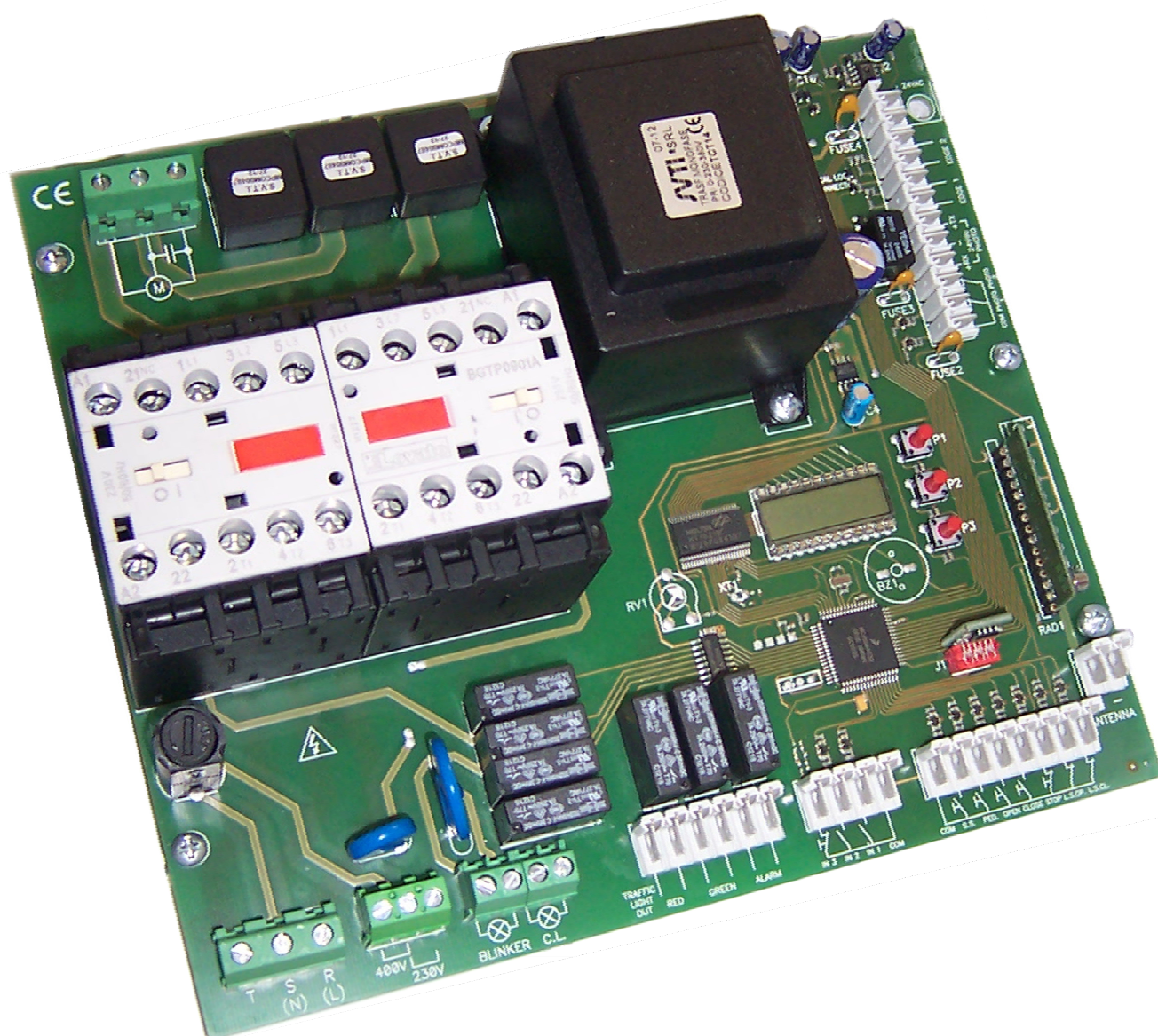


# CONTROL UNIT CT3IND

Programmable Control board for sliding gates



Manual for installation



## 1. Introduction

The control board CT3IND is a device suitable for operating and controlling the industrial sliding gates with single-phase motor 230V and three-phase 400Vac, in a simple and complete way; it is designed to satisfy all possible needs.

