

# Control board for rolling-shutters with limit-switches

# THEMIS

CE Rev 1.A

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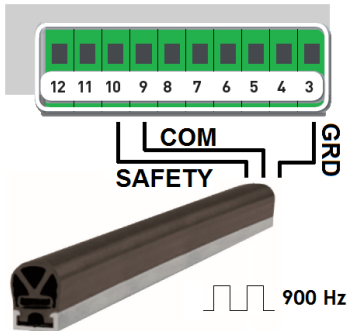
**FOLLOW THIS INSTRUCTIONS CAREFULLY !!** This manual contains important instructions for the installation and use of the board mod. "THEMIS". Don't install before reading this manual, the product's security depends on a correct installation. The installation must be done by qualified technicians. The board must have a special box to protect from water infiltration or damp. The board mustn't be exposed to sources of heat or electromagnetic fields. Install the board in airy place and far from inflammable material. The producing company declines any responsibility in case of a not correct installation or improper use. The product respects the European norms: 2006/95/CE (CEE73/23, CEE93/68), 2004/108/CE (CEE89/336), CEE89/106, CEE89/392.

SIMBOLI	
	IMPORTANT !! for product's use
	INFORMATION for the installation security
	DANGER in presence of high tension !

**IMPORTANT !!!** All the wiring connections must be done after to have disconnected the main alimentation !  
**DISCONNECT THE GENERAL SWITCH** before every connection !!

**ATTENTION !** The installation must have a switch with opening contacts at least 3mm for the omnipolar disconnection. The change tension and the wiring connections can be made after to have disconnected the alimentation ! **DISCONNECT THE GENERAL SWITCH** before every connections !

### Wiring for optoelectric safety edge (digital output at 900Hz)



Terminal 3: Ground  
Terminal 9: 12Vdc  
Terminal 10: Signal

Follow the procedure described in **TOGGLE SAFETY INPUT TYPE** to enable safety input for the optoelectric Safety edge.

