ALARM'BOX

INDICATOR DISPLAY AND ALARMS UNIT WITH BATTERY

www.ami-control.com

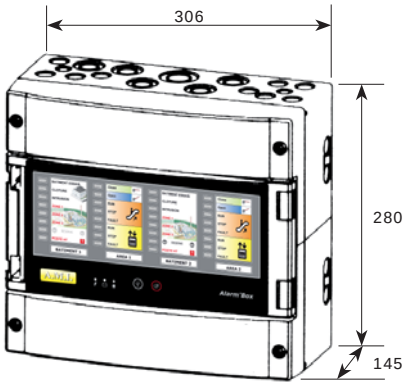
warranty 2 years warranty

STANDARD UNIT
8 to 96 INPUTS MODULAR UNIT
Built with 1 to 3 stages

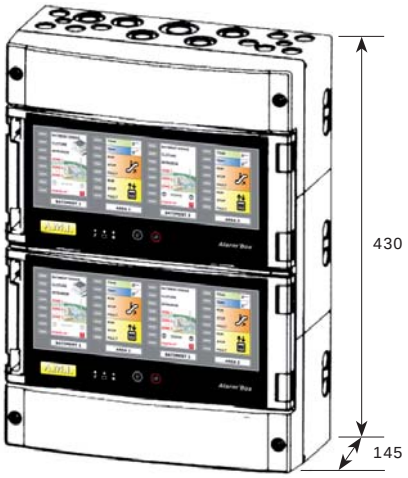
MANUFACTURED ON REQUEST
8 TO 32 INPUTS MODULAR UNIT,
With 2 Feedback contacts per inputs
2 stages

STARTING PROCEDURE

STANDARD UNIT:



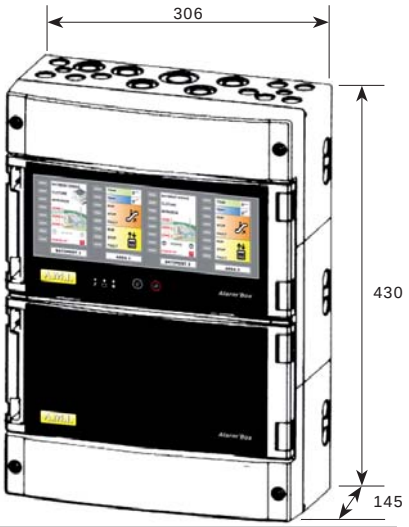
MODULAR UNIT
from 8 to 32 inputs
on 1 stage



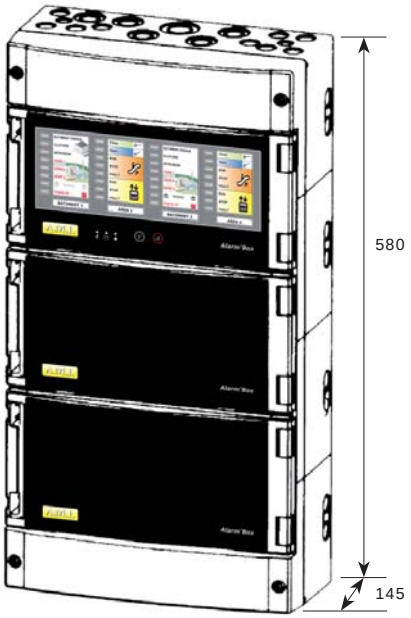
MODULAR UNIT
from 8 to 64 inputs
on 2 stages

MODULAR UNIT
from 8 to 96 inputs
on 3 stages

Manufactured on request special unit fitted up with relay cards



MODULAR UNIT from 8 to 32 inputs
including 1 stage with
output relay cards



MODULAR UNIT from 8 to 32 inputs
including 2 stages with
output relay cards

Table of contents

A) ALARM'BOX PRESENTATION:

The ALARM'BOX allows clustering in a single point for effective protection and easy maintenance for industrial and administrative sites.
- Important indicator displays : including in service/out of service, run/stop, and levels.
- Technical alarms : including trip outs, temperature alarms, levels and overspeeds, ...)

The display can be regrouped by elements under control such as RUN/STOP/FAULT.
The ALARM'BOX was developped according to the strictest industrial standards.

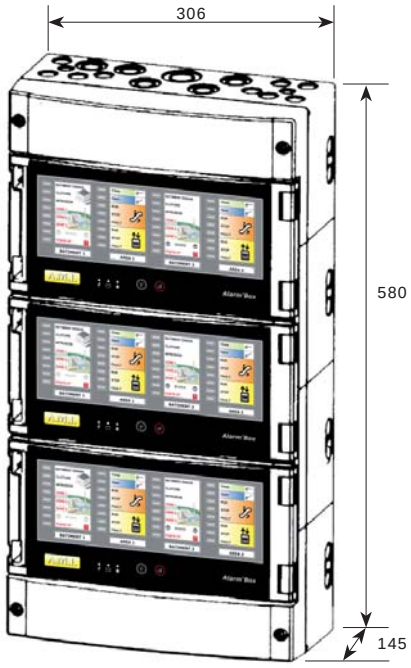
A.1) Technical description :

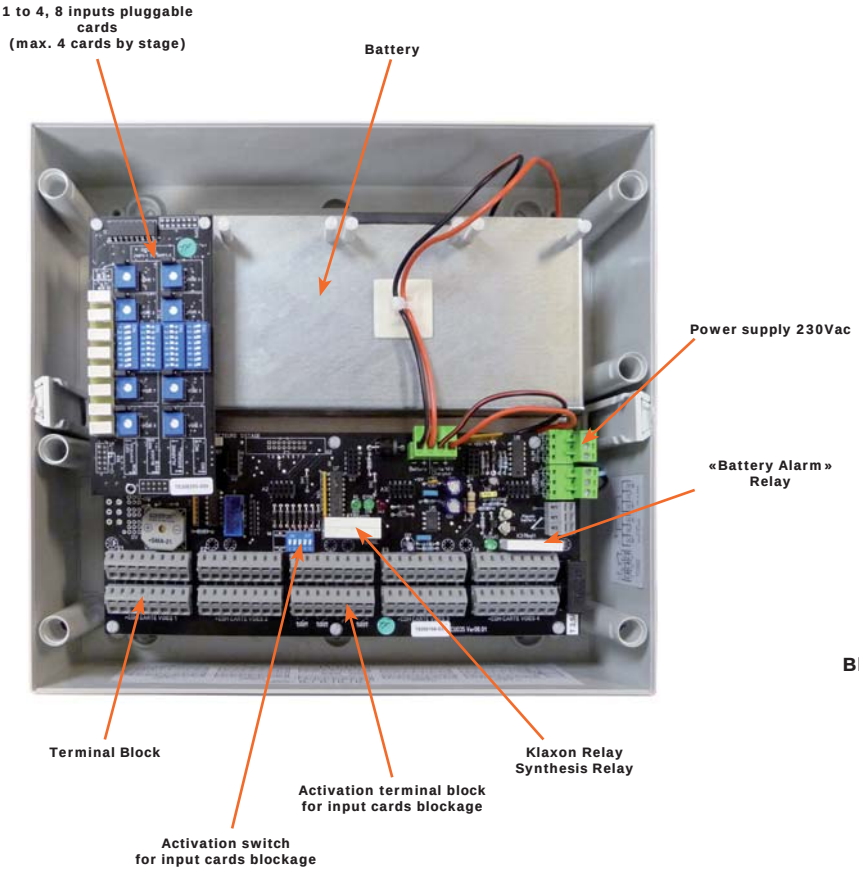
With 8 to 96 inputs modulation on 1 to 3 stages this central unit is an IP65 weatherproof wall cabinet.
The ALARM'BOX is delivered with battery included and with a 230 Vac power supply.
- Each input can be selected in common indicator display or in alarm mode, with inputs NO or NC, with fittering of time delay.
- The inputs selected under alarm will be flashing and stored. They will activate the audible alarm (included) until the operator acknowledgment.
- Acknowledgment and test button in front face are accessible throughout see through front door.
- Remote relay included.

