Type of the Discharge Nozzles installed at 1-1.2m height on top of Kitchen Appliances/Devices, parallel with the Exhaust Hood and inside the Exhaust Ducts are determined according to the previous table.

On a Total Flooding System, the discharge nozzle A8 is installed every (50cm) longitudinally to the Exhaust Hood at 1-1.2m over Kitchen Appliances/Devised. Only in Parallel with the Exhaust Hood and inside the Exhaust Ducts the nozzles are selected according to the previous table.

On both system types the quantity of the extinguishing agent depends on the selected discharge nozzles.

## EXAMPLE

In a Professional Kitchen there are there is the following equipment:

- One (1) Air duct: 81 cm diameter
- One (1) Exhaust Hood: 305 cm length
- One (1) Deep Fryer: (48x64) cm
- One (1) Cooking Plate: (76x122) cm
- One (1) Oven: (72x72) cm
- One (1) Deep Frying Pan: (35x61) cm
- One (1) Grill-Charcoal: (61x72) cm

## LOCAL FLOODING METHOD

**STEP 1:** According to the Kitchen Equipment the Type and Number of Discharge Nozzles are the following:

Device	Max Dimension	Discharge Nozzles	Flow Units
Air Duct	81cm Diam/254 Perim	2pcs-A3	3
Exhaust Hood	305cm Length	1pc-A2	1
Deep Fryer	(48 x 64) cm	1pc-A9	2
Cooking Plate	(76 x 122) cm	1pc-A8	2
Oven	(72 x 72) cm	2pcs-A4	1.5
Deep Frying Pan	(35 x 61) cm	1pc-A2	1
Grill-Charcoal	(61 x 72) cm	1pc-A3	1.5

**STEP 2:** The Flow Units Sum of the selected nozzles is:

► **Flow Units Sum:**  $3 + 1 + 2 + 2 + 1.5 + 1 + 1.5 = 12$  Flow Units

**STEP 3:** Divide the sum of flow units with the constant number 0.8 so that to calculate the Quantity of the Extinguishing Agent:

► **Extinguishing Agent Quantity:**  $12 / 0.8 = 15$  ltr

**STEP 4:** Choose the fire extinguisher of the system according to the calculated Extinguishing Agent Quantity:

► **Extinguisher Type:** 19.5 ltr Cylinder with 15 ltr Extinguish Agent



## TOTAL FLOODING METHOD

**STEP 1:** On this method, over the Kitchen Appliances/Devices (longitudinally of the Exhaust Hood) are installed the A8 Discharge Nozzle in 50cm distance to each other. The Engineer who elaborates the design of the system must leave 30cm gap from each Exhaust Hood End and then calculate the Number of A8 Discharge Nozzles needed for the Appliances/Devices located under the Exhaust Hood.

► **Number of A8 Nozzles:**  $(305 \text{ cm} - 60 \text{ cm}) / 50 \text{ cm} = 4.9 \text{ pcs} (\approx 5 \text{ pcs})$

*\* In case of decimal number go to the next integral number*

**STEP 2:** The Type and Number of the Discharge Nozzles protecting the Exhaust Hood and the Air Duct of the kitchen are the following:

Device	Max Dimension	Discharge Nozzles	Flow Units
Air Duct	81cm Diameter	2pcs-A3	3
Exhaust Hood	305cm Length	1pc-A2	1

**STEP 3:** The Flow Units are determined by the A8 Nozzles calculated in Step 1 & the Nozzles calculated in Step 2:

► **Flow Units Sum:**  $(5 \text{ pcs A8} \times 2) + 3 + 1 = 14 \text{ Flow Units}$

**STEP 4:** Divide the sum of flow units with the constant number 0.8 so that to calculate the Quantity of the Extinguishing Agent:

► **Extinguishing Agent Quantity:**  $14 / 0.8 = 17.5 \text{ ltr}$

**STEP 5:** Choose the fire extinguisher of the system according to the calculated Extinguishing Agent Quantity:

► **Extinguisher Type:** 19.5 ltr Cylinder with 17.5 ltr Extinguish Agent

On the specific example the calculated Extinguish Agent Quantity on the Local Flooding Method is 15 ltr, while the relevant quantity on the Total Flooding Method is 20 ltr.

