



MA-2000

MA-2000

Installation Manual

M-167.1-MA2000-EN / 06.2022

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.

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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 for man and/or machine. Non-compliance will result in risks to man 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.

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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 form 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 MAx panel Fire Detection System
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	CyberSecurity 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 a training course and that he knows 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 perfectly 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



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



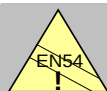
This panel is marked with the UKCA 0359 label to comply with the UKCA guidelines for the UK market of its standards.

1.2.1 NATIONAL STANDARDS



This equipment must be installed and must comply with the instructions and regulations valid at the installation site.

1.3 EN 54: Information



EN 54-2 13.7

Max. 512
Sensors / Manual
Call Points per
microprocessor.

MA-2000 control unit has a maximum capacity of 99 detectors and 99 modules for each loop.

If this function is not appropriately used, it can contravene the EN 54-2 requirements.

This limit includes the possible conventional sensors and buttons 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 rules.
In addition to the basic EN 54 requirements, the control unit is in conformity with 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-2000 control unit is in conformity with 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

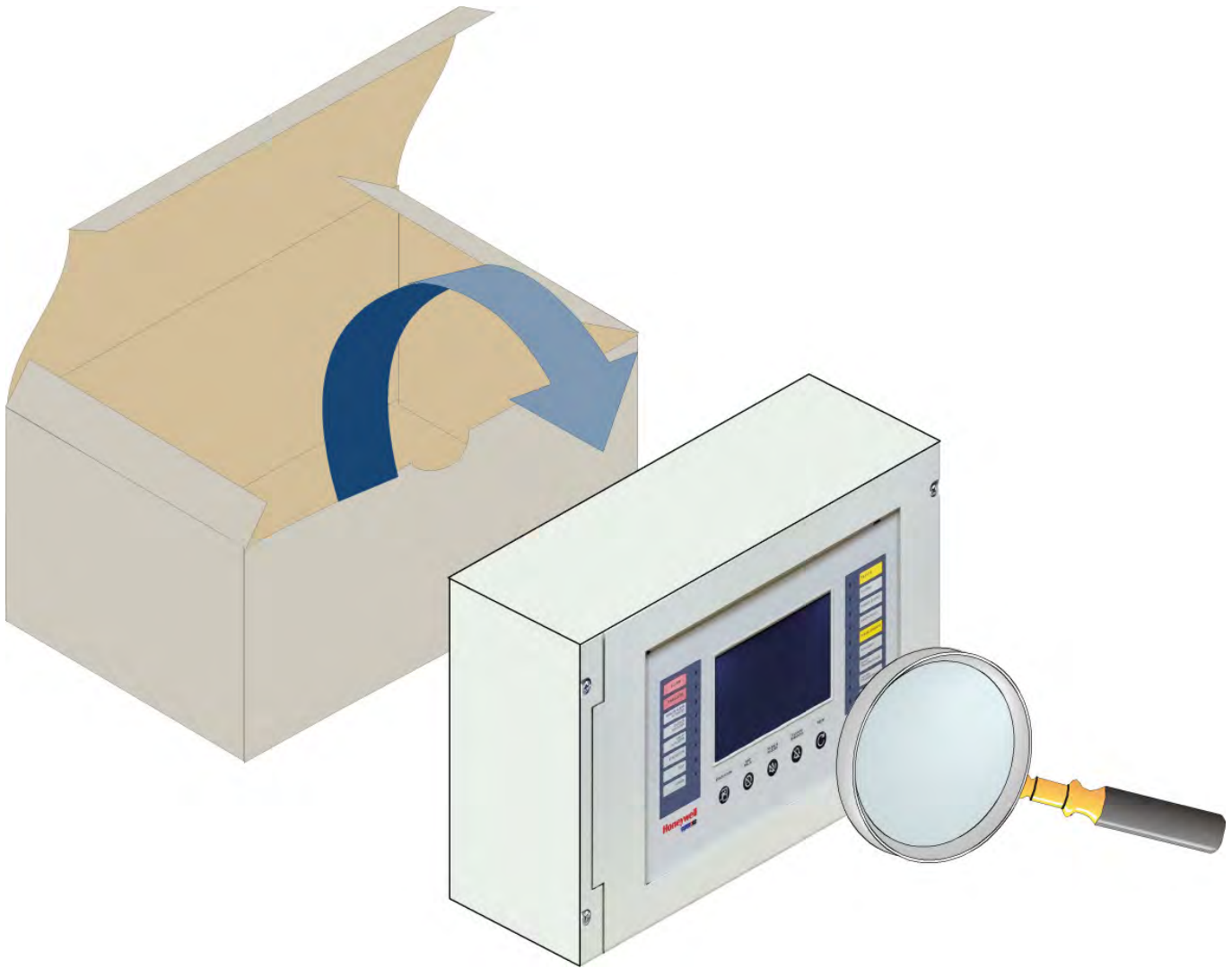


Additional and updated Informations

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. Updated informations are available for comparison on the MORLEY IAS Fire Systems 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-2000 control unit is a fire detection control unit manufactured in conformity with the EN 54-2 and EN 54-4 rules.

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:

- 2 analogue loops programmable to closed or open loop for the connection of the field elements.
- Each loop can drive 99 detectors + 99 input and output modules with Morley / System sensor protocol.

POWER SUPPLY:

- Input: 100 ... 120 V AC, 50 / 60 Hz, max. 3,0 A
200 ... 240 V AC, 50 / 60 Hz, max. 1,7 A
- Voltage: 24 V DC / max. 6,25 A
- User output: 28 V DC (+ 3 % +/- 18 %) 1 A, on board to power external loads such as sirens, bells, etc.
- Primary Power Section:
 - I max. A 1,91 A
 - I max. B 2,7 A
 - I min. 341 mA (with typical loop load connected)
- Fuse: 230 V AC / 3,15 A

OUTPUTS:

- 1 Supervised Sounder Output (EOL 47K Ω or Diode)
- 1 General Alarm Output with contacts free from voltage / supervised Output (EOL 47 K Ω or Diode)
- 1 General Fault Output with contacts free from voltage
- 2 Optional outputs with contacts free from voltage / supervised Output (EOL 47 K Ω or Diode)

Mechanics

The control unit mechanics is suitable for wall installations.

For cabinet sizes refer to the below drawing "MA-2000 dimensions"

- Protection grade: IP 30
- Operation temperature: -5 °C ... +40 °C
- Storage temperature: -10 °C ... +50 °C
- Weight: 7 Kg

Main Functions

- 3 password levels (Operator - Maintenance - Configuration)
- 4 total access levels in conformity with the EN 54 rules
- 40 zonal indicators on screen display
- Programmable text: point description through 32 characters; zone description through 32 characters
- 2000 physical zones, 800 logical equation, 400 logical groups (stand-alone), 1600 logical groups (network)
- 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
- Automatic recognition of points having the same address
- Decision algorithms for the alarm and fault criteria
- Automatic sensitivity changes Daytime /Night
- Signalling of need for sensor cleaning
- Signalling of poor sensor sensitivity
- 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 lead 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!

