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EN 54-4
EN 54-16
EN 54-21
EN 12094-1



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0051-CPR-2741
0051-CPR-2826
0051-CPR-2827

CONTROL PANEL FOR FIRE DETECTION AND ALARM,
FIRE EXTINCTION AND VOICE-EVACUATION SYSTEMS

PREVIDIA **ULTRA**

CONTROL PANEL FOR FIRE DETECTION AND ALARM, FIRE
EXTINCTION AND VOICE-EVACUATION SYSTEMS

INSTALLATION MANUAL



PREVIDIA | ULTRA

inim[®]

Warranty

INIM Electronics s.r.l. warrants that this product shall be free of defects in material and workmanship for a period of 24 months from the date of production. In consideration of the fact that INIM Electronics s.r.l. does not install directly the products here indicated, and due to the possibility they may be used with other products not manufactured by INIM Electronics, INIM Electronics cannot guarantee the performance of the security installation. Seller obligation and liability under this warranty are expressly limited to repairing or replacing, at seller's option, any product not meeting its stated specifications. In no case can INIM Electronics s.r.l. be held responsible or liable by the buyer or any other person for any loss or damage, direct or indirect, consequential or incidental.

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

- Damage arising from 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 herein will void this warranty. For further details regarding this warranty contact the authorized dealer.

Limited Warranty

INIM Electronics s.r.l. shall not be liable for any damage caused by improper use of this product.

The installation and use of the products indicated herein must be carried out by authorized persons only. Moreover, the installation procedure must be carried out in full respect of the instructions provided in this manual.

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Chapter 1

General information

1.1 Manufacturer's details

Manufacturer: INIM ELECTRONICS S.R.L.

Production plant: Centobuchi, via Dei Lavoratori 10

Municipality: 63076, Montepreandone (AP), Italy

Tel.: +39 0735 705007

Fax: +39 0735 704912

E-mail: info@inim.it

Web: www.inim.it

The personnel authorized by the manufacturer to repair or replace the parts of this system, hold authorization to work only on devices marketed under the INIM Electronics brand.

1.2 Supplied Documentation

Previdia Ultra User's Manual: contains the identification of the parts on the front plate and the end-user operating instructions for use.

Previdia Ultra control panel Installation Manual: contains the technical specifications of the Previdia Ultra control panels and the mounting, installation and wiring instructions.

Manual for system configuration, commissioning and maintenance: contains the instructions for system commissioning and the operations to be carried out during commissioning, maintenance and troubleshooting sessions.

Previdia Ultra Programming Manual: contains the control panel configuration guide and a detailed description of the various options contained in the programming software.

Installation manual for internal modules: contains instructions for installation and the wiring diagrams for the various IFAM and IFM internal modules (IFAMPSU, IFAMAMP, IFAMEVAC, IFAMIDANET, IFAMFFT, IFM2L, IFMNET, IFM4R, IFM4IO, IFMDIAL, IFM16IO, IFMLAN, IFMEXT)

Installation manual for FPM modules: contains instructions for installation and the wiring diagrams for the various front-plate modules (FPAMIAS, FPMCUP, FPMLED, FPMLEDPRN, FPMEXT, FPMNUL)

Installation manual for accessory modules: contains instructions for installation and the wiring diagrams for the various IAS-ADAPT1000 accessory modules

Installation manual for microphone bases: contains technical specifications and the instructions for use of the Microphone bases (IPG12, IPG24, IPGE06, IPGE18)

Instructions for the installation of cabinets: instructions for mounting cabinets and respective accessory components (PRCAB+, PRCABRK+)

Guide to Networking: manual containing the instructions for the connection of control panels in a Hornet+ network, IDANet network or via IP, as well as the description of the limitations and responsibilities relating to the use of networks.

BMS Manual: provides the installer with the guidelines relating to the integration of Previdia control panels with external supervision systems.

The manuals which are not supplied with the apparatus can be ordered, making reference to their respective codes, or downloaded from www.inim.it.

1.3 About this manual

Manual code: DCMIINE0PREVIDIAU

Revision: 1.40

1.3.1 Terminology

Control panel, System, Device: The main supervisory unit or any constituent part of the fire detection system.

Left, Right, Behind, Above, Below: Directions as seen by the operator when directly in front of the mounted device.

Qualified personnel: Personnel whose training, expertise and knowledge of the products and laws regarding security systems, are capable of creating, in accordance with the requirements of the purchaser, the most suitable solution for the protected premises.

Select: Click on a specific item on the interface (drop-down menu, options box, graphic object, etc.).

Press: Push a button/key or tap on a video button on a touchscreen or display.

1.3.2 Graphic conventions

Following are the graphic conventions used in this manual.

Conventions	Example	Description
Text in italics	Refer to <i>paragraph 1.3.2 Graphic conventions</i>	Directs you to the title of a chapter, section, paragraph, table or figure in this manual or other published reference.
<text>	<AccountCode>	Editable field
[Uppercase letter] or [number]	[A] or [1]	Reference relating to a part of the system or video object.

Note: *The notes contain important information relating to the text.*

Attention: *The "Attention" prompts indicate that total or partial disregard of the procedure could damage the device or its peripherals.*

EN54: Such indications indicate that the information and instructions refer to European standards.

Cables: Such indications state the types and specifications of the cables which must be used for the wiring in accordance with the manufacturer's advice or the standard concerned.

1.4 Operator classification - Access Levels

The control panel has 4 distinct access levels:

Level 1: Public level - this is the normal access level of the control panel and is the access level for building inhabitants who are neither authorized to use the system nor instructed in its use.

At this level it is possible to view the information on the display and on the signalling LEDs, as well as to interact using the buttons and the touch screen to scroll through the information. Level 1 allows the following operations only:

- mute buzzer
- test signalling LEDs
- activate alarm signalling when an early-warning process is running

Level 2: Authorized users - this access level is for the system supervisors and is for authorized personnel who are adequately instructed in the use of the system and its functions.

Access requires the use of a key or entry of a valid access code with sufficient access rights. In addition to the operations described for level 1 it is also possible to carry out the following operations:

- mute alarm signalling devices
- rearm the control panel
- activate alarm signalling devices manually
- disable control panel elements
- place in test status one or more of the system elements
- manual activation of emergency

The system provides two additional sub-levels of authorized user:

- **Superuser level**, las for the previous one, with the added possibility of replacing a loop device and registering control panels to their account with the Inim Cloud service
- **Maintenance level**, same as the previous level with the added possibility of stopping the valve pulse for those models that support extinction functions

Level 3: Programming - this access level is for specialized technical operators who carry out system configuration, commissioning and maintenance.

Access requires entry of a valid access code with sufficient access rights after inserting a jumper which enables programming. Refer to the manual for system configuration, commissioning and maintenance.

Only authorized technicians, appointed by the Manufacturer can, by means of special tools, carry out repair work on the motherboard.

Level 4: Only authorized technicians, appointed by the Manufacturer can, by means of special tools, carry out repair work on the motherboard.

1.5 CE Mark

1.5.1 Regulation (EU) No. 305/2011

These products comply with requirements stated by standards listed here below in compliance with Regulation (EU) No. 305/2011.

	
0051	
INIM Electronics s.r.l. Via Dei Lavoratori 10 - Fraz. Centobuchi 63076 Montepreandone (AP) - Italy	
22	
0051-CPR-2741	
EN 54-2:1997 + A1:2006 EN 54-4:1997 + A1:2002 + A2:2006 EN 54-16:2008 EN 54-21:2006 EN 12094-1:2003 PREVIDIA-ULTRAVOX PREVIDIA-ULTRAVOXR PREVIDIA-ULTRAVOXD	
<i>Control and signalling panel with power-supply equipment, alarm transmission and fault signalling equipment, automatic electrical device for control and management of switch off and delay, control and signalling equipment for integrated voice alarm systems for fire detection and signalling in buildings and for gas extinguishing systems installed in buildings as part of a complete operating system.</i>	

Essential features		Performance
Performance in the event of fire		PASS
Power supply performance		PASS
Response delay (response time in the event of fire)		PASS
Transmission performance		PASS
Operating reliability		PASS
Durability of operating reliability:	Thermal resistance	PASS
	Vibration resistance	PASS
	Humidity resistance	PASS
	Electrical stability	PASS

Options provided in accordance with EN54-2		Performance
7.8 Output to fire alarm devices		PASS
7.9 Output to fire alarm routing equipment		PASS
7.10 Output to fire protection equipment		PASS
7.11 Delay on outputs		PASS
7.12 Co-incidence detection (Type A, B and C)		PASS
7.13 Alarm counter		PASS
8.3 Point fault signal		PASS
8.9 Output to remote fault or warning signalling devices		PASS
9.5 Addressable points out-of-service		PASS
10.0 Test condition		PASS
Options provided in accordance with EN12094-1		Performance
4.17 Delay of extinguishing signal		PASS
4.18 Signal representing the flow of extinguishing agent		PASS
4.19 Monitoring of the status of components		PASS
4.20 Emergency hold device		PASS
4.21 Control of flooding time		PASS
4.22 Initiation of secondary flooding		PASS
4.24 Triggering signals to equipment within the system		PASS
4.26 Triggering of equipment outside the system		PASS
4.27 Emergency abort device		PASS
4.28 Control of extended discharge		PASS
4.29 Release of the extinguishing media for selected flooding zones		PASS
Options provided in accordance with EN 54-16		Performance
7.3 Audible warning		PASS
7.5 Phased evacuation		PASS
7.6.2 Manual silencing of voice alarm status		PASS
7.7.2 Manual reset of voice alarm status		PASS
7.8 Output to fire signalling devices		PASS
7.9 Voice alarm status output		PASS
8.3 Fault signalling related to the transmission path to the CCS		PASS
8.4 Fault signalling related to voice alarm zones		PASS
9 Out-of-service condition		PASS
10 Manual command of the voice alarm system		PASS
12 Emergency microphone(s)		PASS
13.14 Redundant power amplifiers		PASS
Additional information according to EN 54-2		
About information required at point 12.2.1, see data contained in this manual.		
Additional information according to EN 54-4		
For the information required by point 7.1, see data contained in this manual.		
Additional information according to EN 54-21		
For the information required by point 7.2.1, see data contained in this manual.		
Additional information according to EN 12094-1		
Environmental class: A		
Degree of protection: IP30		
Flooding zones: up to 24		
Zones from 1 a 24 for CO2, inert gas or halogenated hydrocarbons.		
Response delay activation condition: max 3s		
Response delay triggering of outputs: max 1s		

 0051	
INIM Electronics s.r.l. Via Dei Lavoratori 10 - Fraz. Centobuchi 63076 Montepandone (AP) - Italy 22 0051-CPR-2826	
EN 54-2:1997 + A1:2006 EN 54-4:1997 + A1:2002 + A2:2006 EN 54-21:2006 EN 12094-1:2003 PREVIDIA-ULTRA216 PREVIDIA-ULTRA216R PREVIDIA-ULTRA216D <i>Control and signalling panel with power-supply equipment, alarm transmission and fault signalling equipment, automatic electrical device for control and management of switch off and delay for fire detection and signalling in buildings and for gas extinguishing systems installed in buildings as part of a complete operating system.</i>	

Essential features		Performance
Performance in the event of fire		PASS
Power supply performance		PASS
Response delay (response time in the event of fire)		PASS
Transmission performance		PASS
Operating reliability		PASS
Durability of operating reliability:	Thermal resistance	PASS
	Vibration resistance	PASS
	Humidity resistance	PASS
	Electrical stability	PASS

Options provided in accordance with EN54-2	Performance
7.8 Output to fire alarm devices	PASS
7.9 Output to fire alarm routing equipment	PASS
7.10 Output to fire protection equipment	PASS
7.11 Delay on outputs	PASS
7.12 Co-incidence detection (Type A, B and C)	PASS
7.13 Alarm counter	PASS
8.3 Point fault signal	PASS
8.9 Output to remote fault or warning signalling devices	PASS
9.5 Addressable points out-of-service	PASS
10.0 Test condition	PASS
Options provided in accordance with EN12094-1	Performance
4.17 Delay of extinguishing signal	PASS
4.18 Signal representing the flow of extinguishing agent	PASS
4.19 Monitoring of the status of components	PASS
4.20 Emergency hold device	PASS
4.21 Control of flooding time	PASS
4.22 Initiation of secondary flooding	PASS
4.24 Triggering signals to equipment within the system	PASS
4.26 Triggering of equipment outside the system	PASS
4.27 Emergency abort device	PASS
4.28 Control of extended discharge	PASS
4.29 Release of the extinguishing media for selected flooding zones	PASS
Additional information according to EN 54-2	
About information required at point 12.2.1, see data contained in this manual.	
Additional information according to EN 54-4	
For the information required by point 7.1, see data contained in this manual.	
Additional information according to EN 54-21	
For the information required by point 7.2.1, see data contained in this manual.	
Additional information according to EN 12094-1	
Environmental class: A	
Degree of protection: IP30	
Flooding zones: up to 24	
Zones from 1 a 24 for CO ₂ , inert gas or halogenated hydrocarbons.	
Response delay activation condition: max 3s	
Response delay triggering of outputs: max 1s	

 0051	
INIM Electronics s.r.l. Via Dei Lavoratori 10 - Fraz. Centobuchi 63076 Montepandone (AP) - Italy 22 0051-CPR-2827	
EN 54-4:1997 + A1:2002 + A2:2006 EN 54-16:2008 PREVIDIA-VOX PREVIDIA-VOXR PREVIDIA-VOXD <i>Control and signalling panel for voice alarm systems with integrated power-supply equipment for fire detection and signalling systems installed in buildings</i>	

Options provided in accordance with EN 54-16	Performance
7.3 Audible warning	PASS
7.5 Phased evacuation	PASS
7.6.2 Manual silencing of voice alarm status	PASS
7.7.2 Manual reset of voice alarm status	PASS
7.8 Output to fire signalling devices	PASS
7.9 Voice alarm status output	PASS
8.3 Fault signalling related to the transmission path to the CCS	PASS
8.4 Fault signalling related to voice alarm zones	PASS
9 Out-of-service condition	PASS
10 Manual command of the voice alarm system	PASS
12 Emergency microphone(s)	PASS
13.14 Redundant power amplifiers	PASS
Additional information according to EN 54-4	
For the information required by point 7.1, see data contained in this manual.	

Essential features		Performance
Performance in the event of fire		PASS
Power supply performance		PASS
Response delay (response time in the event of fire)		PASS
Transmission performance		PASS
Operating reliability		PASS
Durability of operating reliability:	Thermal resistance	PASS
	Vibration resistance	PASS
	Humidity resistance	PASS
	Electrical stability	PASS

1.5.2 Directive 2014/53/EU

Hereby INIM Electronics S.r.l. declares that the above mentioned control panel models with the optional modules comply with the essential requirements and other relevant provisions established by directive 2014/53/EU.

Following paragraph explains how to download the complete Declaration of Conformity.

This product may be used in all EU Countries.

1.5.3 Documents for the users

Declarations of Performance, Declarations of Conformity and Certificates concerning to INIM Electronics S.r.l. products may be downloaded free of charge from the web address www.inim.it, getting access to Extended Access and then selecting "Certifications" or requested to the e-mail address info@inim.it or requested by ordinary mail to the address shown in the *paragraph 1.5.1*.

Manuals may be downloaded free of charge from the web address www.inim.it, getting access to Extended Access and then selecting "Manuals".

1.5.4 Safeguard instructions

The following symbol shown on the product and/or on its packaging indicates to refer to this manual for further information on the electrical safety of the product.



  EN IEC 62368-1		
Isolation class		I
Terminal type	AC INPUT	ES3, PS3
	BATTERY	ES1, PS3
	RELAY (IFAMPSU and IFM24160)	ES1, PS2
	OUT1, OUT2 (IFAMPSU and IFM24160)	ES1, PS2
	ESPANSION BOARD	ES1, PS2
	RS485-BMS, RS485-REPEATER	ES1, PS2
	CAN-IN, CAN-OUT	ES1, PS2
	TAMPER	ES1, PS1
	USB	ES1, PS1
	CR2032 (J2)	ES1, PS1
	RS232	ES1, PS1
	LOOP-A and B (IFM2L)	ES1, PS2
	ETHERNET (FPMCPU, FPAMIAS, IFAMIDANET and IFAMEVAC)	ES1, PS1
	MUSIC 1/2 (IFAMEVAC)	ES1, PS1
	AUX 1/2 (IFAMEVAC)	ES1, PS1
	A/B PAGERS (IFAMEVAC)	ES1, PS2
	LINE A/B (IFAMAMP)	ES3, PS3
	LOCAL AUDIO (IFAMAMP)	ES1, PS1
	RISER 1/2/3/4 (IFAMEFT)	ES2, PS1

Chapter 2

General Description

2.1 Previdia Ultra System

Previdia Ultra is a modular system for constructing fire detection, alarm, extinguishing and voice alarm systems. A voice evacuation system (commonly named "EVAC" standing for Emergency Voice Alarm and Communication) is a system that uses loudspeakers and amplifiers with characteristics suitable for alerting building occupants to imminent danger in the event of a fire. In addition to this specific function, a voice system can also be used for common "PA" (Public Addressing) purposes, that is, for the diffusion of music or non-emergency communications.

These functions can be activated and used in accordance with the combination of modules which make up the system.

The three typical system applications are:

- control panel in single cabinet
- control panel in several cabinets (multi-cabinet system)
- control panels in a network (RS485 connection, Ethernet point-to-point, optic fiber)

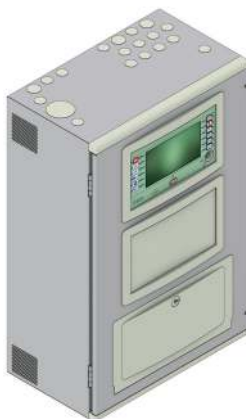
There are three basic control panel models which can be developed and expanded through the use and installation of additional modules.

The basic control panel models are:

• Previdia-Ultra216

control panel in single cabinet with fire detection functions. The control panel includes the modules:

- FPMCPU, main CPU unit with display
- IFAMPSU, power-supply module capable of supplying current up to 1KWatt at 27.6V
- IFM2L - module for the management of two loop circuits for devices distributed in the protected area.



•Previdia-Vox

control panel in single cabinet with voice evacuation functions. The control panel includes the modules:

- FPAMIAS: control panel with display for EVAC/PA voice functions
- IFAMPSU, power-supply module capable of supplying current up to 1KWatt at 27.6V
- IFAMEVAC: audio matrix module for signals processing
- IFAMAMP: 250W audio amplifier module
- PTT microphone

• Previdia-Ultravox

control panel in single cabinet with fire detection and voice evacuation functions The control panel includes the modules:

- FPMCPU, main CPU unit with display
- FPAMIAS: control panel with display for EVAC/PA voice functions
- IFAMPSU, power-supply module capable of supplying current up to 1KWatt at 27.6V
- IFAMEVAC: audio matrix module for signals processing
- IFAMAMP: 250W audio amplifier module
- PTT microphone
- IFM2L - module for the management of two loop circuits for devices distributed in the protected area.



Two types of modules can be added to the basic control panels:

• Front-plate modules

modules to be mounted on the cabinet front plate:

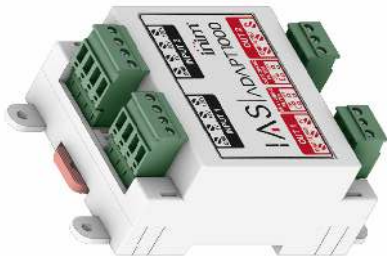
- FPMCPU, main CPU unit with display, essential for the fire detection functions
if required, a second CPU unit can be installed inside the cabinet. This second CPU will take over in the event of fault status on the main unit and by so doing will disable the main CPU completely.
- FPAMIAS: control panel with display for EVAC/PA voice functions.
- FPMNUL - plastic support (provide no functions other than support)
- FPMLED - signalling module with 50 individually programmable tricolour LEDs
- FPMLEDPRN - signalling module with 50 individually programmable tricolour LEDs and an 80mm printer
- FPMEXT - extinguishant channel status module, to be used when the control panel is equipped with modules for the management of automatic fire-extinguishant systems (IFMEXT).



• IFAM and IFM modules

internal modules, which must be mounted inside the cabinet through the use of an interconnection bar:

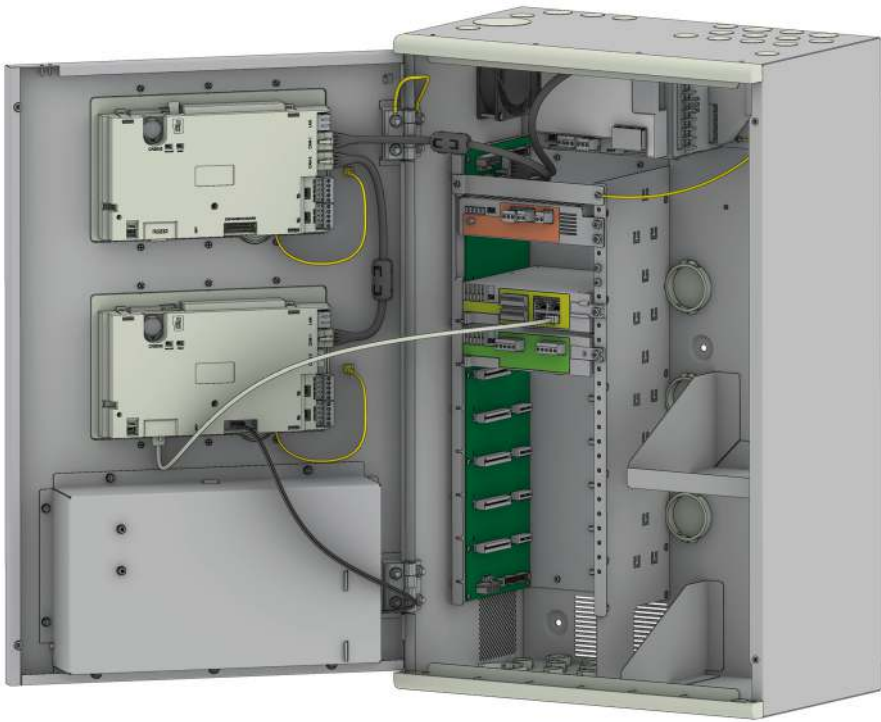
- IFAMPSU, power-supply module capable of supplying current up to 1KWatt at 27.6V
- IFAMEVAC: audio matrix module for signals processing
- IFAMAMP: 250W audio amplifier module
- IFAMIDANET, module for connecting the control panel to the IDANet network
- IFAMFFT, module with 4 lines for emergency telephones
- IFM24160, power-supply module, to be mounted in the first position at the top on the bar
- IFM2L - module for the management of two loop circuits for devices distributed in the protected area.
- IFM4R - module with 4 programmable relays
- IFM4IO - module with 4 supervised power inputs/outputs
- IFMDIAL - module for dialler communications over PSTN or GSM networks and GPRS connection management
- IFM16IO - module with 16 low-power inputs/outputs
- IFMNET - module for the connection of control panels in a Hornet+ network
- IFMLAN - module for advanced TCP-IP service management (Video verification, Web Interface Web, e-mail, etc.)
- IFMEXT - module for gas-extinguishant system management



•Accessory modules

modules to be used optionally in support of modules with audio functions:

-IAS-ADAPT1000: module for adapting and decoupling audio signals input into the control panel



The Previdia Ultra control panel can be mounted in up to 4 cabinets that can be affixed together. In a system with more than one cabinet, the maximum number of modules is as follows:

Front-plate module	maximum number
FPAMIAS	1
FPMCPU	2
FPMNUL	7
FPMLED	7
FPMLEDPRN	1
FPMEXT	5

IFAM Module	maximum number
IFAMPSU	4 one per cabinet
IFAMAMP	30
IFAMEVAC	1
IFAMIDANET	1
IFAMFFT	4

IFM Module	maximum number
IFM24160	4 one per cabinet
IFM2L	8
IFM4R	16
IFM4IO	16
IFMDIAL	1
IFM16IO	4
IFMNET	1
IFMLAN	1
IFMEXT	24

2.2 Single cabinet control panel

If the Previdia control panel is a single cabinet configuration, it will be possible to install a second front panel module on the front panel, in addition to the FPMCPU unit, a primary essential component for the proper functioning of the Previdia-Ultra216, or the FPAMIAS unit for the Previdia-Vox control panel.

Positioned inside the cabinet is the interconnection bar, distribution of power and the signals of the CAN DRIVE+, for housing up to 8 IFM and IFAM modules, depending on the needs of the system.



2.3 Multi-cabinet control panels

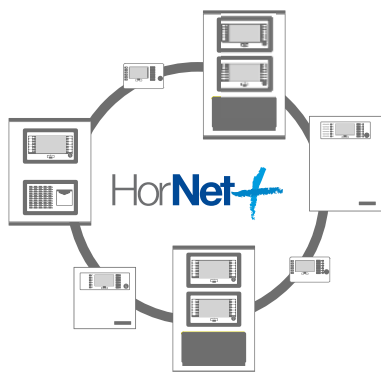
The capacity of the control panel can be expanded by affixing as many as 4 cabinets together.

The cabinets can be affixed together by securing the bottom of one cabinet to the top of another by means of the supplied bolts. Once the cabinets are affixed to one another, all the CAN DRIVE+ bars must be connected together by means of the supplied BUS cable.

The number of housings available for front-plate and internal modules increases with the number of cabinets installed.

A control panel with several cabinets can use several IFAMPSU power-supply modules or IFM24160, mounted one in each of its cabinets, as long as they are of one model and not both models together. In this way the control panel has a total current equal to the sum of the maximum currents of the power-supply modules installed which automatically share the load current.