The difference in Litres arises from the fact that in Total Flooding Systems the whole area under the Exhaust Hood is being protected (as a Unique Appliance/Device) by the A8 Discharge Nozzle that offers Maximum Protection Coverage while in Local Flooding Systems each Appliance/Device under the Exhaust Hood is being locally protected by a Discharge Nozzle selected according to Appliance/Device Type & Size.



# Hydraulic Pipe Network

Copper tubes ( $\phi 18$ ) and Hydraulic Components (nipples, 90° corners, tee pieces) consists the Hydraulic Pipe Network of “ZEUS” Suppression System that leads the extinguishing agent from the fire extinguisher to the nozzles from where it is been discharged.

Installation starts with the mounting of the fire extinguisher on to the heavy duty bracket. The fire extinguisher must be installed into an Easy-Access-Point inside the Kitchen in a safe distance from heat surfaces while the room temperature should not exceed the 60oC.

A Flexible Stainless Steel Hose (female thread at both ends) is used for the connection of the Extinguisher Valve Outlet with the Hydraulic Pipe Network.

Soft Bearing is used for the construction of the Hydraulic Pipe Network – the soft bearing must be according the following specifications:

Freezing Point	Melting Point	Colour	Elogation	Durability
238°C	332°C	Silver	48%	6600–7400psi

According to Greek National Institute of Copper, the Maximum Allowable Pressure of  $\phi 18$  Copper Tubes (as is indicated to the below table) overlaps the Internal Pressure of the Fire Extinguisher that is 15bar, and so there is no chance of vitiation/destruction of the Hydraulic Pipe Network during System Activation & Agent Discharge.

diameter x thickness	Internal diameter	kgr/m	Max Pressure
$\phi 18 \times 0.80$ mm	16.4 mm	0.384	056 bar
$\phi 18 \times 1.00$ mm	16.0 mm	0.475	071 bar

The discharge nozzles must be installed at 1 - 1.2 m height above the Kitchen Appliances/ Devices. In parallel with the Exhaust Hood it must be installed an A2 Discharge Nozzle.

As indicated on the Discharge Nozzle Table, A2 Discharge Nozzle can protect up to 305 cm Exhaust Hood Length, and so, if the Exhaust Hood is longer than 305 cm the number of A2 Nozzles must be calculated accordingly. The Discharge Nozzles protecting of the Air Ducts of the Exhaust Hood must be installed at 20 cm depth inside each Air Duct.

The Silicone Protection Cap of the Discharge Nozzles must never be removed because it prevents moisture, vapors, grease and other particles getting & stuck on the small hole from where the agent is been discharged.

The mounting of the Linear Heat Detection Cable takes place after the construction of Hydraulic Pipe Networks.

\* The Pipe Network must not exceed nine (9) metres length

\*\* Copper Tubes & Network Components are not supplied by our company.

