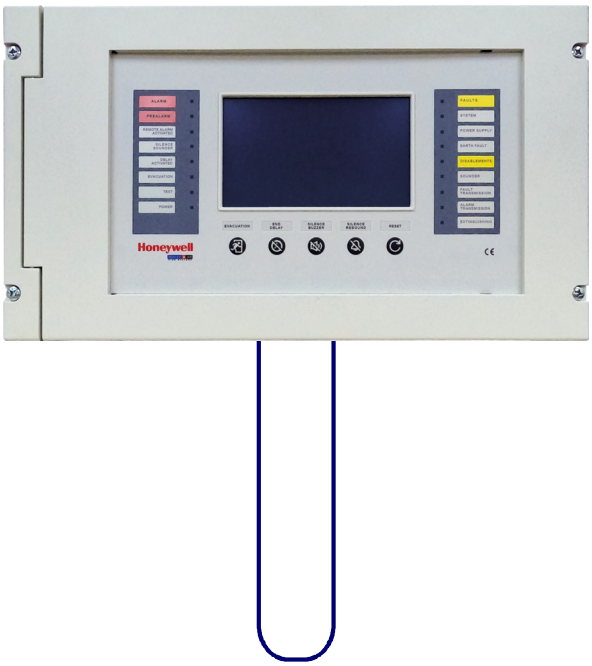
Honeywell
MORLEY IAS
FIRE SYSTEMS
Fire Safety



MA-1000

MA-1000

Installation Manual

M-167.1-MA1000-EN / 02.2023

Intended purpose

This product may be used only for the applications outlined in the catalogue and in the technical description, and only in conjunction with the recommended and approved external devices and components.
This documentation contains registered and unregistered trademarks. All trademarks are the property of the respective owners. The use of this documentation does not grant you a licence or any other right to use any name, logo or label referred to or depicted herein.
This documentation is subject to the copyright of Honeywell. The content must not be copied, published, modified, distributed, transmitted, sold or changed without the express prior written permission of Honeywell.
The information contained in this documentation is provided without warranty.

Safety-related user information

This manual includes information required for the proper use of the products described.

In order to ensure correct and safe operation of the product, all guidelines concerning its transport, storage, installation, and mounting must be observed. This includes taking the necessary care when operating the product.

The term 'qualified personnel' in the context of the safety information included in this manual or on the product itself designates:

- project engineers who are familiar with the safety guidelines concerning fire alarm and extinguishing systems.
- trained service engineers who are familiar with the components of fire alarm and extinguishing systems and the information on their operation as included in this manual.
- trained installation or service personnel with the necessary qualifications for carrying out repairs on fire alarm and extinguishing systems, or who are authorised to operate, earth and label electrical circuits and/or safety equipment/systems.

Symbols

The following information is provided in the interests of personal safety and to prevent damage to the product described in this manual and all equipment connected to it.
Safety information and warnings to prevent hazards endangering the life and health of users and maintenance personnel, as well as causing damage to the equipment itself, are indicated by the following pictograms. Within the context of this manual, these pictograms have the following meanings:

Warning - designates risks to person and/or machine. Non-compliance will result in risks to person and/or machine. The level of risk is indicated by the word of warning.

Note - important information on a topic or a procedure and other important information.

Standards and guidelines - observe configuration and commissioning information in accordance with the national and local requirements.

Dismantling

In accordance with Directive 2012/19/EU (WEEE), after being dismantled, electrical and electronic equipment is taken back by the manufacturer for proper disposal.

Contents

1 GENERAL / APPLICATION

The fire alarm system (FAS) can be very useful for providing a prompt warning of any dangerous events such as fires. In some cases, it can automatically manage events (transmit messages for room evacuation, automatic fire-extinguishing, CCTV system interface, access route or door blockage, automatic warning to authorities, etc.), but it does not ensure protection against damage to property.
In addition, systems may not operate properly if they are not installed and maintained according to the manufacturer's instructions.
This installation manual forms part of the FAS and should be kept in an accessible location in the immediate vicinity of the fire alarm control panel (FACP).
The information and technical specifications detailed in this documentation are designed to enable a professional and experienced fire alarm system installer with the corresponding knowledge and skills generally associated with professional fire alarm system installers to quickly assemble and install the FACP. These instructions must be read through carefully and understood before any work is commenced. Proper assembly and installation, as well as safe working conditions, require compliance with all specified safety and operating information in these instructions, as well as a correctly planned FAS that conforms to the applicable standards and guidelines.
All other applicable documentation must be taken into consideration when designing, commissioning and servicing the fire alarm system.

Do not try to use the control unit and connected devices without reading this manual!

1.1 Associated Documents

Part No.	Description
M-167.1-MA1000-EN	Installation Manual MA-1000
M-167.1-MA2000-EN	Installation Manual MA-2000
M-167.1-MA8000-EN	Installation Manual MA-8000
M-167.2-SERIE-MA-EN	Commissioning Manual MA-1000, MA-2000, MA-8000
M-167.3-SERIE-MA-EN	Operation Manual MA-1000, MA-2000, MA-8000
M-167.4-SERIE-MA-EN	Quick Start Guide MA-1000, MA-2000, MA-8000
M-167.5-SERIE-MA-EN	Configuration Tool MA-1000, MA-2000, MA-8000
M-167.6-MA-LCD7-EN	Operating and Installation Manual MA-LCD7 Repeater
M-167.7-MA-CS-EN	Cyber Security MA-1000, MA-2000, MA-8000
M-167.8-SERIE-MA-EN	Information sheet Spare parts

1.2 Precautions

- These instructions contain procedures to be followed in order to avoid damage to equipment. It is assumed that the user of this manual has completed the relevant training courses and understands the applicable rules that are in force.
- The system and all its components must be installed in an environment with the following conditions:
  - Temperature: -5°C ... +40°C.
  - Humidity: 10 % ... 95 % (non-condensing).
- Peripheral devices (sensors, etc.) which are not compatible with the control unit may cause damage to the control unit or cause the system to malfunction at any time. It is therefore essential to only use material which is guaranteed by Honeywell and is compatible with its control units.
- Please consult Honeywell Technical Service if in any doubt.

- This system, like all solid-state components, may be damaged by induced electrostatic voltages: handle the boards by the edges and avoid touching the electronic components.
- In any case, appropriate earthing ensures a reduction in sensitivity to disturbances.
- Please consult Honeywell Technical Service if you cannot solve installation problems.
- No electronic system will operate if it is not supplied with power.
- If the mains power supply fails, the system will still operate using battery power, but only for a limited period.
- During the system planning phase, consider the authority required to ensure the power supply and batteries are appropriately dimensioned.
- Skilled personnel must periodically check the condition of batteries.
- Disconnect the MAINS and the batteries BEFORE removing or inserting any board.
- Disconnect ALL power supply sources from the control unit BEFORE performing any servicing.
- The control unit and the connected devices (sensors, modules, repeaters, etc.) may be damaged if a new board is inserted or removed, or if the powered cables are connected.
- The most common cause of malfunctions is inappropriate maintenance.
- Pay particular attention to these aspects from the start of the system planning phase; this will facilitate future servicing and will reduce cost.

0370

CE

EN 54-2:1997 + A1:2006
EN 54-4:1997 + A2: 2006

0370-CPR-6094

This panel is marked with the CE 0370 label to comply with the following European Directives:
Construction Products Directive 89/106/EEC including EMC Directive 2014/30/EU and LVD Directive 2014/35/EU and certified as EN 54-2 and EN 54-4.

0359

UK CA

This panel is marked with the UKCA 0359 label to comply with the UKCA guidelines for the UK market of its standards.

NATIONAL STANDARDS

This device must be installed and must operate in accordance with these instructions and to the rules and standards in force in the installation place.

1.3 EN 54: Information

EN54-2 13.7
Max 512
Sensors / Manual Call Points per microprocessor.

MA-1000 control unit includes a single loop which has a maximum capacity of 99 detectors and 99 modules.
If this function is not appropriately used, it can contravene the EN 54-2 requirements.
This limit includes the possible conventional sensors and inputs connected to the system with zone modules.
Therefore, check the number of installed devices and ensure they are in conformity with the rule.

- This fire detection control unit is in accordance with the requirements of EN 54-2 and EN 54-4 standards.
  In addition to the basic EN 54 requirements, the control unit conforms to the following optional operation requirements.

Optional Functions	EN 54-2 reference
Output to fire alarm devices	7.8
Output to fire protection equipment	7.10
Fault monitoring of fire protection equipment	7.10
Delays to outputs	7.11
Dependencies on more than one alarm signal	7.12 (type C)
Fault signals from point	8.3
Total loss of power supply	8.4
Disablement of addressable points	9.5
Test Condition	10
Indication of the test condition	10.2
Indication of zones in the test state	10.3

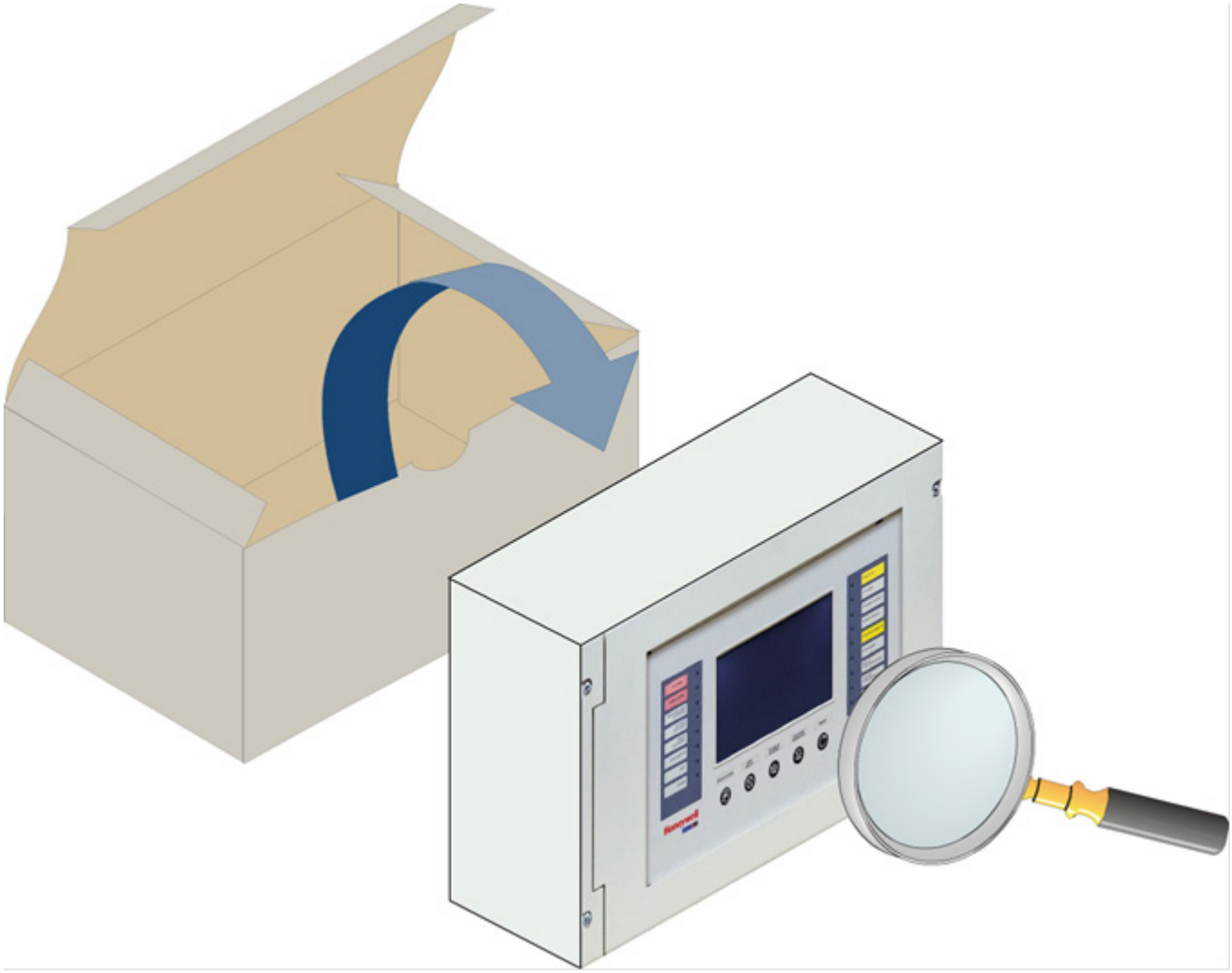
- The power supply section of the MA-1000 control unit conforms to the following EN 54-4 requirements.