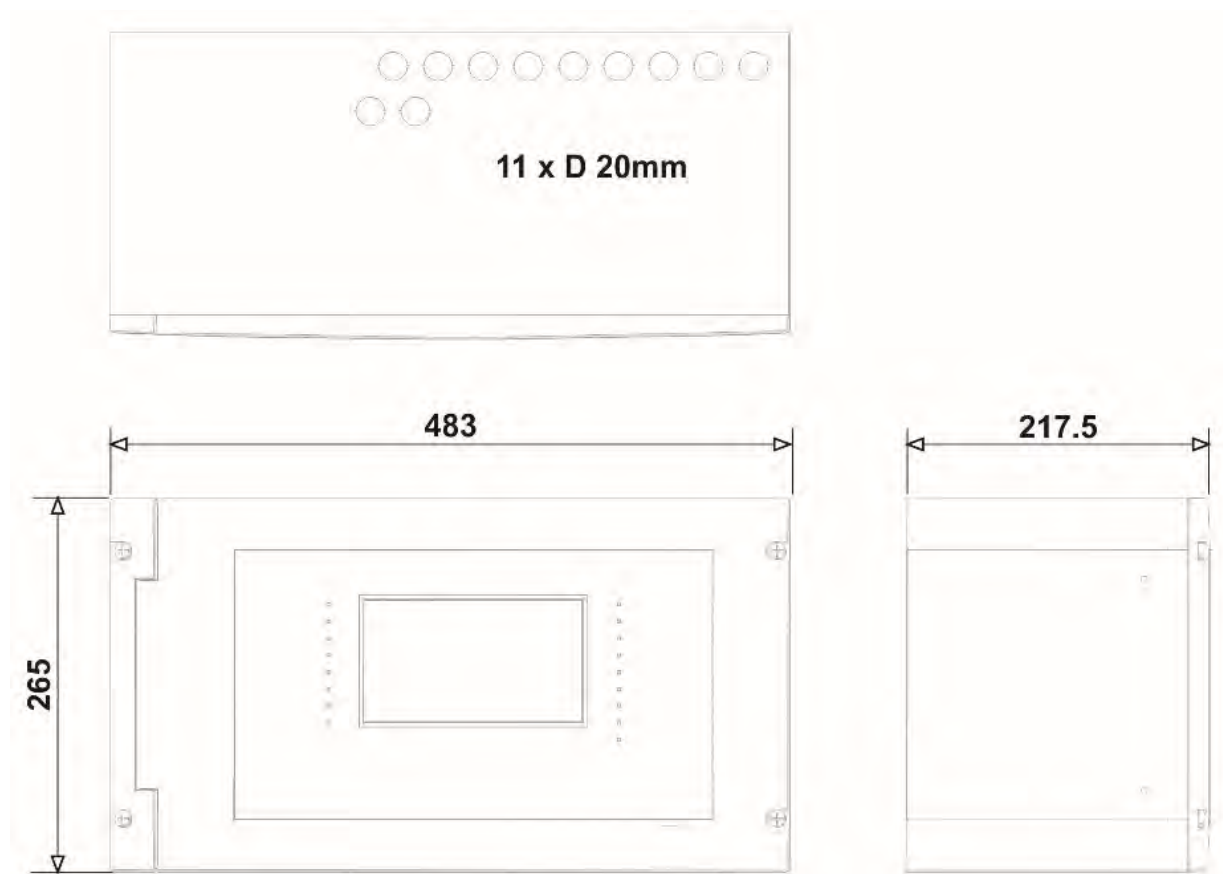
Protective and functional earth

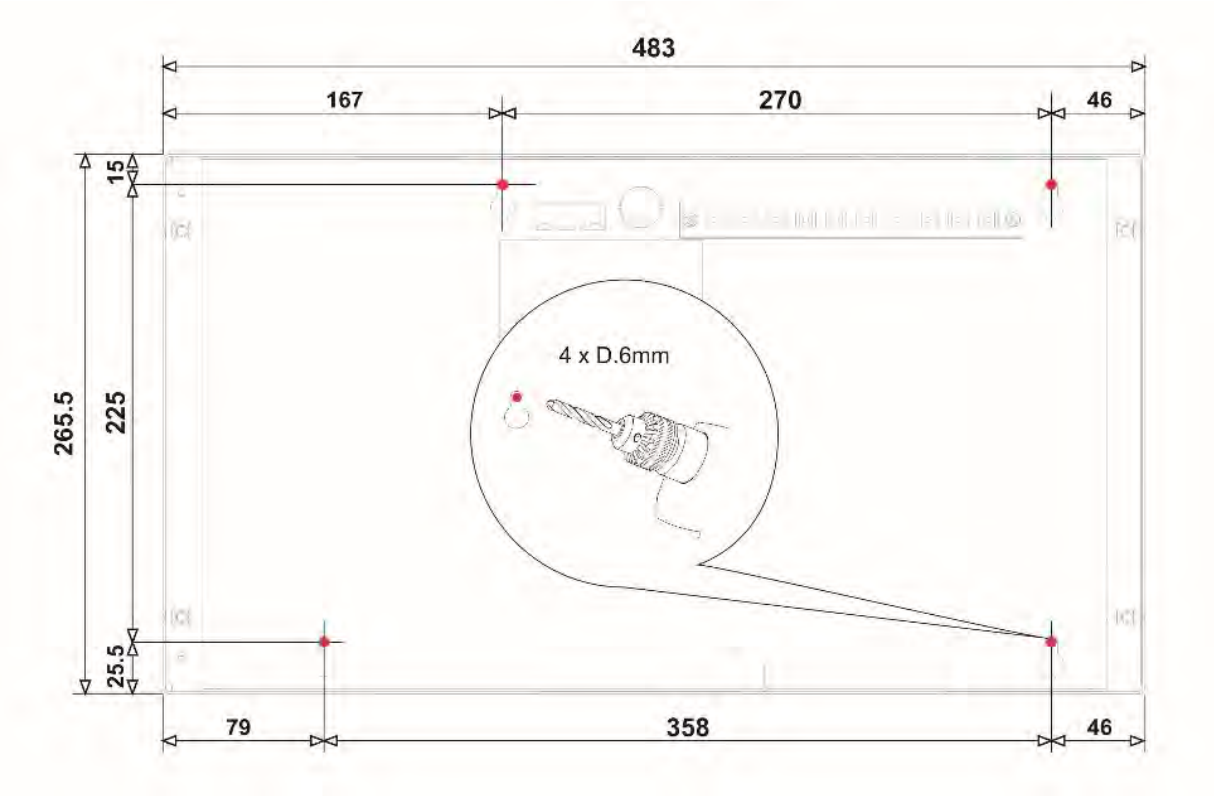
The PE conductor must be connected to the corresponding terminal at the mains supply. Connect the FE terminal of the panel's cabinet with the protective earthing rail (PE rail) of the power distributor panel from which the fire alarm system will be powered.

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-2000 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.



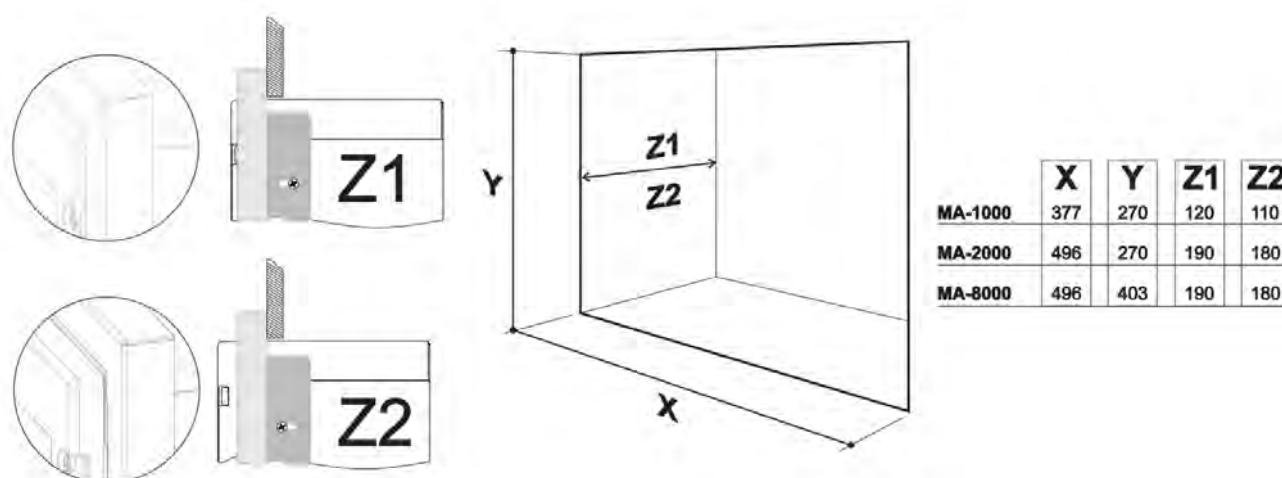
The control unit is designed to be installed to the wall through self-blocking cleats (masonry walls) or self-tapping screws (prefabricated panels).
It is recommended not to install the panel near heat sources (radiators, etc.)
Use screws of max. 5 mm.



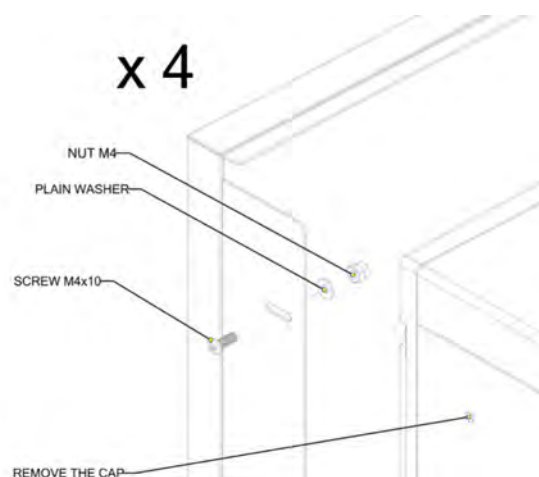
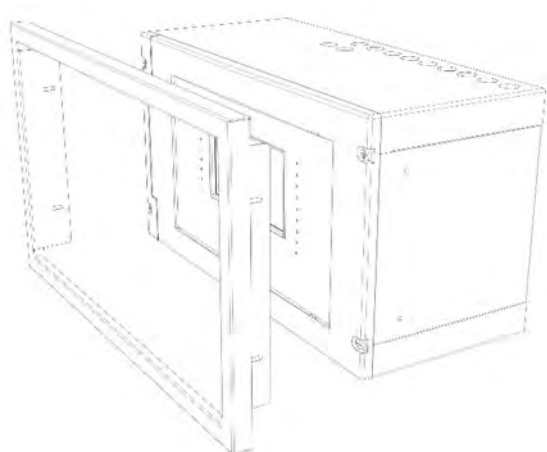
Moreover, if the control unit must be installed to the wall beside a corner wall, the minimum distance from the latter must be at least 200 mm, so as to avoid the opening of the front panel.

4.2 MA-2000 Flush Mount

MA-2000 panel can be flush mounted into a wall recess using a mounting kit MA-2BE:



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 work.



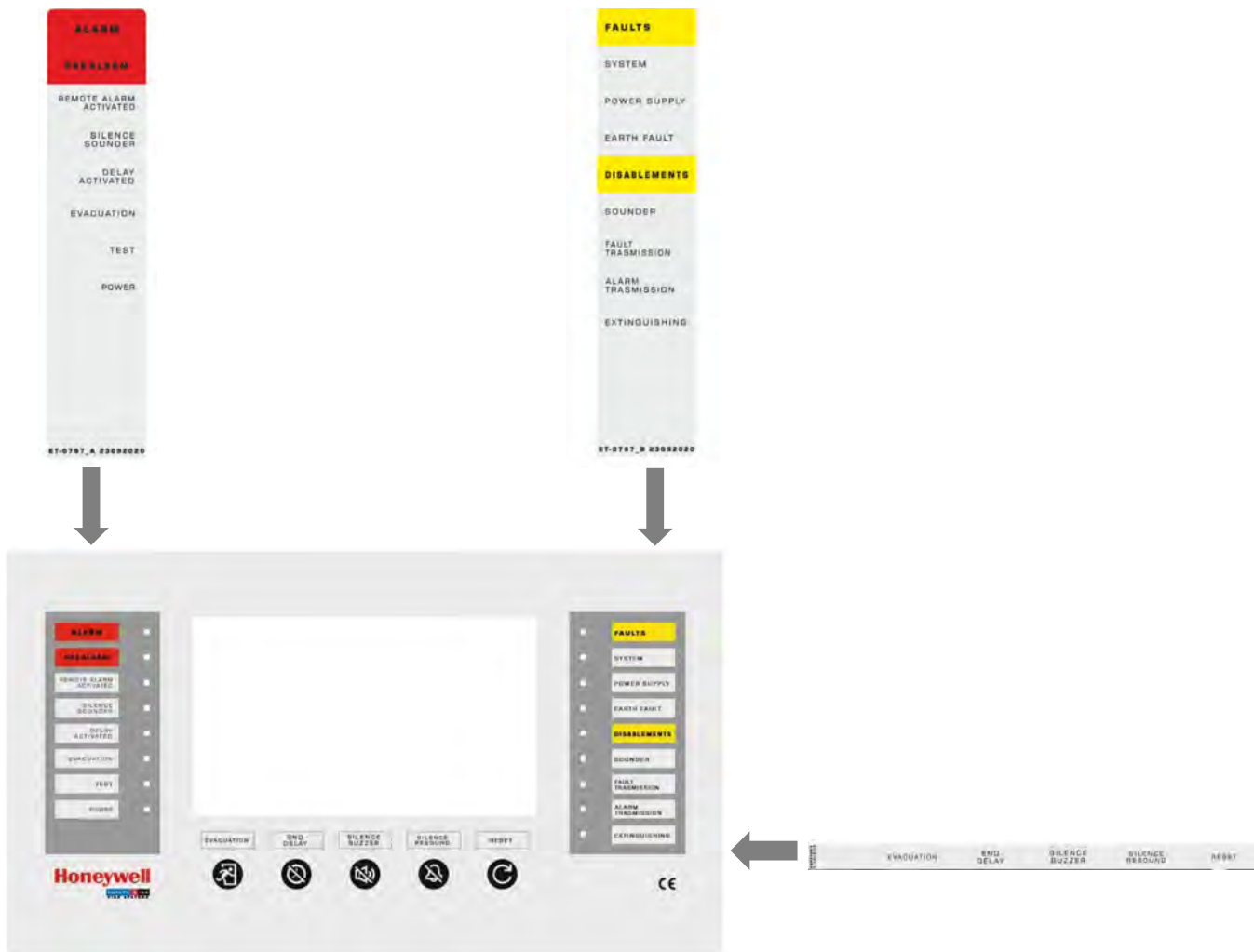
Step 2: Knock out the Flush surround fixing points.

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-2000 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 10 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 at the well with disconnected users). This complies the CEI 68-12 rule 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 topography).

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 battery contained in the same control unit.

The required features for the mains supply are:

- Voltage: 100 ... 120 V AC / 200 ... 240 V AC
- Frequency: 50 / 60 Hz
- Current: max. 3,0 A @ 110 V AC max 1,7 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 V DC / 2,70 A ripple max. 500 m Vpp (Power supply for control unit, user output, external load power supply).

