



EN 54-2
EN 54-4
EN 54-21
EN 12094-1

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0051-CPR-1412
0051-CPR-1413
0051-CPR-1414



SmartLine
Conventional fire detection control panel
Extinguishant system control panel
Alarm transmission and fault warning routing
equipment with integrated power supply equipment

Installation and programming manual



GameOver



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European directive compliance

This Control panel has been designed and developed to the highest standards of quality and performance implemented by INIM Electronics s.r.l..

This control panel must be installed in accordance with the instructions described in this manual and in compliance with the laws in force.

All control panels from the SmartLine series are EN54-2, EN54-4, EN54-21 and EN12094-1 compliant.

All control panels from the SmartLine series, and all accessory items and special functions have IMQ Security systems certification, unless otherwise stated.

Declarations of performance, declarations of compliance and certificates relating to the products mentioned in this manual can be downloaded from the following website:

www.inim.biz

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Overview

Note: *The control panels described in this manual have been designed and manufactured to the highest standards of quality, reliability and performance adopted by INIM Electronics. The components selected for these products will operate properly within their specifications when the environmental conditions outside the product enclosure comply with Class 3k5 (EN60721-3-3).*

Danger: **The GAS control function is not provided for in the aforesaid standard and therefore cannot be considered EN54-2 compliant.**

Danger: **In order to validate the IMQ-SECURITY SYSTEMS certification, and in compliance with EN54-2, all the manual alarm buttons and fire detectors employed in the system must be associated with fire detection and alarm functions.**

1.1 Application and use

The SmartLine conventional fire control panel manages up to 20 conventional detector lines (zones) for SmartLine020 models or up to 36 lines for SmartLine036 model. Each line (zone) accepts up to 30 devices and is provided with an additional I/O line that can be configured as an open-collector output (the activation principles can be defined during the configuration phase) or as an independent input line (separate from the zone) for fire detection, gas detection line, etc. The basic model has 4 on-board zones (2 for the SmartLine020-2 model) expandable to 20 (or 36 for the SmartLine036) by means of 2 SmartLine/8Z optional attachment boards (8 lines per board).

The control panel also provides a series of outputs for the activation of signalling or remote transmission devices. The graphic display and LEDs provide visual indication of the system status and real-time signalling of fault conditions. The control panel supports up to 4 repeater panels (SmartLetUSee/LCD-Lite); these remote consoles replicate all the information provided by the control panel and allow access to level 1 and 2 functions. The control panel can also house and manage the SmartLetLoose/ONE gas extinguishant boar (optional).

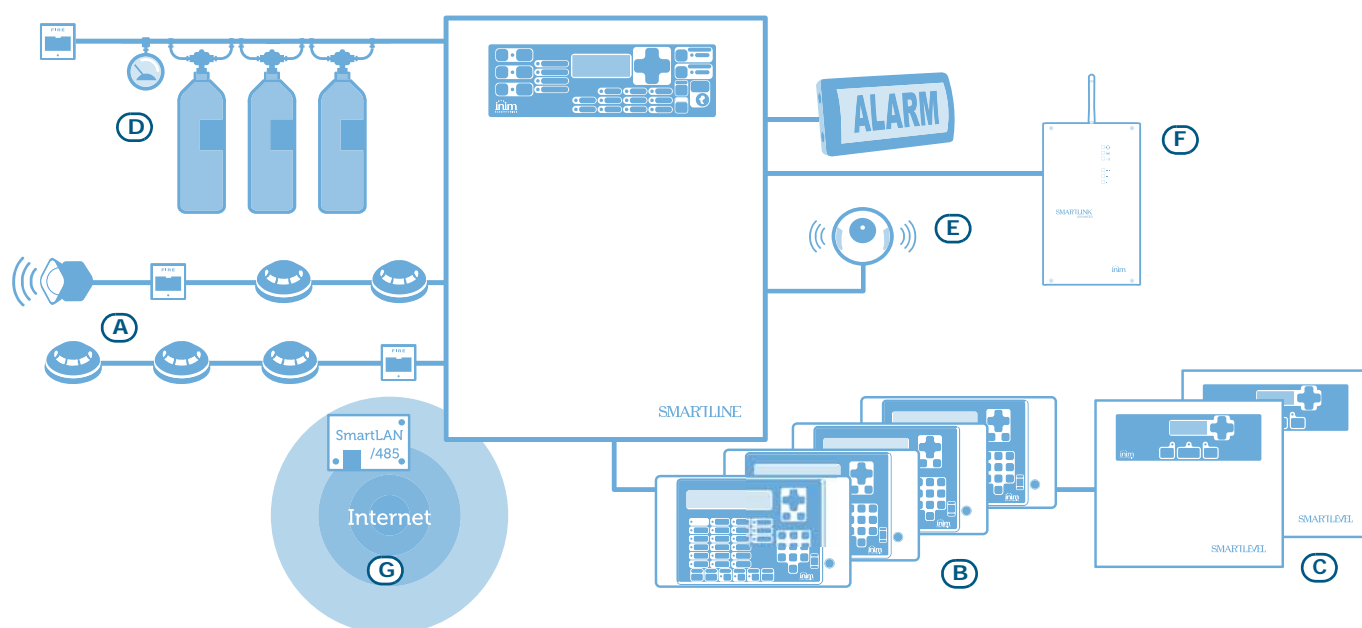


Figure 1 - Example of a typical SmartLine installation

[A] The zones

Each zone is provided with a pair of terminals (lines) for the connection of the fire-detection devices deployed in the protected area. Each line (zone) accepts up to 30 devices (conventional detectors or call points). The control panel can be configured to discriminate between detector and call point triggered alarms. Each line can be configured to activate various signals (fire alarm, gas alarm, etc.).

The lines accommodate:

- **Detectors:** A detector is an active fire protection device that detects smoke or flames and issues an alarm thereby alerting building occupants to the danger of fire. They can be:
 - Optical smoke detectors which look for the presence of visible by-products of combustion in the detection chamber (Tyndall effect).
 - Optical/Heat detectors which operate as per optical smoke detectors but also sense for increase in the environment temperature. The combination of both sensing methods (smoke and heat) provides faster detection and reduces the false alarm rate.
 - Heat detectors which sense for an increase in the temperature in the protected environment. These can be either fixed temperature detectors (which generate an alarm signal when the ambient temperature exceeds the pre-set temperature threshold) or rate-of-rise (which respond to a rapid rise in temperature).
 - Ionization smoke detectors: feature a harmless radioactive source within a dual detection chamber. They operate by sensing for a change in electrical conductivity across the detection chamber.
 - CO detectors: sense the levels of carbon monoxide given off by all carbon-based materials in the smouldering stages of a fire (often combined with heat detection sensor).
- **Conventional call point:** a clearly indicated fire button with instructions for use in the event of fire. This device is usually located in strategic positions especially near building entry/exit points. When activated these devices trigger system alarms.

For further information regarding the list of the detectors the lines accommodate, and for details regarding their operating principles, refer to *Chapter 10 - Detection line threshold-adjustment*.

Danger: **In order to comply with EN54-2 requirements, no more than 30 detectors/devices should be connected to each line.**

Each detection line must be terminated with a 3900 ohm resistor (included), in such way as to allow the control panel to monitor the integrity of the wiring.

[B] SmartLetUSee/LCD-Lite repeater (accessory item)

This optional system enhancement tool (equipped with keypad, LEDs, fast buttons and display) replicates all the system data. The control panel manages up to 4 repeaters which can be connected at a distance of up to 1000m from the control panel via RS485 BUS. These devices are usually located near building entry/exit points in order to allow personnel to obtain information regarding zones affected by alarm conditions without actually entering the premises.

[C] SmartLevel power supply station (accessory item)

The SmartLevel is the ideal power source for all devices located in the area protected by the fire detection system. Its internal board meets all EN54 requirements and provides complete supervision of the power station. The device can be connected to the control panel by means of the RS485 BUS, thus allowing the complete supervision of the power station and control of the 3 outputs.

[D] Gas extinguishant system (accessory item)

The panel can house and manage a gas extinguishant module (SmartLetLoose/ONE, optional system enhancement board). The gas extinguishant module is compliant with *EN 12094-1*.

[E] Sounderflashers

These audible/visual alarm signalling devices connect to the control panel outputs and are capable of signalling specific conditions. The activation trigger (alarm, pre-alarm, warning, etc.), can be specified during the system configuration session.

[F] SmartLink Advanced telephone dialler

INIM's SmartLink/G and SmartLink/GP telephone diallers monitor the analogue landline and, in the event of landline problems (line cutting, etc.) divert incoming and outgoing calls to the GSM network. The SmartLink/P model operates solely over the PSTN line (landline).

[G] SmartLAN/485 Ethernet connection board (accessory item)

Allows the control panel to connect to an Ethernet network for remote connection. So it is possible to modify the configuration parameters (up-download programming data) and/or manage the system using the SmartLook supervision software based on graphical maps.

1.2 Other parts of the system

Zone: a group of points (detectors, etc.) connected to a detection line. The control panel provides an extra terminal (I/O) for each zone. If the terminal (I/O) is configured as an input, the control panel will be able to split the detection line of each zone. This feature can be used when zones require a detector line that is separate from the call point line in order to ensure proper operation of one line in the event of fault on the other.

Switching power supply: this unit, starting from the mains power supply (230V~) it connects to, supplies the board with a 24V (27.6V==) stabilized current capable of feeding the control panel and recharging the batteries. The EN54-4 compliant power-supply module is housed below the motherboard. the mains power supply (230V~) the primary power source of the system. Refer to *paragraph 4.2 - Internal devices*.

Batteries: the secondary power source of the system. The panel enclosure houses two lead batteries @ 12V 17Ah (connected in series). The system monitors the battery status (efficiency and charge). In the event of inefficient or low battery conditions, the system will signal battery fault. In the event of primary power failure (230V~), the batteries will take over automatically. If the problem persists for a long period thus causing the battery charge to drop below the minimum value required, they will be shutdown automatically in order to avoid damage. Refer to *paragraph 6.16*.

Thermal probe: an accessory tool, to be connected to the panel and attached to the battery pack. This device monitors the temperature of the external battery pack and regulates the battery charge accordingly. Refer to *paragraph 6.17*.

RS485 BUS: 4 wire BUS for the repeater connections. Cabling must done with 4 pole braided shielded cable. Refer to *paragraph 6.8 - Connecting the RS485 BUS*.

Timer: a logical entity (the panel provides 8 timers) for automatic time-management of preset intervals (2 intervals per day) on preset days of the week and specific dates. The timers can be used in equations to manage predefined operations or activate outputs.

Equation: a group of logical conditions defined by the installer. An equation comprises a series of operators (AND, OR, +, etc.) and a series of operands (Points, Zones, Timers, etc.). An equation can be associated with an output that will activate when the equation is satisfied.

Holidays: a list of days defined during the system configuration session which are associated with the control panel timers.

1.3 The SmartLine fire alarm panel models

The available models are:

- SmartLine020-2 - Conventional fire alarm control panel with 2 zones non expandable
- SmartLine020-4 - Conventional fire alarm control panel with 4 zones expandable to 20
- SmartLine036-4 - Conventional fire alarm control panel with 4 zones expandable to 36

General information

2.1 Supplied documentation

- Installation and programming manual (this manual)
- User's manual

The Installation manual is inside the device package. For further copies of the Installation Manual, please contact INIM electronics offices.

2.2 Manual details

- Title: SmartLine installation and programming manual
- Version: 3.60
- Manual code: DCMIINEOSLINE
- Addresses: installer, technicians

2.3 Operator qualifications - access levels

The SmartLine is EN-54 compliant. There are four access levels:

Level 1: The Public

All persons in the building can view the system status (active events) and events log; silence the panel beeper and, under pre-alarm conditions, override pre-alarm status and activate an instant alarm.

Level 2: Authorized operators — person/s responsible for the safety of the building and its occupants.

Authorized operators (keyswitch and PIN users) can silence the outputs, reset the panel, activate the 'Investigation' delay, disable zones, points and outputs, change the operating mode (Day/Night) and activate the 'Evacuation' alarm.

Level 3: Authorized technicians appointed by the Installer company.

Such technicians possess the tools required for the removal of the control panel frontplate. And, are allowed to insert the jumper which enables the control panel programming phase (via control panel or PC), in order to access the programming and maintenance functions. The control panel is unable to process data or generate fault or alarm signals of any kind during the programming phase.

Level 4: Technicians employed by the Manufacturer (INIM Electronics s.r.l.).

The manufacturer company technicians can, by means of special tools, repair or replace the control panel components.

Note: *This manual is for Authorized installer company technicians (Level 3). However, it also provides some installation information related to level 1 and level 2.*

2.4 Intellectual property rights

The information contained in this document is private property. All rights reserved.

This document must not be reproduced, either totally or in part, without the prior written consent of INIM Electronics, and refers to the devices specified in *paragraph 2.12*.

2.5 Disclaimer

INIM Electronics s.r.l. shall not be responsible for damage arising from improper application or use.

This control panel should be handled by qualified personnel only. Installation must be carried out strictly in accordance with the instructions described in this manual, and in compliance with the local fire code in force.

2.6 Recommendations

INIM Electronics recommends that the entire system be checked completely at regular intervals (refer to *paragraph 2.7 - System test*).

2.7 System test

This system has been designed to provide the highest standards of reliability and performance. Malfunction of any of the system devices may cause the system to be incapable of reaching the intended levels of performance. Most problems which prevent the system from operating as intended can be found by regular testing and maintenance of the system devices (refer to *Chapter 15 - Maintenance*).

The test must include all the system detectors, signalling devices and all other devices that are part of the system.

2.8 Note to the installer

In order to provide adequate protection and instructions for correct use of the apparatus, you (the installer) must be fully aware of the regulations and operating procedures of firefighting. As the only individual in contact with system users, it is your responsibility to instruct them on how to use this system properly and to bring to their attention that every fire is different in the amount of smoke and rate of burning. Therefore, smoke and heat detectors may not provide timely warning of fires caused by violent explosions, escaping gas or improper storage of inflammable materials.

Regardless of its capabilities, a fire alarm system is not a substitute for the necessary precautions building occupants must take to prevent or minimize the harmful effects of fire.

2.9 Technical support

Our professional engineers are readily available to assist you. If you require help, call us and you will be put through to a person capable of answering your questions and providing you with the service you need.

2.10 Conventions

2.10.1 Terminology

Panel; device; system: refer to the devices defined in *paragraph 2.12*.

Left, right, behind, above, below: refer to the directions as seen by the operator in front of the mounted device.

Communicator (telephone, SMS, digital): synonym of dialler.

STP: Shielded twisted pair cable.

Qualified personnel: those persons whose training, expertise and knowledge of the laws and bylaws regarding service conditions and the prevention of accidents, are able to identify and avoid all possible situations of danger.

Select: click on and select a specific item (from drop-down menu, options box, graphic object, etc.).

Press: click on a video button, or press a key on the panel keypad.

2.10.2 Graphic conventions

Following are the graphic conventions used in the text. For a description of the graphic conventions relating to the interface, refer to *paragraph 5.1 - SmartLine panel frontplate*.

Conventions	Example	description
<i>Text in Italics</i>	Refer to <i>paragraph 2.10.2 - Graphic conventions</i>	Text in italics: indicates the title of a chapter, section, paragraph, table or figure in this manual or other published reference.
<text>	#<CustomerCode>	Variable data.
[uppercase letter] or [number]	[A] or [1]	Identifies a system component or video object.
BUTTON	Esc, RESET	Computer or control panel keys.

Note: *The detached notes contain important information about the text.*

Attention: **The attention prompts indicate that total or partial disregard of the procedure could damage the connected devices.**

Danger: **The danger warnings indicate that total or partial disregard of the procedure could injure the operator or persons in the vicinity.**

2.11 Menu paths

Example

From panel: **<key>**, **Programming**, **Progr. zone**, select a zone, **Ok**

Via software application: **Control panel**, **Zones**

Access to specific functions can be achieved by using the panel keys or PC video objects and the respective path.

Note: *This manual describes the recommended programming flow.*

Attention: **For most part this manual describes programming from the control panel.**

2.12 CE Mark

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	humidity resistance	PASS																																																																																																			
Options provided according to EN 54-2	Performance																																																																																																				
7.8 Output to the fire alarm device	PASS																																																																																																				
7.9 Control of fire alarm routing equipment	PASS																																																																																																				
7.11 Ritardo delle uscite	PASS																																																																																																				
7.12 Dependencies on more than one signal (Type A and B)	PASS																																																																																																				
10 Test condition	PASS																																																																																																				

Figure 2 - Certifications for SmartLine control panels

Note: *The indications for the CE marking shown in the installation manual of the SmartLetLoose/ONE electronic board (optional accessory device) are an integral part of the indications shown here on condition that it is installed in the mentioned control panels.*

Declarations of performance, declarations of compliance and certificates relating to the products mentioned in this manual can be downloaded from the following website:

www.inim.biz

2.13 Warranty

INIM Electronics s.r.l. warrants that for a period of 24 months from the date of commissioning, the product shall be free of defects in materials and workmanship. The warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

- Improper use or negligence
- Damage caused by fire, flood, wind or lightning
- Vandalism
- Fair wear and tear

INIM Electronics s.r.l. shall, at its option, repair or replace any defective products. Improper use, that is, use for purposes other than those mentioned in this manual will void the warranty. For the full details and conditions regarding the warranty, refer to the purchase order.

2.14 Safety laws

The aim of the instructions in this section is to ensure that the device is installed and handled properly. It is assumed that anyone who handles this apparatus is familiar with the contents of this chapter.

2.14.1 Compliancy

The design and manufacture of the SmartLine panel conform with EN 54-2 *Fire detection and signalling systems - Control and signalling panels*.

The power supply unit has been especially designed and manufactured in full compliance with EN 54 part 4 *Fire detection and fire alarm systems - Power supply equipment*.

The SmartLetLoose/ONE extinguishant board enhanced SmartLine control panel has been developed and designed in compliance with EN 12094-01 *Fire-fighting Systems - Components of fire-extinguishant systems - Part 1: Requirements and testing methods for automatic electrical command and fire-extinguish or delay management devices*.

2.14.2 Managing electronic devices

The normal motions of any person may generate electrostatic potential of thousands of volts. Discharge of this current through semiconductor devices during handling may cause serious damage which although may not be immediately evident may reduce the reliability of the circuits.

If located in their housings, the electronic circuits of INIM Electronics products are highly immune to electrostatic discharge.

Do not expose the circuits to damage by removing the modules unnecessarily from their housings.

- When removing or handling the boards, hold the board edges only.
- Do not touch the electronic components, the printed circuits or the metal parts of the connectors.
- Do not hand the board to another person without first ensuring that both of you have the same electrostatic potential. This can be achieved by simply shaking hands.
- Place the board on an anti-static surface or a conductor surface with the same potential.

Further information regarding procedures relating to safety when working with electronic devices can be found in EN 61340-5-1 e CLC/TR 61340-5-2.

2.14.3 Setting up the system

In order to provide adequate protection and instructions for proper use, security professionals (Installers and maintenance technicians) must be familiar with the operating procedure of this device.

Please read the instructions carefully before installing and setting up this product.

Before first power-up, be sure that the earth connection has been completed properly on the respective terminal. The recommended minimum wire cross section for the earth connection is 2.5 mm², unless otherwise stated in accessory documentation.

2.15 Replacement and disposal of used devices

Replacement

When replacing obsolete devices, disconnect the devices concerned then complete the connections of the new devices in compliance with the instructions printed on the respective leaflets.

In order to avoid short-circuits, take all the necessary precautions when removing used batteries.

Disposal

Do not burn used electronic devices, or allow them to pollute the environment (countryside, rivers, etc.). Electronic devices must be disposed of in a safe environment-friendly way. When disposing used devices or batteries, contact your local municipal offices for information regarding their disposal.

Informative notice regarding the disposal of electrical and electronic equipment (Applicable in countries with differentiated waste collection systems)

The crossed-out bin symbol on the equipment or on its packaging indicates that the product must be disposed of correctly at the end of its working life and should never be disposed of together with general household waste.



The user, therefore, must take the equipment that has reached the end of its working life to the appropriate civic amenities site designated to the differentiated collection of electrical and electronic waste.

As an alternative to the autonomous-management of electrical and electronic waste, you can hand over the equipment you wish to dispose of to a dealer when purchasing new equipment of the same type.

You are also entitled to convey for disposal small electronic-waste products with dimensions of less than 25cm to the premises of electronic retail outlets with sales areas of at least 400m², free of charge and without any obligation to buy.

Appropriate differentiated waste collection for the subsequent recycling of the discarded equipment, its treatment and its environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favours the re-use and/or recycling of the materials it is made of.

Device management

3.1 Product handling and storage

This device is safely packed inside a cardboard box, however, care must be taken to avoid accidental damage during handling. Cartons/boxes should be placed in such a way as to avoid knocks and falls, and special care must be taken to protect the devices from extreme heat and/or cold.

3.2 Environmental conditions

Temperature limits:

-10° / +55°C for transport and storage

-5° / +40°C operating temperature

3.3 Unpacking the device

On receipt the goods must be unpacked with care. All waste packaging materials must be disposed of in compliance with the local laws and bylaws in force.

The metal enclosure of the device is packed carefully inside the cardboard box.

Note:

The lead batteries are not included. Be sure you have the batteries on hand before starting.