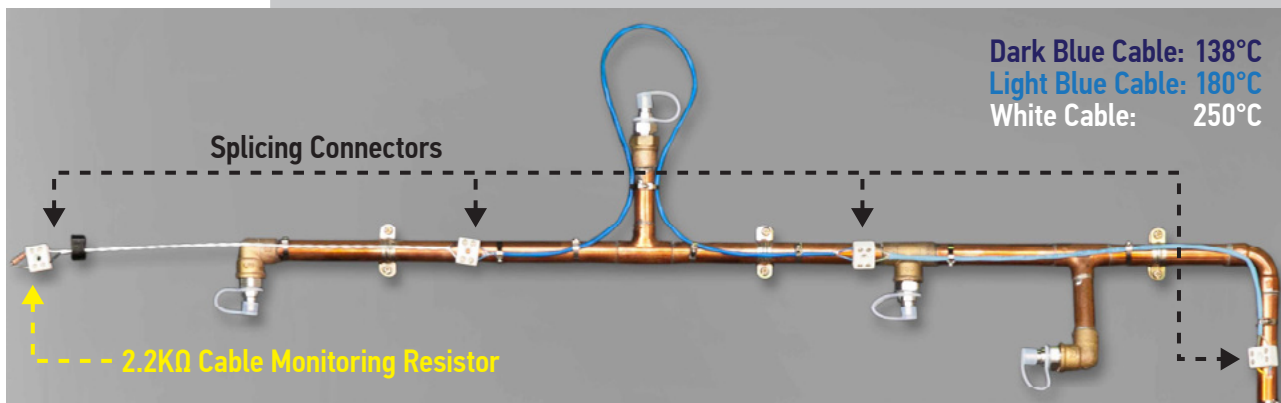
# Linear Heat Detection Cable

Heat Detection Cable is a fixed temperature sensor of activation temperatures 138°C, 180°C or 250°C. It is comprised of two steel conductors individually encased in a heat sensitive polymer. The encased conductors are twisted together to impose a spring pressure between them, then spirally wrapped with a protective tape and finished with an outer jacket to suit the installation environment.

At the rated temperature, the heat sensitive polymer insulation yields to the pressure upon it, permitting the inner conductors to move into contact with each other thereby initiating an alarm signal and the Fire Detection-Suppression Panel is getting activated.

The selection of Activation Temperature of the Linear Heat Detection Cable in each kitchen must be performed after Temperature Measurement (preferably digitally) at 1 - 1.2 m height above the under protection Kitchen Appliances/Devices when the kitchen is in full operation.

Practically, the Installation of the Cable is Simple & Fast procedure as the Cable is mounted by Stainless Steel Straps (Fasteners) on the Copper Tubes of the Hydraulic Network of the System (see photo below).



Fasteners should typically be spaced every 1 - 1.5 m or as may be necessary to prevent the wire from excessive sagging which puts undue stress on the wire at the fastening points. Improper installation and fastening may also subject the Detector to physical damage.

Fasteners which are overtightened apply excess stress that will eventually cause insulation damage to the Detector resulting in unwanted alarms.

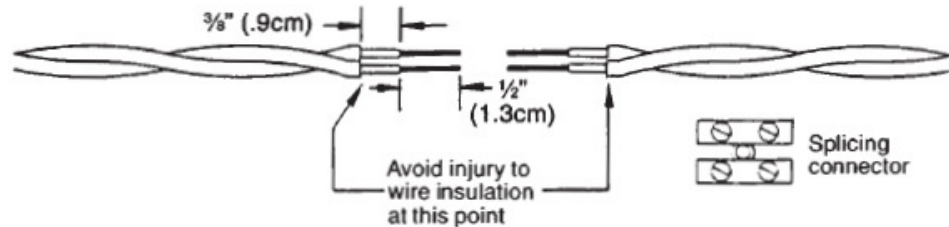
## IMPORTANT INSTALLATION INSTRUCTIONS

- Do not over tighten the fasteners as this may breach the outer jacket or crush the inner insulation, causing unwanted alarms. All fasteners must allow the wire to expand and contract with temperature changes.
- Do not over stretch the Cable during installation - some wire "sag" between fasteners is normal.
- Do not make 90° bends in the detector.
- Do not hold the wire with pliers to make bends. All bends should be made with the fingers and consist of rounded turns with a minimum 6.4 cm radius.
- Do not use wire nuts or other similar devices. All connections must be made via porcelain splicing connectors provided by our company.
- Do not paint this detector, per UL and FM requirements.

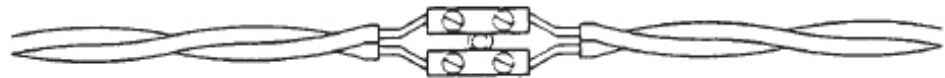
# Linear Heat Detection Cable (continue)

Slicing Porcelain Connectors of two (2) contacts used to connect Cables of different activation temperatures. The connection is based on the following steps.

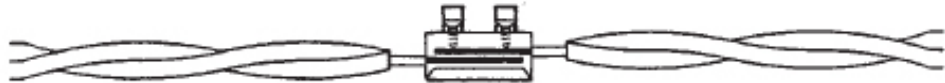
**Step 1:** Remove insulation from each wire leaving 1/2" (1.3 cm) of bare Linear Heat Detector conductor, preserving 3/8" (0.9 cm) of insulation from bare wire back to the covering.



**Step 2:** Install wires as shown below making sure the entire 1/2" (1.3 cm) portion of bare Linear Heat Detector conductor is embedded in splicing connector.



