MAC s.r.l.

Sede e stabilimento:
Via Enrico Mattei, 9 - Loc. MORCIOLA
61022 VALLEFOGLIA (PU)
Tel. +39 0721 495447 - Fax.+39 0721 495438
Internet: http://www.mezzanottifausto.it
E-mail: info@mezzanottifausto.it
        commerciale@mezzanottifausto.it

Cod. Fisc. - Partita IVA n. 02246440412

CONTROL BOARD
BRAIN 4

GBR

INFORMATION:

Customer:

Installing Company:

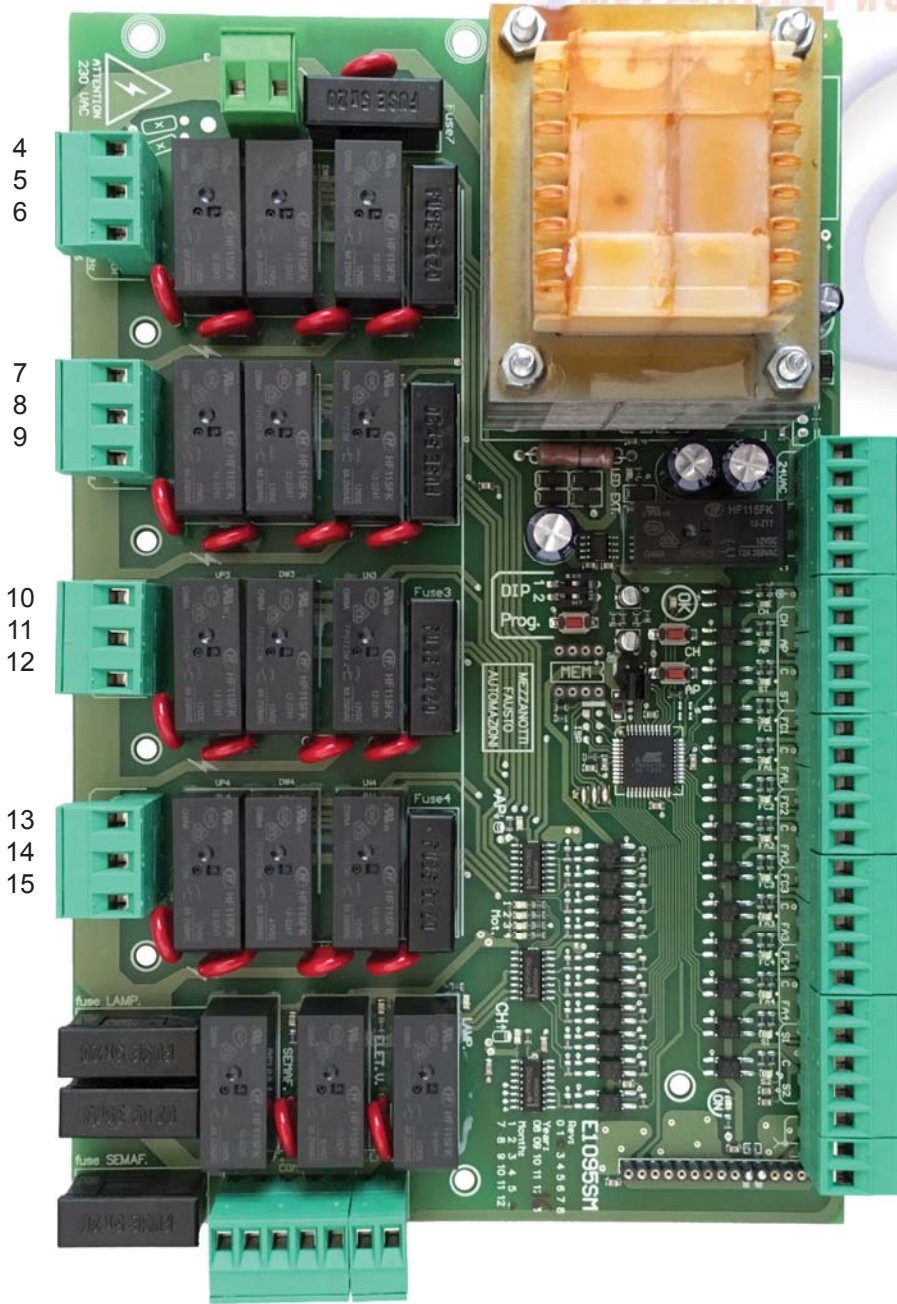Timbre&Signature

CAREFULLY READ THE MANUAL BEFORE USE

Sommario

POWER SUPPLY 230Vac
1 2 3

ENGINE OUTPUTS FOR BOLLARDS

4
5
6

7
8
9

10
11
12

13
14
15

23
24 24Vac
25 LED
26 Com.
27 Ground
28 INPUTS
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49

16 17 18 19 20 21 22
TRAFFIC LIGHT-ELECTR -LAMP

Before the installation, please read carefully this instruction book.
The Company declines every responsibility in case of non-compliance with the laws in force in the country where the installation is made.