When you remove the four screws and metal-frontplate, you will find:

- The SmartLine motherboard mounted on a plastic support that bridges the two sides of the metal box.
- Power supply module located under the plastic support. The power supply module is connected to the SmartLine motherboard.
- A plastic bag containing:
 - Battery connection wires
 - Eyelet terminal for connection to earth
 - Key for access level 2
 - Resistors and EOL diodes for supervised circuits
 - Expansion board connection cable (SmartLine036 only)
- [A] ProbeTH - thermal probe battery-charge optimizer

The following accessory items must be ordered separately:

- [B] SmartLetUSee/LCD-Lite - repeater panel
- [C] SmartLetLoose/ONE - extinguishant board
- [D] SmartLevel - power-supply station
- [E] SmartLine/8Z - 8 zones expansion board
- [F] SmartLAN/485 - Ethernet interface board

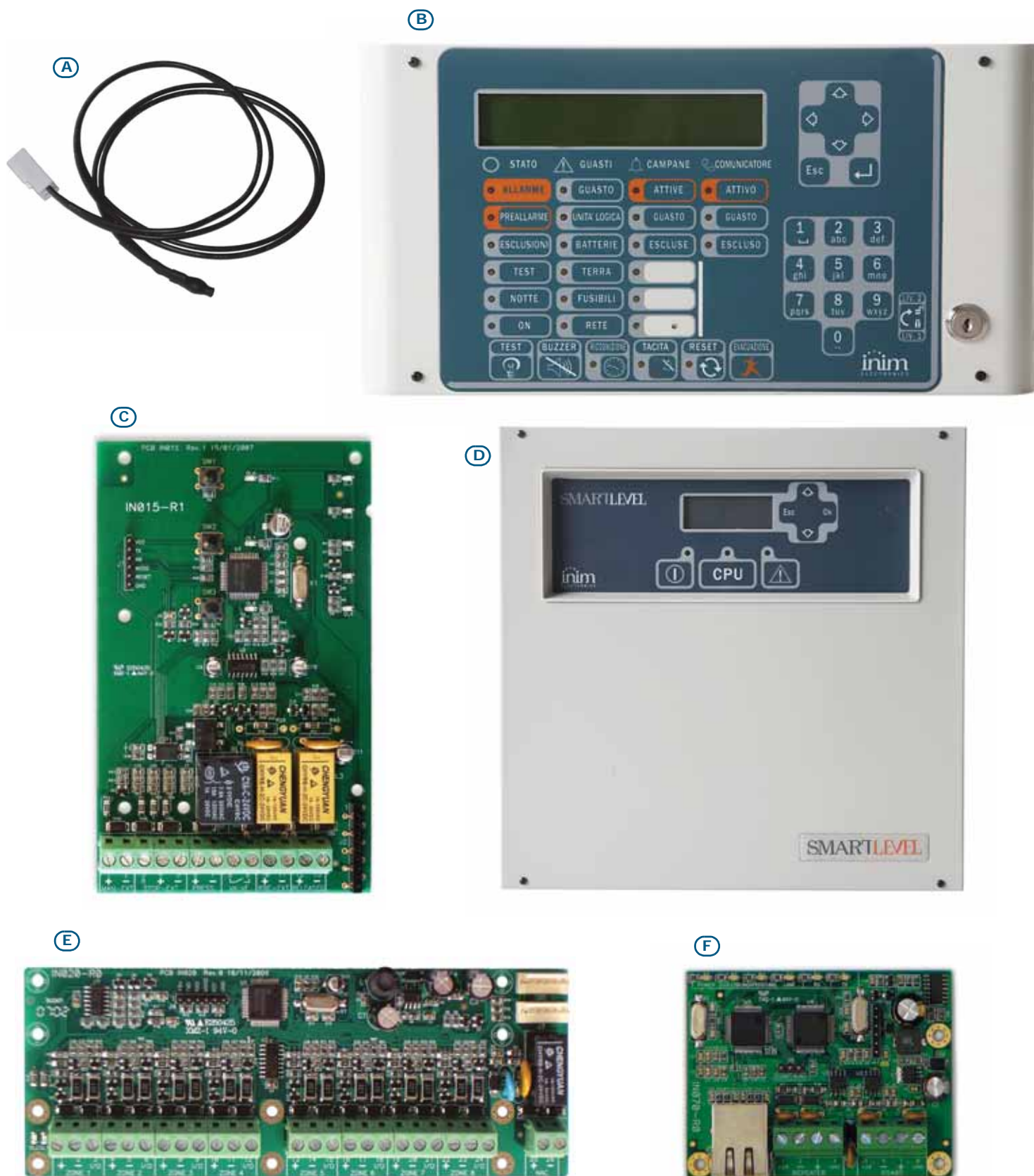


Figure 3 - Thermal probe and accessory devices

Technical description

4.1 Control panel

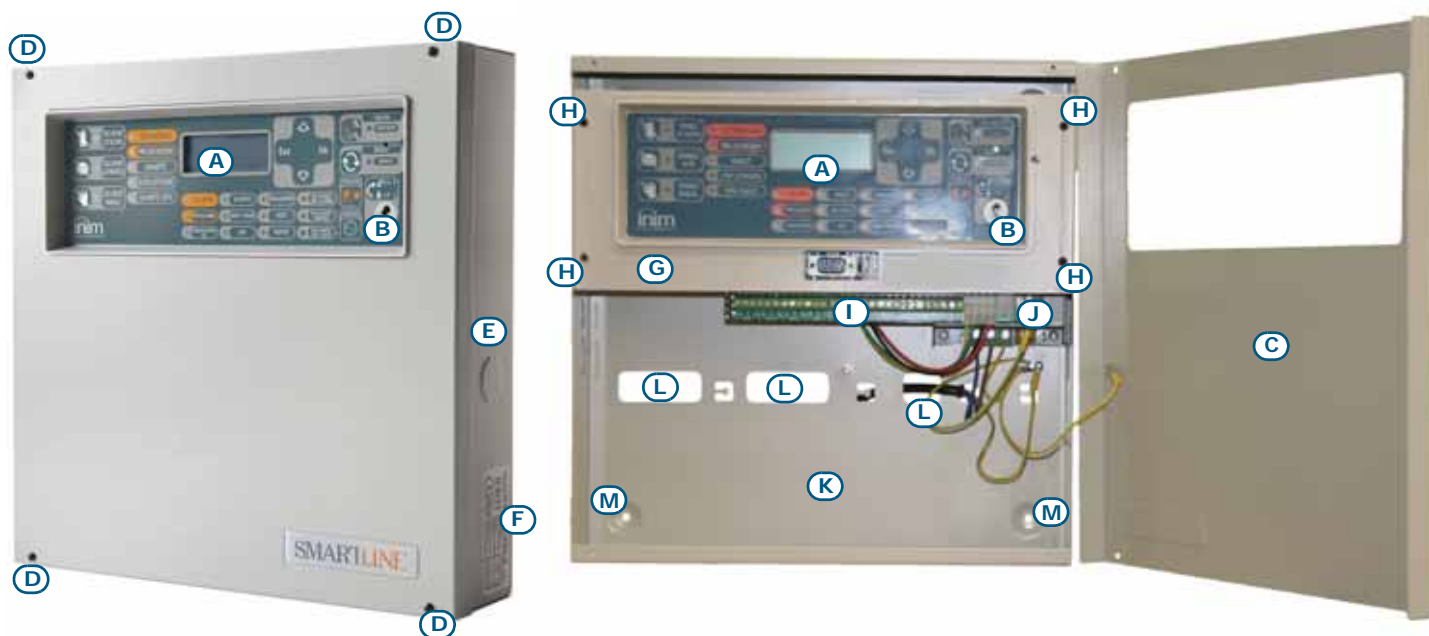


Figure 4 - External and internal parts of the SmartLine020



[A]	Frontplate with display, keys and signalling LEDs
[B]	Slot for level 2 access key
[C]	Frontplate
[D]	Securing screws for the front cover
[E]	Cable entries (located on all sides of the enclosure)
[F]	Data label
[G]	Plastic support for front panel and motherboard mounting
[H]	Plastic support anchor screw
[I]	About the motherboard
[J]	Power supply module
[K]	Backup battery housing
[L]	Cable entry
[M]	Anchor screw hole

Figure 5 - Inside the SmartLine036

4.2 Internal devices

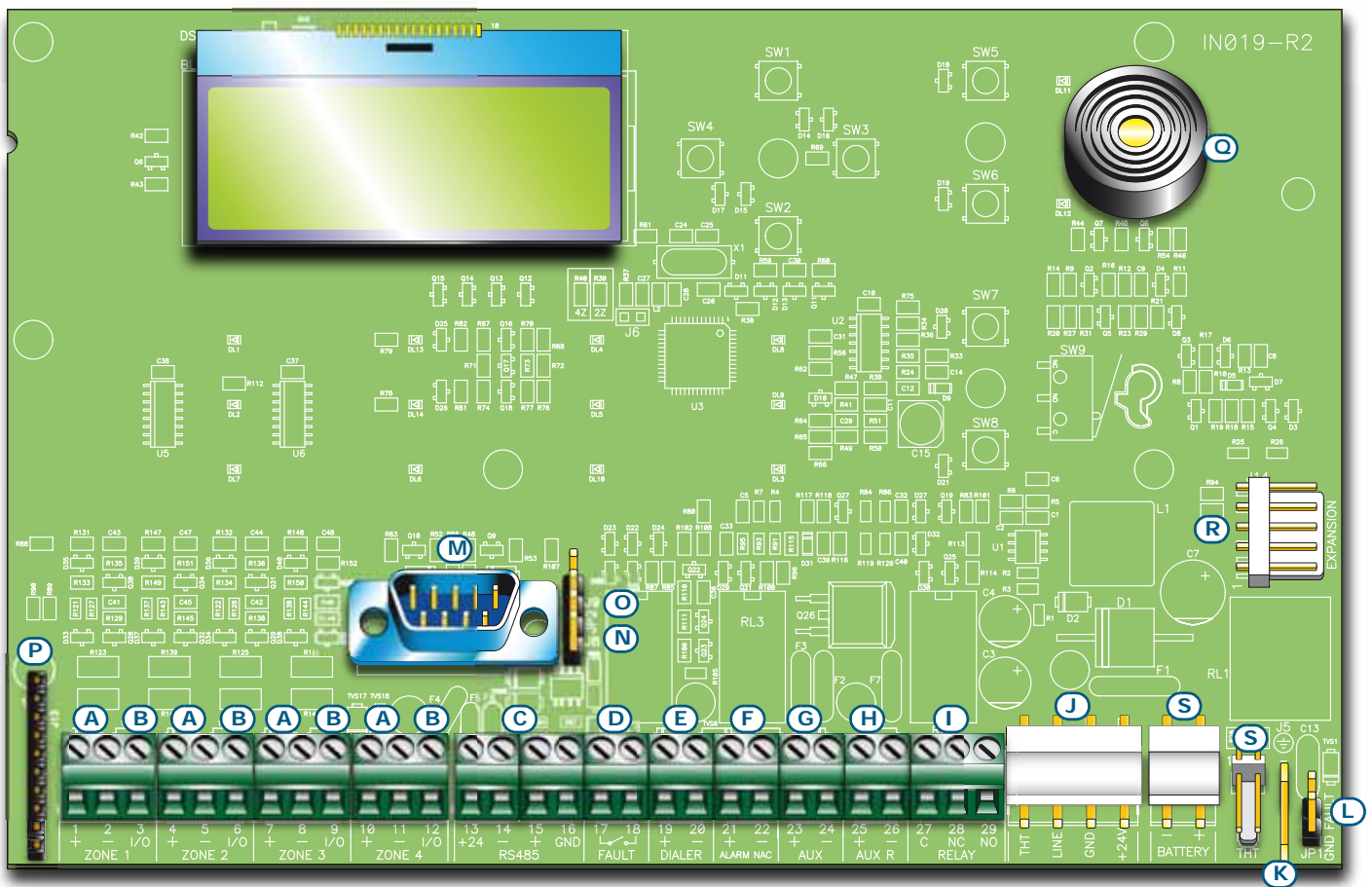


Figure 6 - SmartLine motherboard

Main components:

[A]	ZONE +/-	Zone detection-line terminals
[B]	ZONE I/O	Zone I/O terminals
[C]	RS485	RS485 BUS terminals for repeater and power station connections, max. 0.9 A
[D]	FAULT	Fault output, dry contact
[E]	DIALER	Output terminal for dialler connection, supervised
[F]	ALARM NAC	Supervised alarm output
[G]	AUX	24V $\overline{\text{---}}$ - 0.8A output for external loads
[H]	AUX R	24V $\overline{\text{---}}$ - 0.8A output for external loads - off during reset
[I]	RELAY	Programmable dry contact (Alarm at default)
[J]	Power-supply module connector	
[K]	Connector for the earth wire of the power supply module	
[L]	Earth-fault-bypass jumper - if this jumper is removed faults will be bypassed	
[M]	RS232 serial port for PC connection	
[N]	Jumper for programming from panel (keypad and LCD) J8	
[O]	Jumper for programming from PC J9	
[P]	Extinguishant module connector	
[Q]	Buzzer	
[R]	Connector for expansion board	
[S]	Reserved connectors DO NOT USE	

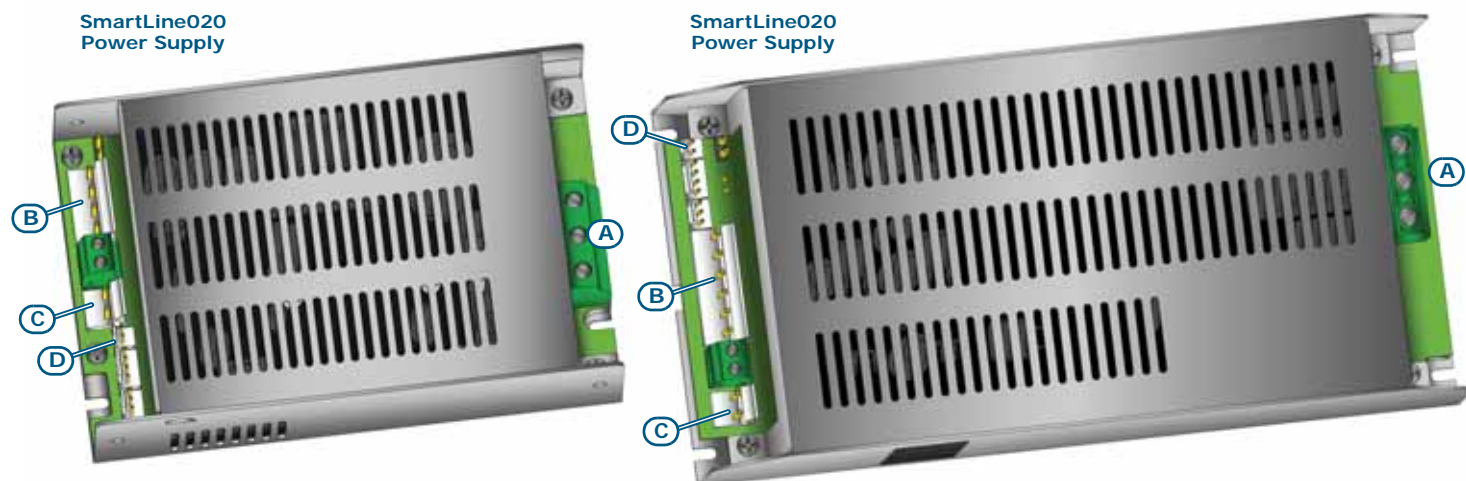


Figure 7 - Switching power supply

The switching power supply is attached to the backplate of the metal enclosure. The power supply type depends on the control panel model.

	SmartLine020	SmartLine036
	Mains input terminal board	
[A]	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> AC Input 230V ~ 50/60 Hz L N </div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> AC Input 230V ~ 50/60 Hz N L </div>
[B]	SmartLine mother board connector	
[C]	Battery connector	
[D]	Thermal probe connector	

Note: *INIM s.r.l. reserves the right to change, replace, in part or entirely, the components not strictly relating to the installation procedure described in Chapter 6 - Installation instructions.*

4.3 Technical specifications

Specification	SmartLine020	SmartLine036
AC power	230V \sim (-15% / +10%) 50/60Hz	
Maximum current draw 230V	0.5 A	1.1 A
Nominal output voltage	27.6 V \equiv	
Maximum output current	2.1 A	5.2 A
$I_{\max. a}$	1.5 A	4 A
$I_{\max. b}$	1.5 A	4 A
Maximum battery current emission during primary power failure	1.5 A	4 A
Maximum current for external loads and accessory devices	1.41 A	3.91 A
Maximum current draw on terminal + AUX	0.8 A	
Maximum current draw on terminal + AUX-R	0.8 A	
Maximum battery-charge current	0.6 A	1.2 A
Battery specifications	2 x 12 V, 7 Ah	2 x 12 V, 17 Ah
	2 x 12 V/7 Ah YUASA NP-12 FR or similar with case flame class UL94-V2 or higher	
Maximum internal resistance of the batteries ($R_{i \max}$)	2.7 Ohm	1 Ohm
Output voltage	from 18 to 27.6V	
Battery shutdown tension	19V	
Internal fuse of switching power supply module	T 3.15A 250V	
Maximum output current ripple	1%	
Operating temperature	from -5°C to 40°C	
Isolation class	I	
Enclosure protection class (EN 60529)	IP30	
Dimensions	325 x 325 x 80 mm	497 x 380 x 87 mm
Weight	2.8 Kg	6 Kg

4.4 PCB current draw

Module	Standby current draw	Maximum current draw
SmartLine motherboard	90 mA	90 mA
SmartLAN/485 board	50 mA	50 mA
SmartLine/8Z board	50 mA	50 mA
SmartLetLoose/ONE board	10 mA	70 mA
SmartLetUSee/LCD-Lite repeater	40 mA	80 mA

User interface

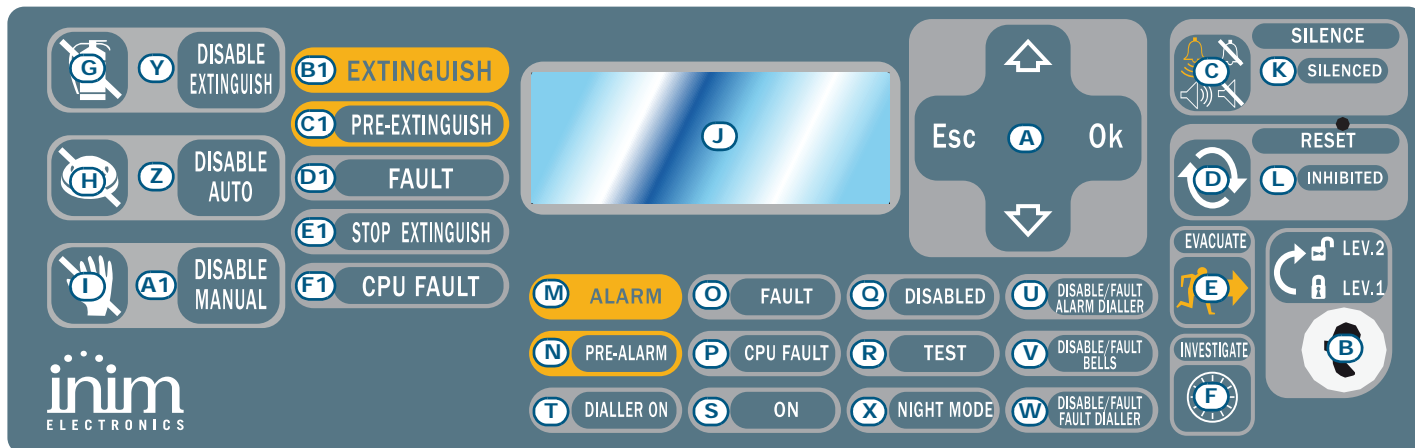


Figure 8 - Frontplate

5.1 SmartLine panel frontplate

5.1.1 Commands

	Command	Access level 1	Access level 2	Note
[A]	Navigation keys			To be used to navigate through the menus on the display. Their effect varies in accordance with the context. See <i>Chapter 8 - Introduction to Programming from the panel.</i>
[B]	Slot for level 2 access key	Key not inserted or inserted in vertical position	Key inserted in horizontal position	When the key is removed or placed in the vertical position and no key is pressed, the control panel will hold access level 2 status for 20 seconds.
[C]	SILENCE	Pushing this button silences the panel beeper.	Silences (switches OFF) active outputs with the silenceable attribute. The silenceable outputs will hold silenced status until a new event occurs that releases the outputs automatically. The SILENCE button operates as a toggle switch, therefore, silenced outputs can be unsilenced by pushing the button again.	If the system is operating in Night mode, SILENCE status will be held for the preset SILENCE time only. This is a safety precaution designed to protect building occupants and persons in charge of night-security who, after silencing the system, may be overcome by smoke or fumes during fire investigation and unable to restart the alarm signalling devices manually.
[D]	RESET		Push this button to clear any active events, delete the memory and restore standby conditions.	Any alarm/fault conditions which persist after RESET operations will generate new alarm/fault signals.

Command		Access level 1	Access level 2	Note
[E]	EVACUATE	If this button is pressed during active pre-alarm conditions, the system will override the programmed pre-alarm time and generate an instant alarm.	If this button is pressed when pre-alarm conditions are not active, the system will generate a panel alarm.	
[F]	INVESTIGATE		If this button is pressed during active pre-alarm conditions, the system will add the preset investigation time to the running pre-alarm time (this operation can be done once only).	The extended alarm delay will allow authorized building occupants and/or security staff to check and verify the fire hazard.

Extinguishant board commands

[G]	DISABLE EXTINGUISH		If this button is pressed once, the system will disable fire-extinction commands. If this button is pressed again, the system will re-enable fire-extinction commands.	This button can be used during testing and maintenance of the fire extinction devices.
[H]	DISABLE AUTO		If this button is pressed once, the system will disable automatic fire-extinction commands generated by the board. If this button is pressed again, the system will re-enable automatic fire-extinction commands generated by the board.	
[I]	DISABLE MANUAL		If you push this button once, the system will disable manual extinguish commands. If you push this button again, the system will re-enable manual extinguish commands. Refer to <i>paragraph 6.14 - Connecting the Extinguishant module (optional system enhancement tool)</i> .	

5.1.2 Signalling

LED		If On solid:	If Blinking:	Note
[J]	Display			See <i>Chapter 8 - Introduction to Programming from the panel</i> .
[K]	SILENCED (yellow)	Indicates that the system has been silenced.		
[L]	RESET INHIBITED (yellow)	In the event of pre-alarm/alarm, indicates that reset commands are not allowed. Reset will be allowed when all outputs have been silenced and this LED goes Off.		This feature ensures that persons responsible for the safety of the building and its occupants do not reset the system without first silencing the outputs, and evaluating the alarm. The silence operation will stop the signalling devices and restore quiet thus allowing the operator to consider the best way to proceed. The operator will then be able to reset the system and restore standby status.

LED		If On solid:	If Blinking:	Note
[M]	ALARM (red)	Signals an alarm condition, that is, activation of a zone point (detector, call point, etc.) that is programmed with the alarm attribute.		Examples: a smoke detector has sensed a quantity of smoke that exceeds its alarm threshold; a heat detector has sensed rise in temperature that exceeds its alarm threshold; a call point has been activated, etc. Authorized persons only (level 2) can clear these conditions (which may occur after an early warning, pre-alarm, etc.) by means of silence/reset operations. Signaling will continue even after the cause of the alarm has ceased.
[N]	PRE-ALARM (red)	Signals a pre-alarm condition, that is, activation of a zone point (detector, call point, etc.) that is programmed with a pre-alarm time.		Examples: a smoke detector has sensed a quantity of smoke that exceeds its alarm threshold; a heat detector has sensed rise in temperature that exceeds its alarm threshold; a call point has been activated, etc. Only authorized persons (level 2) can clear these conditions (which may occur after an early warning, pre-alarm, etc.) by means of silence/reset operations. Signaling will continue even after the cause of the alarm has ceased. If the operator does not intervene in the meantime, the point in pre-alarm status will generate an alarm when the programmed pre-alarm time expires. The pre-alarm time is a short alarm delay that notifies the person/s responsible for the safety of the building and its occupants of the possibility of fire. An alarm will be generated when the programmed pre-alarm time expires, thus causing the evacuation of all the building. After pre-alarm notification, the person/s responsible for the safety of the building and its occupants will have time to verify the real risk of fire and, in the event of a false alarm, will be able to avoid unnecessary evacuation signalling. In the event of pre-alarm status generated by the gas detection line, the pre-alarm signal will reset when the gas detector values drop below the pre-alarm threshold.
[O]	FAULT (yellow)	Indicates an active system fault condition. The display will provide the fault details.	Indicates memory of a cleared fault event. To view the restored fault condition details, consult the events log using the main menu (level 1).	To restore the fault memory (return to LED Off status), reset the control panel (level 2).
[P]	CPU FAULT (yellow)	Indicates trouble with the panel CPU; the panel must be sent back immediately to the manufacturer for repair.	Indicates that the CPU re-initialized (due to control panel shutdown or a fault condition).	Danger: <u>If this LED "blinks", the efficiency of entire system must be checked. To return to LED Off status, reset the control panel (level 2).</u>
[Q]	DISABLED (yellow)	Indicates that one (or more) of the system components (zone or output) has been bypassed.		The display will provide the respective details. Bypassed components (disabled/ out-of-service components) will be unable to generate faults, alarms or signals of any sort and cannot be activated under any circumstances. Components must be bypassed (put out-of-service) during maintenance work.

LED		If On solid:	If Blinking:	Note
[R]	TEST (yellow)	Indicates test status on one or more zones.		A zone in test status cannot generate alarms or signalling of any kind. However, the respective LED will turn on for several seconds and then reset and turn off automatically. The ALARM NAC output will activate for approximately 3 seconds to confirm that the device is working properly. This feature allows technicians to carry out point/zone tests and inspections alone, as it eliminates the need of constantly returning to the panel to verify/reset the events generated by the points.
[S]	ON (green)	Indicates that the system is operating (On).		This LED will go Off in the event of joint primary (230V~) and secondary (batteries) power failure.
[T]	DIALLER ON (red)	Indicates that the dialler activation output is active.	Indicates that the alarm communication has been sent successfully.	The dialler will be activated (after the pre-set delay) in the event of an alarm.
[U]	DISABLE/ FAULT ALARM DIALLER (yellow)	Indicates that the dialler activation output for alarm signalling is disabled or faulty, the display will provide further details.	Indicates restoral of a fault event. This condition can be cleared by reset only (level 2).	
[V]	DISABLE/ FAULT BELLS (yellow)	Indicates that the sounder/flasher activation output is disabled or faulty—the display will provide the respective details.	Indicates restoral of a fault event. This condition can be cleared by reset only (level 2).	
[W]	DISABLE/ FAULT FAULT DIALLER (yellow)	Indicates that the dialler activation output for fault signalling is disabled or faulty, the display will provide further details.	Indicates restoral of a fault event. This condition can be cleared by reset only (level 2).	
[X]	NIGHT MODE (yellow)	Indicates that the panel is operating in night mode.		For safety reasons, the pre-alarm time of all points is cancelled automatically during night mode (night mode pre-alarm time = 0 seconds). As a further safety precaution, the system can be silenced for the pre-set SILENCE time only. Night Mode should be applied when no or few persons are present or awake in the building, and the building security is the responsibility of a night watchman or security patrol guard who is present or notified by the dialler.