**Step 3:** Secure Linear Heat Detector by tightening the connector screws. Plastic screw turrets may be trimmed with snips or utility knife for easier taping.



**Step 4:** Using 10.1 cm - 12.7 cm of Electrical Tape wrap the splice. Stretch and overlap each wrap of tape.



The installer must ensure proper connections and conductors proper insulation (by Electrical Tape) - in case that the conductor is not properly insulated during contact with metal surface (e.g. exhaust hood surface) there will be triggered false alarm signal.

The continuous monitoring of Thermo Sensitive Cable (from the MOB-2001 Control panel) is essential as it ensures notification (Visual and sound different form compared to that of the fire-alarm) to the end user when cutting or disconnection.

The Detection Cable is been monitored by the MOB-2001 Panel with the use of an Electric Resistor 2.2K at the end of the detection line (outside the exhaust hood).

For this reason, the designer should ensure that the Cable runs are continuous – branched are forbidden because the surveillance from the MOB-2001 will not longer exist.

The engineer must ensure that the Linear Heat Detection Cable adequately covers the whole area under the Exhaust Hood (over Kitchen Appliances/Devices), the Exhaust Hood itself and Air Ducts of the Exhaust Hood.

## Linear Heat Detection Cable (continue)

The great advantages of the Linear Heat Detection Cable compared to Pneumatic Heat Detection Cables widely used in other Suppression Systems are indicated in the following table:

Description	MOBIAK's Cable	Pneumatic Cables
Different Activation Temperatures	YES	NO
Cable Part replacement	YES	NO
Detection Device without Pressure	YES	NO
Maintenance Free	YES	NO
System Free from Moving Parts	YES	NO
Extinguish Time delay Option	YES	NO

As indicated on the above table, «ZEUS» system offers to the end user System Activation Time-delay Option (which can not exist in systems using Pneumatic Detection Tubes-Wires). This option is critical for the end user because it offers System Activation Cancel Option incase of a) false alarm and b) killing the fire with other means (e.g. Portable F-Class Extinguishers, Fireproof Blanket).

# Fire Detection Panel MOB-2001

The MOB-2001 is a Fire Detection-Suppression Panel that incorporates a siren, beacon, manual operation call button, adjustable detonator activation delay and an output relay with volt-free contacts (for shut down the Power Supply of Electrical Devices & Duct Fans as well as the Fuel Valve).

The device can be operated either manually or automatically. Manual activation is achieved by pressing the manual operation call button.

The automatic activation is achieved by the Linear Heat Detection Cable that is connected to MOB-2001 (Splicing Connector of the Orange Cable).

The panel incorporates a Siren silence button which is used to only deactivate the siren during an alarm. The output relay (stated in the 1st paragraph) is activated every time that the panel is activated either automatically or manually by its built-in Activation Button.

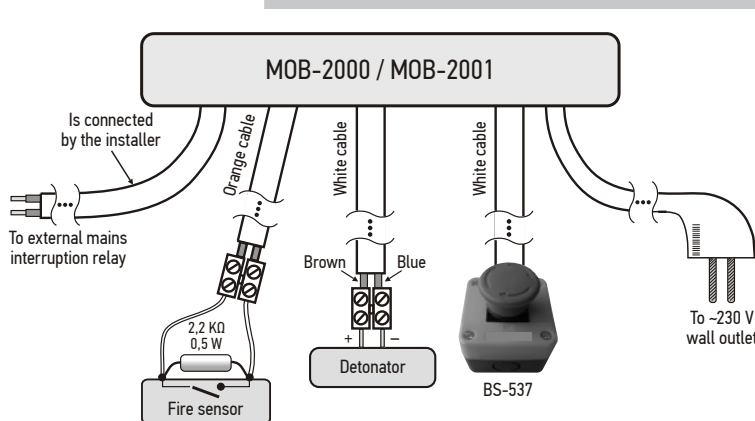
**IMPORTANT:** The Fire Detection-Suppression Panel MOB-2001 is compatible only with the Linear Heat Detection Cable supplied by our company.