ELECTRICAL CONNECTIONS OF CONTROL BOARD

ENTRIES	BOLLARD	CONTACT
CH Close button	29	NA
AP Open button+clock function	30	NA
C COMMON +15 VCC	31	
ST EMERGENCY STOP	32	NC
Fn LIMIT SWITCH BOLLARD 1		
FC1 LIMIT SWITCH CLOSE M1 (Fn CLOSED)	33	NC
C COMMON +15 VCC	34	
FA1 LIMIT SWITCH OPEN M1 (Fn OPEN)	35	NC
Fn LIMIT SWITCH BOLLARD 2		
FC2 LIMIT SWITCH CLOSE M2(Fn CLOSED)	36	NC
C COMMON +15 VCC	37	
FA2 LIMIT SWITCH OPEN M2 (Fn OPEN)	38	NC
Fn LIMIT SWITCH BOLLARD 3		
FC3 LIMIT SWITCH CLOSE M3(Fn CLOSED)	39	NC
C COMMON +15 VCC	40	
FA3 LIMIT SWITCH OPEN M3 (Fn OPEN)	41	NC
Fn LIMIT SWITCH BOLLARD 4		
FC4 LIMIT SWITCH CLOSE M4(Fn CLOSED)	42	NC
C COMMON 15+ VCC	43	
FA4 LIMIT SWITCH OPEN M4 (Fn OPEN)	44	NC
SAFETY DEVICE		
S1 SAFETY1(Coils, photocells Sens.Head 2fn)	45	NC
C COMMON +15 VCC	46	NC
S2 SAFETY2(sens.head.1fn)	47	NC

OUTPUTS	TERMINAL LOCK	NOTES	
POWER SUPPLY OF AUXILIARY ACCESSORIES	23	24Vac MAX800mA	
	24		
LED BRIGHT HEADS BOLLARDS MAX n°4	25 (-)	30Vcc MAX120mA	
	26(+)		
COMMON 31-34-37-40-43-46 +15 VCC	27		
MASS CARD (for ground connection)	28		
AUXILIARY ANTENNA OUTPUT	48		
	49		
TRAFFIC LIGHTS WITH TWO LIGHTS (red/green) MAX300W 220 Vac	16	GREEN LIGHT	220 Vac
	17	RED LIGHT	
	18	COMMON (neutral)	
ELECTRICAL VALVE MAX n°4 (MAX=300W)	19	230Vac MAX300W	
	20		
FLASHING LIGHT (without card)	21	230Vac (NO FLASHER)	
	22		
ENGINE 1*			
OPENING PHASE	4	230Vac MAX500W	
COMMON	5		
CLOSING PHASE	6		
ENGINE 2*			
OPENING PHASE	7	230Vac MAX500W	
COMMON	8		
CLOSING PHASE	9		
ENGINE 3*			
OPENING PHASE	10	230Vac MAX500W	
COMMON	11		
CLOSING PHASE	12		
ENGINE 4*			
OPENING PHASE	13	230Vac MAX500W	
COMMON	14		
CLOSING PHASE	15		

CONTROL BOARD

POWER SUPPLY INPUT (electronic programmer) CARD	TERMINAL LOCK	NOTES
ENTRY CABLE COMING FROM FEEDER DISCONNECTOR 230Vac 50 Hz	1	PHASE
	2	NEUTRAL
MASS CARD (for ground connection)	28	

* MAX. 500W FOR ENGINE ⟶   MAX. DURATION 10 SECONDS

NOTES	mA (interruption)	FUSES
FUSE FOR ENGINES	5000	F1 , F2 , F3 , F4
FUSE FOR ENTRY + SPOOL RELAY	2500	F5
FUSE FOR ACCESORY 24Vac + LED 30Vdc	2500	F6
FUSE FOR ELECTRONIC POWER SUPPLY	315	F7
FUSE FOR FLASHING LIGHT	2500	Fuse FLASHER
FUSE FOR ELECTRICAL VALVE	2500	Fuse ELECT.VALVE
FUSE FOR TRAFFIC LIGHTS	2500	Fuse TRAFLIGHT