Extinguishant board signals (optional system enhancement device)

[Y]	DISABLE EXTINGUISH	Indicates disablement of all types of extinguish commands, via the appropriate key (paragraph 5.1 - [G]).		
[Z]	DISABLE AUTO	Indicates disablement of automatic extinguish commands, via the appropriate key (paragraph 5.1 - [H]).		

LED		If On solid:	If Blinking:	Note
[A1]	DISABLE MANUAL	Indicates disablement of manual extinguish commands, via the appropriate key (<i>paragraph 5.1 - [I]</i>).		
[B1]	EXTINGUISH	Indicates that fire extinction is running.		
[C1]	PRE-EXTINGUISH	Indicates activation of the pre-extinguish output; refer to <i>paragraph 6.14 - Connecting the Extinguishant module (optional system enhancement tool)</i> , terminal PRE-EXT.	Indicates that only one zone is in alarm status, therefore, the extinguishant system will not be activated. If another zone latches in alarm, the extinguishant system will be activated.	
[D1]	FAULT	Indicates trouble with the fire extinction circuits.	Indicates restoral of a fault event.	This condition can be cleared by reset only (level 2).
[E1]	STOP EXTINGUISH	Indicates that the fire extinguishant system has been stopped from a remote hold-off unit; refer to <i>paragraph 6.14 - Connecting the Extinguishant module (optional system enhancement tool)</i> , terminal STOP-EXT.	Indicates restoral of a Stop extinguishant event.	
[F1]	CPU FAULT	Indicates a CPU fault that requires immediate repair.	Indicates restoral of a fault event.	

5.2 Repeater (add-on panel)

Up to four repeater panels can be connected to the RS485 bus. Connected repeater panels replicate all the information provided by the control panel and allow access to all level 1 and 2 functions (view active events, reset, silence, etc. access to the main menu is not possible).



Figure 9 - Front view of the repeater panel

The SmartLetUSee/LCD-Lite repeater is supported by most control panel models. If connected to a SmartLine panel, not all the keys/buttons are active. The following keys/buttons are active:

[A]	Navigation keys	Navigation keys for scrolling active signals
[B]	EVACUATE	As per <i>paragraph 5.1</i>
[C]	SILENCE	As per <i>paragraph 5.1</i>
[D]	RESET	As per <i>paragraph 5.1</i>
[E]	INVESTIGATE	As per <i>paragraph 5.1</i>
[F]	BUZZER	Silences the panel beeper
[G]	TEST	Turns on all the LEDs to verify functionality.

Repeaters provide the following signals.

5.2.1 Display

The display provides same active event data as the control panel. For further details refer to *paragraph 2.5 - Signaling on display* in the User manual.

5.2.2 LED

LED		If On solid:	ON blinking:
[H]	SILENCED	As per <i>paragraph 5.1</i>	
[I]	RESET DISABLED	As per <i>paragraph 5.1</i>	
[J]	INVESTIGATE	Indicates that investigation time has been requested.	
[K]	ALARM	As per <i>paragraph 5.1</i>	
[L]	PRE-ALARM	As per <i>paragraph 5.1</i>	
[M]	FAULT	As per <i>paragraph 5.1</i>	
[N]	CPU FAULT	Indicates that the repeater CPU is not operating properly. If this occurs, the repeater must be repaired immediately.	
[O]	DISABLED	As per <i>paragraph 5.1</i>	
[P]	TEST	As per <i>paragraph 5.1</i>	
[Q]	NIGHT MODE	As per <i>paragraph 5.1</i>	
[R]	BATTERY	Indicates that the panel batteries are low or inefficient.	Indicates restoral of the low/ inefficient battery event.
[S]	EARTH	Indicates voltage dispersion to earth.	Indicates restoral of the voltage dispersion to earth event.
[T]	FUSE	Indicates protection fuse intervention due to short-circuit on the AUX or AUX-R output.	Indicates restoral of the short-circuit on AUX or AUX_R output event.
[U]	MAINS	Indicates Mains failure.	Indicates restoral of the Mains failure event.
[V]	BELLS - ACTIVE	Indicates that the ALARM NAC output is active.	
[W]	BELLS - FAULT	Indicates that a fault has been detected on the ALARM NAC output.	Indicates restoral of the ALARM output fault.
[X]	BELLS - DISABLED	Indicates that the ALARM NAC output has been disabled.	
[Y]	DIALLER - ACTIVE	Indicates that the DIALER output is active.	
[Z]	DIALLER - FAULT	Indicates a DIALER output fault.	Indicates restoral of the Dialler output fault.
[Z1]	DIALLER - DISABLED	Indicates that the DIALER output has been disabled.	

5.2.3 Repeater board

If you open the repeater enclosure, the rear side of the electronic board (which is attached to the frontplate) will be on view. Following is a description of the parts which will be used during the installation phase:

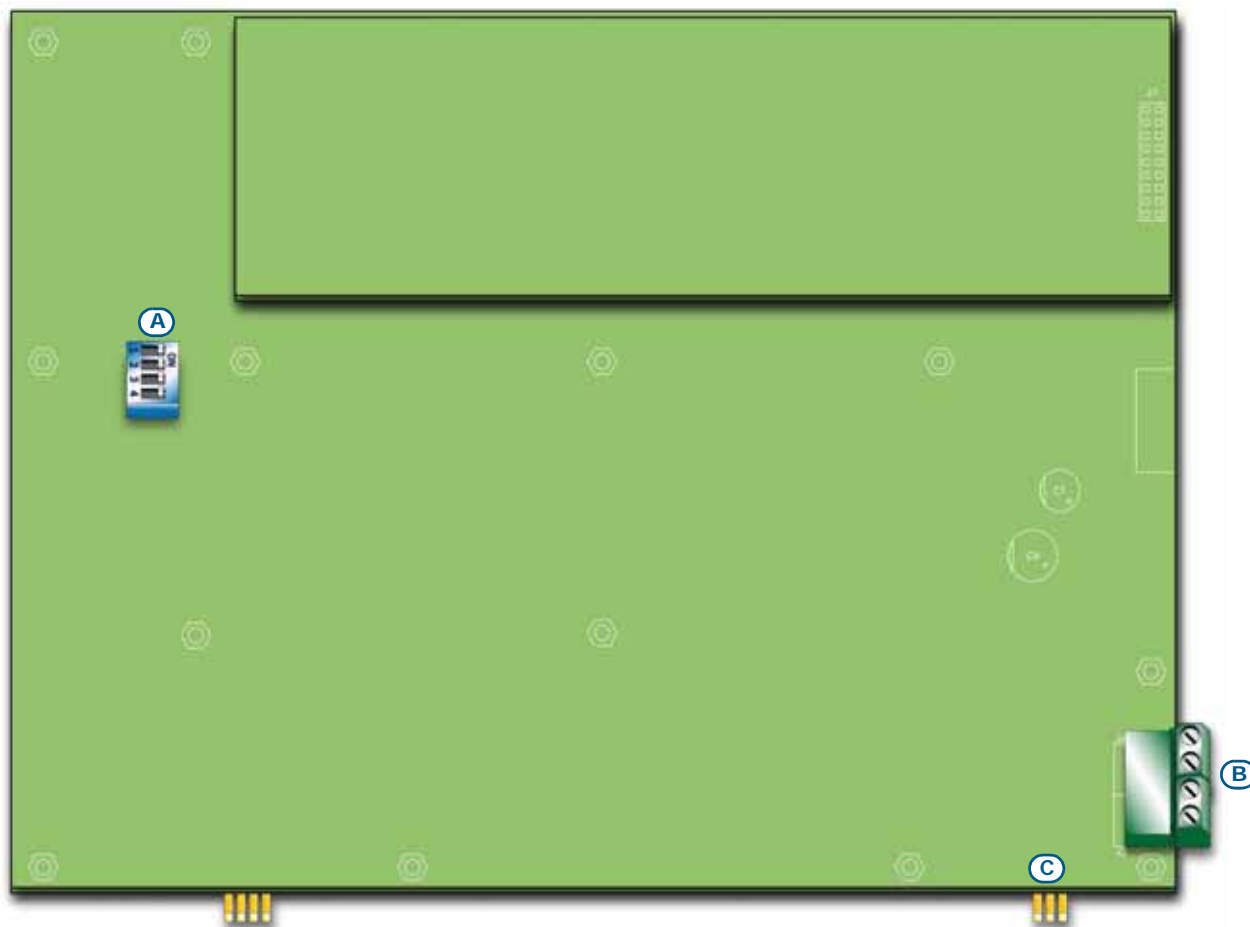


Figure 10 - The rear side of the repeater board

[A]	DIP switches	For the repeater address setting
[B]	RS485 terminals	From the bottom of the figure to the top "+24V - + GND"; for the connection to the RS485 BUS
[C]	EOL terminals	For the setting jumper which indicates the position of the repeater in the system.

Installation instructions

6.1 Mounting the SmartLine/8Z expansion board (accessory item)

The SmartLine/8Z zone expansion board can be used with the SmartLine020-4 and SmartLine036-4 models. The SmartLine020-4 control panel can manage 2 SmartLine/8Z boards (8 zones each board) bringing the total number of zones to 20, while the SmartLine036-4 control panel can manage up to 36 SmartLine/8Z boards, bringing the total number of zones to 36.

The zone expansion board also provides a 1A supervised output, the operating principles of which can be defined during the system configuration phase.

The extinguishant module is packed in a separate cardboard box. Together with the extinguishant module (IN020), you will find a plastic bag containing:

- Pin header for the extinguishant module to SmartLine motherboard connection
- Mounting plate
- Screws
- EOL resistors and diodes

nr. SmartLine/8Z board	Connections	Zones
1	to SmartLine motherboard	5 - 12
2	to SmartLine/8Z board n.1	13 - 20
3	for SmartLine036-4 only	to SmartLine/8Z board n.2
4		to SmartLine/8Z board n.3
		21 - 28
		29 - 36

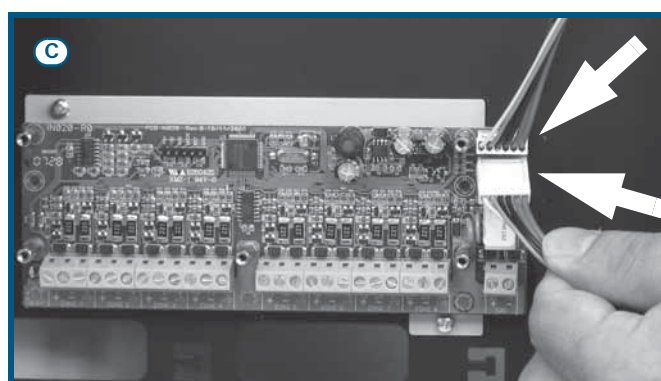
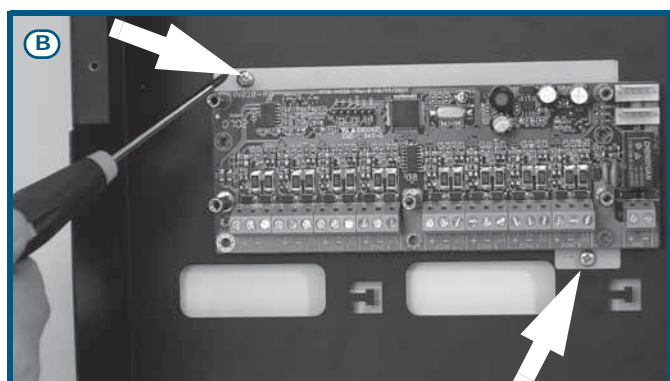
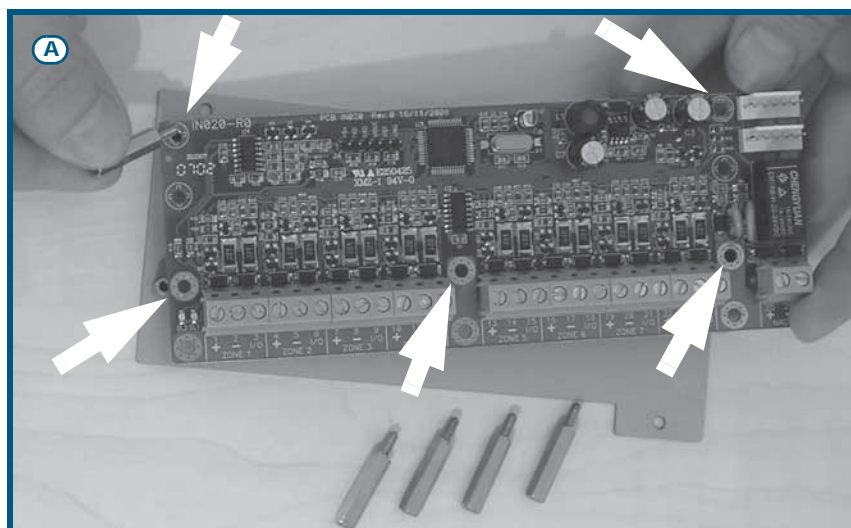


Figure 11 - Mounting the expansion board - 1

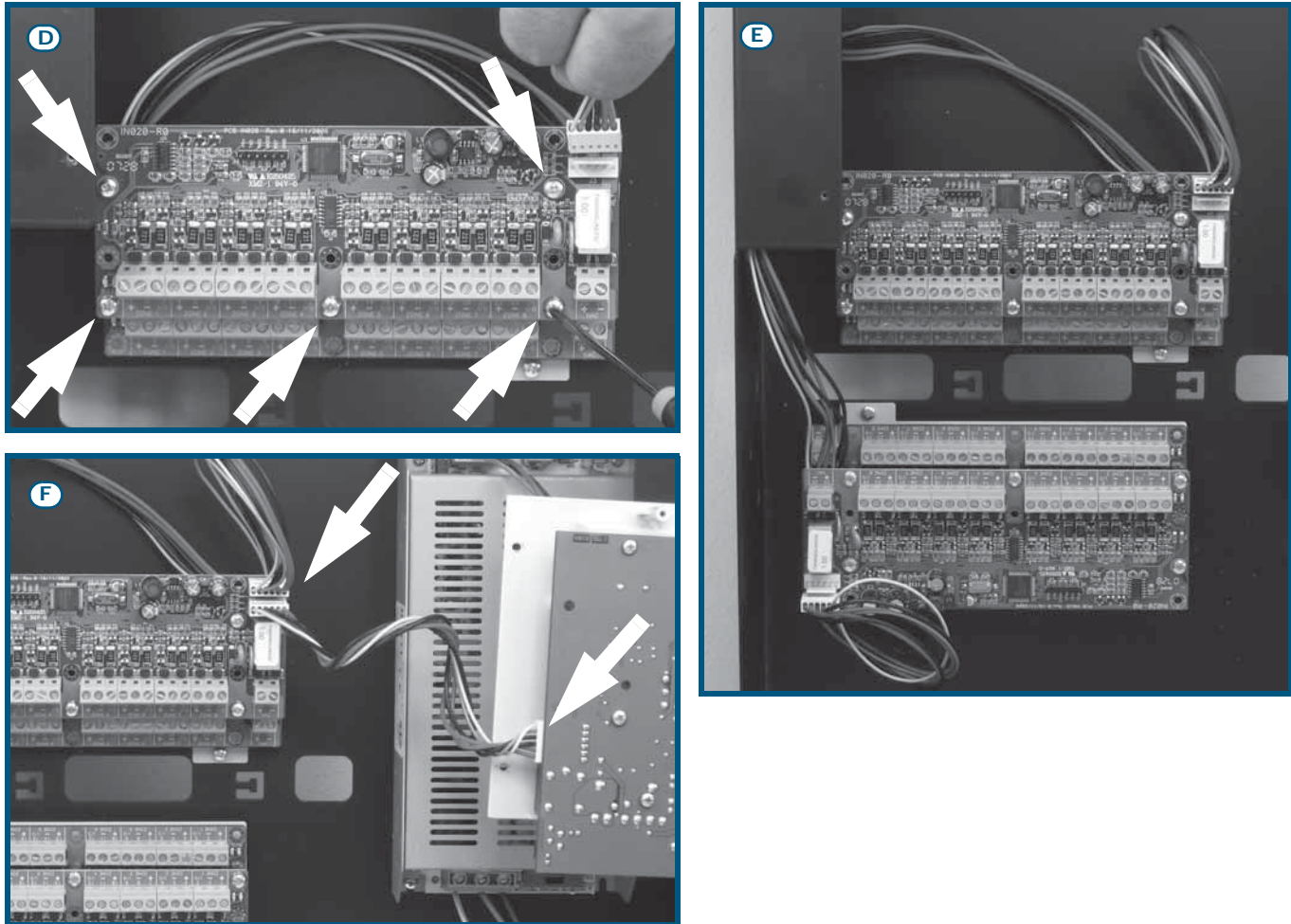


Figure 12 - Mounting the expansion board - 2

1. Remove the four screws and detach the frontplate of the metal enclosure.
2. Remove the four screws and detach the plastic support.
3. Attach the expansion board to the anchor plate, use the metal spacers if you are installing two boards (*Figure 11 - [A]*). Take care to use the mounting holes indicated by the arrows in the photograph.
4. Attach the plate with the board to the back of the metal enclosure (*Figure 11 - [B]*).
5. Using the connection wire, connect the board to the motherboard and to the successive board (*Figure 11 - [C]*).
6. Locate the second expansion board on the metal spacers (*Figure 12 - [D]*).
7. Using the connection wire, connect the board to the previous and successive boards.
8. Mount the third and fourth boards to another anchor plate and connect them together.
9. Attach the second anchor plate to the backplate of the enclosure.
10. Connect the third board to the second (*Figure 12 - [E]*).
11. Using the respective connector, connect the first board to the control panel motherboard (*Figure 12 - [F]*).
12. Replace the plastic holder and close the control panel cabinet.

Note: *In order to allow the control panel to manage the expansion board, you must include it in the configuration. Refer to the Programming section for details.*

6.2 Mounting the SmartLAN/485 Ethernet board (accessory item)

The SmartLAN/485 allows you to program the control panel parameters from remote locations by means of the SmartLeague software via LAN/the Internet. Additionally, the SmartLAN/485 is capable of sending a UDP packet (event description report) to a configurable IP address each time the control panel registers an event.

As a result of this feature, the fire-detection panel can be supervised through INIM's custom software (SmartLook), or integrated into any supervisory software.

For further details and for the installation procedure, refer to the manual provided with the board.

6.3 Mounting the SmartLetLoose/ONE extinguishant board (accessory item)

The extinguishant board comes in a separate cardboard box. Together with the extinguishant board (IN015), you will find a plastic bag containing:

- Jumper for connection between the extinguishant board and the SmartLine motherboard
- Screws
- EOL resistors and diodes

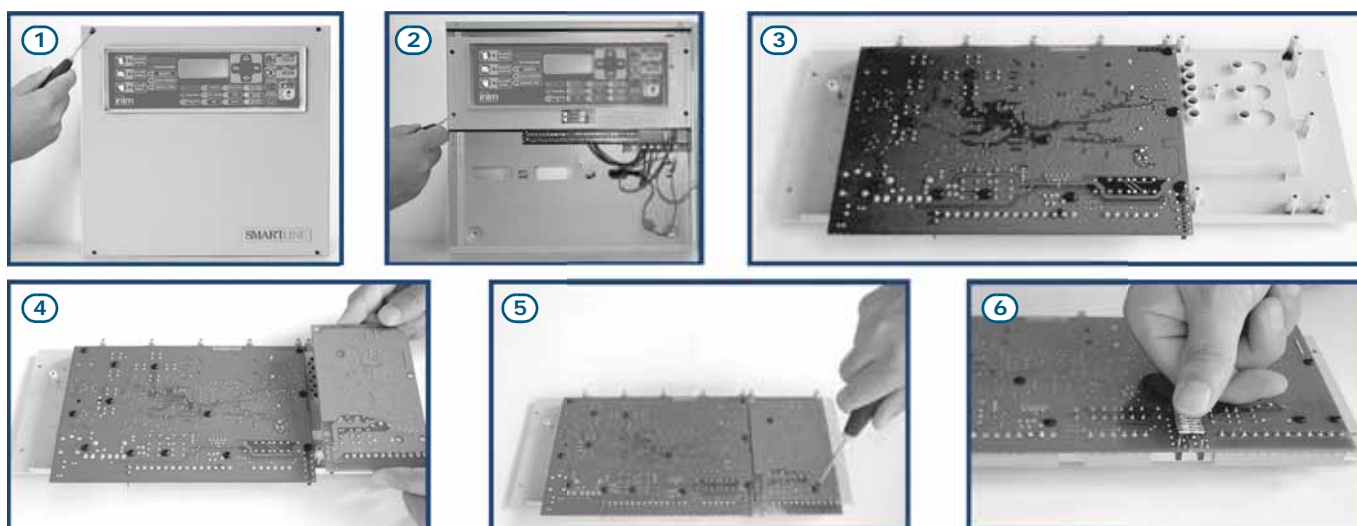


Figure 13 - Mounting the extinguishant board

1. Remove the four screws and detach the frontplate of the metal enclosure.
2. Remove the four screws and detach the plastic support.
3. Rotate the SmartLine motherboard as shown in the figure.
4. Position the extinguishant board in its housing.
5. Using the screws (included), secure the extinguishant board in place.
6. Connect pins J13 of the SmartLine motherboard (*paragraph 4.2 - [P]*) to the respective pins J2 on the extinguishant board.
7. Move the SmartLine motherboard back to its original position.
8. Replace the plastic support.

Note: *In order to allow the control panel to manage the connected extinguishant board, you must include it in the configuration. Refer to the Programming section for details.*

6.4 Wall mounting

6.4.1 Control panel

1. Pull the wires through the wire entry and in such a way that they do not get in way of the installation procedure.
2. Prepare the wall for the four 8mm anchor screws (stop screws) which must be positioned in correspondence with the holes on the backplate of the metal enclosure (*paragraph 4.1 - [M]*).

Danger: **Take care not to drill in the vicinity of electrical wiring, heating ducts and plumbing.**

Note: *Choose anchor screws which are capable of supporting 20kg and which are suitable for the characteristics of the wall.
Ask for professional advice with regard to the best type of anchor screw for the wall concerned.*

3. Using the 4 anchor screws, attach the enclosure securely to the wall.

6.4.2 SmartLetUSee/LCD-Lite repeater (accessory item)

1. Remove the four frontplate screws and lift off the frontplate.
2. Pass the cables through the cable entry on the back of the repeater.
3. Prepare the wall for the four 8mm anchor screws (stop screws) which must be positioned in accordance with the holes on the backplate of the metal enclosure of the repeater.
4. Using the 4 anchor screws, attach the backplate of the repeater securely to the wall.

6.5 Connecting the lines

6.5.1 Connecting the detection lines

Each control panel zone has a pair of detector or call point connection terminals (detection line).

Attention: In order to validate the IMQ-SECURITY SYSTEMS, NOT more 512 detectors and/or manual call points can be connected.