Function	EN 54-4 reference
Power supply from main source	5.1
Power supply from battery source in standby	5.2
Re-charging and check of the battery source	5.3
Power supply fault detection and signalling	5.4

Additional and updated Informations
The described features, specifications and product related informations in this manual correspond to the date of issue (refer to date on the front page) and may differ due to modifications and/or amended Standards and Regulations of the System design, Installation and Commissioning.
Updates and amendments are available via the Morley-IAS technical homepage.

2 TRANSPORT DAMAGE INSPECTION

Please check all of the packaging and components for damage before commencing the assembly and installation work. Do not assemble or install visibly damaged modules and components!



Danger – Electrical shock!
Remove all power from the FACP before carrying out any installation work!

ESD protection
While handling electronic assemblies, the necessary precautions against electrostatic discharge must be taken.

3 GENERAL DESCRIPTION

MA-1000 control unit is a fire detection control unit manufactured in conformity with the EN 54-2 and EN 54-4 standards.

Technical features:
Multi-microprocessor system with 7" / 17,78 cm TFT display (800 x 480 with backlit), 256 colors touchscreen with keyboard simulation to program and configure the system and the following specific functions:
End Delay, Silence Buzzer, Silence / Resound, Reset, Evacuation.

Detection LINES:
- 1 analogue loop programmable to closed or open loop for the connection of the field devices.
- Each loop provides address for 99 detectors + 99 input and output modules with Honeywell protocol.

POWER SUPPLY:
- Input: 100 ... 240 V AC, 50 / 60 Hz
- Voltage 27,6 V DC / 4 A total
- Battery charger 27,5 V DC – 0,54 A (with temperature compensation)
- User output:
  28 V DC (+ 3 % +/ - 18 %) 1 A, on board to power external loads such as loads.
  I max A 1,54 A
  I max B 1,62 A
  I min 102,7 mA
- Fuse 230 V AC, 3,15 A

OUTPUTS:
- 1 Supervised Sounder Output (EOL 47 KΩ or Diode)
- 1 General Alarm Output with volt-free / potential-free contacts and supervised Output (EOL 47KΩ or Diode)
- 1 General Fault Output with volt-free / potential-free contacts
- 2 Optional outputs with volt-free / potential-free contacts and supervised Output (EOL 47 KΩ or Diode)

Mechanics

The control unit mechanics is suitable for wall installations.
For cabinet sizes refer to the “MA-1000 dimensions”
- Protection grade: IP 30
- Operation temperature: -5 °C ... +40 °C
- Storage temperature: -10 °C ... +50 °C
- Weight: 2 Kg

Main Functions
- 3 passcode levels (Operator - Maintenance – Configuration)
- 4 total access levels in conformity with the EN 54 standards
- 40 zonal indicators on screen display
- Programmable text: Point description up to 32 characters and Zone description up to 32 characters
- 2000 physical zones, 800 logical equation, 400 logical groups (stand-alone)
- CBE Control Equations (Control-by event) for activation with logical operators (and, or etc.)
- History Event file with the last 10.000 events in non-volatile memory
- Real time clock
- Line self-programming with automatic recognition of the type of the connected devices
- Double address detection
- Decision algorithms for the alarm and fault criteria
- Automatic sensitivity changes, Day/Night mode
- Contaminated detector notification
- Programmable alarm threshold for sensors
- Pre-defined software function programming for the various devices used
- Walk-Test function for zones

4 ASSEMBLY AND INSTALLATION INFORMATION

The function of the FACP depends on the country-specific version of the operating system software used for the panel and the customer data programming.

- Installation and commissioning must only be carried out by a qualified electrician!
- The fire alarm control panel may only be installed in dry, clean, and adequately illuminated areas with restricted access.
- The FACP must be mounted to an even mounting surface using suitable mounting material (screws + anchors) and without creating any mechanical tension. The FACP may be operated only when it has been properly mounted to a wall or mounting surface of sufficient load-bearing capacity.
- Strong electrical / electromagnetic and mechanical influences must be avoided. This applies particularly to the installation of the FACP, components and installation cables in the direct vicinity of fluorescent lamps or energy cables and if mounted on vibrating, unstable surfaces such as thin partition walls.
- To ensure the product safety, only approved cables in accordance to the IEC 60332-1-2 and IEC 60332-1-3 or IEC/TS 60695-11-21 standard must be connected into the devices housing.
- The used cable glands must comply to the flammability rating V-1 or above.
- The system may not be installed in facilities and environments that have harmful effects.
- For wall installation, operating modules and visual displays should be installed between 800 mm and 1800 mm above the place where the operator stands.

Danger – Electrical shock !
Remove all power from the FACP before carrying out any installation work!

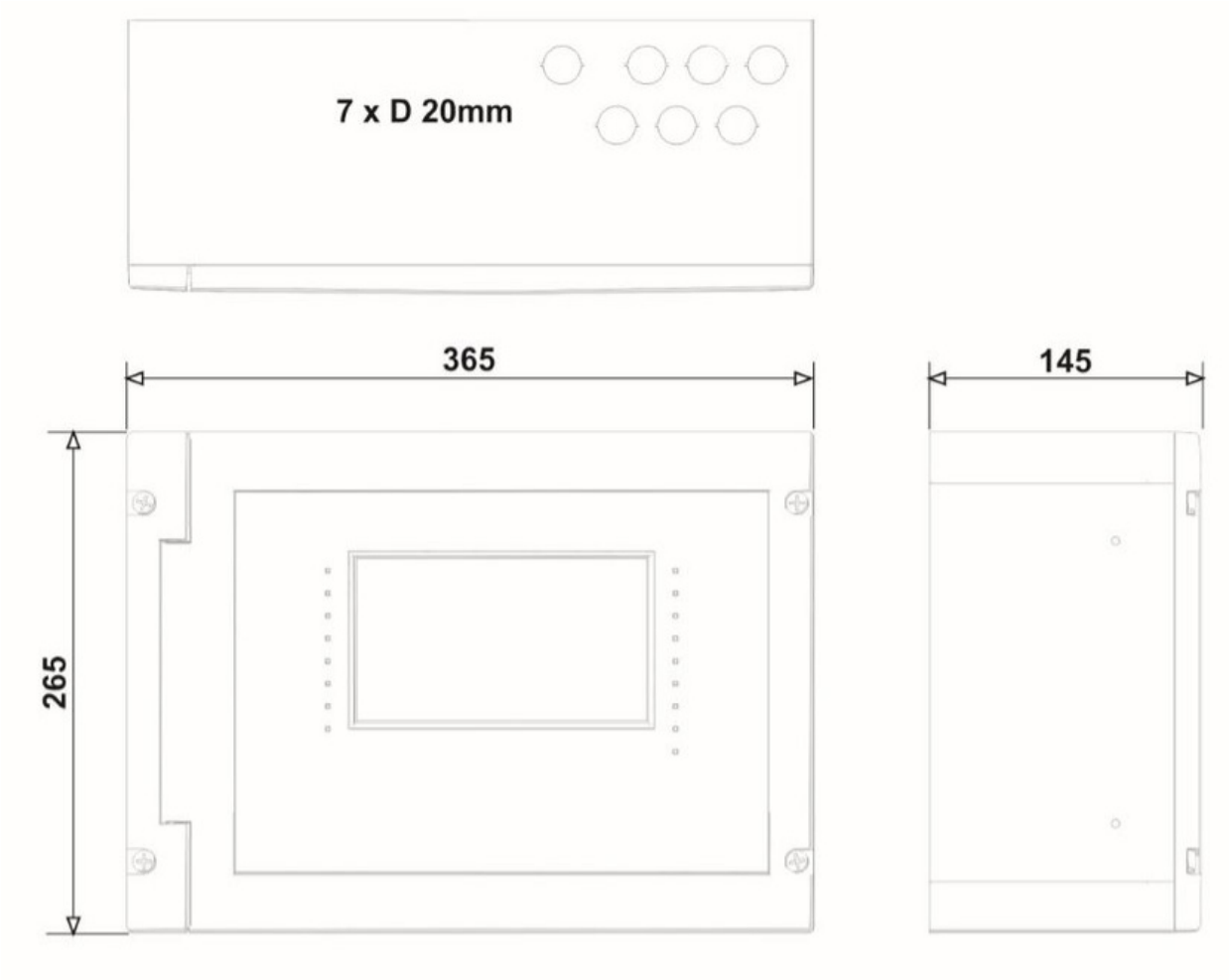
Fuses
The device fuses cannot prevent an unexpected malfunction in electrical assemblies, rather these fuses should protect the user and his environment from damage. Therefore, never repair, bypass or replace the factory-installed fuses with a type other than the one specified!

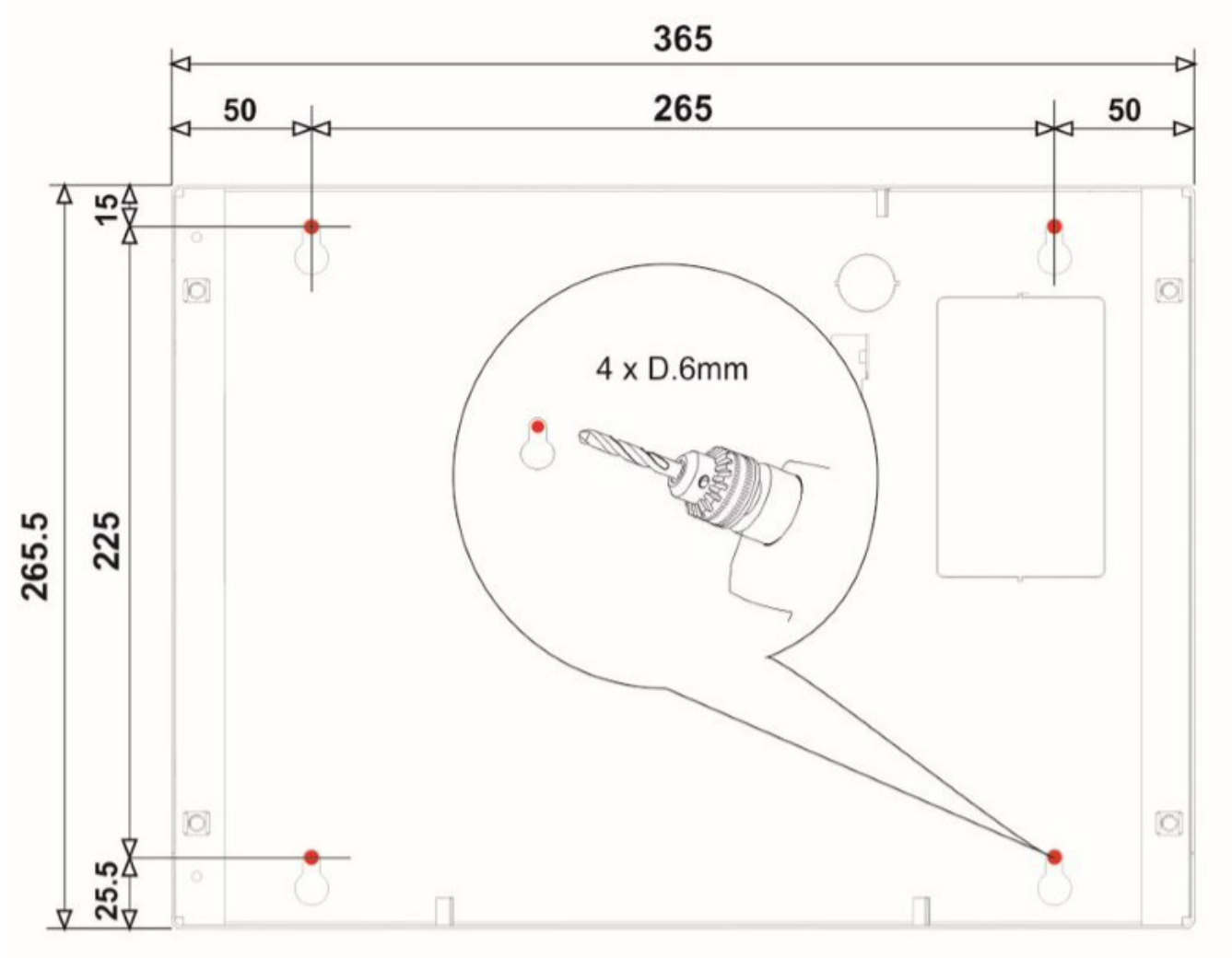
Energy and Backup power supply
For service and maintenance work on the backup power supply of the FACP, it is imperative to observe the information and notes in this documentation!