DIAGNOSIS LED	SIGLE	STATE (on/off)
The led diagnosis state has been realized at the first ignition of 1 column of the bollards totally lowered *The other bollards haven't been connected to the control board (so their inputs are disconnected)*		
It lights when there's electrical network	ON	ON
Led for control board programming	OK	OFF
It flashes after the first minute of ignition (The control board is in safety lock)	OK	OFF
It lights up when the bollards are lowered	AP	OFF
It lights up when the bollards are raised	CH	OFF
It lights up when the engine M1 is on	Eng. 1	OFF
It lights up when the engine M2 is on	Eng. 2	OFF
It lights up when the engine M3 is on	Eng. 3	OFF
It lights up when the engine M4 is on	Eng. 4	OFF
It lights up when the flashing light output is on	FLASHING	OFF
It lights up when the electrical valve output is on	ELECT.VALVE	OFF
It lights up with green traffic lights	TRAF.LIGHT	ON
It lights up (described in point 2h) HEAD LIGHT	LED EXT.	OFF
It lights up with pushed button /clock	ENTRY CH	OFF
It lights up with pushed button /access control	ENTRY AP	OFF
It turns off with stop button pushed (The stop button has to be with self retention)	ENTRY ST	ON
It lights up when the bollard M1 is totally down	FC1	ON
It lights up when the bollard M1 is totally up	FA1	OFF
It lights up when the bollard M2 is totally down	FC2	ON
It lights up when the bollard M2 is totally up	FA2	OFF
It lights up when the bollard M3 is totally down	FC3	ON
It lights up when the bollard M3 is totally up	FA3	OFF
It lights up when the bollard M4 is totally down	FC4	ON
It lights up when the bollard M4 is totally up	FA4	OFF
It turns off with detected coil / sens. head (see 2.c)	S1	ON
It turns off with sensitive head pushed (see 2.c)	S2	ON

WARNING:
You must connect the cable of the GROUND in the predisposed terminal lock of the control board: terminal lock number 28.
The current laws make this connection compulsory to avoid inopportune starting or lack of arrest in case of breaking (both on side outputs and inputs).
EVERY BOLLARD HAS LABELED CABLES FOR THE ELECTRICAL CONNECTION WITH THE CONTROL BOARD.

2.0 TECHNICAL NOTES

2.a) ENTRIES AP / CH

The contacts to insert in these two inputs are contacts without tension (N.A.), input AP makes the bollard goes down, input CH rises the bollard.

ENTRY AP

is possible to connect in parallel to this entry the following devices:
- Button N.A.
- Sound recognizer for emergency vehicles (police, ambulance, ecc.)
- Access control: telepass, plates reader, magnetic coil, ecc.

ENTRY CH

It is possible to connect in parallel to this entry the following devices:
- Button N.A.
- Clock's logic contact (optional hardware) (activate the programm. 3.l)

2.b) SAFETY ENTRY 1 (S1)

It has been projected for the entry of any safety device (also if they are connected in series), this entry allows the reversal of the running direction (only if the bollard is closing the passage).

Devices connectable to this entry:
- Magnetic revelator single/double coil
- Active modulated infrared photocells
- Precalibrated pressure switch
- n°1 positive opening limit switch installed under the sensitive head
- Any devices that respect the current law
NOTE: bypass the entry if not used

SAFETY ENTRY 2 (S2)

It has been projected JUST for SPECIFIC entries.
This input guarantees redundancy and security; using positive limit switches we ensure a positive opening of the spools of the relay of the single bollard (as in current law).
Devices connectable to this entry:
- n°2 positive opening limit switches installed under the sensitive head.
NOTE: bypass the input if not used

2.c) OUTPUTS

Specific circuit for the starting up of an engine to improve the performances of the bollard (prevention against malfunctions, route defusing, ex. glued contacts).

2.d) TRAFFIC LIGHTS (SEMAF.) EXIT 220 Vac

It has been projected to ensure a safe passage of the vehicle in the passage protected by the bollard. The green light will appear when the passage will be free from any obstacle.

2.e) ELECTRICAL VALVE (ELET.V)

It has been projected to guarantee the passage even in case of power failure. The electrical valve will make the bollard go down up to the ground level.
In the version for the MINISTRY OF TRANSPORT the electrical valve is compulsory. The electrical valve is a valve controlled by electricity NA (Normally Open) so that when the diagnostic led is on it means that the electrical valve is active and the valve is closed.

2.f) FLASHING LIGHT (LAMP.)

Use a flasher provided with flashing card. The output of the card is 230 Vdc continuous.
The flashing card will let flash the flashing light.
When the flashing light is active:
- "Advance warning time" before the starting up of the engines M1,M2,M3,M4
- When the engines are on
- "Waiting time of traffic lights"
- Little flashes followed by a long pause when the bollard is in automatic reclosing.

2.g) EXIT 24Vac

It is used for the power supply of the auxiliary devices (ex. Photocells).

2.h) LED LIGHTS SENSITIVE HEAD 24F

It has been projected to supply power to 4 flashing/fixed bright heads according to the movement of the bollard:
-Fixed light with high bollard
- Light off with low bollard in pause time (traffic light time)
- Quick flashing light when the bollard rising up
- Slow flashing light when the bollards going down
- Fixed light when the bollard stops

2.i) M.E.R.

MECHANICAL ELECTRONIC REDUNDANCY. The control board is provided with a redundancy system that ensures the proper functioning of the bollard even in presence of a breakdown.
Thanks to this system it is possible to check the whole control board to detect any breakdown of a component or a malfunction of an accessory of the system, so that if the automation is provided of an electrical valve allowing the bollard to go down until the ground, it guarantees absolute security.