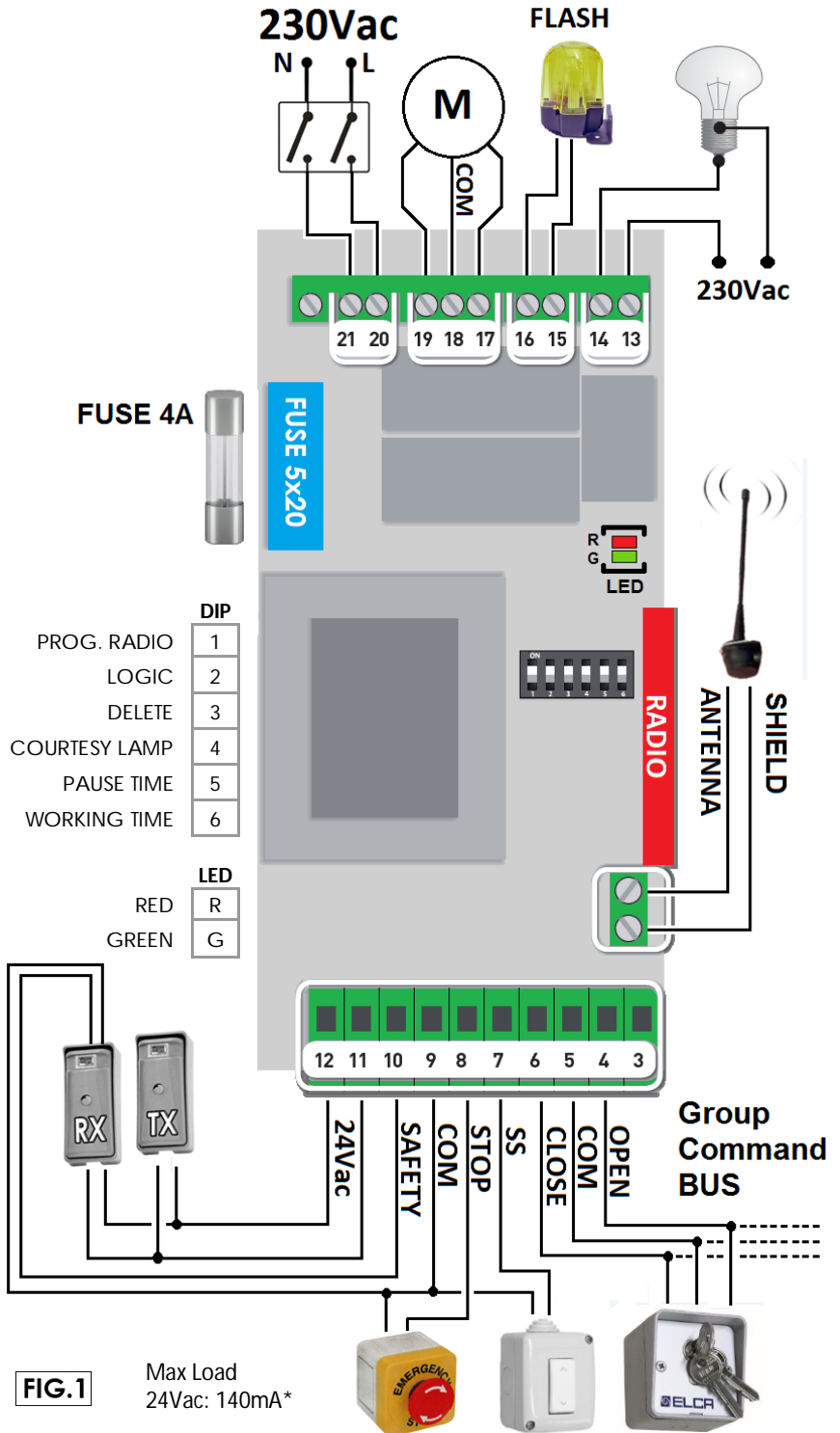


FIG.1

Max Load  
24Vac: 140mA\*

\*Maximum current under different load condition are described in 'MAXIMUM LOAD ON 24Vac AND 12VDC (COM) OUTPUTS'

INPUTS		FUNCTION AND TERMINALS' CONNECTION
<b>OPEN</b> Norm. open	Start an OPEN movement, terminals 5 [COM] and 4 [OPEN].	
<b>CLOSE</b> Norm. open	Start a CLOSE movement, terminals 5 [COM] and 6 [CLOSE].	
<b>START / STOP</b> Norm. open	Commands: OPEN > STOP > CLOSE > STOP > .... During the pause time a command excludes the automatic closing. Terminals 9 [COM] and 7 [SS].	
<b>STOP</b> Norm. close	Stops the rolling-shutter and excludes the automatic closing. Terminals 9 [COM] and 8 [STOP]. <b>If you don't use it</b> , short-circuit the terminals 8 and 9.	
<b>PHOTOCELLS</b> Norm. close	During the closing time it inverts the movement of rolling-shutter in opening time. Connect the photo-cells' alimentation to 24Vac output of board. The NC contact of photo-cell (receiver) must be connected to terminals 9 [COM] and 10 [SAFETY]. <b>If you don't use it</b> , short-circuit the terminals 9 and 10.	
MOTOR AND ALIMENTATION'S CONNECTION		TERMINAL'S CONNECTION
<b>SINGLE-PHASE MOTOR 230Vac</b> 500W MAX		17 CLOSING 18 COM 19 OPENING
<b>BOARD'S ALIMENTATION: 230Vac 50Hz</b>		20 PHASE 21 NEUTRO
<b>FLASHING LIGHT 230Vac 50Hz</b> (autolamping, 25W MAX)		15 - 16
<b>COURTESY LAMP</b> (250V - 2A)		13 - 14 POTENTIAL-FREE CONTACT
FUSE		
FUSE1		4A