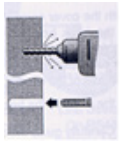
Protective and functional earth
The PE conductor must be connected to the corresponding terminal at the mains supply. Connect the FE terminal of the panel's cabinet with the protective earthing rail (PE rail) of the power distributor panel from which the fire alarm system will be powered.

Configuration and Commissioning
For commissioning and configuration of the system always use software in its current version! A complete system check must be carried out after commissioning and for each modification of the customer data programming!

4.1 MA-1000 dimensions

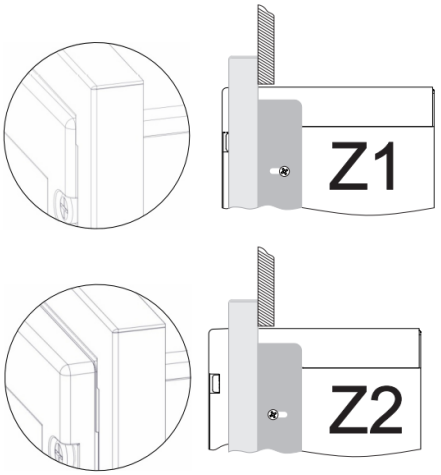


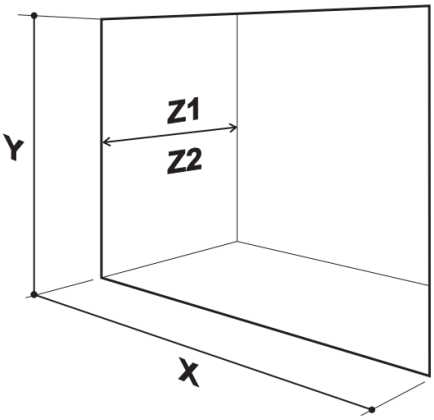


	The control unit must be installed to the wall so as to allow a clear view of the display and easy access by the operator. For example, it allows an optimal view of the display at 1,5 m height.
	The control unit is designed to be installed to the wall using plastic wall plugs and 4 screws of max. 5 x 50 mm (masonry walls) or self-tapping screws (prefabricated panels). It is recommended not to install the panel near heat sources (radiators, etc.) Use screws of max. 5 mm.
	Moreover, if the control unit must be installed to the wall beside a corner wall, the minimum distance from the latter must be at least 200 mm, to allow for opening of the front panel.

4.2 MA-1000 Flush Mount

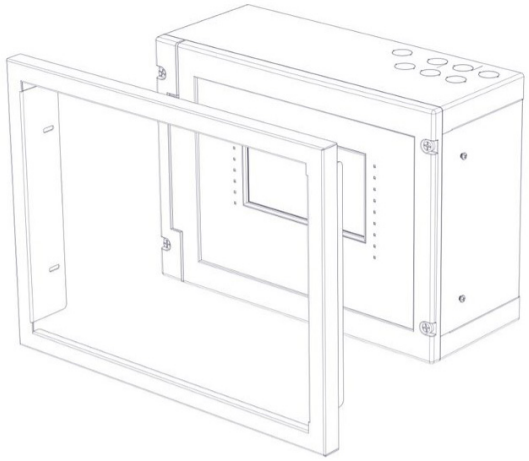
MA-1000 panel can be flush mounted into a wall recess using a mounting kit MA-1BZL:



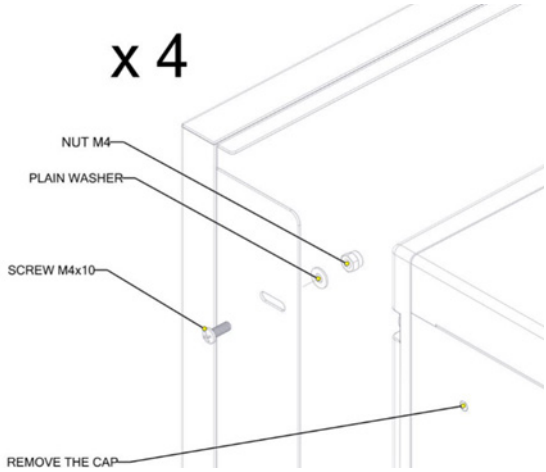


	X	Y	Z1	Z2
MA-1000	377	270	120	110
MA-2000	496	270	190	180
MA-8000	496	403	190	180

Step 1: create a recess in a wall into which the MAX panel is to be semi flush mounted. The Recess Depth Z1/Z2 must be such that there is clearance to allow door to operate.



Step 2: Knock out the Flush surround fixing points.

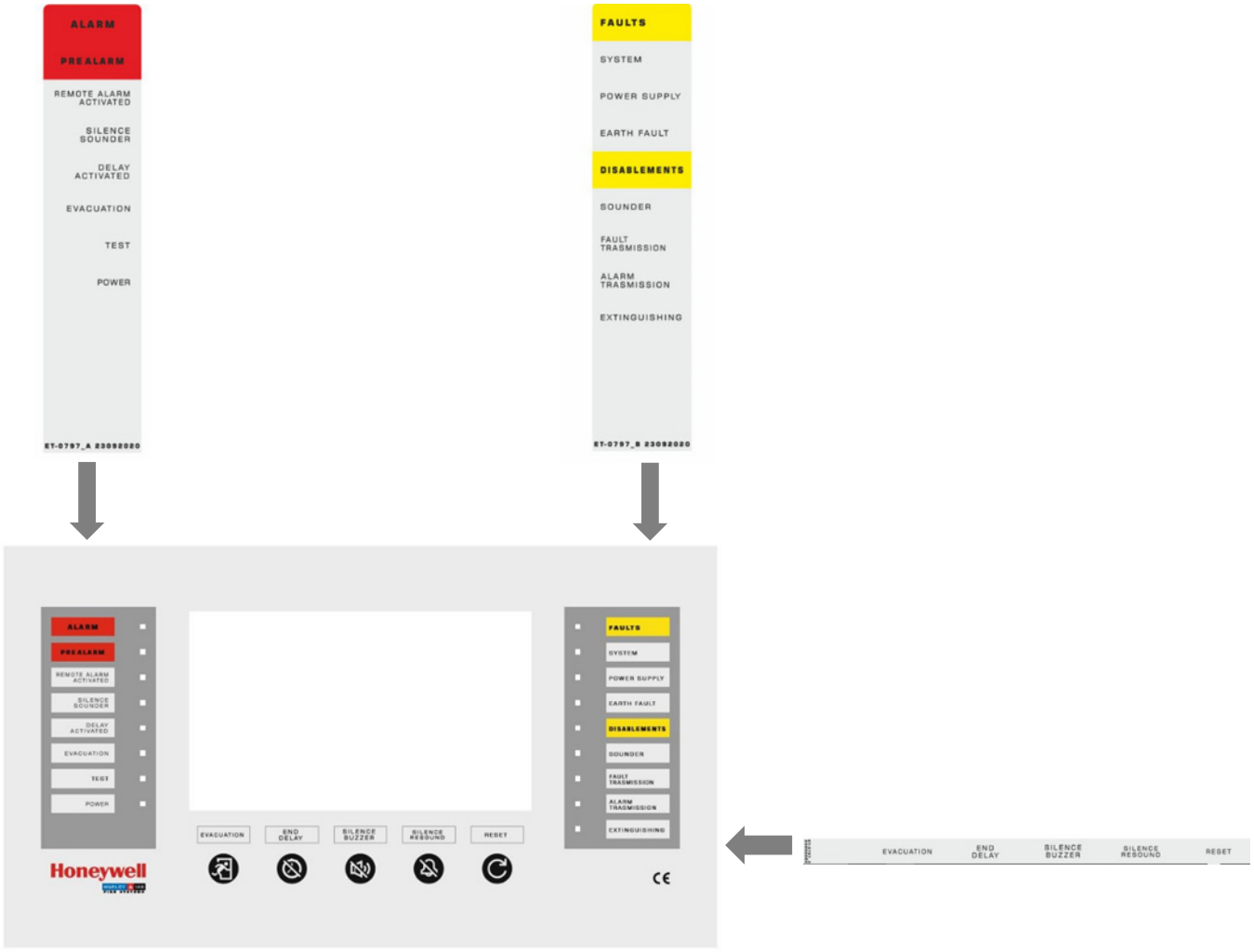


Step 3:Using the screws provided secure the Flush surround to the panel via elongated holes.

Take into consideration dimension Z1/Z2 to reflect the desired front panel alignment result in flush installation.

4.3 Labels for the control panel

The control panel of the MA-1000 is equipped with pull-out labels that provide information about the functional status of the LED.



A set of labels in different languages for self-printing is available in chapter 9 of this documentation.

5 SPECIFICATIONS

- Ambient temperature: - 5 ° C ... + 40 °C
- Storage temperature: - 10 °C ... + 50 °C
- Relative humidity: 10 % ... 95 % (without condensation)

5.1 Earthing

The earthing system must be performed in conformity with CEI and ISPELS rules or rules valid in the country where the panel is installed.
In any case, must have a resistance lower than 10 Ohm (measured with disconnected devices). This complies the CEI 68-12 standard for TN installations.
The earth connection to the control unit is compulsory and it must be performed on the CNAL terminal block. (refer to basic board).

5.2 Main power supply

The control unit is powered by the mains voltage and, in case of mains breakdown it can continue to normally operate due to the re-chargeable batteries contained in the same control unit.
The required features for the mains supply are:

- Voltage: 100 ... 240 V AC
- Frequency: 50 / 60 Hz
- Current: max. 1.2 A @ 230 V AC

Particular care must be taken when the installation is performed near powerful electromagnetic sources (ex. repeaters, radio relays, motors, etc.).