The following diagrams illustrate the detection line wiring of the IRIS devices from INIM (see Appendix A - *Iris devices*):

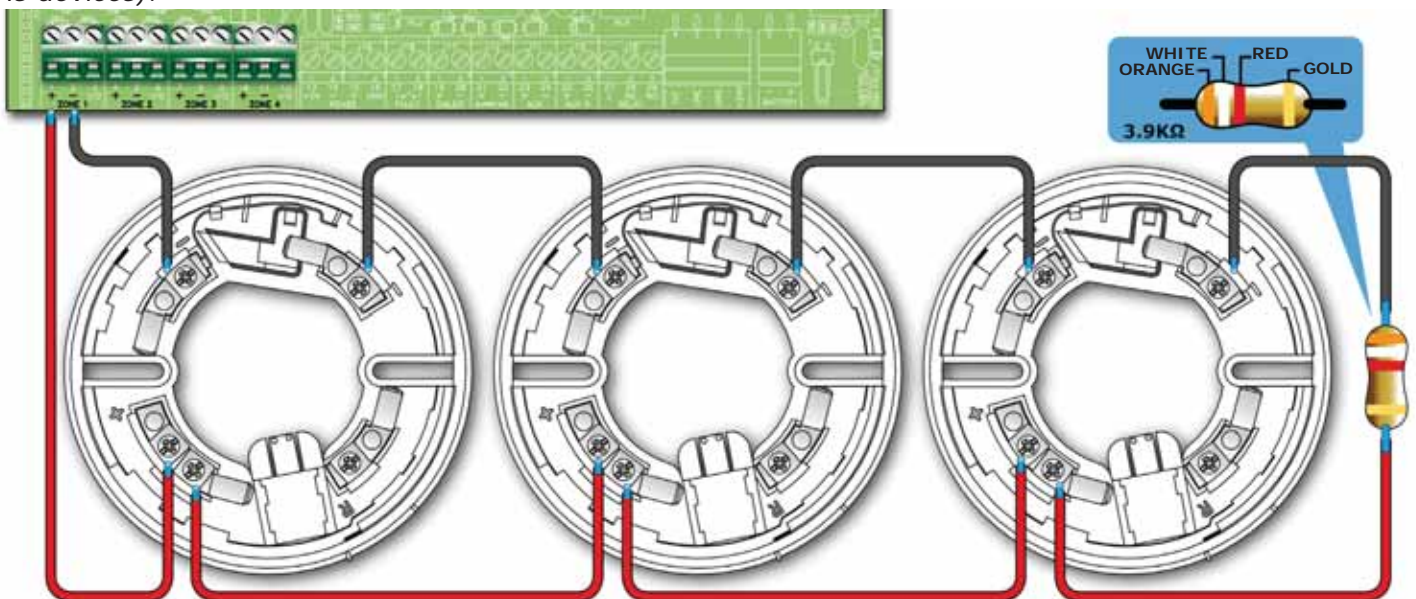


Figure 14 - Connecting Iris detectors

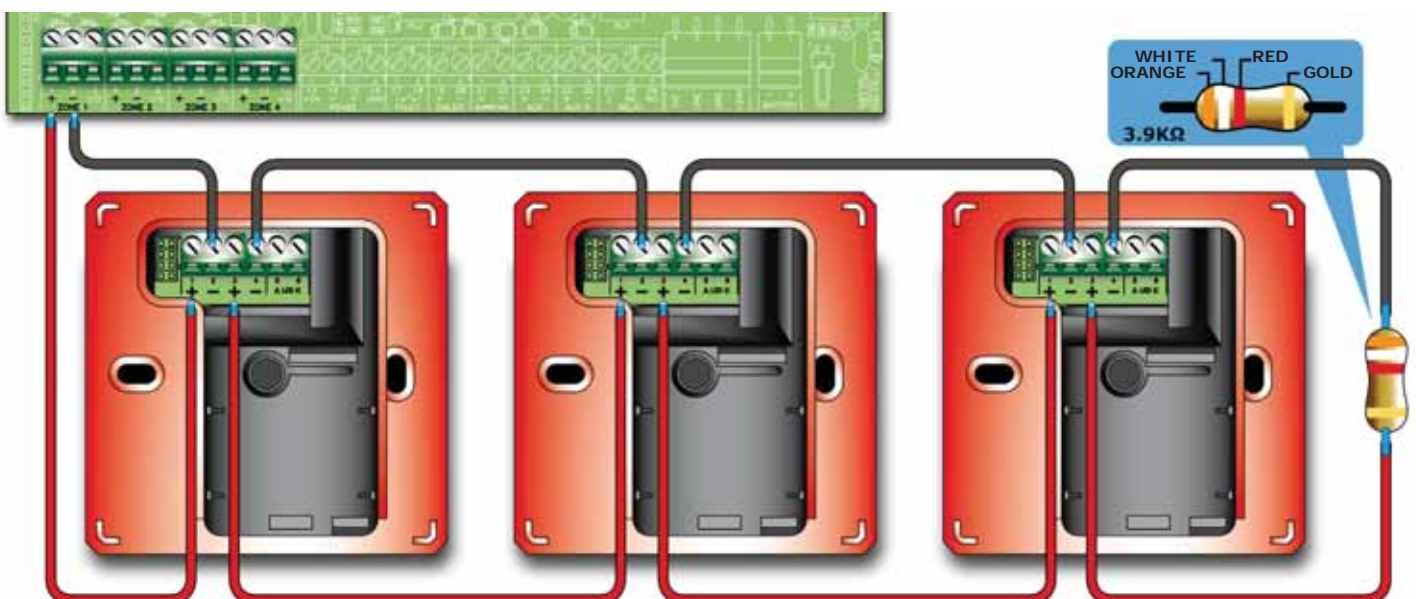


Figure 15 - Connecting Iris call points

If detectors and call points are wired as per the diagram and the zone "Monitor Call points" option is enabled, the control panel will discriminate between detector and call point triggered alarms.

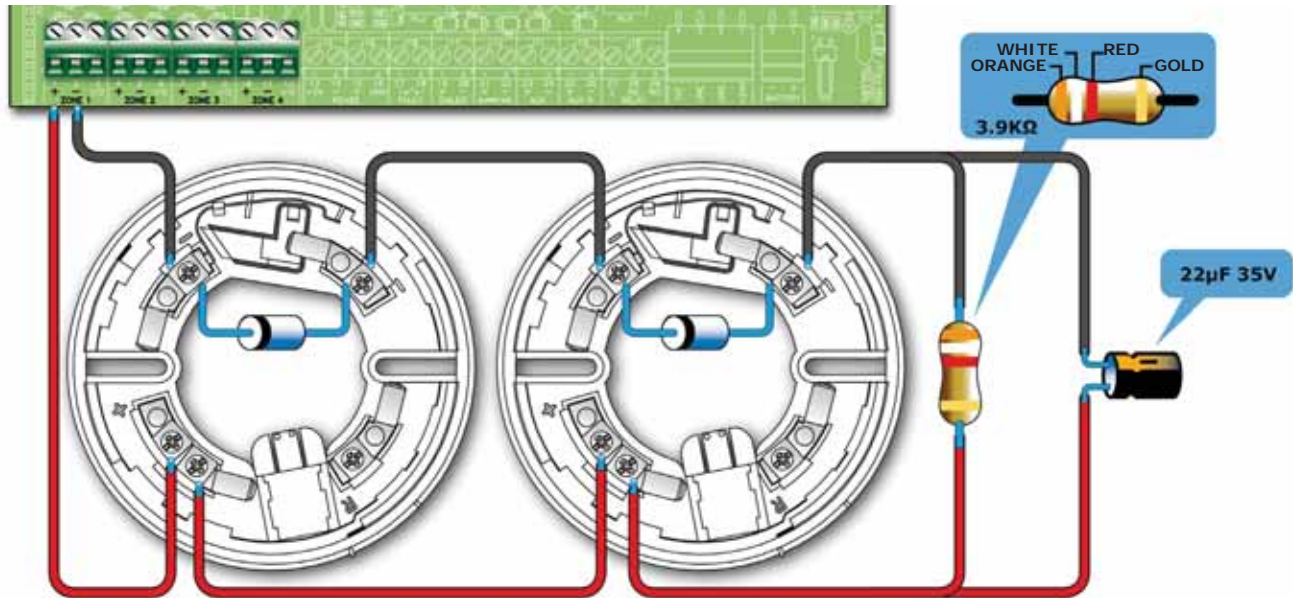


Figure 16 - Wiring for detection with missing detectors

If detectors are wired as per the diagram and the “Det.Missing” option is enabled, the control panel will generate a fault signal when a detector is removed from its base and at the same time will be able to receive alarm signals from other detectors connected downstream.

Attention: If you enable the “Det.Missing” option for a zone that is not wired as illustrated in the figure, the control panel will signal fault only.

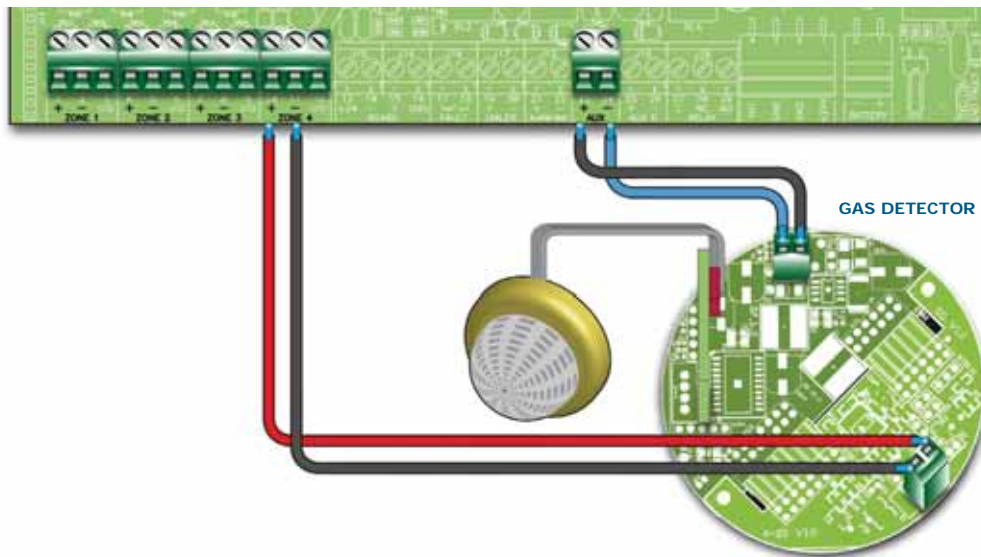


Figure 17 - Connecting gas detectors to the detection line

If the wiring is completed as per the diagram, it will be possible to interface the control panel with a gas line (line configured as a GAS line; refer to the zone programming section).

The example shows a gas detector from “industrial” series, “-ASC” version.

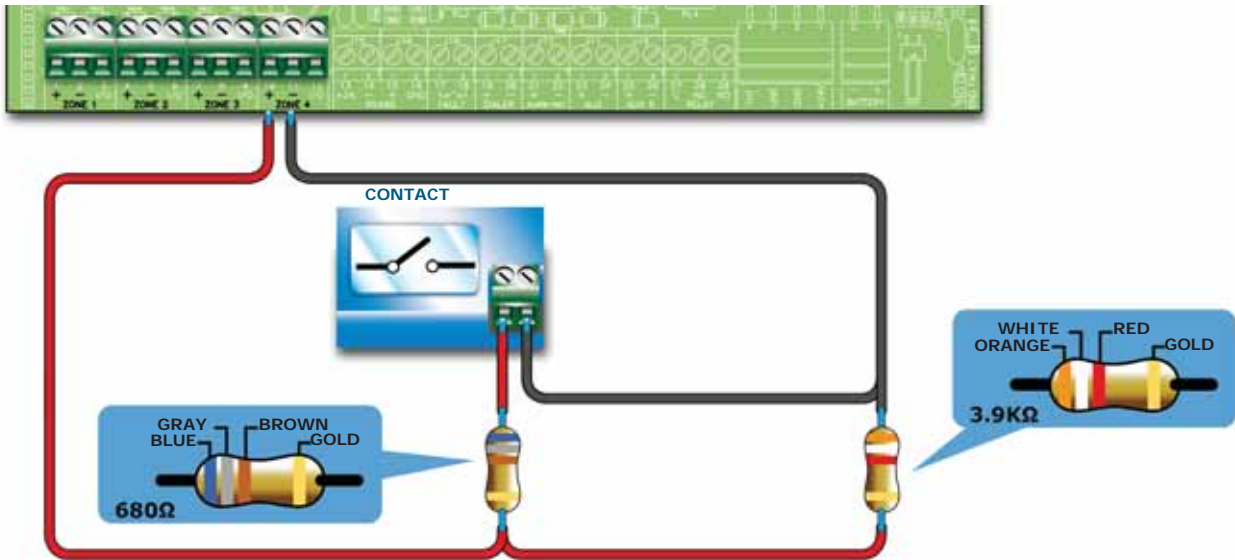


Figure 18 - Connecting generic contacts to the detection line

The wiring diagram above illustrates the connection of a generic device (call point, switch, generic device output) to the detection line. If the line is wired in this way, it will signal a fault when a short-circuit or cable interruption occurs, and will generate the pre-set line signals (alarm, sprinkler, change class, etc.) when the contact closes.

6.5.2 Connecting I/O Lines

Each zone I/O line can be wired in one of the following ways:

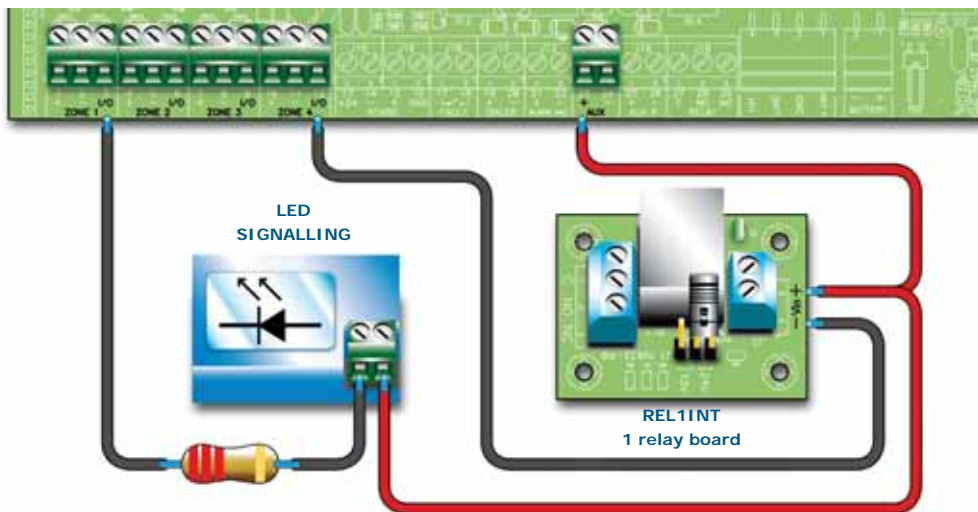


Figure 19 - Wiring the I/O line as an output

The diagram above illustrates a line wired as an output. The terminal will operate in the same way as an open-collector output, that is, it will be open during standby status and close to Ground (-) in the event of activation.

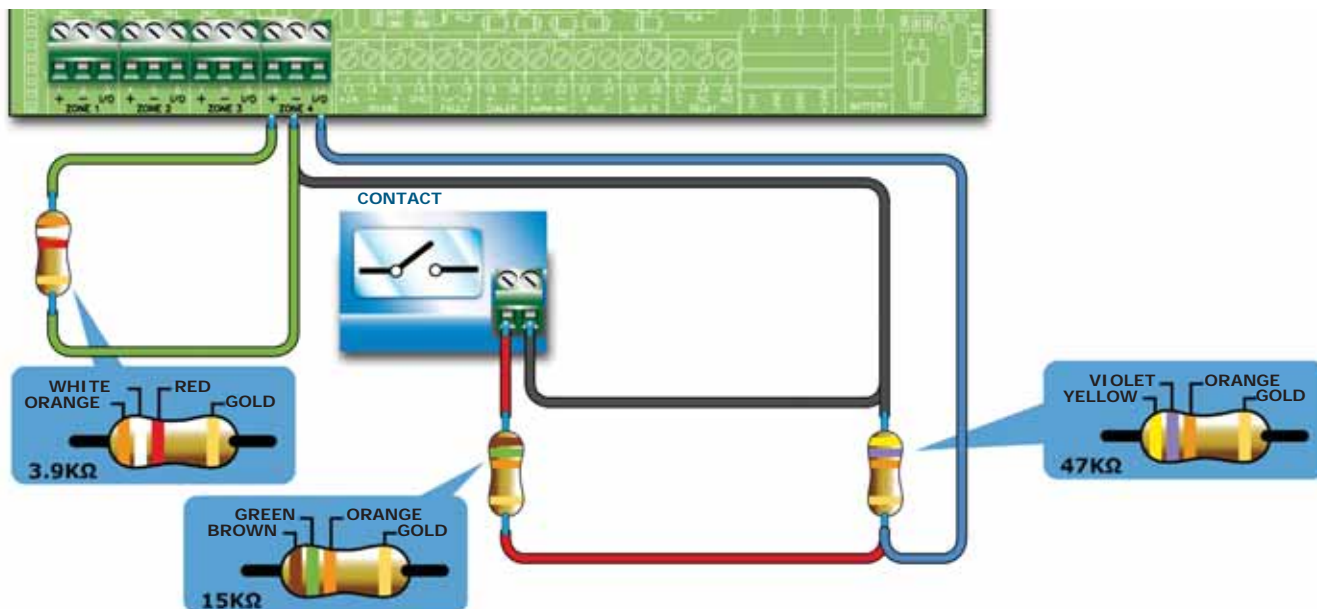


Figure 20 - Wiring the I/O line as an input

The diagram above illustrates a line wired as an input. The EOL resistor will allow the control panel to supervise the wiring, and the resistor connected in series to the activation contact will allow it to discriminate between an activation signal and short-circuit.

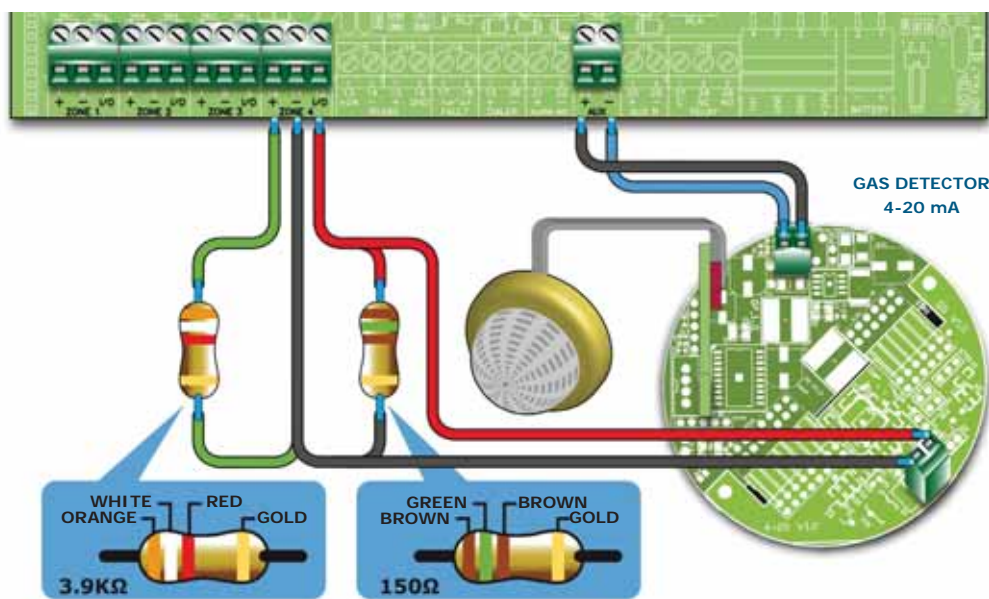


Figure 21 - Connecting 4-20 mA gas detectors

The diagram above illustrates a I/O line wired as a 4-20mA gas input, this wiring method allows the line to interface with a 4-20mA gas detector.

The example shows a gas detector from “industrial” series, “-42” version.

Note: *In order to validate the IMQ-SECURITY SYSTEMS certification, this output should not be used as a type C, E or J output (EN 54-1), and must not be used to command Fire-alarm or Fault transmission devices.*

6.5.3 Wiring

1. Use 2 pole cable with Fire code compliant flame class.

Note: *In order to validate the IMQ-SECURITY SYSTEMS certification: the total number of fire detectors and/or manual call points connected to a zone using the split method (terminals + with - and I/O with -), must not exceed 30 units; the maximum wire length must not exceed 3000m and the wire resistance must not exceed 100 ohm.*

2. Fire alarm wires must be separate from other power wiring circuits.
3. All cabling, connections and junctions should be completed using the local country Fire Code compliant method.

6.5.4 Fire code guidelines

Danger: All circuits should be wired using the local country Fire Code compliant method.

6.6 Connecting an alarm dialler

The control panel dialler must have an activation terminal that will generate calls when it connects to *GND* (activation -A).

In the event of an alarm, the panel will trigger the dialler which, after the delay set during the programming phase, will send the respective calls to pre-set telephone numbers.

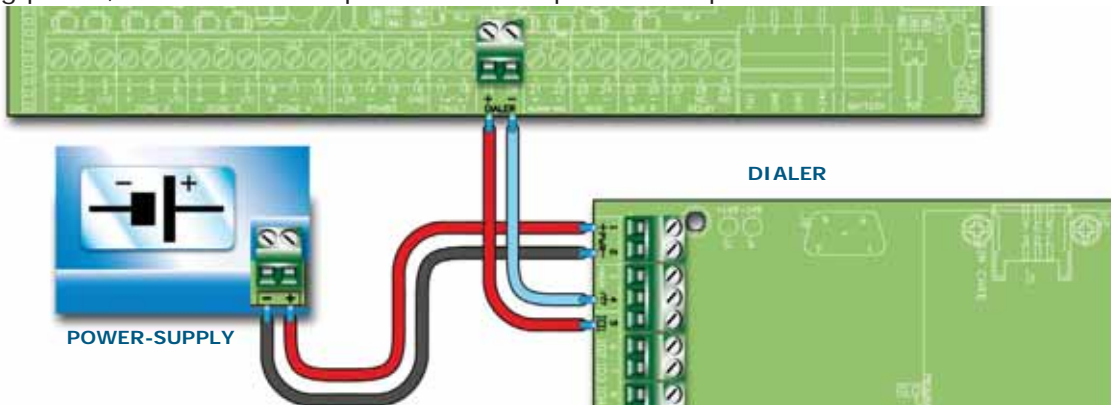


Figure 22 - Connecting the dialler

6.6.1 Wiring

1. Connect the telephone dialler to the *DIALER* terminals.
2. Install a 10 k Ω resistor to the dialler, as shown in the previous figure. This resistor will monitor the integrity of the connection between the panel and the dialler and will signal promptly any short-circuits or interruptions.

Note: If you are not connecting a dialler, the control panel +output should be connected to the +AUX output by a 10 k Ω resistor.

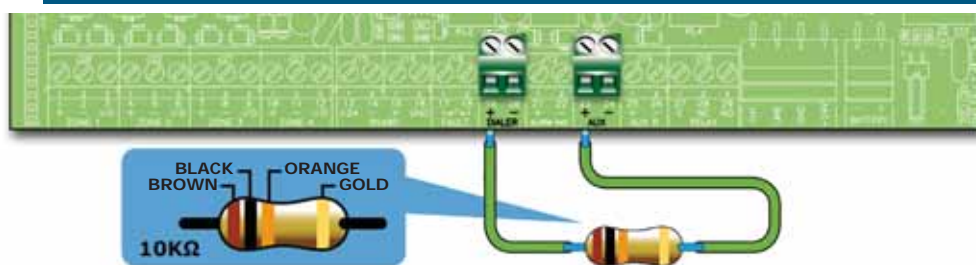


Figure 23 - +DIALER output connection without dialler

6.7 Connecting the dialler for fault communications

The control panel dialler must have an activation terminal that will generate calls when it connects to *GND* (activation -A).