2.4 Control panels in a HorNet+ network

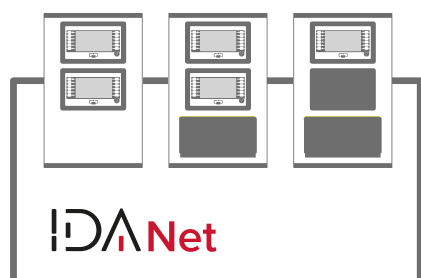


To increase the extension of the system with fire-fighting functions, it is possible to network several Previdia control panels (Ultravox, Vox, Ultra, Max or Compact up to a maximum of 48) in order to form a system of increased capacity (Hornet+ network).

When connecting two or more control panels in a HorNet+, it will be necessary to install an IFMNET module inside each control panel. This module provides two RS485 ports for the ring connection.

For further information regarding the method used for connecting control panels in a network refer to the Previdia Networking Guide available at www.inim.it.

2.5 IDANet



Through IDANet network-connection technology, Previdia Ultra control panels can be connected in a ring via a CAT5 ethernet cable (up to 100m) or optical fiber (by means of an appropriate SFP module according to the type of fiber used).

The IDANet network allows the sharing of all the information with the various control panels, which effectively makes it into a single system. In the case of control panels with voice functions in IDANet network, they are capable of sharing up to 20 audio tracks, thus allowing sound sources to be conveyed from one node to another in the system.

2.6 Control Panels in an IP network

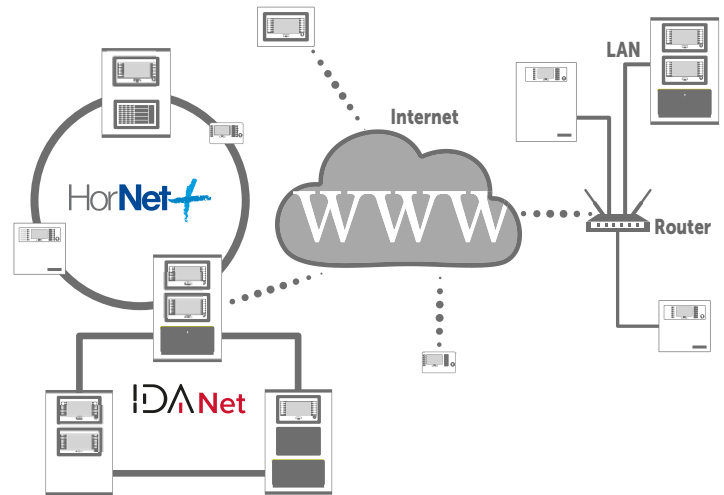
Multiple control panels, or HorNet+ networks of control panels with fire functions, or IDANet networks of control panels with fire and voice functions, can be connected to each other via a TCP-IP connection.

Each node in a connection of this type is identified as a "cluster". Each cluster can consist of:

- a single control panel
- a repeater
- a HorNet+ network
- a IDANet network
- a network consisting of a HorNet+ ring and an IDANet ring

By means of a TCP-IP connection, it is then possible to connect several clusters together.

For further information regarding the method used for connecting control panels in a network refer to the Networking Guide available at www.inim.it



Attention: *The control panel that acts as a gateway for TCP-IP networking must include the FPMCPU module.*

2.7 Inim Cloud fire

The INIM Electronics Cloud service provides Previdia system users with a further method of intrusion panel management via Internet.

The connection of the control panels to the Cloud service is achieved via the Ethernet connection of the IFMLAN module and access for the user is possible with a web interface (App or any browser) without the need to configure the network on which the control panel is installed. In particular, it is not necessary to program a router to perform port-forwarding and the like in order to reach the control panel.



Each cluster, equipped with at least one FPMCPU control panel, can be connected to the Inim cloud, allowing you to take advantage of the following features:

- Remote system monitoring (thus overcoming local network configuration difficulties)
- System register management (in accordance with local regulations in force)
- Management of the maintenance register

2.8 List of Previdia Ultra system components

Following is a list of the elements available for the Previdia Ultra system:

- Standard models of Previdia Ultra control panels:
 - Previdia-Ultravox control panel in single cabinet with fire detection and voice evacuation functions
 - Previdia-Vox control panel in single cabinet with voice evacuation functions
 - Previdia-Ultra216 control panel in single cabinet with fire detection functions
 - Previdia-UltravoxR control panel in single cabinet with fire detection and voice evacuation functions, in red
 - Previdia-VoxR control panel in single cabinet with voice evacuation functions, in red
 - Previdia-Ultra216R control panel in single cabinet with fire detection functions, in red
- Front-plate modules:
 - FPMCPU CPU / Repeater module
 - FPAMIAS Main control module for voice functions
 - FPMLED LED module
 - FPMLEDPRN LED module with printer
 - FPMEXT LED module for extinguishant module
 - FPMNUL Blind-plate module

- IFAM internal modules:
 - IFAMPSU 1KW power-supply module
 - IFAMEVAC Audio matrix module
 - IFAMAMP 250W audio amplifier module
 - IFAMIDANET Module for the connection in IDANET network
 - IFAMFFT Module with 4 lines for emergency telephones
- IFM internal modules:
 - IFM24160 5.2A power-supply CAN module
 - IFM2L CAN module with 2 loops
 - IFMNET CAN module for Hornet+ network connections
 - IFM4R CAN module with 4 relays
 - IFM4IO CAN module with 4 I/O
 - IFMDIAL CAN dialler module
 - IFM16IO CAN module with 16 I/O
 - IFMLAN CAN LAN module
 - IFMEXT CAN extinguishant module
- Accessory modules:
 - IAS-ADAPT1000 Module for adapting and decoupling audio signals input into the control panel
- Cabinets:
 - PRCAB+ Metal cabinet complete with front plate and CAN DRIVE+ bar
 - PRCAB+R Metal cabinet complete with front plate and CAN DRIVE+ bar, in red
- Microphone bases:
 - IPG12 Microphone base for announcements equipped with 12 configurable buttons
 - IPG24 Microphone base for announcements equipped with 24 configurable buttons
 - IPGE06 Emergency microphone base equipped with 6 configurable buttons
 - IPGE18 Emergency microphone base equipped with 18 configurable buttons
- Accessories:
 - PRREP Enclosure and front plate in aluminium for repeaters
 - PRCABRK+ Bracket for mounting the PRCAB+ cabinet to a 19' rack
 - FTLF1217P2BLT SFP module for multimode optical fiber connection
 - IPG-GOOSENECK Flexible gooseneck microphone stand
 - IPG-PTT PTT microphone
 - IPGECAB Red metal cabinet with a keyswitch for the housing of the microphone bases
 - IPS24024DT 24V local power-supply for microphone bases
 - IFFT-PHONE Emergency telephone handset
 - IFFT-SOCKET Jack socket
 - IAS-EOL1000 End of line for speaker line with total power less than 20W
 - PRCAB-Boostfan Additional fan for PRCAB + cabinet

Chapter 3

Description of the Previdia Ultra system parts

3.1 Basic control panel models

The Previdia Ultra system includes three basic control panel models, distinct from each other with regard their available functions and assembled modules:

- Previdia-Ultravox
- Previdia-Vox
- Previdia-Ultra216

These control panels are supplied assembled in a single metal cabinet, with characteristics identical to those of the PRCAB+ cabinet model (see *paragraph 3.2*). For control panel models with voice functions, a niche is added, which can be closed with a plastic door, for the housing and the connection of the PTT microphone and a telephone handset (optional accessory).

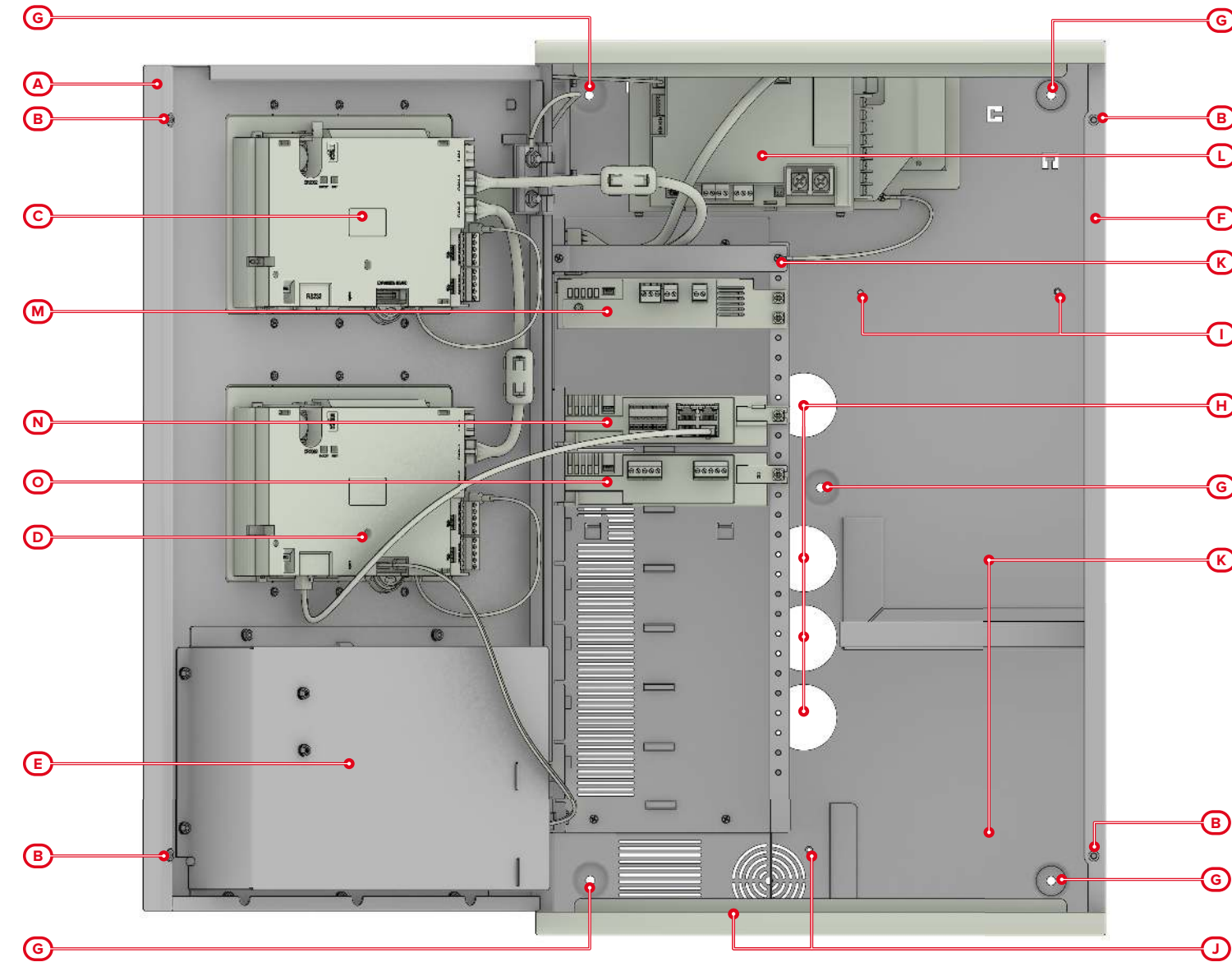
Inside the box are the already assembled modules for operating the control panel, depending on the model, and the space for mounting the batteries and the possible assembly of additional optional modules.

Each control panel module is also available in red colour.

3.1.1 Previdia-Ultravox control panel

Previdia-Ultravox comes with:

- battery connection wire
- 2 metal keys
- 5 ferrites (1 for the mains cable, 2 for the speaker lines and 2 for the OUT1/2 outputs)
- bag with components for line terminations
- Hole covers (inserted)
- installation guide
- user's manual



[A]	Frontplate
[B]	Screw locations for the cover screws
[C]	FPMCPU module (paragraph 3.4)
[D]	FPAMIAS module (paragraph 3.5)
[E]	Housing for the PTT microphone (included)
[F]	Back
[G]	Wall-mount screw locations
[H]	Cable entry

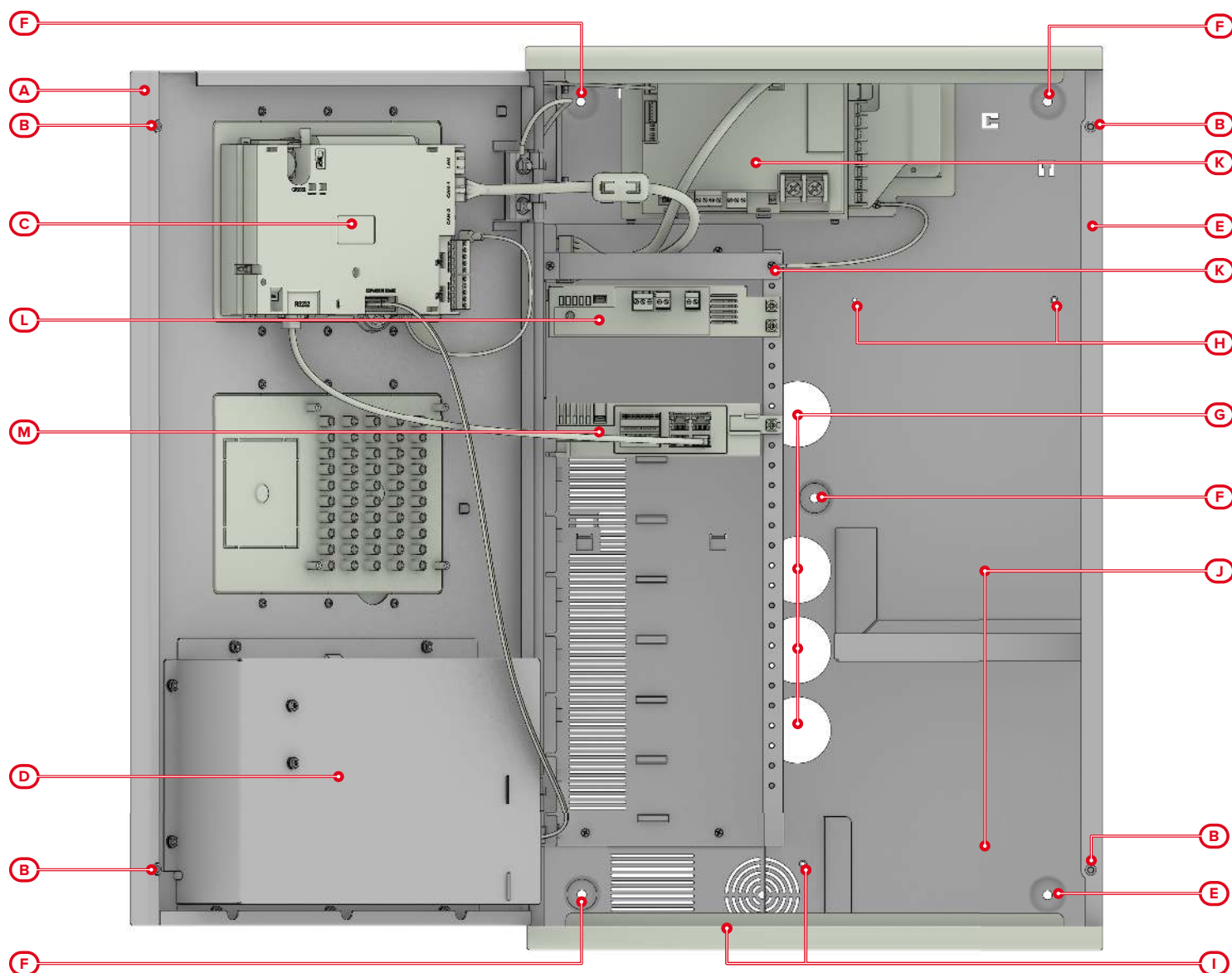
[I]	Fixing holes for DIN rail
[J]	Fixing holes for PRCAB-Boostfan
[K]	Backup battery housing
[L]	IFAMPSU power-supply module (paragraph 3.7)
[M]	IFAMAMP module (paragraph 3.10)
[N]	IFAMEVAC module (paragraph 3.9)
[O]	IFM2L module (paragraph 3.13)

Control panel technical specifications	Previdia-Ultravox
Dimensions	433 x 677 x 258 mm
Weight	23 Kg
Protection grade	IP30
Accepted Batteries	2 x 12V 38Ah, NP38-121 or 2 x 12V 24Ah, NPL24-121 or 2 x 12V 17 Ah, NP 17 -12-FR or equivalent

3.1.2 Previdia-Vox control panel

Previdia-Vox comes with:

- battery connection wire
- 2 metal keys
- 5 ferrites (1 for the mains cable, 2 for the speaker lines and 2 for the OUT1/2 outputs)
- bag with components for line terminations
- Hole covers (inserted)
- installation guide
- user's manual



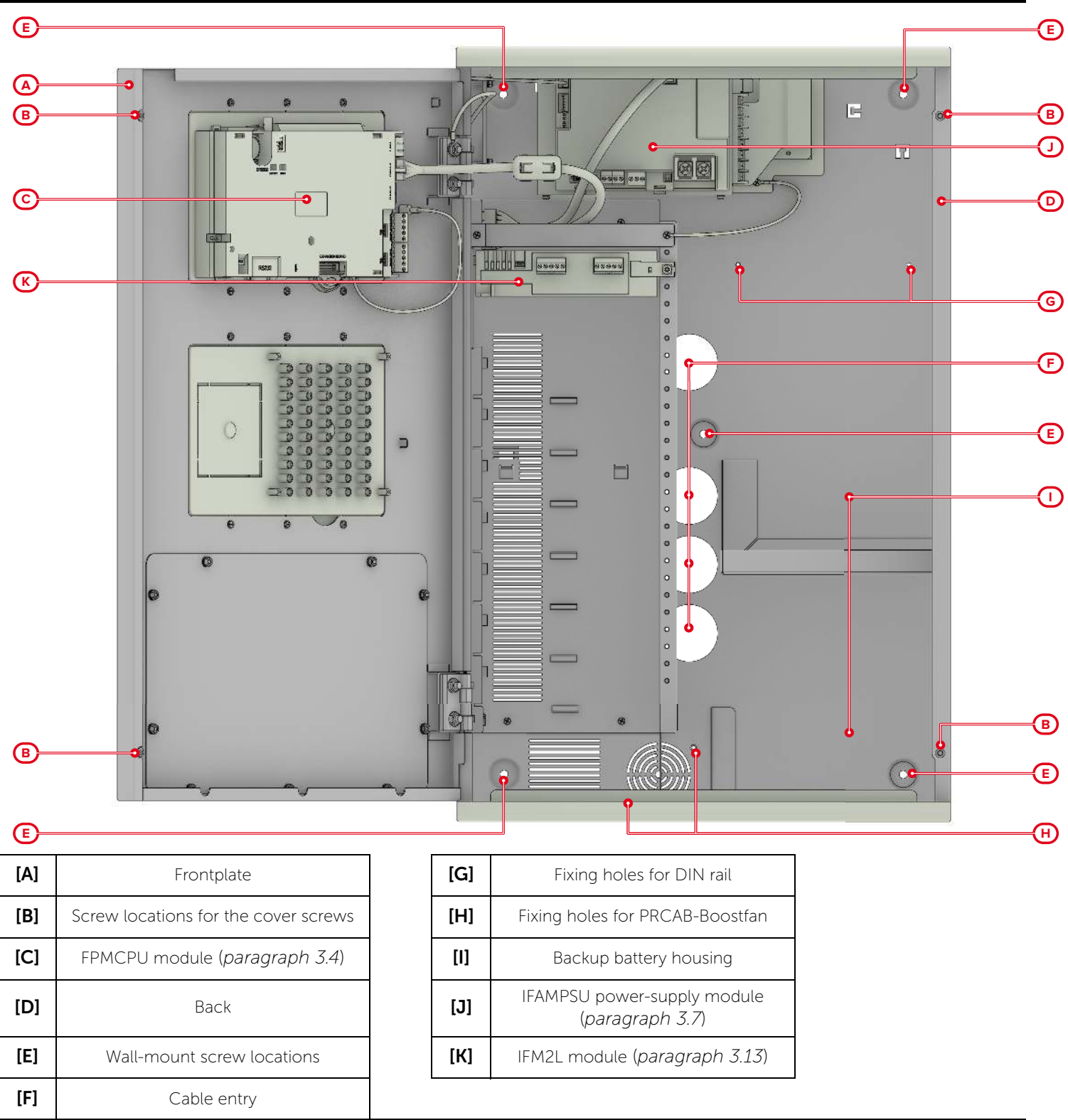
[A]	Frontplate	[H]	Fixing holes for DIN rail
[B]	Screw locations for the cover screws	[I]	Fixing holes for PRCAB-Boostfan
[C]	FPAMIAS module (<i>paragraph 3.5</i>)	[J]	Backup battery housing
[D]	Housing for the PTT microphone (included)	[K]	IFAMPSU power-supply module (<i>paragraph 3.7</i>)
[E]	Back	[L]	IFAMAMP module (<i>paragraph 3.10</i>)
[F]	Wall-mount screw locations	[M]	IFAMEVAC module (<i>paragraph 3.9</i>)
[G]	Cable entry		

Control panel technical specifications	Previdia-Vox
Dimensions	433 x 677 x 258 mm
Weight	22 Kg
Protection grade	IP30
Accepted Batteries	2 x 12V 38Ah, NP38-121 or 2 x 12V 24Ah, NPL24-121 or 2 x 12V 17 Ah, NP 17 -12-FR or equivalent

3.1.3 Previdia-Ultra216 control panel

Previdia-Ultra216 comes with:

- battery connection wire
- 2 metal keys
- 1 ferrite for the mains cable
- bag with components for line terminations
- Hole covers (inserted)
- installation guide
- user's manual



Control panel technical specifications	Previdia-Ultra216
Dimensions	433 x 677 x 258 mm
Weight	20 Kg
Protection grade	IP30
Accepted Batteries	2 x 12V 38Ah, NP38-121 or 2 x 12V 24Ah, NPL24-121 or 2 x 12V 17 Ah, NP 17 -12-FR or equivalent

3.2 PRCAB+, cabinet

The PRCAB+ cabinets offer a metal casing with a door. The cabinet can be wall mounted and anchored in place using the holes on the back of the enclosure or can be affixed to another cabinet by means of two bolts and the holes on the top and bottom sides of the enclosure.

The front of the cabinet provides two apertures for mounting of two front-plate modules and the grounding connections.

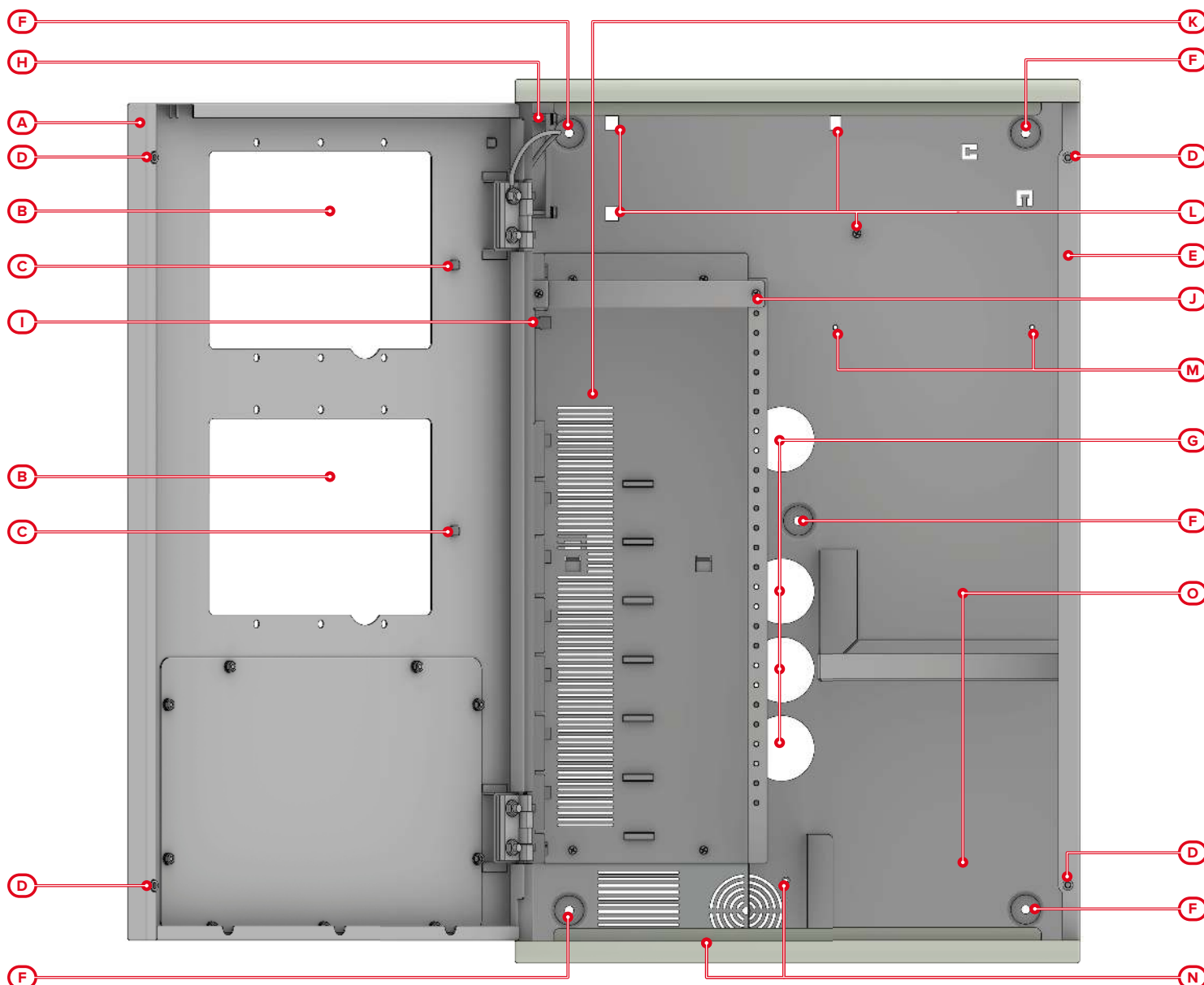
Inside the enclosure is a compartment for mounting up to 8 internal modules, via a connection and power and signal distribution bar (CAN DRIVE+) equipped with suitable connectors for the IFM and IFAM internal modules and for the CAN bus cable for communication with the front-plate modules or with the affixed cabinets. The compartment has a bar which serves to hold the modules in place and allows the grounding connections. There is also space and a shelf for the placement of two 12V, 17Ah, 24Ah or 38Ah batteries.