2.j) INSTALLATION

-The control board must be installed in a protected and dry place with its own protection box.
-Install a circuit breaker of type 0,03A, high sensitivity to the supply of the control board.
-Make sure the supply of the control board is 230Vac ±10% 50Hz.
-For the control board, electrical motor, flashing light, traffic lights, electrical valve; use cables with wire not less than 1,5mm2 up to 50m of distance; for limit switches and accessories of command and safety use cables with wires of 1mm2.
-For distances of more than 50 meters use the appropriate wires with the suitable section for the installation.
Note: for applications such as lights, cameras etc. use static relays.
-The installation should be made by competent staff and in compliance with the legislation in force.
-Before starting the installation verify the integrity of the control board.
-The installation, the electrical connections and the regulations must be done "by the book".
-Packaging Materials (cardboard, plastic, polystyrene, etc.) should not be dispersed into the environment.
-Do not install the control board in environment exposed to danger or disturbed by electro-magnetic fields. The presence of gas or flammable smokes is a great danger for safety.
-Provide on the supply network a protection for extra tensions, a switch/ disconnecting switch and/or differential suitable with the product and with the current law.
-The builder declines every responsibility if other devices and/or components incompatible with the product for integrity are installed, safety and functioning of the product.
-For reparation or substitution only original spare parts must be used.
-The installer must give all the information related to the functioning, maintenance and use of the single parts and of the system in its entireness following the laws EN 12635, EN 12453 e EN 12445.

3.0 PROGRAMMING - FUNCTIONING

3.a1) RESET OF THE CONTROL BOARD

This function allows to go back to the basic programming;
Working time 8 seconds
Traffic lights waiting time 10 seconds
Limit switch delayed of 200 ms
Automatic reclosing excluded
Basic radio code: button 1 of a TX type 53200 with DIP 1,3,5,7,9 in ON and DIP 2,4,6,8,10 in OFF

RESET PROCEDURE:
1) Push and keep pushed the button PROG (Il led OK and led EXT are fixed on)
2) After about 3 seconds the led OK starts to flash quickly
3) Release the button PROG, the led OK keeps flashing.
4) Open the contact to entrance STOP (if there is, push the stop button) for at least 5 seconds.
   The led OK starts to flash quickly.
5) Reclose the contact to entrance STOP
6) When the led ends to flash and it is off, the reset has been completed.

3.a2) SELF NOTICE OF THE LIMIT SWITCHES INPUTS

When the control board is on, the microprocessor checks the limit switches inputs.
If during the starting up of the control board the limit switches of the engines 2,3,4 are not on the entrances, the
microprocessor excludes automatically the inputs and the engines 2,3,4 will not be moved from the control board.
Note: Thanks to this mechanism you don't NEED to bridge the inputs of the limit switches that are not used.

3.b) RADIO CODES PROGRAMMING

PROCEDURE:
1) Push once the PROG button (the OK and EXT leds are fixed on)
2) Send the radio code to be memorized keeping a distance of at least 150 cm from the control board.
3) If the code has been memorized the led OK makes a flash.
4) If you have to memorize other codes repeat from point 3.
5) To exit from radio code programming push twice the PROG button (the OK led turns off)

3.c) COMBINATION RADIO FUNCTION

If during the sending of the code to memorize (point 3) no input is active the command is combined to the function
"Only Open" for all 4 pistons.
To combine to radio command the Start function(Open/Close) for all 4 pistons, push the buttons ap and ch to-
gether.
To combine, to the radio command only to piston 1 push the button AP while the code is sending.
To combine, to the radio command only to piston 2 push the button CH while the code is sending.
To combine, to the radio command only to piston 3 open ONLY the contact SIC1 while the code is sending.
To combine, to the radio command only to piston 4 open ONLY the contact SIC2 while the code is sending.
To combine, to the radio command only to function STOP (for all pistons) activate the entrance STOP (open the
contact) while the code is sending.

3.d) CANCELLATION OF A SINGLE RADIO CODE

PROCEDURE:
1) Push twice the PROG button (the led OK is on, fixed, while the EXT leds are flashing)
2) Send the radio code to be cancelled
3) If the led OK makes 3 flashes, the code has been cancelled, if it makes 1 slow flash it means that the code
is not memorized.
4) To cancel other codes repeat from point 3
5) To exit from CODE CANCELLATION push twice the PROG button (the led OK and the external leds turn off)