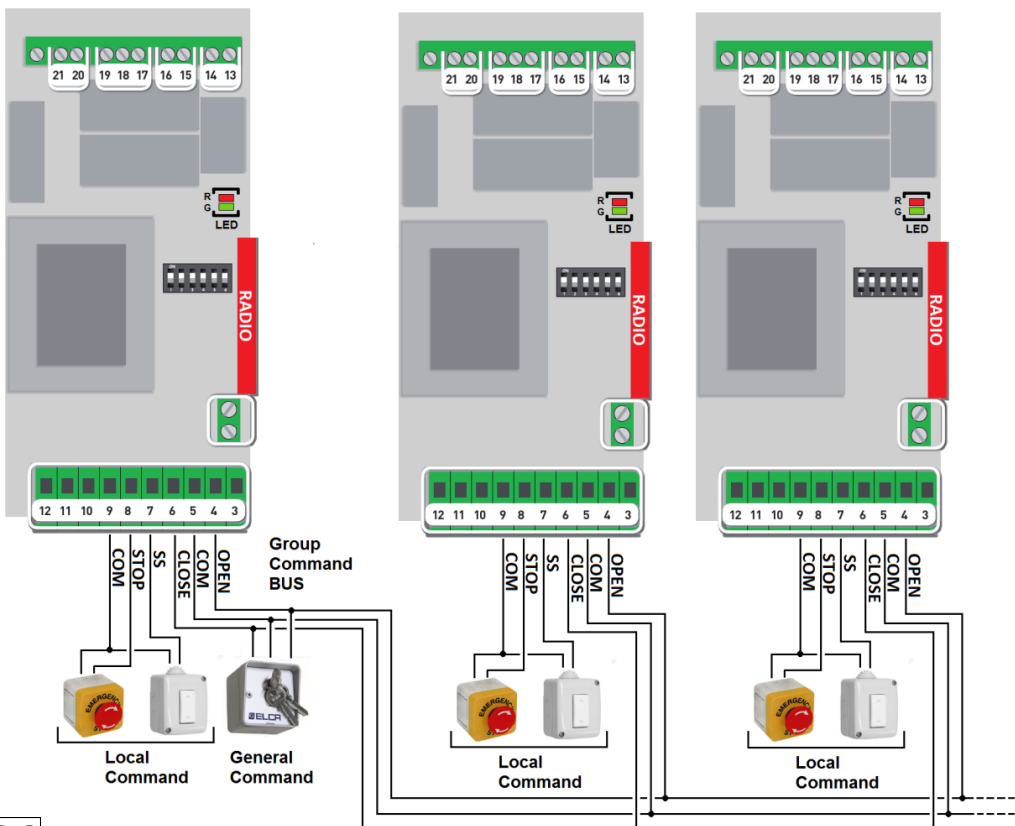


FIG.2

## GROUP COMMANDS

Please never connect more than one motor per THEMIS board. If you need to command 2 or more motors then a THEMIS board per motor is required and they must be connected together as shown in Fig.2. The OPEN and CLOSE command are used as 'Group Command' (all the motor will receive the command simultaneously), START/STOP and STOP are 'Local command'.

THEMIS is equipped with a potential-free contact for courtesy lamp function. This contact can operate in 3 modes: monostable, bistable and timed.

## BOARD PROGRAMMING

### BASE PROGRAM

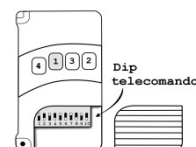
The board has a BASE program. You can come back to the BASE program, making the Reset procedure.

MOTOR'S RUN: **30 sec**  
COURTESY LAMP: **3 minutes**

AUTOMATIC CLOSING: **Excluded**  
THEFT PROOF: **Excluded**      SAFETY: **Photocell**


RADIO CODE

Standard transmitter 53200  
Button 1  
Dip code :  
1,3,5,7,9 in ON position  
2,4,6,8,10 in OFF position



### RESET PROCEDURE

The reset procedure allows to come back to the BASE program, **deleting all the programs memorised** and **all the code programmed**.

 *With the reset procedure you come back to the BASE code (standard transmitter 53200, button n.1, dip 1,3,5,7,9 in ON position and dip 2,4,6,8,10 in OFF position)*

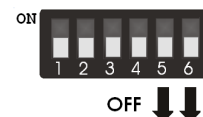
1) Place all dipoles in OFF position



2) Place dip 5 and dip 6 in ON position. The green led will turn OFF and the red led will blink.



3) When red led turns OFF and green led flash 3 times every 3 seconds, turn dip 5 and dip 6 in OFF position.



4) The green led become solid and the procedure ends.



**RADIO COMMANDS** the board can be commanded by the transmitter. You can memorise n. **160 standard-codes** or n.**60 rolling-codes**. The BASE code is (standard 53200, button n.1, dip 1,3,5,7,9 in ON position and dip 2,4,6,8,10 in OFF position), it's erased with the first code that you memorise (regardless of the function).