Output: 28 V DC (+3% +/- -18%) 1 A, on board to power external loads.

5.4 Battery charger section

- Output voltage = 26,5 Vcc ... 28,5 Vcc (temperature compensation)
- Output current = max. 0,79 A ~ 500 m Vpp
- Number of batteries that can be connected = 2 x 12 V / 7 Ah, max. 18 Ah
- The battery charger section has the following signaling 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 = 0,6 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:

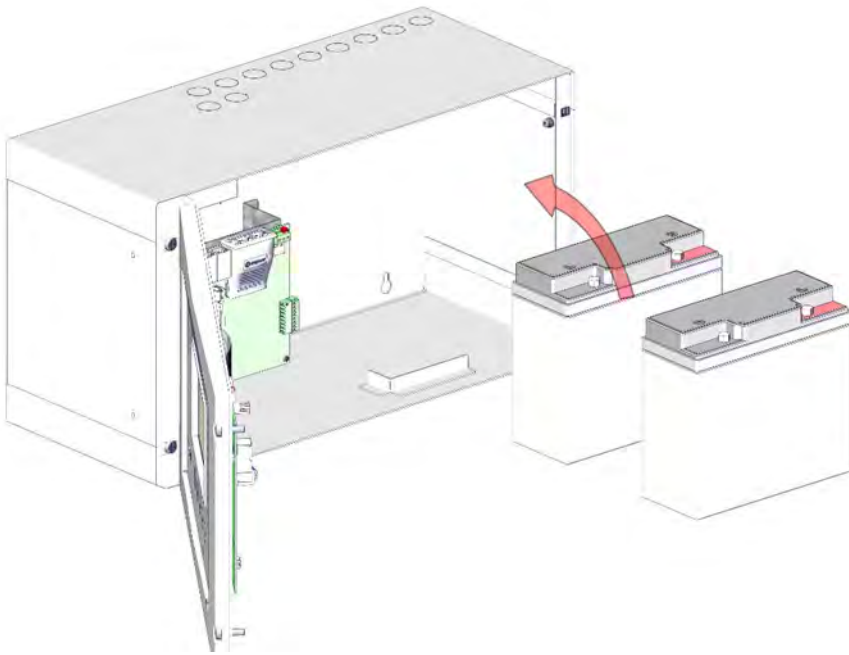
Capacity 17 Ah

Battery Yuasa type NP17-12IFR with bolt connector.

Capacity (20 h): 12 V / 17 Ah

Dimensions (W x D x H): 181 x 77 x 167 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 on the stand-by battery source when AC mains fails.

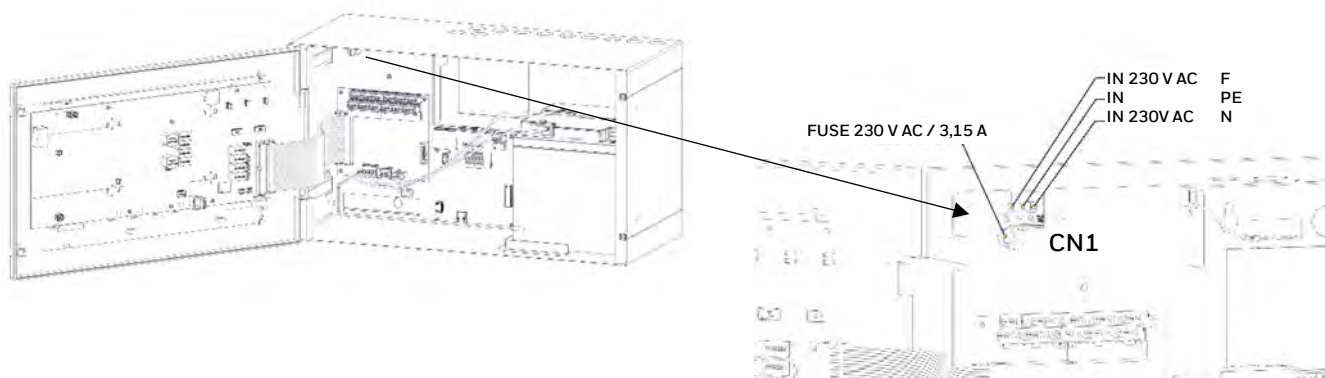
When the control unit operates through AC mains, the main microprocessor controls the battery charger output and the presence of them. To perform this test, the output battery charger is temporarily switched off and the battery voltage is read (signalling of missing batteries < 15 V).

When the control unit operates as a battery (in the absence of the AC mains) "Low Battery" breakdown 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 wirings **MUST** be checked **BEFORE** they are connected to the control unit.
It is recommended to perform at least the following checks!

5.4.4 Mains and Batteries connection



The connection to the 230 V AC power supply mains must be performed through three-conductor cable (phase- neutral- earth).

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 heart bar 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 a soft welding.

A sectioning device external to the control unit must be provided for the 230 V AC power cable (contact separation: min. 3 mm) The sectioning 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.

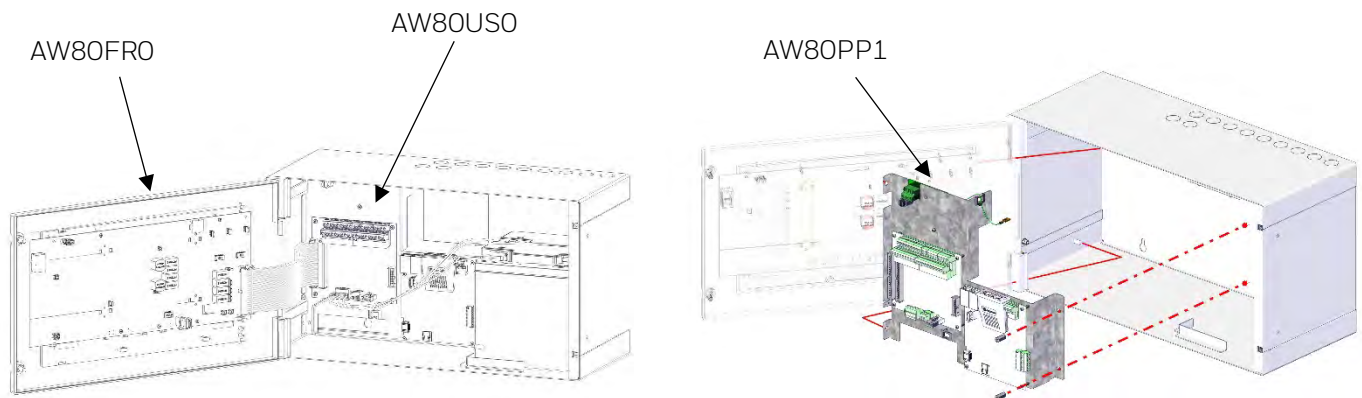


Once the control unit has been powered, it will automatically start operating.

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-2000 is equipped with:

- PSU board AW80PP1 to connect the main.
- Front board AW80FR0 that include LCD display 7" / 17,78 cm and the slot "Buttery Buffer RTC".
- Main connection board AW80US0 that includes connectors to front board and batteries.

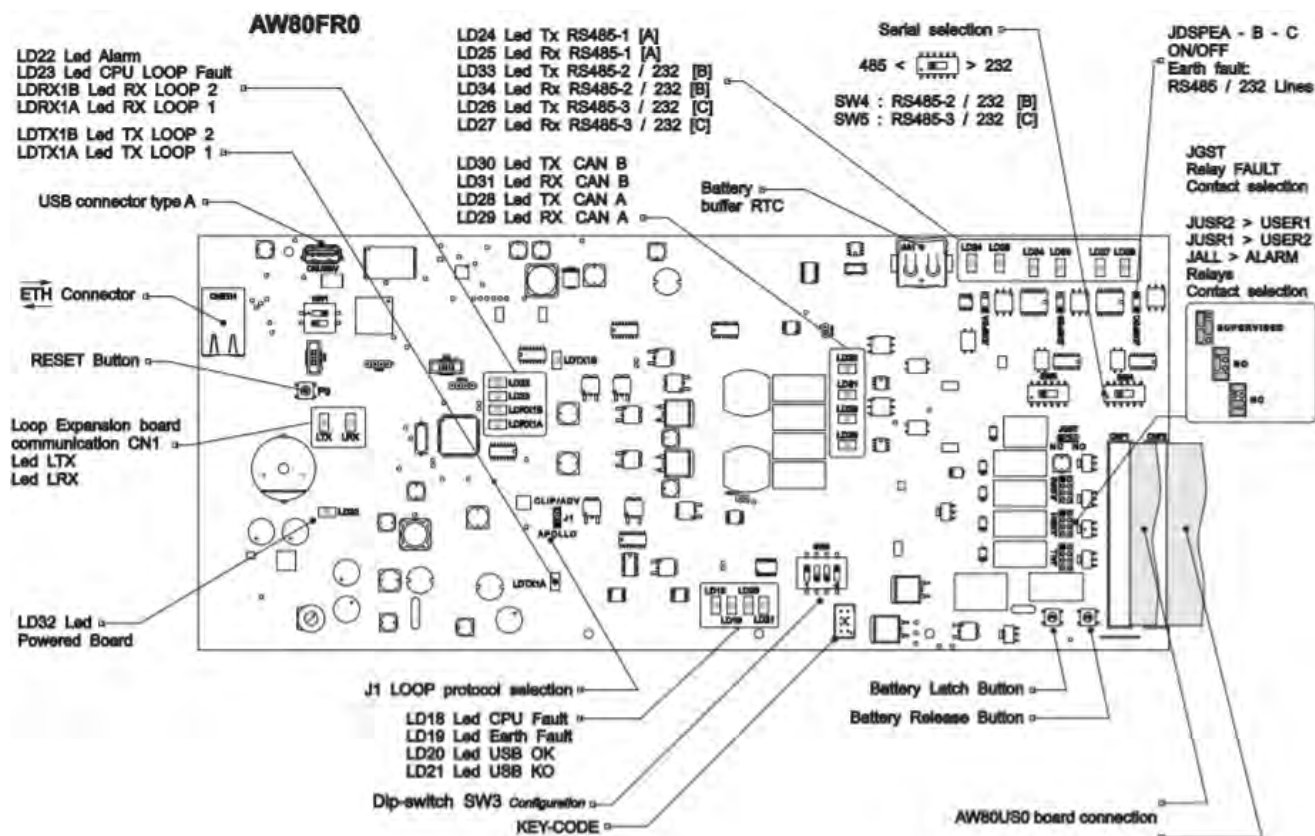
System Setting Battery Backup

Place the battery model CR 1632 (3 V) included with panel on the CPU board AW80FR1 in the slot "Buttery Buffer RTC" 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-2000 CPU Board