5.3 Power supply

The internal power supply has the following output: 28,8 V DC ... 29,0 V DC, 2,30 A ripple max. 500 m Vpp (Power supply for control unit, user output, external load power supply).
User Output: 28,5 V DC ... 28,9 V DC, 1 A with 1 A resettable fuse

5.4 Battery charger section

- Output voltage = 26,5 Vcc ... 28,5 Vcc (temperature compensation)
- Output current = max. 0,54 A ~ 500 m Vpp
- Number of batteries that can be connected = 2 x 12 V / min. 7 Ah, max. 12 Ah
- The battery charger section has the following signalling thresholds
  Exhausted battery threshold = 21,5 V DC
  Re-charge Fault threshold = 3,4 V DC (voltage difference between the two batteries)
  Battery release threshold = 19,5 V DC
  Threshold of internal battery resistance = 600 Ohm

5.4.1 Batteries

Average duration declared by the manufacturer is 3 ... 5 years at an ambient temperature of + 20 °C.

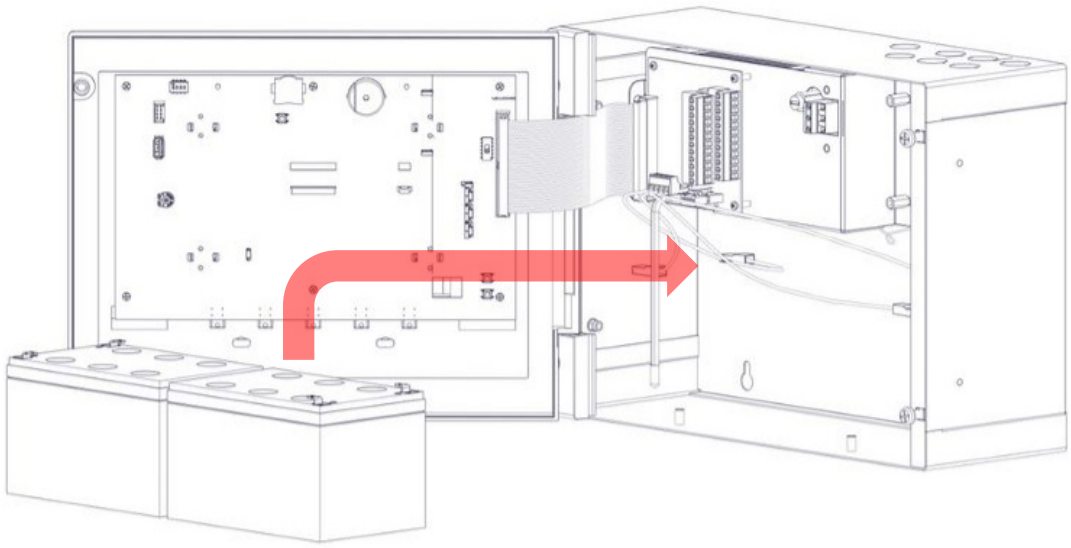
Life decreases in accordance with a higher operating temperature and possible discharging-recharging cycles.

Recommended Batteries:

Capacity 7 Ah
Battery Yuasa NP7-12 or NP7-12FR (V0) with bolt connector or comparable.
Faston Capacity (20 h): 12 V / 7 Ah
Dimensions (W x D x H): 151 x 65 x 98 mm

Capacity 12 Ah (max. stand-by capacity)
Battery Yuasa NP12-12B or NP12-12BFR (V0) with bolt connector or comparable.
Faston Capacity (20 h): 12 V / 12 Ah
Dimensions (W x D x H): 151 x 65 x 98 mm

5.4.2 Batteries Installation



5.4.3 Power supply and battery operation

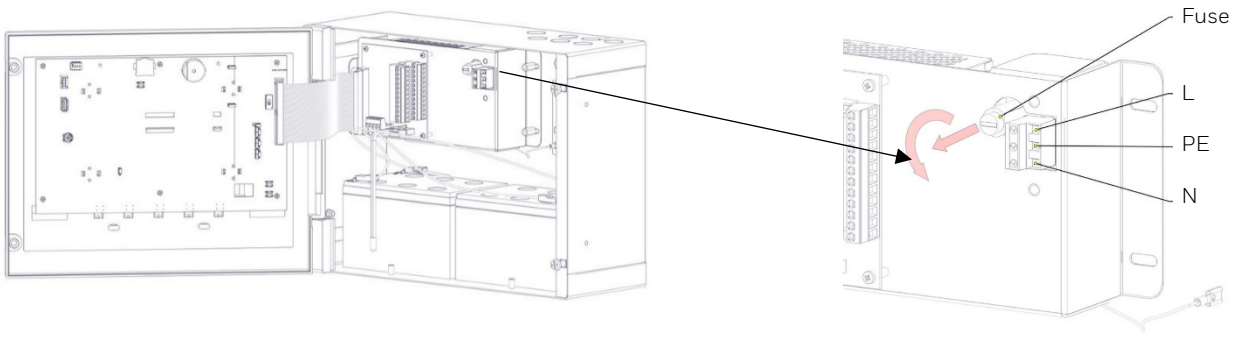
The main microprocessor of the control unit periodically checks the state of the main AC power supply source, batteries and the recharging circuit. The control unit will automatically switch to the stand-by battery source when AC mains fails.

When the control unit operates through AC mains, the main microprocessor controls and monitors the battery charger. To perform this test, the output battery charger is temporarily switched off and the battery voltage is read (signalling of missing batteries < 15 V).

When the control unit operates with the standby battery source. (In the absence of the AC mains) “Low Battery” fault will be indicated when their voltage is < 21,5 V and, to prevent irreversible damages the voltage will be automatically switched off, by disconnecting the batteries, when the voltage is < 19,5 V.

All wiring MUST be checked BEFORE they are connected to the control unit.
It is recommended to perform at least the following checks!

5.4.5 Mains and Batteries connection



The connection to the 230 V AC power supply mains must be performed through three-conductor cable - see figure.

The identification of the earth conductor coming from the mains must be performed on the CN1 terminal block (refer to basic board topography) and must be fixed at the cabinet by means of cable –tightening strip so that it cannot be accidentally stripped off from the terminal block.

The 230 V AC power supply cable must be fixed inside the control unit by means of an appropriate cable fixing device.

The cable fixing collars must be HB flammability class.
The mains supply conductors shall not be consolidated by means of soldering.

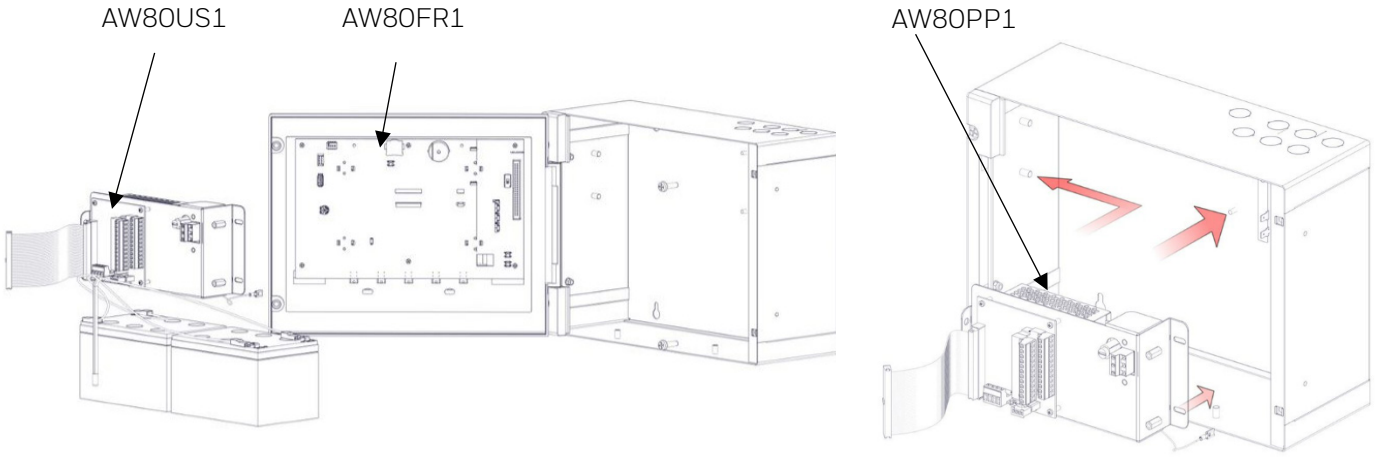
An isolated device external to the control unit must be provided for the 230 V AC power cable (contact separation: min. 3 mm). The isolated device must be omni-polar or must disconnect the line phase. Power Supply connection must be done following this procedure: (Refer to Base Board).

1. Turn off the main power switch of the 230 V AC mains.
2. Disconnect the CN1 terminal block from the control unit.
3. Connect the mains cable.
4. Re-connect the CN1 terminal block
5. Turn on the mains switch
6. Install and connect the batteries as indicated in this manual.

Once the control unit has been powered, it will automatically start operating.
However, in accordance with the battery storage period, it is necessary to wait some hours before the batteries are completely re-charged.

7. Check the operation of the LED indicators on the panel, according to the paragraph “TEST AND STARTING OPERATION”.
8. Close the control unit.

6 SYSTEM COMPONENTS



MA-1000 is equipped with:

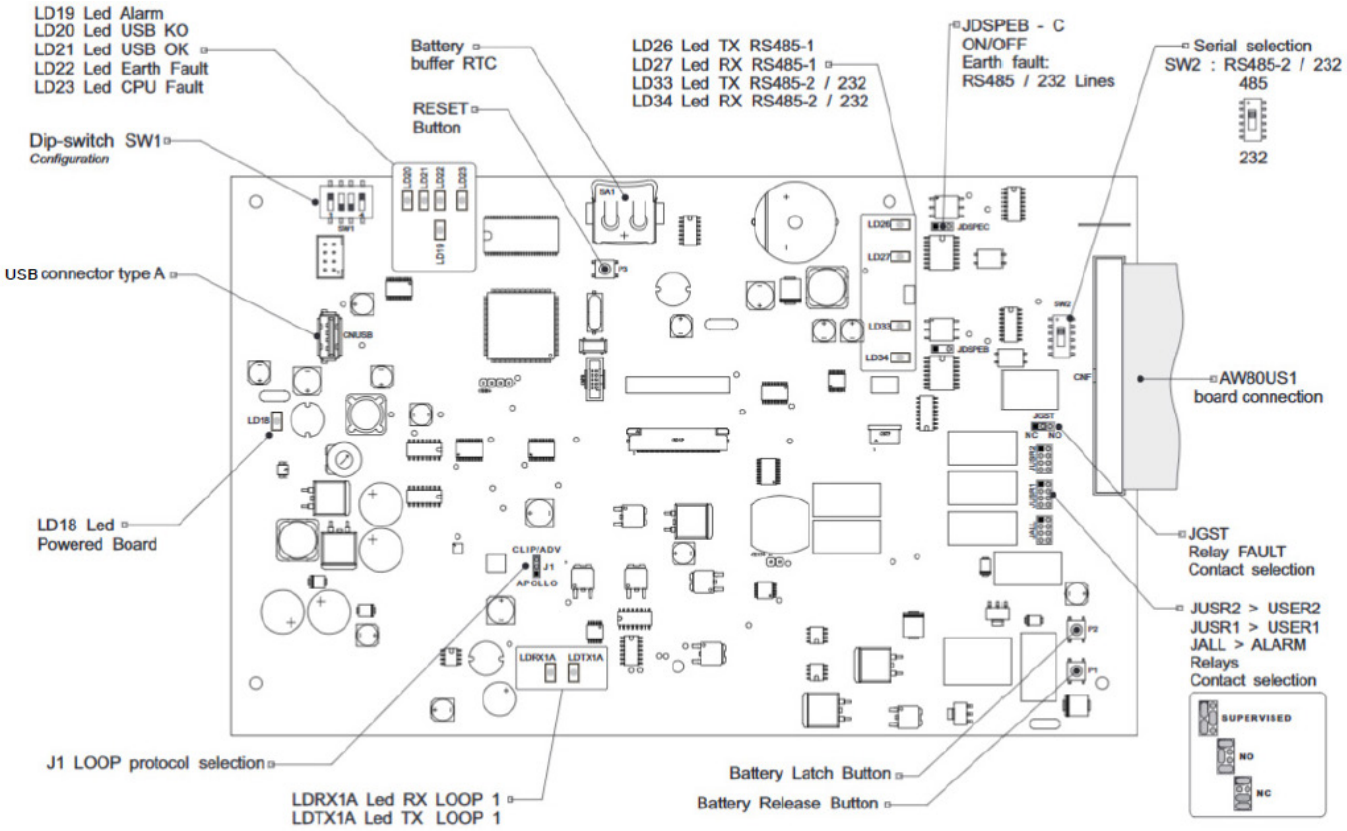
- PSU board (AW80PP1) to connect the main board
- Front board (AW80FR0) includes LC display 7" / 17,78 cm and the slot RTC battery backup (SA1)
- Main board (AW80US0) includes connectors to front board and batteries

System Setting Battery Backup

Place the battery model CR 1632 3V included with panel on the CPU board (AW80F04) in the slot RTC battery backup as shown in the figure. This battery is used as auxiliary backup for the real time clock circuit.