**ATTENTION!!:** To use the transmitter, the board must have the radio receiver. (see fig.1 , pag.1)



**ROLLING-CODES !.** *If the first code memorised is a Rolling-code, the board stops to receive the standard-codes 53200( 10dip). To receive the standard-codes 53200 you have to make the reset procedure (see pag.2) or delete all the codes (see pag.4). The board is also compatible with custom Rolling-codes.*

**TRANSMITTERS PROGRAMMING !** *When you program the transmitters, you have to keep a distance at least 50cm between the transmitter and the board.*

**PERSONAL CODE !** *If you use the standard-codes (10-dip) you have to put a personal code, positioning the 10 dipoles on the transmitter, before it is memorised on the board. After the new code is memorised on board, the dip position on the transmitter cannot be changed!*

### START/STOP CODES PROGRAMMING (SS)

This procedure program a radio code as a start/stop command .

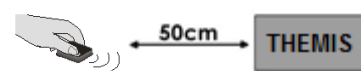
#### PROCEDURE

#### PICTURES

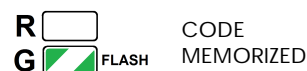
1) Place dip 1 in ON position. Both green and red led will be solid.



2) Send the radio code to be memorized.



3) If the green led blinks, then the code has been memorized.  
If the red led blink, the code was already memorized.  
If both green and red led blink, the memory is full.  
If the red led blink slowly 5 times, then the procedure has been refused. It is necessary check the input wiring.



4) If further code memorization must be performed repeat the procedure from step 2, otherwise place dip 1 in OFF position.



To program a radio code as an OPEN command, perform the procedure START/STOP CODES PROGRAMMING by holding the OPEN button while transmitting the code.

To program a radio code as a CLOSE command, perform the procedure START/STOP CODES PROGRAMMING by holding the CLOSE button while transmitting the code.

To program a radio code as a STOP command, perform the procedure START/STOP CODES PROGRAMMING by holding the STOP button while transmitting the code.

To program the COURTESY LIGHT with the transmitter, perform the procedure START/STOP CODES PROGRAMMING, placing dip 4 in ON position before send the radio code. After the procedure place the dip 4 in OFF position .

### ERASING OF ALL THE CODE

With this procedure it is possible to erase all codes in memory. The base program radio code become active ( standard transmitter 53200, button n.1, dip1,3,5,7,9 in ON position and dip2,4,6,8,10 in OFF position).

**ATTENTION!** If the theft proof function is enabled, the first code programmed after the erasing will be associated at the theft proof function.

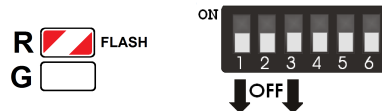
1) Place dip 1 in ON position. Both green and red led will be solid.



2) Place dip 3 in ON position. The green led will turn OFF.



3) Wait until the red led starts blinking. Now the dip 1 and the dip 3 can be turned OFF.

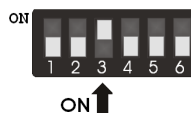


### ERASING OF A SINGLE CODE

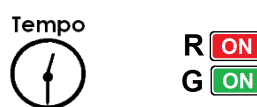
Perform this procedure to erase a single code sending it with the remote. If all the codes are erased with this procedure the base program radio code will NOT become active.

**ATTENTION!** If the theft proof function is enabled and the radio code associated is deleted, the first code programmed after the erasing will be associated at the theft proof function.

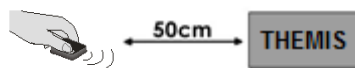
1) Place dip 3 in ON position.



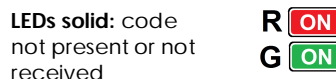
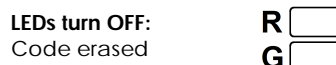
2) Wait until both green and red led are solid.



3) Send the code to be erased

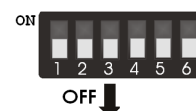


4) If the code is erased both green and red led will turn OFF for a short time.  
If the code is not present in memory or it is not correctly received both led will stay solid.



5) If further codes must be erased repeat the procedure from step 3. Otherwise turn dip 3 in OFF position.

To end the procedure



## WORKING TIME PROGRAMMING

The WORKING TIME is the time that the door needs to open and close.

With this procedure the board learns automatically the door's run (max 4 minutes).

If you don't make the programming, the working time selected is 30 sec.

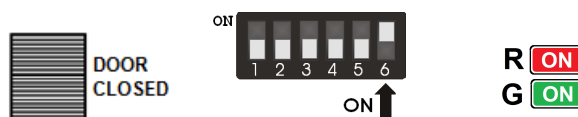
At the working time programmed it will be added 4 seconds automatically.