The cabinet has hooks for the cable ties and cable entries on the top and bottom sides. Appropriate hole covers are provided.

The PRCAB+ cabinets are also available in red and can be ordered using the PRCAB+R code.

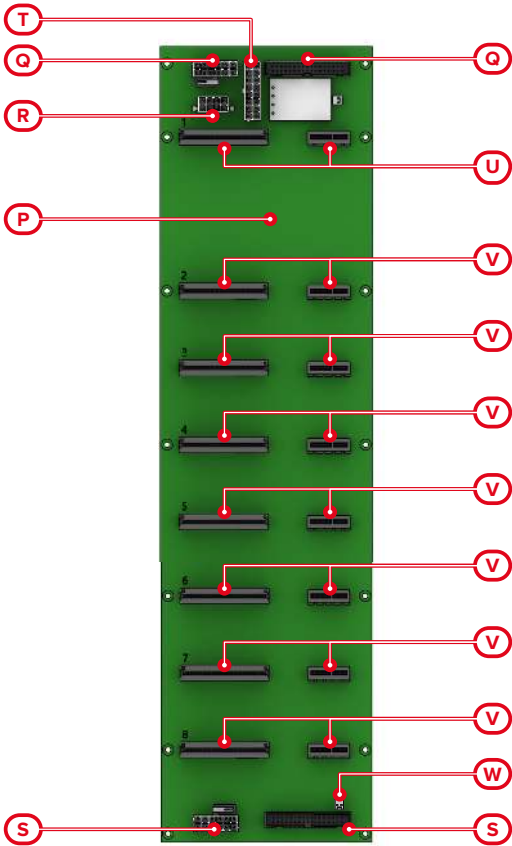
PRCAB+ comes with:

- CAN DRIVE+ bar (inserted)
- Hole covers (inserted)
- 2 bolts for affixing cabinets together
- a CAN bus cable and a flat cable for cabinet interconnection
- ground connection wire
- Instructions manual



[A]	Frontplate	[I]	CAN DRIVE+ bar
[B]	Apertures for FPM front-plate modules	[J]	Earth connection bar
[C]	Connections for grounding the front-plate modules	[K]	Compartment for internal modules
[D]	Screw locations for the cover screws	[L]	Connection points for IFAMPSU power supply
[E]	Back	[M]	Fixing holes for DIN rail
[F]	Wall-mount screw locations	[N]	Fixing holes for PRCAB-Boostfan
[G]	Cable entry	[O]	Backup battery housing
[H]	Fan		

[P]	PCB CAN DRIVE+	
[Q]	CAN connector	to the CAN DRIVE+ bar of an upper cabinet
[R]		toward the module on the front plate
[S]		to the CAN DRIVE+ bar of a lower cabinet
[T]	IFAMPSU power-supply module connector	
[U]	Connector for internal module	to the IFM24160 power-supply module, if present or any module
[V]		for all modules except the IFM24160 power-supply module
[W]	Connector for PRCAB-Boostfan	



PRACAB+- technical specifications	
Dimensions	433 x 677 x 258 mm
Weight	17 Kg
Protection grade	IP30
Accepted Batteries	2 x 12V 38Ah, NP38-121 or 2 x 12V 24Ah, NPL24-121 or 2 x 12V 17 Ah, NP 17 -12-FR or equivalent

3.3 PRCABRK+, accessories for mounting the cabinet

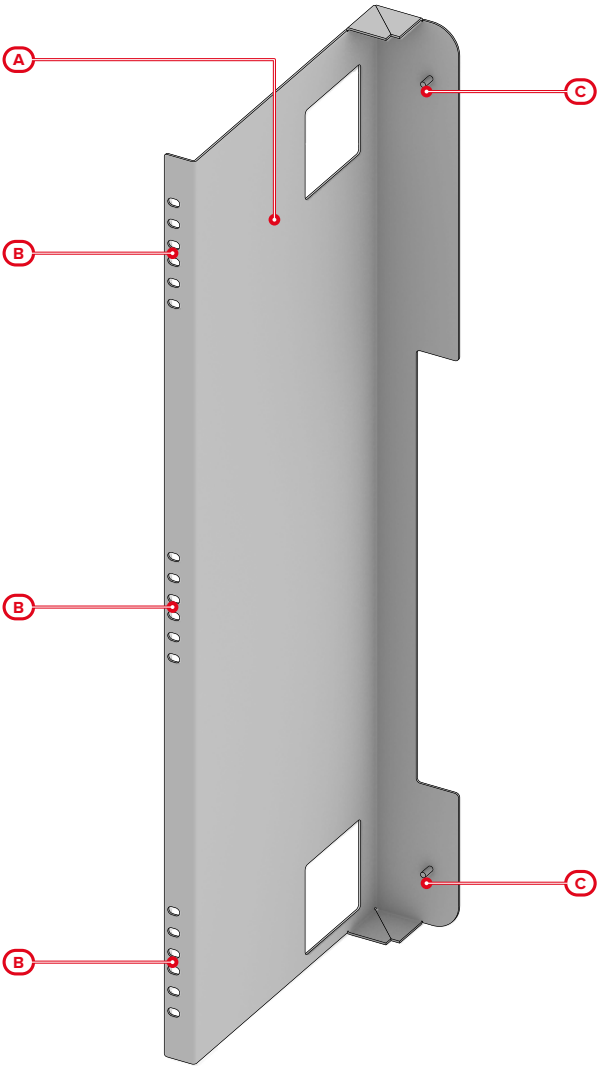
The PRCABRK+ kit allows you to mount the cabinet to a 19" rack by means of two support brackets at each side of the cabinet.

PRCABRK come complete with:

- 4 nuts with washers
- Instructions manual

PRACABRK+ - technical specifications	
Dimensions	237 x 683 x 86 mm (x2)
Weight	4 Kg

[A]	Support bracket (2)
[B]	Rack anchor-screw locations
[C]	Threaded rivet



3.4 FPMCPU, front-plate CPU module and repeater

The FPMCPU module constitutes the main unit of the control panel with fire detection functions where the main CPU resides with the system configuration data.

Inside the FPMCPU unit there are two CPUs: the main CPU and a secondary backup CPU capable of intervening in the event of failure of the main CPU.

The backup CPU ensures the basic functions of the system (receiving alarms from the points and activating the outputs). However, it does not ensure all the configured activation logic. For total redundancy of all the configured functions, it is necessary to add and configure a second FPMCPU unit to the control panel.

The FPMCPU front-plate module has three operating modes:

- main unit of the control panel
- backup unit
- remote repeater user-interface

FPMCPU comes with:

- CAN BUS cable
- 6 screws with washers for securing the module
- 2 system access keys
- 2 ferrites
- Instructions manual

[A]	Touchscreen display
[B]	Status LED
[C]	LED and function button
[D]	LED and multiple-alarm button
[E]	Access-key slot
[F]	Speaker
[G]	Ground connection wire
[H]	Mounting screw locations
[I]	CR2032 battery (included, for internal clock)
[J]	MicroSD card holder
[K]	Button to reset default settings (factory settings)
[L]	Reset button
[M]	Ethernet port
[N]	CAN bar connector
[O]	Connector for other front-plate module
[P]	RS485 terminal board for repeaters
[Q]	EOL jumper connectors
[R]	RS485 MODBUS terminal board
[S]	MODBUS EOL jumper connectors
[T]	For future use
[U]	Mini USB port
[V]	Serial connector
[W]	programming jumper connectors

The diagram illustrates the FPMCPU front-plate module in two views: front and back. The front view shows a touchscreen display (A) with a status LED (B) and various function buttons (C, D, E). A ground connection wire (G) is attached to the bottom left. Mounting screw locations (H) are indicated. The back view shows the internal components, including a CR2032 battery (I), a MicroSD card holder (J), a reset button (K), and various connectors (L, M, N, O, P, Q, R, S, T, U, V, W). A CAN BUS cable (G) is connected to the back. The module is labeled 'inim' and 'EXPANSION BOARD'.

FPM-CPU module - technical specifications

Supply voltage		19-30V $\overline{\text{---}}$
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	stand-by	130mA
	maximum	140mA
	mains fault	110mA
Maximum voltage on RS485-REPEATER		1A @27.6V $\overline{\text{---}}$
Maximum voltage on RS485-BMS		1A @27.6V $\overline{\text{---}}$

3.5 FPAMIAS, front-plate voice module

Main control unit for voice and evacuation functions equipped with touchscreen colour graphic display.

It deals with the management and coordination of the various voice modules.

A single Previdia Ultra control panel can house only one of these modules. Mounts to the front plate and, if housed in the upper opening, connects to the CAN DRIVE+ bar. If housed in the lower opening, it connects to the FPMCPU module in the upper opening.

FPAMIAS comes with:

- CAN BUS cable
- 6 screws with washers for securing the module
- 2 system access keys
- 2 ferrites
- Instructions manual

FPAMIAS module - technical specifications		
Power supply voltage		20-30V $\overline{\text{---}}$
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	maximum	110mA
	mains fault	60mA

3.6 FPMLED, FPMLEDPRN, LED and printer front-plate module

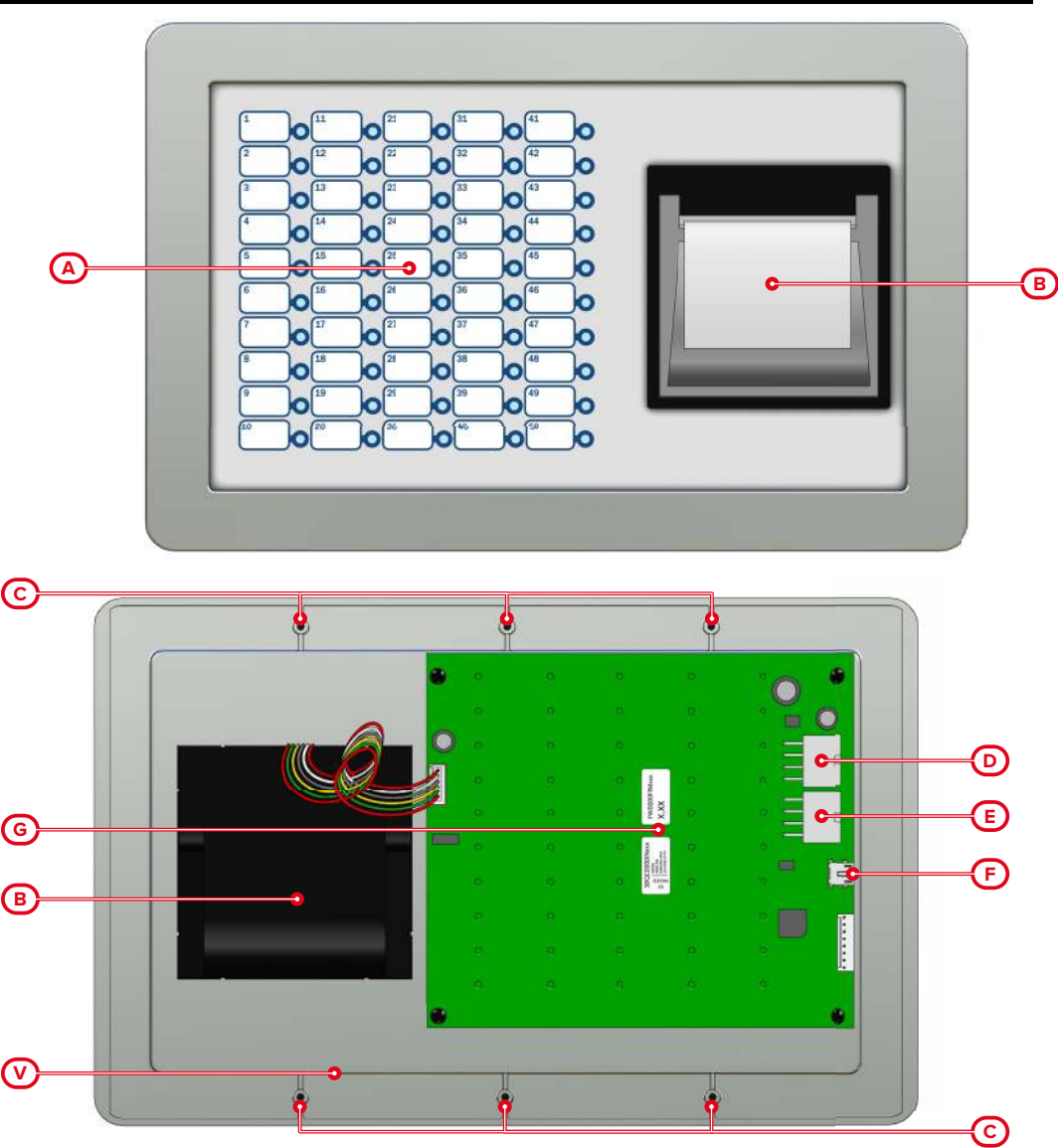
The FPMLED and FPMLEDPRN front-plate modules are equipped with 50 tricolour LEDs which replicate the signals generated by the system.

The FPMLEDPRN module is equipped with an 80mm thermal printer.

This module mounts to either of the two apertures on the front of the cabinet and connects to the system via the CAN bus cable. Each module is equipped with:

- CAN BUS cable
- 6 screws with washers for securing the module
- 1 ferrite
- Instructions manual

[A]	LED
[B]	Thermal printer
[C]	Mounting screw locations
[D]	Connector for the CAN drive bar or other front-plate module
[E]	Connector for front-plate module
[F]	Mini USB port
[G]	Label with firmware revision of the module



Technical specifications		FPMLED module	FPMLEDPRN module
Supply voltage		19-30 V ⁻⁻⁻ supplied by IFM24160 module	
Operating temperature		from -5°C to +40°C	
Consumption @ 27.6V	stand-by	12mA	35mA
	maximum	45mA	400mA

3.7 IFAMPSU, internal power-supply module

1000W switching power supply module. Connects to the mains, supports 230Vac or 115 Vac, 50/60 Hz input voltages and supplies the system with a maximum current of 40A.

Provides a 3A battery-charger capable of maintaining under charge 17Ah, 24Ah or 38Ah batteries.

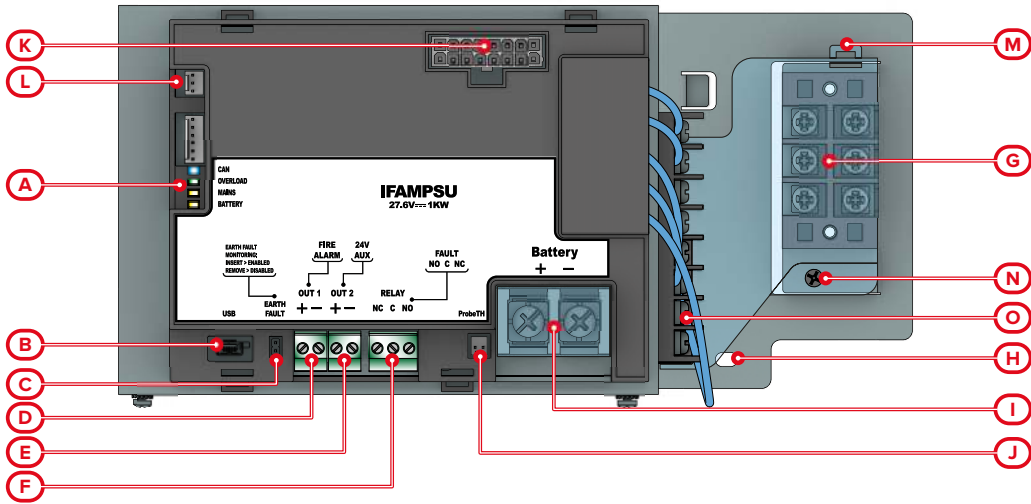
The IFAMPSU module supplies power to the system by distributing it through the CAN DRIVE+ connection bar and through two supervised outputs and a configurable relay output (configured at factory as alarm output, AUX output and fault signalling relay).

Only one IFAMPSU module can be housed inside each metal cabinet, while each control panel can manage a maximum of 4 modules (one for each cabinet).

Attention: *The installation of this module excludes the use of the IFM24160 power-supply module for the control panel.*

IFAMPSU comes with:

- battery connection wire
- battery to battery connection wire
- screw for securing the module to the back of the cabinet
- wire with eyelet terminal for connection to earth
- 1 ferrite
- instructions manual



[A]	Status LED	
[B]	Mini USB port	
[C]	Jumper connectors for enablement of the ground-fault test	
[D]	OUT1	Supervised output
[E]	OUT 2	Supervised output
[F]	RELAY	Relay - voltage free contact
[G]	L N $\overline{\text{PE}}$	AC Mains input terminals
[H]	$\oplus$	Hole for the Earth bar screw and for the Earth conductor

[I]	Battery	Battery connector
[J]	Connector for additional optional thermal probe	
[K]	CAN bar connector	
[L]	Fan connector	
[M]	AC terminals protection	Retaining hook
[N]		Retaining screw
[O]	Ancillary terminals	

IFAMPSU LED	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
OVERLOAD	Green	No overheating or over-absorption trouble	Slow flashing: overheating Fast flashing: overvoltage
MAINS	Yellow	Mains failure fault	Fast flashing: system ground fault
BATTERY	Yellow	Battery inefficiency or fault	-

IFAMPSU module - technical specifications

Power supply voltage		230V~ (+10% -15%) 115V~ (+10% -15%) 50/60 Hz
Maximum current draw from mains		5A @230V~ 8.5A @115V~
Output voltage		26V $\overline{\text{---}}$ nominal $\pm 10\%$
Maximum output ripple		200mV pp
Maximum output current of the power group (Imax b according to EN54-4)		38A @230V~ 32A @115V~
Maximum current for external loads (Imax a according to EN54-4)		35A @230V~ 29A @115V~
Imin		100mA
Power factor		0.95 @ 230V ~ at full load 0.99 @ 115V ~ at full load
Overvoltage protection		105 /135% of the declared potential (constant current limit, automatic reset to the reset of the overload conditions)
Overvoltage category		CAT II 2500 V
Overload protection		29 / 33 V
Overheating protection		Output voltage suspension, reactivation to reset temperature
Batteries	Type	2 x 12V 38Ah, NP38-12I or 2 x 12 V 24Ah, NPL24-12I or 2 x 12 V 17 Ah, NP 17 -12-FR or equivalent with UL94-V1 flame class enclosure or higher
	Maximum voltage charge adapted to temperature	28V
	Battery charger	3A
	Maximum internal resistance of battery (Ri Max)	0,1Ohm
	Battery shutdown voltage	19.5V
Operating temperature		from -5°C to +40°C
Isolation class		I
Consumption @ 27.6V	stand-by	20mA
	maximum	40mA
	mains fault	30mA
Maximum voltage on OUT 1		1.5A @27.6V $\overline{\text{---}}$
Maximum voltage on OUT 2		1.5A @27.6V $\overline{\text{---}}$
Maximum voltage on RELAY		5A, 30V $\overline{\text{---}}$

3.8 IFM24160, internal power-supply module

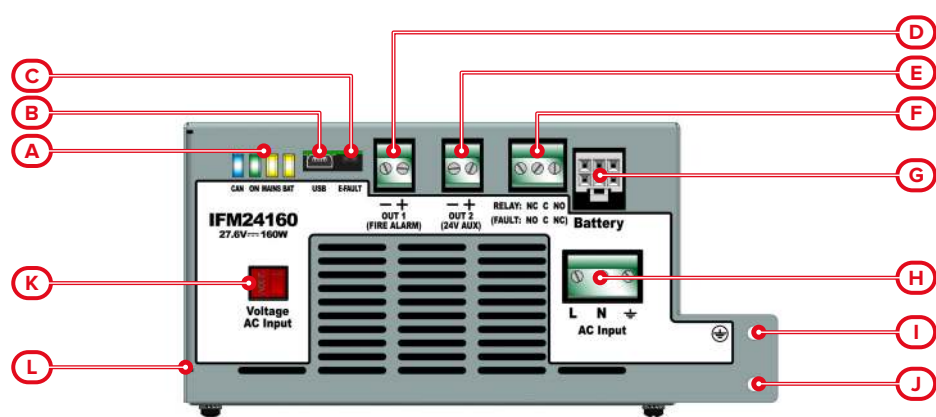
The IFM24160 internal module supplies and distributes power through the CAN drive connection bar and through the two outputs, OUT 1 and OUT 2.

In installations where several control panels are connected in a network, it is necessary to use an IFM24160 power-supply module for each control panel.

In installations where the control panel comprises more than one cabinet, you can install a power supply in each cabinet. The total voltage available equals the sum of the voltages of each power supply added together minus 1A for correct cable balance.

FPMCPU comes with:

- battery connection wire with thermal probe
- battery to battery connection wire
- 3 screws for securing the module to the grounding bar
- wire with eyelet terminal for connection to earth
- 1 ferrite
- Instructions manual



[A]	Status LED		[H]	L N $\neq$	AC Mains input terminals
[B]	Mini USB port		[I]	$\oplus$	Hole for the Earth bar screw and for the Earth conductor
[C]	Jumper connectors for enablement of the ground-fault test		[J]	Hole for the grounding bar screw and for the wire with the eyelet terminal	
[D]	OUT1	Supervised output	[K]	230/115 V	Input voltage selector
[E]	OUT 2		[L]	CAN DRIVE/CAN DRIVE+ connector (opposite)	
[F]	RELAY	Relay - voltage free contact			
[G]	Battery connector				

The indications in brackets below terminals OUT1, OUT2 and RELAY [D, E, F] show the respective factory default settings.

LED IFM24160	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
ON	Green	Module operating normally	Slow flashing: overload (system voltage draw is excessive) Fast flashing: PSU unit overheated
MAINS	Yellow	Mains failure fault	Fast flashing: system ground fault
BATT	Yellow	Battery inefficiency or fault	

IFM24160 module - technical specifications

Operating voltage		230V~ (+10% - 15%) 115V~ (+10% - 15%)
Nominal power frequency		50/60 Hz
Maximum current draw from mains		1.1A @ 230V 2A @ 115V
Output voltage		27.6 V $\overline{\text{---}}$ nominal 20 - 27,6 V $\overline{\text{---}}$
Maximum output ripple		1%
Maximum available current		5.2A
I _{max a} (as per EN54-4)		4A
I _{max b} (as per EN54-4)		4A
I _{min}		185mA
Batteries		2 x 12 V 24Ah, NPL24-12I or 2 x 12 V 17 Ah, NP 17 -12-FR or equivalent with UL94-V1 flame class enclosure or higher
Battery charger Maximum voltage charge adapted to temperature		1.2A
Maximum internal resistance of battery (R _i Max)		10hm
Battery shutdown voltage		19.5V
Operating temperature		from -5°C to +40°C
Isolation class		I
Consumption @ 27.6V	stand-by	20mA
	maximum	40mA
Maximum voltage on OUT 1		1.5A @27.6V $\overline{\text{---}}$
Maximum voltage on OUT 2		1.5A @27.6V $\overline{\text{---}}$
Maximum voltage on RELAY		5 A, 30V $\overline{\text{---}}$
Maximum output current of the power group		38A @230V~ 32A @115V~
Maximum current for external loads		35A @230V~ 29A @115V~

3.9 IFAMEVAC, audio matrix module

The IFAMEVAC module manages the digital processing of all audio sources.

Provides 2 analogue inputs for external sound sources and 2 analogue inputs for external sound sources with priority request.

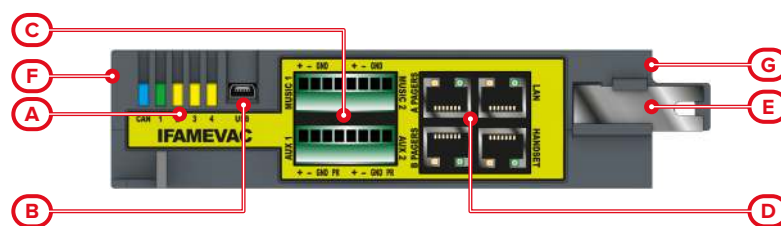
The module can manage emergency messages and user-definable messages by means of an internal flash memory or the use of an optional microSD card.

Also provides the control panel with 2 lines for standard or emergency microphone bases, with a maximum of 64 bases per line, and a connection to the Ethernet network for interaction with IAC and IAS-APP servers.

Each control panel manages only one IFAMEVAC module.