In the event of a fault, the control panel will trigger the dialler which will send the respective calls.

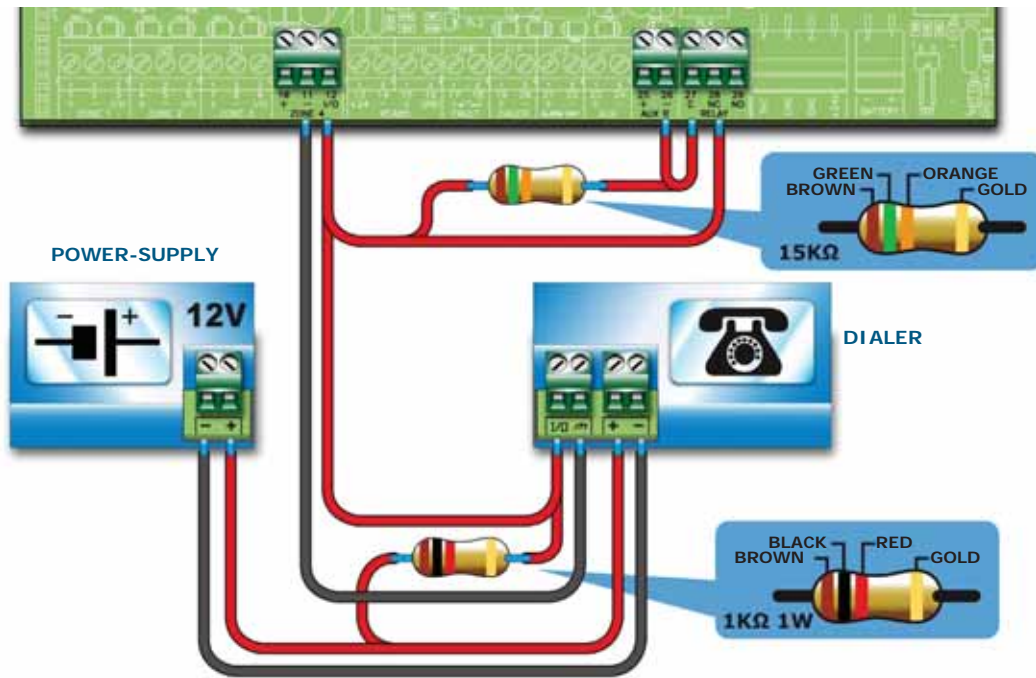


Figure 24 - Connecting the dialler

6.7.1 Wiring

1. Connect the dialler to terminals - and I/O of zone 4 of the control panel.
2. Add a 1 kΩ 1W resistor to the dialler between the activation terminal and the + terminal. This resistor will monitor the integrity of the connection between the panel and the dialler and will signal promptly any short-circuits or interruptions.
3. Add a 15 kΩ resistor to the control panel between the zone 4 terminals and the AUX R and RELAY, terminals, as shown in the figure.
4. Access the SmartLeague software, go to “SmartLine control panel/Other options”, select “Output to fault warning routing equipment”.

6.8 Connecting the RS485 BUS

The RS485 BUS terminals accept up to 4 SmartLetUSee/LCD-Lite repeaters (remote information points, generally located in the entrance areas of the protected building) and 2 SmartLevel power stations.

The devices must be connected in parallel. The control panel communicates with devices by means of a highly noise-immune digital protocol.

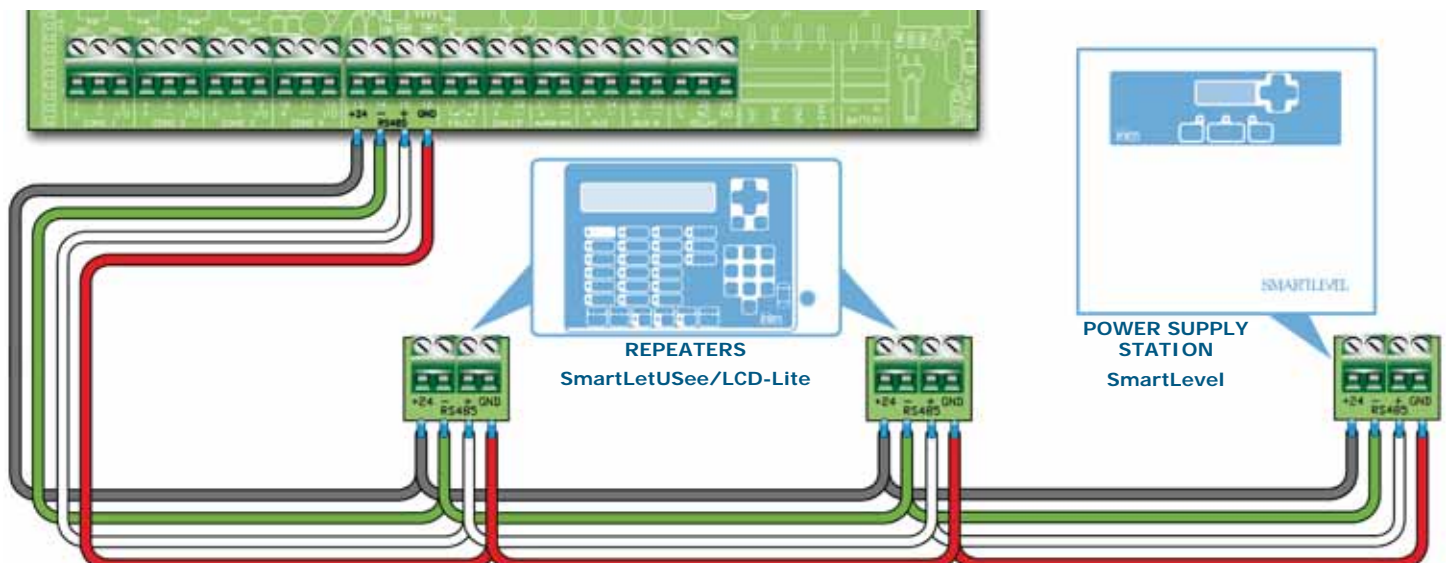


Figure 25 - Connecting the RS485 BUS

6.8.1 Wiring

1. Use a 4 pole shielded-twisted cable.
2. The cable length between the panel and repeater must not exceed 1000 m.
3. Connect the shield to earth (terminal 6 can be used for this connection).

6.8.2 Setting the addresses of devices connected to the RS485 BUS

1. Each of the devices connected to the RS485 BUS must have a distinct address. When setting the addresses of SmartLevel devices, refer to the Power Station programming manual. When setting the addresses of repeaters, use the DIP switches (Figure 10 - The rear side of the repeater board, [A]).

Address	1	2	3	4
DIP Switch position				

Attention: All other DIP switch configurations are NOT allowed.

2. Ensure that the EOL jumper (Figure 10 - The rear side of the repeater board, [C]) is set in the EOL position on the last device on the line ONLY.

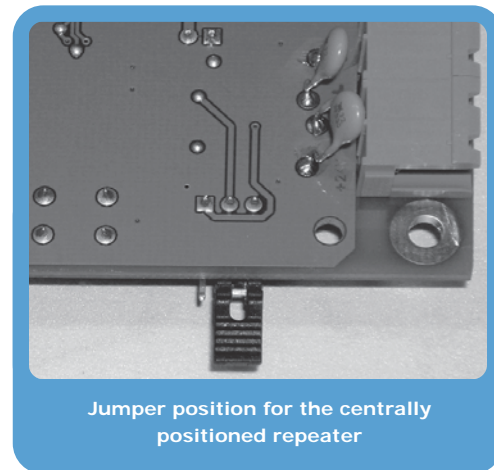
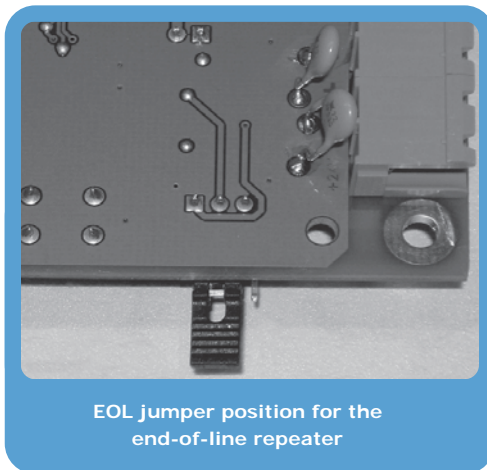


Figure 26 - SmartLetUSee/LCD-Lite board - jumper position

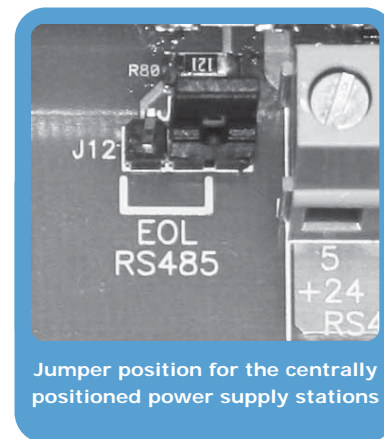
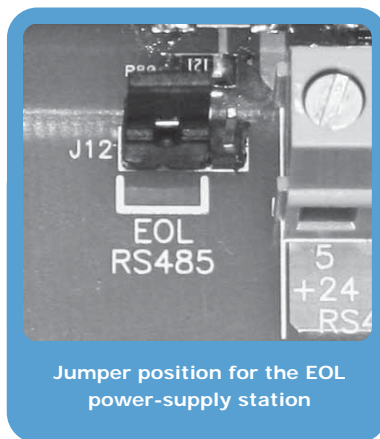


Figure 27 - SmartLevel board - jumper position

6.9 Connecting the fault signalling outputs

The control panel provides a Fault signal output (normally open, non-supervised contact).

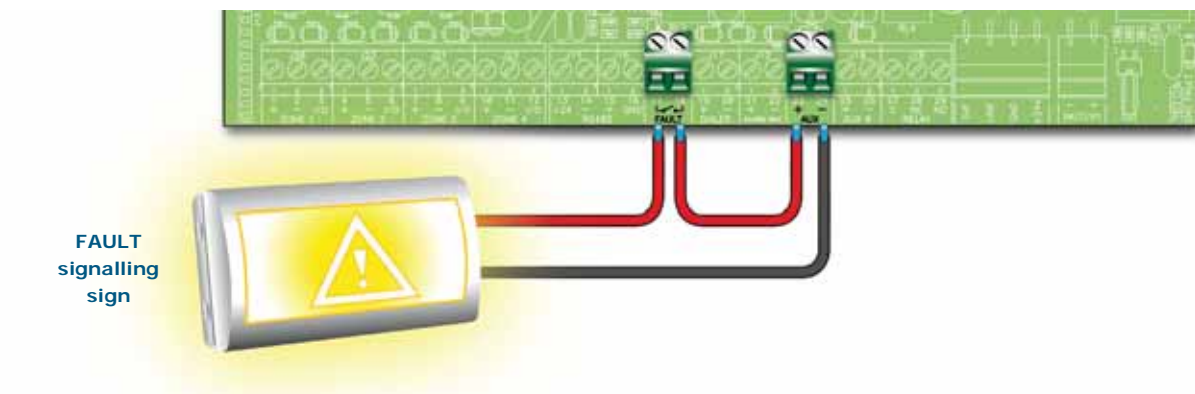


Figure 28 - Connecting the fault signal output

During standby status, the 2 terminals will be open. If the control panel detects any type of fault, the two terminals will close together. The contact can switch a maximum load of 1A - 30V.

Note: *In order to validate the IMQ-SISTEMI DI SICUREZZA certification, this output should not be used as a type J output (EN 54-1), therefore, it must not be used to command Fault transmission devices.*

6.9.1 Wiring

Use NON-shielded cable. The wire section should be compatible with the wire length and load connected to the output.

6.10 Connecting the Alarm signalling output

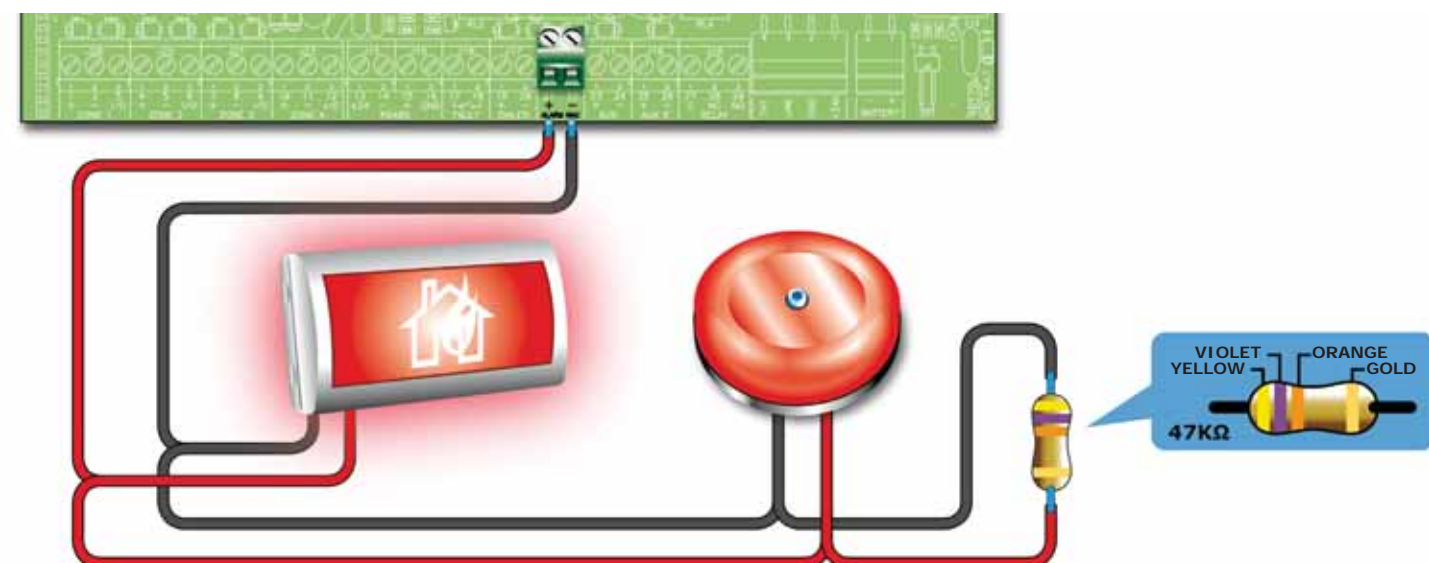


Figure 29 - Connecting the Alarm output

The alarm output is a silenceable supervised output protected by a resettable fuse @ 0.9 A.

During standby status the panel will allow a low supervisory current to circulate on the line, with reverse polarity to that indicated on the board. The diodes connected in series to each load on the line will ensure that the current closes on the EOL resistor. This current allows the panel to verify cable integrity. Open or shorted conditions on the wires will generate a fault signal: "Open" or "Shorted alarm output".

In the event of an alarm, the output will activate and the panel will supply 24V in accordance with the polarity indicated on the board.

6.10.1 Wiring

1. Use NON-shielded cable. The wire section should be compatible with the wire length and load connected to the output.
2. Connect the EOL resistor (included) in parallel to the last device on the line (47 K Ω).
3. Connect a 1N4007 diode (or equivalent) in series to each load.

6.11 Connecting NAC outputs to the Smart/8Z expansion board

The NAC outputs on the expansion boards are programmable, supervised outputs protected by a resettable 0.9A fuse.

During standby status the panel will allow a low supervisory current to circulate on the line, with reverse polarity to that indicated on the board. The diodes connected in series to each load on the line will ensure that the current closes on the EOL resistor. This current allows the panel to verify cable integrity. Open or shorted conditions on the wires will generate a fault signal: "Open" or "Shorted alarm output".

In the event of an alarm, the output will activate and the panel will supply 24V in accordance with the polarity indicated on the board.

Note: *In order to validate the IMQ-SECURITY SYSTEMS certification, and to comply with type C outputs, thus suitable to command Fire Alarm signalling devices, these outputs must be programmed to activate only in the event of fire. Furthermore, they should not be used as type E or J outputs (EN 54-1) and consequently should not be used to command Alarm or Fault transmission devices.*

6.11.1 Wiring

Refer to *paragraph 6.10.1 - Wiring*.

6.12 Connecting AUX and AUX-R outputs

6.12.1 AUX output

The AUX output supplies 24V current (27.6V \approx) and a maximum current of 0.9A current to power external devices. The output is protected by a resettable fuse @ 0.9 A.

In the event of short-circuit, the panel will signal a fault.

6.12.2 AUX-R output

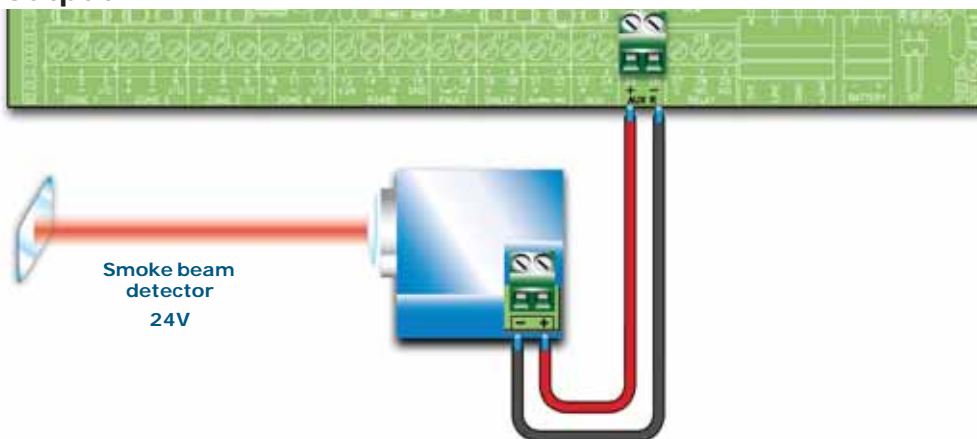


Figure 30 - Connecting AUX-R output

The AUX-R output supplies 24V current (27.6V \approx) and 0.9A current (maximum) that is removed during reset, and therefore can be used as a power source to beam detectors, that once latched in alarm must be switched off in order to reset to standby status.

The AUX-R output can be wired to activate/deactivate as a consequence of different conditions (refer to the Programming section).

6.12.3 Wiring

Use NON-shielded cable. The wire section should be compatible with the wire length and load connected to the output.

6.13 Connecting RELAY output

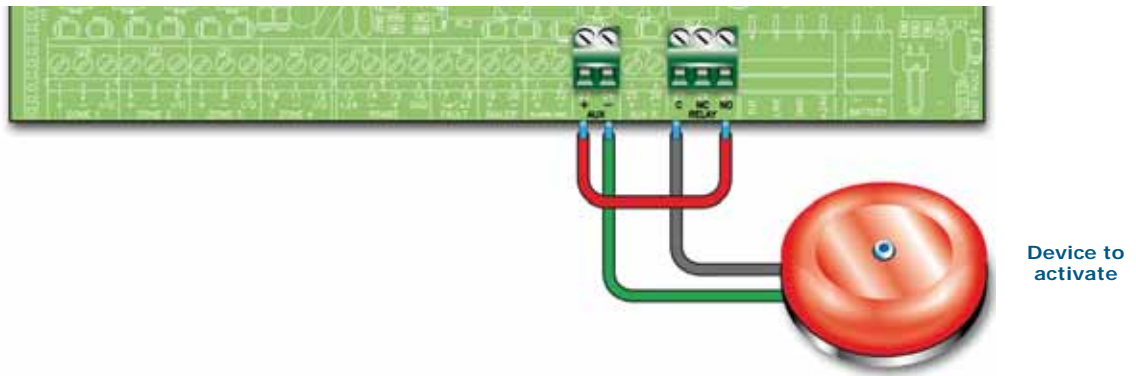


Figure 31 - Connecting RELAY output

The RELAY output provides a dry contact that can switch 1A 30V loads. At default the relay is configured to activate in the event of an alarm but can be configured to activate in the event of various conditions.

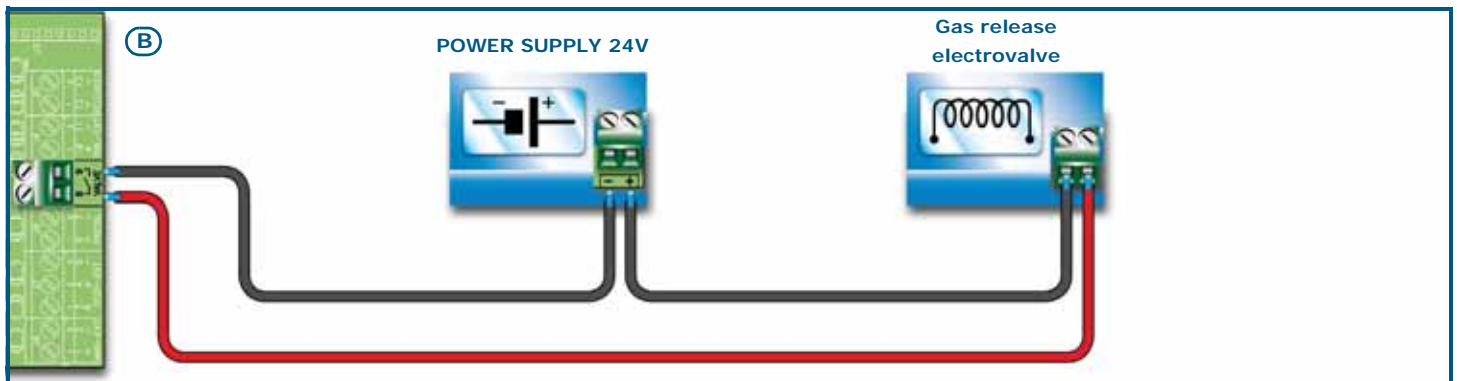
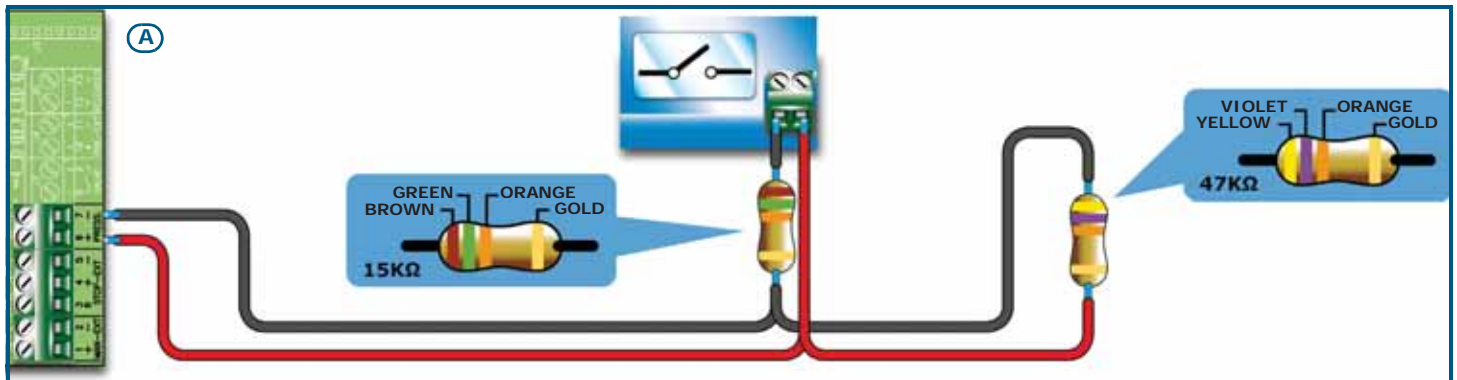
Note: *In order to validate the IMQ-SECURITY SYSTEMS certification, this output should not be used as a type C, E or J output (EN 54-1), and must not be used to command Fire-alarm or Fault transmission devices.*

6.13.1 Wiring

Use NON-shielded cable. The wire section should be compatible with the wire length and load connected to the output.