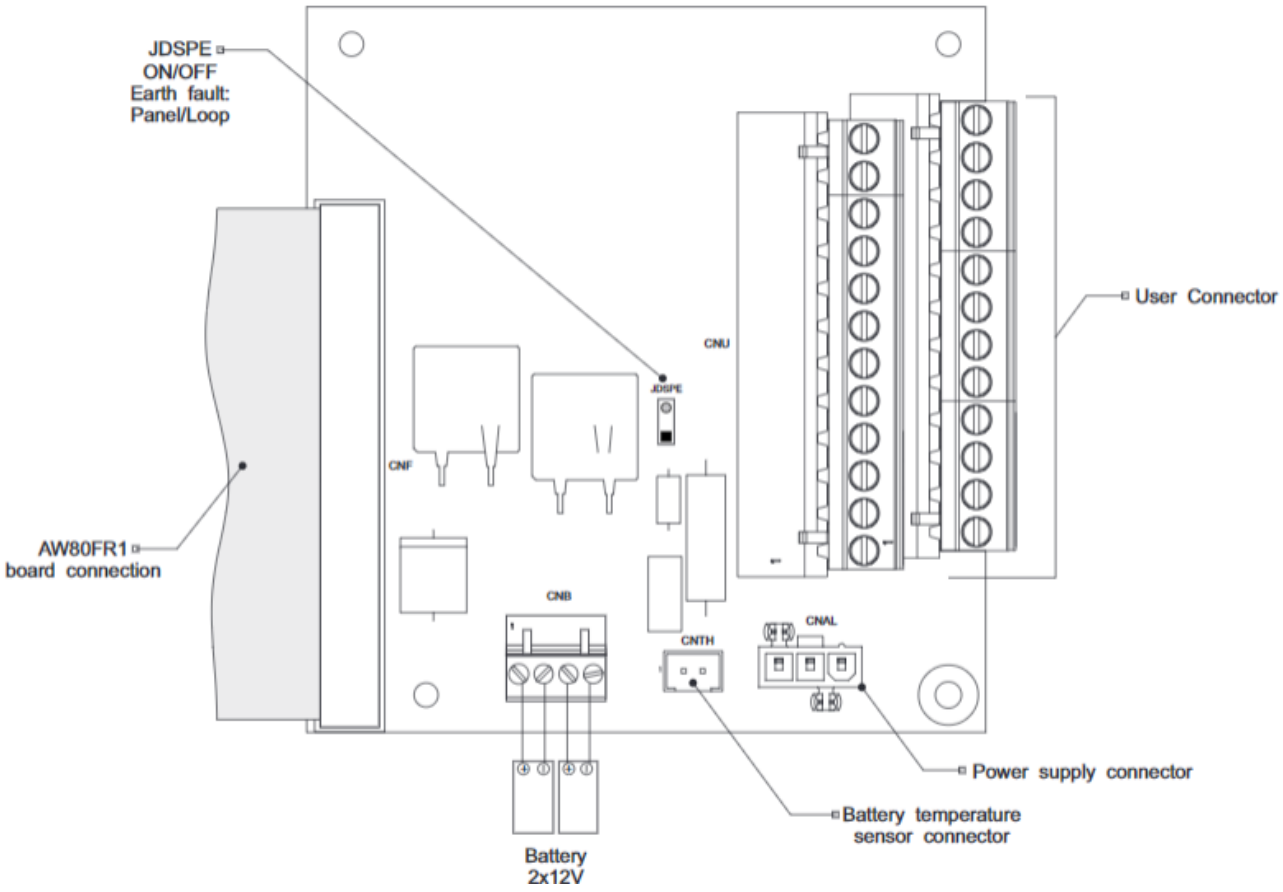
At the start-up of the system, it is necessary to program the date and time (for more details refer to commissioning manual M-167.2-SERIE-MA-xx).

6.1 MA-1000 CPU Board AW80FR1



CPU Board Setup						
Earth Dispersion	JDSPEC	Removing the JDSPEC jumper causes the control unit to ignore an RS485-1 ground fault (isolated).				
Protocol	J1	Position 1-2				
Fault Relay	Possibility of NO/NC contact selection through JGST					
Relay Alarm, User1 and User2	Possibility of selection for each relay: Volt-free / potential-free contacts NO/NC or as controlled output with 47 KΩ, 5 % balance or diode termination, via JALL, JUSR1, JUSR2					
DIP SW1	**Firmware Update**					
	1	**2**	**3**	**4**		
	OFF	OFF	OFF	OFF	Normal Operating setting	
	ON	OFF	OFF	OFF	Copy panel configuration to USB drive	
	ON	OFF	OFF	**ON**	Restore factory configuration	
	ON	**ON**	**ON**	**ON**	Copy configuration from USB drive to the Panel	
DIP SW2	**Configuration Serial Port 2**					
	1	**2**	**3**	**4**		
	ON	**ON**	OFF	OFF	Or move Slider SW2 on RS232	Serial selection 2 type RS232
	OFF	OFF	**ON**	**ON**	Or move Slider SW2 on RS485	Serial selection 1 type RS485

6.2 MA-1000 User Board



6.2.1 Terminal Board AW80US1

CNAL		DC Power Supply
1	Positive	It comes from power supply module – board AW80PP1
2	Earth	
3	Negative	

CNB		Batteries
1	Positive Battery 1	Protection with two MFR400 series resettable fuses
2	Negative Battery 1	
3	Positive Battery 2	
4	Negative Battery 2	

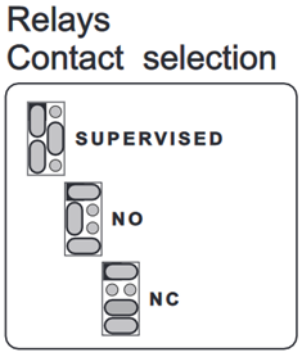
CNTH		Temperature probe
1	NTC	Batteries Temperature probe
2	GND	

CNU		Device Lines			
01	LA1 +	Loop 1 + side A			LOOP 1
02	LA1 -	Loop 1 - side A			
03	LB1 +	Loop 1 + side B			
04	LB1 -	Loop 1 - side B			
05					
06	RS485H1	RS485-1 signal A+			Isolated serial RS485-1
07	GNDIS1	GND RS485-1 isolated			
08	RS485L1	RS485-1 signal B-			
09					
10	RS485H1	RS485-1 signal A+			Serial port - configure as RS232. SW2 Slider pos 1 and 2 on
11	GNDIS1	GND RS485-1 isolated			
12	RS485L1	RS485-1 signal B-			
13	RL ALL- C	Alarm Relay C	Polarity in stand-by	Relay contacts 30 V / 2 A	JALL Selects Potential Free NO / NC or Controlled Output with 1 A Resettable Electronic Fuse with 47 KΩ, 5 % Balance or Diode
14	RL ALL+ NO / NC	Alarm Relay NO / NC			
15	RL USR1- C	Relay USR1 C			JUSR1 selects Potential Free NO / NC or Controlled Output with 1 A Resettable Electronic Fuse with 47 KΩ, 5 % Balance or Diode
16	RL USR1+ NO / NC	Relay USR1 NO / NC			
17	RL USR2- C	Relay USR2 C			JUSR2 selects Potential Free NO / NC or Controlled Output with 1 A Resettable Electronic Fuse with 47 KΩ, 5 % Balance or Diode
18	RL USR2+ NO / NC	Relay USR2 NO / NC			
19	SIR LC +	Sounder + in stand-by			Controlled Output with 1 A resettable electronic fuse with Diode
20	SIR LC -	Sounder – in stand-by			
21	RL GST C	Fault Relay C		Relay contacts 30 V / 1 A	JGST Selects Free from Potential NO / NC
22	RL GST NO / NC	Fault Relay NO / NC			
23	+ 24 V USR	+ 24 Vcc User			Protection with 1 A resettable electronic fuse
24	GND USR	GND User			

6.2.2 Relay outputs

FUNCTION	CHARACTERISTICS
Sounder Circuit	1 contact controlled by 24 Vcc / 1 A resistive
USR2	Max 1 A resistive 30 V DC, NO / NC or supervised output 0,3 A Fused, selectable through Jumper JUSR2 (refer to basic board topography)
USR1	Max 1 A resistive 30 V DC, NO / NC or supervised output 0,3 A Fused, selectable through Jumper JUSR1 (refer to basic board topography)
General Alarm	Max 1 A resistive 30 V DC, NO / NC or supervised output 0,3 A Fused, selectable through Jumper JALL (refer to basic board topography)
General Fault	Max 1 A resistive 30 V DC, NO / NC or supervised output 0,3 A Fused, selectable through Jumper JGST (refer to basic board topography)

6.2.3 Instruction for setting the relay outputs as NO / NC or supervised



The setup show is valid for the output:

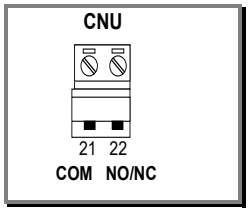
- JUSR1: User 1
- JUSR2: User 2
- JALL: Alarm

6.2.4 General Fault relay

The General Fault relay is usually in energized state and volt-free / potential-free. It is de-energized in Fault condition.

Contact range: max 30 V AC / DC, 1 A, non-inductive loads.

Settings: NO contact (Jumper JGST).



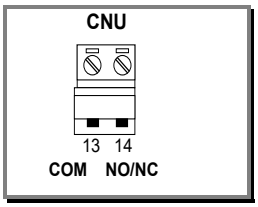
Main Fault output connections (refer to basic board topography)

6.2.5 General Alarm relay

The General Alarm relay is usually in energized state and volt-free / potential-free. It is de-energized in Fire condition.

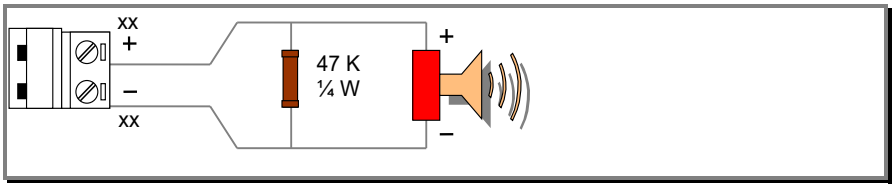
Contact range: max 30 V AC / DC, 1 A, non-inductive loads.