IFAMEVAC comes with:

- 3 screws for securing the module to the grounding bar
- connection wire to the FPAMIAS module
- Instructions manual



[A]	Status LED	
[B]	Mini USB port	
[C]	MUSIC 1	Analog input terminals
	MUSIC 2	
	AUX 1	Analog input terminal with priority
	AUX 2	

[D]	A PAGERS	Microphone-base line connector
	B PAGERS	
	LAN	Ethernet network connector
	HANDSET	Connector for FPAMIAS module
[E]	Holes for the Earth bar screws	
[F]	CAN DRIVE+ connector (opposite)	
[G]	MicroSD card holder (side)	

IFAMEVAC LED	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
1	Green	Packets sent by the DSP	
2	Yellow	Fault PAGERS A	Enrolling in progress on the A PAGERS line
3	Yellow	Fault PAGERS B	Enrolling in progress on the B PAGERS line
4	Yellow	Fault DSP	-

IFAMEVAC module - technical specifications

Power supply voltage		20-30 V $\overline{\text{---}}$
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V		100mA
AUX 1/2 "PR" inputs		Clean contact to "GND"
A /B PAGER lines	Microphone bases per line	Max. 64
	Current per line	Max 1A
	Total cable length per line	Max. 500m
MUSIC 1/2 and AUX 1/2 input voltage		Max. 1 Vrms non balanced between "+" and "GND" and between "-" and "GND"
MUSIC 1/2 and AUX 1/2 input impedance		10K Ohm

3.10 IFAMAMP, audio amplifier module

The IFMAMP audio amplifier module provides two lines for connecting speakers, configurable in A B mode or in loop mode, each line at 100Vrms, individually protected from short circuits and with a maximum of 250W of power supplied.

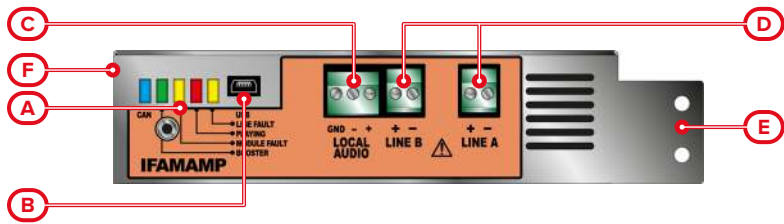
The impedance of the speaker line is supervised by a high frequency tone. Includes an analogue input for an audio source with adjustable priority for the amplifier line only.

IFMAMP can manage any other amplifier module, in backup function, included in the cabinet.

Each control panel manages a maximum of 30 IFAMAMP modules (maximum 8 for each cabinet).

IFAMAMP comes with:

- 3 screws for securing the module to the grounding bar
- 2 ferrites
- Instructions manual



[A]	Status LED			[D]	LINE A	Terminals for connecting the speaker lines
[B]	Mini USB port				LINE B	
[C]	LOCAL AUDIO	Local audio source input for the line managed by the amplifier		[E]	Holes for the Earth bar screws	
				[F]	CAN DRIVE+ connector (opposite)	

IFAMAMP LED	Colour	On solid
CAN	Blue	Activity on the CAN communication BUS
BOOSTER	Green	Booster access
MODULE FAULT	Yellow	Fault board
PLAYING	Red	Audio being played
LINE FAULT	Yellow	Fault on speaker-connection line

IFAMAMP module - technical specifications		
Power supply voltage		20-30 V $\overline{=}$
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	stand-by	530mA
	during mains failure and not in an emergency situation	Max. 100mA (2.5W)
	maximum	10A (250W + 14W)
Speaker lines LINE A / B	voltage of outputs	Max. 100 Vrms
	Maximum load	250W total
	Minimum resistance	40Ohm total

IFAMAMP module - technical specifications		
Audio input LOCAL AUDIO	Input voltage	Max. 1 Vrms non balanced between "+" and "GND" and between "-" and "GND"
	Input impedance	10K Ohm
Frequency response		50 - 20000 Hz
Separate volume adjustment for MUSIC 1/2 sources, voice and emergency announcements		+6 / -40 dB
Separate 3-band equalization for MUSIC 1/2 sources, voice and emergency announcements		+6 / -40 dB

3.11 IFAMFFT, emergency telephones module

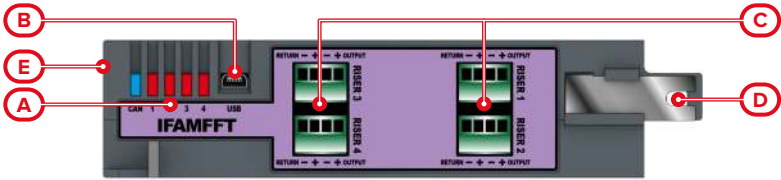
The IFAMFFT module provides 4 lines for connecting emergency telephones up to a maximum of 64 telephones for each line.

By picking up one of the telephones connected to the lines, the request for a conversation is notified on the FPAMIAS front panel and the call can be accepted by via the display. It is possible to create a chat with up to 5 incoming calls.

Each control panel manages up to 4 IFAMFFT modules.

IFAMFFT comes with:

- 3 screws for securing the module to the grounding bar
- Instructions manual



[A]	Status LED			[D]	Holes for the Earth bar screws
[B]	Mini USB port			[E]	CAN DRIVE+ connector (opposite)
[C]	RISER n	Telephone line connection terminals			

IFAMFFT LED	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
1	Green	The request initiated by a telephone on line "1" was rejected automatically (maximum number of calls already reached) or accepted by the FPAMIAS front panel.	Slow flashing: short circuit or open circuit on line "1". Fast flashing: communication request initiated by one of the telephones of line "1" and not yet processed.
2	Yellow	As for line "1", but, respectively, for lines "2", "3" e "4".	
3	Yellow		
4	Yellow		

IFAMFFT module - technical specifications	
Power supply voltage	20-30 V
Operating temperature	from -5°C to +40°C
Consumption @ 27.6V maximum	80mA
Maximum number of telephone for each line	64

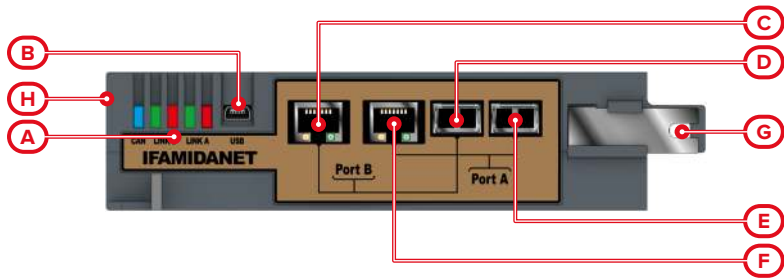
3.12 IFAMIDANET, IDANet network connection module

The IFAMIDANET module for the connection to the IDANet network provides two RJ45 ports for connection via CAT5 Ethernet cable (for distances up to 100m) and two ports for SFP modules for fiber optic connection.

The module allows the connection of up to 48 control panels and the sharing of all system information and up to 20 audio tracks.

IFAMIDANET comes with:

- 3 screws for securing the module to the grounding bar
- Instructions manual



[A]	Status LED	[G]	Holes for the Earth bar screws
[B]	Mini USB port	[H]	CAN DRIVE+ connector (opposite)
[C]	RJ45 connector for port B		
[D]	BASE 100 FX base SFP connector for port B		
[E]	RJ45 connector for port A		
[F]	BASE 100 FX base SFP connector for port A		

IFAMIDANET LED	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
LINK A	Red	No connection	RJ45 and SFP are both connected
	Green	Correct connection	Packet received
LINK B	Red	No connection	RJ45 and SFP are both connected
	Green	Correct connection	Packet received

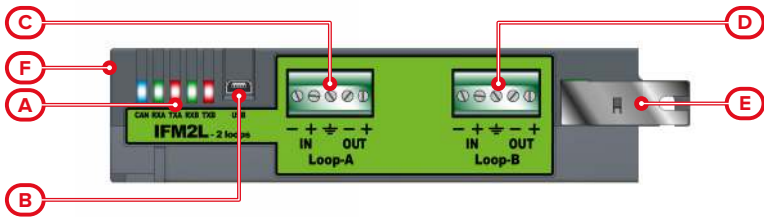
IFAMIDANET module - technical specifications		
Power supply voltage		20-30 V
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	maximum with Ethernet connection	80mA
	maximum with fiber connection	80 mA + consumption SFP modules (@ 3.3V) divided by 7 (typically about 15mA x each converter)

3.13 IFM2L, internal module with 2 loops

All the peripheral devices of the system must be connected in parallel to the loop circuit (2 pole shielded cable). The control panel communicates with the loop devices via a digital protocol which allows their complete control. The loop utilizes the same two wires for the power supply to devices and for two-way communication.

Each IFM2L module contains circuits for the management of two loops. Previdia control panels are capable of managing up to 16 loops through a maximum of 8 IFM2L modules.

- IFM2L comes with:
- 3 screws for securing the module to the grounding bar
 - Instructions manual



[A]	Status LED	
[B]	Mini USB port	
[C]	Loop-A	Loop A connection terminals
[D]	Loop-B	Loop-B connection terminals

[E]	Holes for the Earth bar screws
[F]	CAN DRIVE/CAN DRIVE+ connector (opposite)

LED IFM2L	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
RXA	Green	Reception activity - receiving data from devices on loop A	
TXA	Red	Transmission activity - transmitting data to devices on loop A	
RXB	Green	Reception activity - receiving data from devices on loop B	
TXB	Red	Transmission activity - transmitting data to devices on loop B	

IFM2L module - technical specifications		
Supply voltage		20-30 V _{DC}
Operating temperature		from -5°C to +40°C
Maximum number of devices managed by a loop		240
Consumption @ 27.6V	stand-by	35mA
	maximum	50mA
Maximum voltage on Loop-A		0.5A
Maximum voltage on Loop-B		0.5A

3.14 IFMLAN, internal Ethernet module

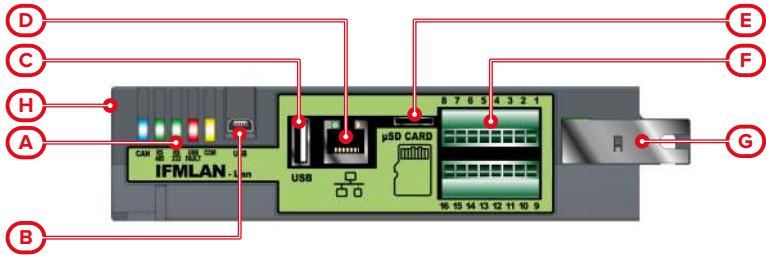
The IFMLAN module provides the Previdia with communication ports:

- USB Host
- Mini USB
- Ethernet
- RS485
- RS232

Connecting the Ethernet port establishes a second connection between the control panel and the network for access to the advanced TCP-IP functions (sending of event-related e-mails, communications via SIA-IP, video verification and browser-accessible Web server).

IFMLAN comes with:

- 3 screws for securing the module to the grounding bar
- Instructions manual
- SD card not included



[A]	Status LED	[E]	MicroSD card holder	
[B]	Mini USB port	[F]	1 - 16	Terminals for serial link
[C]	USB port	[G]	Holes for the Earth bar screws	
[D]	Ethernet port	[H]	CAN DRIVE/CAN DRIVE+ connector (opposite)	

Serial	Terminal	
RS232	1	Programmable ancillary power output
	2	RS232 TX
	3	RS232 RX
	4	RS232 RTS
	5	RS232 CTS
	6	Negative (GND, )
	7, 8	Earth

Serial	Terminal	
RS485	9	Programmable ancillary power output
	10	RS485 B (negative)
	11	RS485 A (positive)
	12, 13	EOL
	14	Negative (GND, )
	15, 16	Earth

IFMLAN LED	Colour	On solid
CAN	Blue	Activity on the CAN communication BUS
RS485	Green	Activity on the RS485 communication BUS
RS232	Green	Activity on the RS232 communication BUS
USB FAULT	Red	Fault detected on USB port
COM	Yellow	Communicator CPU operating

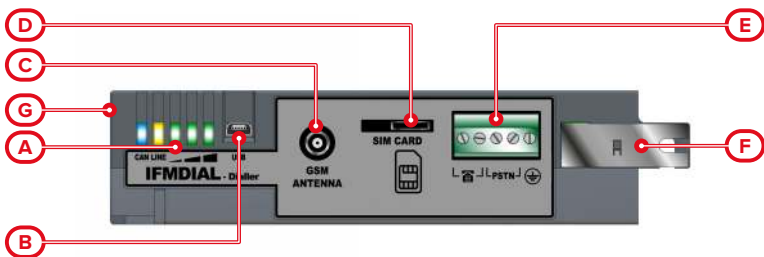
IFMLAN module - technical specifications	
Supply voltage	19-30 V 
Operating temperature	from -5°C to +40°C
Consumption @ 27.6V	45mA
Maximum capacity of SD-card	32Gbyte
Security protocol	8bit proprietary encryption
IP access address at default	192.168.1.200

3.15 IFMDIAL, internal dialler module

The IFMDIAL internal module allows Previdia control panels to connect to the landline (PSTN) and the GSM network. It manages fire reporting protocols used by alarm receiving centres. This module allows the control panel to make voice calls and send SMS text messages.

IFMDIAL comes with:

- 3 screws for securing the module to the grounding bar
- Instructions manual
- SIM card and GSM antenna not included



[A]	Status LED	[E]		Internal telephone line terminals
[B]	Mini USB port		PSTN	Telephone line connection terminals
[C]	GSM antenna connector			Ground terminal
[D]	SIM card holder	[F]	Holes for the Earth bar screws	
		[G]	CAN DRIVE/CAN DRIVE+ connector (opposite)	

IFMDIAL LED	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
LINE	Yellow	Ongoing call	
	Green	GSM signal reception level	

IFMDIAL module - technical specifications		
Supply voltage		19-30 V 
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	stand-by	30mA
	maximum	250mA
GSM band frequency		850, 900 / 1800, 1900 MHz
Maximum RF output power		2W / 1W

3.16 IFMEXT, FPMEXT, internal module and LED panel for extinction control

The IFMEXT and FPMEXT are fire-extinguishant system control modules and must be combined.

The internal IFMEXT module allows management of a gas extinguishant channel. Complies with EN12094-1 and provides the inputs, outputs and control logic required by fire-extinguishant systems.

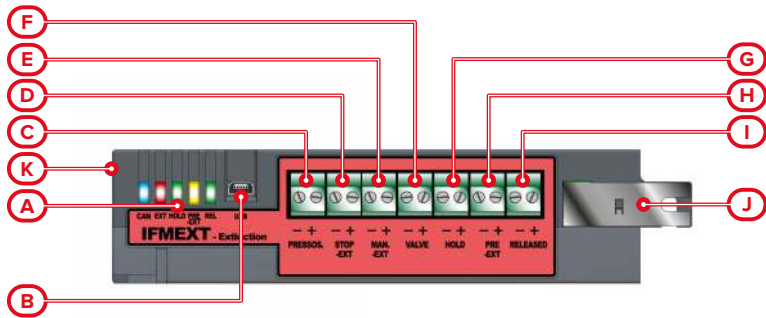
The indications provided by the IFMEXT module, as well as being visualized on the FPMCPU module display, can also be seen on the LEDs on the front-plate FPMEXT module. This module has 40 tricolour LEDs which replicate the signals of up to 5 IFMEXT.extinguishant modules on the control panel front plate.

IFMEXT comes with:

- 3 screws for securing the module to the grounding bar
- 7 resistors @1kOhm 1w
- 3 resistors @ 3k9Ohm
- 3 resistors @ 470Ohm
- 4 diodes -1n4007
- Instructions manual

FPMEXT comes with:

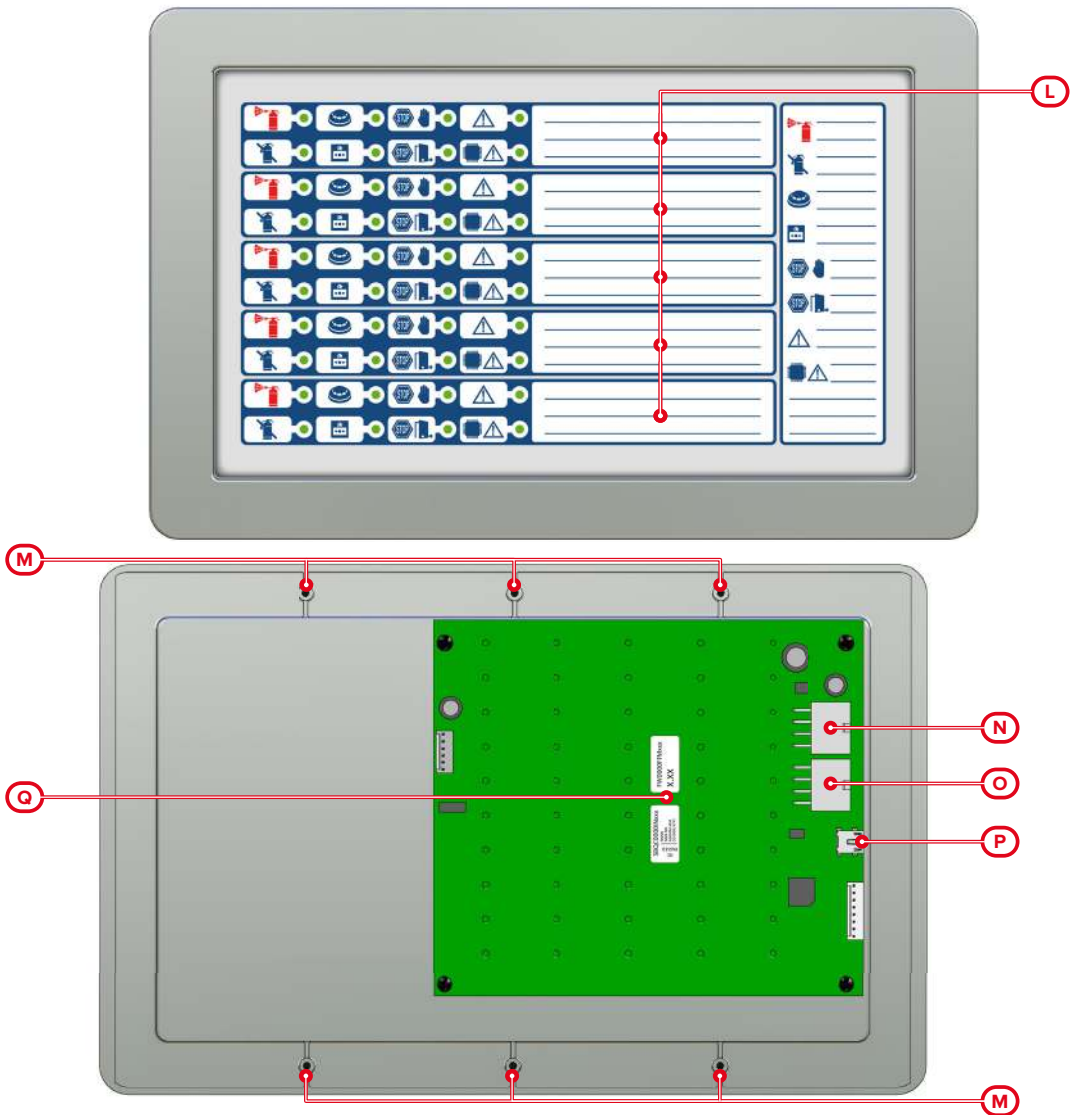
- CAN BUS cable
- 6 screws with washers for securing the module
- 1 ferrite
- Instructions manual



[A]	Status LED	
[B]	Mini USB port	
[C]	PRESSOS.	Connection terminals
[D]	STOP-EXT	
[E]	MAN.-EXT	
[F]	VALVE	
[G]	HOLD	
[H]	PRE-EXT	
[I]	RELEASED	

[J]	Holes for the Earth bar screws
[K]	CAN DRIVE/CAN DRIVE+ connector (opposite)

[L]	Visual signalling of IFMEXT modules
[M]	Mounting screw locations
[N]	Connector for the CAN drive bar or other front-plate module
[O]	Connector for front-plate module
[P]	Mini USB port
[Q]	Label with firmware revision of the module



IFMEXT LED	Colour	On solid
CAN	Blue	Activity on the CAN communication BUS
EXT	Red	Extinction activated (running or ended)
	Yellow	Fault on VALVE terminal line
HOLD	Red	Extinction stopped manually or automatically
	Yellow	Fault on the line of the HOLD terminal
PRE-EXT	Red	Pre-extinction phase running
	Yellow	Fault on the line of the PRE-EXT terminal
REL	Red	Extinction terminated
	Yellow	Fault on the RELEASED terminal line

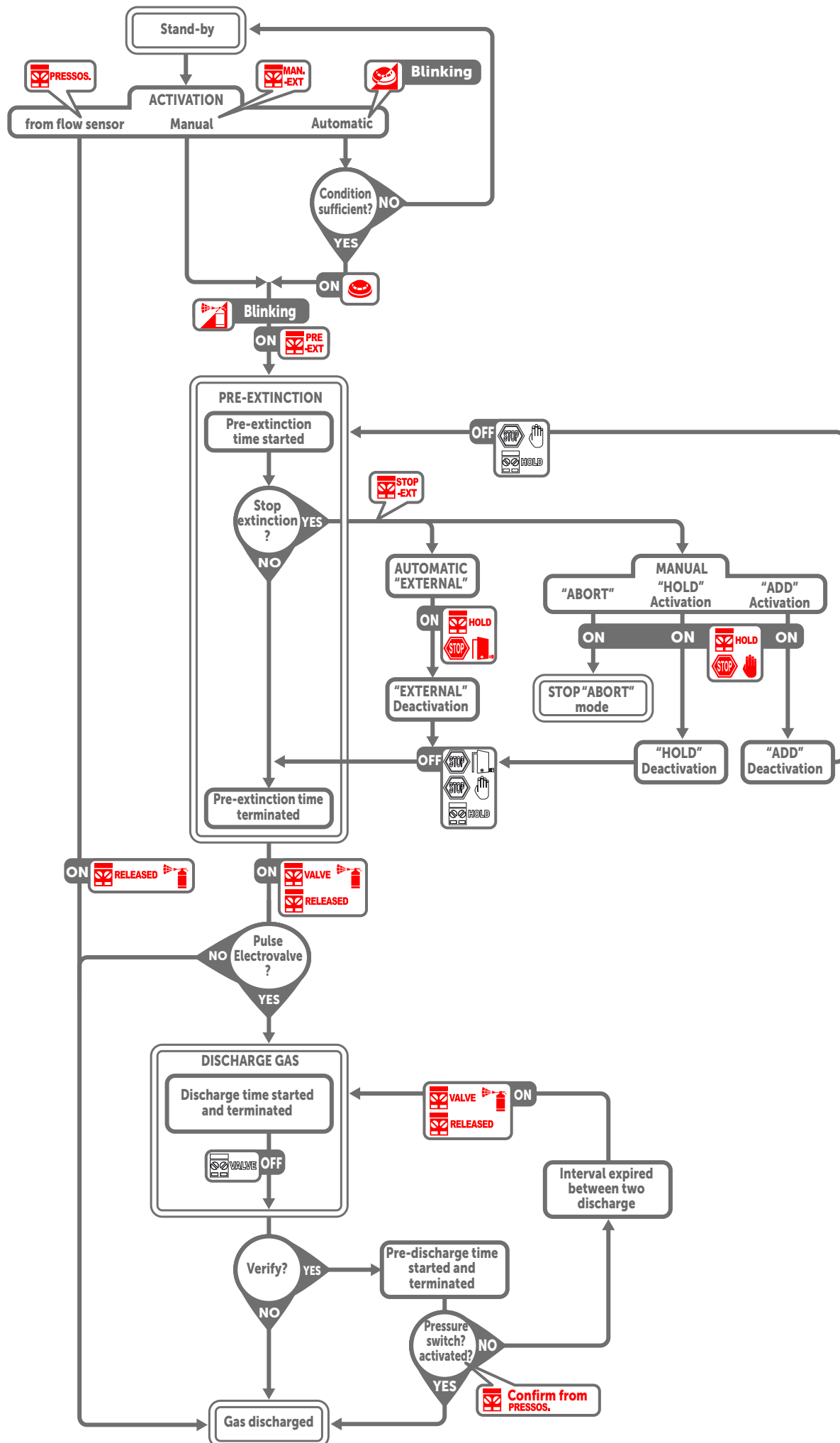
FPMEXT LED		Colour	On solid	Flashing
	Extinction channel activation LED	Red	Discharge activated	Pre-extinction condition running
	Bypass extinction channel LED	Yellow	Channel bypassed	/
	Automatic activation indicator LED	Red	Automatic discharge command activated	Automatic discharge command partially activated
	Manual activation LED	Red	Manual discharge command activated	/
	Manual stop extinction LED	Yellow	Lock extinction command activated	Fault on stop-extinction circuit
	Stop extinction LED from non-electrical-devices	Yellow	Lock extinction command activated	Fault on stop-extinction circuit
	Generic fault LED	Yellow	/	Generic fault on extinction channel
	CPU fault LED	Yellow	Generic CPU fault on extinction module	/

IFMEXT module - technical specifications

Supply voltage		19-30 V $\overline{---}$
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	stand-by	30mA
	maximum	80mA
Maximum voltage @ 27.6V	on VALVE output	2A
	on outputs	1A

FPMEXT module - technical specifications

Supply voltage		19-30 V $\overline{---}$
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	stand-by	12mA
	maximum	45mA



Terminal	Function	Activation	
PRESSOS.	The pressure-switch input is for the connection of a pressure switch which will close the contact in the event of low pressure in the cylinders.	If the electrovalve opens when the "verify" procedure is enabled, its activation confirms the discharge of extinguishant gas (refer to the "confirm" option below). During stand-by status, its activation generates a fault warning.	
STOP-EXT	This input stops the extinction procedure in accordance with the activation mode described opposite.	Abort	If this input is activated during the pre-extinction phase, the extinction procedure will be aborted even if the input resets. The procedure can be restarted only after control panel reset. If this input is activated during stand-by, it will generate a fault warning.
		Add	If this input activated during pre-extinction status, the extinction procedure will remain locked until the input resets. On input reset the pre-extinction countdown will refresh and restart. If this input is activated during stand-by, it will generate a fault warning.
		Hold	If this input is activated during pre-extinction status, the extinction procedure will remain locked but the pre-extinction countdown will continue running. On input reset, if the early warning countdown has terminated, the extinguishant gas will be discharged. If this input is activated during stand-by, it will generate a fault warning.
		External	This function is identical to the "Hold" function but refers to mechanical or electrical intervention (for example, a door contact that inhibits gas discharge, etc.). This activation will be signalled separately. If activated during stand-by, it will not generate a fault warning.
MAN.-EXT	This input is for the connection of one or more manual call points for the activation of extinguishing-agent discharge.		
VALVE	Output for the connection of the electrovalve which discharges the extinguishing agent.	It will activate only when the pre-extinction time expires	
HOLD	Output for the connection of stop-extinction signalling devices.	It will activate when the extinguishing channel is locked by one or more inputs connected to a "STOP-EXT" input.	
PRE-EXT	Output for the connection of a signal relating to imminent discharge of the extinguishing agent.	It will activate during the pre-extinction time which runs before the discharge of the extinguishing agent.	
RELEASED	Output for the connection of signalling devices which warn building inhabitants of the actual discharge of the extinguishing agent.	It will activate on activation of the electrovalve.	