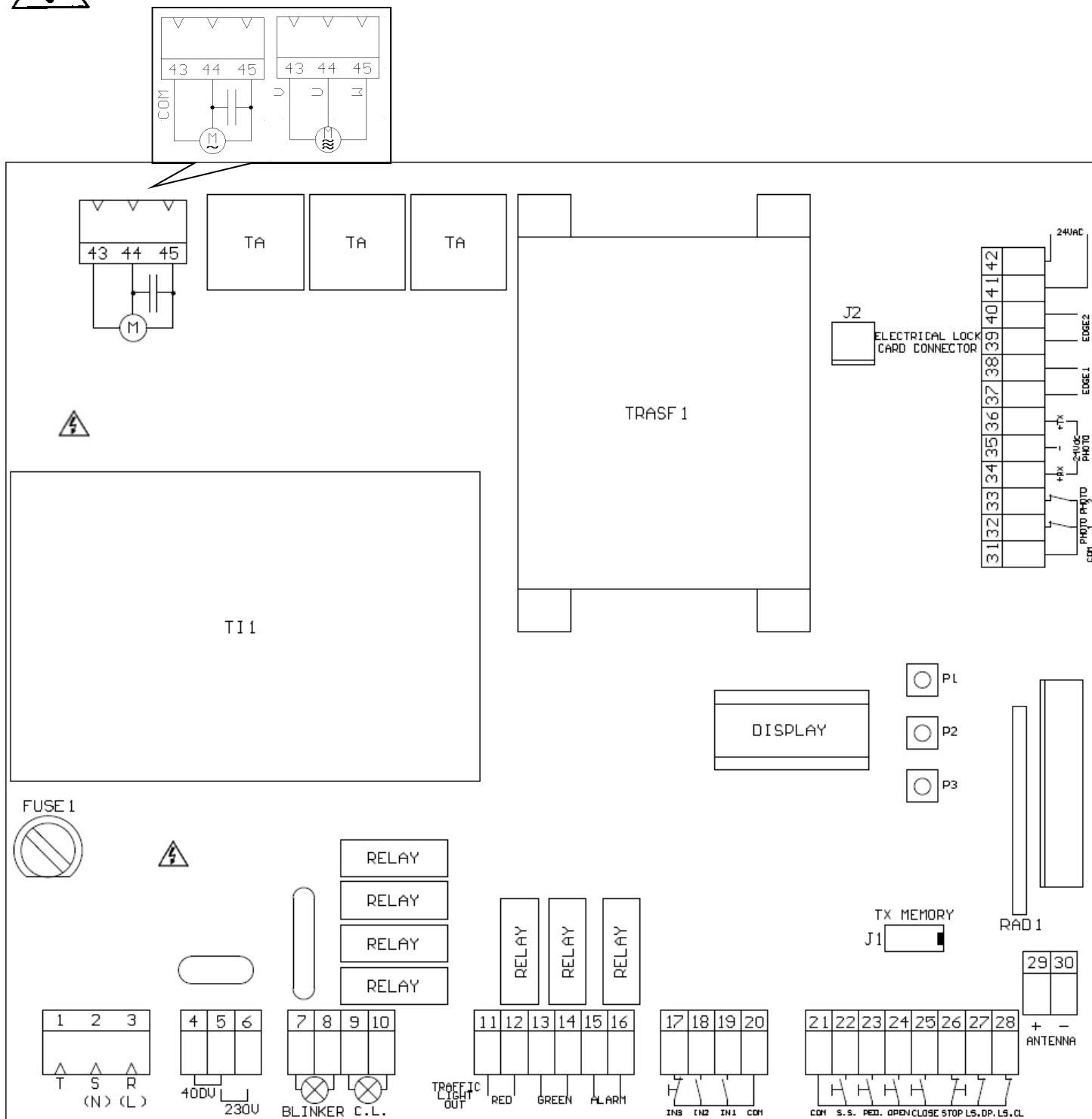
The CT3IND is safe because it is designed with a sense that enables the detection of possible obstacles along the run, furthermore it has a motor protector that enables to protect the motor in case of over current.

In each control unit it is installed a memory module where the transmitters (transferable from a control unit to another) are learnt. It is equipped with 2 photocells inputs and 2 safety edges inputs, limit in opening and closing, security stops and a wide display with three keys for settings. It is also equipped with output for courtesy light and flashing light. It is possible to connect an additional card (R1) to operate an auxiliary function (electric lock or courtesy light).

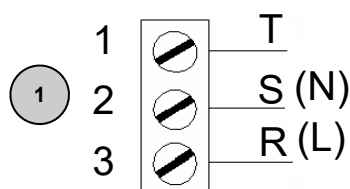
Where planned there is also the control of the traffic lights outputs.