Settings: NO contact (Jumper JALL)

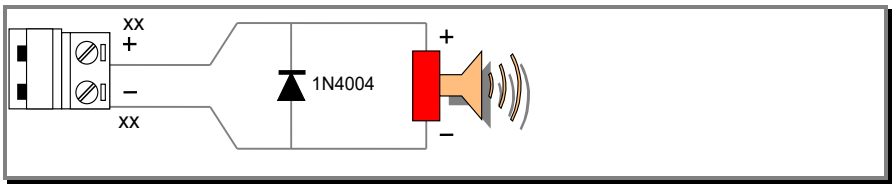


Main Alarm output connections (refer to basic board topography)

Polarized devices balanced with resistor (electronic Sounders, etc.)



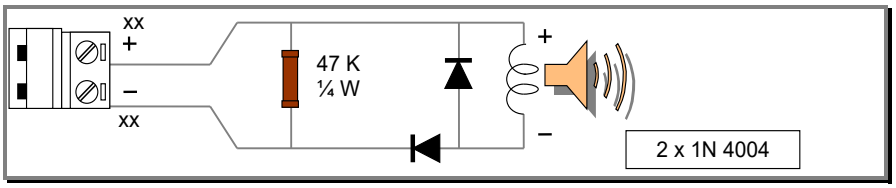
Polarized devices balanced with diode (electronic Sounders, etc.)



Connect the 47 KΩ, ¼ W EOL resistor or the diode only on last sounder of the line.

Polarity displayed are in Alarm condition, at idle condition, they are inverted!

Non-polarized devices balanced with a resistor (Bells, relays, etc.)

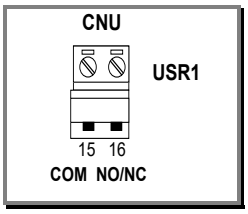


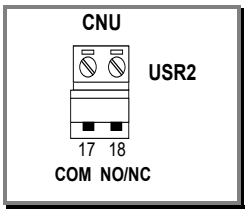
6.2.6 USR1 and USR2 relays

SR1 and USR2 relays are volt fee / potential-free contacts or supervised outputs.

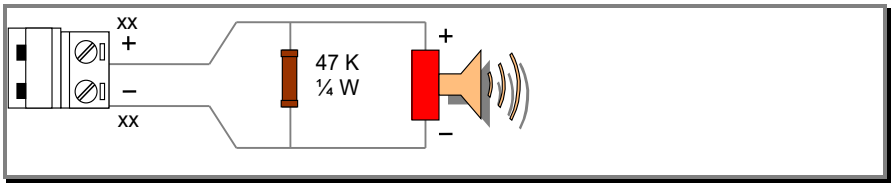
Contact range: max 30 V AC / DC, 2 A, non-inductive loads
Selection: NO, NC or supervised outputs (refer to Chapter 6.2.3)

To program the activation of these outputs refer to MA-1000 Commissioning Manual.

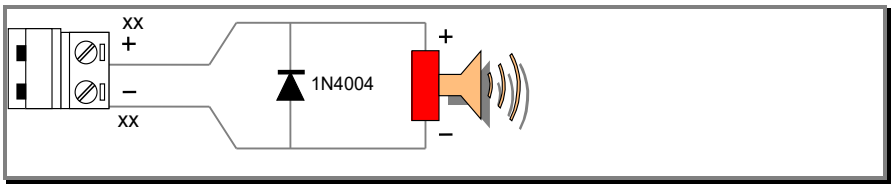




Polarized devices balanced with resistor (electronic Sounders, etc.)



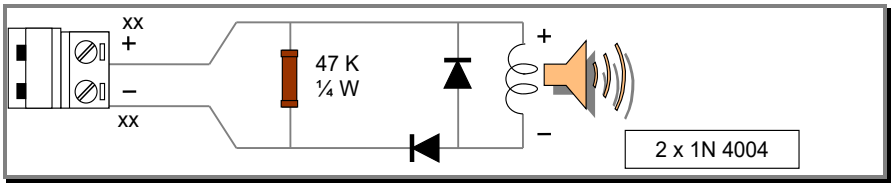
Polarized devices balanced with diode (electronic Sounders, etc.)



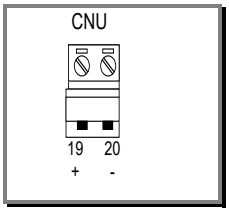
Connect the 47 KΩ, ¼ W EOL resistor or the diode only on last sounder of the line.

Polarity displayed are in Alarm condition, at idle condition, they are inverted!

Non-polarized devices balanced with a resistor (Bells, relays, etc.)

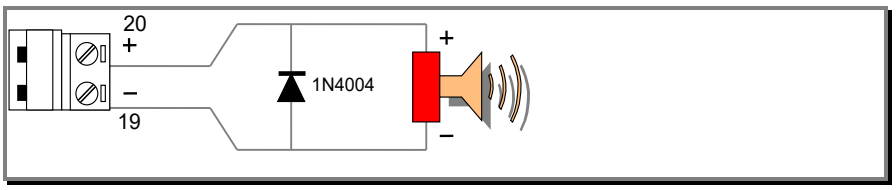


6.2.7 Sounder connection - controlled output



Sounder output connections (refer to basic board topography) 1 A resettable fuse.

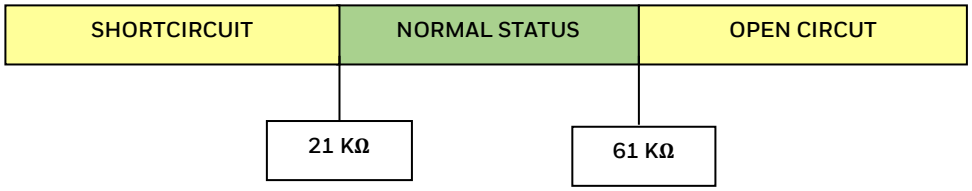
Polarized devices balanced with diode (electronic Sounders, etc.)



Connect the diode only on last sounder of the line.

Polarity displayed are in Alarm condition, at idle condition, they are inverted!

Thresholds for supervised outputs



7 COMMUNICATION LINES WITH DETECTORS / MODULES

The MA-1000 control unit communicates with intelligent detection and control devices which are addressable through a 2-wire loop or line.
The line can be connected to respect the specifications relevant to the signalling circuit lines of the STYLE 4 (open line) and STYLE 6 (closed loop).
The peripheral devices are powered by using the same line which is used to communicate with them.

In case of short circuit cannot be lost more than 32 alarm points

- If more than 32 devices (ref. EN 54-2) are installed on a line, this must be configured as closed Loop (style 6).
- If a connection is performed with a spur in a closed loop, no more than 32 devices must be installed on this branch and these devices must be separated by isolators.
- If the line is in Style 6 (Loop) an appropriate number of isolators devices must be provided, in such as to not lose more than 32 points in case of a short circuit.

The detection circuit must be separated from other cables to minimize the risk of interferences.
The detection Loop circuit is supervised and current-limited.

The connection cables fitted with detectors, the auxiliary devices and the power mains, can be introduced into the control unit by appropriate entrances on the panel cabinet, by running cables along the side walls of the box, and appropriately providing for those which are located near the terminal block.

Technical specifications of detection line connection cables
Type of cable: 2 conductors (for their selection refer to the table below)
- Twisted narrow pitch (10 cm)
- Shielded pair cable
- Max. admitted capacity: 0,5 μF

If the recommended cable types are not common regionally, contact Honeywell support for alternative cable types!

Cable section
The sections are referred to the total length of the line (in case of a closed loop, the total length is considered) which, however, must not be longer than 2.500 m and the total resistance of the line must be lower than 40 Ohm.

Minimum Cable Section	
Up to 500 m	cable 2 x 0,5 mm²
Up to 1.000 m	cable 2 x 1 mm²
Up to 1.500 m	cable 2 x 1,5 mm²
Up to 2.500 m	cable 2 x 2,5 mm²

Number of installed devices for line
The maximum number of devices that can be installed:
- 99 Detectors
- 99 input and/or output modules

Isolator modules
The isolator modules allow electrical isolation of a series of devices from others to reduce the number lost in a loop short circuit condition.

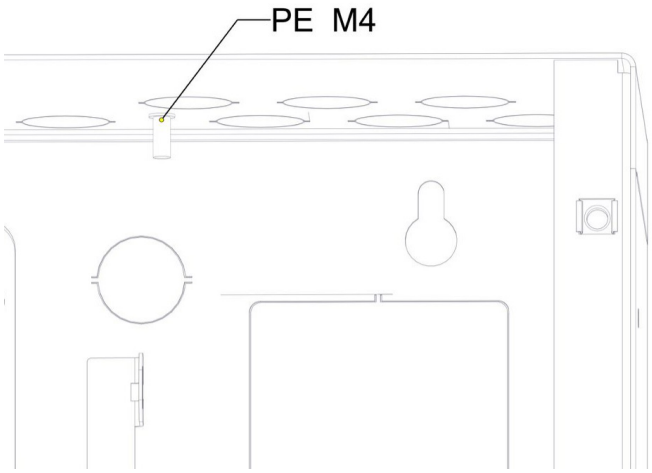
Input Modules
The addressable inputs modules allow the MA-1000 system to monitor contacts, manual alarm call points, 4 wires conventional detectors, and several other devices with alarm contact outputs.

Output modules
Through addressable output modules, the MA-1000 system, by means of the programmable CBE equations, can activate the indication circuits or output relays through voltage free contacts or supervised class A controls.

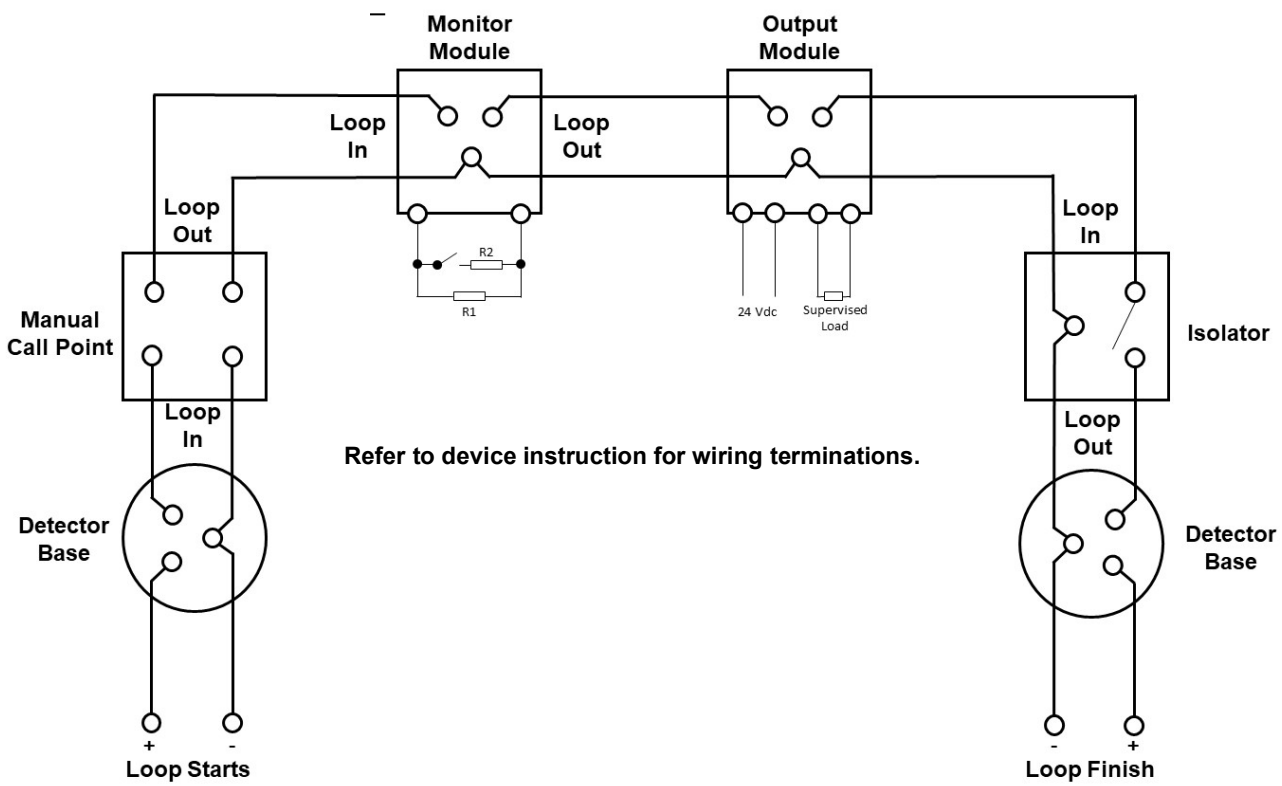
Intelligent detectors
The MA-1000 control unit can communicate only with analogue detectors declared as compatible by Honeywell.

