HARPER

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Supervision control panels

Installation and use manual

inim® ELECTRONICS

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- damage arising from improper maintenance or negligence
- damage caused by fire, flood, wind or lightning
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- fair wear and tear

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Limited warranty

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Installation of this Product must be carried out by qualified persons appointed by INIM Electronics. Installation of this Product must be carried out in accordance with Our instructions in the product manual.

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1 General information

1.1 Manufacturer's details

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The persons authorized by the manufacturer to repair or replace the parts of this system have authorization to work on Inim Electronics brand devices only.

1.2 About this manual

Manual code DCMIINE0HPMNG

Version 100

1.3 Terminology

Control panel, System, Device The main supervisory unit or any constituent part of the emergency lighting system.

Left, Right, Behind, Above, Below Refer to the directions as perceived by the operator when directly in front of the mounted device.

Qualified personnel Persons whose training, expertise and knowledge of security products and laws pertaining to security systems are capable of identifying, evaluating and maintaining the most suitable solution for the protection of the premises in accordance with the specific needs of the purchaser.

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

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

1.3.1 Graphic conventions

Following are the graphic conventions used in this manual.

Conventions	Example	Description
Text in Italics	Refer to *paragraph 1.3.1 Graphic conventions*	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.***

2 General Description

The centralized supervision of the emergency lighting system is a system of diagnostics and control managed by a computerized control panel which collects and saves all the data coming from the lamps.

2.1 Harper control panels

The centralized processing unit (CPU) that controls the functions of the HARPER system is housed on the cabinet frontplate.

The cabinet contains a CAN drive for the connection of a maximum of 5 OHM modules for Harper Manager or 8 OHM modules for Harper Manager XL.

HPMNG, the standard Harper control-panel model comes with the following modules installed inside the cabinet:

- Main CPU unit
- OHMCM24160 power-supply module
- OHMCM2L module for the management of two loops

Functions

The Harper Manager and Harper Manager XL control panels allow you to carry out the following operations:

- Test the functionality of devices
- Test and measure the autonomy of the devices
- Enable and disable the emergency function
- Switch On and Off the devices in programmed to operate in maintained mode
- Brightness adjustment

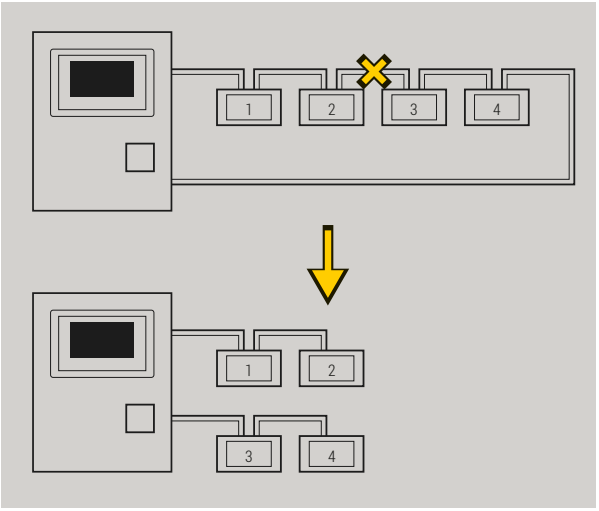
The Inim Electronics lamps, predisposed for BUS communication, have an unique serial number that allows the control panel to identify them.

It is possible to build automatically a map of the system devices which will allow instant identification of any devices in fault status.

Loop

The bus that starts from the control panel can close on itself and thus create a loop. In this way a fault on the data transmission line which interrupts the loop will be solved by the following automatic operations

- The devices on either side of the fault will open their electronic switches and disconnect one side of the line (the example shows devices 2 and 3).
- The same devices will communicate the intervention as soon as it is completed.
- The control panel will then convert the return point of the loop into an output and will start communicating on two distinct lines.
- The control panel will signal and save the line fault and indicate the exact point of the interruption on the installation map.



Even though there is a type of centralized control, the installed devices remain autonomous, and any cable or control panel faults will not affect the automatic operating capacity of the lamps in the event of an emergency.

Modularity

The Harper Manager and Harper Manager XL control panels can manage two loops separately, each supporting a maximum of 240 devices each loop.

Additionally, both are capable of housing expansion boards which can gradually increase the number of LOOPS to a maximum of 8 LOOPS on the Harper Manager (1920 devices) and 14 LOOPS on Harper Manager XL (3360 devices).

A web server installed inside the control panel can also act as an expansion. This will allow connection to a control panel via PC, Tablet or Smartphone via either a local network or the Internet without the need of specific software. The web server allows access to all the functions via any ordinary Internet browser.

This modularity allows you to configure a control panel in accordance with the installation and user requirements.

System test

In compliance with CEI EN 50172 and UNI 11222, Harper Manager and Harper Manager XL utilize user-customizable calenders to carry out the following two tests:

- Functionality Test The correct operating capacity of the lamp will be checked, therefore also the light source.
- Autonomy Test This test requires the simulation of a mains blackout, the lamp will be switched On by power from the internal battery and will remain On until the battery runs out.
  For this test it is necessary to simulate a mains blackout, the emergency SmartLiving will switch On, powered through the batteries, and remain On until the battery power runs out. Once the test is completed you will obtain the autonomy assessment for comparison to the nominal autonomy.

Events log

The control panel has a non-volatile memory which saves the chronology of all events. The log stores data regarding test results, emergency intervention, inhibition actions, programming events, bus line faults (loop) and control panel faults.

The events log can be viewed on the display and printed out on an incorporated printer (optional item).

Connections

Harper Manager and Harper Manager XL control panels can be connected via:

- web server
- USB
- RS232 serial line

2.2 OHM modules

Internal modules, to be mounted inside the cabinet by means of the CAN drive bar:

OHMCM24160 Power supply module, essential for control panel functioning, to be mounted in the first position at the top on the CAN drive bar. Suppled with the control panel.

OHMCM2L Module for the management of two loop circuits for devices placed in the protected area (loop).

OHMCMLAN Module for the management of advanced TCP-IP services (Web Interface Web, e-mail, etc.). Only one can be installed.

2.3 List of Harper system components

Harper control panel standard models

- HPMNG, control panel comprising a metal cabinet complete with frontplate, CPU, power-supply module, 2 loop module
- HPMNGXL, control panel comprising a metal cabinet (XL) complete with frontplate, CPU, power-supply module, 2 loop module and a closure plate for the aperture on the front of the cabinet.

OHM internal modules

- OHMCM24160, CAN power-supply module
- OHMCM2L, CAN module with 2 loops
- OHMCMLAN, CAN LAN module

Front-plate modules:

- OHMPRN, OHMXLPRN, printer modules
- FPMNUL, blind-plate module

Accessory items

- OHMCABSP, OHMXLCABSP, kit for distancing the cabinet from the wall
- OHMCABRK, OHMXLCABRK, kit for mounting cabinet to 19" rack

3 Description of the Harper system parts

3.1 The cabinet

The cabinet is a metal enclosure equipped with a frontplate (door) with removable hinges. It is available in two models, one for Harper Manager and one for Harper Manager XL.

The cabinet can be wall mounted and fixed in place using the holes on the back of the enclosure.

The front of the cabinet provides the CPU and the Earth connections.

It has a compartment for the connection of up to 5 OHM modules for Harper Manager or 8 modules for Harper Manager XL via a CAN drive bar equipped with connectors for IFM internal modules, and a CAN BUS cable for communication with the CPU module on the frontplate. The compartment has a bar which serves to hold the modules in place and permits the Earth connections.

There is a placement for two 12V-7Ah batteries (24Ah or 17Ah for HP XL).

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

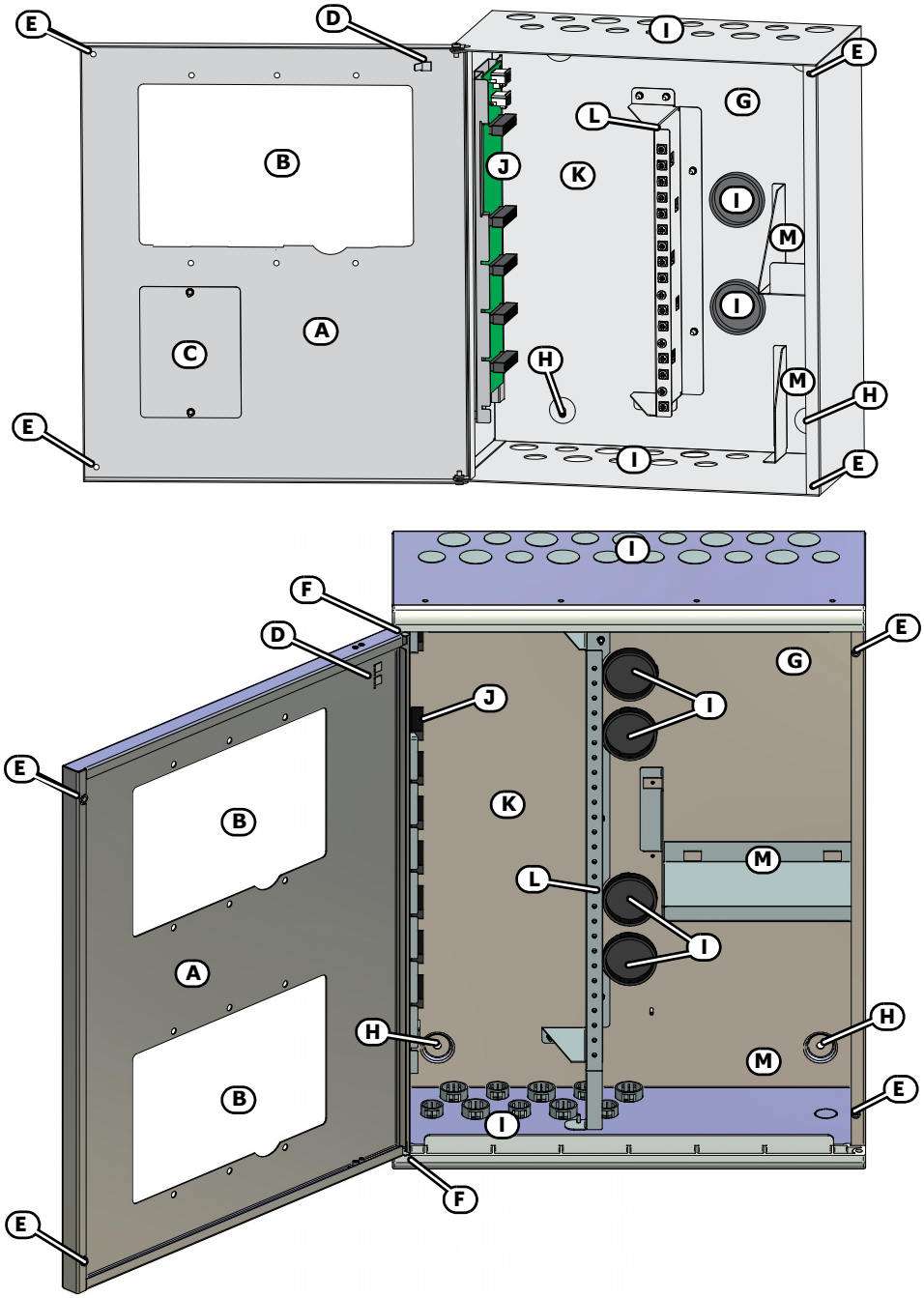
The available accessory items, required in accordance with the type of installation, are as follows:

- OHMCABSP, OHMXLCABSP, kit for distancing the cabinet from the wall (5cm)
- OHMCABRK, OHMXLCABRK, kit for mounting cabinet rack

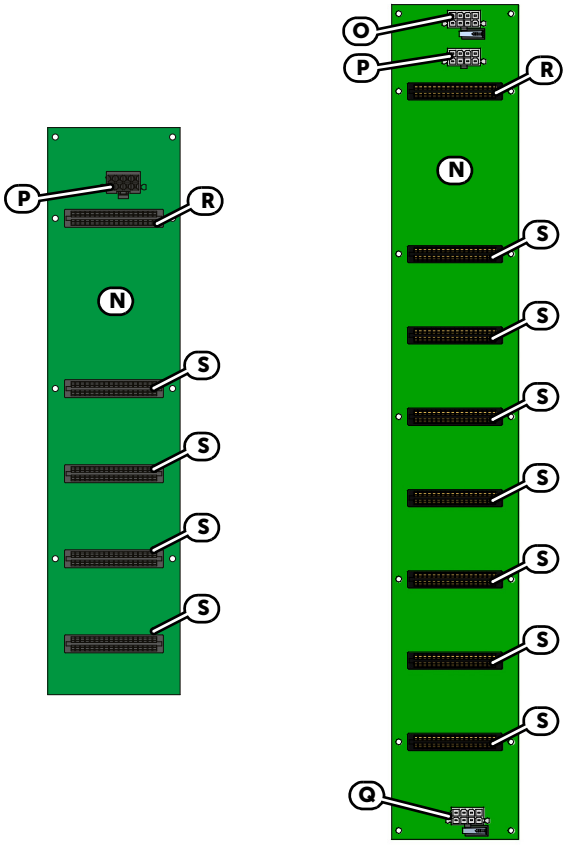
Harper Manager cabinet - technical specifications	
Dimensions	351 x 406 x 181 mm
Weight	6.5Kg
Protection rating	IP30
Accepted Batteries	2 x 12V 7Ah

Harper Manager XL cabinet - technical specifications	
Dimensions	433 x 563 x 187 mm
Weight	10Kg
Protection rating	IP30
Accepted Batteries	2 x 12V 24Ah, NPL24-12I or equivalent or 2 x 12V 17 Ah, NP 17 -12-FR or equivalent

[A]	Frontplate
[B]	Apertures for front-plate modules
[C]	Aperture for printer
[D]	Soldered connectors for the frontplate Earth conductor and CPU module
[E]	Screw locations for the cover screws
[F]	Hinge grip
[G]	Back
[H]	Wall-mount screw locations
[I]	Cable entry
[J]	CAN drive bar
[K]	Compartment for internal modules
[L]	Earth connection bar
[M]	Backup battery housing



[N]	PCB CAN drive	
[O]	CAN connector	Do not use
[P]		toward the module on the front plate
[Q]		Do not use
[R]	Connector for OHM internal module	for the power-supply module
[S]		for all modules except the power supply module



3.2 Cabinet mounting accessory items

The accessory items are OHMCABSP, OHMCABRK for the Harper Manager control panel and OHMXLCABSP, OHMXLCABRK for the Harper Manager XL control panel.