Note:

The functions shown in the table, with the exception of the "VALVE" output, can be replicated on the input/output devices of the loop or IFM internal modules.

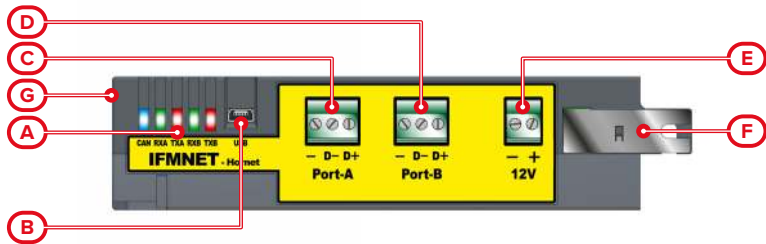
3.17 IFMNET, internal network connection module

The IFMNET module allows you to connect two or more control panels in a Hornet+ network by means of two RS485 communication ports (A and B).

In cases where a fiber optic cable is used over long BUS lengths, it is necessary to use a RS485/fiber converter (non-INIM brand product). The module has a 12V output for the power supply to the converter in use.

IFMNET comes with:

- 3 screws for securing the module to the grounding bar
- Instructions manual



[A]	Status LED		[F]	Holes for the Earth bar screws
[B]	Mini USB port		[G]	CAN DRIVE/CAN DRIVE+ connector (opposite)
[C]	Port-A	Connection terminal for port A		
[D]	Port-B	Connection terminal for port B		
[E]	12V	Terminals for the power supply to the RS485/fiber converter		

IFMNET LED	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
RXA	Green	Data reception activity on port A	
TXA	Red	Transmission activity on port A	
RXB	Green	Data reception activity on port B	
TXB	Red	Transmission activity on port B	

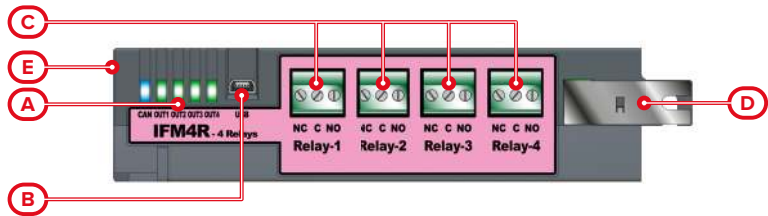
IFMNET module - technical specifications	
Supply voltage	19-30 V $\overline{\text{---}}$
Operating temperature	from -5°C to +40°C
Consumption @ 27.6V	60mA
Maximum voltage on OUT 12V	0.8A for use inside the cabinet

3.18 IFM4R, internal module with 4 relays

The IFM4R module provides 4 relay outputs with voltage-free contacts (Common, Normally Open and Normally Closed). The activation mode of each relay can be defined during the system configuration phase using the configuration software.

IFM4R comes with:

- 3 screws for securing the module to the grounding bar
- Instructions manual



[A]	Status LED			[D]	Holes for the Earth bar screws
[B]	Mini USB port			[E]	CAN DRIVE/CAN DRIVE+ connector (opposite)
[C]	Relay-x	Connection terminals for relay output x			

LED IFM4R	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
OUTx	Green	Output x activated	

IFM4R module - technical specifications			
Supply voltage		19-30 V $\overline{=}$	
Operating temperature		from -5°C to +40°C	
Consumption @ 27.6V	stand-by	10mA	
	maximum	80mA	
Maximum voltage on outputs		5A, 30V $\overline{=}$	

3.19 IFM4IO, internal module with 4 input/output terminals

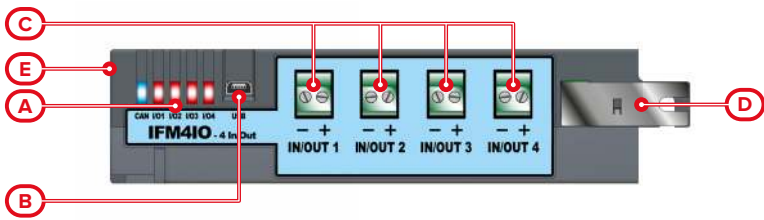
The IFM4IO module provides 4 input/output channels (IN/OUT 1, ..., IN/OUT 4) each of which, by means of the configuration software, can be configured as:

- Supervised output, to drive alarm signalling devices or similar (also indicated as a NAC output)
- Supervised input, to control the status of a device or the acquisition of a command
- Conventional line, for interfacing with a conventional line
- 4-20mA gas detector input

IFM4IO comes with:

- 3 screws for securing the module to the grounding bar
- 4 resistors @1kOhm 1w
- 4 resistors @ 3k9Ohm
- 4 resistors @ 470Ohm

- 4 diodes -1n4007
- Instructions manual



[A]	Status LED		[D]	Holes for the Earth bar screws
[B]	Mini USB port		[E]	CAN DRIVE/CAN DRIVE+ connector (opposite)
[C]	IN/OUT x	Connection terminals for input/output x		

LED IFM4IO	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
I/Ox	Red	The respective channel, configured as “input”, is in alarm or activated status	
	Green	The channel configured as “output” is active	
	Yellow	The channel is in fault status	

IFM4IO module - technical specifications			
Supply voltage		19-30 V---	
Operating temperature		from -5°C to +40°C	
Consumption @ 27.6V	stand-by	22mA	
	maximum	170mA	
Maximum voltage on I/O		1A @27.6V---	

3.20 IFM16IO, internal module with 16 input/output terminals

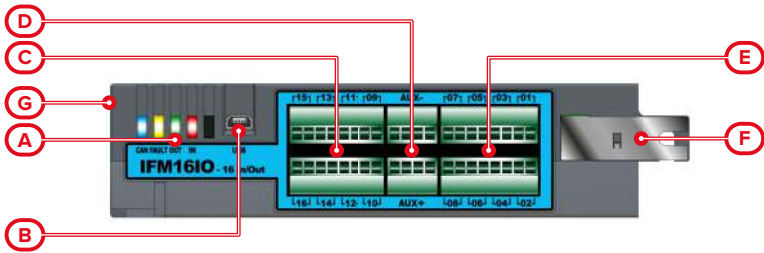
The IFM16IO module provides 16 channels, each of which, by means of the configuration software, can be configured as:

- Non-supervised low power output for low-demand loads
- Non-supervised input

This module also provides terminals for the ancillary power @ 27V.

IFM16IO comes with:

- 3 screws for securing the module to the grounding bar
- Instructions manual



[A]	Status LED			[E]	Holes for the Earth bar screws
[B]	Mini USB port			[F]	CAN DRIVE/CAN DRIVE+ connector (opposite)
[C]	1 - 16	Input/Output connection terminals			
[D]	AUX -/+	Ancillary power-supply terminal			

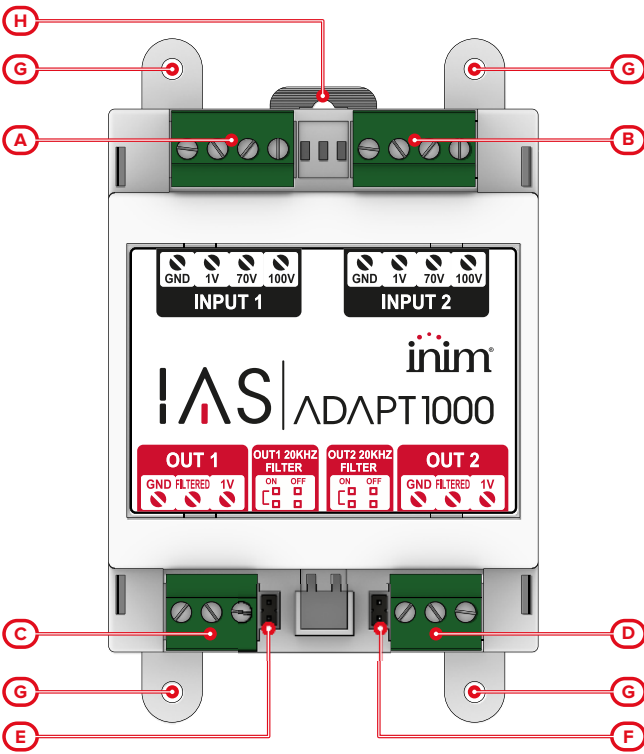
LED IFM16IO	Colour	On solid	Flashing
CAN	Blue	Activity on the CAN communication BUS	
FAULT	Yellow	Short circuit on AUX terminals	
OUT	Green	At least one of the outputs on terminals 1-16 is active	
IN	Red	At least one of the inputs on terminals 1-16 is active	

IFM16IO module - technical specifications		
Supply voltage		19-30 V $\overline{\text{DC}}$
Operating temperature		from -5°C to +40°C
Consumption @ 27.6V	stand-by	12mA
	maximum	25mA
Maximum voltage on I/O		0.1A 30V $\overline{\text{DC}}$

3.21 IAS-ADAPT1000, audio signal adaptation module

The IAS-ADAPT1000 module has the function of adapting and decoupling the audio signals input to the Previdia control panel through the IFAMEVAC or IFAMAMP modules.

Provides an input for 1VRMS, 70 VRMS or 100 VRMS signals. Also includes a filter for 20KHZ.



[A]	INPUT 1	Line 1 input terminals	[E]	Connector for activation jumper filter line 1
[B]	INPUT 2	Line 2 input terminals	[F]	Connector for activation jumper filter line 2
[C]	OUT 1	Line 1 output terminals	[G]	Mounting screw hole
[D]	OUT 2	Line 2 output terminals	[H]	Backlocking grip to the DIN bar

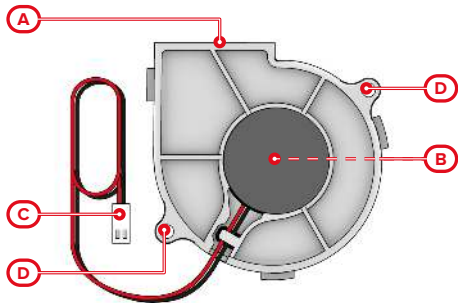
The jumpers (paragraph 3.21 - [E], paragraph 3.21 - [F]) must be inserted if the respective outputs are to be filtered at 20KHz. Otherwise the jumpers must be removed.

IAS-ADAPT1000 module - technical specifications		
Height	with anchor locations	113mm
	without anchor locations	90mm
Width		71mm
Depth	with terminal boards	43mm
	without terminal boards	40.5mm
DIN modules		4
Weight		130g

3.22 PRCAB-Boostfan, fan

The PRCAB-Boosfan fan is an accessory item to be installed inside the PRCAB+ metal cabinet, in order to prevent any overheating of the modules mounted inside the cabinet.

Once mounted on the back of the cabinet through the appropriate screw locations, it is powered by the CAN DRIVE+ bar and automatically activated at the suitable level of temperature, as programmed for the IFAMAMP modules.



[A]	Airflow exit hole (at sides)
[B]	Airflow entry hole (on rear)
[C]	Power-supply cable
[D]	Mounting holes

PRCAB-Boosfan - technical specifications	
Power-supply voltage	12-26 V $\overline{=}$
Consumption @ 24V	0,12A
Input power rate@ 24V	2,88W $\overline{=}$
Fan speed rate	3500 RPM $\pm$ 10%

Chapter 4

Installation

Note: *The installation of these control panels must be carried out in full compliance with national design regulations, local fire regulations, laws and provisions in place, and in accordance with the relative instructions and guidelines.*

This Fire control panel should be located in a place that is:

- Dry
- Far from electromagnetic interference (electrical equipment, heating units, air-conditioning units, radio transmitters, etc.)

The mounting location must satisfy all the requirements of the respective laws and bylaws in force for technical installations. When choosing the position, it is necessary to ensure that the holes for the fan in the control panel cabinet (*paragraph 3.2 - [I]*) are not obstructed.

The system must be installed in accordance with the following procedure:

1. Lay the cables
2. Complete the connections on the BUS, loops and field devices
3. Install system peripherals
4. Mount the control panel to the wall
5. Install accessory modules
6. Power up the system
7. Test the system

4.1 Mounting a PRCAB+ cabinet

1. Remove the securing screws and door (*paragraph 3.2 - [D]*).
2. Remove the seals from the cable entries you intend using (*paragraph 3.2 - [G]*).

Note: *In order to guarantee the IP30 protection grade, do not remove any other seals.*

3. Pull the cables through the open cable entries.
4. Using the holes on the back, mount the cabinet to the wall (*paragraph 3.2 - [F]*).
The manufacturer strongly recommends the use of 8mm diameter minimum anchor screws (stop screws).

Note: *The equipment is suitable for mounting at heights of below 2 meters.*

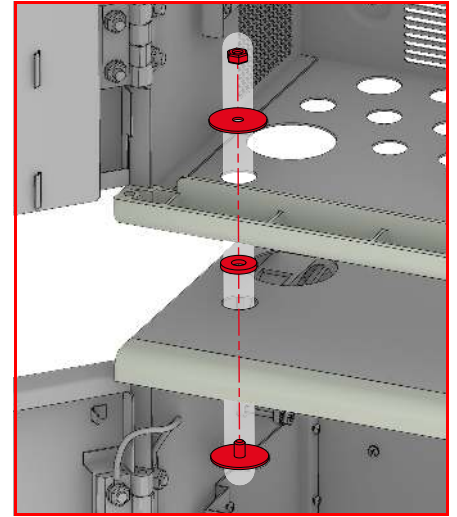
5. Insert and secure the various modules inside the cabinet and on the front plate.
6. Complete the wiring of the internal modules.
7. Replace the front plate.

4.1.1 Affixing cabinets to one another

The cabinets can be attached together by aligning the bottom of one cabinet with the top of another.

This operation allows you to join together up to 4 cabinets.

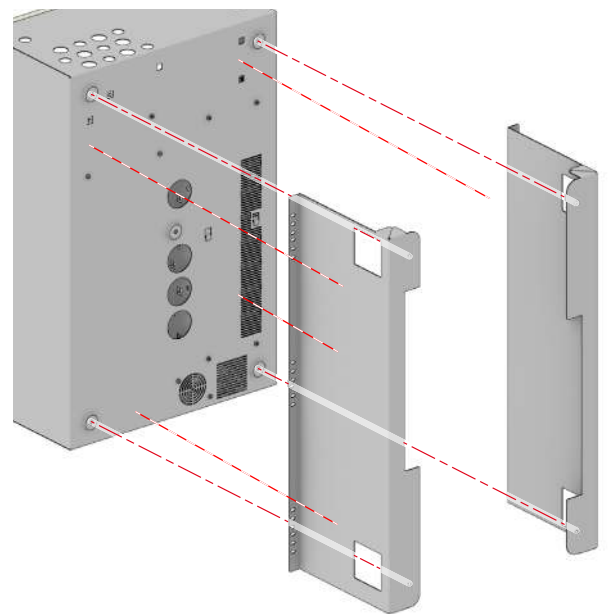
1. Remove all modules and wire/cables from the cabinets,
2. Remove the seals from holes used for affixing cabinets together.
3. Align the cabinets and, using the bolts (supplied with each cabinet), secure them together.
4. Connect the CAN DRIVE+ bars of each cabinet to each other with the CAN cables and flat cables supplied with the cabinet (*paragraph 4.6.4 Multi-PRCAB+ cabinet wiring*).
5. Install the necessary modules and proceed with the installation of the control panel.



4.1.2 Mounting the PRCABRK+ kit

This accessory kit must be mounted to the 19" rack before the Previdia Ultra control panel is installed.

1. Attach one of the two support brackets to each bar on the rack, using the available holes.
2. Mount the cabinet to the bracket by inserting the threaded rivets through the holes on the back of the enclosure, then secure it in place using the supplied nuts.



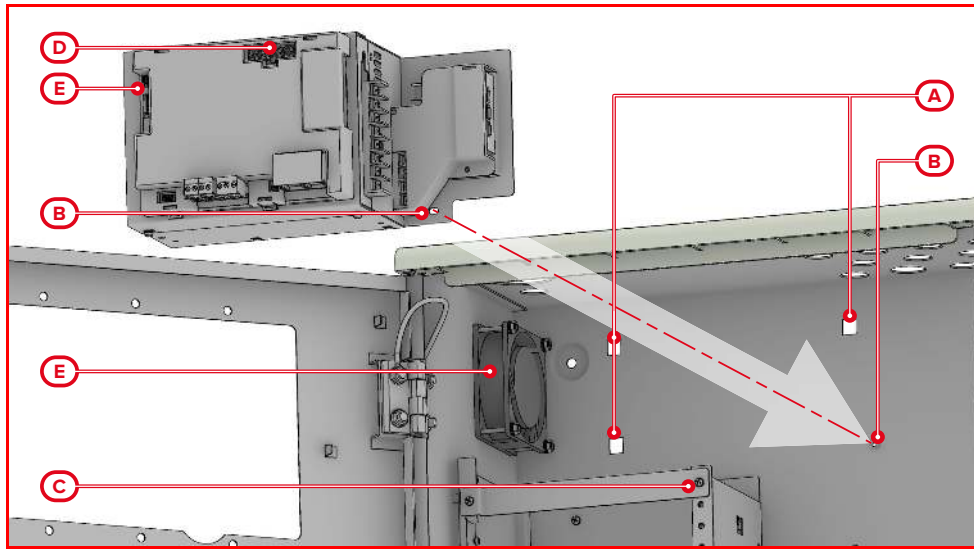
4.2 Mounting the IFAMPSU power supply

The IFAMPSU power supply module must be mounted in the allotted space inside the PRCAB+ metal cabinet:

1. Pair up the three tabs on the back of the power supply with the fixing holes on the back of the cabinet (*[A]*, *paragraph 3.2 - [M]*).
2. Move the module to the right until the Grounding hole for the power supply is properly positioned (*[B]*).
3. Secure the provided Ground cable in the hole in the cabinet (*[B]*) and to the special bar (*[C]*, *paragraph 3.2 - [K]*).
4. Connect the CAN BUS cable (supplied) to the connectors on the power supply (*[D]*) and on the CAN DRIVE+ bar (*paragraph 3.2 - [T]*).
5. Connect the fan (*[E]*, *paragraph 3.7 - [L]*).

Attention: *The power-supply modules inside each control panel must be of the same type. IFAMPSU and IFM24160 modules cannot be used together in the same control panel.*

Note: *The power supply which, once installed, is subject to transient voltages higher than those of the design overvoltage category (CAT II 2500 V), requires additional protection against transient voltages external to the equipment.*



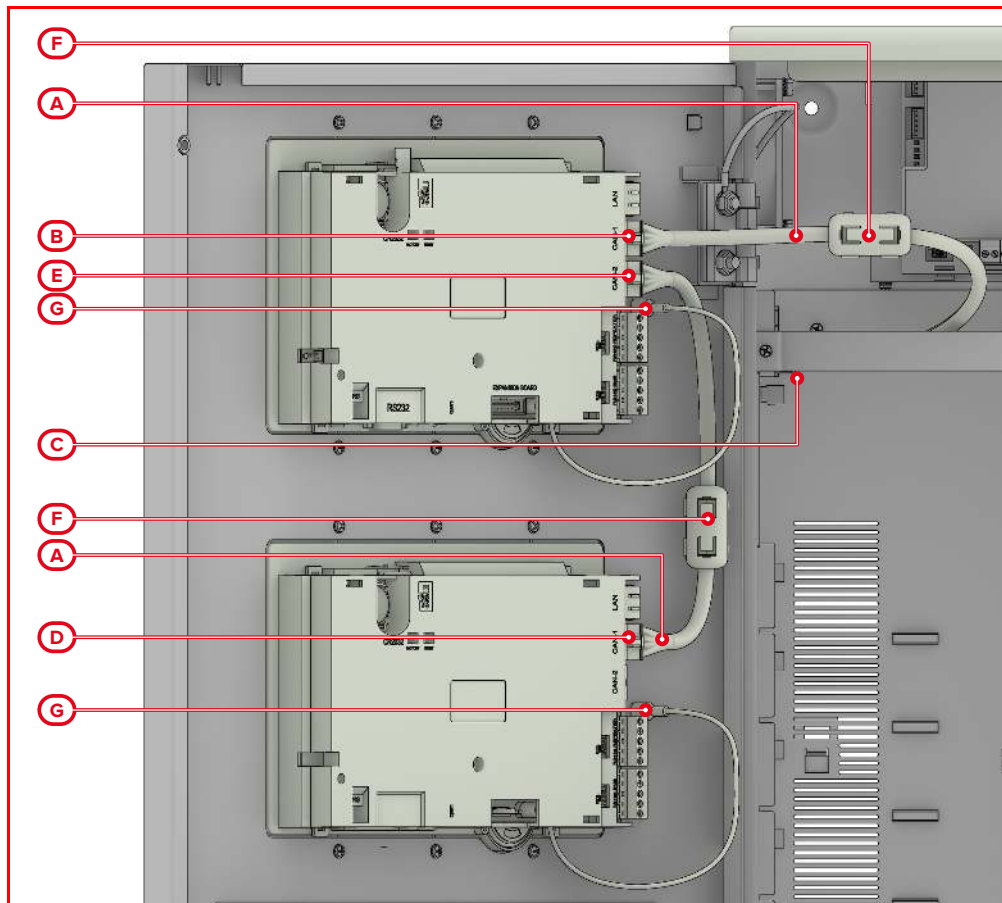
4.3 Mounting the front-plate modules

The front-plate modules (FPAMIAS, FPMCPU, FPMNUL, FPMLED, FPMLEDPRN, FPMEXT) can be mounted to one of the apertures on the cabinet front plate (*paragraph 3.2 - [B]*). The FPMCPU module can also be mounted to front plate of the PRREP repeater enclosure.

1. Align the 6 holes on the module frame (*paragraph 3.4 - [H]* e *paragraph 3.5 - [H]*) with the 6 holes on the cabinet front-plate or repeater enclosure.
2. Secure the module in place by fastening the supplied screws into the aligned holes.
3. Connect the CAN BUS wire (*[A]* supplied):
 - if the module is mounted in the upper aperture, the CAN BUS wire must be connected between the module port (*[B]*, *paragraph 3.4 - [N]*, *paragraph 3.5 - [N]*) and the CAN bar port (*[C]*, *paragraph 3.2 - [R]*)
 - if the module is mounted in the lower aperture and another module is mounted in the upper aperture, the CAN BUS wire must be connected between module port (*[D]*, *paragraph 3.4 - [N]*, *paragraph 3.5 - [N]*) and the appropriate port on the upper module (*[E]*, *paragraph 3.4 - [O]*, *paragraph 3.5 - [O]*)

Attention: *The CAN BUS cables must not be connected or disconnected when the control panel is powered up.*

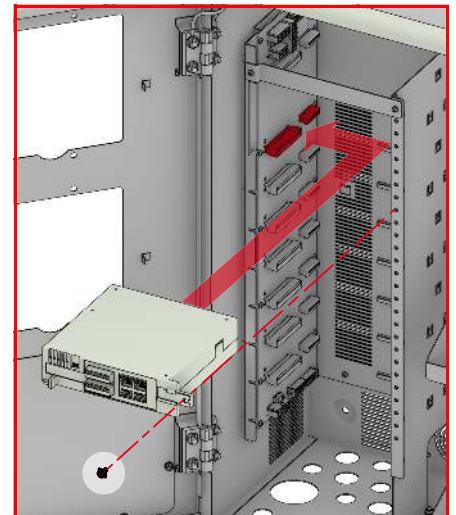
4. Fit the ferrite (*[F]*, supplied) to the connected CAN BUS cable.
5. Connect the Ground cable of the module (*paragraph 3.4 - [G]* and *paragraph 3.5 - [G]*) to the appropriate fitment (*[F]*, *paragraph 3.2 - [C]*).
6. Complete the wiring.



4.4 Mounting the internal modules

The internal modules (IFAMEVAC, IFAMAMP, IFAMIDANET, IFAMFFT, IFM24160, IFM2L, IFM4R, IFM4IO, IFMDIAL, IFM16IO, IFMNET, IFMLAN, IFMEXT) must be mounted in the special compartment inside the cabinet (*paragraph 3.2 - [L]*). There are two bars on either side of the compartment for mounting and connecting modules (*paragraph 3.2 - [J] - [L]*), up to 8 per cabinet.