It is also possible to group together the number of inputs needed in order to signal the whole condition of an under control element (Start/Stop/PUMP Alarm).
It is possible to create special cabinets. This instructions manuel also shows a set with 2 feedback contacts per input.

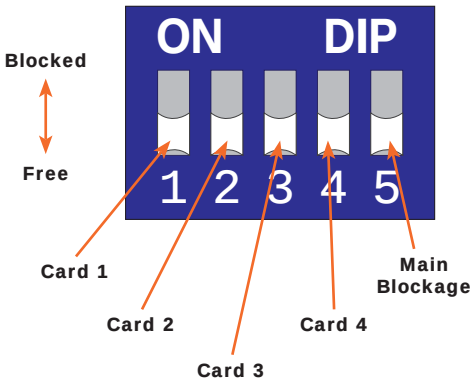
A.2) Composition of the system :

The system is made of :
- 1 unit with 1, 2 or 3 stages
- 1 to 12 pluggable cards of 8 inputs
- 1 battery with charger
- contacts connected to the terminal block
- 1 klaxon relay on terminal block
- 1 synthesis relay on terminal block per stage
- 1 battery alarm relay on terminal block





Selection activation / desactivation of input cards by switch



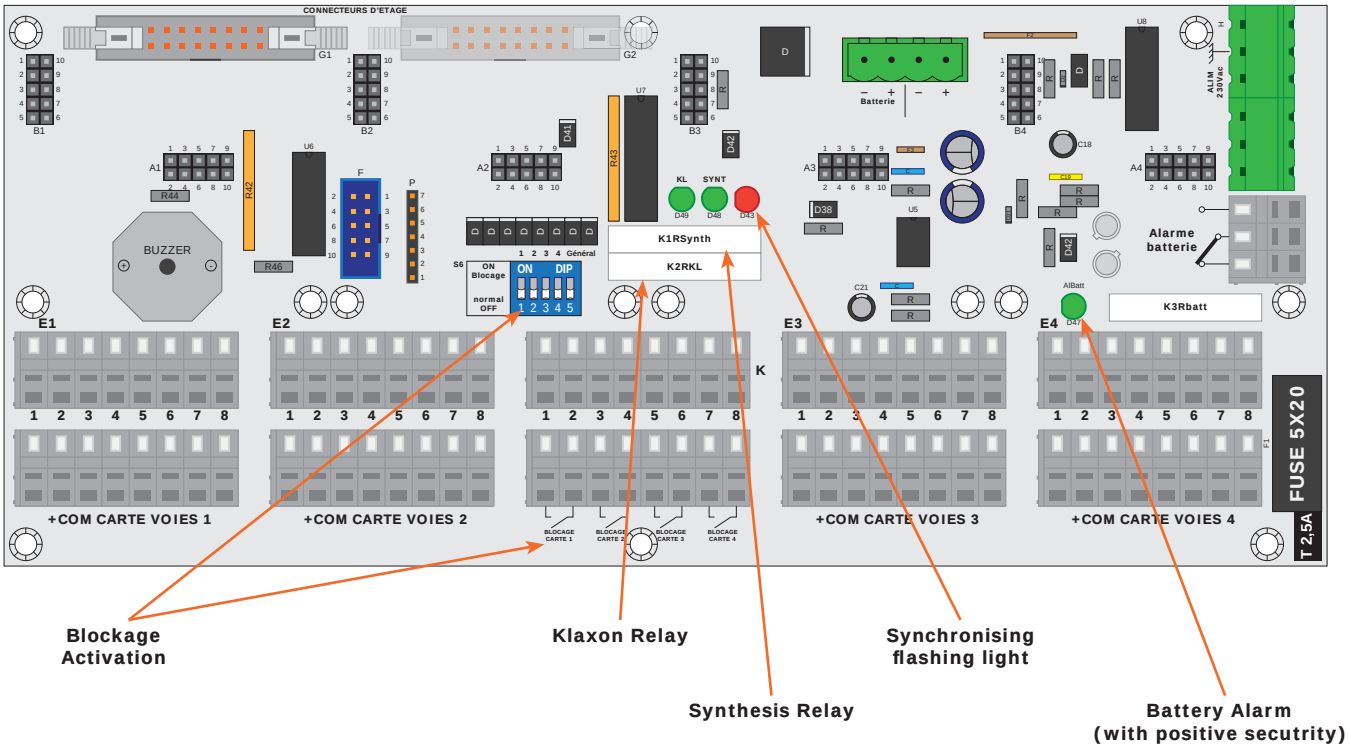
B) MAIN FEATURES :

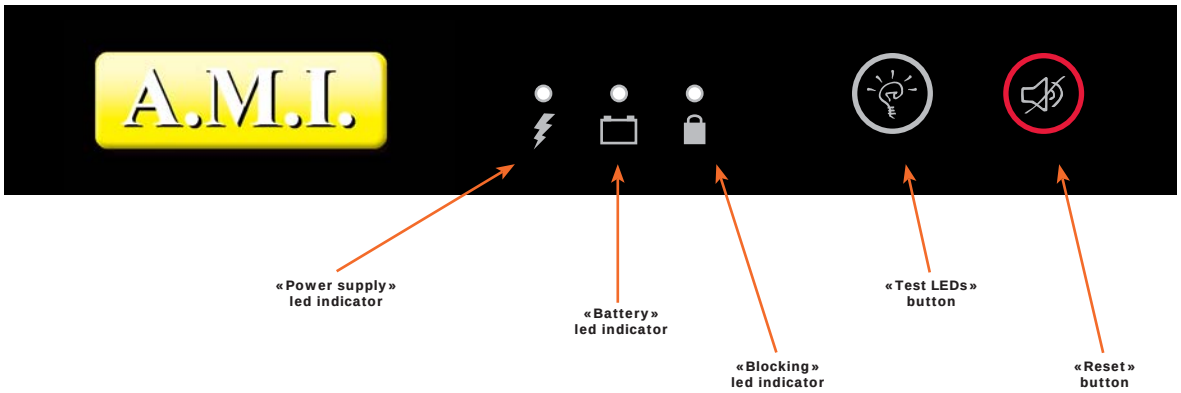
The inputs can be treated in :

- Simple indicator : the selected input will switch on the led on fixed statement. The «contact direction» and the «input temporization» functions are activated. The viewed input can deactivate the synthesis relay depending on the selection. «Klaxon» relay and the buzzer are not activated. When the input disappears, the light switches off.
- Alarm : the activation of an input will switch on the led in flashing. The «contact direction», «input temporization» are activated. The viewed input can activate the synthesis relay depending on the selection. «Klaxon» relay and the buzzer are activated. An acknowledgment on «reset» button will stop the buzzer and «klaxon» relay, the LED will pass on fixed statement. When the input goes back to normal, the light switches off.

The setting input by input can be done trough switches located on each input card. These cards are pluggable and connected to a main bottom card.

B.1) Main bottom card : (always located in the upper stage)





Klaxon relay : positive security relay for external audible alarm (ALARM'BOX has an internal buzzer).

Synthesis relay : positive security relay is falling in case of signalling or present alarms with a «synthesis» selection. This relay will only go back to normal when all the inputs involved are deactivated.

Synchronization flashing light : flashes in continous indicating the normal synchronization of the leds.

Battery Alarm : positive security relay dropping in case of battery anomaly.

«Power supply» led indicator : switched on green = power supply indicated, switched off = no power supply.

«Battery» led indicator : usually switched off . Switched on red, an unusually battery discharge is indicated with no power supply or a malfunction of the charger.