The connections on the Panel are easy, fast and take place outside the Panel (external wiring). The Detection Cable must be connected to the Splicing Connector of the Orange Cable. It must be installed a Resistor (2.2K) at the end of the Detection Cable outside the exhaust hood so that to monitor the good operation of the Detection Line. In case of problem on the Detection Line

(e.g. damaged cable or not proper connection) MOB-2001 activates the siren so that to warn the end user about this serious problem. The Emergency Stop Button BS-537 is been factory-connected to MOB-2001 by a 2 m length.

The detonator of the Fire Extinguisher Valve must be connected to the Splicing Connector of the White Cable of the Fire Detection Panel.

MOB-2001 is been factory connected to Suko Plug so that to be directly connected to a usual plug of the kitchen.



## INDICATION LEDs

The **green indication LED** shows the charging of the batteries. When it is continuously ON the battery is charging, when it is OFF the battery is disconnected and when it is blinking the battery must be replaced (it is faulty – does not charge).

The **yellow indication LED** shows the alarm status. When it is OFF there is no alarm, when it is blinking an alarm has been issued and when it is blinking along with the other two indicators it means that the Detection Cable has been disconnected or disrupted.

The **red indication LED** shows the state of the detonator. When it is OFF the detonator is connected and ready, when it is blinking along with the yellow indicator there is a disruption of the detonator's connection and when it is ON continuously there is a fault in the detonator's activation circuit.

# Fire Detection Panel MOB-2001 (cont.)

Green	Yellow	Red	Beacon	Siren	Buzzer	Action/Result	The device is connected to mains 230V AC with it's battery connected
●	○	○	○	○	○	Battery charging - normal operation	
○	○	○	○	○	○	Disconnected battery	
☀	○	○	○	○	○	Battery problem - required replacement	
●	☀	○	☀	●	○	Alarm condition	
☀	☀	☀	☀	● <sup>1</sup>	○	Connection interruption for the fire sensor	
●	○	☀	☀	● <sup>1</sup>	○	Connection interruption for the detonator	
●	○	●	☀	● <sup>1</sup>	○	Detonator's circuit activation problem	
○	○	○	☀	○	☀	Mains 230 V interruption	

○ Inactive    ● Active    ☀ Intermittent    ☀ Low endurance pulse

●<sup>1</sup> The sirens sound is different than the alarm sound

## DETONATOR DELAY ADJUSTMENT

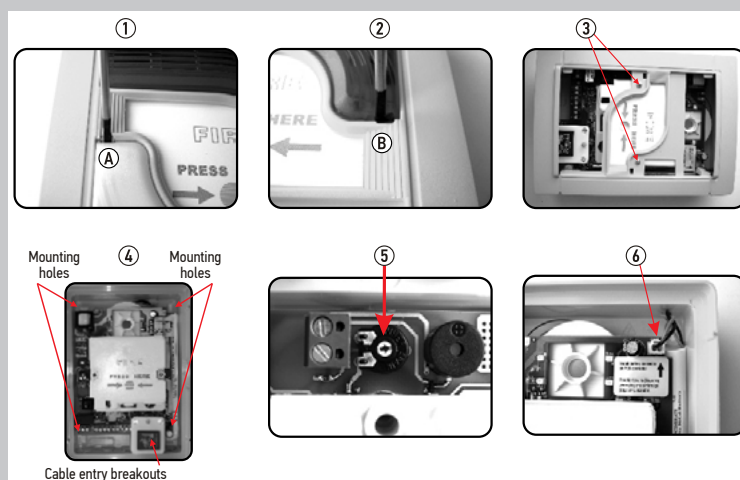
The variable trimmer Ñ1 is used to adjust the delay between the panel activation and the activation of the detonator. The delay can be adjusted from 1 to 80 seconds. The default adjustment is 40 seconds. Rotating the trimmer to the left decreases the delay whereas a rotation to the right increases it.

## RESETTING THE MANUAL CALL BUTTON

After manually activating the panel using the manual activation call button you can reset it to its original position by inserting the reset key into the opening marked "RESET" and after rotating it 90° pull to bring the button to its original position.

## INSTALLATION

MOB-2001 must be installed on a stable position at least three (3) meters away from the warm focal points of the kitchen.