1. Inside the compartment, find the position of the module that corresponds to one of the connectors on the PCB bar (*paragraph 3.2 - [P]*).
If you are installing an IFM24160 power-supply module, you must use the first connector at the top (*paragraph 3.2 - [U]*). When installing any other type of internal module, you can use this or any other connector that is free (*paragraph 3.2 - [V]*).
2. Position the module in such a way that it is on level with the desired connector on the bar then insert it in place by pushing it carefully to the left.
3. Affix the module to one of the holes on the grounding bar (*paragraph 3.2 - [L]*) using one of the supplied screws.
4. Complete the wiring on the internal module (refer to *paragraph 4.6.1 Cable entry* and the paragraphs regarding the wiring of each internal module).



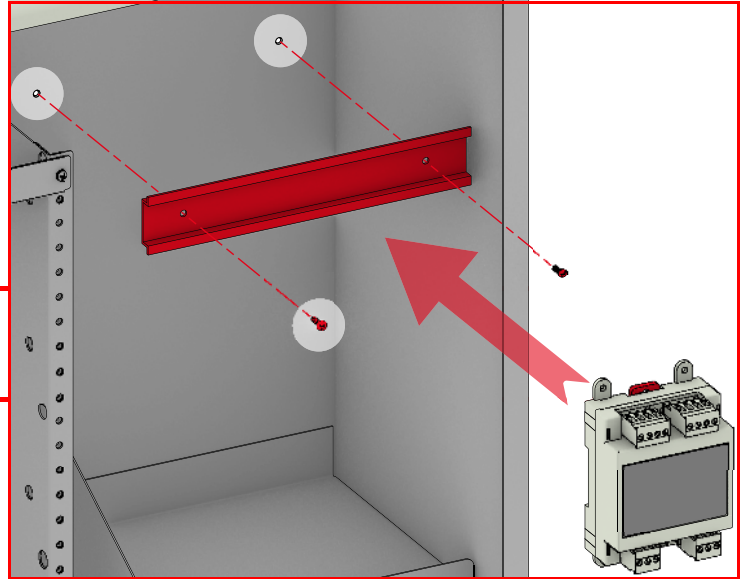
4.5 Mounting the optional modules

4.5.1 IAS-ADAPT1000

The IAS-ADAPT1000 optional modules are contained inside a plastic box that can be installed inside a 4-module DIN type container (*paragraph 3.21 - [H]*), or by using the fixing holes it is provided with (*paragraph 3.21 - [G]*).

If necessary, the modules can be mounted inside the cabinet of the PRCAB+ control panel, using the DIN bar supplied with the module and the appropriate holes on the back (*paragraph 3.2 - [N]*).

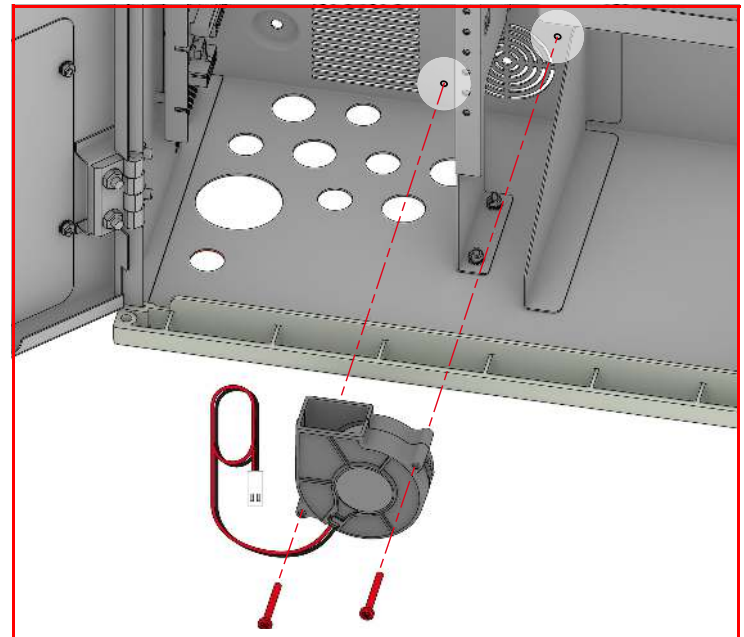
Note: *Mounting the IAS-ADPT1000 module inside the control panel cabinet is mandatory.*



4.5.2 PRCAB-Boosfan

The optional PRCAB-Boosfan fan must be mounted on the back of the PRCAB+ cabinet using the supplied mounting holes (*paragraph 3.2 - [N]*), taking care that the airflow entry is positioned toward the grating on the back.

Once mounted, connect the power-supply cable of the fan (*paragraph 3.22 - [C]*) to the appropriate connector on the PCB of the cabinet (*paragraph 3.2 - [W]*).



4.6 Control panel wiring

Attention: *Take care to remove all sources of power, including the batteries before starting any wiring operations.*

Cables: The cables used for the wiring of the product must have an adequate section and comply with the IEC 60332-1-2 or IEC 60332-2-2 standards.
The ends of wires must not be soft soldered in points where they are subject to clamping.

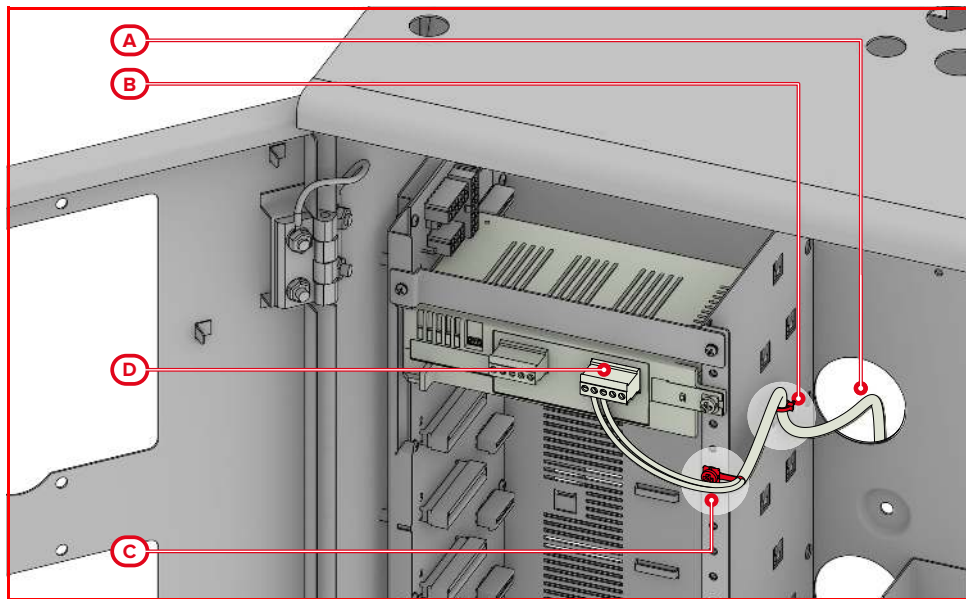
4.6.1 Cable entry

Use only the provided cable entries (remove the respective cable-entry covers) on the upper and lower sides of the cabinet and on the back *[A]*.

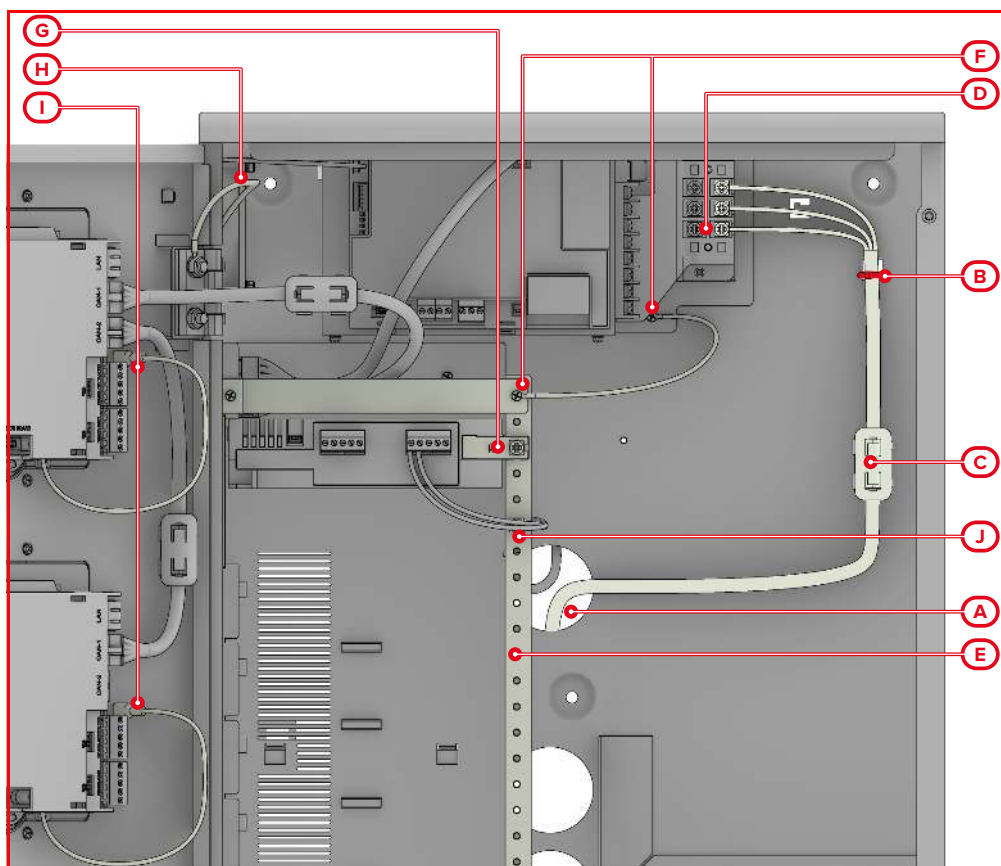
The cables must run vertically behind the Earth bar (*paragraph 3.2 - [K]*) and must be secured to the appropriate hooks by cable ties *[B]*.

The cable must run level with the terminal board of the module it is to be connected and its shield must be connected to the Earth bar [C]. Conductors without shields must be conveyed to the appropriate terminal board [D].

The unused cable entries must be closed by the supplied plastic covers.



4.6.2 Mains connection



A dedicated input [A] must be provided for the mains power input terminal (230-115V~). The cable must be secured to the appropriate hooks by a plastic cable tie in order to avoid accidental dislodgement [B]. The cable must be protected by a ferrite (supplied) which must be affixed in the proximity of the terminals [C].

Ensure that the network cable runs along a separate route and that it does not interfere with any other cables.

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 must be labeled and of "16A curve C" type.

The power source must be provided through a bipolar protection device.

Cables: Connection cable type NYM 3 x 1.5 mm² or similar
Protected by ferrites (supplied)

4.6.3 Connection of the Earth conductors of the system

The ground conductor of the power-supply cable must be connected to the control panel via the appropriate terminal on the IFAMPSU unit terminal board (⚡, [D], paragraph 3.7 - [G]).

The earth conductor must be connected to earth on the electrical panel which supplies the control panel.

The Earth bar ([E], paragraph 3.2 - [K]) ensures that the control panel and its peripherals are taken to ground potential. Therefore, to ensure proper functioning of the connection to Earth, make certain the Earth bar is connected properly to:

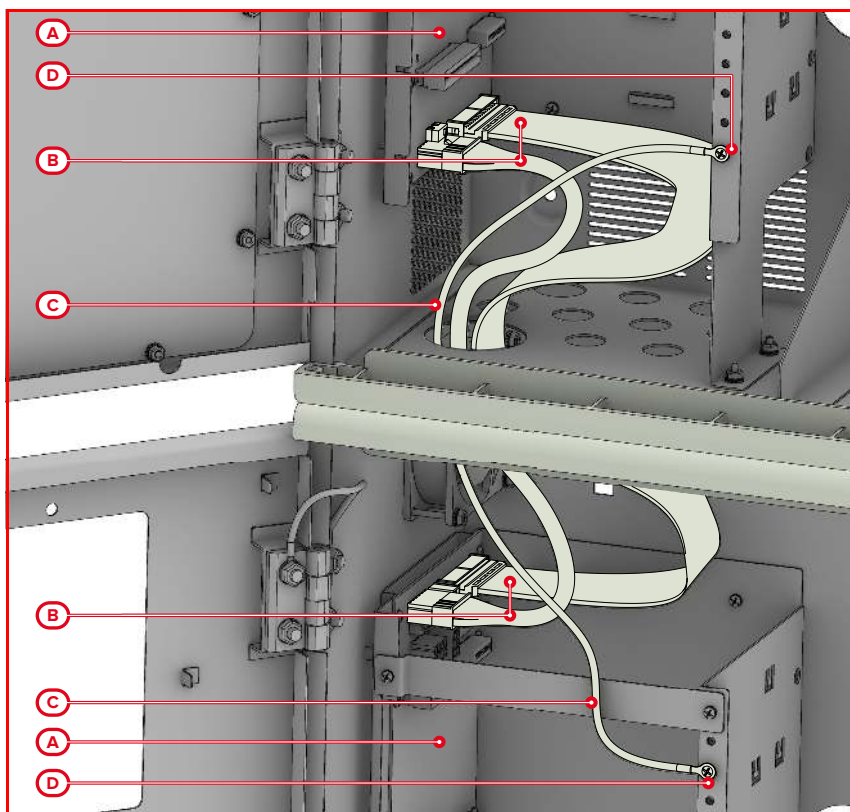
- the wire with eyelet terminal, by means of the appropriate hole (⊕ [F], paragraph 3.7 - [H])
- the internal modules, by means of the appropriate screws duly inserted and fastened in place [G]
- the cover, using the supplied wire already in place [H]; the Grounding cables of the front-plate modules must be adequately connected to the cover ([I], paragraph 3.4 - [G] and paragraph 3.5 - [G])
- the cable shields, by means of cable-gland screws [J].

4.6.4 Multi-PRCAB+ cabinet wiring

Once the cabinets are affixed to one another, all the CAN DRIVE+ bars of each cabinet ([A], paragraph 3.2 - [J]) must be connected together. To connect the CAN DRIVE+ bars, use the BUS cables supplied with every PRCAB+ [B].

The two wires of this cable must be inserted, one into the lower connector of the CAN DRIVE+ bar of the cabinet above (paragraph 3.2 - [S]), and the other into the upper connector of the CAN DRIVE+ bar of the cabinet below (paragraph 3.2 - [Q]).

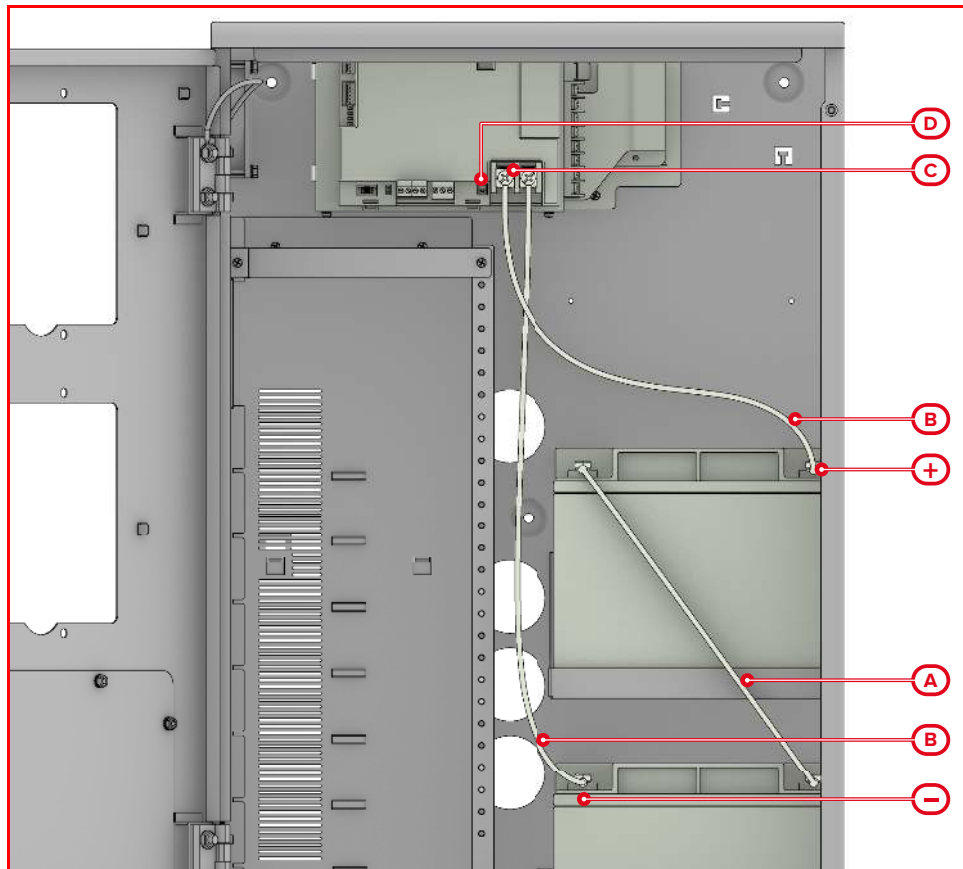
In the same way, it is convenient to connect the grounding wires of the cabinets that are attached together. For this purpose, use the proper cable supplied with every PRCAB+ [C] and connect to each other the grounding bars of the two adjacent cabinets ([D], paragraph 3.2 - [K]).



4.7 IFAMPSU and IFM24160 power-supply module wiring

As well as the terminal board for the mains power supply and the connector for the batteries, the power-supply module also provides two supervised outputs capable of supplying 27.6V in active status and a relay (voltage-free contacts C,NC,NO).

4.7.1 Battery connection



The batteries must be connected to the power-supply module by means of the supplied wires. They consist of two cables with connectors for the battery terminals and, for IFM24160 only, also a thermal probe (NTC) for temperature related charging voltage compensation.

The backup power batteries are not included.

1. Insert the batteries into the battery compartment inside the cabinet (*paragraph 3.2 - [O]*).
2. Using the battery wire ([A]), connect the batteries together.
3. Connect the wire with the eyelet terminals to the terminals of the batteries ([B]).

Attention: *Ensure that the polarity is correct.*

*Red - positive
Black - negative*

4. Connect the battery wire connector to the connector on the power-supply module ([C]).

Connection of the batteries before the mains voltage is present will not activate the system. Once the mains voltage is supplied, the power-supply module will connect the batteries automatically and initialize the circuits which manage them.

5. If use of an additional thermal probe is required, it must be inserted on the power-supply module ([D]) and secured on the side of a battery with a piece of tape.

Note:

The installer must use only valve regulated lead-acid batteries (VRLA) for stationary use, compliant with IEC 60896-21 and IEC 60896-22 standards. Such batteries must have a V-1 or higher firestop casing. For the internal clock battery replacement, the installer must use only non-rechargeable CR2032 lithium batteries compliant with IEC 60086-4 standard. The batteries must be replaced by sector experts only.

4.7.2 Output connection

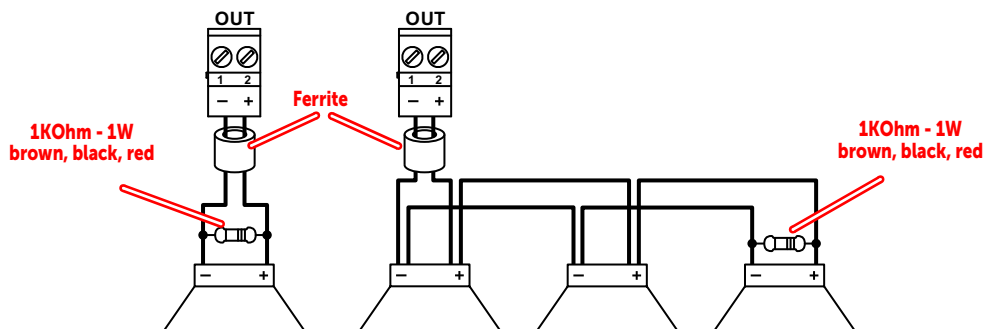
Each output of the power-supply module can be configured to activate under certain conditions. If left at their default settings, the three outputs will be as follows:

- OUT 1 (*paragraph 3.7 - [D]*), supervised output which activates in the event of a generic fire alarm
- OUT 2 (*paragraph 3.7 - [E]*), constantly active output (27.6V constant) for powering external devices
- RELAY (*paragraph 3.7 - [F]*), voltage free contact which activates in the event of fault

Each connection to these outputs (*[E]*) must be carried out in accordance with the instructions in *paragraph 4.6.1*.

Cables: 2-wire shielded cable
Proper section (minimum 0.5mm², maximum 2.5 mm²)
Compliant with local laws and regulations in force

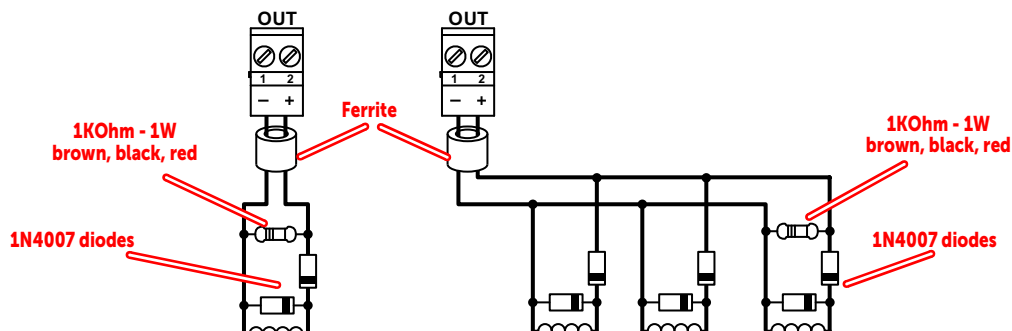
Connection of polarized devices (sounders, etc.) to the OUT outputs



The polarities refer to the active status of the output, the polarities invert for stand-by status.

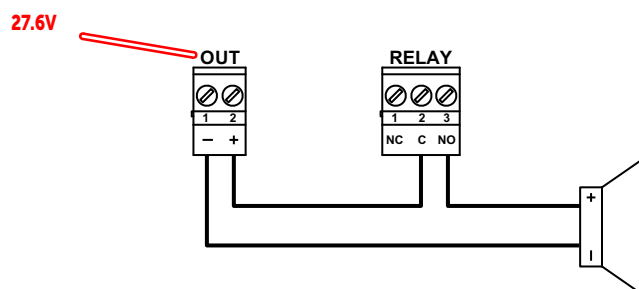
EN54: If the control panel default settings are left unchanged, the OUT 1 output will result as being configured as a type C output for the connection of audible/visual signalling devices. The output will activate in the event of any type of fire-alarm condition.

Connection of non-polarized devices (relays, etc.) to the OUT outputs



The polarities refer to the active status of the output, the polarities invert for stand-by status.

Connection of a generic device to the RELAY output



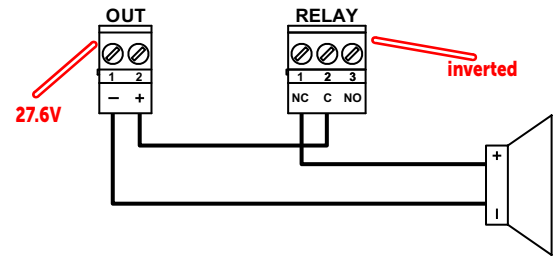
The OUT output illustrated in the diagram is used as a power source and is programmed as continuously active.

The illustrated connection does not supervise the cable and does not signal connection faults.

All voltage free relay contact can only be connected to SELV circuits.

EN54:

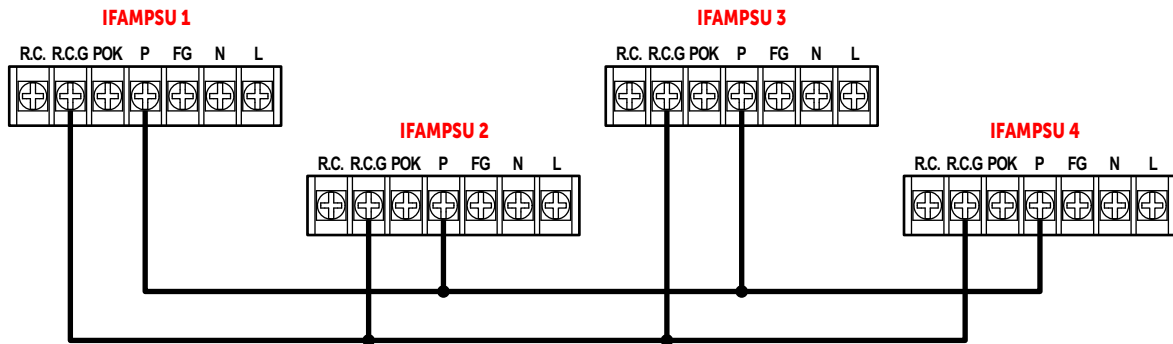
If the control panel default settings are left unchanged, the RELAY output will result as being configured as a fault signalling output.
In compliance with regulations the output will also result "inverted" in order to switch to fault condition when the system is completely without power.
Therefore, in stand-by status (no faults present on the system) terminals C and NC will be closed, whereas terminals C and NO will be open.



4.7.3 Connection of more IFAMPSU modules

In the case of installations with more cabinets for a single control panel that uses more than one IFAMPSU module, work through the following procedure:

1. Remove the protection of the AC mains input terminals of each power-supply unit by unlocking the retaining hook (*paragraph 3.7 - [M]*) and removing the retaining screw (*paragraph 3.7 - [N]*).
2. Identify the ancillary "R.C.G" and "P" terminals.
3. Connect these terminals as herein indicated:



Attention: During the connecting phase of the ancillary terminals, factory connections must not be modified.