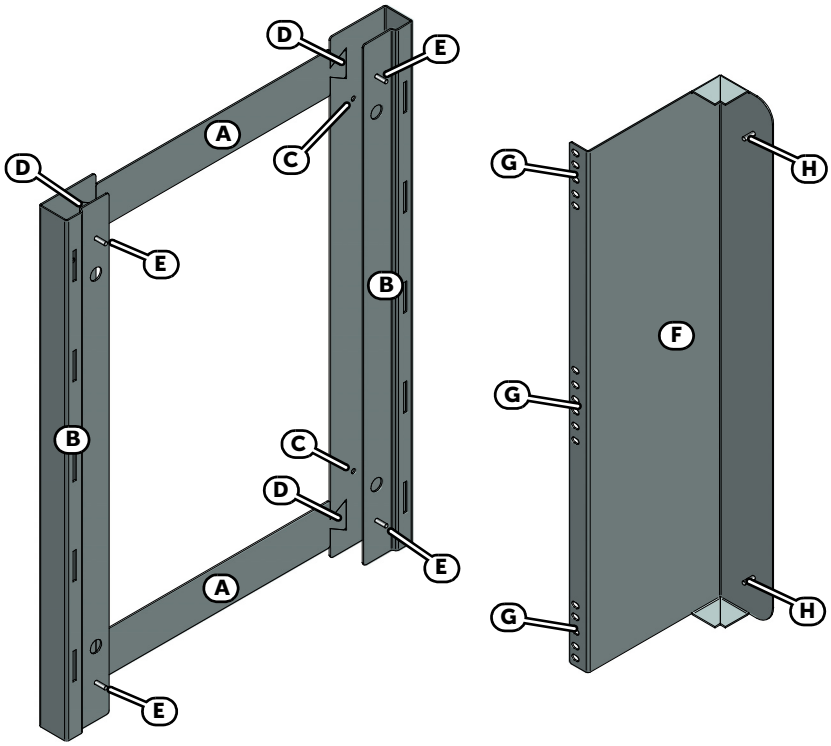
The OHMCABSP and OHMXLCABSP kits allow you to distance the cabinet 5cm from the wall thus creating a space between the cabinet and its placement. They consist of three pieces to be assembled together before mounting the control panel cabinet.

The OHMCABRK and OHMXLCABRK kits allow you to mount the cabinet to a 19" rack by means of two support brackets at each side of the cabinet.

OHMCABSP, OHMCABRK, OHMXLCABSP and OHMXLCABRK come with:

- 4 nuts with washers
- Instructions manual

OHMCABSP OHMXLCABSP	[A]	Distance bracket/template
	[B]	Support bracket
	[C]	Wall-mount screw location
	[D]	Dovetail locations
	[E]	Threaded rivet
OHMCABRK OHMXLCABRK	[F]	Support bracket (2)
	[G]	Rack anchor-screw locations
	[H]	Threaded rivet



3.3 CPU front-plate module

The CPU module is the main unit of the control panel with all the system configuration data.

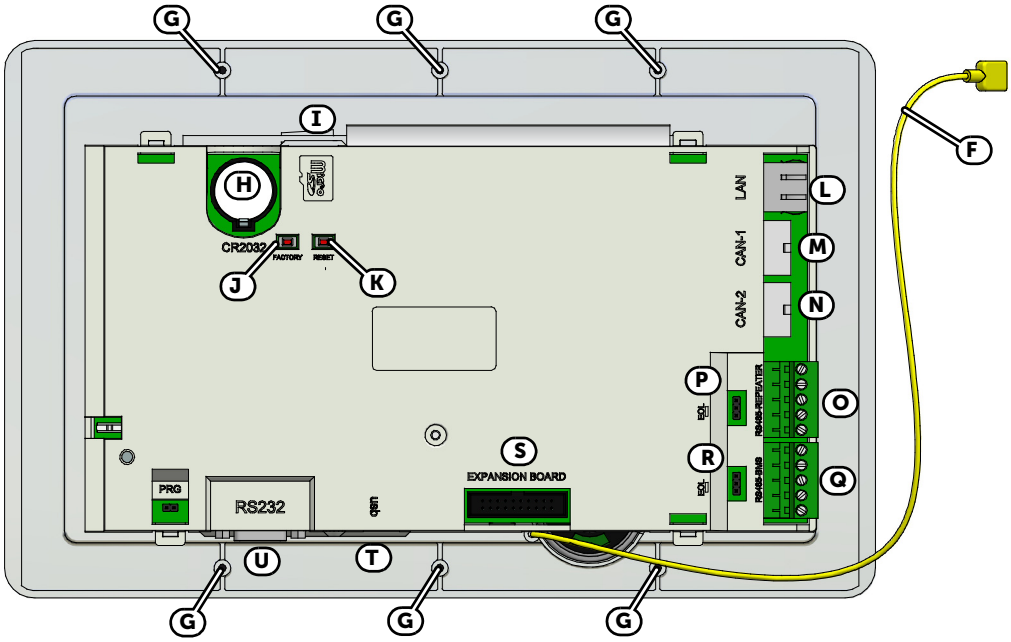
The unit contains two CPUs: a main CPU and a emergency backup CPU. The backup CPU will take over in the event of fault on the main CPU.

Each other module in the Harper system has its own independent CPU.

CPU module - technical specifications

Power supply voltage		19-30V⎓ supplied by OHMCM24160 module
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⎓
Maximum voltage on RS485-BMS		1A @ 27.6V⎓

[A]	Touchscreen display
[B]	Function keys
[C]	Home page key
[D]	Access-key slot
[E]	Speaker
[F]	Ground connection wire
[G]	Mounting screw locations
[H]	CR2032 battery (included, for internal clock)
[I]	MicroSD card holder
[J]	Button to reset default settings (factory settings)
[K]	Reset button
[L]	Do not use
[M]	CAN bar connector
[N]	Do not use
[O]	RS485 terminal board
[P]	EOL jumper connectors
[Q]	RS485 MODBUS terminal board
[R]	MODBUS EOL jumper connectors
[S]	Connector for printer
[T]	Mini USB port



[U]	Serial connector

3.4 OHMPRN, OHMXLPRN, printer module

The OHMPRN thermal printer module uses 82mm thermal roll paper and can be connected directly to the motherboard (connector cable included). It provides a continuous real-time printout of events and/or date to date inquiry printouts. It is possible to print complete reports for each loop containing information regarding the status of each device.

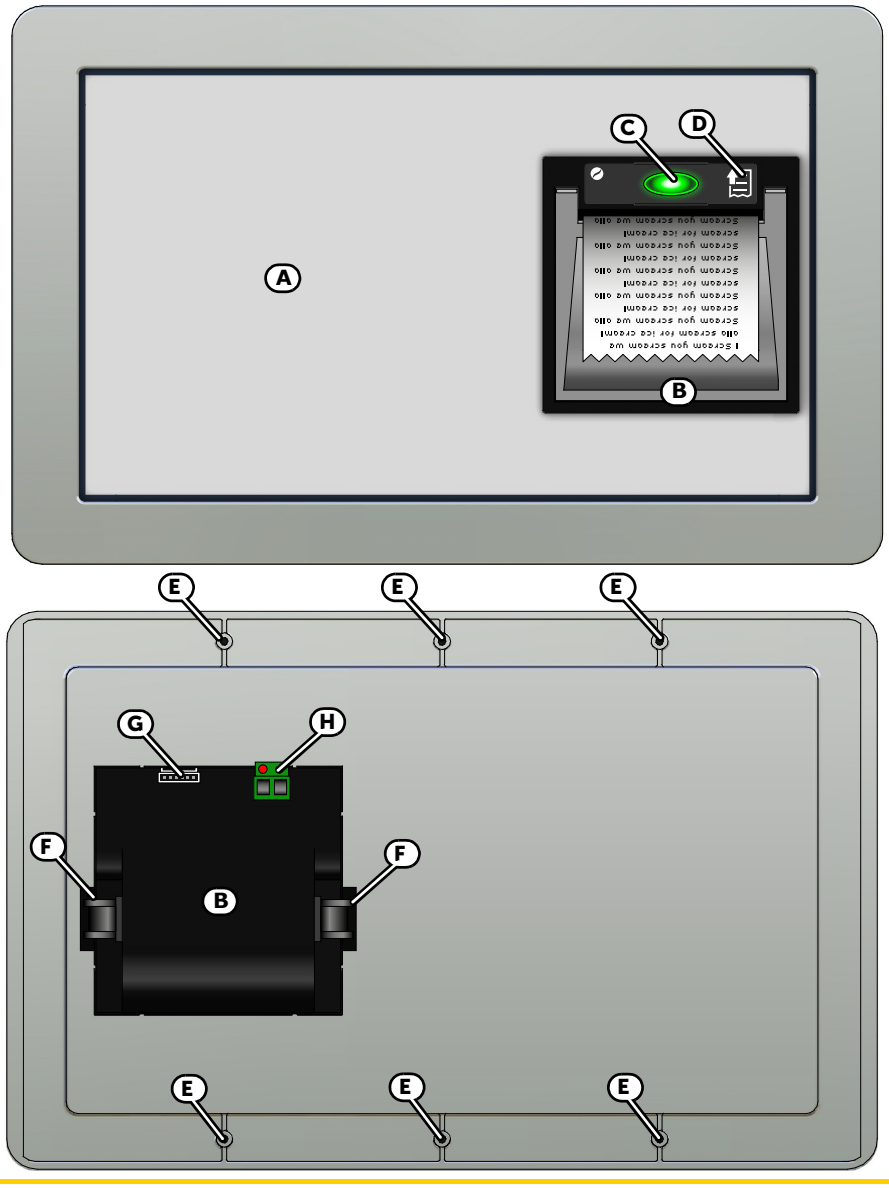
The OHMPRN thermal printer must be mounted on the frontplate of the Harper Manager control panel only, while the OHMXLPRN module (provided with the printer) must be mounted in the proper aperture on the frontplate of the Harper Manager XL control panel.

Each module is equipped with:

- A cable for the connection to the motherboard
- Cable ties
- Paper roll
- 2 anchor hooks (OHMPRN only)
- 6 screws with washers for securing the module (OHMXLPRN only)
- Instructions manual

Technical specifications		OHMXLPRN module	OHMXLPRN module
Power supply voltage		19-30 V⎓ supplied by CPU module	
Operating temperature		from -5°C to +40°C	
Consumption @ 27.6V	stand-by	25mA	
	maximum	350mA	

[A]	OHMXLPRN module
[B]	OHMPRN thermal printer
[C]	Status LED and button to open the paper-roll housing
[D]	Paper roll button
[E]	Mounting screw locations
[F]	Anchor hook to the panel
[G]	Data connector
[H]	Power-supply terminals

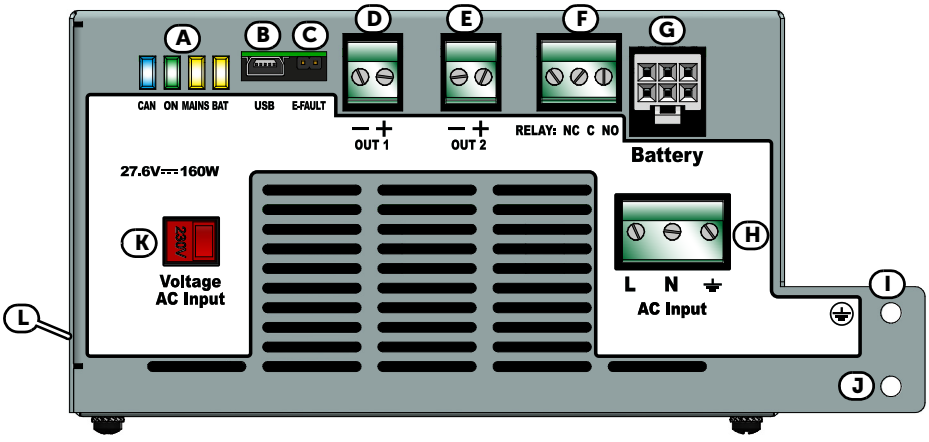


3.5 OHMCM24160, power-supply module

The OHMCM24160 internal module supplies and distributes power through the CAN drive connection bar and through the two outputs, OUT 1 and OUT 2.