Board Setup

Earth Dispersion	JDSPE	Jumper housed on AW80Usx. Removing the JDSPE jumper causes the control panel to ignore a ground fault on the control panel circuits, loop lines, and isolated CanBus lines.			
	JDSPEA	Removing the JDSPEA jumper causes the control unit to ignore an RS485-1 ground fault (isolated).			
	JDSPEB	Removing the JDSPEB jumper causes the control unit to ignore a RS485/RS232 -2 ground fault (isolated).			
	JDSPEC	Removing the JDSPEB jumper causes the control unit to ignore a RS485/RS232 -3 ground fault (isolated).			
Clip / HON Protocol	J1	Clip: Set J1 to position 2-3 HON: Set J1 to position 1-2			
Fault Relay	Possibility of NO/NC contact selection through JGST				
Relay Alarm, User1 and User2	Possibility of selection for each relay: potential-free contact NO/NC or as controlled output with 47 KΩ, 5 % balance or diode termination, via JALL, JUSR1, JUSR2				
DIP SW3	Firmware Update				
	1	2	3	4	
	OFF	OFF	OFF	OFF	Normal Operating setting
	ON	OFF	OFF	OFF	Copy the configuration in the USB memory key
	ON	OFF	OFF	ON	Restore factory configuration
DIP SW4	ON	ON	ON	ON	from USB memory key loads configuration previously prepared by PK SW Tool
	Configuration Serial Port 3				
	1	2	3	4	
	ON	ON	OFF	OFF	Serial Port 3 type RS232
DIP SW5	OFF	OFF	ON	ON	Serial Port 3 type RS485
	Configuration Serial Port 2				
	1	2	3	4	
	ON	ON	OFF	OFF	Serial Port 2 type RS232
DIP SW5	OFF	OFF	ON	ON	Serial Port 2 type RS485



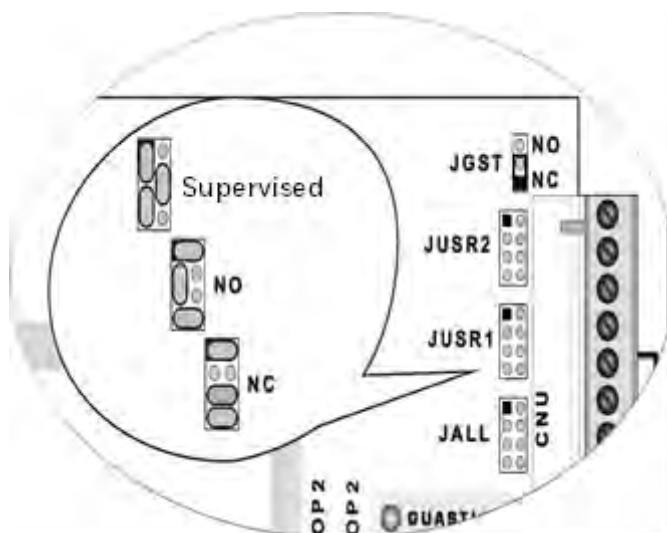
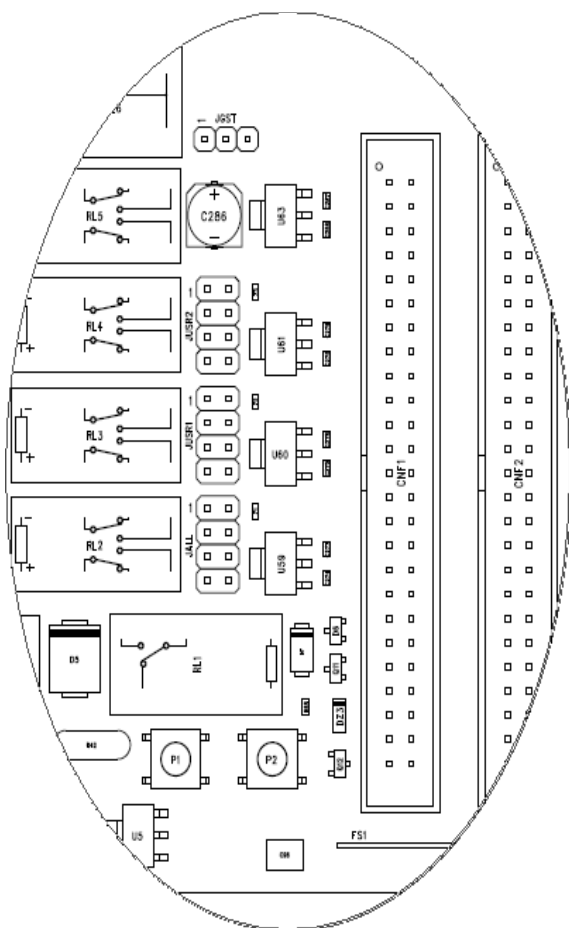
6.2.1 Terminal Board AW80US0

CNAL		DC Power Supply	
1	Positive	It comes from power supply module – board AW70PP1	
2	Earth		
3	Negative		
CNB		Batteries	
1	Positive Battery 1	Protection with two MFR700 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	LA2 +	Loop 2 + side A	LOOP 2
06	LA2 -	Loop 2 - side A	
07	LB2 +	Loop 2 + side B	
08	LB2 -	Loop 2 - side B	
09	+24V USR	+ 24 Vcc User	Protection with 1 A resettable electronic fuse
10	GND USR	GND User	
11	RL ALL- C	Alarm Relay C	JALL Selects Potential Free NO / NC or Controlled Output with 1 A Resettable Electronic Fuse with 47 K Ω / 5 % Balance or Diode
12	RL ALL+ NO/NC	Alarm Relay NO/NC	
13	RL USR1- C	Relay USR1 C	
14	RL USR1+ NO/NC	Relay USR1 NO/NC	
15	RL USR2- C	Relay USR2 C	
16	RL USR2+ NO/NC	Relay USR2 NO/NC	
17	SIR LC +	Siren + in stand-by	JUSR1 selects Potential Free NO / NC or Controlled Output with 1 A Resettable Electronic Fuse with 47 K Ω / 5 % Balance or Diode
18	SIR LC -	Siren – in stand-by	
19	RL GST C	Fault Relay C	JUSR2 selects Potential Free NO / NC or Controlled Output with 1 A Resettable Electronic Fuse with 47 K Ω / 5 % Balance or Diode
20	RL GST NO/NC	Fault Relay NO/NC	
CNS Connector 9+9 poles 2 horizontal staggered planes pitch 5 (1-9 row below 10-18 row above)			SERIAL
01	RS485H1	RS485-1 signal A+	Isolated serial RS485-1
02	GNDIS1	GND RS485-1 isolated	
03	RS485L1	RS485-1 signal B-	
04	RS485H2	RS232 TX2	Serial RS485-2 SW5-1,2 OFF SW5-3,4 ON Serial RS232-2 SW5-1,2 ON SW5-3,4 OFF
05	GNDIS2	GND RS485-2 isolated	
06	RS485L2	RS232 RX2	
07	RS485H3	RS232 TX3	Serial RS485-3 SW4-1,2 OFF SW4-3,4 ON Serial RS232-3 SW4-1,2 ON SW4-3,4 OFF
08	GNDIS3	GND RS485-3 isolated	
09	RS485L3	RS232 RX3	
10			
11			
12			
13	CDAHA	CAN signal +	A-side CANBUS isolated
14	GNDISA	GND CANA isolated	
15	CDALA	CAN signal -	
16	CDAHB	CAN signal +	B-side CANBUS isolated
17	GNDISB	GND CANB isolated	
18	CDALB	CAN signal -	
CNBT			Communication cable for Extended PSU & Batteries
1	RS485H1	RS485-1 signal A+	Isolated RS485-1 Serial Extension
2	GNDIS1	GND RS485-1 isolated	
3	RS485L1	RS485-1 signal B-	

6.3 Relay outputs

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

6.3.1 Instructions to setting the relay outputs as NO / NC or Supervised

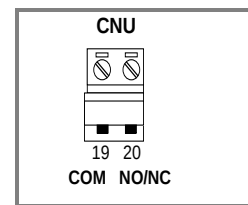


6.3.2 General Fault relay

The General Fault relay is usually in energized state. It is de-energized in Fault condition. This output is available in free voltage.

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

Setting of the general fault output with N.O. contact (Jumper JGST).



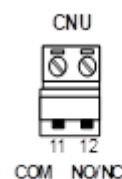
Main Fault output connections
(refer to basic board topography)

6.3.3 General Alarm relay

The General Alarm relay is usually in energized state. It is de-energized in Fault condition. This output is available in free voltage.

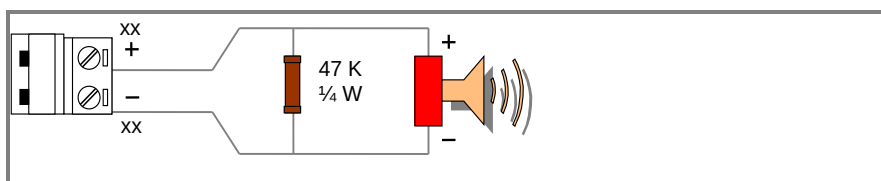
Contact range: max 30 V AC / DC, 1 A, Non-inductive loads.

Setting of the general fault output with N.O. contact (Jumper JALL)

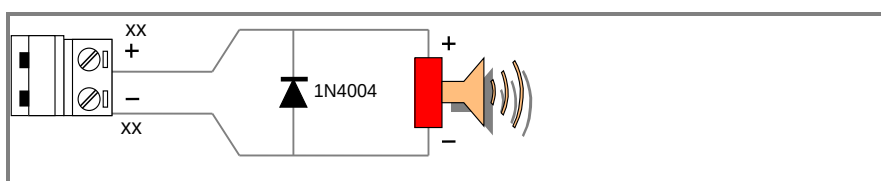


Main Alarm output connections
(refer to basic board topography)

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



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

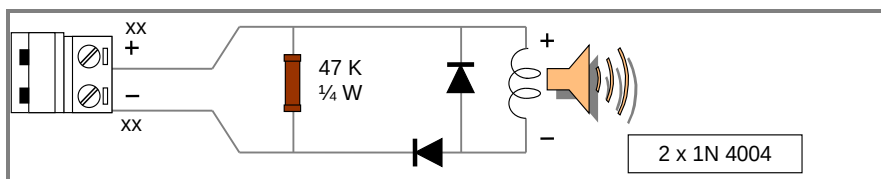


Connect the 47 K Ω , 1/4 W EOL resistor or the diode only on last sounder of the line.



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

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



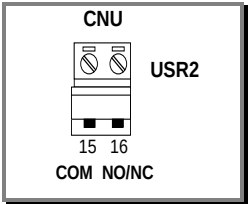
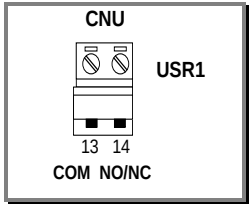
6.3.4 USR1 and USR2 relays

The USR1 and USR2 relays are available in free voltage contacts or as supervised outputs.

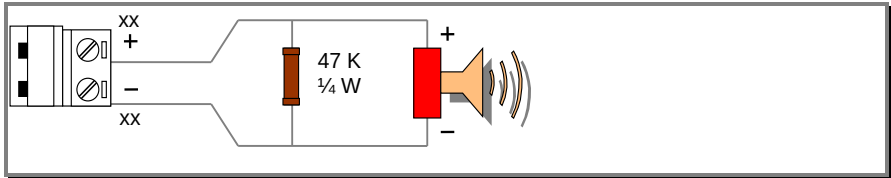
Contact range: max 30 V AC / DC, 2 A, Non-inductive loads
Selection of type of contact
(Normally open, normally closed or supervised outputs) refer to Chapter 4.4.2.