4. Refit the protections removed.

4.8 IFAMEVAC internal module wiring

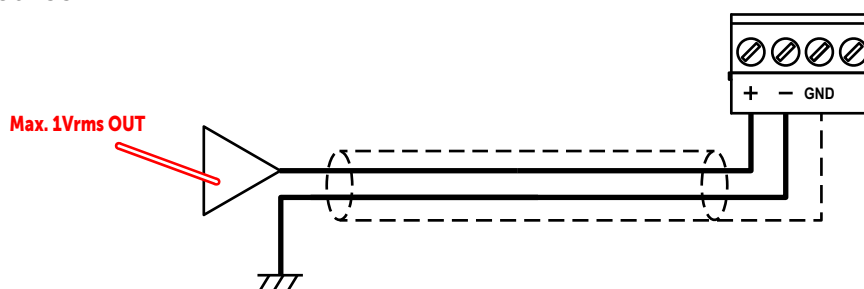
This paragraph illustrates the wiring possible through the IFAMEVAC module, necessary for connection with external audio sources and microphone bases.

4.8.1 Connection of audio sources (MUSIC 1/2, AUX 1/2)

Cables: Shielded Twisted Pair (STP) cable

Note: The cable segment outside of the shield must be short as possible.

Non balanced source

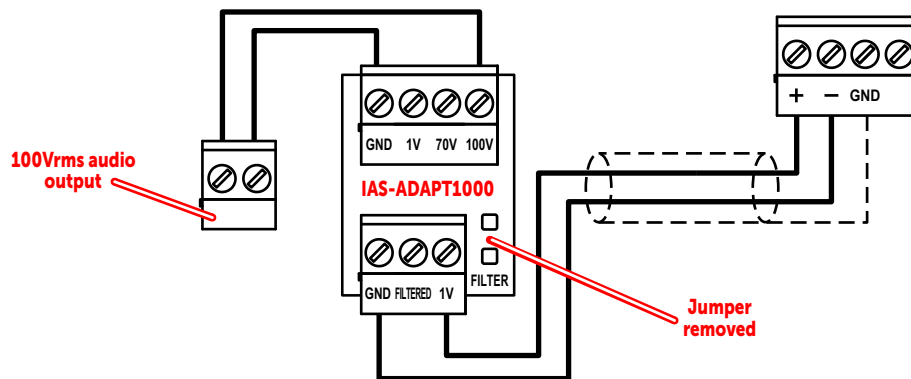


To avoid humming caused by ground loops, we recommend using the IAS-ADAPT1000 decoupling module.



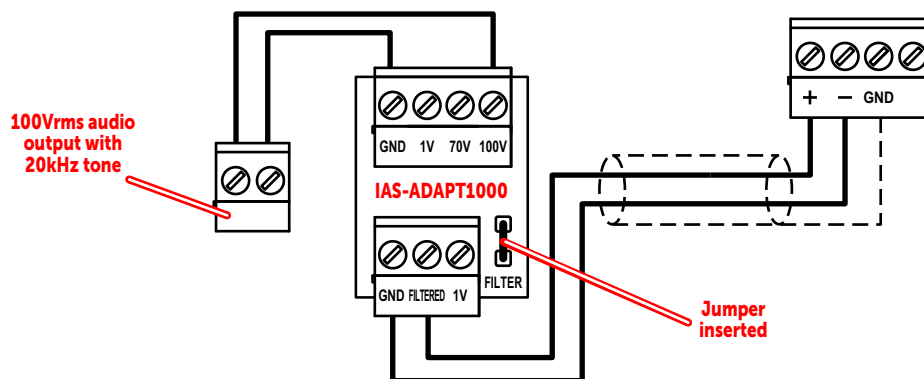
Note:

The priority request on AUX inputs can be detected on the audio signal level (option to be configured)

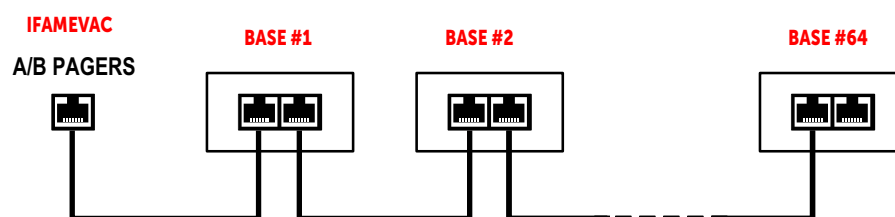
100Vrms non-supervised speaker output**100Vrms supervised speaker output**

In the case of a supervised line, this presents an additional tone of 20kHz, for impedance measurement.

The IAS-ADAPT module provides, by inserting a jumper (paragraph 3.21 - [E], paragraph 3.21 - [F]), a filter to eliminate the supervision tone from the audio output.

**4.8.2 Microphone bases connection**

Cables: Double shielded not crossed cat. 5E SF/UTP cable

**4.9 IFAMAMP internal module wiring**

This paragraph illustrates the wiring possibilities via the IFAMAMP module, necessary for the connection for speaker lines driven with a maximum signal of 100 Vrms.

Note:

The sum of the power of all the speakers connected to the module must be less than or equal to 250W.

4.9.1 Audio output connection (LINE A/B)

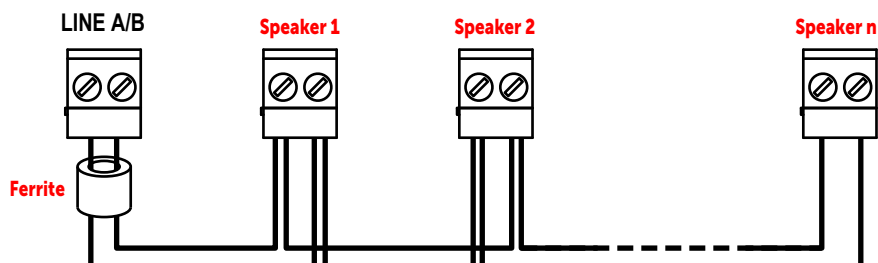
Cables: 2 pole cable as per the reference standard

EN IEC 62368-1:

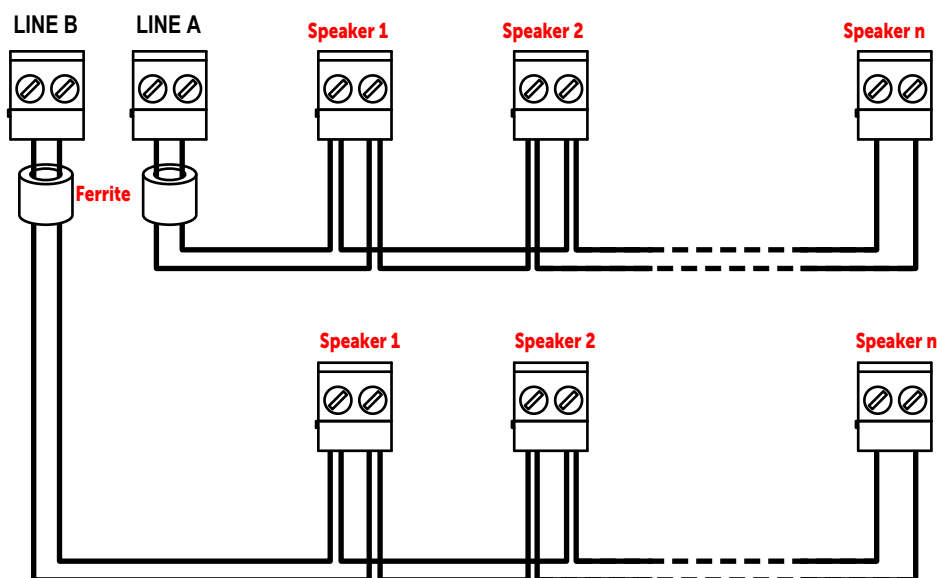
Touching uninsulated terminals or live wiring with bare hands can cause electric shock.



Speaker outputs, single line connection



Speaker outputs, dual line connection



4.9.2 LOCAL AUDIO input connection

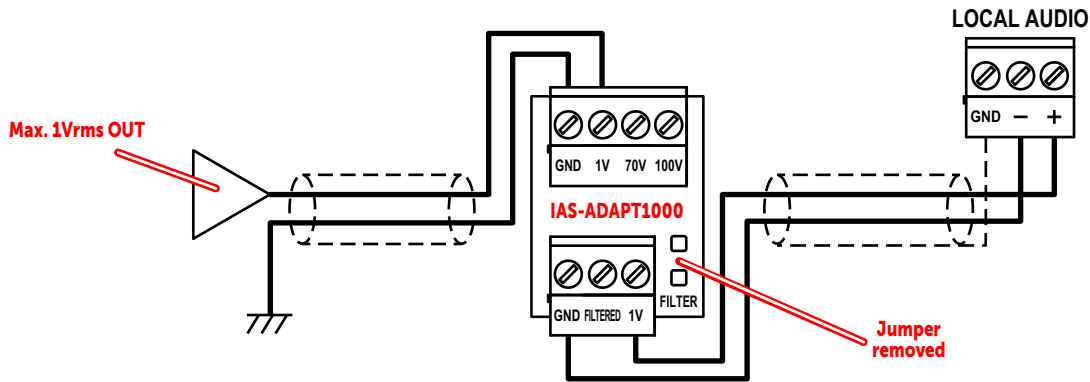
The IFAMAMP provides a "LOCAL AUDIO" input with configurable priority for audio sources intended for the power-supply speaker line only.

Cables: 2-pole Shielded Twisted Pair (STP) cable

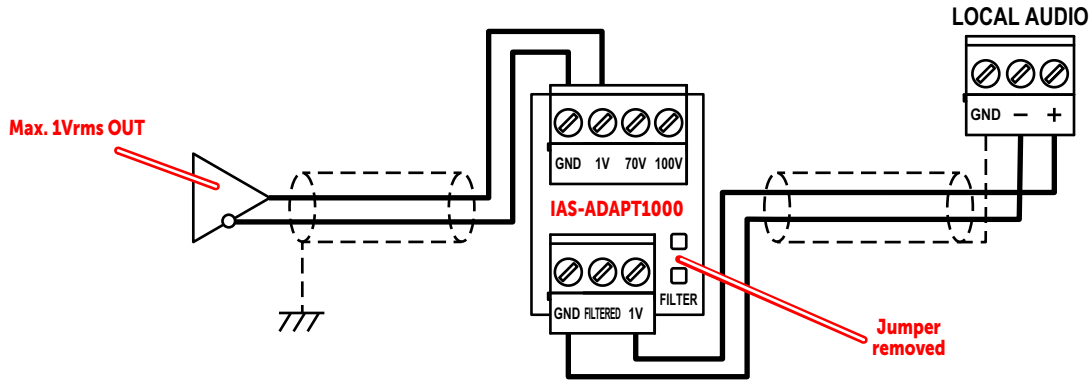
Attention: To connect an audio source to the LOCAL AUDIO input, the use of the IAS-ADAPT1000 adapter is mandatory.

Note: The cable segment outside of the shield must be short as possible.

Unbalanced source with IAS-ADAPT1000



Balanced source with IAS-ADAPT1000



4.10 IFAMIDANET internal module wiring

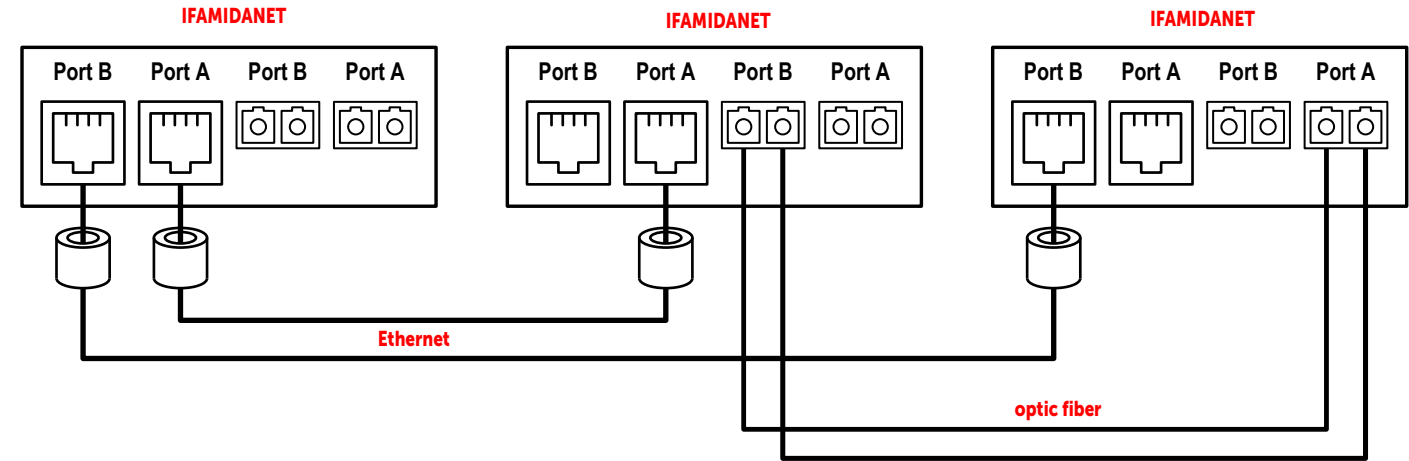
The IFAMIDANET module allows for the connection of several Previdia Ultra control panels, up to a maximum of 48 in an IDANet network.

The module has two ports ("PORT-A" and "PORT-B") for making the ring connection. For each of the two ports, an RJ45 socket is available for connection via UTP CAT5 cable (Ethernet protocol) or alternatively a socket for an SFP fiber optic converter for making the fiber optic connection.

Each of the two connections can be made independently in fiber or copper, ensuring that both ports are used.

Note: Do not use Ethernet and fiber at the same time from the same port.
The SFP converters used for the fiber optic connection must be 100 Base FX type.

Cables: Ethernet: UTP CAT 5, maximum 100m
Fiber: depending on the SFP module used



4.11 IFAMFFT internal module wiring

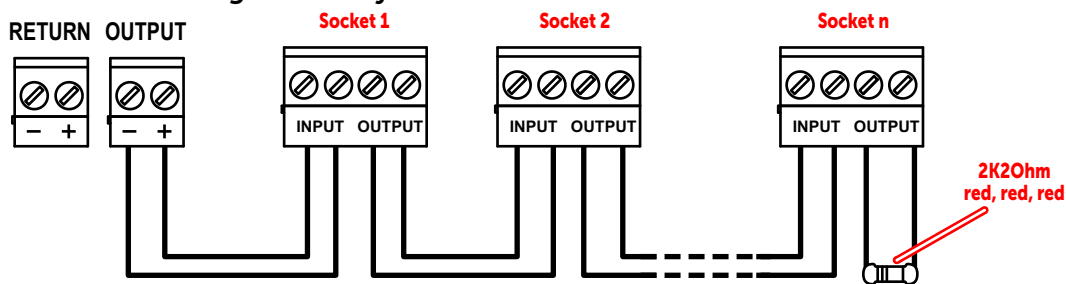
Each IFAMFFT module manages up to 4 socket risers for the connection of emergency telephones. A socket riser consists of a twisted bipolar cable (telephone twisted pair cable) to which all the emergency telephone sockets are connected in parallel and terminated with a 2.2 KOhm resistor.

When an emergency telephone is plugged into one of the riser sockets, an emergency call will be signalled on the control panel. Accepting the call will establish a telephone connection between the central console and the remote telephone plugged into the riser socket.

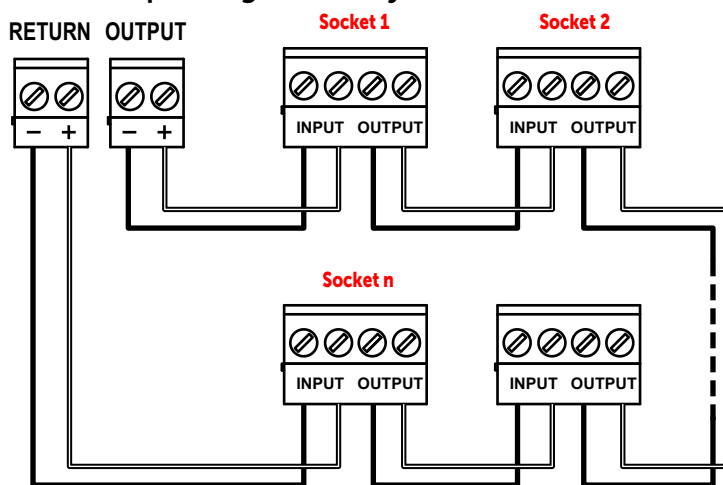
More emergency telephones inserted in the same riser socket will automatically go into group chat mode (maximum 4). From the control panel it is possible to accept calls from different riser sockets (up to a maximum of 4) for a call in chat mode.

Cables: Line connection via twisted pair cable with a maximum length of 500m.

Socket IFFT-PHONE line wiring - "Polarity insensitive"

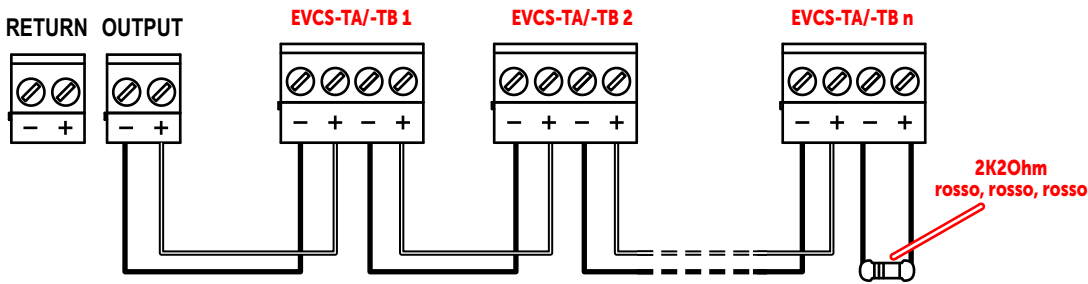


Socket IFFT-PHONE loop wiring - "Polarity sensitive"

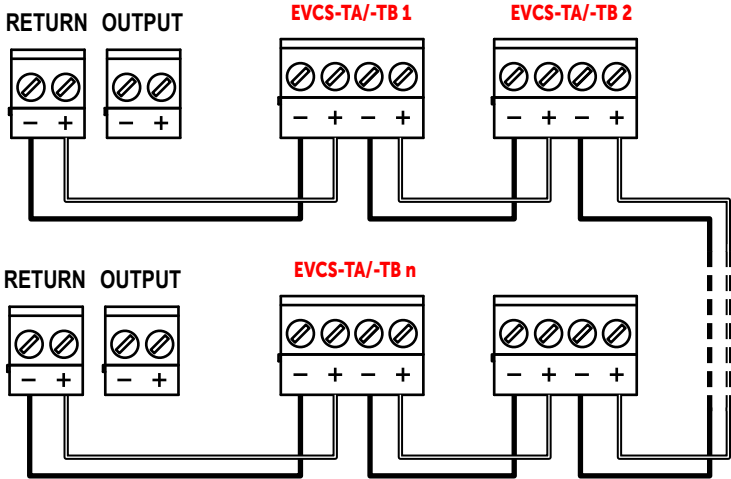


Attention: Maintain the polarity of the lines between socket and IFAMFFT.

EVCS-TA / EVCS-TB emergency telephone line wiring - "Polarity sensitive"



EVCS-TA / EVCS-TB emergency telephone loop wiring - "Polarity sensitive"



4.12 IFM2L internal module wiring - loop connection

The connection circuits of the peripheral detection/activation devices are defined as "loops". These loops start from the output terminals, run through the entire protected area connecting in parallel all the system devices before re-entering on the input terminals.

The loop utilizes the same two wires for the power supply to devices and for two-way communication. Due to electrical incompatibility, different brand devices (i.e. devices using different protocols) cannot co-exist on the same loop. However, the loops can be programmed separately in such a way as to allow the system to manage different brand devices on different loops.

Loops are made by means of a two-wire shielded cable with proper wire section (refer to the following cable specifications) and in compliance with local laws in force.

The wiring must be completed in a loop in order to guarantee the tolerance of wire-cutting or short-circuit on the cable.

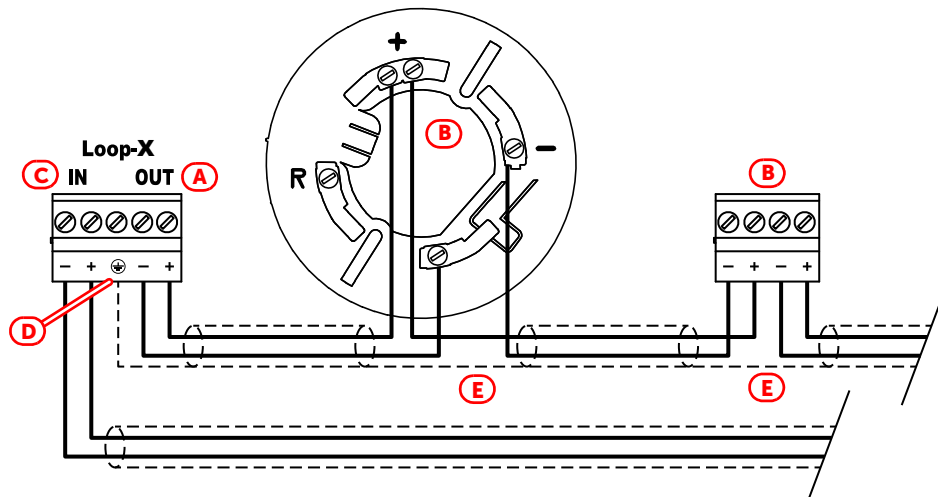
Cables:	2 wire shielded cable
	Twisted 5/10cm
	Total maximum capacity 0.5uF
	Maximum length 2000m
	Maximum resistance (considering the sum of the positive and negative conductor) 40Ohm
It is necessary to consult the configuration software, Previdia/STUDIO, for the proper cable sizing in relation to the power consumption of the connected devices, or to the following table for a rough estimate:	

Total loop length	Wire section	American Wire Gauge
Up to 1000m	2 x 1 mm ²	17 AWG
Up to 1500m	2 x 1.5 mm ²	16 AWG
Up to 2000m	2 x 2 mm ²	14 AWG

The cable shield must be connected to the Earth bar at one end only.

For the connections of the various devices refer to the instructions supplied with the devices themselves.

The following diagram illustrates the proper completion of the loop wiring. Starting from Loop-A/B OUT terminals on the IFM2L module ([A], *paragraph 3.13 - [C] - [D]*) proceed with the connection of the peripheral devices located in the area protected by the system ([B]) and re-enter on Loop-A/B IN terminals ([C]).



When connecting the loop devices it is not necessary to follow the input/output order indicated in the figure. Connect the cable shield only at the start of the loop ([D], the shield can be connected to the terminal indicated in the figure or directly to the grounding bar). Take care to link the interrupted shields in correspondence with the device connections ([E]).

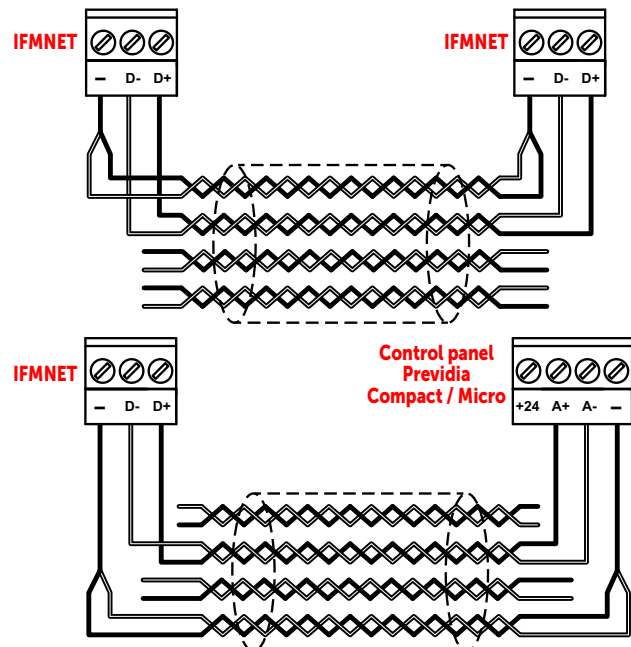
EN54: A Previdia Ultra control panel can manage up to 3840 fire detection/signalling devices (240 devices per loop).

4.13 IFMNET internal module wiring - Hornet+ network connection

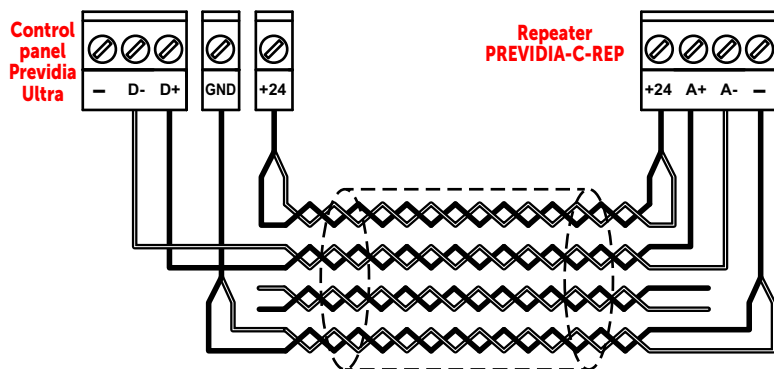
The connection of two or more control panels in a Hornet+ network can be achieved by means of two RS485 communication ports (*paragraph 3.17 - [C] - [D]*).