7.1.1 Screen Termination

Good quality fire industry cable must be used incorporating drain wires or screens. The drain wires or screens must be earthed within the enclosure. Cable screen or drain wire and earthing points. Ensure the drain wires or screens are adequately grounded inside the enclosure - earthing points are provided for this purpose on enclosure to cover all the cable entry points.
Use the earth screw and clamp to achieve the required earthing bond of the screens. Make sure the screws are tightened to gain low resistance contact for EMC purposes.
Use cable manufacturers recommendations for adequate earthing of the drain wires or screens.
In the panel is available an earth bar for screen termination as shown below:



7.1.2 Example of closed line (style 6 Loop)



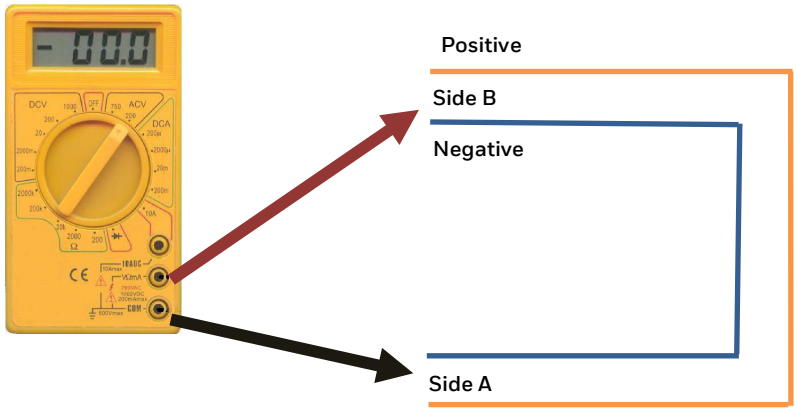
Please refer to the Loop and Battery calculator for total loop length.

7.2 Test procedure for detection lines

Before powering the control unit lines, check the following values:

A DIGITAL MULTI METER IS REQUIRED

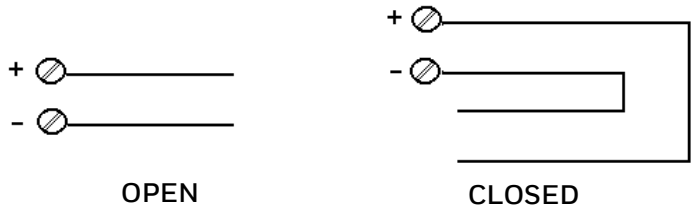
Line resistance



The direct current resistance of the negative wire of the loop SHALL NOT exceed 20 Ohm.
The measurement must be performed by disconnecting the channels “A” and “B” from the LIB Multi meter probes are to be connected to the Negative wire terminals.
To have the total loop wire resistance, multiply by 2 the value read on the Negative side.

Line insulation

Place between (+) and (-) of line through a tester, with sensors or modules installed and check the following:



Test 1:
Connect: Tester (+) / Line (+) and Tester (-) / Line (-)
Check: Resistance: 1 ... 1.3 M Ohm

Test 2:
Connect: Tester (+) / Line (-) and Tester (-) / Line (+)
Check: Resistance: 0.7 ... 0.9 M Ohm

Screen shield insulation from the cable/line

Place a test probe of the tester on the line cable screen and the other test probe on the positive cable (+) of the same line. The resistance measured must be higher than 15 ... 20 M Ohm, better if “infinite”.
Perform the same operation between the line screen and negative cable (-). Check that also in this case the resistance is higher than 15 ... 20 M Ohm.

Earthing /lines insulation

Place a test probe of the tester on the system earthing and the other test probe on the positive cable (+) of the line; the resistance measured must be higher than 15 ... 20 M Ohm, better if “infinite”.
Perform the same operation between the earthing and negative cable (-) of the line. Check that also in this case the resistance is higher than 15 ... 20 M Ohm.

Earthing /cable screen insulation

Place a test probe of the tester on the system earthing and the other test probe on the cable screen; the resistance measured must be higher than 15 ... 20 M Ohm, better if it is “infinite”.

Line voltage

With the sensors/modules line connected, the line output voltage must be 24 Vcc without the device query (no programmed Point). A voltage much lower than 14 Vcc indicates a connection reversed on detector or modules.

7.3 System Test and Commissioning

The Control unit installation must be performed after having carefully read the instructions contained in the installation and commissioning manual.

Once mechanical installation of the control unit has been completed, perform the following operations:
Check the correct detection line wiring through a multi-meter (refer to chapter 7.2).

- Check the correct detection line wiring through a multi-meter or a POL-200-TS (refer to chapter Test Procedure for the analogue system lines in this manual).
- Connect the detection lines to the control unit.
- If in use, connect the main alarm sounder (Sounder Circuit fitted 47 KΩ EOL) on the terminals (refer to basic board topography)
- Ensure correct size batteries are fitted to enable required standby time in case of mains failure.

Connect the control unit to the 230 V AC mains by means of a 3-pole cable: L, N, PE (the earth cable must be longer than the L and N ones) on the CN1 terminal block (the earthing connection is compulsory) and must be fixed to the cabinet by means of a cable fixing device so that it cannot be accidentally stripped off.

The power supply connection must be performed through the following phases
(refer to basic board topography):

- Turn off the main switch of the 230 V AC mains which powers the control unit
- Disconnect the CN1 terminal block from the control unit
- Connect the 230 V AC mains to the CN1 terminal block
- Connect the CN1 terminal block to the control unit
- Turn on the main switch of the 230 V AC mains
- Install and connect the batteries as indicated in this manual

When the control unit is powered check the following conditions on the front panel:

- Green LED “POWER OK” = on
- Yellow LED ”FAULTS” = flashing
- Buzzer = continuous sound

By pressing the Buzzer Silencing key, the buzzer is switched off and the “POWER UP” fault indication is displayed.

By Pressing the “RESET” key the request to enter the level 2 password is displayed (default = 22222).

Enter the password and check the following conditions:

- Green LED “POWER OK” = on
- Yellow LED “FAULTS” = off
- No faults signalling on the display

8 SYSTEM PERIODICAL MAINTENANCE

Check that the green LED “POWER OK” is on
Check that all other control unit LED are off
Press the function TEST key on the LCD and enter the level 2 password to access the “TEST” menu.
Use the arrow keys ▲▼ to select the item “LED” (lamp test function), press the enter key to perform the test, check that all light indications are on for some seconds.

1. **Disconnect the 230 V AC mains supply from the MA-1000 control unit and check the following conditions:**

- The indication of “MAINS LOSS” on the display
- Yellow LED “FAULTS” flashing.
- Yellow LED “POWER OK” on
- Yellow LED “MAINS” on
- General Fault relay active
- After at least 15 minutes, check the battery voltage.
  If the sum of the two battery voltages is lower than 20.5 V replace them.

2. **Connect the 230 V AC mains power supply to the control unit, press the “SILENCE ALARM/FAULT” key and check the following conditions:**

- There is no indication of Alarm in progress on the display
- Yellow LED “FAULTS” off
- Yellow LED “POWER OK” on
- Yellow LED “MAINS” off
- General Fault relay deactivated

3. **Disconnect both batteries; wait (not more than 2-3 minutes) for the control unit to signal:**

- The indication of “BATTERIES NOT CONNECTED” on the display
- Yellow LED “FAULTS” flashing
- Yellow LED “POWER OK” on
- Yellow LED “MAINS” on
- General Fault relay active

Re-connect the batteries and press the “SILENCE ALARM/FAULT” key and check:

- No breakdown signalling on the display
- Yellow LED “FAULT” off
- Yellow LED “POWER OK” off
- Yellow LED “MAINS” off
- General Fault relay deactivated

4. **Alarm a line 1 device and check the following conditions:**

- Red LED “ALARM” flashing
- Sounder output active
- Alarm display

Press the “SILENCE ALARM/FAULT“ key and subsequently the “SILENCE / RESOUND” key; the request to enter the level 2 password is displayed (default = 22222).
Enter the password and check the following conditions:

- Yellow LED SILENCE SOUNDER off
- Red LED “ALARM” on
- Sounder output deactivated

By pressing the “RESET” key, the request to enter the level 2 password is displayed (default = 22222).
Enter the password and check the following conditions:

- Yellow “LED SILENCE SOUNDER” off
- Red LED “ALARM” off
- Sounder output deactivated
- No alarm signalling on the display

At the end of the maintenance leave the control unit in the idle condition (without alarm and fault) and check that the LED “POWER OK” is on.

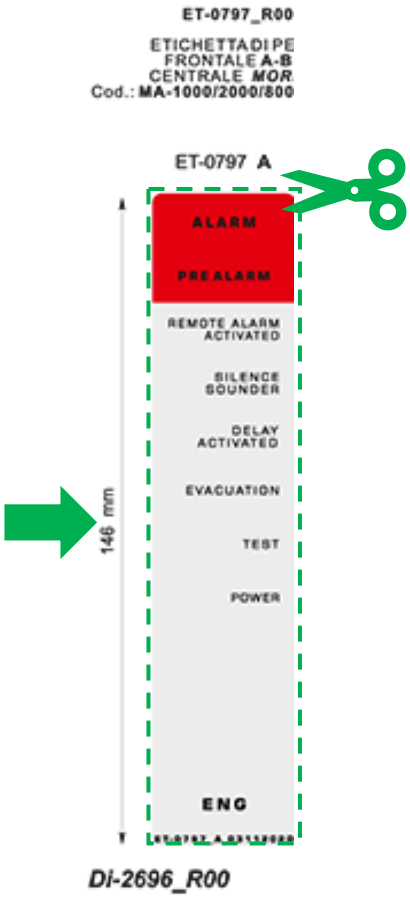
9 LABELS IN DIFFERENT LANGUAGES

In this chapter labels in different languages are shown for the control panel of the MA-1000, which can be printed 1:1.

- Print the labels in original size, pay attention to the printer settings.
- Be sure to use a color printer to print the labels with all features.
- Carefully cut the labels along their edges as shown in the example.
- Carefully slide the labels into their respective holders and check that they are positioned correctly.