3.e) CANCELLATION OF A GROUP OF CODES

This function allows you to cancel with a single operation all the codes of the same kind
PROCEDURE:
1) Push twice the PROG button (the led OK is fixed on, while the leds EXT are flashing)
2) Select the group to be cancelled:
-   Button AP+CH (push at the same time) >> canc. all codes Open/Close
-   Button AP >> canc. All the codes for PISTON 1
-   Button CH >> canc. All the codes for PISTON 2
-   Button SIC1 >> canc. All the codes for PISTON 3
-   Button SIC2 >> canc. All the codes for PISTON 4
-   Entrance STOP >> canc. all the codes STOP
3) The led OK flashes quickly during the cancellation process
4) When the led OK turns off the procedure is finished

CONTROL BOARD

3.f) AUTOMATIC RISE OF BOLLARDS TO THE REVIVAL OF POWER SUPPLY(function save car parking)

To the revival of power supply the control board commands the automatic rise of all the bollards ,only if the time of automatic reclosing has been programmed.
Check these following points 3.f1 and 3.f2 for the programming and the cancellation of automatic reclosing.

3.f1) PROGRAMMATION TIME OF AUTOMATIC RECLOSING
PROCEDURE:
1) Push and keep pushed the PROG button (the led OK and the leds EXT are on, fixed)
2) After about 3 seconds the led OK starts to flash
3) Release the PROG button, the led OK keeps flashing
4) Push and keep pushed the CH button for the time you wish to memorize
5) When the CH button is released the led OK turns off and the procedure is finished

WARING: Programming the time of automatic reclosing, is activated also the automatic rise at the revival of power supply.(Check point 3.f).

During the normal functioning the automatic reclosing can be excluded sending a START/STOP command during the pause or activating the EMERGENCY STOP

3.g) DELETE OF THE AUTOMATIC RECLOSING
PROCEDURE:
6) Push and keep pushed the PROG button (led OK and led EXT are on, fixed)
7) After about 3 seconds led OK starts to flash
8) Release PROG button, led OK continues to flash
9) Open ONLY the contact to the entrance: SIC2
10) Led OK flashes: the erasing process is happening
12) When the led turns off the procedure is finished

WARING: Deleting the time of automatic reclosing, is deactivated also the automatic rise at the revival of power supply.(Check point 3.f).

3.h) PROGRAMMING OF THE TRAFFIC LIGHTS WAITING TIME
The waiting time of traffic light is the time that need the traffic light to exchange the green into red (this time has to be timed after the end of pause time).
In order to calculate the time it's necessary to measure with a chronometer the necessary time that it own a vehicle to go through and to free the passage.
During the waiting time of traffic light the flashing light is flashing.
PROCEDURE:
1) Push and keep pushed the PROG button (the led OK and the leds EXT are on, fixed)
2) After about 3 seconds the led OK starts flashing.
3) Release the PROG button, the led OK go on flashing.
4) Push and keep pushed the AP button for the time you want memorize.
5) When the AP button is released, the OK led turns off and the procedure's finished

3.i) WORKING TIME OF THE PISTONS PROGRAMMING
PROCEDURE:
1) Push and keep pushed the PROG button(the led OK and the led EXT are on, fixed)
2) After about 3 seconds the led OK starts flashing
3) Release the PROG button, the led OK keeps flashing
4) Open ONLY the contact to entrance SIC1 for the time you wish to memorize
5) When the contact S1 is closed, the led OK turns off and the procedure is finished

WARNING: Use the condenser 20µF for the connections of the engines
- To obtain a better starting of power use the following condensers:
- Condensers: 20µF, 25µF.

3.l) CLOCK LOGIC ACTIVATION
To activate the clock logic you have to place DIP1 on "ON".
Note: when this logic is activated you have to connect the clock contact without power instead of the input CH (clamps 31-29).
Thanks to this function the road will be open until the contact of the clock is closed and it will close when the clock contact is opened.
In case of power failure, at the revival of power the central guarantees the reopening or the reclosing even if the clock has commuted while the central was off.
When the clock contact is closed, the pause management is excluded.
If during the automatic reclosing of the clock, the SECURITY 1 intervenes, the bollard reopens and it will try to reclose after 5 minutes. The closing attempts will continue until the bollard isn't closed or coming a user's command.

If it is pushed with an opening button from a transmitter or from a control board, the bollard does a safety lowering, if the clock contact is still open, the bollard will do the rise again (The control board before doing the rise always verify all the securities, and always after the pause time and the waiting time of traffic light).

3.m) ACTIVATION OF HYDRAULIC PRESSURE MAINTENANCE

To activate this function you have to place DIP 2 on "ON".

When the system is in CLOSED state, the control board check the position of closing limit switches.

If the limit switches are exchanged their state, due pistons lowering, the control board commands the closing of the bollard.

The control is done every 10 minutes and the forced closing lasts up to the reaching of the limit switches or to a maximum of 3 seconds. Before the forced closing the bollard makes some signaling flashes (examples: quick start flash of sensitive head +led ORION)

The flashing light doesn't work during the forced closing.

During the forced closing the securities S1 and S2 don't order the inversion but only the stop.