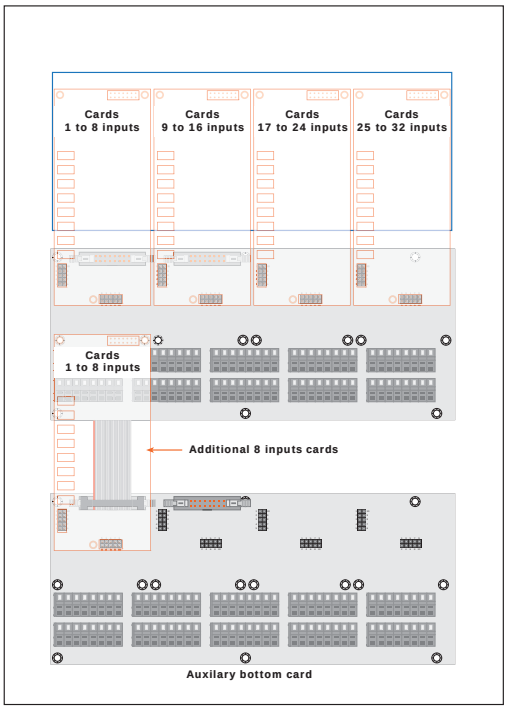
«Blocking» led indicator : no blocking. Switched on orange = blocking activated.

«Test LEDs» button : allows to test the leds.

«Reset» button : (or «acknowledgment») allows to stop the klaxon and to pass on the flashing lights in fixed statement or to delete the disappeared alarms.

B.2) Auxilary bottom card : (fitted in satge 2 and 3) for standard units.

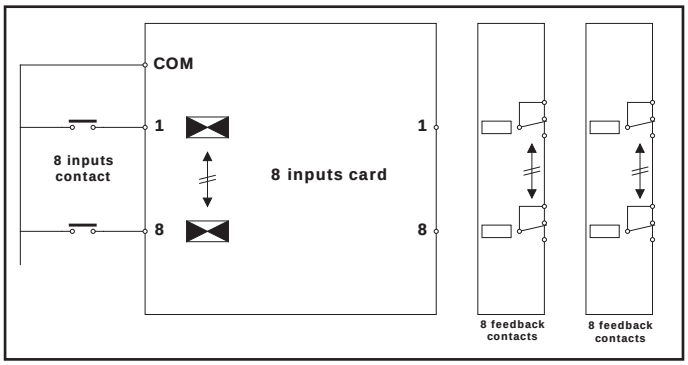
An auxiliary card allows to connect 1 to 32 additional inputs.
The «audible alarm» is common and unique, located in stage 1.
The main alarm relay or synthesis relay is selectable by stage (1 relay for each stage).

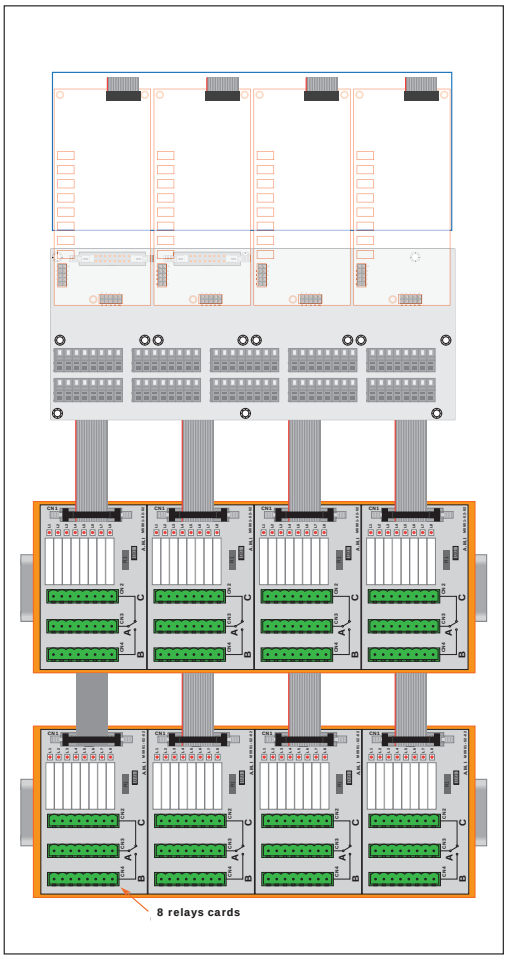


When units are fitted with 2 reports relay per input :

The stage 2 and 3 contain relaying cards.
Each card is located under the input cards which represents it.

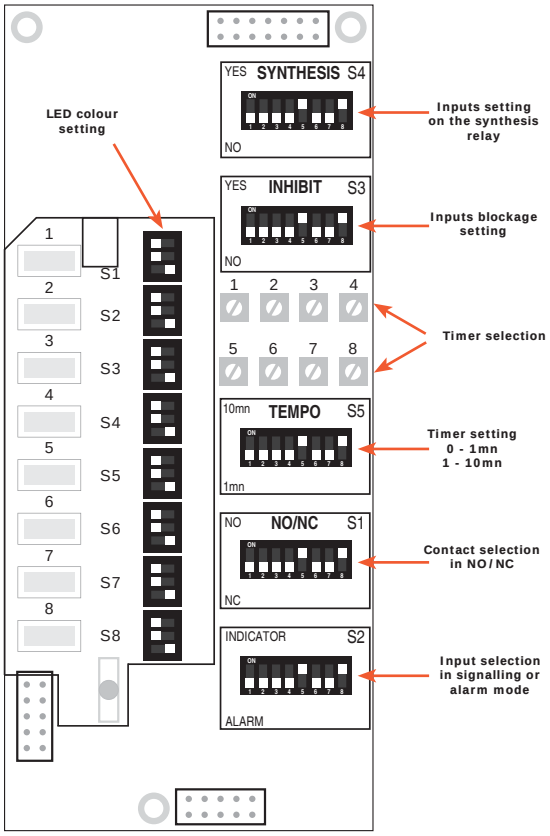
Principe :





B.3) 8 inputs cards programming :

Programming input-by-input can be done through switches located on every input card.



B.3.1) Inputs selected in «basic led indicator mode» :

- The «x» input is selected in basic led indicator mode with S2x :
  Depending on the direction of the input contact «x» selected with S1x (Normally Open / Normally Closed) and after delaying time has expired Tx, the Led «Lx» will be lit up in fixe (It is also possible to switch on a LED by the opening of the contact if the selection is NO).
- The corresponding output «X» is activated (open collector output, gives 0V).
- The «synthesis» relay Rs can be activated if the selection S4x is programmed.
- The «audible alarm» relay RKL is not activated.
- As soon as the contact comes back to normal position, the LED lights off.
- If the input blockage is activate before the LED lights-up and the input is selected in blocking authorization with S3, the display will be cancelled so will the fault consideration.

<u>Output «main alarm» or synthesis (RS) :</u>

Output 1RT with galvanic isolation. The relay is with «positive security». That is to say «normally energized». The relay will be deactivated by each input selected with S4x, whether the inputs are selected in basic indicator or in alarm.
The relay will only be reactivated when all the selected inputs would have disappeared.

B.3.2) Inputs selected in «Alarm mode» :

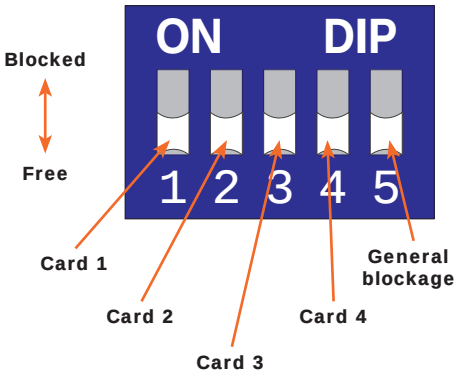
- The input «X» is selected in alarm with S2x :
  Depending on the direction of the input contact «x» selected with S1x (Normally Open / Normally Closed) and after delaying time has expired Tx, the consideration of the alarm will be memorized.
  The LED will be blinking.
- The corresponding output «x» is activated (open collector output, gives 0V).
- The «synthesis» relay Rs can be activated if the selection S4x is programmed.
- The «audible alarm» relay RKL is activated. (so is the buzzer if it is present).
- A push on the «acknowledgment button» on front face (or an activation of the acknowledgment by the rear terminal) stop the buzzer and turns the LED in fixe if the alarm is still present or turns the LED off when back to normal. The «open collector» output and the main alarm relay (if that one is selected by S4) will remain activated until the LED switches off.

B.3.3) Input «Blockage» :

The blockage is used when inputs have to be cancelled during a period. This period is established by the closure of an external contact (day/night, start of cycles with inactive securities, technical services).