OHMCM24160 module - technical specifications		
Power supply voltage		230V~ (+10% - 15%) 115V~ (+10% - 15%) 50/60 Hz
Maximum current draw from mains		1.1A @ 230V 2A @ 115V
Output voltage		27.6 V⎓ nominal 19 - 27.6 V⎓
Maximum available current		5.2A
Imax a (as per EN54-4)		4A
Imax b (as per EN54-4)		4A
Batteries		2 x 12V 7Ah, 2 x 12V 24Ah, NPL24-12I or 2 x 12V 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 (Ri Max)		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
Maximum voltage on OUT 1		1.5A @ 27.6V⎓
Maximum voltage on OUT 2		1.5A @ 27.6V⎓
Maximum voltage on RELAY		5 A @ 30V⎓

[A]	Status LED	
[B]	Mini USB port	
[C]	Jumper connectors for enablement of the ground-fault test	
[D]	OUT1	Supervised output
[E]	OUT 2	
[F]	RELAY	Relay - voltage free contact
[G]	Battery connector	
[H]	L N ⏚	AC Mains input terminals
[I]	⏚	Hole for the Earth bar screw and for the Earth conductor
[J]	Screw hole for securing the Earth bar and the wire with the eyelet terminal	



[K]	Input voltage selector	230/115 V
[L]	CAN drive connector (opposite)	

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

LED OHMCM24160	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 overheated
MAIN	Yellow	Mains failure fault	Fast flashing: system ground fault
BATT	Yellow	Battery inefficiency or fault	

3.6 OHMCM2L, internal module with 2 loops

All the peripheral devices of the emergency lighting system must be connected in parallel to the loop circuit (2 pole shielded cable). The control panel communicates with the loop devices via a bidirectional digital protocol which allows their complete control.

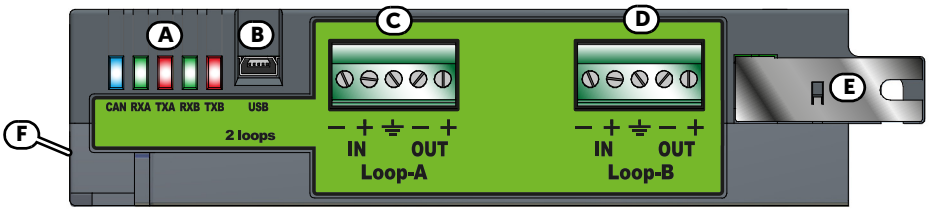
Each OHMCM2L module contains circuits for the management of two loops. Harper control panels are capable of managing up to 14 loops through a maximum of 7 OHMCM2L modules.

OHMCM2L comes with:

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

OHMCM2L module - technical specifications		
Power supply voltage		19-30 V⎓ supplied by OHMCM24160 module
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

[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 connector (opposite)

LED OHMCM2L	Colour	On solid or 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

3.7 OHMCMLAN, internal Ethernet module

The OHMCMLAN module provides the Harper with communication ports:

- USB Host (for future use)
- Mini USB
- Ethernet
- RS485 (for future use)
- RS232 (for future use)

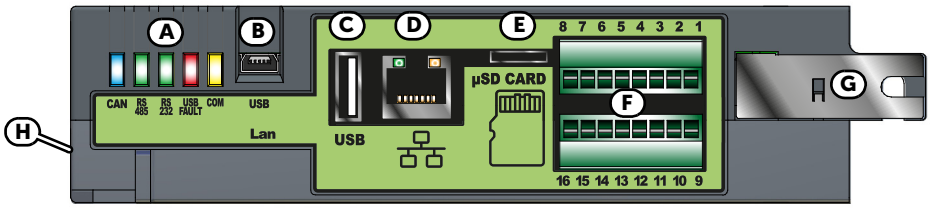
Connecting the Ethernet port establishes a connection between the control panel and the network for access to the advanced TCP-IP functions (sending of event-related e-mails, communications via SIA-IP and browser-accessible Web server).

OHMLAN comes with:

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

OHMCMLAN module - technical specifications	
Power supply voltage	19-30 V⎓ supplied by OHMCM24160 module
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

[A]	Status LED	
[B]	Mini USB port	
[C]	USB port	
[D]	Ethernet port	
[E]	MicroSD card holder	
[F]	1 - 16	Terminals for serial link



[G]	Holes for the Earth bar screws
[H]	CAN drive connector (opposite)

OHMCMLAN LEDs	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

4 HPMNG and HPMNGXL control panels

HPMNG and HPMNGXL control panels are the base models of a Harper system.

These models consist of a single cabinet with the following modules already installed:

- CPU front-plate module with main CPU unit
- OHMCM24160, internal power-supply module
- OHMCM2L, internal module for the management of two loops

The combination of these modules makes the HPMNG and HPMNGXL addressable emergency-lighting control panels capable of managing two loops which accommodate different types of addressable Harper devices.

These models can be expanded by means of a combination of other modules, installed as required to suit the needs of the system.

4.1 Inside the package

Inside the box of the standard models you will find:

- Metal cabinet containing a motherboard (CPU), a power supply module (OHMCM24160), a 2-loop module (OHMCM2L) and hole covers for the cable entries (already inserted).
- Installation manual
- Plastic bag containing:
  - 2 resistors @ 1KOhm 1W
  - 2 diodes @ 1A 1000V 1N4007
  - 2 keys for access to the control panel functions
  - wire for the connection of the battery to the power-supply unit with thermal probe
  - battery to battery connection wire
  - 4 screws for securing OHM modules to the Earth bar
  - 2 ferrites

The batteries and programming software are not included in the package. These accessory items must be purchased separately.

5 Installation

Note: *Installation of these control panels must be carried out in full respect of the local codes, laws and bylaws in force, and in accordance with the instructions and guidelines herein. The control panel must be mounted 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.

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

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

5.1 Mounting the cabinet

1. Remove the securing screws and door (*paragraph 3.1 - [E]*).
2. For the Harper Manager XL, remove the Earth conductor of the frontplate (*paragraph 3.1 - [D]*) and, if present, the CAN wire.
3. For the Harper Manager XL, push the hinge grips, located at the top and bottom of the door hinges, inwards (*paragraph 3.1 - [F]*) to release the cabinet frontplate.
4. Remove the covers from the cable entries you intend to use (*paragraph 3.1 - [I]*).

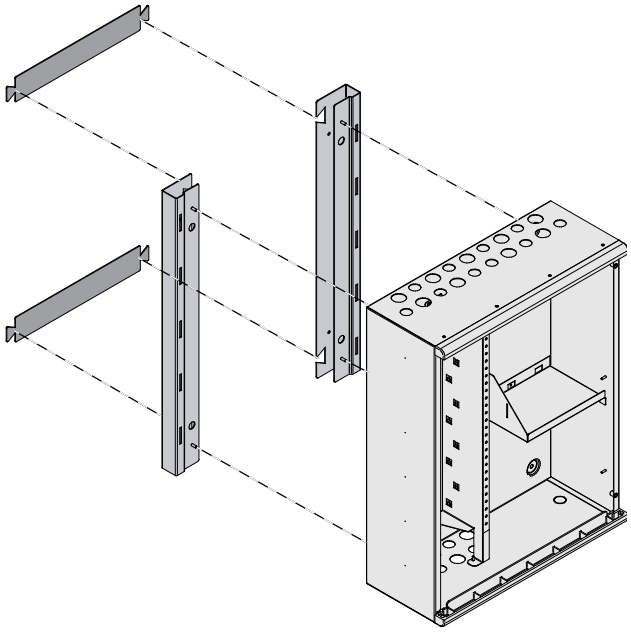
Note: *In order to guarantee the IP30 protection grade, do no remove any other hole covers.*

5. Pull the cables through the open cable entries.
6. Using the holes on the back, mount the cabinet to the wall (*paragraph 3.1 - [H]*).
   The manufacturer strongly recommends the use of 8mm diameter minimum anchor screws (stop screws).
7. Insert and secure the various modules inside the cabinet and on the frontplate.
8. For the Harper Manager XL, replace the frontplate and reconnect the Earth conductor and CAN wire.
9. Complete the wiring of the internal modules.

5.1.1 Mounting the OHMCABSP kit

This kit allows the control panel to be mounted 5cm away from the wall and must be fitted before the Harper control panel is installed.

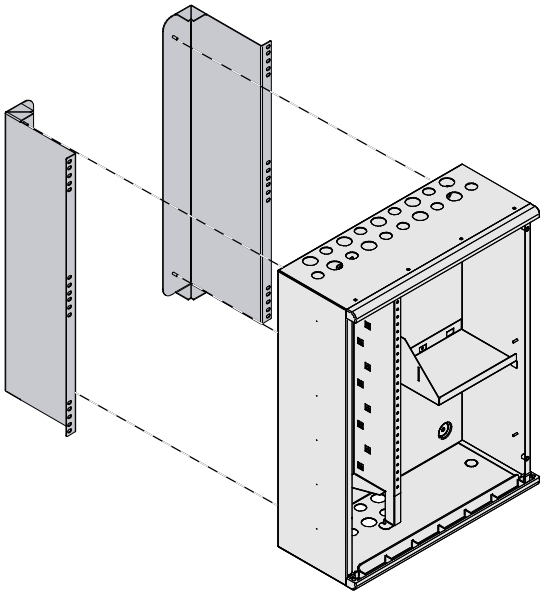
1. Assemble the kit by attaching the distance bracket (*paragraph 3.2 - [A]*) to the support bracket (*paragraph 3.2 - [B]*) by means of the interlocking dovetails (*paragraph 3.2 - [D]*).
2. Attach the assembled structure to the wall by means of the holes on the support bracket (*paragraph 3.2 - [C]*).
3. Mount the cabinet to the distance bracket by inserting the threaded rivets (*paragraph 3.2 - [E]*) through the holes on the back of the enclosure (*paragraph 3.1 - [H]*), then secure it in place using the supplied nuts.



5.1.2 Mounting the OHMCABRK kit

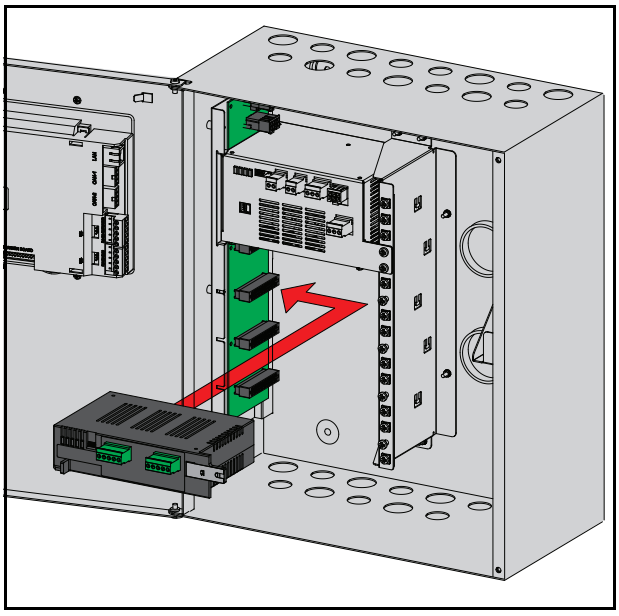
This accessory kit must be mounted to the 19" rack before the Harper control panel is installed.

1. Attach one of the two support brackets (*paragraph 3.2 - [F]*) to each bar on the rack, using the available holes (*paragraph 3.2 - [G]*).
2. Mount the cabinet to the bracket by inserting the threaded rivets (*paragraph 3.2 - [H]*) through the holes on the back of the enclosure (*paragraph 3.1 - [H]*), then secure it in place using the supplied nuts.



5.2 Mounting OHM internal modules

The internal modules (OHMCM24160, OHMCM2L, OHMCMLAN) must be mounted in the special compartment inside the cabinet (*paragraph 3.1 - [K]*). There are two bars on either side of the compartment for mounting and connecting modules (*paragraph 3.1 - [J] - [L]*), up to 5 for Harper Manager or 8 for Harper Manager XL.



1. Find the position inside the compartment of the module that corresponds to one of the connectors on the PCB bar (*paragraph 3.1 - [N]*).
   If you are installing an OHMCM24160 power-supply module, you must use the first connector at the top (*paragraph 3.1 - [R]*). When installing any other type of internal module, you can use any other connector that is free (*paragraph 3.1 - [S]*).
2. Position the module in such a way that it is on level with the chosen connector on the bar then insert it in place by pushing it carefully toward the left.
3. Affix the module to one of the holes on the Earth bar (*paragraph 3.1 - [L]*) using one of the supplied screws.
4. Complete the wiring on the internal module (refer to *paragraph 5.5.1 Cable entry* and the paragraphs regarding the wiring of each internal module).