*In order to install the Panel please follow the below procedure:*

1. To mount the unit you must first remove the white plastic cover by placing a flat blade screwdriver in area A and prying open until the hook of the white cover is disengaged.

# Fire Detection Panel MOB-2001 (cont.)

2. Place a flat blade screwdriver in area B and pry open until the hook of the red cover is disengaged.
3. After the two plastic covers are detached, remove the two retaining screws of the front fascia.
4. Use the supplied mounting accessories to mount the unit. Pass all cables from the appropriate breakout.
5. If required adjust the detonator delay (the delay is set to 40 seconds).
6. Diagram 1 shows a connection diagram of the MOB-2001. After all connections are made, install the battery's connector.
7. Replace the front fascia with the two screws that was removed in step 3.

**ATTENTION:** Apply maximum tightening torque 0.4 Nm. Reinsert the plastic covers that were removed in steps 1 and 2 and the unit is ready to operate.

## DETONATOR'S OUTPUT TEST

To verify the correct function of the detonator's output, this could be done by replacing the detonator with an incandescent lamp 12V/2W and by pressing the FIRE button to activate the device. After the ending of the delay the detonator's output is activated and the lamp shimmers in normal output's function.

Simultaneously can be verified the endurance of the delay. That is the time from the button's pressure until the activation of the detonator's output.

1. Each maintenance and installation operation must be conducted only by qualified service personnel
2. The unit must be connected to the mains power supply via it's own dedicated fuse.
3. It is advised that a system check is conducted every month by pressing the manual activation button. In this case the siren, beacon and relay will be activated. If this is not the case then contact the installer.

**WARNING:** The test must be brief and not exceed in time that is set for the Detonator Delay. If the time is exceeded then the detonator will be activated.

4. It is not permissible to discard the batteries in common waist containers. They must be disposed at special recycling points. Do not incinerate the batteries.
5. Disable the battery if the unit will not be connected to the mains power supply for more than 2 months. To disable the battery simply remove the battery connector.

TECHNICAL CHARACTERISTICS	MOB-2000	MOB-2001
OPERATION VOLTAGE	220-240V AC/50-60Hz	
MAXIMUM CONSUMPTION	3 V A	
BATTERIES (Ni-Cd)	3.6V/1Ah	
MINIMUM DURATION	72 hours in idle state	
CHARGE TIME	24 h	
INDICATORS	CHARGE-SYSTEM ACTIVATION-ACTUATOR FAULT	
CONTROLS	Siren silence button, Manual activation button	
FIRE SENSOR TYPE	NC closed in idle state	NO open in idle state
DETONATOR DELAY	1- 80 seconds (adjustable)	
SOUND LEVEL 1 METER	Approximately 100 dB	
RELAY CONTACT TOLERANCE	250V AC-5A/AC1, 250V AC-0,25A/AC3	
DETONATOR'S CONTROL CURRENT	2.5mA	
OUTPUT CURRENT TO THE DETONATOR	0.8A DC for 10"	
DEGREES OF COVER PROTECTION	IP 40	
PRODUCED IN ACCORDANCE WITH	EN 60335-1, EN 50082-1, EN 61000-3-2, EN 61000-3-3	
OPERATION TEMPERATURES RANGE	0 to 45°C	
RELATIVE HUMIDITY	Up to 95%	
CONSTRUCTION MATERIAL	Bayblend FR3010	
EXTERNAL DIMENSIONS	201 x 142 x 53 mm	
WEIGHT	550 gr.	
GUARANTEE	2 years (1 year for the battery)	



# System Inspection

The inspection of the system must take place only when all the relevant kitchen appliances/ devices are out of order.

The inspection of the system is recommended to be done once per month by the owner or a representative of the company that owns the kitchen. The following procedures must be carried out:

- Visual check of the Kitchen Appliances/Devices so that to secure that the under protected devices have not been removed from their initial position (according to the mechanical drawing) or no other devices/appliances have been added to the Kitchen, be placed in correct position.
- The mechanical (valve rod) and electrical actuators (remote control button & extinguish button of the Fire Detection Panel) must not be blocked.
- Visual Inspection of the Linear Heat Detection Cable (check of defects as well the connections on porcelain splice connectors).
- Visual Inspection of the Fire Detection-Suppression Panel (check the LED's so that to ensure that the proper operation of the panel).
- Visual check the pressure gauge of the extinguisher so that to ensure that the pressure is according to the specifications (15Bar).
- Ensure that the White Silicon Caps of the nozzles are in their position (covering the outlet of the nozzles).
- Visual Inspection of the Hydraulic Network and the Flexible Hose so that to secure that there are no defects.