Note: *The relay contacts on the electronic are suitable for SELV circuitry only.*

6.14 Connecting the Extinguishant module (optional system enhancement tool)



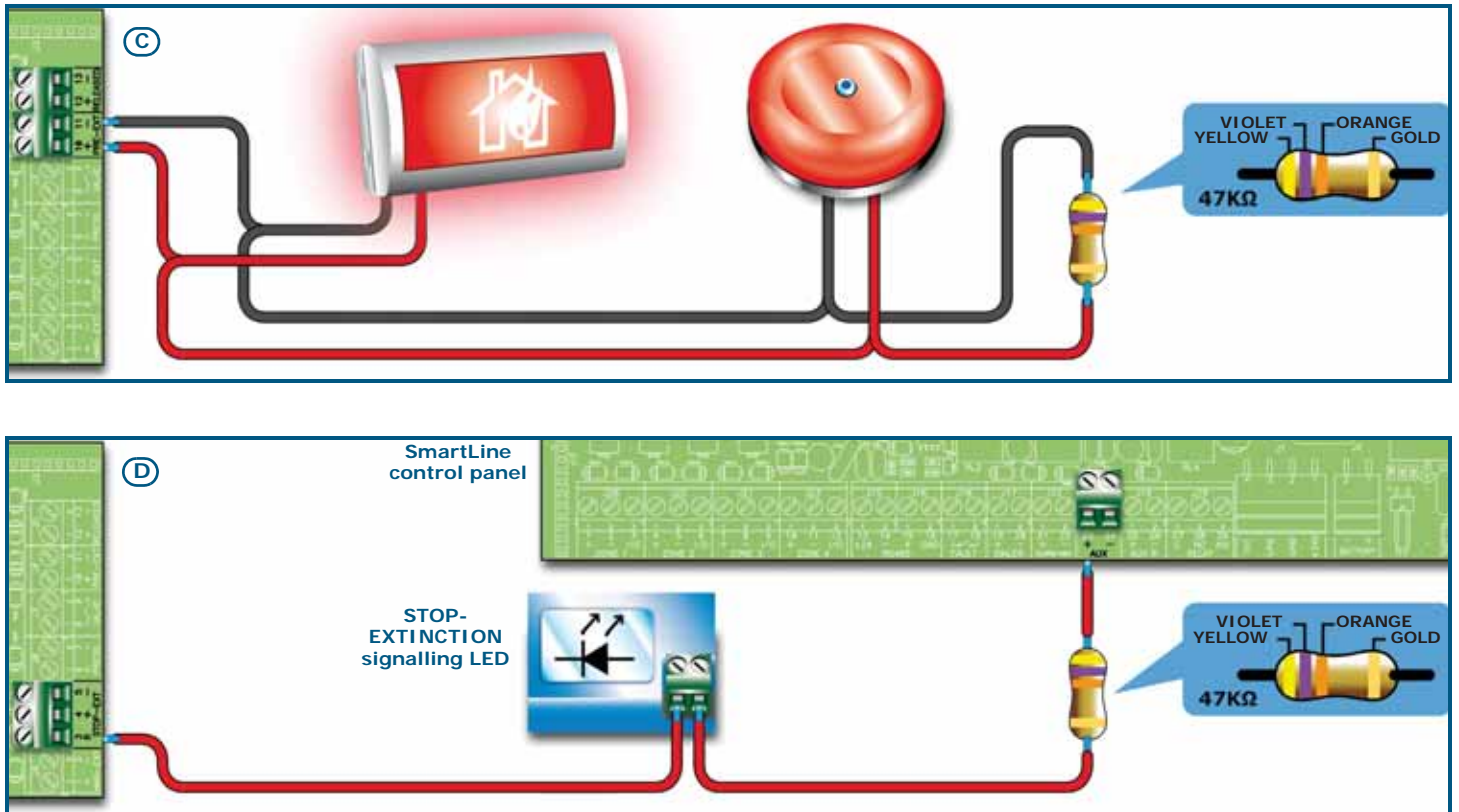


Figure 32 - Extinguishant module

6.14.1 Inputs

Terminal	Device to be connected	Input Type	Note	Wiring Diagram
MAN-EXT	Extinguishment system Start button	Supervised.	Up to 20 devices can be connected to this input.	<i>Figure 32 - Extinguishant module/A</i> 47K = Standby 15K = Active
STOP-EXT	Button to stop the extinguishment-system manually	Supervised.	The STOP extinguishment-system button should always be located near to the protected area. This will allow any persons present during the release of extinguishment gas to stop the process and evacuate the area unharmed. Up to 20 devices can be connected to this input.	
PRESS	Gas extinguishment pressure switch.	Supervised.	The pressure switch has two functions: - Under normal operating conditions, it monitors the pressure of the Gas extinguishment. If the pressure drops spontaneously below the pre-set value, it will generate a fault signal. - After an 'Extinguishment' command, it confirms that the command has been executed.	

6.14.2 Outputs

Terminal	Device/s to connect	Output Type	Note	Wiring Diagram
VALVE	Electrovalve for gas release.	Supervised		Figure 32 - Extinguishant module/B
PRE-EXT	Audible and Visual signalling devices	Supervised	The signalling devices activate as soon as the detectors sense fire conditions that require gas extinguishant intervention. This will allow building occupants to evacuate the building before the gas extinguishant is released. The delay between the activation of alarm signalling devices and the release of the gas extinguishant is customizable.	Figure 32 - Extinguishant module/C 47K Balancing
RELEASED	"Extinguishant Gas release" signalling devices	Supervised	There are two activation modes: - activation on confirmation of Extinguishant Gas release; - simultaneous activation with the electrovalve output. This mode requires gas detectors in the protected environment.	
R	Remote LED that signals the deployment of the STOP extinguishant-system button.	Open Collector (non-supervised)	Activates (closes to GND) in the event of activation of the STOP EXT input (max 100 mA).	Figure 32 - Extinguishant module/D

6.15 Connecting the mains power source

The power system of the SmartLine control panel is EN54-4 compliant.

Danger: DO NOT power up the system with a non-compliant voltage.

1. Connect the mains power supply to the terminals on the power-supply module (*Figure 7 - Switching power supply, [A]* and *Figure 33 - Earthing system, [A]*).
For a safety standards compliant system, the Line must be connected to terminal "L", the Neutral conductor to terminal "N".

This panel must be connected to a separate line on the Electrical Switchboard (Mains power supply). The line must be protected by a sectioning device which complies with local safety regulations, fire codes, laws and bylaws in force.

Note: As a further safety measure, the electrical system of the building must be protected against overload and short-circuit.

Note: The ends of wires must not be soft soldered in points where they are subject to clamping.

- Primary power source: 230V~ (-15%/+ 10%) 50/60Hz
- Max. current draw SmartLine020 control panel: 0.5 A
- Max. current draw SmartLine036 control panel: 1.1 A

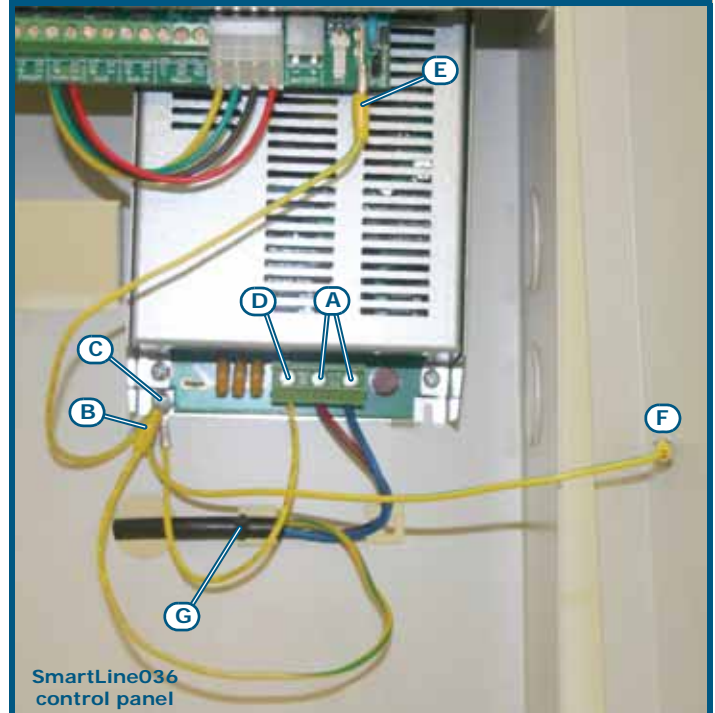
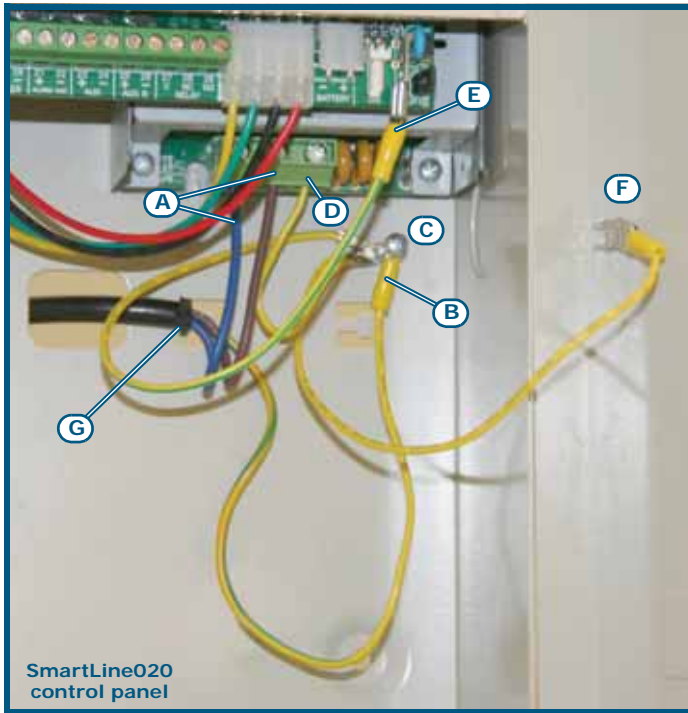


Figure 33 - Earthing system

2. Crimp the earth line wire to the eyelet terminal [B] (included in the package).
3. Attach the wire with the eyelet to the control panel using the ground connection screw [C].
4. Ensure that the terminal "⊕" of the power supply module [D], the motherboard [E] and the frontplate [F] of the enclosure are connected to earthing system.

Danger: The protective earthing system must be compliant with the local safety regulations, fire codes, laws and bylaws in force.

Note: A protective earth connection ensures that all exposed conductive surfaces are at the same electrical potential as the earth surface, in order to avoid the risk of electrical shock if a person touches a device in which an insulation fault has occurred. In the event of an insulation fault, a protective earth connection will generate a high fault current which in turn will trigger an overcurrent protection device (fuse) and disconnect the power supply.

5. Ensure that low-current safety or signal lines DO NOT come into contact with points with potentially dangerous currents.
Using a plastic cable tie, bunch the wires together and secure them to one of the wire hooks on the backplate of the enclosure [G].

Note: The connection wires (to the electrical mains, and also any other wires inside the cabinet) must be secured to the cable hooks on the back box by means of plastic cable ties or similar fittings. Use cable with double isolation for the connection to the electrical mains.

6. Insert the two 12V batteries and connect them to the power supply module (Figure 7 - Switching power supply, [C]).

6.16 Connecting the batteries

The metal enclosure provides housing for two 12V, 7Ah lead batteries for the SmartLine020 and 17Ah for the SmartLine036. The two batteries must be connected in series, in such a way as to provide a 24V current.

Using the connection wires (included), connect the batteries together and then connect them to the SmartLine control panel:

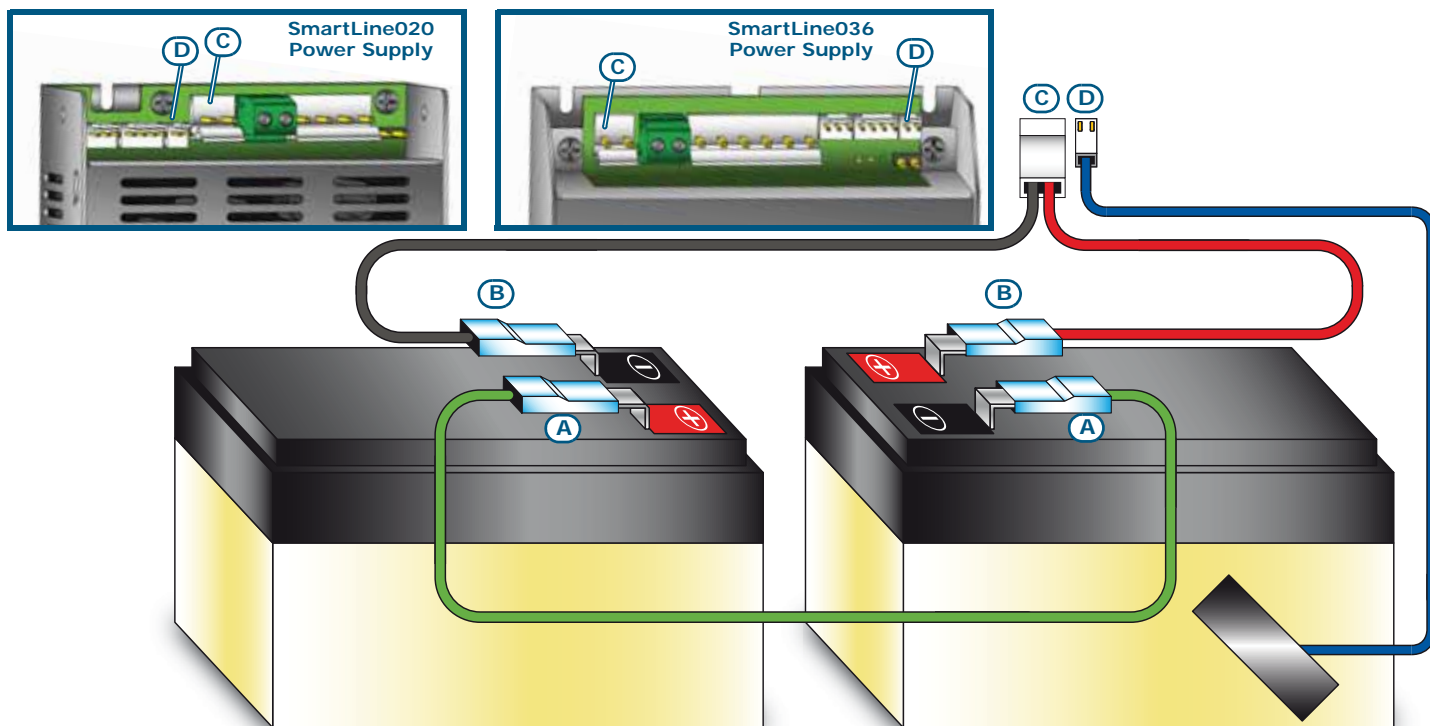


Figure 34 - Connecting the batteries

1. Connect the connection wire [A] to the two batteries.
2. Connect the wire [B] to the batteries.

Attention: Be sure that cable polarity is correct.

3. Connect the terminal [C] of the battery wire to the proper connector of the power-supply unit (*Figure 7 - Switching power supply, [C]*).

Attention: Be sure that connector polarity is correct.

The batteries are the secondary power supply of the system. Once powered up, the panel will charge and monitor the batteries automatically. The battery monitoring process is as follows:

- Efficiency test
The control panel tests the battery efficiency every 10 minutes. If their internal resistance is over the allowed limit, the control panel will signal a "Missing bat." fault.
- Battery level test
The control panel monitors the charge level of the batteries continuously. In the event of mains failure, the control panel will continue monitoring the charge level of the batteries. If the voltage drops below 22.8V, the power supply station will signal a "Battery low" event. The event will end when the voltage restores to 24.6V.
- Deep discharge shutdown
If a mains failure event lasts for a long period, and battery voltage drops below 18V, the panel will shutdown the batteries automatically in order to avoid irreparable damage.

6.17 Thermal probe

Attention: In order to validate the IMQ-SISTEMI DI SICUREZZA certification and comply with EN 54-4 requirements, installation of a thermal probe is essential.

The thermal probe regulates the charging process in accordance with the battery temperature. The thermal probe protects against battery overheating and their consequent permanent damage.

6.17.1 Connecting the thermal probe

Connect the thermal probe to the proper connector of the power-supply module (*Figure 7 - Switching power supply, [D]* and *Figure 34 - Connecting the batteries, [D]*).

Using adhesive-insulating tape, attach the thermal probe to one of the batteries, in order to provide optimized heat-transfer measurements.

Powering up and configuring the system

7.1 Testing wiring integrity

Before powering-up the system, check the wiring integrity and the isolation between the wires and earth.

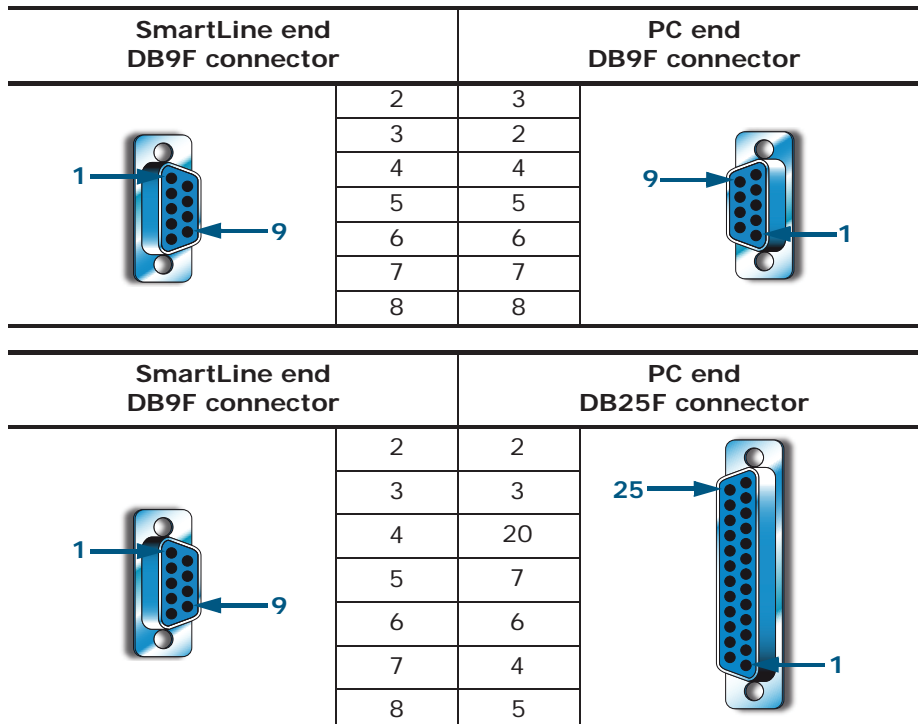
1. Remove the jumper (*paragraph 4.2 - [L]*) in order to bypass earth fault check.
2. Using a tester, check that the resistance between each wire and earth is infinite.
3. Replace the jumper in order to unbypass earth fault check.
4. Disconnect the wires of each line.
5. Using a tester, ensure that the line resistance corresponds to the value as the EOL resistance.
6. Disconnect the wires of the supervised outputs from the respective terminals on the motherboard.
7. Using a tester, measure the cable resistance. Test both polarities. At least one must have the same resistance value as the EOL resistor.
8. Check that all cables are properly separated, bunched (by means of cable ties) and attached firmly to the cable hooks on the backplate.
9. Check the correct polarity of the primary power source connection (230V~).
10. Ensure that the cable is attached firmly to the cable hook by means of a plastic cable tie.
11. Ensure that the repeater panel address DIP microswitches have been set properly (*Figure 10 - The rear side of the repeater board, [A]*).
12. Ensure that the EOL resistance jumper of the last device connected to the BUS is in the EOL position.

7.2 Connecting the RS232 PC serial link

Connect the RS232 cable to the apparatus by means of an RS232 serial input (*paragraph 4.2 - [M]*).

Note: *The connection between the panel and the PC will be operative only when the PC programming jumper is inserted.*

The cable should be connected to the device as shown:



Note:

The RS232 link can be ordered separately.
If your PC does not have a RS232 port but has a USB, use an RS232-USB adapter.



7.3 Powering up the system

1. Connect the connection wire between the two batteries and the batteries to the proper connector of the power-supply module (refer to *paragraph 6.16 - Connecting the batteries*).

Attention: Be sure that connector polarity is correct.

The panel will take several seconds to stabilize, startup will be indicated by an intermittent audible signal and the "Resetting".

```
Control panel
In service
01/01/18      18:23
```

Figure 35 - Reset signalling

Full panel reset will be indicated by:

- The On status of the green LED (*Figure 8 - Frontplate, [S]*) indicates that the panel is operating.
 - The CPU LED (*Figure 8 - Frontplate, [P]*) will blink to indicate that the board is initializing.
 - If you do not carry out the successive step (connection to the mains power source) within 2 minutes, the FAULT LED (*Figure 8 - Frontplate, [D1]*) will go On and the "Mains Fault" message will appear on the display.
2. Power up the panel from the mains.
In the event of restoral of a Mains fault; the FAULT LED will blink to indicate that the event has been saved to the memory.
 3. If the fault persists, check all wiring sections thoroughly. See *Chapter 16 - Diagnostics and fault solutions*.
 4. Once all faults have been cleared, turn the key in the keyswitch (access Level 2) and press the **RESET** button (*Figure 8 - Frontplate, [D]*).
After Reset operations, all the LEDs should go OFF, with the exception of the green ON LED (*Figure 8 - Frontplate, [S]*).
The display will show "Panel working" message.
 5. Press any key to access the main menu. Using the cursor key ▼ select the second option on the "Test LEDs" menu. Press and hold the **Ok** key and check that all the LEDs go On.

Chapter 8

Introduction to Programming from the panel

The control panel and its zones and outputs can be programmed and configured via the control panel or by means of the SmartLeague software program. For a brief description of the software application and the programming process, refer to *Chapter 14 - SmartLeague software* or, for a more complete description, refer to the User's Manual of the SmartLeague software.

Access to programming is allowed only after the programming jumper has been inserted:

```
Control panel
IN PROGRAMMING
Ver. 2.00
01/01/18 18:23
```

1. Remove the frontplate.
2. Insert the programming jumper (refer to *paragraph 4.2 - [N]*).
3. The display will show the relevant message.
4. The panel switches Off: no faults or alarms will be signalled.

```
Control panel
IN MAINTENANCE
Ver. 2.00
01/01/18 18:23
```

If this message appears, the programming phase has been blocked via PC. If this occurs, only maintenance functions can be accessed.

Note: To unblock the programming phase, start the SmartLeague application on the PC and type in the code previously used to block it. This feature protects the system from being accessed by persons other than qualified technicians authorized by the Installer company.

Menu options

```
→001<Zone Descr.>
002<Zone Descr.>
003<Zone Descr.>
004<Zone Descr.>|
```

Press **Ok** to access the zone screen.

'|' indicates that there is further information after the last line.

Press **Esc** to step back to the previous screen.

Editable alphanumeric field

```
Modify descr.
jl: move OK: mod.
<Zone 001>
```

Use keys ▲ and ▼ to move along the string.

Press and hold **Ok** to scroll the alphanumeric characters.

Press **Esc** to confirm the data entry, exit and step back to the previous screen.

Editable numeric field

```
→Delay mains fail
-- hour -- min.
Delay dialler
-- min -- sec
```

Press and hold **Ok** to scroll the values the two-digit counters (e.g.: 0 to 99 and "--", which means non-specified).

Use key ▲ or ▼ to move to the next programming field.

Press **Esc** to confirm the data entry, exit and step back to the previous screen.

Variable field

```
Al arm: YES
Pre-al arm: YES
GAS Al arm: YES
GAS Pre-Al arm: NO
```

Use key ▲ or ▼ to scroll the list.

Press **Ok** to toggle the parameter in the programming field (e.g.: YES to NO).

Press **Esc** to confirm the data entry, exit and step back to the previous screen.

Programming from panel

This section describes how to program the control panel.