5.3 Mounting the OHMPRN printer

The OHMPRN printer must be mounted in the proper aperture on the frontplate of the Harper Manager control panel (*paragraph 3.1 - [C]*).

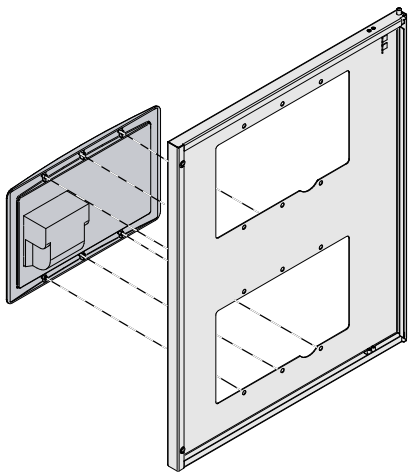
1. Unscrew the nuts from the screws which secure the printer-housing plate in place then remove the plate.
2. Working from the front of the enclosure, insert the printer into its location.
3. Holding the printer module firmly in place, position the hooks on the guide (*paragraph 3.4 - [F]*), ensure that the module is firmly positioned.

Connecting the printer

4. Connect the printer wire to the terminals on the reverse side of the module:
   - Data transmission wire connector (*paragraph 3.4 - [G]*)
   - Power supply terminals (*paragraph 3.4 - [H]*). Positive cable (colour red) must be connected to the terminal with the mark on it.
5. Connect the wire to the motherboard via the respective connector (*paragraph 3.3 - [S]*).

5.4 Mounting the OHMXLPRN printer module

The OHMXLPRN frontal printer module must be mounted in the appropriate aperture on the frontplate of the Harper Manager XL control panel (*paragraph 3.1 - [B]*).



1. Align the 6 holes on the module frame (*paragraph 3.3 - [G]*) with the 6 holes on the cabinet front-plate.
2. Secure the module in place by securing the supplied screws in the aligned holes.
3. Connect the wire (*paragraph 5.3 Mounting the OHMPRN printer*).

5.5 Control panel wiring

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

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

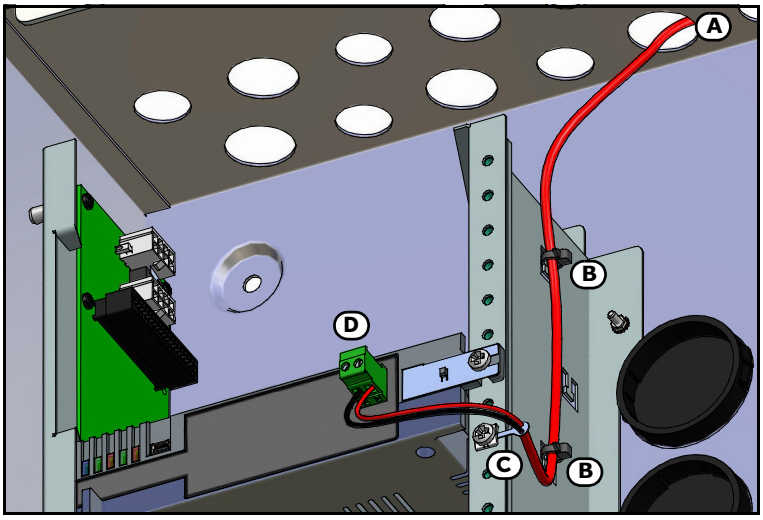
5.5.1 Cable entry

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 3.1 - [L]*) 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]*.

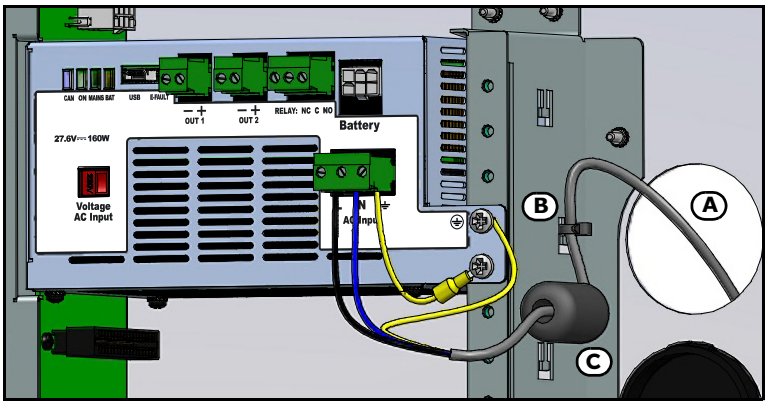
The unused cable entries must be closed by the supplied plastic covers.



5.5.2 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 “16A curve C” circuit breaker that must be duly labelled.

The installation must be constructed in compliance with the local laws in force regarding electrical safety.

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

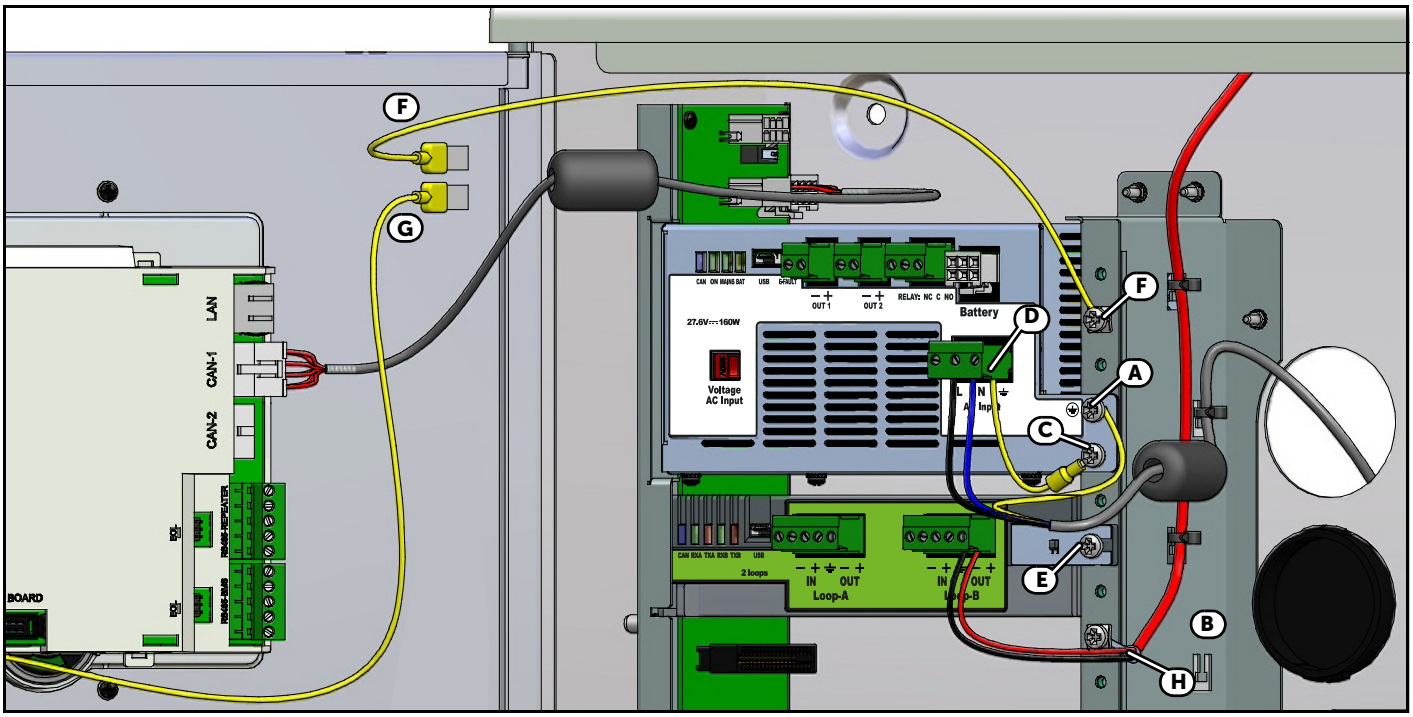
5.5.3 Connection of the Earth conductors of the system

The Mains cable Earth conductor must be connected to the control panel by means of the securing screw that must be fastened into the appropriate hole on the OHMCM24160 unit (⏚, *[A], paragraph 3.5 - [I]*).

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

The Earth bar (*[B], paragraph 3.1 - [L]*) 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 *([C], paragraph 3.5 - [J]*); this wire must be connected to the Earth terminal of the OHMCM24160 (⏚ , *[D], paragraph 3.5 - [H]*)
- the internal modules, by means of the appropriate screws duly inserted and fastened in place *[E]*
- the frontplate, by means of the supplied wire (*[F]*, only for the HPMNGXL control panel, *paragraph 3.1 - [D]*) coming from the soldered end to which the Earth wire of the frontplate CPU module *[G] (paragraph 3.3 - [F]*) must be connected.
- the cable shields, by means of cable-gland screws *[H]*.



5.6 OHMCM24160 module wiring

As well as the terminal board for the mains power supply and the connector for the batteries, the OHMCM24160 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).

5.6.1 Battery connection

The batteries must be connected to the OHMCM24160 module by means of the supplied wire. The wire comprises the connectors for the battery terminals and thermal probe (NTC) for temperature-based charge voltage compensation.

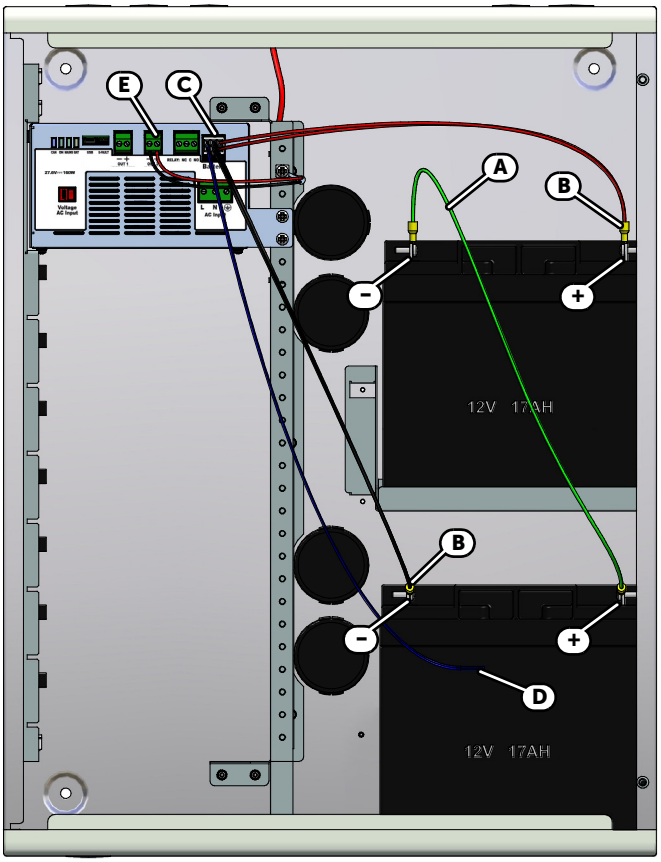
1. Insert the batteries into the battery compartment inside the cabinet (*paragraph 3.1 - [M]*).
2. Using the battery wire (*[A]*), connect the batteries together.
3. Connect the wire with the eyelet terminals to the terminals of the batteries (*[B]*).

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], paragraph 3.5 - [G]*).

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. The thermal probe must be positioned on the side of the battery and held in place by a strip of tape (*[D]*).



5.6.2 Output connection

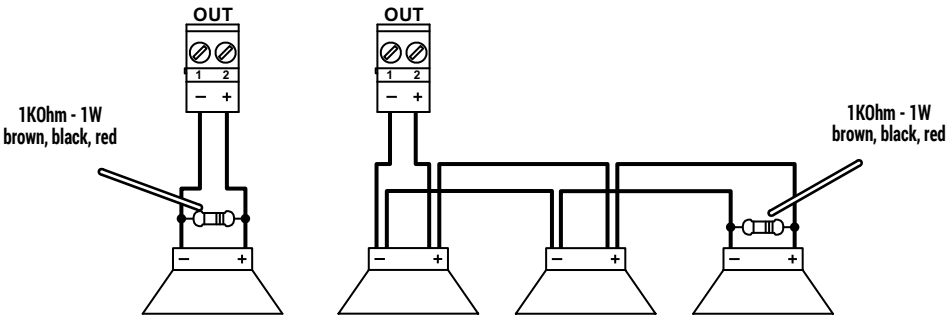
Each output of the OHMCM24160 module can be configured to activate specific conditions. If left at their default settings, the three outputs will be as follows:

- OUT 1 (*paragraph 3.5 - [D]*), supervised output
- OUT 2 (*paragraph 3.5 - [E]*), constantly active output (27.6V constant) for powering external devices
- RELAY (*paragraph 3.5 - [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 5.5.1*.