**IMPORTANT:** The personnel who will execute the inspection of the system must fill the relevant inspection documents.

In case of irregularities observation, appropriate corrective actions must be executed immediately while the System "ZEUS" should be switched-off (push Emergency Stop). In the event that the corrective actions include system maintenance, it should be performed only by qualified personnel. The qualified personnel who will carry out the maintenance of the system should fill in the maintenance actions on the Maintenance Sheet.

After the Inspection is completed the Owner or his representative must fill in the Inspection Sheet and keep it in file.

The inspection of the system can be performed by the owner or his representative only if one of these persons are trained by the Designer (Mechanical Engineer) of the System or the Manufacturer.

In each case the Inspection Forms must be kept with the Owner of the cooking - in any case should not be destroyed.

**IMPORTANT:** The inspection documents must be kept in safe position in a file form.

# System Maintenance

The Maintenance of the system must take place only when all the relevant kitchen appliances/ devices are out of order and it must be executed (at least) once per year.

The specialized technician who will carry out the maintenance of the Fire Suppression System must be trained by the manufacturer. The technician who will carry out the maintenance of the Fire Suppression System must have in possession a Training Certificate, which is supplied only by our company.

The technician who will carry out the maintenance of the Local Application Automatic Fire Suppression System must have the Manual of the system and must execute the maintenance of the system at least once per year (at least).

The maintenance has to be executed on the following parts of the Fire Suppression System:

- The Fire Extinguisher must be maintained once per year strictly according to European Legislation.
- The Linear Heat Detection Cable must be gently cleaned with a wet table cloth (use of clean water) so that to remove grease or fat.
- The Electrical Tape used to seal the connections of the Linear Heat Detection Cable on the Splice Connections must be replaced.
- The Fire Detection-Suppression Panel of the System must be tested by an Electrical Engineer so that to secure its normal operation.
- Replacement of MOB-2001 after 5 Years in service.
- The Expiry Date of the Detonator must be checked (change incase of expiration).
- Check of MOB-2001 Cable Defects and change incase of damages.
- The White Silicon Caps of the Nozzles must be replaced in case of defects.
- Cleaning of the Pipe Network of the System with Clean Water after Agent Discharge (the water must be connected to the Stainless Steel Flexible Hose and will be discharged from the Nozzles – this procedure must last 10 minutes for proper cleaning).

**IMPORTANT:** In case of damages or part defects these must be replaced immediately only by the recommended spare parts.

In case of damages, the owner of the kitchen must be immediately informed by the Maintenance Technician and the fire suppression system must be characterized as «non-functional» until the replacement of the spare parts has been done.

Once the spare parts have been replaced by authorized personnel only, the owner of the kitchen must be informed and the system can be characterized as «totally functional».

The maintenance document must be filled in only when the owner or a representative of the owner is present by the specialized technician.

The maintenance document must be kept on a file-form. These documents must never be damaged.

**IMPORTANT:** After the system's maintenance, the technician must place a maintenance label in the kitchen. The label has to show the date of the last maintenance as well as the full-name of the technician who executed the maintenance.

# System Refilling

Every Fire Suppression System must be Maintained & Refilled immediately after it is used. It must be also refilled when it is observed during the inspection or the maintenance that the extinguishing agent is less than it should be.

**IMPORTANT:** *After system's activation that means extinguishing agent discharge, the Copper Tube Network must be cleaned using water and then dried.*

**NOTE:** *The hydraulic test of the cylinder of the system's fire extinguisher of the system must be executed once after 10 years.*

# INSPECTION SHEET

A/A	DATE	TECHNICIAN'S NAME	SERVICE DESCRIPTION	SIGNATURE
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				

# MAINTENANCE SHEET

A/A	DATE	TECHNICIAN'S NAME	SERVICE DESCRIPTION	SIGNATURE
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				



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