**ATTENTION: DO NOT INSTALL THE CONTROL UNIT WITHOUT READING THE INSTRUCTIONS FIRST !!!  
THE INSTALLATION SHOULD BE PERFORMED ONLY BY QUALIFIED PERSONNEL.**



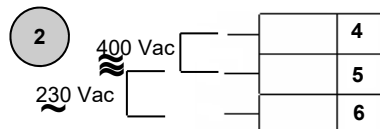
## 2. Connections



Connect the power supply cable between the clamps 1, 2 and 3 of the control unit if a three-phase power supply 400 Vac is used.  
Connect the power supply cable between the clamps 2 and 3 if a single phase power supply 230Vac is used.

Do not connect the card directly to the electric network. Put a device that can ensure the disconnection of each pole from the power supply of the control unit.

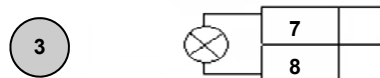
### POWER SUPPLY



**Jumper the clamps 4 and 5 in case a 400 Vac three-phase power supply is used .**  
**Jump the clamps 5 e 6 in case a single-phase 230Vac power supply is used .**

**Attention:** execute the jumper in a correct way. A wrong cabling of the jumper could compromise the correct functioning of the control unit.  
Use a cable with adapt section according to the absorbed current by the motor.

### FLASHING LIGHT



Connect the flashing light between the clamps 7 e 8

Use a flashing light without flashing circuit 230 Vac 60W max

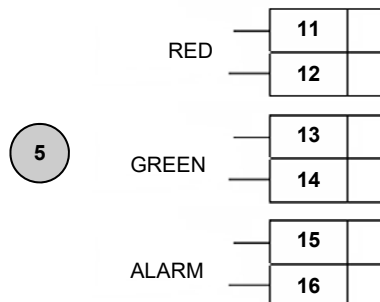
### COURTESY LIGHT



Connect the courtesy light between the clamps 9 and 10

Connecting a load 230Vac 100W MAX you can light the operating area of the automation during each movement. The functioning of the courtesy light is controlled by a dedicated menu.

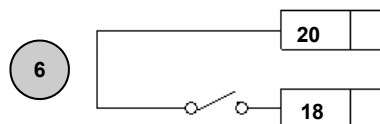
### TRAFFIC LIGHT



The outputs RED (11-12), GREEN (13-14) and ALARM (15-16) are dry contacts (5A max) to which a possible traffic light can be connected. RED(11-12) and GREEN(13-14) are normally open contacts (NO). ALARM(15-16) is a normally closed contact (NC).

The traffic light outputs are activated in this way:  
During the opening and closing movement the output relay RED (11-12) is activated.  
With the gate open the output relay GREEN (13-14) is activated.  
With the gate closed the outputs RED and GREEN are disabled (open relay)  
The output ALARM (15-16) is activated under the condition of the control unit not enabled to the normal functioning (i.e.. stop activated, thermal, menu activated)

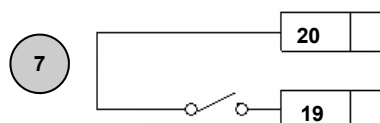
### IN2



This input plans the possibility to give a command of delayed closing to the automation.

It is possible to connect on this input, for example, a magnetic loop that enables to give a closing pulse to the automation. The input is excluded enabling the functioning dead man. The counting of the time of delay, starts from the release of the command (opening of the contact)

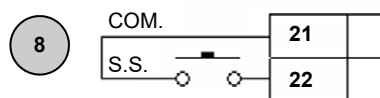
### IN1



This input plans the possibility to give an opening control to the automation.

It is possible to connect on this input, for example, a magnetic loop that enables to give an opening pulse to the automation. The input is excluded enabling the functioning dead man.

### STEP BY STEP INPUT

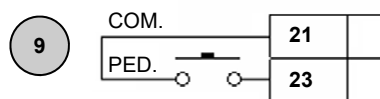


Connect the STEP-BY-STEP button (S.S.) between the clamp 21 and 22 of the terminal box.  
**ATTENTION: leave it open if not used.**

Under the dead man mode, the step-by-step button operates as open.

See function *dead*

### PEDESTRIAN INPUT

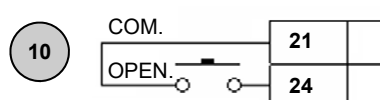


Connect the PEDESTRIAN button (PED.) between the clamp 21 and 23 of the terminal box.  
**ATTENTION: leave it open if not used.**

Under the mode dead man the pedestrian button operates as close.