3.n) SEQUENTIAL STARTING UP OF THE ENGINES

With this function the engines don't start up at the same time but in sequence:

M1 >> M2 >> M3 >> M4.

PROCEDURE:

1) Turn off the control board
2) Insert the jumper in the position JA.

3.o) EXCLUSION OF THE DELAY TIME OF THE LIMIT SWITCH

Usually the engines stop after 250ms from the opening of the contact of the limit switch(JB open). Thanks to this procedure it is possible to exclude the delay letting stop the engines as soon as the limit switch contact is opened(JB close).
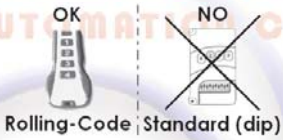
On the electromechanical bollards is necessary to exclude the delay time of the limit switch.

PROCEDURE:

3) Turn off the control board
4) Insert the jumper in the position JB (It is advisable to insert the jumper JB for electromechanical bollard)

CONTROL BOARD

3.o) RADIO / REMOTE CONTROL PROGRAMMING:

TRANSMITTERS PROGRAMMING BY RADIO	OPERATIONS	IMAGES
This procedure allows to program a new radio code without intervene directly on the board. The operation of programming are all by radio, using a transmitter already programmed on the control board. If you need to memorize more radio codes it will repeat each time the procedure from the beginning. This function is available only if in the control board are memorized exclusively Rolling-Code codes.	The following operations are valid only if in the control board are exclusively memorized codes of type Rolling-Code. The functions of the new code can be selected during the programming according to the same criterions used for the normal programming.	
	1) Send a command to the control board with an IRIS RC transmitter already inserted in memory.	
	2) Within 8 seconds push together the buttons 1 and 3 of IRIS RC transmitter used in the previous point. The control board is in programm.	
	3) Within 8 seconds send a new radio code (rolling code) of the transmitter to be memorized. If you don't send any new code, the external receiver exits from the program after 8 sec.	
	4) Check the new memorized code and if is not correct repeat the procedure.	

www.mezzanottifausto.it

EXTERNAL MEMORY	OPERATIONS	IMAGES
If you put the modulus of the external memory on the central it is possible to expand the memory capacity of the radio codes from 160 standard codes and 60 Rolling Codes to 8000 standard codes and 2000 Rolling Codes. When the central notices the presence of the external memory, the management of the internal memory is being excluded, that is the radio codes memorized before the putting of the new memory do not work. If you want to keep the codes previously memorized you have to follow the procedure of copy memory INT-------> EXT described below.	1) Turn off the central and insert the modulus of memory on the 8 pin skirting board (MEM) respecting the following warnings:	
	Handle with care the external modulus Don't wet it, don't let it fall, don't let it exposed to electromagnetic fields or heat sources.	
	The assembly on the card must be done respecting the polarity of the component. The foot n. 1 on the card is shown by a white ring.	
	2) Put the modulus on the skirting board and verify that all pins are in line with each hole. Insert the modulus pushing it towards the card. Pay attention not to fold the pins.	
	Before memorizing the new radio codes execute the copy of the internal memory on the external one, or the procedure of reset	

COPY MEMORY INT------------>EXT :	OPERATIONS	IMAGES
This function is available only if there is a modulus of external memory. When the central notice the presence of the external memory, the management of the internal memory is automatically excluded, that is that the radio codes memorized before the insert of the new memory don't work. This procedure allows to keep the codes memorized in the internal memory making a copy of the codes from the internal memory to the external one.	Turn off the central. Push and keep pushing the PROG button.	SPEGNERE LA CENTRALE B
	Turn on the central. The OK led makes quick flashes and then it stays on fixed.	ACCENDERE LA CENTRALE ACCESO OK
	Wait until the led doesn't start to flash again (about 3 seconds)	Attendere LAMPEG. OK
	When the led OK stops flashing and turns off the copy is finished. (copy time: about 60 seconds)	Attendere SPENTO OK

4.0 SAFETY WARNINGS FOR MAINTENANCE AND USE

WARNINGS

These warnings are integral and essential parts of the electronics and they are to be given to the final user. So it is necessary to keep this INSTRUCTION BOOK.
Read carefully the instruction book which gives important indications about the installation.
The wrong installation or the improper use could create great danger.

MAINTENANCE

To guarantee the efficiency of the control board professional staff must make the maintenance in times decided by the installer, by the producer and by the legislation in force.
The operations of installation, maintenance, reparation and cleaning must be documented.
This documentation is to be kept by the user.

FOR THE USER

Read carefully the instructions and the documents enclosed.
The product must be used according to the use designed by the.
Any other use is to be considered improper and then dangerous. Moreover, the information in this document and in the enclosed documents can be modified without notice.
The Company declines all responsibility.
In case of maintenance, cleaning, breakdown or malfunction of the product, turn off the power supply and avoid any attempt of intervention except where indicated.
Call he Company staff before any maintenance or sending of damaged/broken material.