Each connection in the network must be completed in accordance with the instructions in *paragraph 4.6.1*.

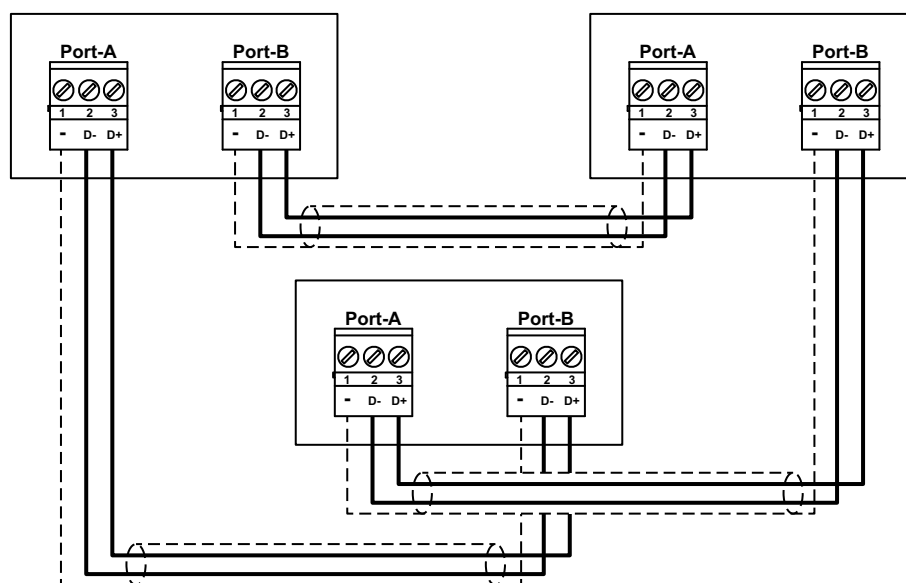
Cables: Cat.5 S/FTP FR PH(120) Ethernet cable
Maximum length (between two successive control panels): 1000m for speeds up to 230kbps, 500m for higher speeds (512kbps)



Cables: If the cable is used to power repeaters, the section of the conductors used for the power supply must be appropriately evaluated.



The connection must be a loop connection and must respect the direction of the wiring: the terminals on the terminal board of PORT-B must be connected with their counterparts on the terminal board of PORT-A of the next control panel; whereas, the terminals on the terminal board of PORT-A must be connected to their counterparts on the terminal board of PORT-B of the previous control panel.



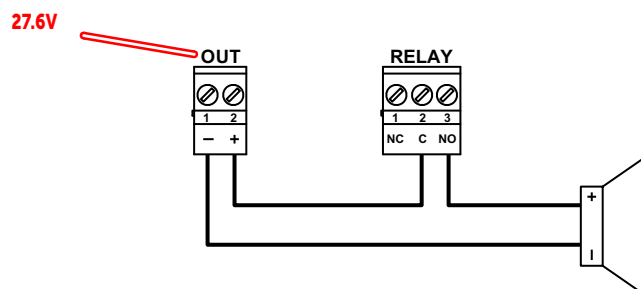
4.14 IFM4R internal module wiring

Cables: 2/3 wire shielded cable
Proper section (minimum 0.5mm², maximum 2.5 mm²)
Compliant with local laws and regulations in force

Each connection to this output must be completed in accordance with the instructions in *paragraph 4.6.1*.

All voltage free relay contact can only be connected to SELV circuits.

Each of the 4 relay outputs on the module must be connected in accordance with the following wiring diagram:



The OUT output illustrated in the diagram is used as a power source and is programmed as continuously active.

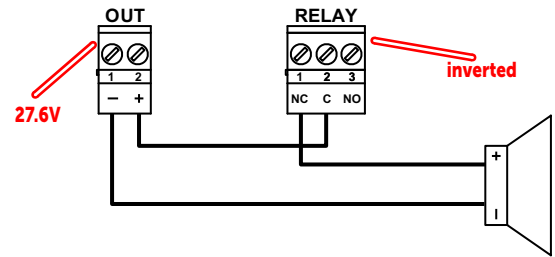
The illustrated connection does not supervise the cable and does not signal connection faults.

EN54:

If you wish to configure a RELAY output as a fault signalling output, you must complete the connections as shown in the wiring diagram opposite.

In compliance with the regulations in force, the output must be configured as "inverted" in order to switch to fault condition when the system is completely without power.

Therefore, in stand-by status (no faults present on the system) terminals C and NC will be closed, whereas terminals C and NO will be open.



4.15 IFM4IO internal module wiring

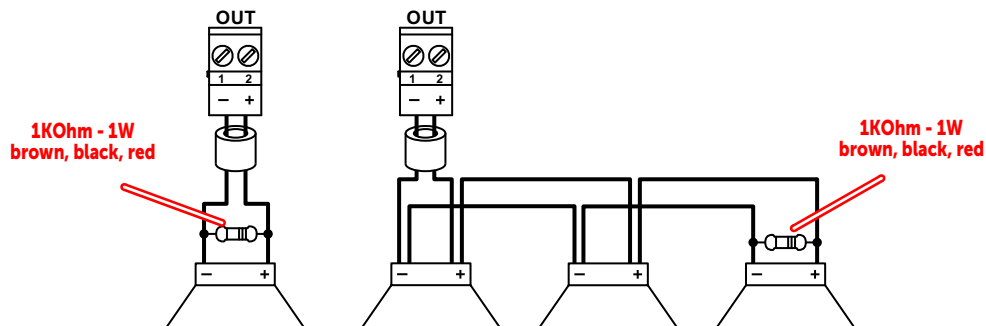
Each of the 4 IN/OUT channels of the IFM4IO module (*paragraph 3.19 - [C]*) must be configured as:

- supervised output
- input
- conventional zone
- 4-20m gas input

Each connection to this channel must be carried out in accordance with the indications in *paragraph 4.6.1*.

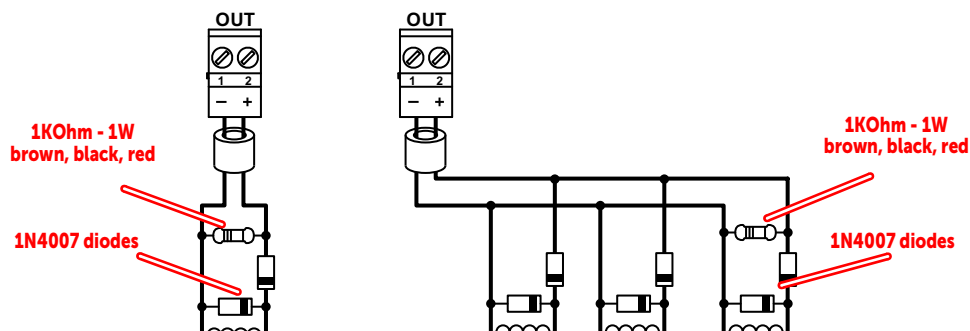
Cables: 2 wire shielded cable
Proper section (minimum 0.5mm², maximum 2.5 mm²)
Compliant with local laws and regulations in force

Connection of polarized devices (sounders, etc.) to channels configured as outputs



The polarities refer to the active status of the output, the polarities invert for stand-by status.

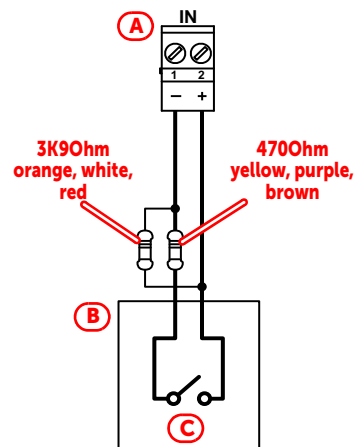
Connection of non-polarized devices (relays, etc.) to channels configured as outputs



The polarities refer to the active status of the output, the polarities invert for stand-by status.

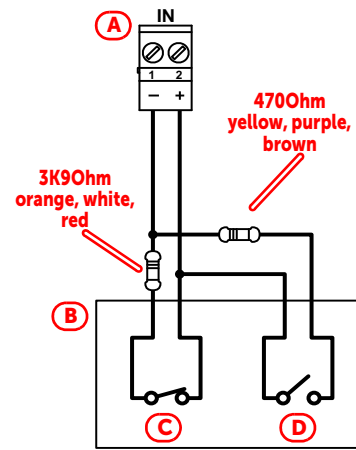
Connection of devices with an alarm output to channels configured as input

The wiring diagram illustrates a connection made to one of the channels of the IFM4IO module [A], configured as input. The connected device [B] is equipped with a normally open output for alarm signalling [C].



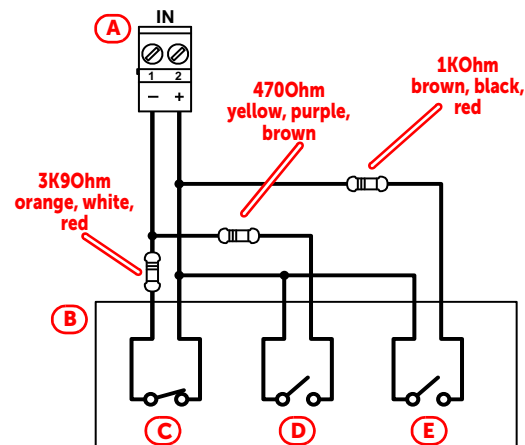
Connection of devices with alarm and fault outputs to channels configured as input

The wiring diagram illustrates a connection made to one of the channels of the IFM4IO module [A], configured as input. The connected device [B] is equipped with a normally closed fault signalling output [C] and a normally open alarm signalling output [D].

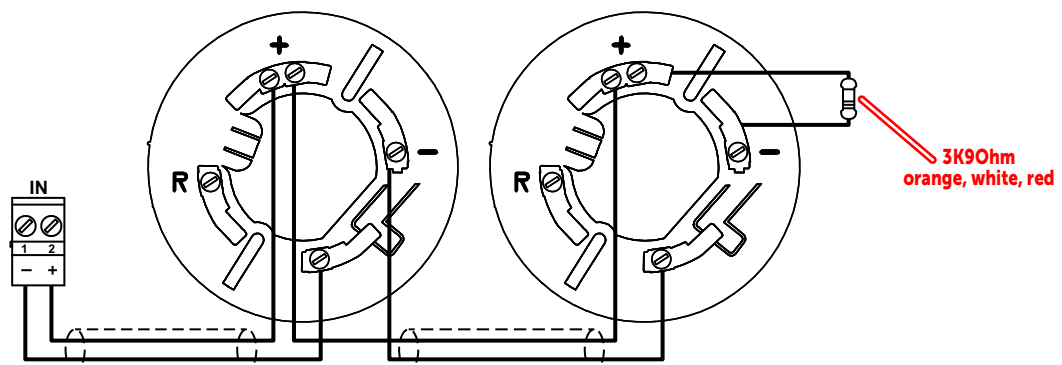


Connection of devices with alarm, early warning and fault outputs to channels configured as input

The wiring diagram illustrates a connection made to one of the channels of the IFM4IO module [A], configured as input. The connected device [B] is equipped with a normally-closed fault signalling output [C], a normally-open alarm signalling output [D] and a normally-open early warning signalling output [E].

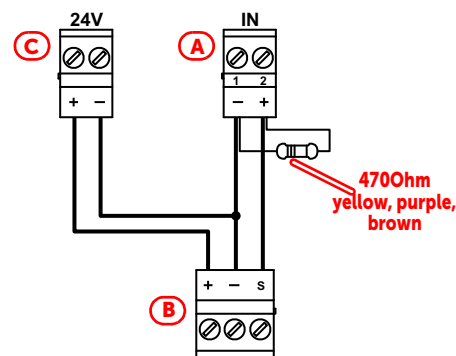


Connection to channels configured as conventional line



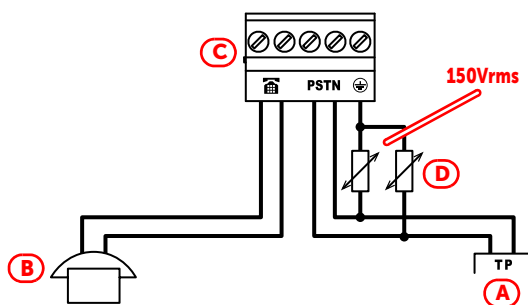
Connection to channels configured as 4-20mA gas input

The wiring diagram illustrates a connection made to one of the channels of the IFM4IO module [A], configured as gas output inclusive of a generic device with a 4-20mA output [B] powered from a 24V source [C].



4.16 IFMDIAL internal module wiring

Cables: Compliant with local regulations in force



Connect the telephone line [A] to the PSTN terminals and telephone device or the internal phone line [B] to the terminals  on the IFMDIAL module ([C], paragraph 3.15 - [E]).

In order to protect the control panel against the discharge of atmospheric electricity, the manufacture strongly advises the use of the two 150Vrms varistors [D]; these varistors must be connected between the grounding terminal  and the PSTN terminals.

4.17 IFM16IO internal module wiring

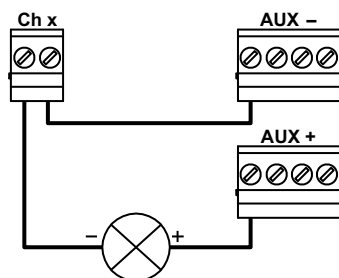
Each of the 16 IN/OUT channels of the IFM16IO module (paragraph 3.20 - [C]) can be configured as non-supervised input or output.

If the connection requires, the module has AUX terminals (paragraph 3.20 - [D]) for a 27V ancillary power supply.

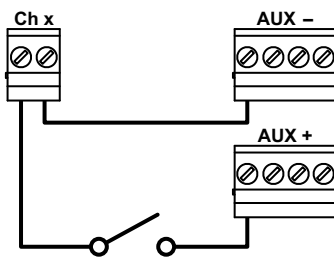
Each connection to this channel must be carried out in accordance with the indications in paragraph 4.6.1.

Cables: 2 wire shielded cable
Proper section (minimum 0.5mm², maximum 2.5 mm²)
Compliant with local laws and regulations in force

Connection of devices to channels configured as output



Connection of devices to channels configured as input



4.18 IFMLAN internal module wiring

The screw terminals of the IFMLAN module (paragraph 3.14 - [F]) are not available for any type of connection. For future use

4.19 IFMEXT internal module wiring

The IFMEXT module provides 7 terminals for the connection of signalling, activation and control devices linked to the apparatus of the fire extinction system.

- 3 input terminals:
 - PRESSOS. (paragraph 3.16 - [C])
 - STOP-EXT (paragraph 3.16 - [D])
 - MAN-EXT (paragraph 3.16 - [E])
- 4 output terminals:
 - VALVE (paragraph 3.16 - [F])
 - HOLD (paragraph 3.16 - [G])
 - PRE-EXT (paragraph 3.16 - [H])
 - RELEASED (paragraph 3.16 - [I])

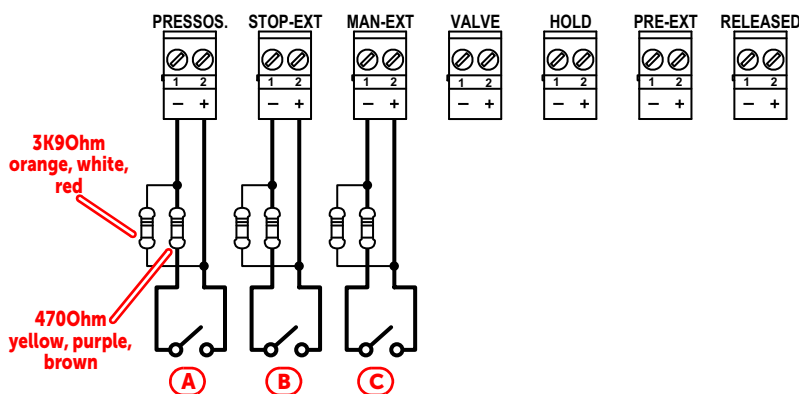
Each connection to these terminals must be completed following the instructions in paragraph 4.6.1.

Cables: 2 wire shielded cable
 Proper section (minimum 0.5mm², maximum 2.5 mm²)
 Compliant with local laws and regulations in force

Note: *In order to comply with EN12094-1 standard requirement, if more than one extinction channel is managed by a single Previdia control panel (more than one IFMEXT module installed on a single control panel) a backup FPMCPU unit have to be installed in the system, this backup unit will provide the disablement function for each extinction channel also in the unlikely event of main FPMCPU system fault.*

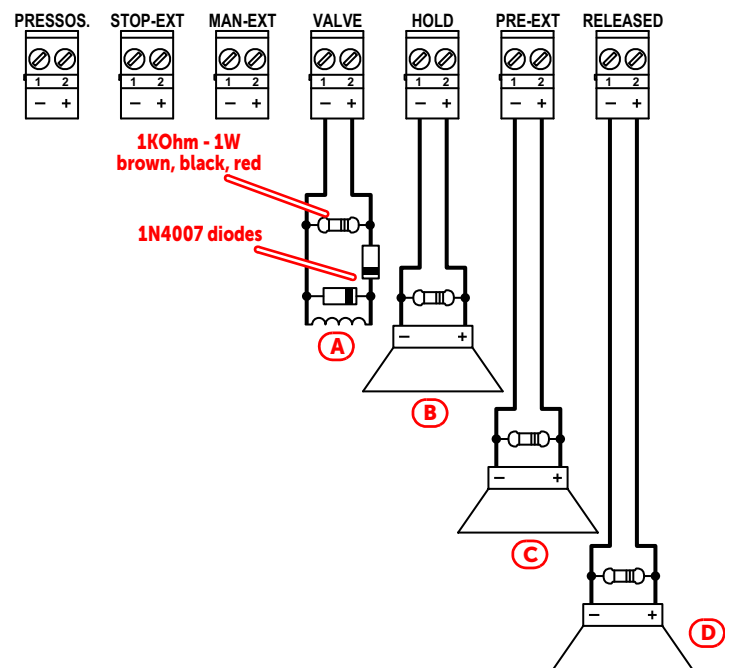
Connection of Input terminals

The wiring diagram illustrates the connection to be completed on the input terminals. The devices to be connected are: the normally open input of a pressure switch [A], a normally-open output of a command which interrupts extinction [B] and a normally-open output of an alarm activation command [C]. The resistances to be utilized are the same for each channel



Connection of output channels

The wiring diagram illustrates the connection to be completed on the input channels. The connectible devices are: a valve for extinguishant gas discharge [A], a device which signals the suspension of the extinction procedure [B], a device which signals the activation of the pre-extinction time [C] and a device which signals the completed extinguishant gas discharge operation [D]. The resistances to be utilized are the same for each channel

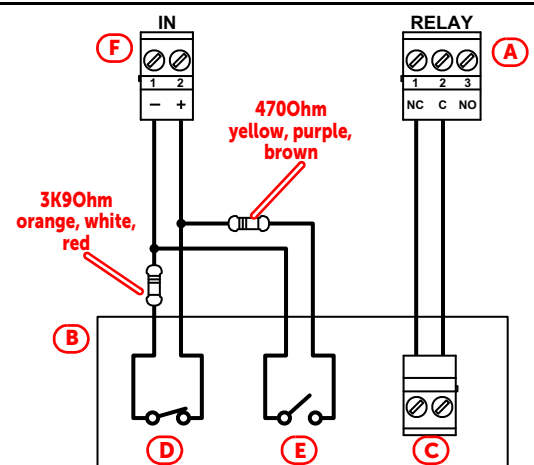


4.20 J and E type relay output wiring (EN54)

Cables: 2-wire shielded cable
Proper section (minimum 0.5mm², maximum 2.5 mm²)
Compliant with local laws and regulations in force

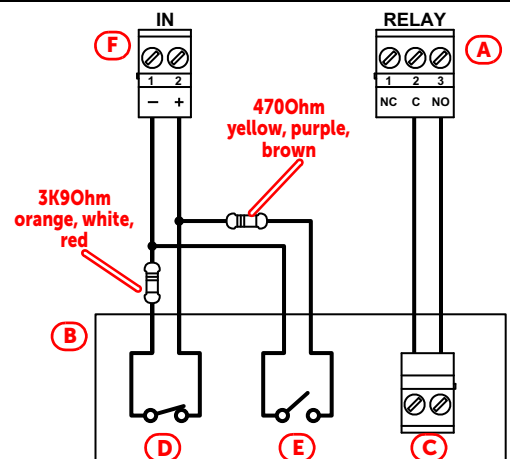
EN54: To make a type J output (output for the activation of a remote fault-signalling device as required by EN54-2, [A]), you must use a remote communication device which is compliant with EN54-21 regulations [B] and which must have a normally-open supervised activation input [C], a normally-closed fault signalling output [D] and a normally-open output to provide feedback indicating successful communication [E].

This is done by making the connection illustrated in the figure, using a relay output (of an IFM24160 module, IFM4R module or relay module) [A] configured as "communicator fault condition output" and an input of an I/O module [F] configured as "communicator fault condition input".



EN54: To construct a type E output (output for the activation of a remote alarm-signalling device as required by EN54-2, [A]), you must use a remote communication device which is compliant with EN54-21 regulations [B] and which has a normally-open supervised activation input [C], a normally-closed fault signalling output [D] and a normally-open output to provide feedback indicating the successful communication [E].

This is done by making the connection illustrated in the figure, using a relay output (of an IFM24160 module, IFM4R module or relay module) [A] configured as "communicator alarm condition output" and an input of an I/O module [F] configured as "communicator fault condition input".



4.21 FPMCPU front-plate module wiring - repeater connection

The wiring for the FPMCPU module provides for a connection to the Ethernet network via LAN cable and to the RS485 BUS which must be set up between the Previdia control panel and the system repeaters. The connection to the Ethernet network is obtained through the LAN port on the module (*paragraph 3.4 - [M]*).

Cables:

- UTP cable with RJ45 connectors
- Protected by ferrites (supplied)
- Compliant with local laws and regulations in force

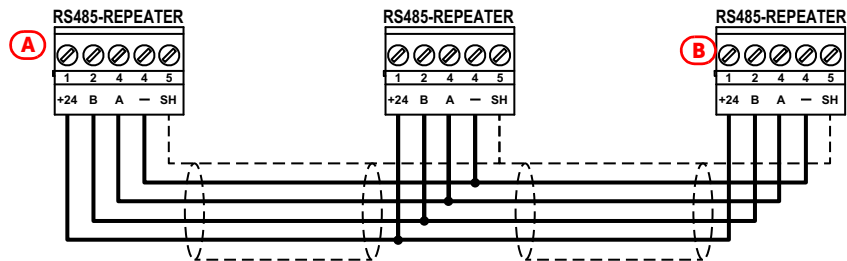
The BUS connection is achieved through the RS485 communication port on the module PCB (*paragraph 3.4 - [P]*). Two connection methods are possible, depending on whether the power supplied to the control panel is sufficient enough to power the repeaters, due to the loads required or the length of the cables.

Cables:

- 4 wire shielded cable
- Maximum length (from control panel to last repeater) 1000m
- Protected by ferrites (supplied)
- Compliant with local laws and regulations in force

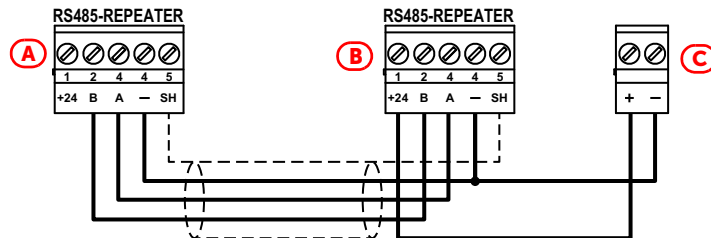
Each connection in the network must be completed in accordance with the instructions in *paragraph 4.6.1*.

Connection of repeaters using power supplied by the control panel



The jumper for the position on the BUS (*paragraph 3.4 - [Q]*) must be inserted in the EOL position EOL for the control panel *[A]* and for the end-of-line repeater *[B]*.

Connection of repeaters using power supplied by an external power-supply



In this case the power to the repeaters *[B]* is not supplied by the control panel *[A]* but by an external power supply *[C]*.

EN54:

The power-supply unit employed must be EN54 standard compliant.

System Test

INIM Electronics recommends that the entire system be checked completely at regular intervals.

For testing and maintenance procedures, refer to the *Manual for system configuration, commissioning and maintenance*.

WEEE

Pursuant to art. 26 of the Legislative Decree 14 March 2014, n. 49 "Implementation of Directive 2012/19 / EU on waste electrical and electronic equipment".



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.

Information about disposal of batteries and accumulators (applicable in Countries with separate collection systems)



This marking on batteries and/or their manual and/or their packaging, indicates that batteries of these products, at the end of their working life, should not be disposed of as unsorted municipal waste, but must be object of a separate collection. Where marked, the chemical symbols Hg, Cd o Pb indicate that the battery contains mercury, cadmium or lead above the reference levels of the directive 2006/66/EC. If batteries are not properly disposed of, these substances, together with other ones contained, can cause harm to human health and to the environment.

To protect human health and the environment, to facilitate treatment and recycling of materials, separate batteries from other kind of waste and use the collection scheme stated in your area, in accordance to current laws.

This product contains a lithium metal button cell type CR2032. Furthermore, for proper operation and compliance with product standards, the installer must install a couple of lead-acid accumulators for backup use type NPL24-12I or NP 17 -12-FR or equivalent (not supplied).

Before disposing of the above, it's appropriate to remove them from their holders avoiding to damage them or causing short circuits.



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