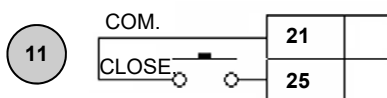
See function *dead*

### OPEN INPUT



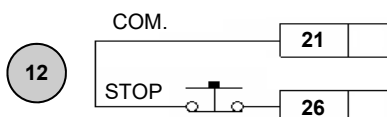
Connect the OPEN button between the clamp 21 and 24 of the terminal box.

**ATTENTION: leave it open if not used.**

**CLOSE INPUT**

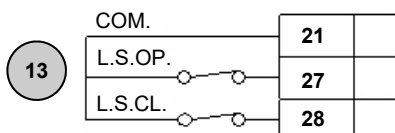
Connect the button **CLOSE** between the clamp 21 and 25 of the control unit.

**ATTENTION: Leave it open if not used.**

**STOP INPUT**

Connect the **NORMALLY CLOSED** contact of the STOP between the clamp 21 and 26 of the terminal box.

**ATTENTION: jumper the input 21 to the input 26 if not used.**

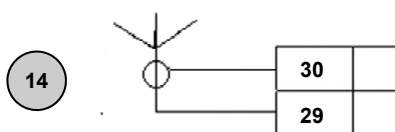
**LIMIT SWITCHES INPUTS**

Connect the **NORMALLY CLOSED** contact of the OPENING LIMIT SWITCH (L.S.OP.) between the clamp 21 and 27 of the terminal board.

Connect the **NORMALLY CLOSED** contact of the CLOSING LIMIT SWITCH (L.S.CL.) between the clamp 21 and 28 of the terminal box.

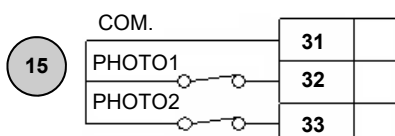
**The automation can not work without limit switches.**

Before actioning the installation ensure that the limit switches are functioning and correctly cabled.

**ANTENNA INPUT**

- Connect the signal cable to the clamp 29 of the control unit.
- Connect the earth of the antenna to the clamp 30 of the control unit.

The presence of the metallic parts or humidity in the walls could have negative influences on the range of the system. We suggest therefore to not place the receiving antenna and/or transmitters near big metallic objects, near the floor or on the ground.

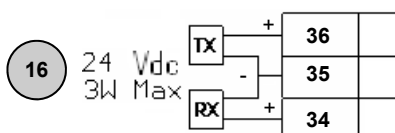
**PHOTOCELLS INPUT**

Connect the **NORMALLY CLOSED** contact of the photocell 1 (PHOTO1) between the clamp 31 and 32 of the terminal box.

Connect the **NORMALLY CLOSED** contact of the photocell 2 (PHOTO2) between the clamp 31 and 33 of the terminal box..

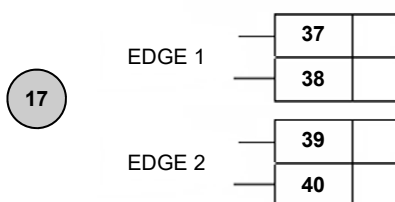
**ATTENTION: jumper the inputs 32 and 33 to the clamp 31 if not used**

The functioning of the PHOTOCELLS can be set  
Entering the menu **! nPh !** and **! nPh2**

**PHOTOCELLS POWER SUPPLY**

- Connect the **clamp 36** of the control unit to the **clamp +** of power supply for the photocell's transmitter.
- Connect the **clamp 35** of the control unit to the **clamp -** of power supply for the photocells receiver and transmitter.
- Connect the **clamp 34** of the control unit to the **clamp +** of power supply for the photocells receiver.

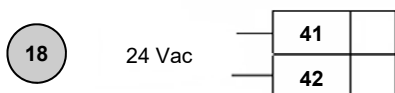
The photocells test is enabled by the menu **! tStPh**  
**ATTENTION:** the control unit supplies a voltage of 24 Vdc and can supply a maximum power of 3W.  
For the safety edges test connect the test device of the edge on the power supply pin TX (test activated with low logical signal 0Vdc.)