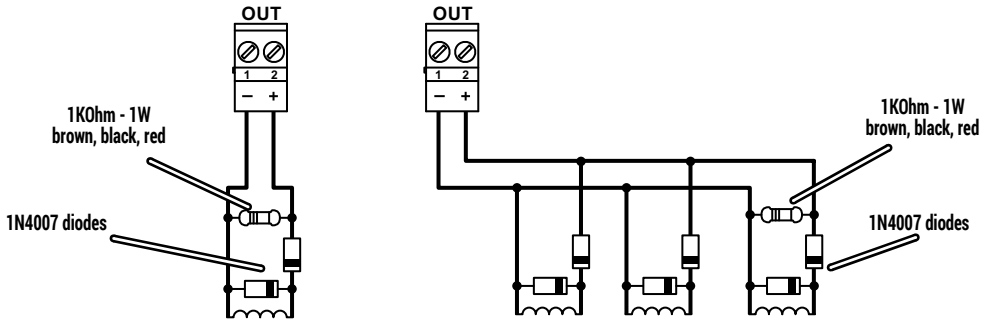
Cables:
2-wire shielded cable
Proper section (minimum 0.5mm², maximum 2.5 mm²)
Compliant with local laws and regulations in force

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



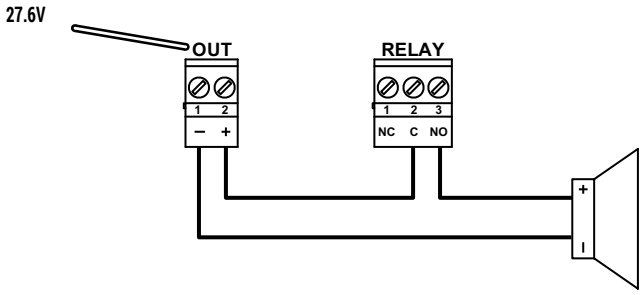
The polarities refer to the active status of the output, the polarities invert for stand-by status.

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.

5.7 OHMCM2L 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.

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:

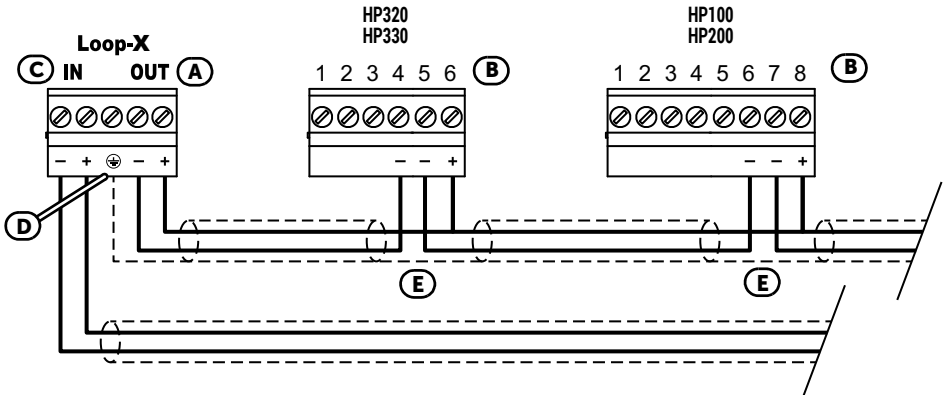
2 wire shielded cable
Twisted 5/10cm
Total maximum capacity 0.5uF
Maximum length 2000m
Maximum resistance (considering the sum of the positive and negative conductor) 40Ohm

Total loop length	Wire section	American Wire Gauge
Up to 1000m	2 x 1 mm²	17 AWG
Up to 1500m	2 x 1.5 mm²	16 AWG
Up to 2000m	2 x 2 mm²	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 OHMCM2L module (*[A], paragraph 3.6 - [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 Earth bar). Take care to link the interrupted shields in correspondence with the device connections (*[E]*).

5.8 OHMCMLAN internal module wiring

The screw terminals of the OHMCMLAN module (paragraph 3.8 - [F]) are not available for any type of connection. For future use

5.9 System Test

LXIL s.r.l. recommends that the entire system be checked completely at regular intervals.

For testing and maintenance procedures, refer to *capitolo 7 Commissioning*.

5.10 Replacement and disposal of used devices

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

Contact your local municipal offices for information regarding the disposal of used electronic devices.

Do not burn used electronic devices, or allow them to pollute the environment (countryside, rivers, etc.). Electronic devices must be disposed of in a safe environment-friendly way.

In order to avoid short-circuits, take all the necessary precautions when removing used batteries. Contact your local municipal offices for information regarding the disposal of batteries.

6 Configuration

6.1 Access levels

The control panel has 2 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.

This level allows building inhabitants to view information on the screen and signals on the LEDs, interact with the system (in accordance with Level 1) and scroll through the information by means of the buttons and touchscreen.

Level 2 This access level is for the system supervisors and authorized personnel who are adequately instructed in the configuration, commissioning and maintenance of the system.

Access requires the use of a key or entry of a valid access code with sufficient access rights.

Note: *The default access code is "00001".*

The control panel will return to level 1 if no buttons are pushed within 60 seconds.

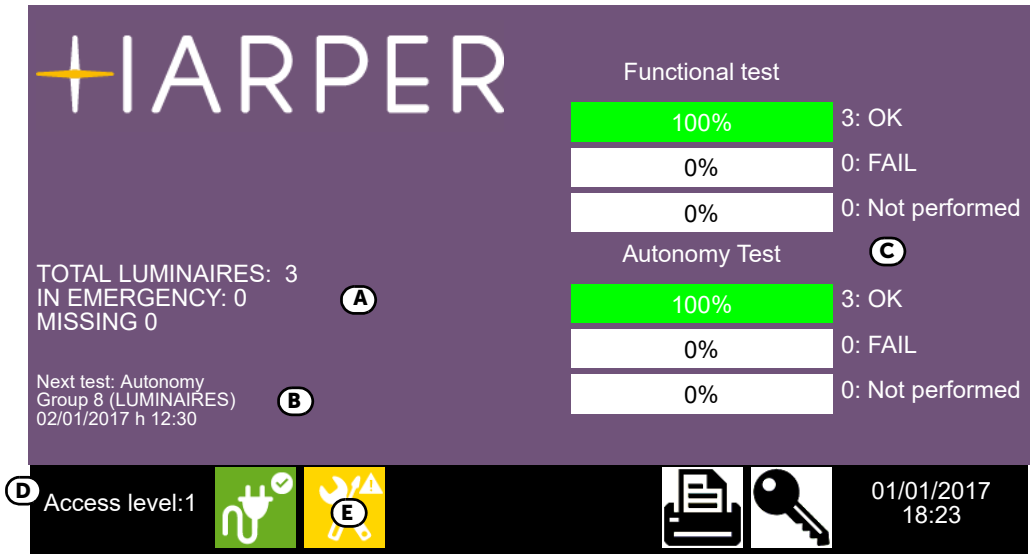
6.2 First power up

Once the installation and cabling procedures have been completed the system is ready for the initializing phase.

On first startup it will be necessary to select the system language.

The control panel screen will be as follows (for a detailed description of the display, refer to *paragraph 8.3 Display, home page*):

[A]	Harper system status
[B]	Next test information
[C]	Results of the last tests (functional and autonomy)
[D]	Status bar (always present) shows essential information regarding the system.
[E]	Configuration status icon (system configuration and faults)



In this condition the control panel has no acquired configuration, all the modules connected to the CAN drive bar have the same address and are not included in the configuration.

The configuration status icon on the status bar indicates a fault condition, due to the fact that modules have been detected but are not present in the configuration saved in the memory.

In order to configure the control panel it is necessary to work through the following procedure:

1. Access the configuration menu (*paragraph 6.3*)
2. Assign addresses to the system modules (*paragraph 6.4*)
3. Enroll the loop devices on each of the OHMCM2L modules, with the relative Faults search (*paragraph 6.5*)
4. Set the processed configuration (*paragraph 6.6*)
5. Check eventual signalling and search for faults (*paragraph 7.1*)
6. Set the date and time (*paragraph 6.8*)

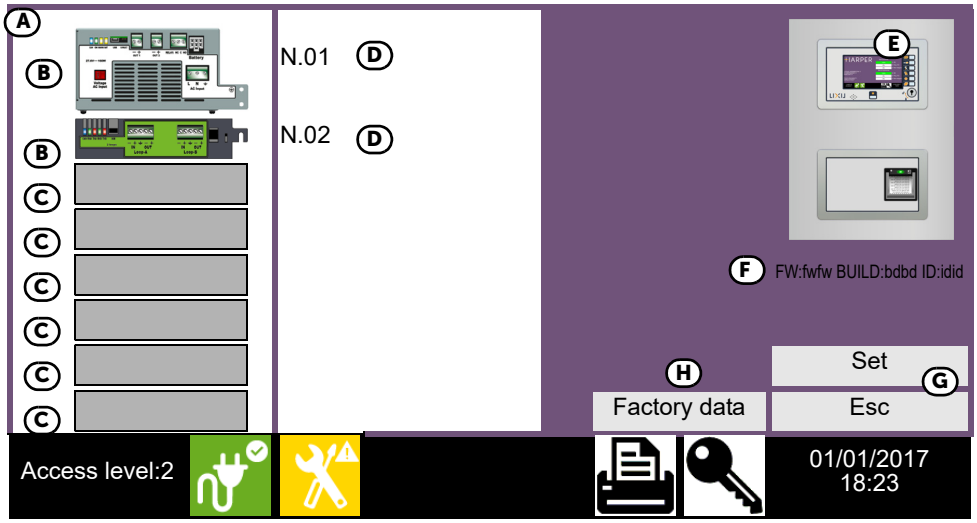
6.3 Accessing the configuration menu

In order to access the configuration menu press the **Configure** button on the right side of the display.

Entry of a valid access code will be requested.

Once the configuration menu has been accessed, the control panel screen will provide a map of the control panel and its parts.

[A]	Internal layout of the cabinet
[B]	Internal module detected
[C]	Position empty
[D]	Address of detected module
[E]	Map of the entire control panel
[F]	Control panel firmware revision
[G]	Buttons to carry out setting changes or to exit without saving
[H]	Factory data restore button



The installed OHM internal modules with their addresses are shown on the left ([A]).

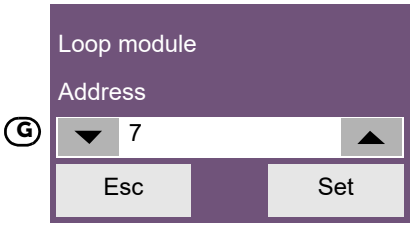
From this section you can access the configuration phase of each module by tapping on the icon which represents it.

6.4 OHM modules addressing

In order for the control panel to identify each module individually, it is necessary to assign an address to each one. It is possible to assign the same address to modules of different types, however, modules of the same type must have different addresses.

To assign an address to a module, you must first select it by tapping on the section it belongs to.

A window will open (*[G]*), select the desired address in the "Address" field, then tap on **Set**.



Note: *Addresses with values that exceed the maximum number of modules supported by the control panel are not valid.*

Following is a table containing the addresses allowed for each type:

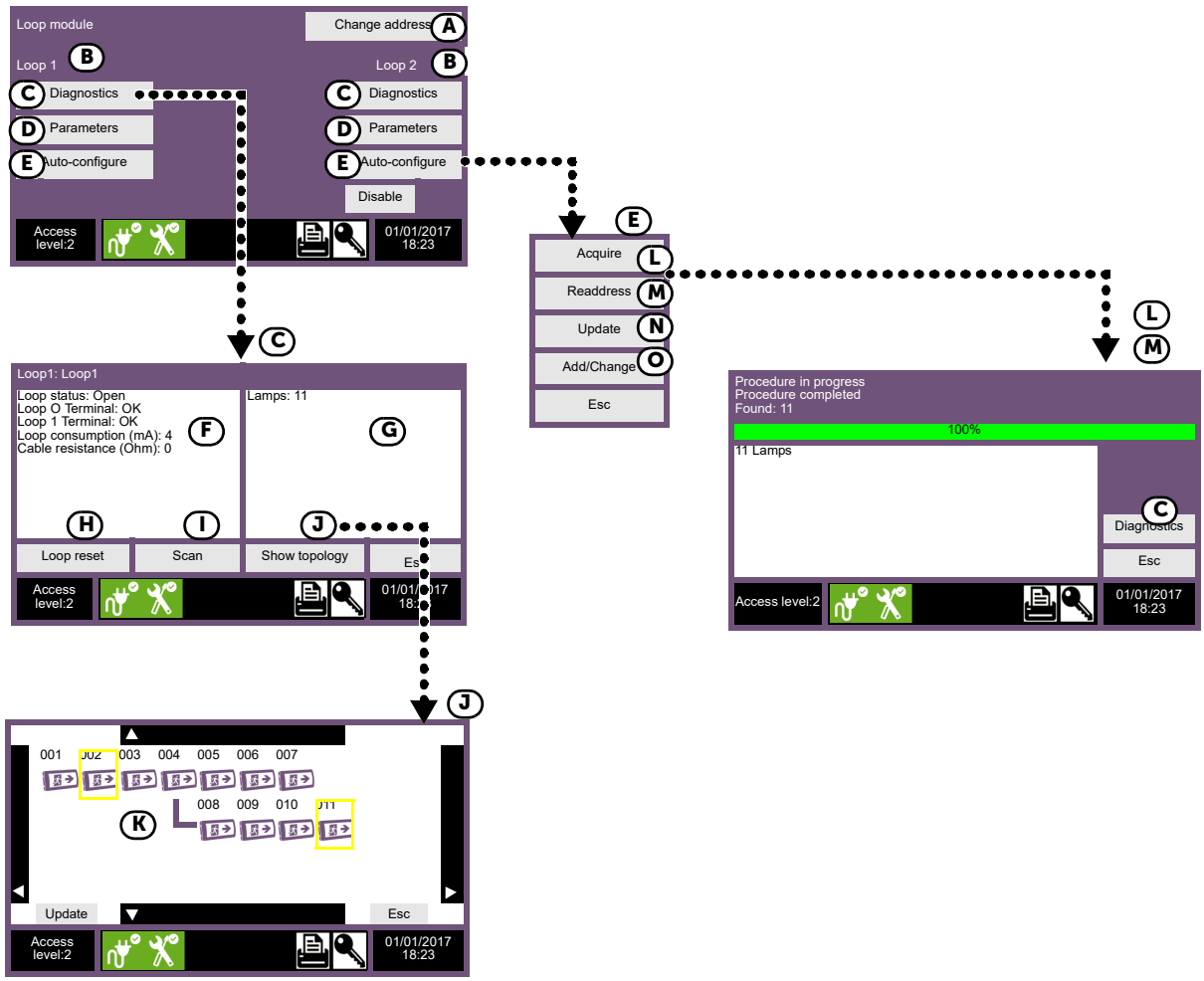
Module	Maximum number	Address	
		from	to
OHMCM24160	1	/	
OHMCM2L	7	1	7
OHMCMLAN	1	/	