The blockage allows cancelling the consideration of some inputs selected on each input card by the S3 switch. This function is valid for inputs in basic indicator display or in alarm. This cancellation will start when the external contact on the blockage input will be closed. (Connected to the «+ COM»). When a LED is lit up (fixe or blinking) and its blockage input is to be activated, the blockage will operate after the LED switch off. If any blockage input is activated, the front face LED «blockage» will light in orange.

Selection activation / desactivation of input cards by switch



Command blockage different possibilities :

- On each input card, an S3 switch allows the inputs of this card that are going to be blocked.
- The block terminal composed of 8 thresholds on the main card allows activating the 1 to 4 cards by 4 external contacts. A fifth terminal block located on the upper block allows activating the general blockage of the ALARM'BOX stage by an external contact.
- The front face «Blockage» light will light up orange when activating (contact closure) of the first of the four «blockage inputs» or with the «main contact blockage».
- Five internal switches on the main card allow forcing the blockage without using external contact. This function can be used for servicing. As with the «blockage inputs», it is also possible to block the whole stage of the ALARM'BOX (main blockage) or each card one by one.

To block a input it is necessary :

- That the concerned input be selected in blockage with the S3 switch located on this input card.
- That the concerned card be selected in blockage with the S6 switch located on the main card or that the external contact on the block terminal be closed.

Please note :
To block all the input cards at once, two solutions :
(The inputs must be blocked on the input card by the S3 switch)

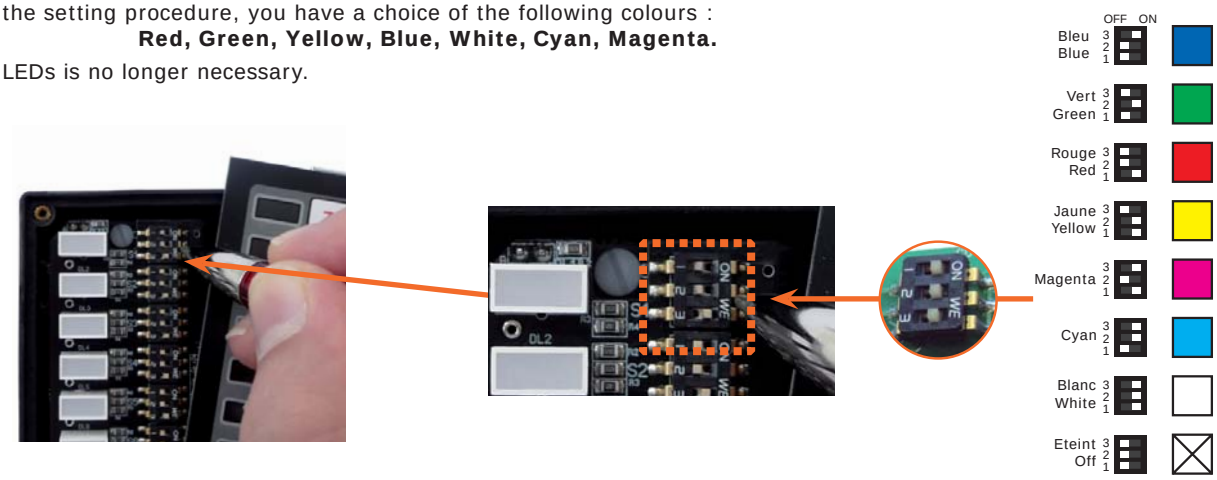
- The S6 switch must have the first four guides (1, 2, 3, 4) in up position, or else the block terminal must have all its thresholds wired on closed contacts. (Refer to diagram page 11).
- The S6 switch must have the fifth position (general) up or the contact wired on external main blockage thresholds must be closed.

B.3.4) LED colour setting :

A choice of 7 colours of display is possible per LEDs, selectable using switches on the front.
Following the setting procedure, you have a choice of the following colours :

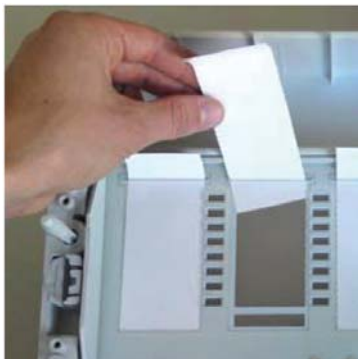
Red, Green, Yellow, Blue, White, Cyan, Magenta.

Changing LEDs is no longer necessary.



B.3.5) Producing labels :

Labels are ordinary paper sheets that slid into transparent pockets included in the thickness of the front. A blank label is supplied with each unit. Labels can be handmade or produced on a colour printer (laser or ink-jet).
PC software is provided for free to create labels, including images, to save and to duplicate the productions.
(For high humidity countries printing on plastic sheets is recommended).



Front face's back «Label holder»

Labels setting :

- Print and then cut the labels.
- Unscrew the plastic screws "cross-headed" on the ALARM'BOX front face, disconnect the ribbon from the label holder keypad making sure to note the direction to reassemble.
- Slide the labels inside the slot on the thickness of the label holder at the back of the front face, using it as a cover
- Reassembling :
  Put the ribbon back into the connector, place the front face back in its location, and screw the 6 plastic screws. (depending on the number of stages of your ALARM'BOX).

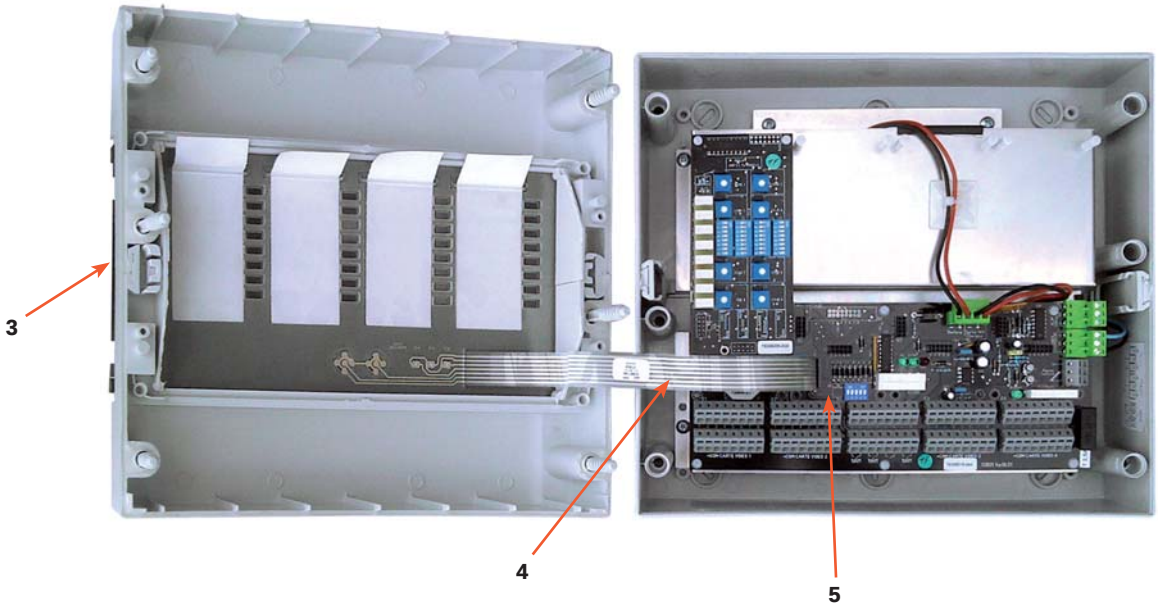
C) ASSEMBLING :

Careful : before any manipulation, make sure the Alarm'Box is switched off.