**SAFETY EDGE INPUTS**

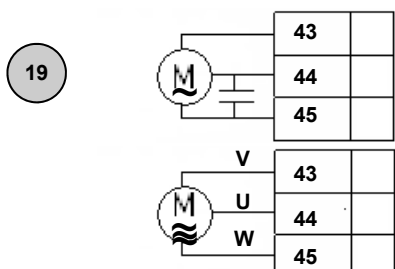
Connect the safety edge 1 between the clamps 37-38 and the safety edge 2 between the clamps 39-40.

The safety edge contact must be normally closed or resistive 8K2 depending on the selection.

Select the type of security edge used (mechanical or 8K2) through the menu **! tYPE 1** and **! tYPE 2**  
The inputs, **if are not used**, must be jumpered in case of selection of mechanical safety edge or, they have to be closed through a 8.2K resistance (supplied) in case of the safety edge 8K2.



Accessories output 24 Vac 3W.

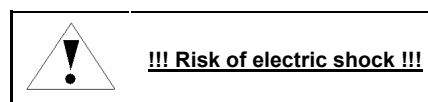


Connect the **230 Vac SINGLE PHASE** motor between the clamps 43 - 44 - 45.

Connect the neutral on the clamp 43, phase 1 on the clamp 44, phase 2 on the clamp 45 and the capacitor between clamps 44 and 45.

In case that a **THREE PHASE 400 Vac** motor is used, connect the three phases to the clamps 43, 44 and 45.

Before activating the automatism check that the wiring of the motor is compliant with the installation. To do this, follow the procedure of the **preliminary checks**.





### 3. Preliminary checks and general warnings

#### 3.1 General warnings

Before powering the control unit , carry on the following checks:

- The electric installation and the logic functioning should be compliant with the law in force.
- Avoid putting the connection cables of the buttons, security devices and inputs close to those of the power supply of the control unit and of the motor.
- Use on the power supply network an omnipolar switch/ disconnecter device with a contact's minimum distance equal or higher than 3mm. Check that at the top of the electric installation there is a differential switch or a proper overvoltage protection.
- For the connection of the card and of the motors to the power supply, we recommend to use cables with double insulation in compliance with the laws in force; the minimum cross section of the single conductor should not be less than 1mm<sup>2</sup> and not more than 2.5mm<sup>2</sup>
- The conductors should be linked with an additional fixing close to the clamps in order to avoid the unintentional detachment of the terminal boards.
- Check that all the connections are executed according to the enclosed diagram.
- The unused N.C. inputs should be all jumpered (in case that the safety edges are not used, jumper the inputs and set the safety edge in the menu **TYPE1** **TYPE2** the type " mechanical edge".



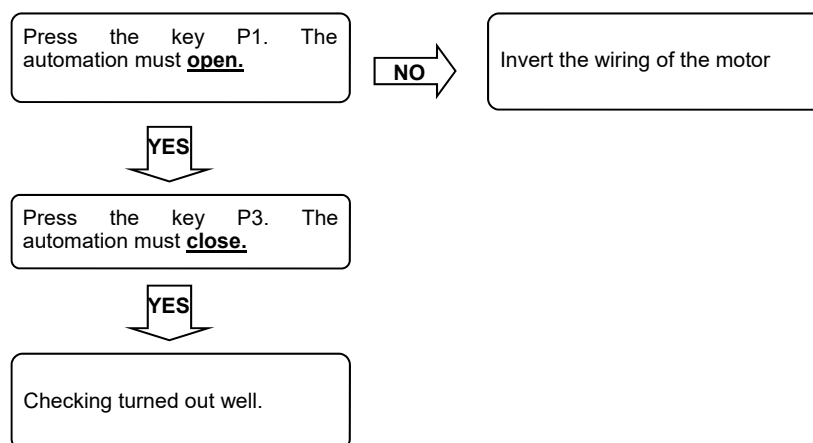
**PAY PARTICULAR ATTENTION TO PLACE CORRECTLY THE JUMPER OF POWER SUPPLY SELECTION (SEE CHAPTER 2)**

#### 3.2 Preliminary checks

After having controlled all the connection, power the system.

To verify the correct wiring of the motor , execute the following procedure:

Press the button P2 to enter the menu, roll it up to the entry **PAR**, press the key P2, the display shows **READY** :



### 4. Programming menu

N.B. The programming of the control board should be performed by qualified personnel only.

The control unit enables to easily programm all the operating parameters through the LCD display available on board, setting the desired values in the different functions.