On returning to the control-panel configuration section, the assigned address (*[D]*) will be shown at the side of the previously selected internal module.

6.5 Enrolling loop devices (OHMCM2L)

The operations required for the configuration of the OHMCM2L network modules involve the configuration of the devices connected to the loops.

Selection of the module from the internal map section of the cabinet (*paragraph 6.3 Accessing the configuration menu*, *[A]*) accesses the configuration section which, in addition to providing the change address button (at the top) also provides two identical sections for each of the two loops (connected to the Loop-A and Loop-B terminals). The present document describes the operations necessary for the configuration of a single loop, however, it is implicit that the operations be repeated for each of the two loops.



[A]	Change address	Button to access the section for the OHMCM2L module address assignment (*paragraph 6.4 OHM modules addressing*).
[B]	Sections containing the configuration menu of the single loops Section on the left for the loop connected to the Loop-A terminals, on the right for the Loop-B terminals.	

[C]	Diagnostics	Button to access the section for loop diagnosis.
[D]	Parameters	Provides a check box for the selection of the "**4 wires**" option. Press **OK** to confirm and exit.
[E]	Auto-configure	Button to access the automatic loop-configuration procedure.
[F]		Section which provides data regarding the electrical status of the loop circuit: **Loop status**: indicates whether the loop is a closed ring circuit or open **Loop O Terminal**: indicates eventual short-circuits or anomalies instantly on the "OUT" terminals **Loop I Terminal**: indicates eventual short-circuits or anomalies instantly on the "IN" terminals **Loop Consumption**: indicates the current absorbed by the loop **Cable resistance**: indicates the cable resistance value
[G]		Section which provides the number and type of devices currently in the configuration.
[H]	Loop reset	Button to rearm the loop and reassess the status. In the event of a "Loop open" fault, it will be necessary to tap on this button in order to check whether or not the interruption has been cleared.
[I]	Scan	Button to start a check on an already enrolled loop. The procedure verifies whether there are any connected devices which are not in the configuration, if devices have been lost or if there are any other anomalies. The result of the scan can be viewed in the section on the right (*[G]*).
[J]	Show topology	Button which passes to the map of the devices in the configuration of the enrolled loop. The display provides an exact diagram of the device connections. Any devices in fault status will be boxed in yellow.
[K]	Update	Button to refresh the screen by updating the alarm and fault indications of the devices shown (restored fault events will not be shown).
[L]	Acquire	Button to perform a scan which will search the loop for devices and their serial numbers and place those found in the configuration. A report of the devices will be shown when the scan terminates. The "Diagnostics" button will allow you to pass to the technical report, as shown in the previous points (*[C]*).
[M]	Readdress	Button to perform a scan which will search the loop for devices and their serial numbers and assign automatically an address to each of those found in order of their connection to the loop. This operation may take several minutes depending on the size and composition of the loop. A report of the devices will be shown when the scan terminates. The "Diagnostics" button will allow you to pass to the technical report, as shown in the previous points (*[C]*).
[N]	Update	Button to start the procedure which is to be performed after changes have been carried out on a previously configured loop (add, remove or replace devices). The control panel will provide a table with the previously acquired configuration in the columns on the left, and the newly detected configuration in the columns on the right. Positions in which changes have not been detected will be outlined in green. Changes will be indicated in white. This operation may take some minutes depending on the size and composition of the loop. The **OK** button will allow you to accept the new configuration which will become the configuration saved to the memory.
[O]	Add/Modify	Button to access a section which will allow you to select a specific address and change, remove or add a device manually. At the side of the loop device list are a series of buttons which will allow you to work on the device selected by a screen tap gesture, as follows: **Delete**: button to delete the selected device. **Add/Modify**: button to change or add a device manually. After completing the connection of a new device or replacing an old device, it is necessary to select the address involved then tap on the **Add/Modify** button. Then, it is necessary to enter the serial number of the new device. Once this operation has been completed the control panel will communicate with the new device. The appearance of the type of device detected is the confirmation of its acquisition.
	◀ ▶	Arrow buttons
	Esc	Button to step back

6.6 Acquiring the configuration

Once the previously described operations have been completed, it will be necessary to save the defined configuration to the control panel memory. This operation can be done via the configuration template, by means of the "**Set**" button (*paragraph 6.3 - [G]*).

A progress bar will confirm that the data saving process is running.

Once this operation has been completed and valid addresses have been assigned to all the devices, the configuration status icon will turn green. Any successive changes to the hardware configuration (for example, the loss of a module or addition of a new module) will turn the icon yellow to signal that the control panel configuration is different to the one saved to the memory.

6.7 Factory data

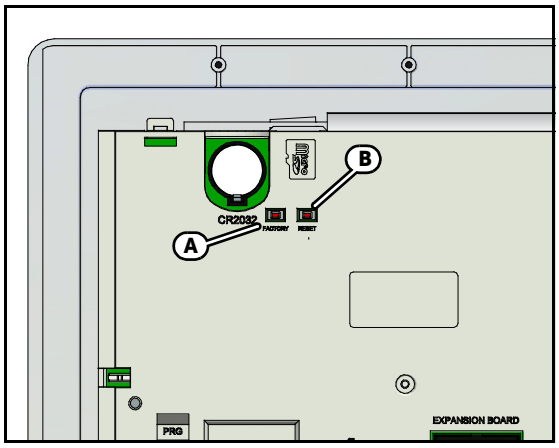
Reset of default factory data deletes all configuration settings.

It is possible to reset the factory default settings by means of:

- the **Factory data** button from the configuration menu (*paragraph 6.3 - [H]*)
- the buttons on the back of the CPU front-plate module. Press and hold the **Factory** button [A] and press and release the **Reset** button [B].

A template will be shown where you can choose the control panel language.

A progress bar will confirm the reset of factory data.



6.8 Setting the date and time

When setting this parameter, it is necessary to tap on the respective field in the bottom right-hand corner of the template, enter a valid access code then, by means of the scroll keys, navigate through the programming fields and set the desired date and time.

7 Commissioning

The commissioning phase is a set of tests and inspections which are necessary to ensure the full efficiency and proper functioning of the system as specified in the system project. This phase is essential and must be performed in a scrupulous way in accordance the regulatory requirements of the country where the system is installed and in full respect of the recommendations in the following section.

Ensure the test and inspection procedures are performed only after checking the safety of the system and after having verified that any device activations controlled by the system will not cause any conditions of danger, and that all the building occupants who can be reached by the audible and visual signalling have been informed.

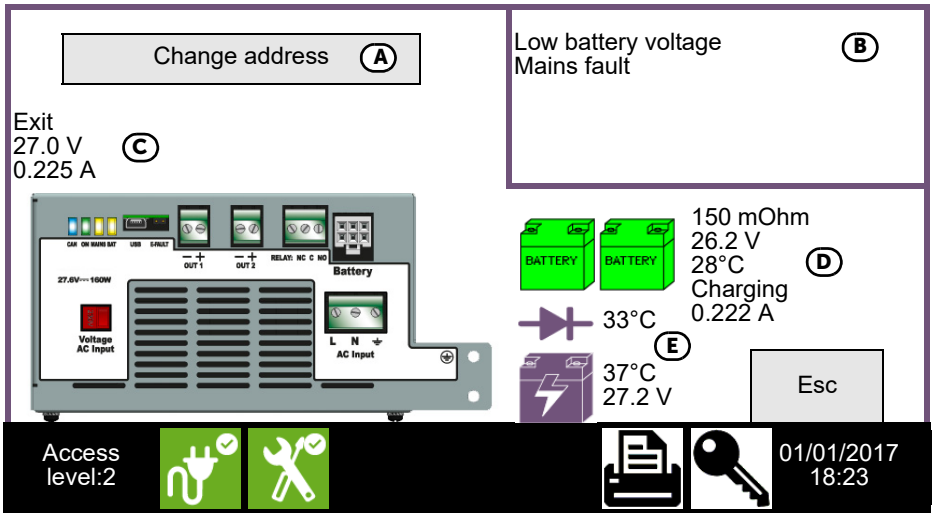
Ensure that the person who is responsible for the security of the building where the tests and inspections are to be carried out has taken countermeasures to avoid any situations of panic or distress for the building occupants.

7.1 Testing the Control panel

It is necessary to check the functionality status of the frontplate by first checking the information supplied on the screen and LEDs and then by inspecting the efficiency of the command devices (user-interface buttons, access keys, etc.):

- Check the functionality status of the screen and ensure that the information provided is clear.
- Ensure that the descriptions of the various zones, points and system elements entered during the data-entry phase are correct, and that the information provided on the screen clearly indicates any detectable conditions of danger.
- Check that there are no fault or anomaly signals of any type present. In the event of such indications, proceed with the removal of the causes of faults and anomalies.
- Check the efficiency of the front-plate buttons and keys.
- Check the status of the power-supply sources (mains and batteries) and the consumption conditions of the control panel. The power-supply parameters can be checked by accessing the configuration menu (refer to *paragraph 6.3 Accessing the configuration menu*) and selecting the configured OHMCM24160 module.
  The sections show the voltages, currents and temperatures of the various elements:

[A]	Button for addressing the module
[B]	Section containing a list of current faults
[C]	Voltage and output current of the OHMCM24160 module
[D]	Battery parameters (internal resistance, voltage, status and current)
[E]	Internal temperature and battery charge voltages



7.1.1 Testing the wiring (Bus monitoring)

The wiring of the devices connected to the Harper control panel loops can be checked at any time. It is of particular importance during the first configuration oh the system.

To check the correct wiring of all emergency devices connected to loops of the Harper control panel, first press the **Commands** button then the **Bus monitor** button.

Press **ON** to access this function.

This activation stops any loop communication on the loop and it sends a monitoring broadcast command every 2 seconds. At this point the green and red LEDs on all the correctly cabled lamps will blink in turn, in order to allow you to check that the cabling has been completed properly (correct polarity, no cable interruption, etc.).

Once the verification operations have been completed correctly, the enrolling and/or addressing procedures can be started (*paragraph 6.5 Enrolling loop devices (OHMCM2L)*)

If the bus monitor function is active, the home page will flash the message:

“BUS MONITOR RUNNING”

7.1.2 Testing of devices and manual activations

All the installed emergency devices must be tested during the commissioning phase. It is necessary to check the command response of each device and the accuracy of the descriptions provided by the control panel.

This can be done by means of the control panel Test function which can be reached by first pressing the **Commands** button then the **Test** button.

The functional test can be carried out on the entire system or on a previously programmed group (refer to *paragraph 9.2*).

The activation of each test operation will be saved to the events log together with the test results, in order allow the operator to verify the congruity of the various indications.

7.2 Maintenance

For correct and efficient management of the system it is necessary to carry out periodic maintenance in accordance with the regulatory requirements of the country where the system is installed and in full respect of the recommendations contained in this section.

For the frequency of the maintenance operations it is necessary to adhere to the applicable regulations. However, the manufacturer recommends that tests are performed on each point, component and element of the system at least once a year.

Work through the steps for control-panel test procedure as described in the commissioning section (*paragraph 7.1 Testing the Control panel*).

Additionally, consult the events log and check for the presence of fault conditions which must be investigated.