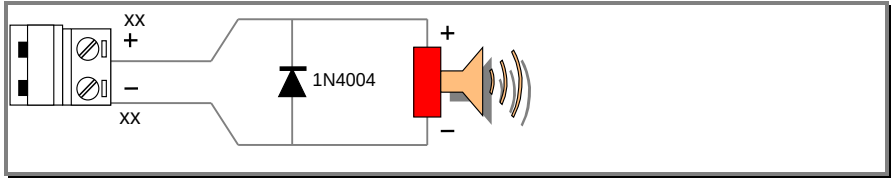
To program the activation of these outputs refer to MA-2000 Commissioning Manual.



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



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

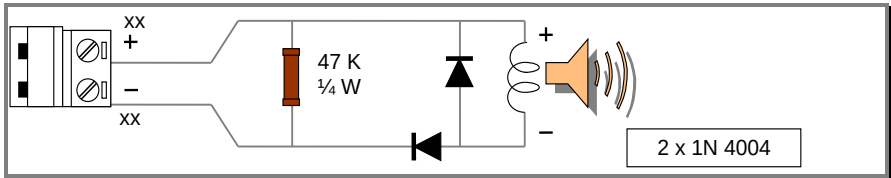


Connect the 47 K Ω , 1/4 W EOL resistor or the diode only on last sounder of the line.

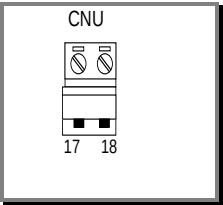


Polarity displayed are in Alarm condition, at idle condition, they are inverted!

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

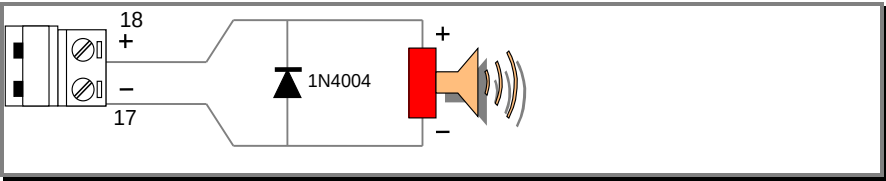


6.3.5 Sounder connection - controlled output



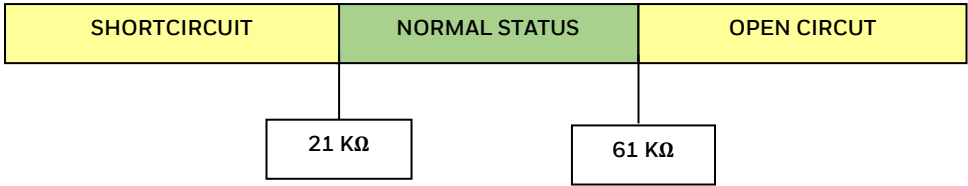
Sounder output connections (refer to basic board topography) 1 A resettable fuse

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



-  Connect the diode only on last sounder of the line.
-  Polarity displayed are in Alarm condition, at idle condition, they are inverted!

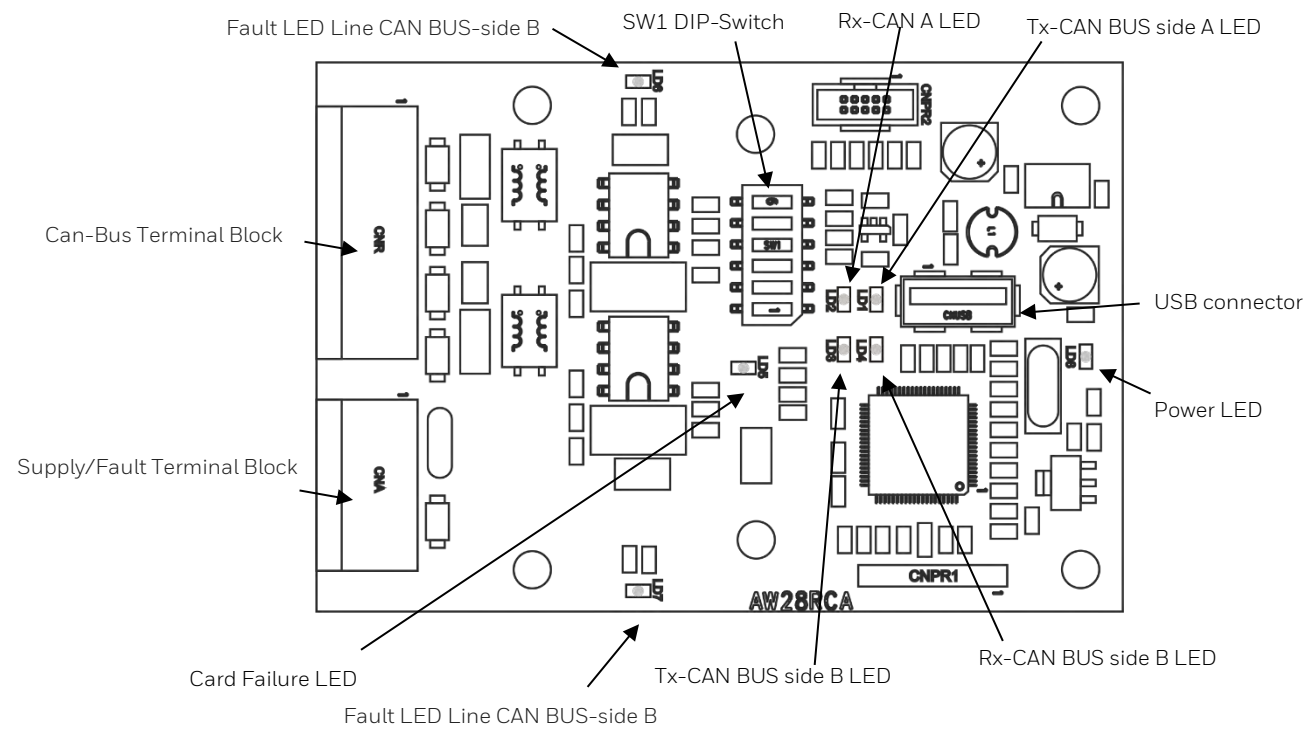
Thresholds for supervised outputs



6.4 OPTIONAL CARD

6.4.1 MA-BST-C (CAN-BUS amplifier card)

This card can be installed in a remote HLSPS25 (power supply) in the CAN-BUS network to double the distance from node to node.
Up to 8 MA-BST-C cards can be installed in the CAN-BUS network.

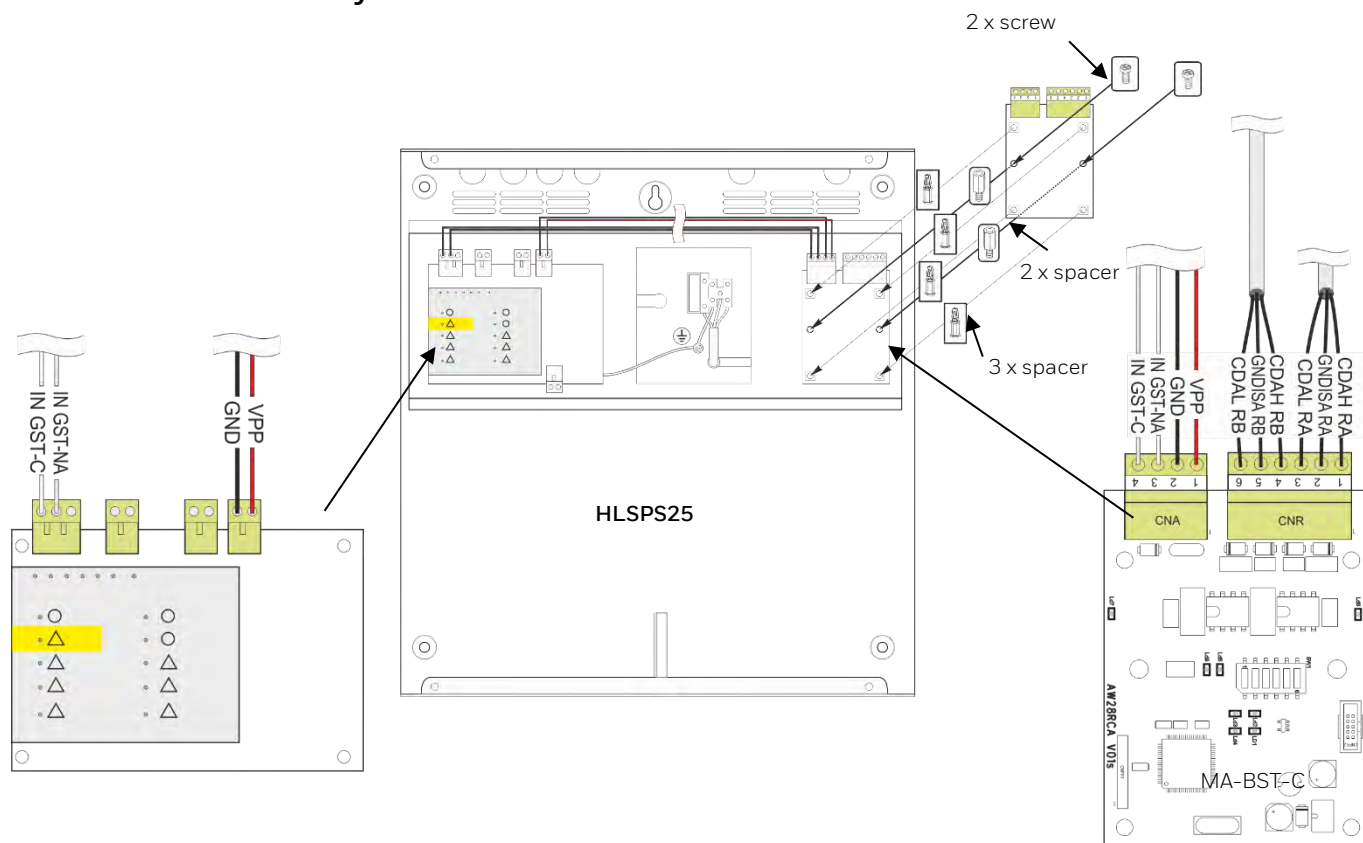


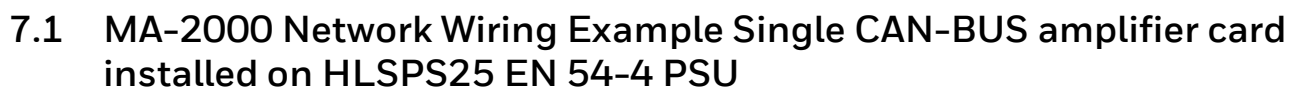
CNA			
N°	Description	Characteristics	Note
01	+ 24 Vcc	Power input	potential-free contact
02	GND		
03	IN GST-NO	Digital input to signalize the power supply fault	
04	IN GST-C	GND	

CNR			
N°	Description	Characteristics	Note
01	CDAHRA	Communication line (side A) for CAN BUS NETWORK	optically isolated with 120 Ohm termination resistor installed on board
02	GNDISRA		
03	CDALRA		
04	CDAHRB	Communication line (side B) for CAN BUS NETWORK	optically isolated with 120 Ohm termination resistor installed on board
05	GNDISRB		
06	CDALRB		

DIP switch SW1 – Address Switch						Card Address
1	2	3	4	5	6	
ON	OFF	OFF	OFF	OFF	OFF	Address No. 1
OFF	ON	OFF	OFF	OFF	OFF	Address No. 2
ON	ON	OFF	OFF	OFF	OFF	Address No. 3
OFF	OFF	ON	OFF	OFF	OFF	Address No. 4
ON	OFF	ON	OFF	OFF	OFF	Address No. 5
OFF	ON	ON	OFF	OFF	OFF	Address No. 6
ON	ON	ON	OFF	OFF	OFF	Address No. 7
OFF	OFF	OFF	ON	OFF	OFF	Address No. 8

6.4.2 Board Assembly MA-BST-C





7.2 MA-2000 Network Wiring Example Multiple CAN-BUS amplifier card installed on HLSPS25 EN 54-4 PSU



On the CAN-BUS network, it's possible to install max. 8 of MA-BST-C cards

CanBus Network Cable

CBUS 218AWG:

CAN-BUS Cable 2 x 18 AWG 18 Fire Resistant PH60 EN 50200 Color Blue

Core Type: Flexible Cl. 5-Tinned Copper

Total shield: Aluminium /Polyester tape 25/23 μm .