C.1) Unit dessassembling :

Only after putting the unit on a table,

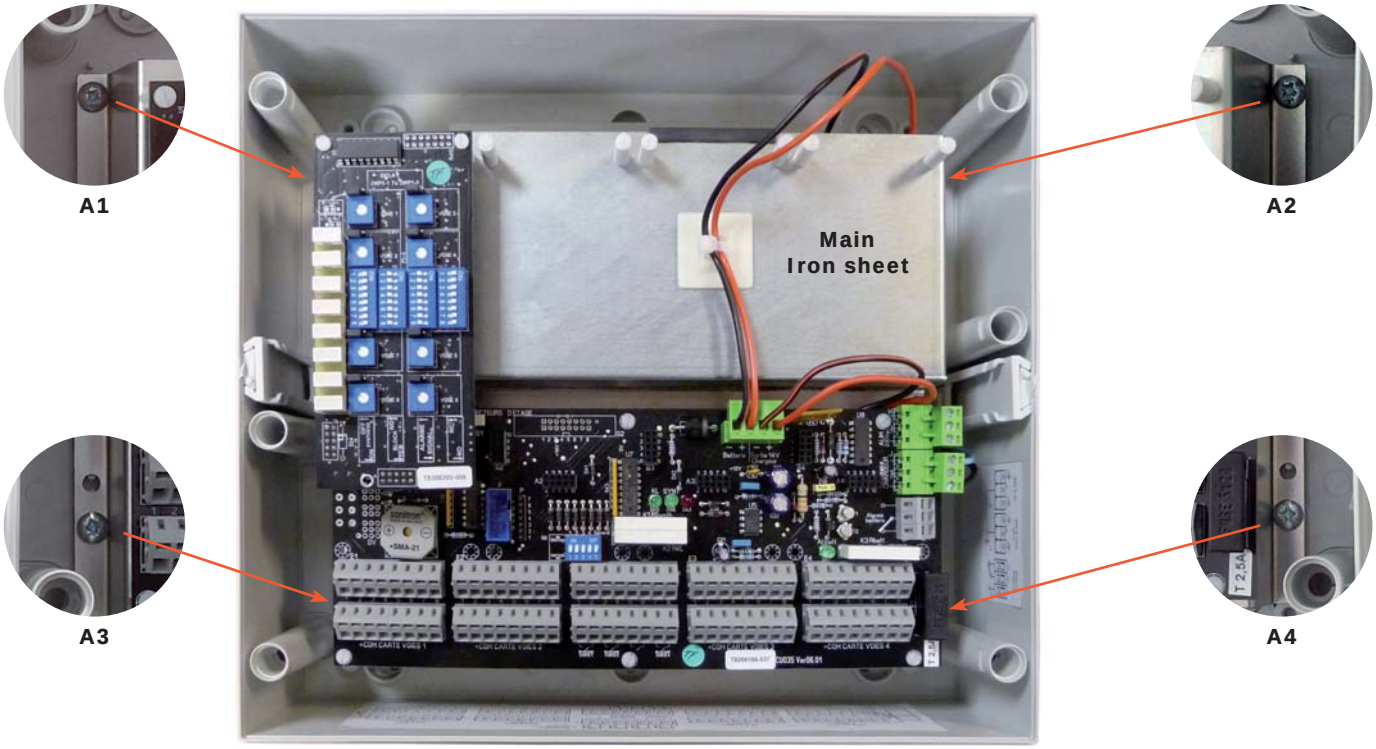
- Unscrew the plastic screws "cross-headed" (1), as well as the those hidden by the doors (2).
- When opening the front face (3), disconnect the ribbon (4) from the bottom circuit of the cabinet.
- Take the front part off, being careful of the ribbon (4) connected to the front face (3).



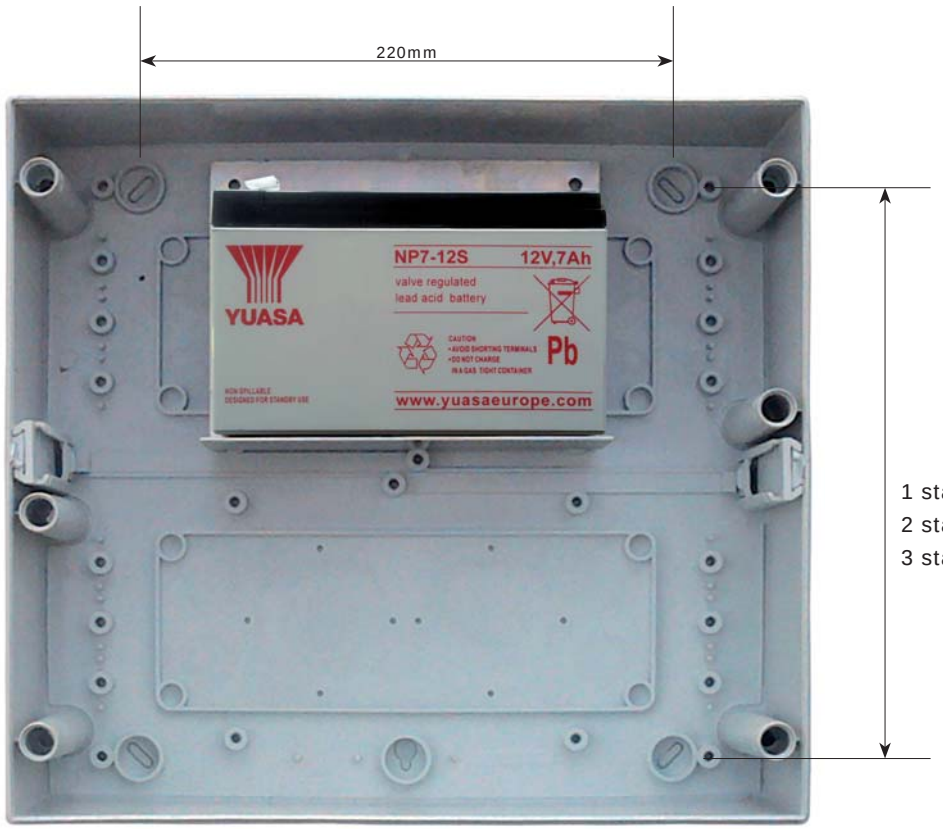
C.2) Battery assembling :

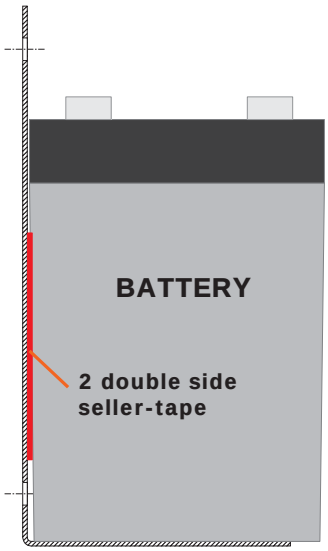
The battery tray is located behind the main iron sheet.

- To assemble the battery, you have to take off the main iron sheet fixed by 4 screws following A1, A2, A3 and A4 marks.

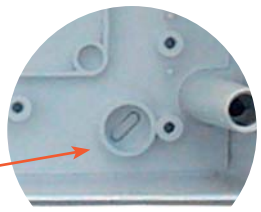


- Properly position the battery.
- Stick it with 2 double side seller-tape.
- Put the main iron sheet back.
- To finish, **be carreful :**
  Connect the battery observing proper polarity.