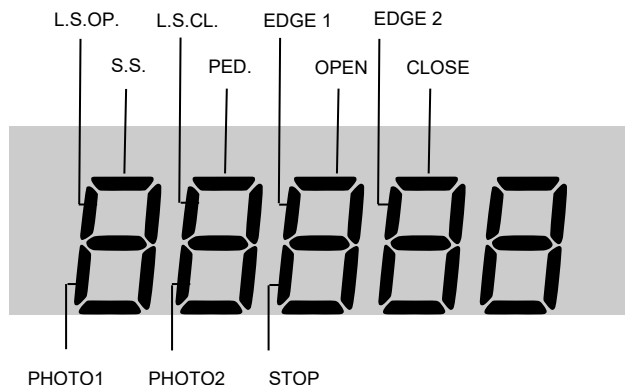
The menu is structured on 2 levels:

- 1st level: starting settings.
- 2nd level: setting of the parameters required for the functioning (**conf**) and setting of the special functionings (**PAR**).

The function of the three keys that enables to move inside the menu is the following:

- P1: goes to the previous entry of the menu or increases a value (in the main page the pressure of P1 enables to enter in the function **LEARN**)
- P2: its pressure from the main page enables to enter the different menus and confirm the settings executed.
- P3: goes to the next entry if the menu or decreases a value

Under the normal functioning conditions, the display is in the main page where the state of the inputs is displayed. The N.C. inputs are represented by vertical segments. The N.O. segments are represented by horizontal segments.



N.B. The lit segments indicate that the input is activated.

#### 4.1 Transmitters learning (*LEArn*)

The control unit is compatible with all the transmitters of B.RO series.

To enter the learning menu of the transmitters:

1) press the key P1 2) on the display the writing *rAdl D* appears.

- at this stage execute the following procedure:



Press the key of the transmitter to learn. The display shows the writing *dOnE*



- If the display shows the writing *FaUnd* the transmitter is already learnt.
- If the display shows nothing, check that the transmitter functions and, that the antenna of the control unit is correctly cabled.



Learning turned out well.

The sequence of buttons learning sets out the functioning and in particular:

1) first key learnt step-by-step function

2) second key learnt pedestrian function.

3) third key learnt lighting of the courtesy light. This key enables the lighting of the courtesy light that will turn off with a time set in the menu *coUrt* (see chap. 4.4).

Differently from the first learnt key, when the second key and third keys are learnt the display shows the writing *FaUnd*. The procedure is turned out well and the key is learnt.

There is the possibility to learn the transmitters also in this way: press the key P2 to enter the menu, roll it until reaching the entry *LEArn*, press the key P2, on the display the writing *rAdl D* appears. At this stage continue with the procedure mentioned above.

#### 4.2 Menu “start settings”:

To enter this menu press the key P2 from the main page.

MENU'	DESCRIPTION	SELECTABLE VALUES min-max	DEFAULT	MEMO
<i>conF</i>	Enables to enter the menu of the basic settings (see paragraph 4.3)	—	—	
<i>PARAr</i>	Enables to enter the menu of the adjustment of the special functions (see paragraph 4.4).	—	—	
<i>rESEt</i>	Enables the cancellation of the learnt transmitters, of the settings or both. The cancellation of the settings brings back the control unit to the factory values. Enter the function <i>rESEt</i> , the display shows <i>PrESE</i> , at this stage: - press and keep pressed for 5" the key P1 to delete the transmitters. -press and keep pressed for 5" the key P3 to delete the settings and bring back to the factory settings - press and keep pressed for 5" the keys P1 and P3 to delete all the transmitters and the settings . If the cancellation has turned out well the display shows <i>dOnE</i> . If the cancellation does not turn out well the display shows <i>AbOrt</i> .	—	—	
<i>LEArn</i>	Enables the learning of the transmitters. For the learning see paragraph 4.1	—	—	
<i>Ar</i>	Enable the manual movement of the automation. Keeping pressed the key P1 the automation starts opening. Keeping pressed the key P3 the automation starts closing.	—	—	
<i>ESc</i>	Exit from the menu.	—	—	

### 4.3 Menu “basic settings” ( *conF* ) :

From *conF* press the key P2 to enter the menu “basic settings”