Drain: Tinned copper 7 x 0,20

Can Bus Typology

Similar to all RS485 communication line, the CAN Bus is a Point-to-Point sequential connection. The wire must have a 120 Ohm resistor at each end (on board on all boards).

The typology used is a Class A (closed Loop).

Note that it's not necessary to follow the sequential series on the peripheral's addresses.

T-taps are not permitted.

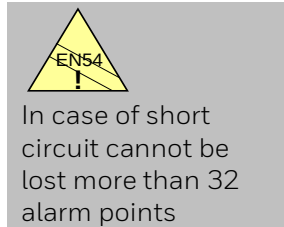
Cable must be wired in conduits separated by the mains power line and anyway wiring must be compliant to laws and rules valid in the country of the installation.

8 COMMUNICATION LINES WITH DETECTORS / MODULES

The MA-2000 control unit communicates with intelligent detection and control devices which are addressable through a 2-wire 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 line).

The peripheral devices are powered by using the same line which is used to communicate with them.



- 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 T-branch in a closed loop, not more than 32 devices must be installed on this branch and these devices must be separated by line isolators.
- If the line is in Style 6 (Loop) an appropriate number of isolators devices must be provided, in such way to don't lost more than 32 points in case of short circuit. The detection circuit must be separated by other cables to minimize the risk of interferences. Use twisted cable according to the specifications. 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 making some appropriate holes, 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 section refer to the table below)

- Twisted narrow pitch (5 /10 cm.)
- Shielded pair cable
- Max. admitted capacity: 0,5 μ F

Cable section

The sections are referred to the total length of the line (in case of "STYLE 6" loop and therefore when the loop is closed, it is considered the loop length) which, however, must not be longer than 3000 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 mm ²
Up to 1.000 m	cable 2 x 1 mm ²
Up to 1.500 m	cable 2 x 1,5 mm ²
Up to 3.000 m	cable 2 x 2,5 mm ²

Number of installed devices for line

The maximum number of devices that can be installed for each of the four detection lines is the following:

- 99 Detectors using Clip Protocol
- 99 input and/or output modules using Clip Protocol

Isolator modules

The isolators modules allow to electrically insulate on the loop a series of devices from the remaining ones, allowing loop critical components to continue operating even in case of the communication line short circuit.

Input Modules

The addressable inputs modules allow the MA-2000 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-2000 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-2000 control unit can communicate only with analogue detectors declared as compatible by Honeywell.

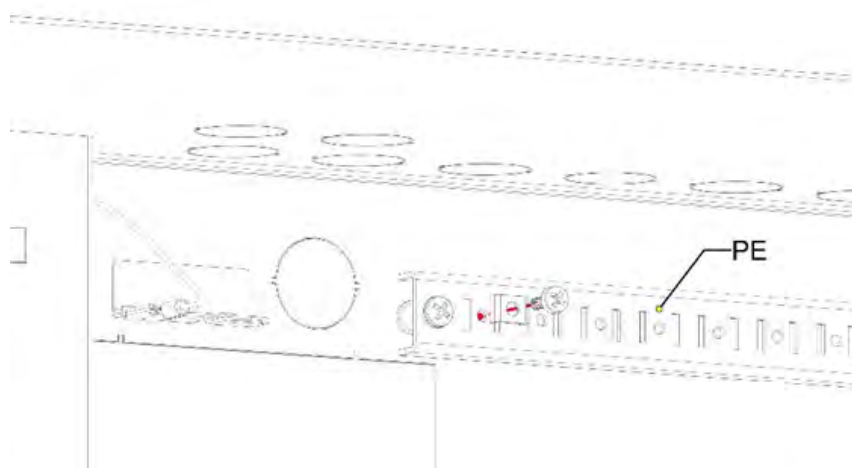
8.1 Screen Termination

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.

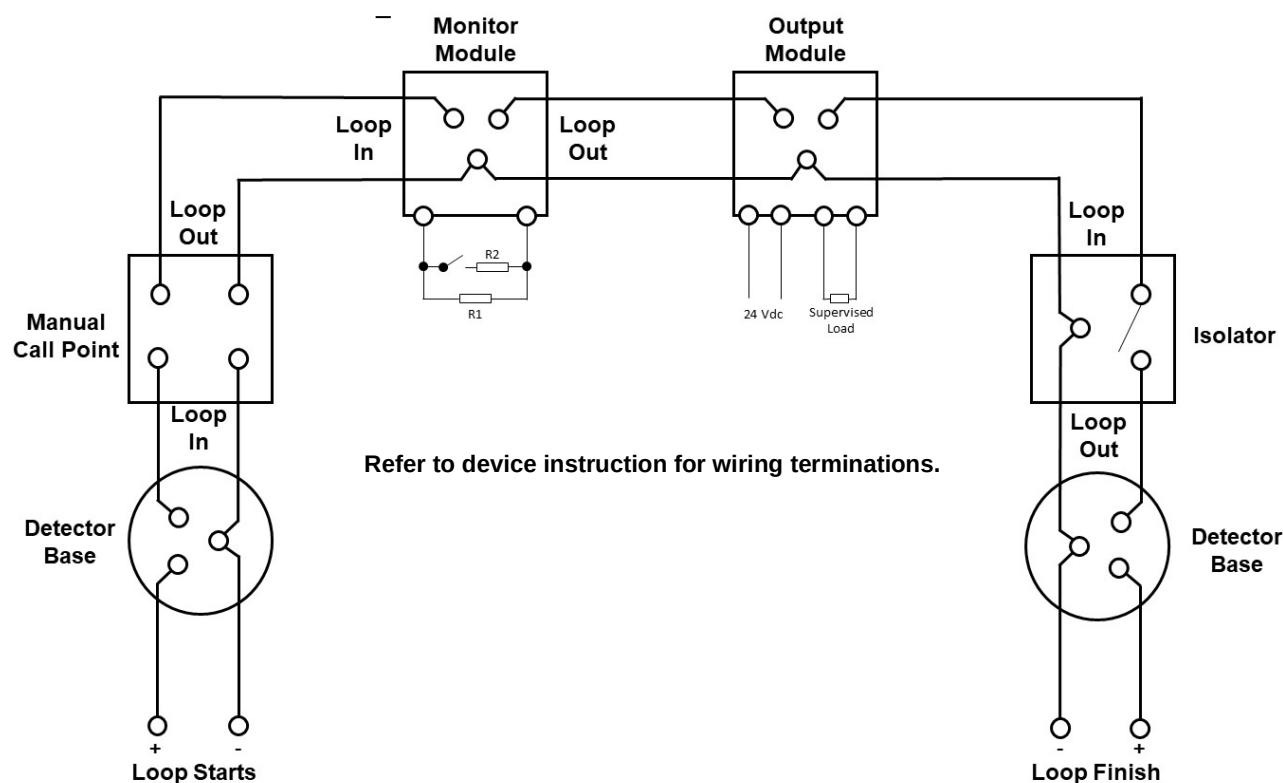
Use the earth screw and clamp to achieve the required earthing bond of the screens. Make sure the screws are tightened and to gain low resistance contact for EMC purposes.

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:



8.1.1 Example of closed line (style 6 Loop)



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

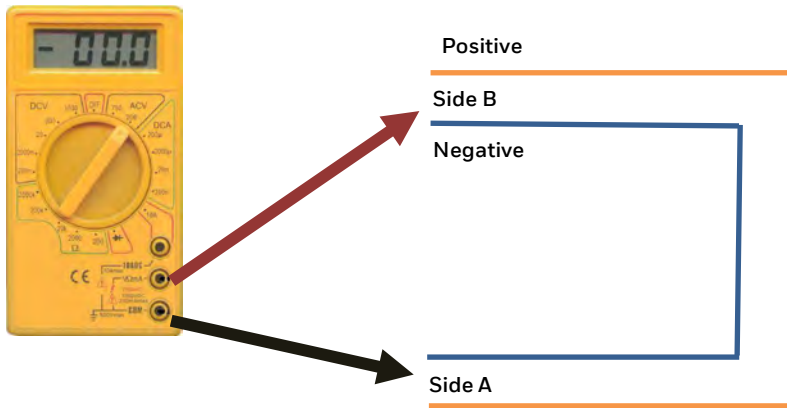
8.2 Test procedure for detection lines

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



DIGITAL MULTI METER IS REQUIRED.

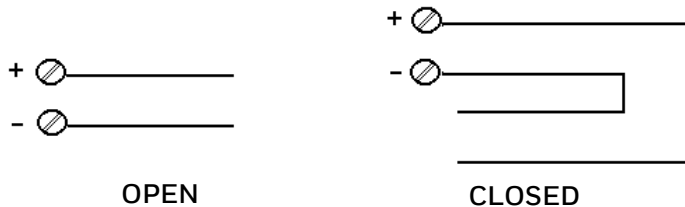
Line resistance



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 points 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 prod of the tester on the line cable screen and the other test prod 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 prod of the tester on the system earthing and the other test prod 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 prod of the tester on the system earthing and the other test prod on the cable braid; 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 inversion of detector or modules.

8.3 System Test and Commissioning

The Control unit installation must be performed after having carefully read the instructions contained in the installation manual and the programming 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 Test Procedure for the analogue system lines in this manual).

- 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.
Connect the main alarm siren (fitted with $47\text{ K}\Omega$ $\frac{1}{4}\text{ W}$ balance resistance) on the CNU-18 and 17 terminals (refer to basic board topography)
- To correctly dimension the batteries to be used, check the autonomy that the system must guarantee in case of 230 V AC mains breakdown.

Connect the control unit to the 230 V AC mains by means of a three-pole cables: phase, earth, neutral (the earth cable must be longer than the phase and neutral 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

9 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 $\blacktriangle$ $\blacktriangledown$ 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-2000 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.
- Siren output active.
- Alarm display

Press the "SILENCE ALARM/FAULT" key and subsequently the "SILENCE / RESOUND SIREN" 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.
- Siren 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
- Siren 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 breakdown signalling) and check that the LED "POWER OK" is on.