WARRANTY

The guarantee will be valid for twelve (24) months from the selling.
It decays in case of: negligence, mistake or bad use of the product, use of non-compliance accessories to the specific of the builder, operated by the customer or by a third party, natural causes (lightnings, floods, fire, ect.), tampering , vandalism acts, changes in the environmental conditions in the installation place. The guarantee does not include, moreover, parts that suffer wear. (batteries, oil, ect.)
The purchase of the product implies the complete acceptance of the general sale conditions.

GUIDE FOR THE CAUSES RESEARCH OF SOME DRAWBACKS

N	DRAWBACKS	PROBABLE CAUSES	HYPOTESIS OF FAULT	SOLUTIONS
1	BOLLARD NO RISE (wrong connections)	-wrong sense of rotation -reversed limit switch -lack of electrical power -control board damaged -fuses damaged	-wrong connection of electrical engine -wrong limit switch connection -sectional swtich open -control board damaged -high absorption peak -short circuit on the side engine,electrical valve, inputs, output24Vac, traffic light	-rewire the electrical engine on the control board (reverse wires rise/fall) -rewire magnetic limit switches (reverse limit switch close with open-rise) -reactivate sectional switch -substitute the control board -substitute the fuse with others appropriate -check and solve the damage
2	BOLLARD NO RISE COMPLETELY (during the rise the bollard stops)	-bollard stops at the mid of the stroke - magnetic limit switches are closed (lights FC1 e FA1 switch on about MOT1)	-wrong programmation of working time -magnetic limit switch out reading zone of magnet	-program again the working time -establish the right position for limit switches reading between the magnet and the sensor(bringing near the magnetc limit switch)

230 Vac 50Hz

N
F
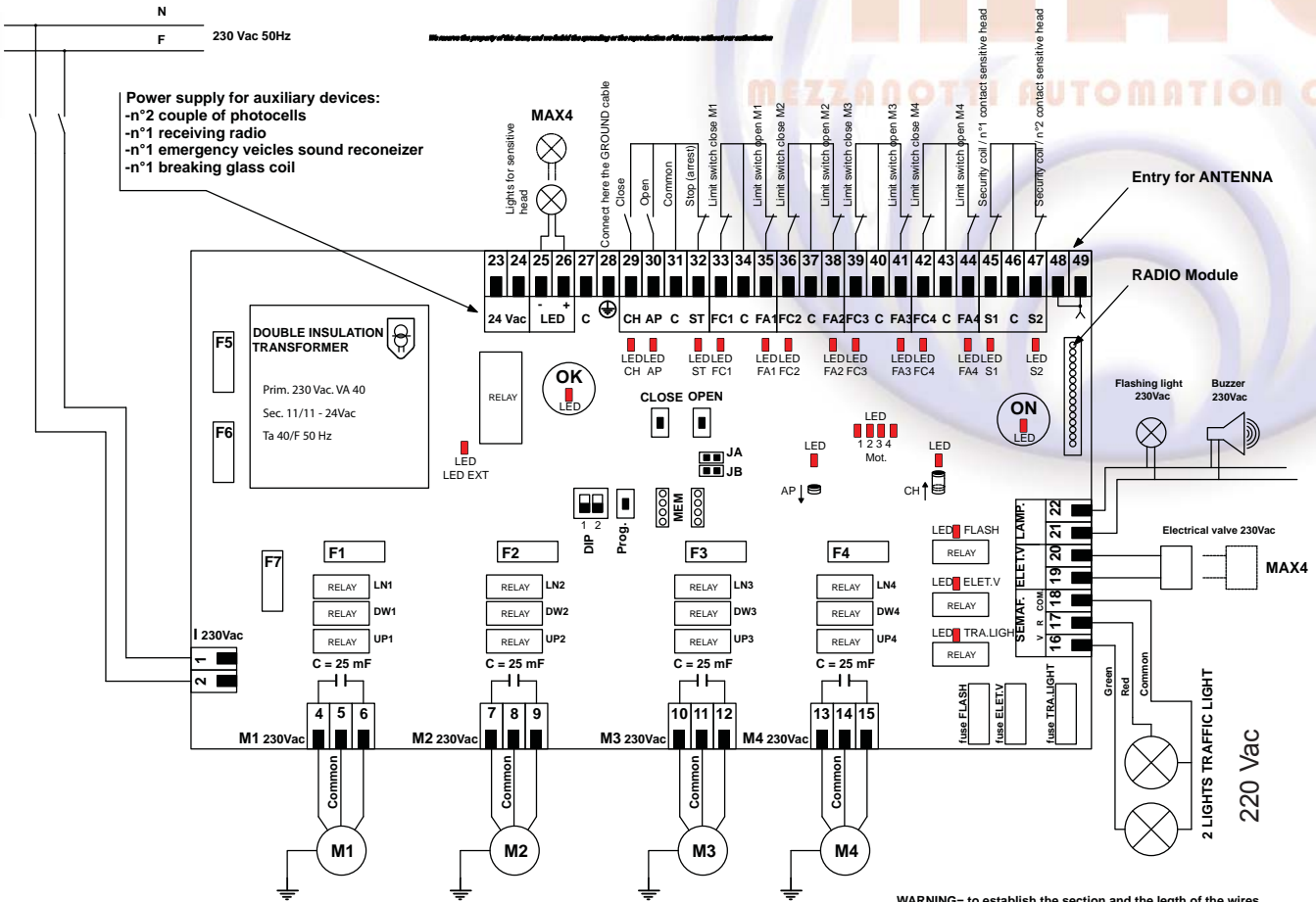
Power supply for auxiliary devices:
-n°2 couple of photocells
-n°1 receiving radio
-n°1 emergency veicles sound reconeizer
-n°1 breaking glass coil