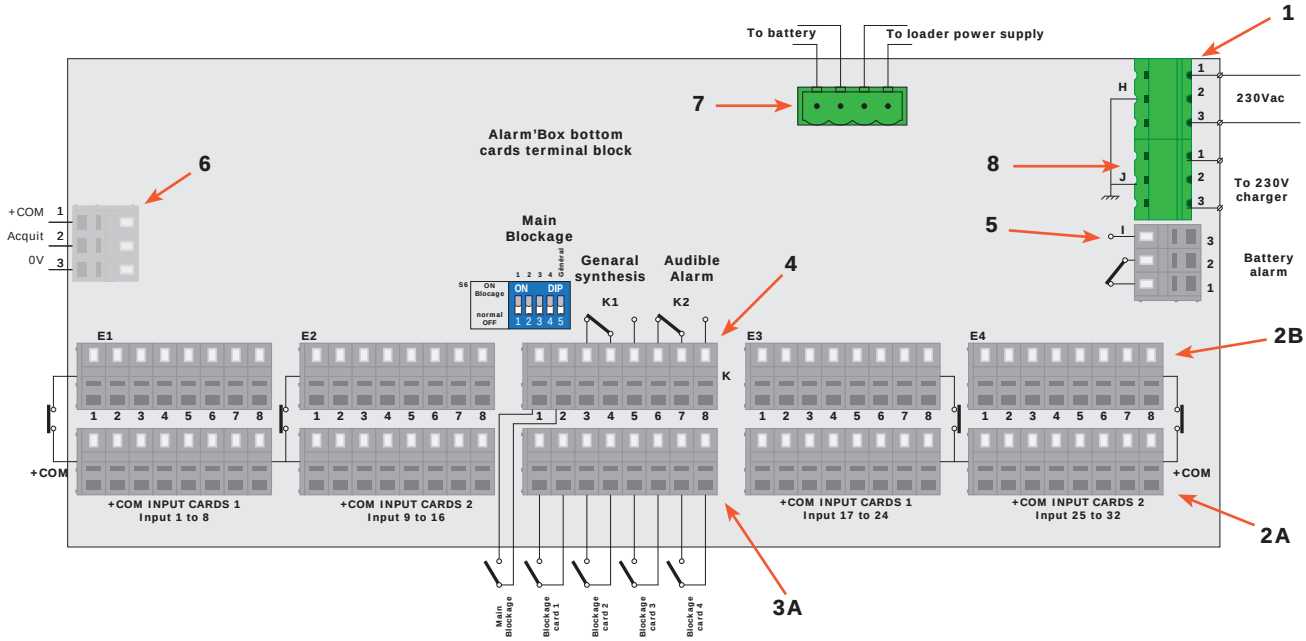


1 stage = 235mm
2 stages = 385mm
3 stages = 535mm



- Mount the unit on the wall using spaces provided for this purpose.

C.3) Connection of main & auxiliary cards :



The main card includes a number of connectors :

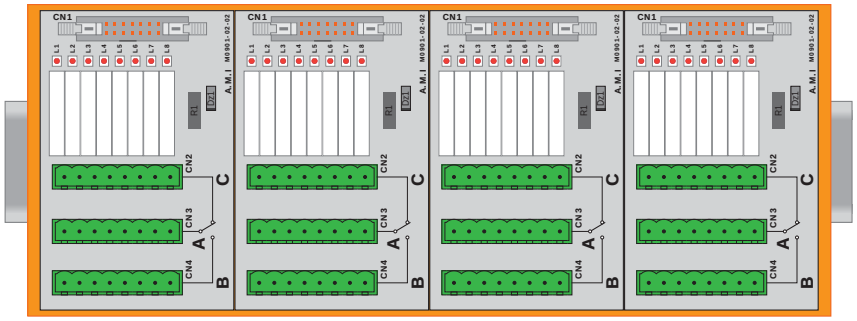
1. The power supply 230Vac (Terminal block 1-3).
2. The inputs terminal block (2 cables per contact). The connectors are grouped together on 4 groups of 2. Each group correspond to an 8 channels card (the one located directly above). In each group of 2 connectors, the first one (2A) allows to power the contact. The other one (2B), corresponds to the input of the cards. The inputs contacts are directly powered by the power station. The polarity «+» is already present on all the 2A connector terminal blocks. (For other wirings please contact us .
3. The inputs contact terminal block of external blockage (3A). Possibility to use an independent blockage for each 8 channels card (card blockage 1 to 4).
4. Auxiliary terminal block (Main external blockage, Synthesis feedback, Audible alarm).Each output is planned with an exchange non-powered contact. Caution : The relays are with positive security. The contact swings to power on. Example : The synthesis relay contact is closed in 4 and 5, when there is no signaling.
5. Auxiliary terminal block «Battery alarm».
6. Special use terminal block (please contact us).
7. Internal terminal block, link towards battery and «14V charger». When disconnecting this terminal block, the battery is out of service. (so is the whole Alarm'box).
8. Internal terminal block, link to the primary of the charger.

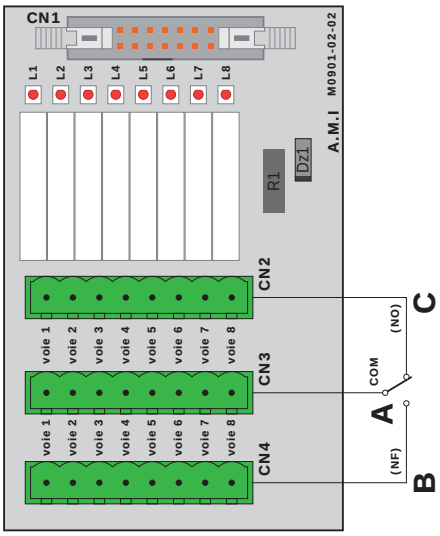
Connection of main and auxiliary card on stage 2 and 3 :

Refer to previous chapter.
Connect the inputs and the synthesis relay.

When equipped with reports relay : (connection in stage 2 and 3) :

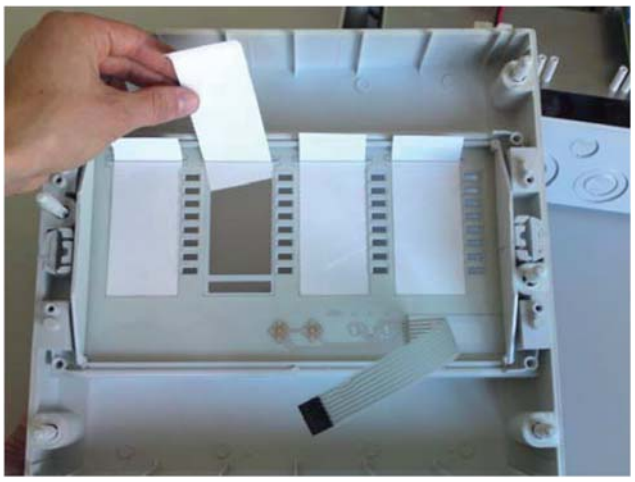
Refer to previous chapter.
Connect the inputs and the synthesis relay.



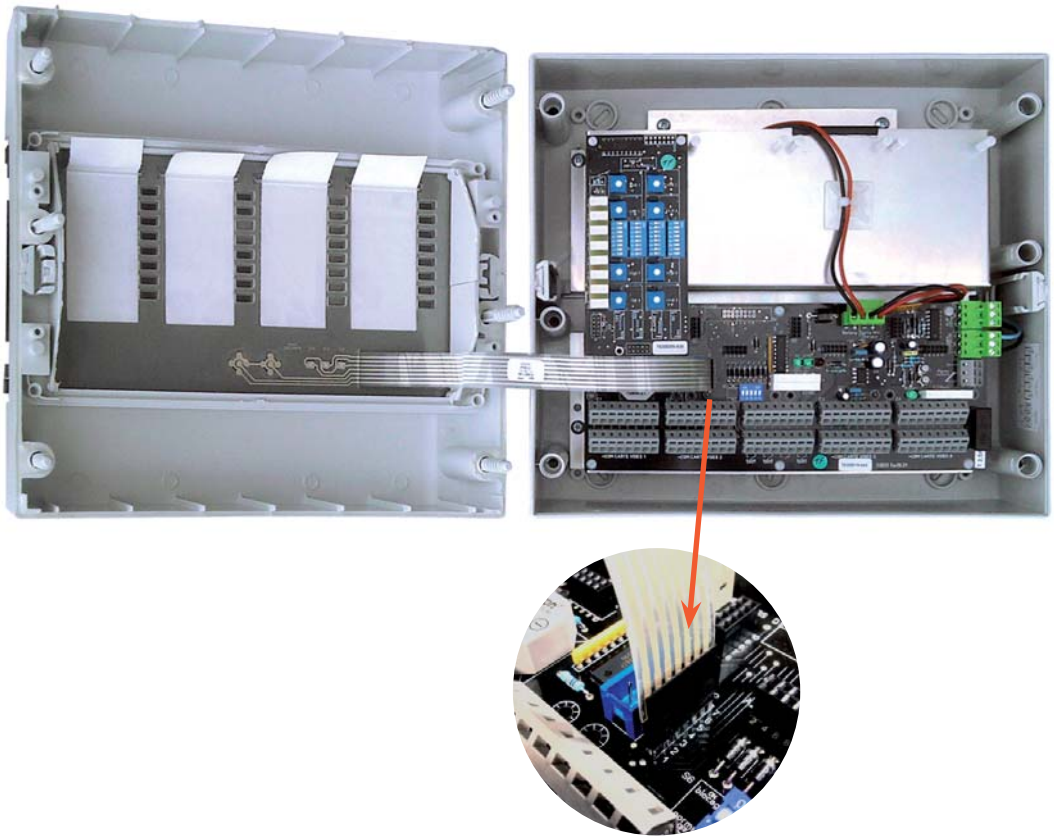


C.4) Reassembling :

- Slide the labels into the front face.