8 User interface

8.1 Frontplate

[A]	Touchscreen display
[B]	Function buttons
[C]	Access-key slot

Function buttons are available at the side of and below the display.

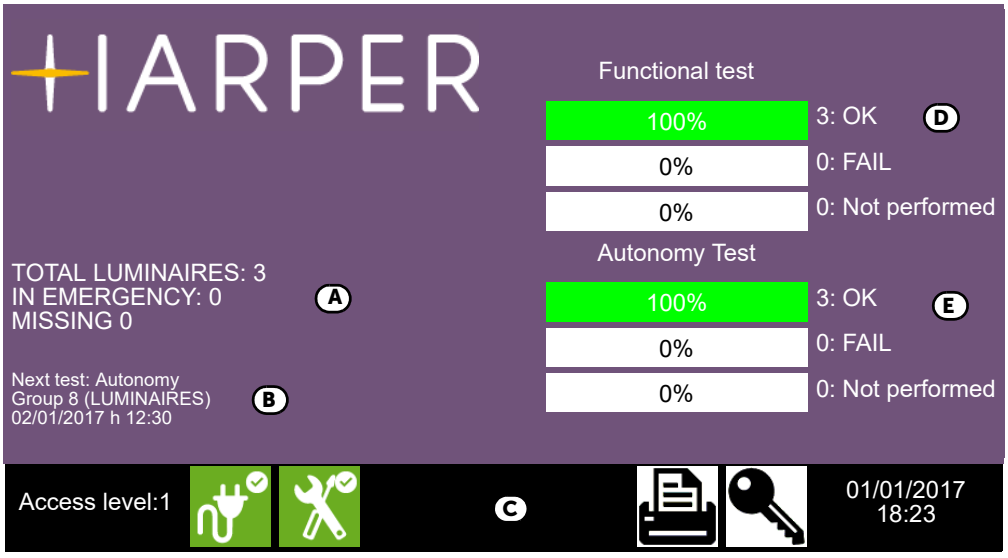
Key

The key is to be inserted into the indicated keyswitch (*[C]*), it permits level 1 (public level) to pass to level 2 (supervisor level). When turned clockwise the key will generate a pulse which places the control panel in level 2 status.

8.2 Function buttons

Icon	Call point	Function
	**Loops**	Allows access to the loops viewing menu (*paragraph 9.1*)
	**Commands**	Allows access to commands menu (*paragraph 9.2*)
	**Configuration**	Allows access to configuration menu (*capitolo 6 Configuration*)
	**Events log**	Allows access to events log (*paragraph 9.3 View events log*)
	**Web**	Allows access to the parameters configuration menu for the Ethernet connection (IP, Netmask and Gateway).
	**Groups**	Allows access to the section for the viewing and configuration of the groups (*paragraph 9.4 Group management*).
	**Home page**	Allows access to the home page and exit from the open section without saving any changes.

8.3 Display, home page



[A]	Harper system status	Total devices	Total number of lamps found after the last enroll operation (refer to *paragraph 6.5*).
		In emergency	Number of devices (as part of the total number indicated above) which, in real-time, are in emergency status
		Missing	Number of devices (as part of the total number indicated above) which, in real-time, are not communicating on the loop
[B]	Next test	Information relating to the next programmed test (refer to *paragraph 9.4 Group management*): test type (functional or autonomy), group of lamps, date and time when the test will be carried out.	

[C]	Status Bar	Refer to *paragraph 8.4*	
[D]	System functional test status.	Refer to *paragraph 9.2.1 Test*	
		1° progress bar	The bar progresses in green and indicates the percentage of the lamps (as part of the total number indicated above) that passed the functional test ("OK"). The number on the right indicates the exact number of these lamps.
		2° progress bar	The bar progresses in red and indicates the percentage of the lamps (as part of the total number indicated above) that failed the functional test ("FAIL"). The number on the right indicates the exact number of these lamps.
		3° progress bar	The bar progresses in gray and indicates the percentage of the lamps (as part of the total number indicated above) that have never undergone a functional test. The number on the right indicates the exact number of these lamps.
[E]	System autonomy test status.	Refer to *paragraph 9.2.1 Test*	
		1° progress bar	The bar progresses in green and indicates the percentage of the lamps (as part of the total number indicated above) that passed the autonomy test ("OK"). The number on the right indicates the exact number of these lamps.
		2° progress bar	The bar progresses in red and indicates the percentage of the lamps (as part of the total number indicated above) that failed the autonomy test ("FAIL"). The number on the right indicates the exact number of these lamps.
		3° progress bar	The bar progresses in gray and indicates the percentage of the lamps (as part of the total number indicated above) that have never undergone an autonomy test. The number on the right indicates the exact number of these lamps.

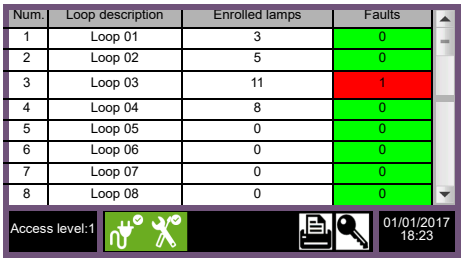
8.4 Status bar

Icon		Function
Access level:1		Selection of this area will allow you to enter a code and change the current user-access level. 1 = Public level (no code entry) 2 = Installer level (turn key or code entry) The control panel will return to level 1 if no buttons are pressed within 60 seconds.
Mains network		Mains power-supply functioning properly
		Indicates that the power-supply module has detected mains failure
Configuration status		No hardware anomalies on the control panel
		A hardware problem has been detected inside the control panel (module malfunction).
Printer		Button which allows the access to the section for the use of the thermal printer (*paragraph 9.5 Managing the printer*)
Modify code		Button which allows the access to the section which allows changes to the Installer access code (level 2). **Note:** *The default access code is "00001".*
01/01/2017 18:23		Indicates the current date and time, selection of this area accesses the date and time setting section (level 2 access required).

9 Usage

9.1 Loops

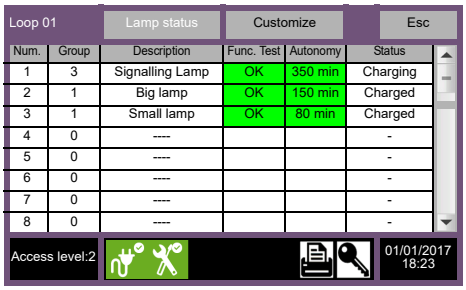
The **Loop** button display and provides access to the loop management page.



Here you can select and view a loop directly on the display by simply tapping on the corresponding line.

The table shows the following information for each loop:

- **Num.**, which is the logic address (I.D.)
- Loop description
- Total number of lamps belonging to the loop
- Number of ongoing faults. the colour of the box changes depending on the status:
  - green, no faults
  - red, ongoing faults

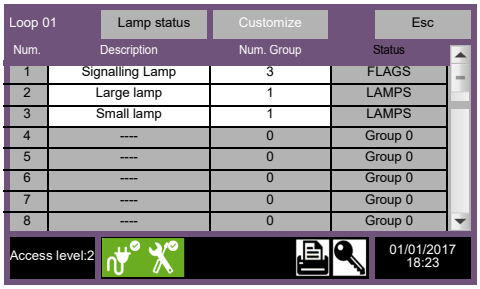


After accessing a loop (level 2 access required) you will find a table that lists in logic address order all the emergency lamps belonging to it.

The table shows the following details for each lamp:

- **Num.**, which is the logic address (I.D.)
- Logic group assigned
- Lamp description
- Last functional test result
- Last autonomy test result, duration time in minutes

  The colour of the boxes changes depending on the test result:
  - green, test with positive result
  - red, test with negative result
  - gray, test not defined
- Lamp status notification



The **Customize** button accesses the following table:

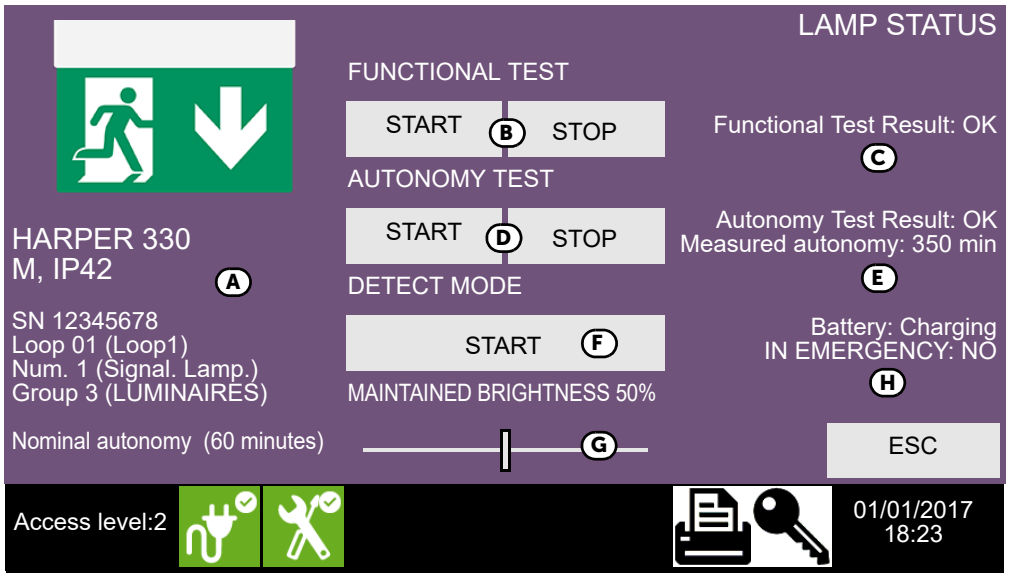
Here you can customize the description of each device and the assigned group by tapping the box of the parameter you intend to change.

You can use the buttons on the display for editing purposes.

9.1.1 Lamp status

Once access to the loop has been obtained, it is possible to view the status of each individual lamp by simply tapping on the corresponding line.

[A]	Lamp parameters
[B]	Functional test commands
[C]	Functional test result
[D]	Autonomy test commands
[E]	Autonomy test result
[F]	Detect (Locate) button
[G]	Brightness bar (maintained mode)
[H]	Lamp status info



The left column (*[A]*) shows factory data such as the lamp model, power, type (Maintained or Non-Maintained), IP grade, serial number, nominal autonomy, and also system parameters such as the loop it belongs to, ID logic address and the assigned group.

The centre section contains the command template: the “start” and “stop” test buttons, the detect (locate) button, and the lamp brightness adjustment bar (available only for maintained type devices).

The section on the right contains information regarding the status of the lamp such as the last functional and autonomy tests, the battery status and emergency status.

The **ESC** button allows you to step back to the selected loop.

9.2 Commands

The **Commands** button accesses a section containing the access buttons to the following commands (requires use of the keyswitch or valid code entry).

- **Test**
- **Rest Mode**
- **Detect Mode (Locate)**
- **BUS Monitor**
- **Brightness**

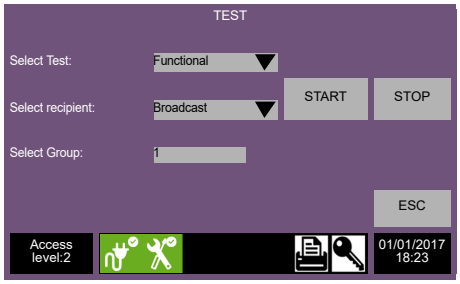
9.2.1 Test

Section where you can start a functional or autonomy test for all the system or for a group of lamps (level 2 access required).

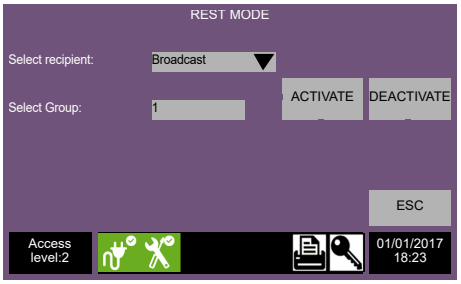
The first check box is for the selection of the test type.

The second check box is for the selection of the command recipient, either the entire system or a group. If a group is selected, the number of the group must be indicated in the field below.

The **START** and **STOP** buttons start and stop the test for all the lamps in the entire system or in the selected group. It is to be noted that the Stop command will affect only the devices in test mode.



9.2.2 Rest mode



Section where you can send a bypass command to all the lamps in the system or to a specific group (level 2 access required).

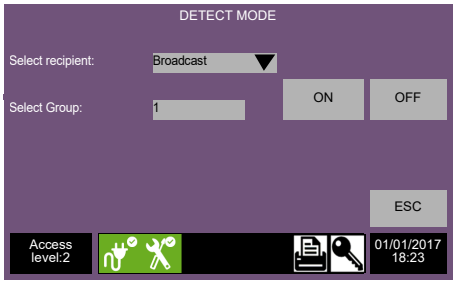
In the event of an emergency (e.g. Blackout), activation of this command (**ACTIVATE** button) inhibits the operating capability of the lamp (the lamp will switch off). However, the inhibited status will be held only for the duration of the ongoing emergency, as the lamp is capable of resetting itself when the mains supply restores.