MAX4

Lights for sensitive head

Connect here the GROUND cable

Close
Open
Common
Stop (arrest)
Limit switch close M1
Limit switch open M1
Limit switch close M2
Limit switch open M2
Limit switch close M3
Limit switch open M3
Limit switch close M4
Limit switch open M4
Security coil / n°1 contact sensitive head
Security coil / n°2 contact sensitive head

Entry for ANTENNA

RADIO Module

CONTROL BOARD

| 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |

| 24 Vac | - LED + | C | | CH | AP | C | ST | FC1 | C | FA1 | FC2 | C | FA2 | FC3 | C | FA3 | FC4 | C | FA4 | S1 | C | S2 |

DOUBLE INSULATION TRANSFORMER

Prim. 230 Vac. VA 40
Sec. 11/11 - 24Vac
Ta 40/F 50 Hz

F5
F6

RELAY

OK
LED

LED
LED EXT

CLOSE   OPEN

JA
JB

LED CH LED AP
LED ST LED FC1
LED FA1 LED FC2
LED FA2 LED FC3
LED FA3 LED FC4
LED FA4 LED S1
LED S2

LED
1 2 3 4
Mot.

LED

AP

LED

CH

ON
LED

DIP 1 2
Prog.
MEM

Flashing light 230vac
Buzzer 230vac

F7

F1
RELAY LN1
RELAY DW1
RELAY UP1
C = 25 mF

F2
RELAY LN2
RELAY DW2
RELAY UP2
C = 25 mF

F3
RELAY LN3
RELAY DW3
RELAY UP3
C = 25 mF

F4
RELAY LN4
RELAY DW4
RELAY UP4
C = 25 mF

LED FLASH
RELAY

LED ELET.V
RELAY

LED TRA.LIGHT
RELAY

SEMAF. ELET.V LAMP.
V R COM

| 16 | 17 | 18 | 19 | 20 | 21 | 22 |

Electrical valve 230vac

MAX4

I 230Vac
1
2

| 4 | 5 | 6 | | 7 | 8 | 9 | | 10 | 11 | 12 | | 13 | 14 | 15 |

M1 230Vac   M2 230Vac   M3 230Vac   M4 230Vac

Common   Common   Common   Common

fuse FLASH   fuse ELET.V   fuse TRA.LIGHT

Green
Red
Common

2 LIGHTS TRAFFIC LIGHT

220 Vac

M1   M2   M3   M4

WARNING= to establish the section and the legth of the wires
carefully read the manual af the control board at point 2.m

CONTROL BOARD

MAGNETIC TRACER

Connection in series with the other security devices connected on this terminal

POWER SUPPLY   R1   R2   L1

01 02 03 04 05 06 07 08 09 10 11 12

13 14 15 16

L1

230 Vac 50Hz

N

F

24 Vac   LED   C   CH AP C ST FC1 C FA1 FC2 C FA2 FC3 C FA3 FC4 C FA4 S1 C S2

-    +   C

23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49

TRAF.LL ELET.V FLASH

V R COM.

16 17 18 19 20 21 22

DOUBLE INSULATION TRANSFORMER

Prim. 230 Vac. VA 40
Sec. 11/11 - 24Vac
Ta 40/F 50 Hz

F5

F6

I 230Vac

1   2

Switch with unlock coil
\ OPTIONAL: auxiliar contacts modul

MAX4

Electrical valve 230Vac

N

F

2

1

Emergency button
"break the glass"

NA

CONTROL BOARD

49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23
		S2	C	S1	FA4	C	FC4	FA3	C	FC3	FA2	C	FC2	FA1	C	FC1	ST	C	AP	CH		⏚	C	LED		
																								− +		24 Vac

22	21	20	19	18	17	16
		V	R	COM		
TRA.LIG.ELET.V	FLASH					

DOUBLE INSULATION
TRANSFORMER

Prim. 230 Vac. VA 40

Sec. 11/11 - 24Vac

Ta 40/F 50 Hz

F5

F6

I 230Vac

2 1