- Put the front face back being careful to correctly connect the ribbon.



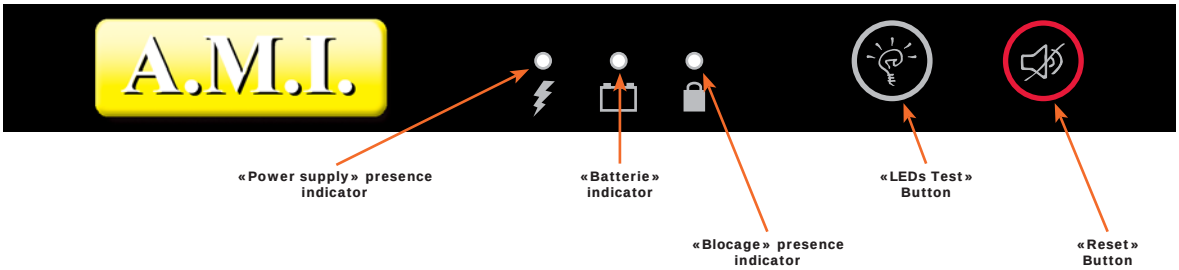
- Screw the plastic screws “cross-headed” (1) and (2)
  (Depending on the number of stages of your Alarm’box).

D) STARTING PROCEDURE AND REPAIR :

- Connect the battery.
- Connect the 230Vac main power on.
- Proceed to a «LEDS Test».
- Program the cards (see chapter B3).

Meaning of indicators :

State of «**POWER SUPLLY**» presence indicator :	**Green** : Power Supply present	**Off** : Power Supply not present
State of «**BATTERY**» indicator :	**Off** : Normal	**Red** : Discharged battery with supply absent or charger anomaly
State of «**BLOCKAGE**» indicator :	**Off** : No blockage	**Orange** : Blockage activated



D.1) «Stand by» mode :

To set the ALARM'BOX in «standby» mode that is to say completely out of service :
- Switch the 230Vac main power off or disconnect the connector 1 (Refer to wiring diagram in chapter 3).
- Insulate the battery by disconnecting the connector 7 (Refer to wiring diagram in chapter 3).

E) TECHNICAL FEATURES :

Delivered in standard with red LEDs, other colours :
Green, Yellow, Blue.

General power	12Vdc	230Vac
Power supply tolerance	-20/+30%	-30/+30%
Consumption : - Without input card - By input card (standby) - By input card (max.)	 70mA 9mA 230mA	 0,2A 9mA 230mA

Fuse : 2,5A (Main bottom card)

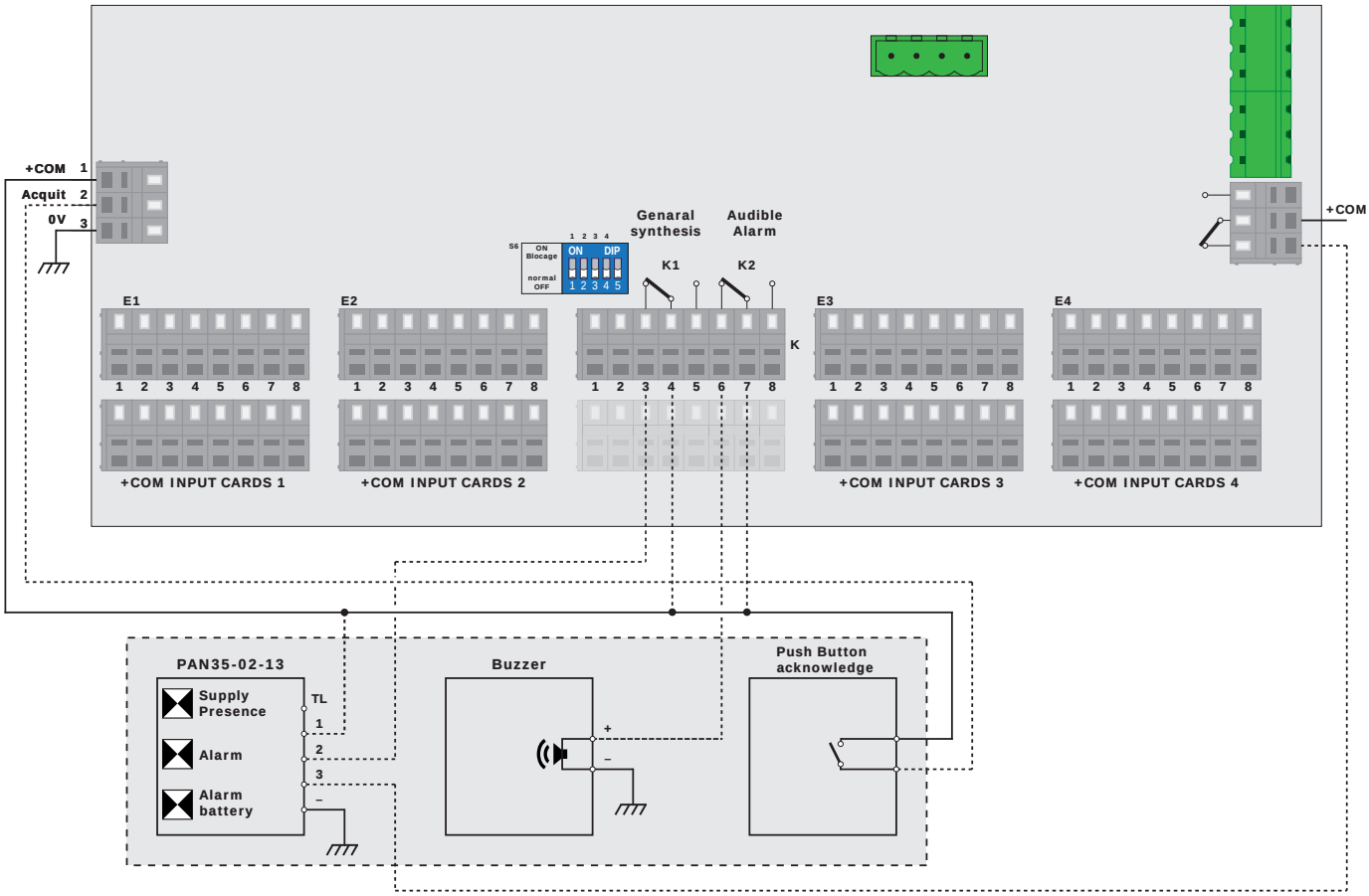
Input consumption	2,4mA
Line's resistance admited on the contact	2kOhms
Time delays accuracy	+/- 20%
Protection with cover	IP65
Temperature (at nominal voltage)	-10°C / +50°C
Contact relay (at positive security)	1RT 6A/12Vdc - 0,15A/240Vac
weight (with battery)	1 stage : 7kg 2 stages : 8,5kg 3 stages : 10kg