### PROCEDURE

### PICTURES

1) Check that the limit-switches are connected in the right way ! If the safety systems ( stop, photo-cells) are active during the procedure, the motor's run stops.

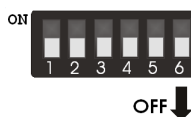
2) Put the door in closed position then turn dip 6 in ON position. Both green and red led become solid.



3) With the remote send a SS command, the door will start to open. When the door is completely open send another SS command.



4) Place the dip 6 in OFF position.



## PAUSE TIME PROGRAMMING (Automatic closing)

The pause time programming allows the automatic closing.

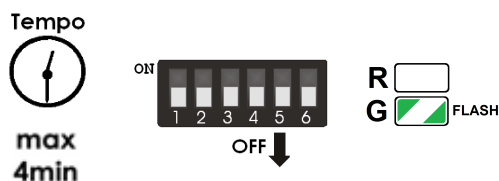
To modify the pause time you have to repeat the procedure.

During the pause time you can exclude the automatic closing with a SS command

1) Place dip 5 in ON position. Green led will blink once every second.



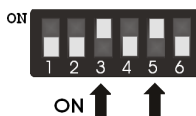
2) Wait for the desired pause time, then turn OFF the dip 5. Green led will blink quickly to indicate the correct programming.



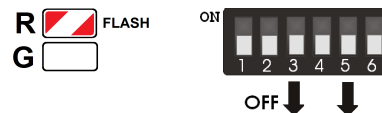
## ERASING THE AUTOMATIC CLOSING

With this procedure the automatic closing will be disabled.

1) Place dip 5 in ON and then dip 3 in ON position.



2) After the red led starts blinking quickly, place dip3 and dip5 in OFF position.



## TOGGLE SAFETY INPUT TYPE

With this procedure is possible to toggle between the photocell safety input type and the optoelectric edge safety input type.

This procedure also modify the safety logic:

- **Photocell** : it has effect only during the closing movement and reverse until the opening switch.

- **Optoelectric edge**: during the opening movement it immediately stops the motor. During the closing movement, it reverse the movement for 2 second then stop the motor.

**ATTENTION!** In step 2, the time between dip 3 movements must be lower than 2 seconds, otherwise the movement counter is cleared.

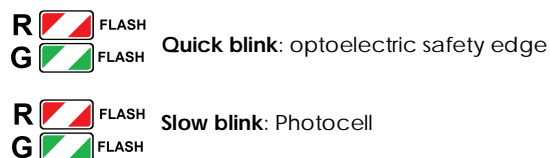
1) Place dip 6 in ON position. Green and red led become solid.



2) Turn ON and OFF dip 3 for 3 times in a row.



3) If green and red led blink quickly then the optoelectric safety edge input is activated. If green and red led blink slowly then photocell input is activated.



4) Place dip 6 in OFF position.



## OPERATING LOGIC SELECTION

It is possible to change the operating logic using dip 2.

1) If dip 2 is in OFF position then both opening and closing are automatic



2) If dip 2 is in ON position then the closing is dead-man and the opening is automatic.



## THEFT PROOF FUNCTION

The theft proof function allow to completely block the board. Follow the procedure to enable the function. Once the function is enabled the first radio code memorized will be associated with the theft proof function.

The theft proof function will be activated by the associated radio code when the door is completely closed (the motor will jog after the function is activated). Send another time the radio code to deactivate the function, the board will execute every commands. The function can be disabled performing again the procedure or performing the reset procedure. Disabling the function will automatically delete the associated radio code.

1) Turn dip 5 in ON and in OFF position 5 times in a row.

5x



2) If the led red blinks quickly then the function is enabled. If the red led blinks slowly then the function is disabled.



Quick blink: function enable



Slow blink: function disabled

## COURTESY LAMP

In base program the courtesy lamp is in normal mode with 3 minutes of active time

The courtesy lamp has 3 different mode:

- **Normal:** the contact close automatically at the beginning of every opening movement and stay closed for the programmed time. If a radio code is associated to courtesy lamp, the contact no longer close along with opening movements.

- **Installation:** the courtesy lamp contact closed for 2 seconds at the beginning of every opening movement. The contact time can't be programmed. If a radio code is associated to courtesy lamp, the contact no longer close along with opening movements.