10 LABELS IN DIFFERENT LANGUAGES

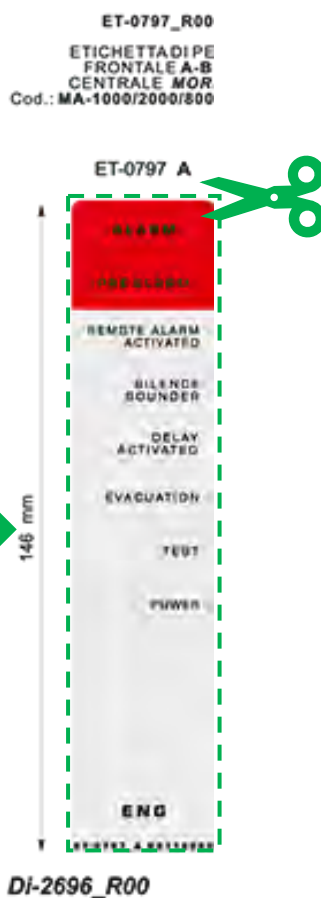
In this chapter labels in different languages are shown for the control panel of the MA-2000, which can be printed 1:1.



- 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 DIPERS.
FRONTALE A-B-C
CENTRALE MORLEY

Cod.: MA-1000/2000/8000-01-02-03



Inglese

ET-0797 C

ET-0797 A

ALARM
PRE ALARM

REMOTE ALARM
ACTIVATED
SILENCE
SOUNDER
DELAY
ACTIVATED

EVACUATION
TEST
POWER

ENG

ET-0797_A 03112020

ET-0797 B

FAULTS

SYSTEM
POWER SUPPLY
EARTH FAULT

DISABLEMENTS

SOUNDER
FAULT
TRANSMISSION
ALARM
TRANSMISSION
EXTINGUISHING

ENG

ET-0797_B 03112020

146 mm

Di-2696_R00



Italiano 1

ET-0796 C

ET-0796 A

ALLARME
PREALLARME

ALLARME
REMOTO ATTIVO
SIRENE
TACITATE
RITARDI ATTIVI

EVACUAZIONE
TEST
TENSIONE
PRESENTE

ITA

ET-0796_A 03112020

ET-0796 B

GUASTI

SISTEMA
ALIMENTAZIONI
DISPERSIONE
A TERRA

ESCLUSIONI

SIRENA
TRASMISSIONE
GUASTI
TRASMISSIONE
ALLARMI
COMANDO
ANTINCENDIO

ITA

ET-0796_B 03112020

ITA

EVACUAZIONE

AZZERRA
RITARDO

TACITAZIONE
CICALINO

TACIT./RIPR.
SIRENE

RESET

ET-0796_C
03112020

190 mm

10 mm



Slovenian 2



Serbian 3

ET-0797 C2

ET-0797 A2

ALARM

PREDALARM

ALARMNA
DALJAVO
AKTIVIRAN

UTIŠAJ ZVOČNO
NAPRAVO

ZAKASNITEV
AKTIVIRANA

EVAKUACIJA

TEST

VKLOP/IZKLOP

SLV

ET-0797_A2 29032022

ET-0797 B2

NAPAKE

SISTEM

NAPAJANJE

NAPAKA
OZEMLJITVE

ONEMOGOČITVE

ZVOČNA
NAPRAVA

PRENOS NAPAKE

PRENOS ALARMA

GAŠENJE

SLV

ET-0797_B2 29032022

ET-0797 C3

ET-0797 A3

ALARM

PREDALARM

DALJINSKI
ALARM
UKLJUČEN

UTIŠAJ ZVUČNIK

AKTIVIRANA
ODGODA

EVAKUACIJA

TEST

NAPAJANJE

SRP

ET-0797_A3 12042022

ET-0797 B3

KVAROVI

SISTEM

NAPAJANJE

GREŠKA
UZEMLJENJA

ONEMOGOĆENJA

ZVUČNIK

PRENOS KVARA

PRENOS ALARMA

GAŠENJE POŽARA

SRP

ET-0797_B3 12042022

PONIŠTI

REAKTIVACIJA
SIRENA

ZUJALICA
TIŠINE

ODGODA
KRAJA

EVAKUACIJA

SRP

ET-0797_B3
12042022



Croatian 4



Greek 5

ET-0797 C4

ET-0797 C5

ET-0797 A4

ET-0797 B4

ALARM
PREDALARM!

DALJINSKI
ALARM
UKLJUČEN

UTIŠAJ SIRENU

AKTIVIRANA
ODGODA

EVAKUACIJA

TEST

NAPAJANJE

HRV

ET-0797_A4 12042022

GREŠKE

SUSTAV

NAPAJANJE

GREŠKA
UZEMLJENJA

ONEMOGUĆENJA

ZVUČNIK

PRIJENOS
GREŠKE

PRIJENOS
ALARMA

GAŠENJE POŽARA

HRV

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ET-0797 A5

ET-0797 B5

ΣΥΝΑΓΕΡΜΟΣ
ΠΡΟΣΥΝΑΓΕΡΜΟΣ

ΑΠΟΜΑΚΡΥΣΜΕΝΟΣ
ΣΥΝΑΓΕΡΜΟΣ
ΕΝΕΡΓΟΠΟΙΗΜΕΝΟΣ

ΗΧΗΤΙΚΟΣ
ΤΟΝΟΣ ΣΙΓΑΣΗΣ

ΚΑΘΥΣΤΕΡΗΣΗ
ΕΝΕΡΓΟΠΟΙΗΜΕΝΗ

ΕΚΚΕΝΩΣΗ

ΔΟΚΙΜΗ

ΙΣΧΥΣ

GRE

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ΣΦΑΛΜΑΤΑ

ΣΥΣΤΗΜΑ

ΤΡΟΦΟΔΟΣΙΑ

ΣΦΑΛΜΑΤΕΙΩΣΗΣ

ΑΠΕΝΕΡΓΟΠΟΙΗΣΕΙΣ

ΗΧΗΤΙΚΟΣ ΤΟΝΟΣ

ΣΦΑΛΜΑ
ΜΕΤΑΔΟΣΗΣ

ΣΥΝΑΓΕΡΜΟΣ
ΜΕΤΑΔΟΣΗΣ

ΚΑΤΑΣΒΕΣΗ

GRE

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ΕΠΑΝΑΦΟΡΑ

ΑΝΤΗΧΗΣΗ
ΣΙΓΑΣΗΣ

ΜΗΔΕΡΣΙΓΑΣΗΣ

ΑΝΗΗ
ΚΑΘΥΣΤΕΡΗΣΗ

ΕΚΚΕΝΩΣΗ

GRE

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Bulgarian 6



Albanian 7

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АЛАРМА ПРЕДВ. АЛАРМА	АКТИВИРАНА ДИСТ. АЛАРМА
	ЗАГЛУШЕНА СИРЕНА
	АКТИВИРАНО ЗАКЪСНЕНИЕ
	ЕВАКУАЦИЯ
	ТЕСТ
BUL	
ET-0797_A6 29032022	

ПОВРЕДИ	СИСТЕМА
	ЗАХРАНВАНЕ
	ПОВРЕДА ЗАЗЕМЯВАНЕ
	ИЗКЛЮЧВАНИЯ
	СИРЕНА
BUL	
ET-0797_B6 29032022	

ET-0797 C7

ET-0797 A7

ET-0797 B7

АЛАРМ ПРАГА АЛАРМ	АКТИВИЗИНГА ДИСТАНЦА АЛАРМИТ
	PUSHIM SIRENE
	АКТИВИЗИМ МЕВОНЕСЕ
	ЕВАКУИМ
	ТЕСТ
ALB	
ET-0797_A7 29032022	

ДЕФЕКТЕ	СИСТЕМИ
	БЛОКУ PUSHIMIT
	ДЕФЕКТОКЕЗИМИ
	С'АКТИВИЗИМЕ
	СИРЕНА
ALB	
ET-0797_B7 29032022	

RESET

PUSHIM
SIRENES

PUSHIMIZILES

SHKEPUTJEE
VONESSES

EVAKUIM

ALB

ET-0797 C7
29032022

BUL

ET-0797 C6
29032022

КРАЙНА
ЗАКЪСНЕНИЕ

ЕВАКУАЦИЯ

BUL

ET-0797_B6 29032022

ЗАГЛУШВАНЕ
СИРЕНА

ЗАГЛУШВАНЕ
ЗУМЕР

ИЗКЛЮЧВАНИЯ

СИРЕНА

ИЗПРАЩАНЕ
ПОВРЕДА

ИЗПРАЩАНЕ
АЛАРМА

ПОЖАРОГАСЕНЕ

BUL

ET-0797_A6 29032022

АЛАРМА

ПРЕДВ. АЛАРМА

АКТИВИРАНА
ДИСТ. АЛАРМА

ЗАГЛУШЕНА
СИРЕНА

АКТИВИРАНО
ЗАКЪСНЕНИЕ

ЕВАКУАЦИЯ

ТЕСТ

ЗАХРАНВАНЕ



Dutch 8



Romanian 9

ET-0797 C8

ET-0797 A8

BRAND

VOORALARM

DOORMELDING
UITGEVOERD

STOP
SIGNAALGEVERS

VERTRAGING
ACTIEF

ONTRUIMING

INTEST

INBEDRIJF

DUT

ET-0797_A8 14042022

ET-0797 B8

STORING

SYSTEEM

VOEDING

AARDLEK
STORING

BUITEN
DIENST

SIGNAALGEVERS

DOORMELDING
STORING

DOORMELDING
BRAND

BLUSSING

DUT

ET-0797_B8 14042022

ET-0797 C9

ET-0797 A9

ALARME

PREALARME

ACTIVARE
TRANSMISIE
DISTANTĂ

STOP SIRENE

ÎNTÂRZIERE
ACTIVĂ

EVACUARE

TEST

ALIMENTARE

RUM

ET-0797_A9 14042022

ET-0797 B9

DEFECTE

SISTEM

ALIMENTARE

PUNERE
LAPĂMÂNT

DEZACTIVĂRI

SIRENE

TRANSMISIE
DEFECTE

TRANSMISIE
ALARME

STINGERE

RUM

ET-0797_B9 14042022

RESET

STOP/START
SIRENE

STOP BUZZER

ANULARE
ÎNTÂRZIERE

EVACUARE

RUM

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1404022

RESET

STOP/HEEST.
SIGNAALG.

STOP ZOEMER

EINDE
VERTRAGING

ONTRUIMING

DUT

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11 SPARE PARTS

Description	Part No.
User board	5000.00.003
Flat Cables	5000.00.005
Power Supply	5000.00.007
Main board + LCD, Version 01	5000.00.010
Main board + LCD, Version 02	5000.00.011
Main board + LCD, Version 03	5000.00.012
Front door	5000.00.017



Warning!

These instructions must be studied carefully and understood before the replacement of spare parts. Any damage caused by failure to observe these instructions voids the warranty. Furthermore, no liability can be accepted for any consequential damage arising from such failure.

Safety Information

The replacement of spare parts and recommissioning of the devices may only be carried out by qualified electricians!

Danger – Electrical shock!

Remove all power from the panel before carrying out any installation work!

ESD protection

While handling electronic assemblies, the necessary precautions against electrostatic discharge must be taken!