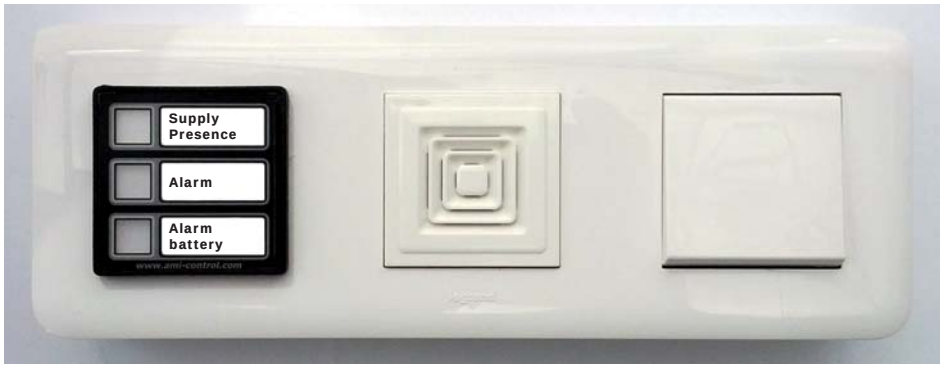
Number of inputs	Type	12Vdc without battery	220Vac without battery	220Vac with battery	Standard Autonomy *
8 inputs	1 stage	AJ1900-01-11	AJ1900-05-11	AJ1900-05-11B	85 h
16 inputs		AJ1900-01-12	AJ1900-05-12	AJ1900-05-12B	76 h
24 inputs		AJ1900-01-13	AJ1900-05-13	AJ1900-05-13B	67 h
32 inputs		AJ1900-01-14	AJ1900-05-14	AJ1900-05-14B	60 h
40 inputs	2 stages	AJ1900-01-21	AJ1900-05-21	AJ1900-05-21B	45 h
48 inputs		AJ1900-01-22	AJ1900-05-22	AJ1900-05-22B	42,5 h
56 inputs		AJ1900-01-23	AJ1900-05-23	AJ1900-05-23B	40 h
64 inputs		AJ1900-01-24	AJ1900-05-24	AJ1900-05-24B	37,5 h
72 inputs	3 stages	AJ1900-01-31	AJ1900-05-31	AJ1900-05-31B	31 h
80 inputs		AJ1900-01-32	AJ1900-05-32	AJ1900-05-32B	30 h
88 inputs		AJ1900-01-33	AJ1900-05-33	AJ1900-05-33B	29 h
96 inputs		AJ1900-01-34	AJ1900-05-34	AJ1900-05-34B	28 h
8 inputs	additional card	AJ1900-01-10C			

Additive 8 input card with connector for relay card : AJ1900-01-10CA
* Standard autonomy : The Alarm' Box are delivered as standard with a 12V/7Ah battery.
The discharge time is the one that allows the following test after 24h of battery charge (AC power present) :
- Operational of the unit in standby mode (AC power present), without signaling or alarms.
- At the end of discharge time, detection and consideration of an alarm during minimum 1mn.

F) CONNECTION EXAMPLE :

Connection of an Alarm'Box with a MJ1900 report box fitted with a PAN35-02-13, with a buzzer and an acknowledgment button.





G) TIMER OPTION :

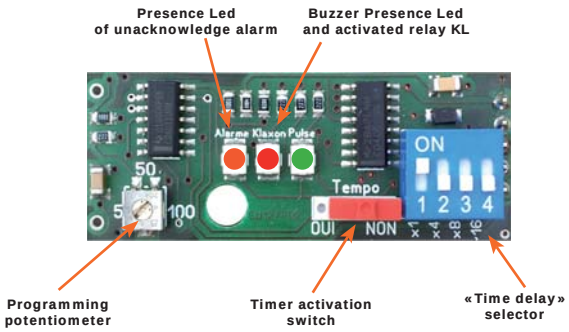
The timer option allows when an alarm appears, not to leave the buzzer ring out permanently.

When an alarm appears, the buzzer rings, if this one is not acknowledged, with the timer option on, the buzzer will switch off after the programmed delay. It has to be noted that when a new alarm appears the buzzer will not ring.

Activate the timer using the activation switch.

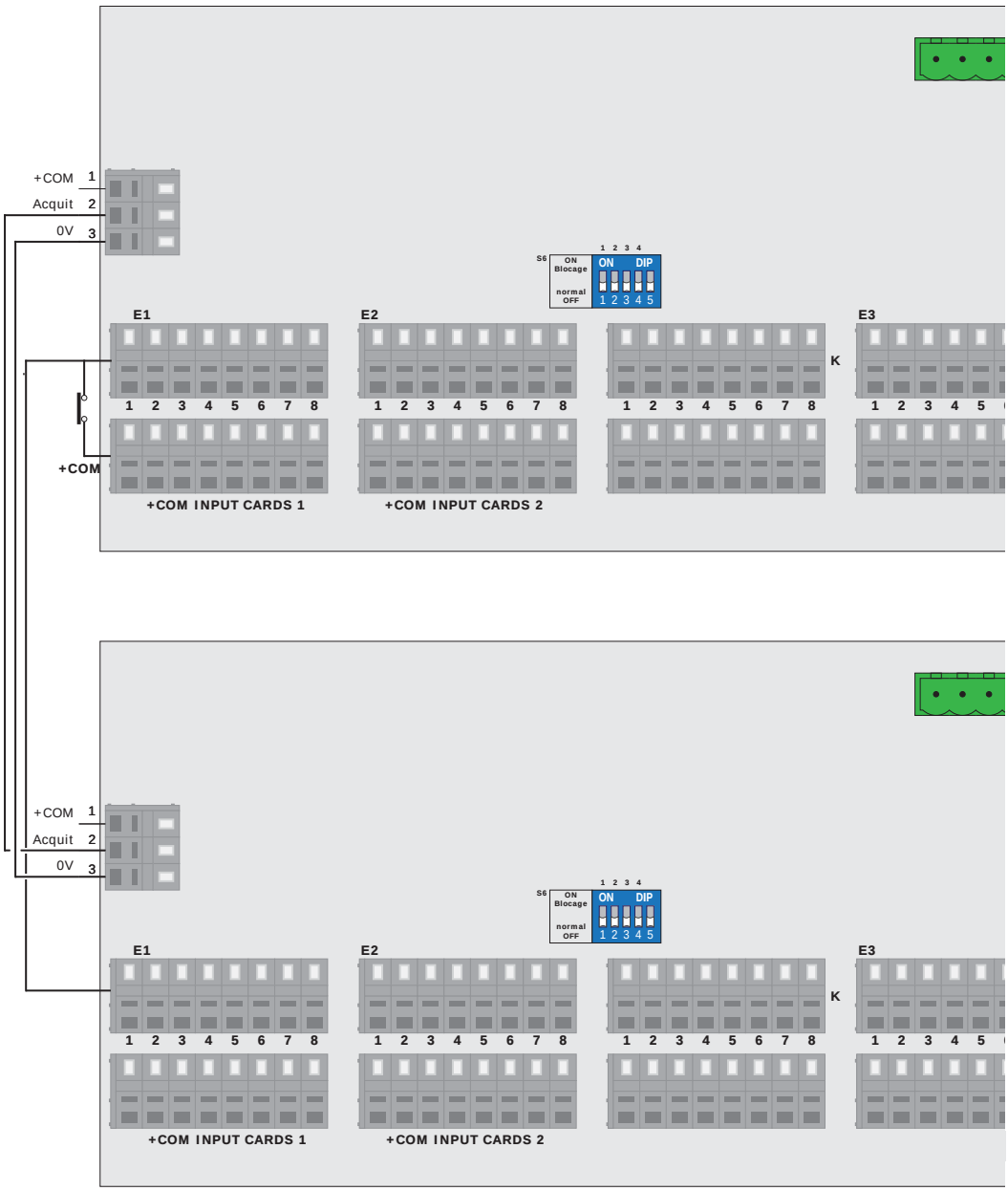
Select first of all your time range using the selector :
x1 : 1s to 1mn
x4 : 4s to 4mn
x8 : 8s to 8mn
x16 : 16s to 16mn

Then make your time range vary with the potentiometer to reach the desired time range.



H) AKNOWLEDGMENT OPTION :

On an installation with several Alarm'Box, it is possible using the acknowledgment button on the front face, to acknowledge concurrently all the Alarm'Box at once. To do so, you need to specify the acknowledgment option when ordering and to carry out the wiring as below :



A.M.I.
3, Rue de la Garenne - Z.I. de Vernon
27950 SAINT MARCEL - FRANCE
tél. : +33 (0)2 32 51 47 16
Fax : +33 (0)2 32 21 13 73
http://www.ami-control.com
✉ : contact@ami-control.com