9.1 Configuring the control panel

From panel: <key>, Programming, Configuration

The first step is to configure the control panel. Press **Ok** after you select “Acquire int. bus”, the display will show the current configuration of the control panel (i.e. the number of extinguish and expansion boards).

```
Current Devices
Extin. module: 0
Expansion      0
OK to execute
```

Press **Ok** to initiate the scanning phase. On completion of this phase, the control panel will enroll the properly connected extinguish board (one only) and expansion boards. Ensure that the configuration is correct, then press **Esc** to exit.

Select “Acquire ext. bus” and press **Ok**, the display will show the number of repeaters in the current system configuration.

```
Current Devices
Repeater      0
Power station 0
Extin. module
```

Press **Ok** to initiate the RS485 BUS scanning phase. On completion of this phase, the control panel will enroll all the properly connected devices found on the RS485 BUS.

Once a component has been enrolled, it will be monitored by the control panel. If the device for any reason does not respond or is not functioning properly, the control panel will signal a fault.

9.2 Programming the zones

From panel: <key>, Programming, **Progr. Zone**, select zone number, **Ok**

This section describes the zone parameters of the detection line and the I/O line.

Attention: Consult the local laws in force for any restrictions regarding the definition of zones (dimensions and installation).

9.2.1 Zone parameters

ZONE	Pre-set zone number (from 2 to 20 or 36, depending on the control panel model).
<aaaaaaaaaaaa>	Zone Description (e.g.downstairs kitchen).
Pre-alarm	Length of pre-alarm signal for the zone. The zone will trigger an alarm when the set time expires.
Investigate	Length of investigation time, the countdown starts when the INVESTIGATE button is pressed during pre-alarm status. Pressing this button will stop the pre-alarm timer and start the INVESTIGATE timer.
Verify alarm time	If the Verify alarm time is set for the detection line (further information follows), the control panel will not activate an instant alarm in response to alarm signals from a detector, but instead will reset the detector and activate the Verify alarm time. The alarm will be considered valid only if detector signals again within the preset time.
Filter time	If the “Filtered” option is enabled for the zone detection line or I/O line, this represents the minimum duration of an line alarm or fault signal before the control panel will consider it as valid. This filter avoids accidental activation of fault or alarm signals caused by instant activation (for example, when an elevator trolley violates the area covered by a linear smoke detector).

Detection line	Press Ok when the cursor is positioned on this line, to access the programming page relating to the detection line of the selected zone.
I/O line	Press Ok when the cursor is positioned on this line, to access the programming page relating to the I/O line of the selected zone.

9.2.2 Detection line parameters

<aaaaaaaaaaaa>	Zone Description (e.g. downstairs kitchen). The field cannot be edited at this point. If you wish to change the string, you must step back to the previous menu.
Line type	Using the Ok key, scroll the various activation types that can be assigned to the detection line:
FIRE ALARM	The line will operate as a fire detection line. Activation of the line will generate a fire alarm. The line will remain active until the control panel resets.
Modify levels	Position the cursor on this option then press Ok to access the detection line threshold-adjustment wizard (refer to <i>Chapter 10 - Detection line threshold-adjustment</i> for details).
Det.Missing	If this option is enabled, the voltage on the line will be reversed periodically for several mS, in order to check if any detectors have been removed from their bases. This function mode can be applied only when bases with diodes have been suitably wired using an EOL diode/capacitor connected in parallel (refer to the wiring diagram).
Detect CP	If this option is enabled, the line will discriminate between alarms generated by call points and detector. Alarms generated by call points will override the pre-alarm time and activate instant alarms. This option can be enabled only when the line is wired as indicated in the respective wiring diagram.
Short=Alarm	If this option is enabled, short-circuits on the line will activate the line itself (depending on the type of line: Alarm, Supervision, etc.).
Night prealarm	If this option is enabled, the line will signal pre-alarm conditions even when the system is operating in Night Mode (the Pre-alarm feature must also be enabled).
Verify	If this option is enabled, the control will remove the power from the line (and its detectors) when it receives an alarm signal from one of the line detectors. After reset (a few seconds), it will repower the line (and detectors) and will consider the alarm valid only if the detector signals the condition again within the preset "Verify alarm time".
Pre-alarm	If this option is enabled, the control will signal pre-alarm for the pre-set time when the line triggers an alarm.
Filtered	If this option is enabled, an alarm or fault condition on the line will be activated only when it persists for a period of time longer than the pre-set "Filter Time".
RESET ALARM	The line will operate as a fire detection line. Activation of the line will generate a fire alarm. The line will remain active until the detectors connected to it remain in alarm status, once the detectors restore to standby, the signalling on the control panel will stop.
Modify levels	As above.
Det.Missing	As above.
Detect CP	As above.
Short=Alarm	As above.
Night prealarm	As above.
Verify	As above.
Pre-alarm	As above.
Filtered	As above.

SPRINKLER The line will operate as a resettable alarm line (it will remain active for the duration of the alarm condition). Activation of the line will generate a fire alarm and the display will indicate activation of the "Sprinkler" system. The line will also generate the "Sprinkler" signal that can be used for the activation of specific outputs which provide separate signals.

Modify levels As above.

Short=Alarm As above.

Night prealarm As above.

Pre-alarm As above.

Filtered As above.

SUPERVISORY The line will signal a specific fault condition and will activate Fault and Supervision signals that can be used for the activation of specific outputs.

Modify levels As above.

Short=Alarm As above.

Filtered As above.

GAS RELAY The line will interface gas detectors with output relay (see the respective diagram). Pre-alarm activation will generate a pre-alarm gas signal, if the pre-alarm clears (restores to standby), the control panel will stop signalling. In the event of alarm activation, the control panel will signal a gas alarm.

Modify levels As above.

Reset.Alarm If you select "Yes", alarm signalling will cease when the value returns below the set threshold; otherwise alarm signalling will persist until the next reset operation occurs.

Filtered If this option is enabled, an alarm or fault condition on the line will be activated only when it persists for a period of time longer than the pre-set "Filter Time".

Passing If this option is enabled, the line will be activated with no alarm signalling; useful for CO gas detection in parking areas.

EXTINGUISH The line will be used to command the extinguishment board functions. The type of command that is achieved by activating the line can be set on the two lines that follow. The available functions are: Disable extinguish; Disable manual extinguish; Disable automatic extinguish; Confirm extinguish; Manual extinguish; Stop extinguish. For further details regarding the previously mentioned functions, refer to the extinguishant board section.

Modify levels As above.

Short=Alarm As above.

Filtered As above.

9.2.3 I/O detection line parameters

<aaaaaaaaaaaa> Zone Description (e.g.downstairs kitchen). The field cannot be edited at this point. If you wish to change the string, you must step back to the previous menu.

Line type

Using the **Ok** key, scroll the various programming options for the I/O line:

In this mode, the line will operate as an Open-Collector output that will activate in response to any of the selected signals ("Alarm", "Pre-alarm", "Gas alarm", "Gas pre-alarm", "Sprinkler", "Supervisory", "Class Change" and "Fault") relative to the control panel (if the "Panel" option is selected from the following list), or relative to the zones specified in the list (All zones set as "YES").

OUTPUT ZONE STATUS

Silenceable If "YES" is selected, it will be possible to switch Off the activated output by inserting the key and pressing the **SILENCE** button.

Inverted If selected, the output will always be closed to ground and will open when activated.

Duration Activation time (0 to 10 minutes); if the endurance is not defined ("--") the output will not deactivate. Under all circumstances, if the condition clears the output will deactivate.
-- min -- sec

At least 1 / 2 / All The output will activate if one or more signals activates on at least one/two/all of the selected zones.

OUTPUT DISABLEMENTS

In this mode, the line will operate as an Open-Collector output that will activate when any of the control panel components is bypassed (if "Panel" option is selected), or when one or more zones (all the zones set as "YES") are bypassed.

Silenceable As above.

Inverted As above.

Duration As above.
-- min -- sec

At least 1 / 2 / All The output will activate if at least one/two/all of the selected zones are disabled.

OUTPUT EXTINGUISH

In this mode, the line will operate as an Open-Collector output that will activate in response to the selected extinguishant module signals: "Disable manual"; "Disable automatic"; "Pre-extinguish"; "Extinguish"; "Confirm extinguish"; "Pressure Switch".

Silenceable As above.

Inverted As above.

Duration As above.
-- min -- sec

OUTPUT SIGNALS

In this mode, the line will operate as an Open-Collector output that will activate in response to the selected conditions: ("Reset", "Day", "Night").

Silenceable As above.

Inverted As above.

Duration As above.
-- min -- sec

OUTPUT TIMERS

In this mode, the line will operate as an Open-Collector output that will activate in response to the activation of the specified timers (i.e. all timers set as "YES").

Silenceable As above.

Inverted As above.

Duration As above.
-- min -- sec

OUTPUT EQUATIONS

In this mode, the line will operate as an Open-Collector output that will activate when at least one of the specified equations is satisfied (all the equations set as "YES").

Silenceable As above.

Inverted As above.
Duration As above.
-- min -- sec

OUTPUT GAS OUTPUT

In this mode, the line will operate as an Open-Collector output that will activate when the average reading of the values relating to the 4-20 mA gas detector, connected to the I/O lines of the selected zones, exceeds the set level.

Silenceable As above.
Inverted As above.

This option is available for the first four zones on the motherboard only; if selected, the output will operate as a PWM (Pulse Width Modulation) output with a period of 0.5 s and a Duty Cycle of:

- 0%, if the average smoke reading is less or equal to the "Level 1" setting
- 100%, if the average smoke reading is more or equal to the "Level 2" setting

If the output is set as "Analog" and is equipped with an external filter, it can be used to control an inverter that activates a ventilator whose speeds will be proportionate to the average smoke reading.

Analog

INPUT FIRE ALARM

The line will operate as a fire detection line. Activation of the line will generate a fire alarm. The line will remain active until the control panel resets.

Pre-alarm If "YES" is selected, a pre-alarm signal will be sent when the line activates and will last for the duration set for the zone concerned.

NightPrealarm If this option is enabled, the line will signal pre-alarm conditions even when the system is operating in Night Mode (the Pre-alarm feature must also be enabled).

Filtered If "YES" is selected, alarms or faults on the I/O line will be signaled only when the conditions persist for longer than the "Filter Time" of the zone concerned.

INPUT GAS 4-20mA

In this mode, the I/O line will operate as a gas detection line for gas detectors with 4-20mA output. If a detector exceeds the pre-alarm threshold, it will generate a gas pre-alarm signal. If the current output drops below the pre-alarm threshold, the signal will clear. If a detector exceeds the alarm threshold, it will generate a gas alarm signal.

Modify levels Position the cursor on this option then press **Ok** to access the detection line threshold-adjustment wizard (refer to *Chapter 10 - Detection line threshold-adjustment* for details).

Reset.Alarm If you select "Yes", alarm signalling will cease when the value returns below the set threshold; otherwise alarm signalling will persist until the next reset operation occurs.

Filtered As above.

Only progr. bar / Show LEL / Show PPM 2000FS / Show PPM 500FS

String for the selection of the unit of measurement used for reading detection values.

Passing If this option is enabled, the line will be activated with no alarm signalling; useful for CO gas detection in parking areas.

INPUT DISABLEMENTS

In this mode, the I/O line operates as a supervised input line that when activated bypasses the zones specified in the lines that follow (all zones with "YES").

Filtered As above.

INPUT CLASS CHANGE

During this operating mode, the I/O line will operate as a supervised output which when activated will not provide any data on the display but will activate the "Class Change" signal for the zones specified below (all zone set as "YES"). In this way it will be possible to activate all the outputs that are set up to activate the "Class Change" signal of the respective zones. This function is useful in school building installations, where the alarm bells can be activated manually in order to signal the end of a lesson.

Filtered As above.

NAC on CC If you select "Yes", each time the "Change Class" signal activates, the Alarm NAC output on the panel will also activate.

The line will operate as a resettable alarm line (it will remain active for the duration of the alarm condition). Activation of the line will generate a fire alarm and the display will indicate activation of the "Sprinkler" system. The line will also generate the "Sprinkler" signal that can be used for the activation of specific outputs which provide separate signals.

INPUT SPRINKLER

Pre-alarm As above.

NightPrealarm As above.

Filtered As above.

INPUT COMMAND

In this mode, the I/O line will operate as a supervised output that when activated will perform the actions specified below:

Filtered As above.

Reset Replicates the **RESET** button on the control panel.

Investigate Replicates the **INVESTIGATE** button on the control panel.

Silence Replicates the **SILENCE** button on the control panel.

Toggle day Inverts the Day/Night operating from Day to Night.

Force night The control panel will operate in Night mode for the time the input is active.

Evacuate Functions only when the pre-alarm time is running, in this case the pre-alarm time will be ignored and the control panel will generate an instant alarm. If the pre-alarm time is not running, it will have no effect.

The line will be used to command the extinguishment board functions. The type of command that is accomplished by activating the line can be set on the line that follows. The available functions are: "Disable extinguish", "Disable manual", "Disable automatic", "Confirm extinguish", "Manual extinguish", "Stop extinguish". For further details regarding the previously mentioned functions, refer to the extinguishment board section.

INPUT EXTINGUISH

NC input If you select "Yes", the standby and alarm intervals will be reversed; for use with Normally Closed contacts.

Filtered As above.

9.2.4 Programming the outputs

From panel: <key>, Programming, **Progr. Output**, select an output, **Ok**

This option will allow you to set up the operating mode of each output (RELAY, Expansion board NAC outputs).

9.2.5 Outputs parameters

Relay, Expansion NAC..., Power Stat... Name of the output you are configuring.

Activation Type Using the **Ok** key, scroll the various activation types that can be assigned to the output:

OUTPUT ZONE STATUS

In this mode, the output will activate in response to any of the selected signals ("Alarm", "Pre-alarm", "Gas alarm", "Gas pre-alarm", "Sprinkler", "Supervisory", "Class Change" and "Fault") relative to the control panel (if the "Panel" option is selected from the following list), or relative to the zones specified in the list (All zones set as "YES").

Silenceable If "YES" is selected, it will be possible to switch Off the activated output by inserting the key and pressing the **SILENCE** button.

Inverted If selected, the output will always be closed to ground and will open when activated.

Duration -- min -- sec Activation time (0 to 10 minutes); if the endurance is not defined ("--") the output will not deactivate. Under all circumstances, if the condition clears the output will deactivate.

At least 1 / 2 / All The output will activate if one or more signals activates on at least one/two/all of the selected zones.

OUTPUT DISABLEMENTS	<p>In this mode, the output will activate when any of the control panel components is bypassed (if "Panel" option is selected), or when one or more zones (all the zones set as "YES") are bypassed.</p> <p>Silenceable As above.</p> <p>Inverted As above.</p> <p>Duration As above. -- min -- sec</p> <p>At least 1 / 2 / All The output will activate if at least one/two/all of the selected zones are disabled.</p>
OUTPUT EXTINGUISH	<p>In this mode the output activates in response to the signals relative to the extinguishant board selected in the successive lines ("Disable manual"; "Disable automatic"; "Pre-extinguish"; "Extinguish"; "Confirm extinguish"; "Pressure Switch").</p> <p>Silenceable As above.</p> <p>Inverted As above.</p> <p>Duration As above. -- min -- sec</p>
OUTPUT SIGNALS	<p>In this mode, the output will activate in response to the selected conditions ("Reset", "Day", "Night").</p> <p>Silenceable As above.</p> <p>Inverted As above.</p> <p>Duration As above. -- min -- sec</p>
OUTPUT TIMERS	<p>In this mode, the output will activate in response to the activation of the specified timers (i.e. all timers set as "YES").</p> <p>Silenceable As above.</p> <p>Inverted As above.</p> <p>Duration As above. -- min -- sec</p>
OUTPUT EQUATIONS	<p>In this mode the output will activate when at least one of the equations specified on the successive lines is satisfied (all the equations set as "YES").</p> <p>Silenceable As above.</p> <p>Inverted As above.</p> <p>Duration As above. -- min -- sec</p>

9.3 Setting the Timers

From panel: <key>, Programming, **Progr. Timer**, select a timer, **Ok**

This option will allow you define the timer intervals (e.g.: from 13.00 to 14.00), dates (e.g.: 25-12-2006) or special days (e.g.: Sundays and days of closure). The timer can be included in an equation and can contribute to the activation of an output. Timer activation may trigger associated actions (e.g. bypass a zone, toggle to Night Mode).

Navigate through the programming field and set the new values.

9.3.1 Timer parameters

Timer n	Timer number (maximum 8), preset.
Enabled	If you select "Yes", the selected timer will be enabled.
Start/End time 1	Hour and minutes of the Start and End of the interval 1.

Start/End time 2	Hour and minutes of the Start and End of the interval 2.
Day, Month, Year	Operational date of the timer. To indicate any day, month or year, leave "--" (for example, every 3rd of the: day=3, month = "--", year = "--").
Sunday, etc.	Day of the week for weekly arrangements. Valid only when the "Day", "Month", "Year" are set as "--".
Holidays	If you select "Yes" the timer will activate during the programmed holiday periods (refer to <i>paragraph 9.3 - Setting the Timers</i>).
NO Holiday	If you select "Yes", the timer will not activate during holiday periods; this option has priority over the previous two options.
Force night	Activation of the timer will switch the panel to Night mode. The panel cannot be switched back to Day mode until the set timer interval expires. Once the set timer interval expires, the panel can be switched back to day mode either by another timer or manually from the panel (refer to <i>paragraph 15.3 - Day/Night mode</i>).
Set day	Activation of the timer will switch the panel to Day mode. The panel can be switched back to Night mode either by another timer or manually from the panel.
Set night	Activation of the timer will switch the panel to Night mode. The panel can be switched back to Day mode either by another timer or manually from the panel.
Disable zone	On activation the timer will bypass the specified zone.
Enable zone	On deactivation, the timer will unbypass the selected zones.
Disable verif.	When the timer is activated, the alarm verify is disabled on the selected zone.
Zone	List of zones to be bypassed on timer activation (zones set as "YES" will be bypassed).

9.4 Setting holidays

From panel: <key>, Programming, **Progr. Holidays**, select a holiday, **Ok**

This option will allow you to set specific periods which determine exceptions with regard timer programming, for example, holidays, bank holidays, etc. Navigate through the programming field and set the new values.

9.4.1 Holidays parameters

Holiday nn	Number of holidays (maximum 15), already preset.
day, month, year	Date of the holiday or start date of the holiday period. To indicate any day, month or year, leave "--" (for example, every 3rd of the: day=3, month = "--", year = "--").
Sunday, etc.	Day of the week for weekly arrangements. Valid only when "Endurance"=1 and "Day", "Month", "Year" = "--".
Duration	Length of time (expressed in days) of the holiday period (0 at default). If you set 0, the system will not take the holiday into account.

9.5 Setting the control panel options

From the panel: <key>, **Programming, Options**

Navigate through the programming field and set the new values.

9.5.1 Options

Mains failure delay	This is a programmable delay (0 to 30 minutes) which runs between the start of the mains failure event and the actual fault signal. This delay avoids unnecessary signalling of brief 'Mains failure' events.
Delay dialler	The period (0 to 10 minutes) which the dialler allows before signalling a zone alarm. If an alarm is activated from a manual call point or by means of the EVACUATE button, the output will activate immediately.

Night silence time	The duration (0 to 10 minutes) of Silence status when the system is operating in Night mode (starting from the moment the SILENCE key is pressed).
Time lock reset	The period (0 to 30 minutes), after extinction activation, when reset operations are not allowed. If a confirm extinction signal is sent to the extinction module during this period, reset operations will be re-enabled.
Time reset	Line reset time (2 to 10 seconds): during this period the power supply to the line is removed, in order to restore the detectors to standby after an alarm.
Time ignore	During this period (1 to 5 seconds), which starts after reset, the lines will not be taken into account thus allowing the line devices to stabilize and restore to standby.
24VR cond.	If this option is set as "NO", the AUX-R output will always be active except during Reset time when it will be off. If this option is set as "YES", the AUX-R output will always be active except when one or more of the zones listed under the option is set as "YES" go into alarm status.
Events on disabled	If enabled, this option allows the control panel to register in the log any change of status of the disabled zones.
Slave on485	When activated, the control panel is seen as a power station connected to the SmartLoop RS485 bus in slave mode. After this option is activated it is possible to change the address of the control panel: From panel: <key>, Programming, Configuration, Acquire int.bus, Ok
Real time	
Control panel	If this option is enabled (option = "YES"), the display provides a value bar showing the real-time values of the I/O lines of the specified zones during standby status. This function can be used when the I/O lines are configured as 4-20mA gas lines, and allows users to view the level of gas detected by each line.
Repeater n	If this option is enabled (option = "YES"), the display provides a value bar showing the real-time values of the I/O lines of the specified zones during standby status. This function can be used when the I/O lines are configured as 4-20mA gas lines, and allows users to view the level of gas detected by each line.

9.6 Setting up equations

From panel: **NOT available**

This section (available from SmartLeague software only) will allow you to define 7 equations that the control panel can use in order to activate the outputs.

Each equation can be defined using operands (zone signals, timers and constants) and operators (AND, OR, NOT, XOR, +, -, >, >=, <, <=, !=, =).

Chapter 10

Detection line threshold-adjustment

By means of the guided threshold settings procedure, it is possible to configure the intervention thresholds of the detection lines and I/O lines configured as "INPUT GAS 4-20mA".

From panel: <key>, Programming, **Progr. Zone**, select a zone, **Detection line** or **I/O line**, **Modify levels**, **Use wizard**, **Ok**

The control panel will ask you to perform a series of operations on the line you are working on (open the line then press **Ok**, Balance the line then press **Ok**, etc.). During each phase, the display will show the terminal value reading (expressed in Volts), and a graphic bar that indicates the reading.

Once the requested operations have been completed, the display will show the value in volts and the point on the graphic bar where the various thresholds are set. Each threshold can be adjusted by means of the UP and DOWN scroll keys. After setting the required value, press **OK** to confirm the entry.

This threshold-setting procedure will allow you to define the current limit (for each line) that discriminates standby status from an alarm, etc.

In this way, the control panel can be set up to work with all types of conventional detectors and existent detection lines with unknown resistance and balancing values. etc.

From panel: <key>, Programming, **Progr. Zone**, select a zone, **Detection line** or **I/O line**, **Modify levels**, **Import from**, **Ok**

The control panel will allow you to import the thresholds of a previously configured zone.

Attention: **If you change the line type of a zone, the thresholds will be restored automatically to default values.**

Programming the extinguishant board

The extinguishant board manages a gas extinguishant system activated by automatic or manual commands:

- automatic commands triggered by the fire-control panel when the programmed zones go into alarm status.
- manual commands from devices connected to the extinguishant-board inputs or set up as fire-detection loop input points.