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!

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.

Short circuits

All voltage and signal lines must be secured with suitable fastening material, e. g. plastic cable fasteners so that they cannot come loose or be moved. When doing so, ensure that the power supply line cannot touch the signal lines (SELV) when moved. Work may be carried out on the fire alarm system only when it is de-energized (mains and emergency power supply disconnected).

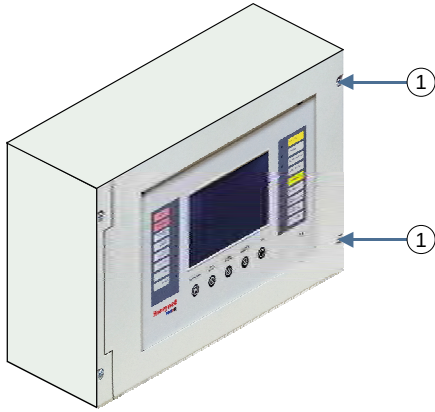
Recommissioning

After completing the recommissioning, perform a complete function test of the system!

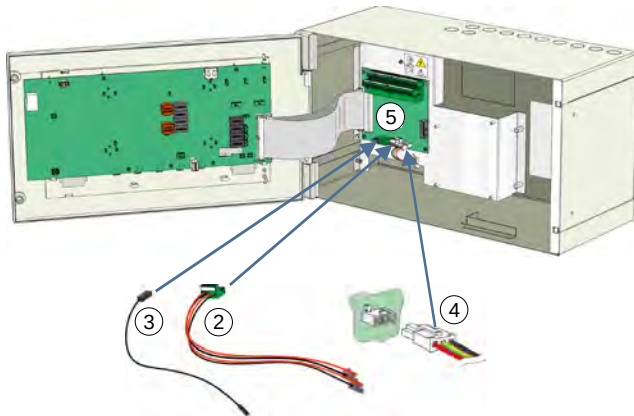
The following information applies to all spare parts listed in this documentation:

11.1 Preparation

1. Disconnect the control panel completely from the mains voltage!
2. Switch off the fuse (main power).



3. Remove the 2 screws ① and open the panel door.



4. Unplug the battery cable ② from the batteries.
5. Wait 1 minute to ensure that the panel is not energized before proceeding.
6. Unplug the battery cable ② from the board ⑤.
7. Unplug the main power supply connector ④ from the board ⑤.
8. Remove the battery probe ③ from the board ⑤.



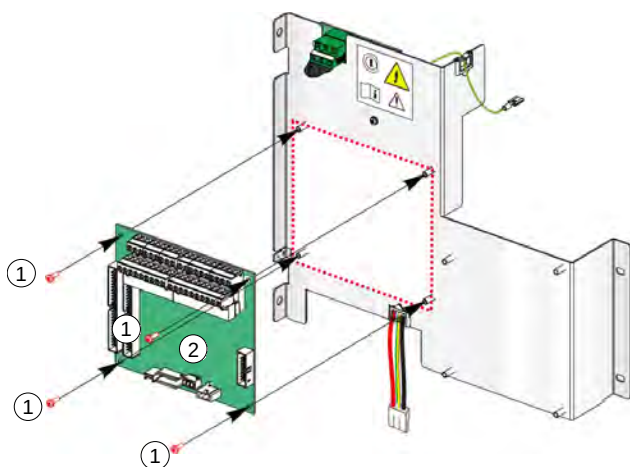
For more information on spare parts, refer to the following chapters.

11.2 MA-2000-0x User board (SKU 5000.00.003)



Preparation

Be sure to follow the instructions 1 – 8 under "Preparation" in chapter 11.1!



1. Unplug all flat cable shown in chapter 11.3.
2. Remove the 4 screws ① and remove the board ②.

Reinstallation

3. Install the **new user board** on the metal plate.
4. Follow the instructions in this chapter in reverse order, then follow the preparation instructions in chapter 11.1 in reverse order to step 8.
5. Turn on the switch from the electrical cabinet to connect the main power to the panel.
6. Plug the battery cables to the batteries and close the front panel door with the 2 screws see chapter 11.1.



Recommissioning

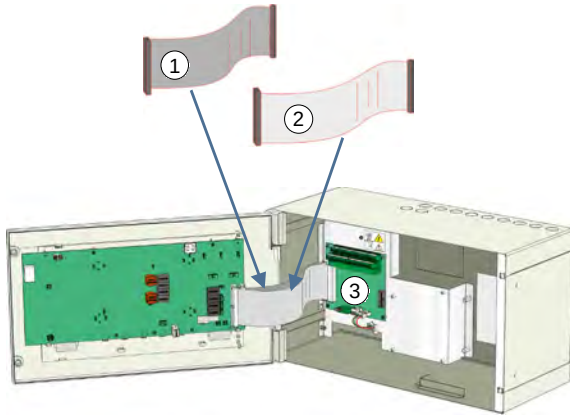
After completing the recommissioning, perform a complete function test of the system!

11.3 MA-2000-0x Flat Cables Set (SKU 5000.00.005)



Preparation

Be sure to follow the instructions 1 – 8 under "Preparation" in chapter 11.1!



1. Unplug all flat cable ① + ② from the board ③.
2. If necessary, the battery probe can be replaced at the same time.
Unplug the old probe from the connector and plug on the new probe see chapter 11.1.

Reinstallation

3. Replace the existing flat cables with the **new flat cables**.
4. Follow the instructions in this chapter in reverse order, then follow the preparation instructions in chapter 11.1 in reverse order to step 4.
5. Turn on the switch from the electrical cabinet to connect the main power to the panel.
6. Plug the battery cables to the batteries and close the front panel door with the 2 screws see chapter 11.1.



Recommissioning

After completing the recommissioning, perform a complete function test of the system!

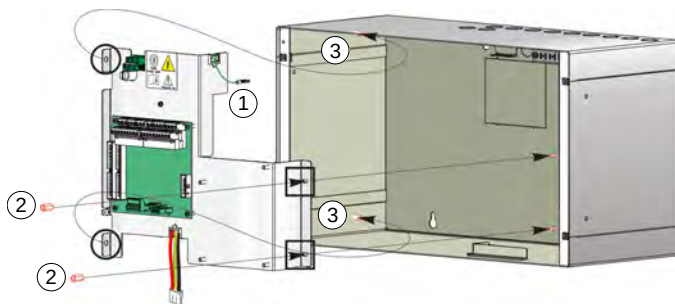
11.4 MA-2000-0x Power supply, pre-mounted (SKU 5000.00.008)



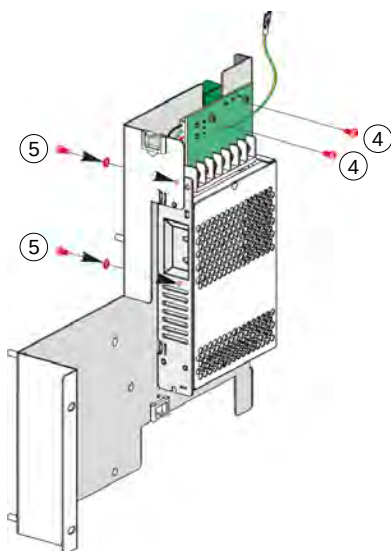
Preparation

Be sure to follow the instructions 1 – 8 under "Preparation" in chapter 11.1!

1. Unplug all flat cable see chapter 11.3.



2. Unplug Earth cable ① from the housing.
3. Unscrew the spacers ② and remove the metal bracket from ③.



4. Remove the 2 screws ④ and 2 spacers ⑤.
5. Remove the power supply from the metal bracket.

Reinstallation

6. Install the **new power supply** on the metal support.
7. Follow the instructions in this chapter in reverse order, then follow the preparation instructions in chapter 11.1 in reverse order to step 8.
8. Turn on the switch from the electrical cabinet to connect the main power to the panel.
9. Plug the battery cables to the batteries and close the front panel door with the 2 screws see chapter 11.1.



Recommissioning

After completing the recommissioning, perform a complete function test of the system!

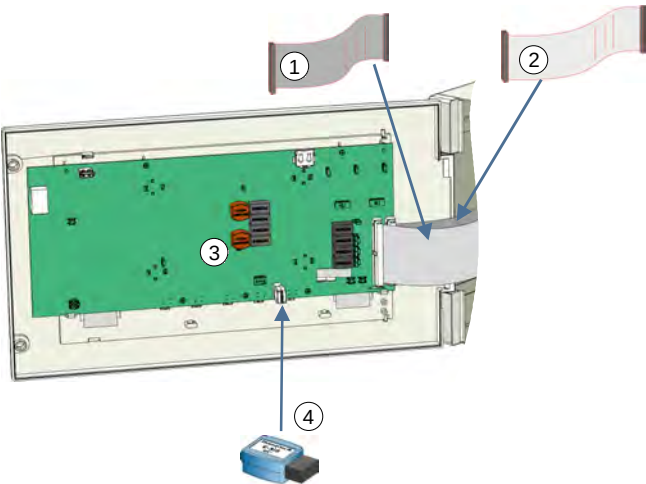
11.5 MA-2000-01 Main board + LCD (SKU: 5000.00.013)
MA-2000-02 Main board + LCD (SKU: 5000.00.014)
MA-2000-03 Main board + LCD (SKU: 5000.00.015)

This spare part set includes Main board + LCD pre-mounted and firmware installed.

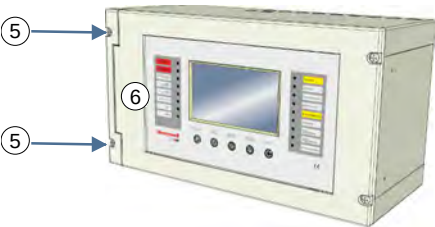


Preparation

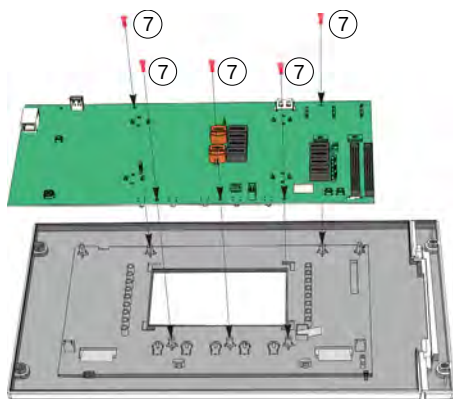
Be sure to follow the instructions 1 – 8 under "Preparation" in chapter 11.1!



1. Unplug both 50 poles flat cable ① + ② from the display board ③.
2. Unplug the hardware enablement key ④ whether connected.



3. Remove unscrewing the 2 screws ⑤.
4. Remove the front panel ⑥ and carefully place onto a smooth and clean surface.



5. Unscrews the 5 screws ⑦.
6. Remove the main board + LCD lifting up using both hands.

Reinstallation

7. Install the **new main board + LCD** on front door.
8. Follow the instructions in this chapter in reverse order, then follow the preparation instructions in chapter 11.1 in reverse order to step 8.
9. Turn on the switch from the electrical cabinet to connect the main power to the panel.
10. Plug the battery cables to the batteries and close the front panel door with the 2 screws see chapter 11.1.



Recommissioning

After completing the recommissioning, perform a complete function test of the system!

Notes

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Notes

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.