The check boxes allow you to select the entire system or a single group as the command recipient.

This command has no effect on the lamps that are not in emergency status.

The **DEACTIVATE** button switches back on devices in emergency status with rest mode activated.

9.2.3 Detect Mode (Locate)



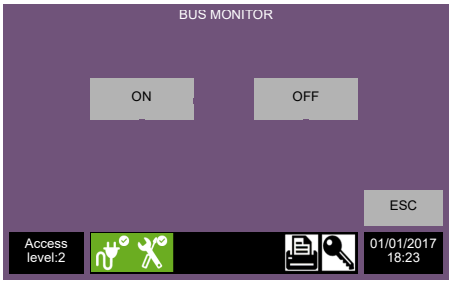
Section where you can send a detect device command in order to locate devices in the entire system or to locate a single lamp (level 2 access required).

Activation of this command (**ON** button) starts an alternate blinking phase on the green and red indicator LEDs, present on each lamp, in order to help you locate and identify them.

The **OFF** button switches off this function, if activated.

The check boxes allow you to select the entire system or a single group as the command recipient.

9.2.4 BUS Monitor



Section where you can send a command, at any moment, to verify the correct cabling of the devices connected to the Harper control panel loop (level 2 access required).

This command is important during the initial configuration phase and especially during the construction and cabling of the system. It is not necessary to use this command to enroll and/or address the lamps on the various loops.

The BUS monitor can be activated only in broadcast mode (entire system).

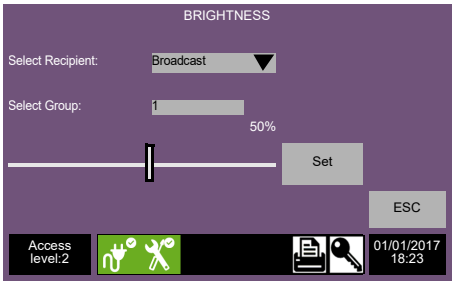
Activation (**ON** button) stops any other form of communication on the bus and generates a broadcast monitoring command every 2 seconds. At this point the green and red LEDs on all the correctly cabled lamps will blink in turn, in order to allow you to check that the cabling has been completed properly (correct polarity, no cable interruption, etc.).

After checking the cabling, you can then carry out the enrolling and/or addressing procedures.

If the bus monitor function is active, the home page will flash the message:

“BUS MONITOR RUNNING”

9.2.5 Brightness



Section where you can dim the brightness of lamps operating in maintained mode (access level 2 required).

The check boxes allow you to select the entire system or a single group as the command recipient.

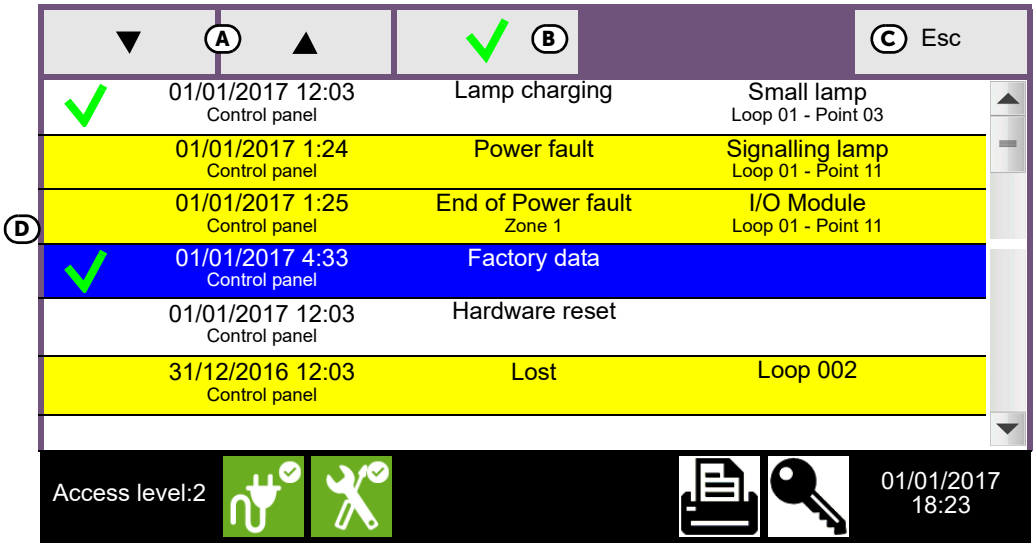
The brightness is set by means of the percentage bar and the **Set** button.

“0%” completely switches off the maintained function on the devices the command is sent to.

9.3 View events log

The **Log** button (accessible to level 1 users) accesses a template which contains all the events saved to the memory.

[A]	Arrow buttons to scroll through the events list
[B]	Button to mark the selected event
[C]	Button to exit the open section
[D]	Events list



Each line in the list *[D]* represents an event which has been saved to the log.

The log shows the date and time of each event, the control panel (to the left), the event description (in the center) and the event details (to the right).

Tapping on an event with details (access level 2 required) will allow you to mark the event with the respective button (*[B]*).

It is possible to distinguish the event type by the background colour of the line:

- White, indicates events relating to normal operating status
- Yellow, indicates events relating to fault status
- Blue, indicates an event selected by tapping on the screen

9.4 Group management

The Harper control panel allows the subdivision of the system in as many as 80 logic groups.

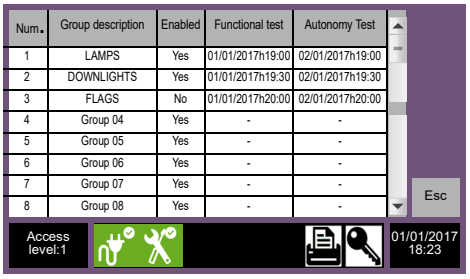
The assignment of a single lamp to a group can be carried out via the **Customize** section. This section can be reached by pressing the **Loop** button and then by selecting the required loop (refer to *paragraph 9.1 - Loops*).

The **Group** button (accessible to level 1 users) accesses a section where you can view all the lamp groups configured in the system.

The table shows the groups in lines, showing for each of them:

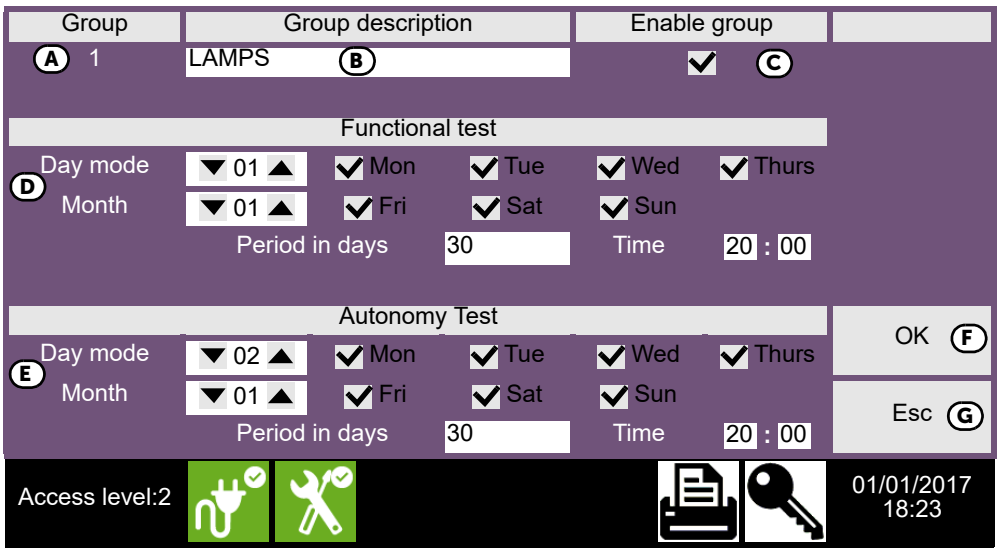
- number
- description
- enabled status
- date and time of the next programmed functional test
- date and time of the next programmed autonomy test

Tapping on one of the lines on the table accesses the programming phase of the selected group.



A section will open where you can view the parameters of the group and change the programmed data (requires entry of a valid code).

[A]	Group number
[B]	Group description
[C]	Check box for the enablement of the group
[D]	Functional test parameters
[E]	Autonomy test parameters
[F]	Button to exit and save changes
[G]	Button to exit without saving changes



At the top of this screen it is possible to change the group description by tapping on the respective field (*[B]*) and also change the group enablement status (*[C]*). A disabled group will be unable to schedule tests of any kind.

Lower down the screen it is possible to view two sections relating to the programming of the functional tests (*[D]*) and the autonomy tests (*[E]*). Each section contains the following parameters:

- The day of the month of the test (a zero setting eliminates this constraint)
- The month of the year of the test (a zero setting eliminates this constraint)
- The days of the week when the test can be carried out
- The interval in days, in other words the minimum time that must pass between tests
- The time the test will start

In order to make the programmed data effective you must press the **OK** button.

You can check the result of the programming calculation from the date of the next test on the group table.

9.5 Managing the printer

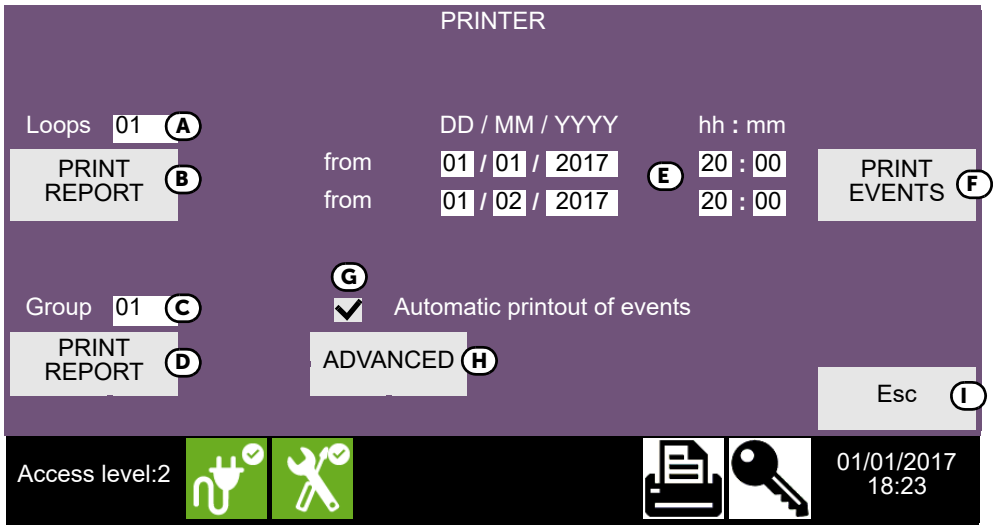
Tapping on this button on the bar at the bottom of the display accesses the management section of the thermal printer on the Harper control panel in use; both for the OHMPRN printer on board the Harper Manager control panel, and the OHMXLPRN frontplate module mounted to the Harper Manager XL control panel.

If the control panel is not equipped with a printer, this section will show the following message:

“NO PRINTER INSTALLED”

This section can be accessed only after entry of a valid code.

[A]	Number of the selected group
[B]	Button to start the report printout of the selected loop
[C]	Number of the selected group
[D]	Button to start the report printout of the selected group
[E]	Check boxes for the dates and times of the intervals
[F]	Button to start the printout of the events that occurred during the selected interval
[G]	Check box for the enablement of the automatic printout of the selected events
[H]	Button to access the section for the selection of the events for the automatic printout
[I]	Exit button



To the left you will find the buttons that start the printout of a report relating to an entire loop or entire logic group, selected in the respective check boxes.

On the right you will find the button that starts the printout of the events recorded in the events log (*[F]*), the recorded events are those which occurred during the programmed interval *([E]*).

The check box (*[G]*) enables the automatic printout of the events as they occur.

The **ADVANCED** button accesses a page that allows you to select and filter the events to be printed, both automatically and on request by means of the **PRINT EVENTS** button (*[F]*).

In this section, tapping on the line enables the respective event. Press **OK** to save changes.

9.5.1 The printer report

The printer report, whether for a loop or a group, provides the following information, in accordance with the scheme:

1. Heading with the loop or group number	**Loop/Group REPORT**
2. Date and time of the report	**DD/MM/YYYY hh:mm**
3. Information relating to each pertaining lamp: - description, ID number, serial number - model, nominal autonomy, loop and assigned group - Result, date and time of the last functional test - Result, date and time of the last autonomy test	**"lamp" Num.nn SN SNSNSNSN** **HARPER xyz hh LOOP ll Group gg** **Func. Test OK dd/mm/yyyy hh:mm** **Autonomy OK (ttt min) dd/mm/yyyy hh:mm**
4. Total number of lamps assigned to the loop or group	**TOTAL DEVICES: tot**

System test

Inim Electronics s.r.l. recommends that the entire system be checked completely at regular intervals.

For the instructions for system testing and maintenance refer to system configuration, commissioning and maintenance chapter.

Replacement and disposal of used devices

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

Contact your local municipal offices for information regarding the disposal of used electronic devices.

Do not burn used electronic devices, or allow them to pollute the environment (countryside, rivers, etc.). Electronic devices must be disposed of in a safe environment-friendly way.

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

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