Example:

Pay attention to the original size of the label!
Height = 146 mm



ET-0797_R00

ETICHETTA DI PERS.
FRONTALE **A-B-C**
CENTRALE ***MORLEY***
Cod.: **MA-1000/2000/8000-01-02-03**

"Standard label"

English

ET-0797 **C**

RESET
SILENCE RESOUND
SILENCE BUZZER
END DELAY
EVACUATION
EN

ET-0797 **A**

ALARM
PREALARM
REMOTE ALARM ACTIVATED
SILENCE SOUNDER
DELAY ACTIVATED
EVACUATION
TEST
POWER
EN

ET-0797_A 03112020

ET-0797 **B**

FAULTS
SYSTEM
POWER SUPPLY
EARTH FAULT
DISABLEMENTS
SOUNDER
FAULT TRANSMISSION
ALARM TRANSMISSION
EXTINGUISHING
EN

ET-0797_B 03112020

ET-0797_C 03112020

146 mm

190 mm

10 mm

Italian

ET-0840 **C12**

RESET
TACIT./RIPR. SIRENE
TACITAZIONE CICALINO
AZZERA RITARDO
EVACUAZIONE
IT

ET-0840 **A12**

ALLARME
PREALLARME
ALLARME REMOTO ATTIVO
SIRENE TACITATE
RITARDI ATTIVI
EVACUAZIONE
TEST
TENSIONE PRESENTE
IT

ET-0840_A12 31102022

ET-0840 **B12**

GUASTI
SISTEMA
ALIMENTAZIONI
DISPERSIONE A TERRA
ESCLUSIONI
SIRENA
TRASMISSIONE GUASTI
TRASMISSIONE ALLARMI
COMANDO ANTINCENDIO
IT

ET-0840_B12 31102022

ET-0840_C12 31102022

Slovenian 1

ET-0840 **C1**

ET-0840 **A1**

ALARM

PREDALARM

ALARM NA DALJAVO AKTIVIRAN

UTIŠAJ ZVOČNO NAPRAVO

ZAKASNITEV AKTIVIRANA

EVAKUACIJA

TEST

VKLOP/IZKLOP

SL

ET-0840_A1 29032022

ET-0840 **B1**

NAPAKE

SISTEM

NAPAJANJE

NAPAKA OZEMLJITVE

ONEMOGOČITVE

ZVOČNA NAPRAVA

PRENOS NAPAKE

PRENOS ALARMA

GAŠENJE

SL

ET-0840_B1 29032022

PONASTAVITEV

UTIŠANJE ZVOKA

UTIŠAJ BRENČALO

PREKINI ZAKASNITEV

EVAKUACIJA

SL

ET-0840_C1 29032022

Serbian 2

ET-0840 **C2**

ET-0840 **A2**

ALARM

PREDALARMI

DALJINSKI ALARM UKLJUČEN

UTIŠAJ ZVUČNIK

AKTIVIRANA ODGODA

EVAKUACIJA

TEST

NAPAJANJE

SR

ET-0840_A2 12042022

ET-0840 **B2**

KVAROVI

SISTEM

NAPAJANJE

GREŠKA UZEMLJENJA

ONEMOGUĆENJA

ZVUČNIK

PRENOS KVARA

PRENOS ALARMA

GAŠENJE POŽARA

SR

ET-0840_B2 12042022

PONIŠTI

REAKTIVACIJA SIRENA

ZUJALICA TIŠINE

ODGODA KRAJA

EVAKUACIJA

SR

ET-0840_B2 12042022

Croatian 3

ET-0840 C3

PONIŠTI

REAKTIVIRANJE SIRENA

ZUJALICA TIŠINE

ODGODA KRAJA

EVAKUACIJA

HR

ET-0840 A3

ALARM

PREDALARMI

DALJINSKI ALARM UKLJUČEN

UTIŠAJ SIRENU

AKTIVIRANA ODGODA

EVAKUACIJA

TEST

NAPAJANJE

HR

ET-0840_A3 12042022

ET-0840 B3

GREŠKE

SUSTAV

NAPAJANJE

GREŠKA UZEMLJENJA

ONEMOGUĆENJA

ZVUČNIK

PRIJENOS GREŠKE

PRIJENOS ALARMA

GAŠENJE POŽARA

HR

ET-0840_B3 12042022

Greek 4

ET-0840 C4

ΕΠΑΝΑΦΟΡΑ

ΑΝΤΗΧΗΣΗ ΣΙΓΑΣΗΣ

ΜΠΑΖΕΡ ΣΙΓΑΣΗΣ

ΛΗΞΗ ΚΑΘΥΣΤΕΡΗΣΗΣ

ΕΚΚΕΝΩΣΗ

EL

ET-0840 A4

ΣΥΝΑΓΕΡΜΟΣ

ΠΡΟΣΥΝΑΓΕΡΜΟΣ

ΑΠΟΜΑΚΡΥΣΜΕΝΟΣ ΣΥΝΑΓΕΡΜΟΣ ΕΝΕΡΓΟΠΟΙΗΜΕΝΟΣ

ΗΧΗΤΙΚΟΣ ΤΟΝΟΣΣΙΓΑΣΗΣ

ΚΑΘΥΣΤΕΡΗΣΗ ΕΝΕΡΓΟΠΟΙΗΜΕΝΗ

ΕΚΚΕΝΩΣΗ

ΔΟΚΙΜΗ

ΙΣΧΥΣ

EL

ET-0840_A4 29032022

ET-0840 B4

ΣΦΑΛΜΑΤΑ

ΣΥΣΤΗΜΑ

ΤΡΟΦΟΔΟΣΙΑ

ΣΦΑΛΜΑΓΕΙΩΣΗΣ

ΑΠΕΝΕΡΓΟΠΟΙΗΣΕΙΣ

ΗΧΗΤΙΚΟΣ ΤΟΝΟΣ

ΣΦΑΛΜΑ ΜΕΤΑΔΟΣΗΣ

ΣΥΝΑΓΕΡΜΟΣ ΜΕΤΑΔΟΣΗΣ

ΚΑΤΑΣΒΕΣΗ

EL

ET-0840_B4 29032022

Bulgarian 5

ET-0840 **C5**

ET-0840 **A5**

АЛАРМА

ПРЕДВ. АЛАРМА

АКТИВИРАНА ДИСТ. АЛАРМА

ЗАГЛУШЕНА СИРЕНА

АКТИВИРАНО ЗАКЪСНЕНИЕ

ЕВАКУАЦИЯ

ТЕСТ

ЗАХРАНВАНЕ

BG

ET-0840_A5 29032022

ET-0840 **B5**

ПОВРЕДИ

СИСТЕМА

ЗАХРАНВАНЕ

ПОВРЕДА ЗАЗЕМЯВАНЕ

ИЗКЛЮЧВАНИЯ

СИРЕНА

ИЗПРАЩАНЕ ПОВРЕДА

ИЗПРАЩАНЕ АЛАРМА

ПОЖАРОГАСЕНЕ

BG

ET-0840_B5 29032022

РЕСЕТ

ЗАГЛУШАВАНЕ СИРЕНА

ЗАГЛУШАВАНЕ ЗУМЕР

КРАЙНА ЗАКЪСНЕНИЕ

ЕВАКУАЦИЯ

BG

ET-0840_C5 29032022

Albanian 6

ET-0840 **C6**

ET-0840 **A6**

ALARM

PARA ALARM

AKTIVIZIM NGA DISTANCA I ALARMIT

PUSHIM SIRENE

AKTIVIZIM MEVONESE

EVAKUIM

TEST

TENSIONI PREZENT

AL

ET-0840_A6 29032022

ET-0840 **B6**

DEFEKTE

SISTEMI

BLLOKU I USHQIMIT

DEFEKT TOKEZIMI

C'AKTIVIZIME

SIRENA

TRANSMETIM DEFEKTESH

TRANSMETIM ALARMESH

EXTINGUISHING

AL

ET-0840_B6 29032022

RESET

PUSHIM ISIRENES

PUSHIM I ZILES

SHKEPUTJEE VONESES

EVAKUIM

AL

ET-0840_C6 29032022

Dutch 7

ET-0840 **C7**

ET-0840 **A7**

BRAND

VOORALARM

DOORMELDING UITGEVOERD

STOP SIGNAALGEVERS

VERTRAGING ACTIEF

ONTRUIMING

INTEST

INBEDRIJF

NL

ET-0840_A7 14042022

ET-0840 **B7**

STORING

SYSTEEM

VOEDING

AARDLEK STORING

BUITEN DIENST

SIGNAALGEVERS

DOORMELDING STORING

DOORMELDING BRAND

BLUSSING

NL

ET-0840_B7 14042022

RESET

STOP/HERST. SIGNAALG.

STOP ZOEMER

EINDE VERTRAGING

ONTRUIMING

NL

ET-0840_C7 14042022

Romanian 8

ET-0840 **C8**

ET-0840 **A8**

ALARME

PREALARME

ACTIVARE TRANSMISIE DISTANȚĂ

STOP SIRENE

ÎNTÂRZIERE ACTIVĂ

EVACUARE

TEST

ALIMENTARE

RO

ET-0840_A8 14042022

ET-0840 **B8**

DEFECTE

SISTEM

ALIMENTARE

PUNERE LA PĂMÂNT

DEZACTIVĂRI

SIRENE

TRANSMISIE DEFECTE

TRANSMISIE ALARME

STINGERE

RO

ET-0840_B8 14042022

RESET

STOP/START SIRENE

STOP BUZZER

ANULARE ÎNTÂRZIERE

EVACUARE

RO

ET-0840_C8 14042022

German 9

ET-0840 **C9**

ET-0840 **A9**

ALARM

VORALARM

ABGES. ALARM AKTIV

AKUSTIKAB

VERZÖGERUNG LÄUFT

EVAKUIERUNG

TEST

BETRIEB

DE

ET-0840_A9 24102022

ET-0840 **B9**

STÖRUNGEN

SYSTEM

ENERGIEVERS.

ERDSCHLUSS

ABSCHALT.

AKUSTIK

STÖRUNGS-ÜBERTRAGUNG

ALARM-ÜBERTRAGUNG

LÖSCHANLAGE

DE

ET-0840_B9 24102022

RÜCKSETZTEN

AKUSTIK AB/AN

SUMMER AUS

VERZÖGERUNG BEENDET

EVAKUIERUNG

DE

ET-0840_C9 24102022

Spanish 10

ET-0840 **C10**

ET-0840 **A10**

ALARMA

PREALARMA

ALARMA REMOTA ACTIVA

SILENCIADO SIRENAS

RETARDOS ACTIVOS

EVACUACIÓN

PRUEBA

ALIMENTACIÓN

ES

ET-0840_A10 14102022

ET-0840 **B10**

AVERÍAS

AVERÍA SISTEMA

AVERÍA ALIMENTACIÓN

AVERÍA TIERRA

ANULACIÓN

SIRENA

TRANSMISIÓN AVERÍAS

TRANSMISIÓN ALARMAS

EXTINCIÓN

ES

ET-0840_B10 14102022

REARME

SILENCIAR REACTIVAR SIR

SILENCIAR ZUMBADOR

FIN RETARDOS

EVACUACIÓN

ES

ET-0840_C10 14102022

Portuguese 11

ET-0840 **C11**

ET-0840 **A11**

ALARME

PRÉ-ALARME

ALARME REMOTO ACTIVO

SILENCIAR SIRENES

ATRASO ACTIVO

EVACUAÇÃO

TESTE

ALIMENTAÇÃO

PT

ET-0840_A11 14102022

ET-0840 **B11**

AVARIAS

AVARIA SISTEMA

AVARIA ALIMENTAÇÃO

AVARIA DE TERRA

ANULADOS

SIRENE

TRANSMISSÃO AVARIAS

TRANSMISSÃO ALARMES

EXTINÇÃO

PT

ET-0840_B11 14102022

REARME

REACTIVAR SIRENES

SILENCIO BESOURO

FIM ATRASOS

EVACUAÇÃO

PT

ET-0840_C11 14102022

Notes

Notes

Honeywell House
Skimped Hill Lane
BRACKNELL
Berkshire, RG12 1EB
UK

M-167.1-MA1000-EN / 02.2023

Technical changes reserved!