MENU <i>conF</i>	DESCRIPTION	SELECTABLE VALUES min-max	DEFAULT	MEMO
<i>oPti i</i>	Enables to set the <u>working time</u> of the automation.	5 s — 600s	30 s	
<i>tPEd</i>	Enables to set the <u>pedestrian opening time</u> (partial opening of the automation).	5 s — 600s	10 s	
<i>hAioP</i>	Enable to activate/ deactivate the <u>water hammer in opening</u> and determine the duration of the pressure on the mechanic stop. When the gate is closed the automation executes for short period a closing movement before starting the opening stage. We suggest to use the <b>water hammer</b> only if the electric lock is installed. <u>To activate the electric lock, use the menu <i>FuRuH</i>.</u>	0,1 s — 10 s	OFF	
<i>hAicL</i>	Enable to activate/ deactivate the <u>water hammer in closing</u> and determine the duration of the pressure on the mechanic stop. When the gate reaches the closed position it executes an ' over stroke ' equal to the set time that enables the hook of the electric lock. We suggest to use the <b>water hammer</b> only if the electric lock is installed.	0,1 s — 10 s	OFF	
<i>ISEoP</i>	<u>Impact sensor in opening.</u> The sensor intervenes when an obstacle stops the stroke of the automation. The more the values decrease, the more the sensitivity increases ( a lower force will be necessary to stop the motor). The more the values increase, the more the sensitivity decreases ( a higher force will be necessary to stop the motor).	1% — 99%	OFF	
<i>ISEcL</i>	<u>Impact sensor in closing.</u> The sensor intervenes when an obstacle stops the stroke of the automation. The more the values decrease, the more the sensitivity increases ( a lower force will be necessary to stop the motor). The more the values increase, the more the sensitivity decrease ( a higher force will be necessary to stop the motor).	1% — 99%	OFF	
<i>ISEI n</i>	<u>Inversion on impact sensor.</u> OFF: the automation stops the motion in case the impact sensor intervenes. ON: the automation stops the motion and execute a short inversion in case that the impact sensor intervenes.	ON — OFF	ON	
<i>iioTS</i>	<u>Motor protector</u> This function enables to limit the current, due to overloads or short circuits, that goes through the motor in order to avoid any damages. We suggest to set a value only just higher that the rated current of the motor.	0,5 A — 14 A	OFF	
<i>nPhdt</i>	<u>Lack of phases function</u> The control unit indicates the lack of one or more phases on the power supply. This option should be activated only if a three-phase power supply is used. OFF: function lack of phase disabled. ON: function lack of phase enabled.	ON — OFF	OFF	
<i>FuRuH</i>	<u>Auxiliary function.</u> It allows to manage the functioning of the R1 optional card. 4 settings are possible: <ul style="list-style-type: none"> <li>0: output on R1 card is disabled;</li> <li>1: electric lock function is enabled. At every opening movement, before to power the motor, the R1 output will be enabled for 1,5s. <u>It is NOT necessary to enable the water hammer.</u></li> <li>2: "courtesy light function in opening" is enabled. At every opening movement, after an user command, the R1 output will be enabled for 2s.</li> <li>3: "courtesy light function" is enabled. At every movement (both in opening and closing), after an user command, the R1 output will be enabled for 2s.</li> </ul>	0 — 3	0	

### 4.4 Menu “special settings” ( *PARAi* ) :

From *PARAi* press the key P2 to enter the menu “special settings”

MENU <i>PARAi</i>	DESCRIPTION	SELECTABLE VALUES min-max	DEFAULT	MEMO
<i>AR-EcL</i>	<u>Automatic reclosing</u> The automatic reclosing happens only with the gate completely opened or further a complete pedestrian opening.	1 s — 300 s	OFF	