Therefore, the board makes use of its own terminals and those of the control panel zones, in order to obtain the activation conditions and command the outputs:

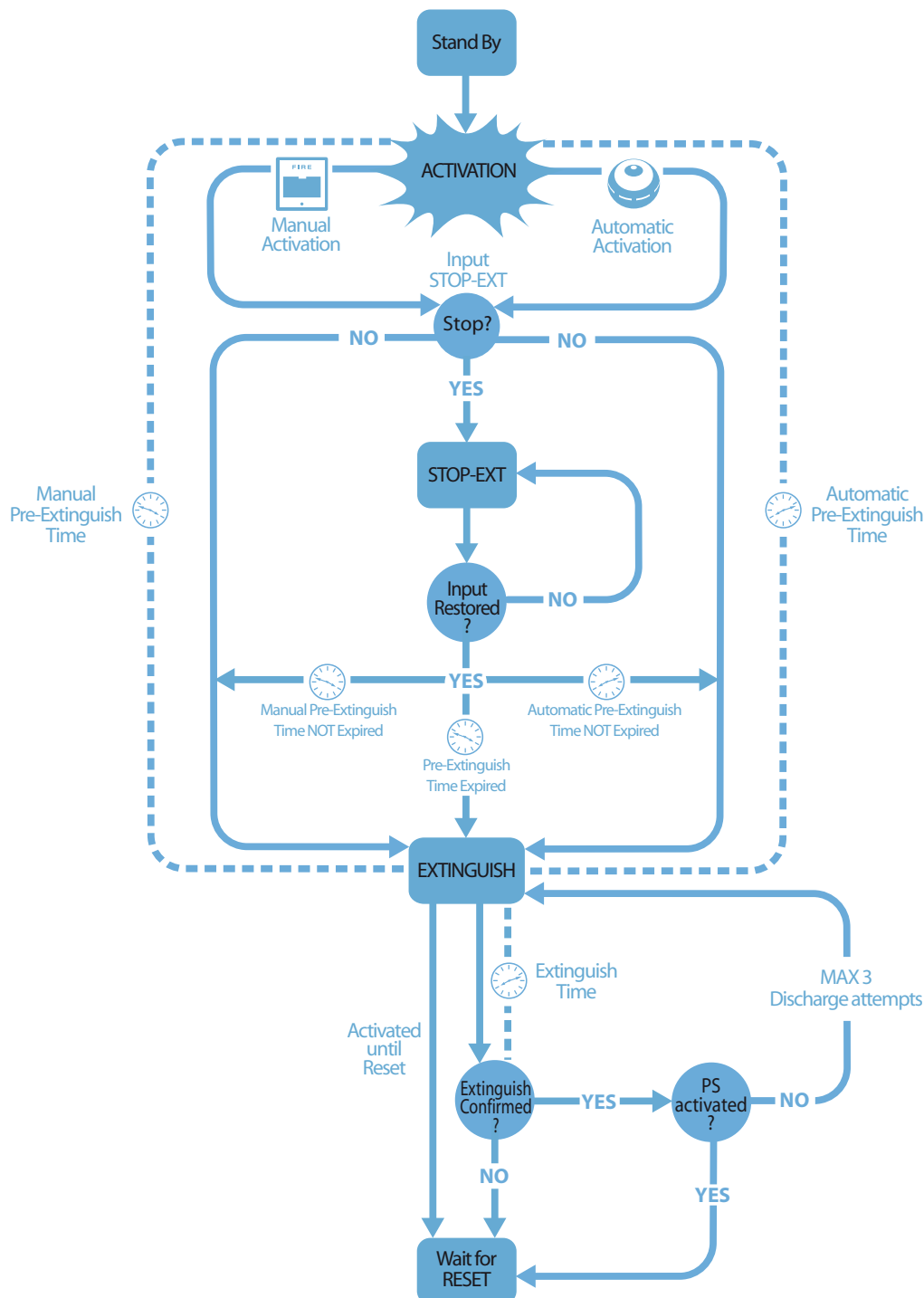


Figure 36 - Extinguishant board: operating principles

To ensure proper programming of the gas extinguishant system you must:

1. Configure the extinguishant module
2. Program the operating principles
3. Configure the Detection lines and I/O utilized by the extinguishant module

11.1 Configuring the extinguishant module

From panel: <key>, **Programming, Configuration, Acquire int.bus, Ok, Ok**

This function allows the control panel to detect the presence of the expansion boards and the extinguishant module.

11.2 Programming the module

From panel: <key>, **Programming, ExtinguishBoard, Ok**

Program the parameters that define the operating principles of the extinguishant system.

11.2.1 Module parameters

Mask zone	Zones that activate extinguish commands when they go into alarm status.
Mode:	<p>At least 1 / 2 The extinguishant gas release will activate if at least one/two/all of the selected zones go into alarm status.</p> <p>/ All</p>
Confirm extinguish	<p>Extinguishant module feature that provides confirmation of extinguishant gas release. Press the Ok button corresponding to the option below.</p> <p>Do not confirm If an "Extinguish" event occurs, the extinguishment module will activate the VALVE output (for the pre-set time) and the RELEASED output without awaiting confirmation of extinguishant gas release.</p> <p>The RELEASED output will be activated when the "Extinguish time" expires, that is, if the "pressure switch" signal has been activated (from the pressure switch input or from an point set up as a "pressure switch" input). The "pressure switch" signal will be considered valid only when the signal persists after expiry of the extinguish time.</p> <p>Wait for press. Example: you can connect a pressure gauge to the PRESS. input, or to an input with the "pressure switch" attribute, that will signal when the cylinders empty (in order to confirm the successful saturation of the protected space).</p> <p>Wait for flow The RELEASED output will be activated when the Extinguish time expires, that is, if the "from flow detector" signal has been activated during this phase (from the pressure switch input or from an input point set up as a "flow detector"). EXAMPLE: You can connect a gas-flow signalling device to the PRESS input or a point set up as a "flow detector" input (the device will signal when gas is being released).</p>
Pressure switch	<p>Defines the significance of the signal coming from the PRESS input. Press the Ok button corresponding to the option below.</p> <p>Supervisory Activation of the input signals a drop in gas extinguishant pressure.</p> <p>From pressure Activation of the input indicates that the gas cylinders are empty, therefore, the protected space is saturated and activates the "confirm extinction from pressure switch" signal.</p> <p>From flow detector Activation of the input indicates that gas has been released and activates the "confirm extinction from flow detector" signal. If this option is selected, and the pressure switch activates during control panel standby status, it will trigger a control panel alarm.</p>
Time pre-extinction	Duration of the automatic pre-extinguish time, activated by a zone in alarm status.
Extinguish Time	Length of time the electrovalve remains active, starting from the end of the pre-extinguish phase. If the value is not specified, fire extinguishment will be continue until the control panel RESET button is pressed.

Time pre-extinction manual	The duration of the manual pre-extinction phase, activated by a MAN-EXT input or Detection line set up as a manual extinction input.
Confirm extinguish time	Delay between activation of the electrovalve output and the pressure switch activation analysis (if programmed as "Confirm extinguish"). EXAMPLE: in this way the device connected to the pressure switch input can detect the drop in pressure inside the cylinders and confirm that extinguishment has occurred.
Pause between discharges	Length of the pause between one gas discharge and another in the event of non-confirmation of gas discharge (extinguishant module allows three discharge events).

11.3 Programming extinguish inputs/outputs

From panel: <key>, Programming, **Progr. Zone**, select a zone, **Detection line** or **I/O line**, **Ok**

Each Detection line or I/O line can be set up to generate functional signals to the extinguishant board, or to be activated by (in the case of an I/O line configured as an output) signals from the extinguishant board.

For further details regarding the extinguishment functions that can be associated with zones, refer to the zone configuration section.

Chapter 12

Configuring the devices connected to the RS485 BUS

From panel: <key>, **Programming, Configuration, Acquire ext.bus, OK, Ok**

The SmartLetUSee/LCD-Lite repeaters are clone panels. They are equipped with displays and LEDs and replicate all the information provided by the control panel. The panel supports up to 4 repeaters which, under normal circumstances, should be located at entrances/exits, in such way as to allow building occupants or fire officers to view alarm details without going too far inside the building.

The SmartLevel power-supply stations provide load current to remote apparatus located within the area covered by the system. The control panel supports two power-supply stations, for a maximum of six devices connected to the RS485 BUS.

After installing and addressing each device, you must include them in the system configuration.

```
Current Devices
Repeater          x
Power Station     Y
OK per execute
```

This will allow the panel to determine which devices are connected to the BUS and indicate those found.

Note: *The panel uses the screen above to indicate the current configuration of the devices. If you press **OK** (working from this screen), the panel will search the communication BUS and include any newly found devices in the configuration.*

Closing the programming session

Once you have completed the programming, remove the panel/PC programming jumper. The panel will be ready to go into service, and the display will be as follows.

```
Control panel
In service
01/01/18    18:23
```

Double check the functionality of all the input devices.

13.1 Restoring factory settings

From panel: <key>, **Programming**, **Factory data**, **Ok**

If you select this option, you will access the "Confirm" screen. If you press **Ok** (working from this screen) all the programming data (panel and extinguishant module) will reset to default values (factory settings).

Chapter 14

SmartLeague software

14.1 Overview

The SmartLine system can be programmed from the panel or from a PC. You can access all the programming process via the SmartLeague programming and management software for INIM Electronics security products.

The SmartLeague software program allows you to access all the system parameters which can be accessed via the control panel. In addition, it provides a clear, complete view of the status of the system and its parts and thus a more precise programming process. The programming process is further enhanced by a greater number of parameters for each point and the use of combinatory logic in the zone "equations".

For further details regarding the SmartLeague software program, refer to the respective software manual.

14.2 The Solutions

Each *solution* comprises an installation structure and the respective group of programming parameters. You can save the system solution to the SmartLeague database and use it for maintenance purposes or as a "model" for other systems.

Each solution is dedicated to a device type and has its own programming interface. In this way, it is possible to compare different solutions, or keep two solutions open (one real and the other for test purposes), in order to verify step by step the effects of the programming process.

A solution can be created and changed without computer to device link up. For example, you can prepare a system layout and/or set parameters without leaving your office. The data can be downloaded to the system when you are ready.

14.3 Enable programming via PC

All functions can be accessed without the need of connecting to the control panel; this is required only during data upload (writing on control panel) and download (reading from control panel).

The extinguishant module can be programmed only via the SmartLeague software, whereas, the configuration and programming of the points can be done from the panel. If the programming jumper is not inserted, access to the programming via PC will be denied.



1. Remove the frontplate.
2. Insert the jumper (*paragraph 4.2 - [O]*), the respective message will appear. The panel keys will be disabled.
3. Using the cable (refer to *paragraph 7.2 - Connecting the RS232 PC serial link*), connect the PC to the serial port (refer to *paragraph 4.2 - [M]*).

Maintenance

The following operations must be carried out regularly.

1. Using a damp lint-free cloth, remove any dust that may have gathered on the control panel (do not use any kind of cleaning product or solvent!).
2. From panel: press **<key>, Test LED, Ok** to test the LEDs.
3. Check the battery efficiency and change them if necessary.
4. Check the integrity of all wires and connections.
5. Ensure that there are no insects inside the control panel.
6. Carry out maintenance on the detectors (clean the outside and the detection chamber).

Note: *Points 1 and 2 can be carried out by authorized persons, whereas all other points must be carried out by qualified technicians.*

15.1 Set Time and date

From panel with the jumper inserted: **<key>, Settings, Date & Time**

Navigate through the programming field and set the new values. The system will select the day of the week automatically.

15.2 Viewing events

The system displays information regarding real-time events of major importance and disregards those of minor importance (e.g.: if the system is dealing with three fault events when a pre-alarm event occurs, the fault events will be disregarded and cleared from the display and the pre-alarm will take priority). All events are saved to the log and can be viewed.

15.2.1 Signaling on the display

If several events of the same type occur, only the first will be shown on the display. If several alarms occur, the first alarm will remain on the first line of the display and the most recent alarm will be shown on the line below.

To view the events on the display, press button **▲** or **▼**.

15.2.2 Viewing the events log

Press **<key>, View log, Ok**: all the recorded events (maximum 100) can be viewed in chronological order.

15.3 Day/Night mode

15.3.1 Day

There are people in the building, therefore, those in charge of the safety of the building and its occupants should be duly informed before the evacuation command is given.

Silence	Silences (turns Off) the panel beeper and silenceable outputs. The Silence command will be undone automatically, if a new alarm event occurs (e.g.: another detector signals alarm conditions).
Pre-alarm	Some points can be programmed to signal pre-alarm status. If no-one intervenes during the pre-alarm phase, the system will generate an alarm when the programmed pre-alarm time expires. Refer to <i>paragraph 9.2.2 - Detection line parameters</i> to enable/disable the pre-alarm time of points.

15.3.2 Night

There are no people in the building, therefore, there is only one person in charge of building safety (e.g.: night watchman, guard).

Silence	The Silence command holds off signalling. The Silence phase will run for the pre-set time. If no-one intervenes during this phase, the system will undo the silence command and the alarm will continue. To change the night-mode silence time, refer to <i>paragraph 9.5 - Setting the control panel options</i> .
Pre-alarm	The pre-alarm signal can be disabled on certain points. Alarm events will generate instant alarms. Refer to <i>paragraph 9.2.2 - Detection line parameters</i> to enable/disable the pre-alarm time on points during Night mode.

15.3.3 Changing Day/Night mode manually

From panel with access level 2: <key>, **Settings**

15.3.4 Changing Day/Night mode automatically

Setting up a timer (refer to *paragraph 9.3 - Setting the Timers*) to toggle the panel status.

15.4 Bypassing a zone

From panel with access level 2: <key>, **Disablement, Zones**, select a zone, **Ok**

Under certain circumstances (e.g. maintenance or fault), it may be necessary to bypass a zone. Bypassed zones or points cannot generate fault or alarm signals and cannot be activated.

15.5 Bypass the DIALER or ALARM NAC output

From panel with access level 2: <key>, **Disablement, Outputs, Ok**

Under certain circumstances (e.g. maintenance or fault), it may be necessary to bypass the dialler (*paragraph 4.2 - [E]*) or ALARM NAC outputs (*paragraph 4.2 - [F]*). The bypassed object cannot be activated.

Bypass may be necessary in the event of fault signalling triggered by the dialler or supervised output (refer to *Chapter 16 - Diagnostics and fault solutions*).

15.6 Testing the zones

From panel with the jumper inserted: <key>, **Maintenance, Test zone**, select a zone, **Ok**

Maintenance work often entails zone tests. Activation of an alarm when a line is in Test status will activate the ALARM NAC output for approximately 3 seconds. The control panel will reset the line automatically when the brief output signal ends. This feature allows the technician to test the system without the assistance of another person.

Note: *The LED of detectors in test status will go on for several seconds, and the ALARM NAC will activate for 3 seconds to confirm reception of the alarm signal. The detector will reset automatically.*

```
Zone      04  ↑
<Zone  04>
In test   ↓
```

1. Press **Ok** to put the zone in test/operating status.
2. Press ▲ or ▼ to go to the adjacent zone.

15.7 Force the status of I/O lines configured as outputs

From panel with the jumper inserted: <key>, **Maintenance, Test outputs**, select a zone, **Ok**

In the event of maintenance or first power up, it may be necessary to activate manually the output of an I/O line configured as an output.

Zone	04	↑
<Zone 04>		
Off		↓

1. Press **Ok** to activate/deactivate the output.
2. Press **▲** or **▼** to go to the adjacent output.

15.8 Set the date for the next maintenance session

From panel with the jumper inserted: **<key>, Maintenance, Maintenance date, Ok**

Maint. Fault	
01/01/18	18:23
Monday	

If you have set the date of the next maintenance session, the system will signal a fault event on the specified date. Only a new date, selected via this menu, will clear this fault signal.

15.9 Reading the power supply tension

From panel with the jumper inserted: **<key>, Maintenance, Power level, Ok**

Power Level	24.4
-------------	------

The display shows the output voltage of the power supply module housed in the control panel.

This function is useful during the calibration of the charging voltage described in *paragraph 6.17 - Thermal probe*.

Diagnostics and fault solutions

Danger: Only authorized operators (Level 2 or 3) may search for, and correct faults.

16.1 Fault "Open"

The panel is unable to find the EOL resistor on the supervised input/output terminals. The following line will specify the terminals concerned (NAC, detection line, I/O line, etc.).

Check the EOL resistor connection on the last device. Using a tester check that the resistor has not burnt out.

16.2 Fault "Shorted"

A short-circuit has been detected on the input/output terminals. The next line indicates the specific terminals (NAC, on a module connected to the detection line, etc.). Check the device connections and cable sections.

16.3 Repeater faults

If the number of repeaters recognized by the control panel is less than expected (refer also to *Chapter 12 - Configuring the devices connected to the RS485 BUS*):

1. Check that the address of each repeater has been set properly (by means of the DIP switches (*Figure 10 - The rear side of the repeater board, [A]*)).
2. Check that the cabling is intact.
3. Check the connection polarity.
4. Check that the EOL jumper is in the EOL position only on the last repeater connected the BUS.
5. Using a tester, measure the voltage across the +24 V and GND terminals of the RS485 BUS.
If the voltage is less than 20V, it means that the resettable protection fuse is open and the current draw of the devices connected to the BUS is excessive. Disconnect the BUS devices and reconnect them one by one until you find the problem.

16.4 Battery faults

16.4.1 Battery Disconnected

The battery is not connected or has failed the battery efficiency test.

1. Allow the batteries to charge for several hours.
2. If the fault signal persists, disconnect the batteries from the panel and test them separately.
3. If only one of the batteries has a current below 12.5 - 13 V:
 - Replace the faulty battery only.
 - Allow the batteries to charge for several hours.
 - Check that the fault has cleared.
4. If both batteries have a voltage of 12.5 - 13 V, it means they are both inefficient (even though the voltage without load is correct).
 - Replace both batteries.
 - Allow them to charge for several hours.
 - Check that the fault has cleared.

16.4.2 Low Battery

The batteries are running low.

This signal should be present only during primary power source failure (Mains 230V~). Mains power must be restored in order to charge the batteries.

16.5 Other faults

The panel shows the message:	Meaning
Dialler Fault	Trouble on the dialler communication line (dialler output).
24V output	Short-circuit on the AUX terminals protected by the resettable fuse.
Mains fail	Primary power failure (230V~).
Ground fault	Voltage dispersion to ground detected This fault signal can be disabled by disconnecting the respective jumper (<i>paragraph 4.2 - [L]</i>).
Maintenance	The preset date for Maintenance has expired.

Iris devices

All Enea series devices manufactured by INIM Electronics for addressable-analogue detection are LPCB certified and carry the CE mark in compliance with the CPD standard.



The operating parameters of detectors may be modified to suit their specific environments and, when used in conjunction with the EITK-DRV supplied by INIM Electronics. This device allows you to connect directly to the detector line for a complete diagnosis of each detector and thus test its operating capacity, verify its real-time values, view the contamination level in the optical smoke chamber and change its sensitivity and operating mode. Each detector has a non-volatile memory which allows you to view the smoke and temperature levels measured in the period prior to the last alarm detected.

The Iris series of INIM Electronics provides three conventional detector models:

- Optical chamber with sealed upper-part and 500 micron hole-diameter mesh insect screen
- Bicolour LED: red for alarm, green blinking for standby or for trouble
- Drift compensation for sensor drift caused by dust in the chamber
- Sensitivity selection for smoke and heat thresholds
- Operating mode selection (for ID300 version): only smoke, only heat
- AND mode, OR mode, PLUS mode
- Complete diagnostics - provides contamination level and real-time values
- Memory of the smoke and temperature levels measured in the five-minute period prior to the last alarm detected
- Bypass plate on base guarantees line continuity in the event of removal of the detector

For further details regarding the precise features and technical specification of each device, refer to the respective instructions booklet.

Type	Model	Description
Detectors	ID100	Optic smoke detector
	ID200	Heat detector
	ID300	Smoke and heat detector
Bases	EB0010	Mounting base
	EB0020	Relay base
	ESB010	Sounder base (to be installed under EB0010 mounting base with a dedicated wiring)
	ESB020	Sounder base and beacon (these are to be installed under EB0010 base and require dedicated wiring)
Manual call points	IC0010	Manual call point
	IC0010E	Manual call point for outdoor installation (IP67)
Alarm repeater	FI100	Remote addressable alarm repeater
Driver	EITK1000	Kit for the configuration, maintenance and diagnostics of systems using IRIS and ENEA series devices
	EITK-DRV	Driver for zones with IRIS series devices or loops with ENEA series devices
	EITK-BASE	Base for the connection of IRIS and ENEA series detectors
	EITK-PWSP	Power supply for the EITK-DRV driver

The distinct serial number of each detector is shown on the device information label.

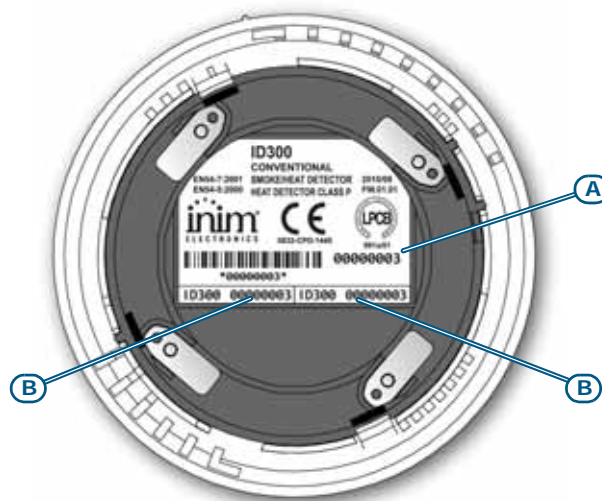
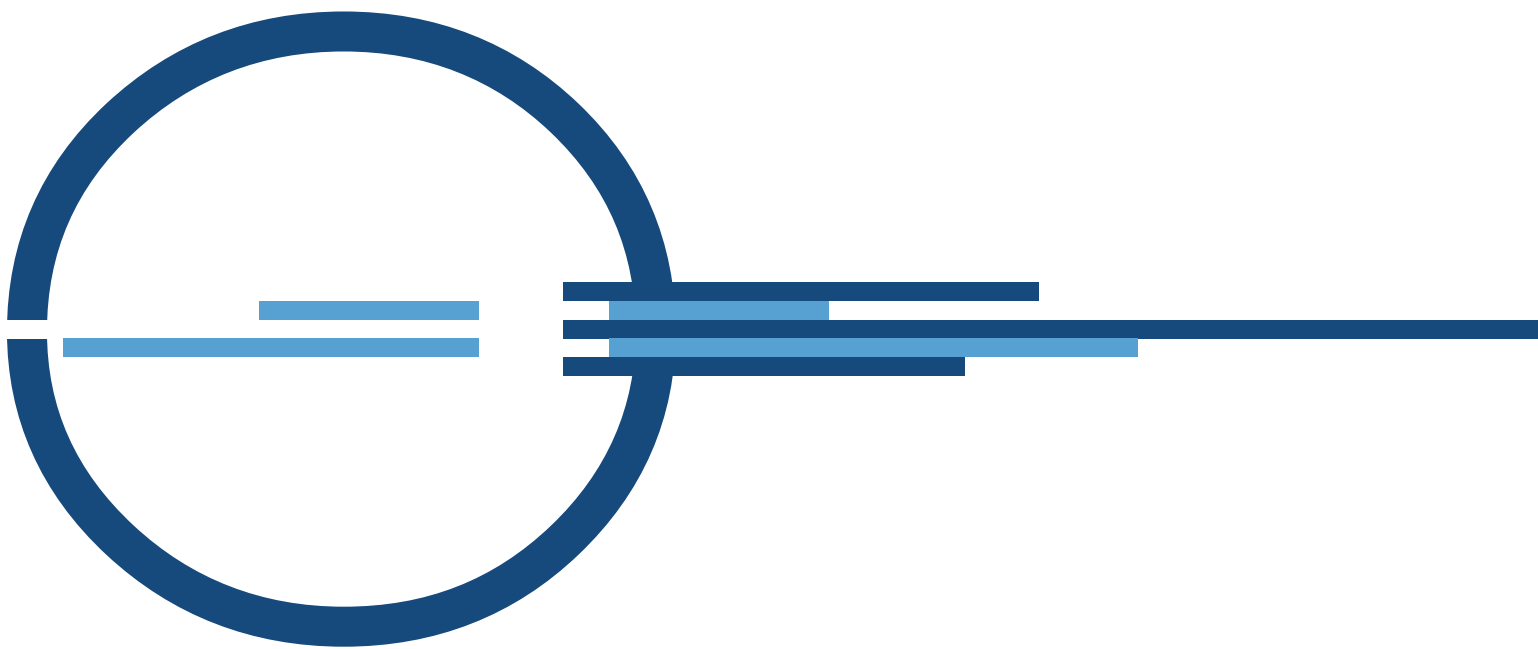


Figure 37 - The reverse side of Iris detectors

The serial number is shown on the information label [A] and on two smaller removable labels [B]. When installing the devices, it is strongly advised to remove the small labels and place one on the system layout and the other on the mounting base. This will facilitate device tracing and re-location operations.

Notes



ISO 9001 Quality Management
certified by BSI with certificate number FM530352

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