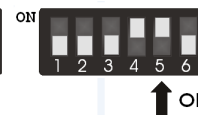
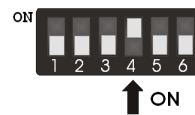
- **Bistable:** the contact can be opened or closed only using a radio code associated. The contact stay closed or opened until a radio command arrives.

It is possible go back to default setting following the procedure.

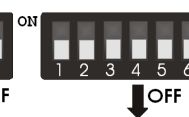
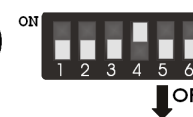
**ATTENTION!** Going back to default setting will delete all radio code associated to courtesy lamp.

### PROGRAMMING CLOSED TIME FOR COURTESY LAMP CONTACT

1) Place dip 4 in ON position, then place dip 5 in ON position. Green led starts blink.



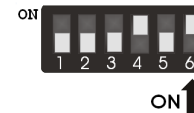
2) Wait for the desired contact closed time (maximum 30 minutes). Place dip 5 in OFF position and then also dip 4 in OFF position to complete the programming (green led will blink quickly for 2 seconds).



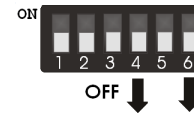
### CHANGING COURTESY LAMP MODE

Every time this procedure is performed the mode change as follow:  
NORMAL > INSTALLATION > BISTABLE > NORMAL > ...

1) Place dip 4 and dip 6 in ON position. Green led starts blink.



2) Wait until green led shows which mode is activated, then place dip 4 and dip 6 in OFF position.



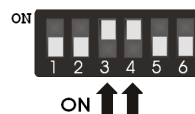
Green led courtesy lamp mode notification:

- 1 blink: normal mode activated
- 2 blink: installation mode activated
- 3 blink: bistable mode activated

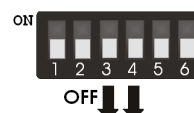
### RETURN TO DEFAULT SETTING

Normal mode, 3 minute contact closed time, no radio code associated

1) Place dip 3 and dip 4 in ON position. Red led starts blink quickly.



2) When the red led turns OFF and the green led starts to blink, it is possible to place dip 3 and 4 in OFF position.



**MAXIMUM LOAD ON 24Vac AND 12VDC (COM) OUTPUTS**

The table reports the maximum current for 24Vac and 12VDC outputs in different load condition. In the 24Vac column the value reported are 0mA, 70mA and 140mA which correspond to the current absorbed by no photocell, 1 couple of photocell, 2 couples of photocells.

For example the 2nd row indicate that with a 70mA load on 24Vac output, it is possible to connect maximum 40mA load on the 12VDC output.

	LOAD CONDITION	
	24Vac	12VDC (COM)
0mA (no photocell)		50mA
70mA (1 couple of photocell)		40mA
140mA (2 couples of photocell)		10mA

**TROUBLESHOOTING**

RED LED	ERROR SOLVING
1 FLASH	CHECK STOP BUTTON CONNECTION
2 FLASHES	CHECK SAFETY DEVICE CONNECTION / CHECK SAFETY ACTIVATION
8 FLASHES	CHECK : - POWER SUPPLY - 12VDC OUTPUT OVERLOAD (TERMINALS 9 - 3) - 24Vac OUTPUT OVERLOAD (TERMINALS 11 - 12)
SOLID	WRONG DIP SETTING, FOLLOW THIS PROCEDURE: 1. PLACE ALL DIPS IN OFF POSITION 2. WAIT 5 SECONDS 3. SET DIPS IN THE DESIRED POSITION FOLLOWING THE INSTRUCTIONS

**WARRANTY**

ELCA devices and accessories are guaranteed for a period of 24 months after production, whose date is printed on each items. ELCA will replace or repair its devices, provided that they are returned to our plant. In order to check the actual functioning of the returned pieces, they will remain the property of manufacturer. The warranty does not include damages due to any incorrect use, such as : non fulfilment of the instructions detailed for each device. Moreover, warranty does not cover damage due to wrong tension supply and any other reason for which the manufacturer cannot be made responsible. Any device returned must be delivered to ELCA with carriage paid and will be sent back with freight collect. Warranty validity ceases in case of the customer's non fulfilment of payment. ELCA declines all responsibility for the non observance of the safety rules by part of the installer.

Document Revision 01/06/2018