MENU <i>PARAiti</i>	DESCRIPTION	SELECTABLE VALUES min-max	DEFAULT	MEMO
<i>PhrEc</i>	<b>Automatic reclosing function from photocells.</b> The gate closes automatically 3 seconds after the passing through the photocells. The function can be activated only if the automatic reclosing is activated.	ON — OFF	OFF	
<i>dERdi</i>	<b>Dead man function</b> OFF: dead man function disabled. ON: dead man function enabled In case the dead man function is activated, the pressure of the keys OPEN-CLOSE should be kept during all the opening/closing cycle. <b>If this function is activated then all the automatic and impulsive movements are deactivated.</b> Therefore all the automatic reclosings, clock function, IN1 IN2 inputs are disabled. The cabled buttons S.S. and PED. operate respectively as OPEN and CLOSE. While, the function of the cabled button STOP remains enabled.	ON — OFF	OFF	
<i>cond</i>	<b>Condominium function</b> OFF: condominium function disabled. ON: condominium function enabled. The condominium function enables the step by step and pedestrian controls only in opening. The closing occurs only thorough automatic reclosing or through the cabled key close. In case that the dead man function is enabled the condominium function is excluded.	ON — OFF	OFF	
<i>InPh1</i>	<b>Functioning of photocell 1.</b> OFF: in case of intervention of the photocell during the opening the movement is stopped until the obstacle has been removed in order to continue then the movement in opening. In case of intervention of the photocell during the closing the movement is stopped until the obstacle is removed and then continues the movement in opening. ON: the photocell intervenes only in the closing performing an immediate inversion of the movement till complete opening.	ON — OFF	OFF	
<i>InPh2</i>	<b>Functioning of photocell 2.</b> OFF: in case of intervention of the photocell during the opening the movement is stopped until the obstacle has been removed in order to continue then the movement in opening. In case of intervention of the photocell during the closing the movement is stopped until the obstacle is removed and then continues the movement in opening. ON: the photocell intervenes only in the closing performing an immediate inversion of the movement till complete opening.	ON — OFF	OFF	
<i>tStPh</i>	<b>Photocells test.</b> If enabled it executes the test of both the photocells. Pay attention to the cabling of the photocells (vedi Cap. 2.16).	ON — OFF	OFF	
<i>tYPE1</i>	<b>Type of safety edge used on the input EDGE1.</b> selection of mechanic edge with N.C. contact. selection of resistive edge 8K2 with N.O. contact in parallel.	0 — 1	0	
<i>tYPE2</i>	<b>Type of safety edge used on the input EDGE2.</b> 1: selection of mechanic edge with N.C. contact. 0: selection of resistive edge 8K2 with N.O. contact in parallel.	0 — 1	0	
<i>InEd1</i>	<b>Functioning of safety edge 1.</b> OFF: in case of intervention of the safety edge during a motion, both in opening and closing the automation is stopped. To make the automation start again it is necessary to give a step by step command by the user. ON: the safety edge intervenes only in closing executing an immediate inversion of the motion till complete opening.	ON — OFF	ON	
<i>InEd2</i>	<b>Functioning of safety edge 2.</b> OFF: in case of intervention of the safety edge during the motion, both in opening and closing, the automation is stopped. To make the automation start again it is necessary to give a step by step command by the user. ON: the safety edge intervenes only in closing executing an immediate inversion of the motion till complete opening.	ON — OFF	ON	
<i>tStEd</i>	<b>Test of the safety edges</b> OFF: disabled. ON: enabled. Connect the device for the test of the safety edge on the power supply pin RX of the photocells (test enabled with low logical signal 0Vdc)	ON — OFF	OFF	
<i>PrbLI</i>	<b>Preflashing</b> OFF: disabled ON: enabled, the flashing light executes a flashing of 5 seconds approx. before starting the motion of the automation.	ON — OFF	OFF	

MENU <i>PARA1</i>	DESCRIPTION	SELECTABLE VALUES min-max	DEFAULT	MEMO
<i>colrL</i>	<b>Functioning of the auxiliary light</b> OFF: functioning of courtesy light: the light activates further a command and stays lit for all the motion period, going off after a time set by the function <i>colrL</i> . ON: functioning light zone, the light activates at the beginning of the motion. The counting of the switching off time set by the function <i>colrL</i> starts once that the gate reaches the position of complete closing.	ON — OFF	OFF	
<i>colrL</i>	<b>Switching off of the auxiliary light.</b> The time of the switching off of the auxiliary light can be set from 1 second till 300 seconds.	1 (s) — 300 (s)	60 (s)	
<i>cLoc</i>	<b>Clock time.</b> OFF: disabled function ON: enabling the function a time relay can be connected ( free contact timer) at the input open. The function is disabled in case the dead man function is enabled.	ON — OFF	OFF	

## 5. Faults diagnostics

The control unit indicates anomalies or malfunctions of the system through a message that appears on the display of the control unit.  
In particular the faults are codified as follows:

*Err1*

Fault intervention motor protector. The control unit has detected an absorption higher than the one set by the menu (see entry *70L5* of paragraph 4.3) for a period longer than 3 seconds. Check that there are not anomalies in the system. In case that there are problems in the installation, increase the threshold of the motor protector being careful to not overpass the absorption values of given by the motor's constructor.

*Err2*

Fault lack of phase (only with three-phase functioning). The control unit has detected an unbalancing between the phases higher than 40%.

*Err3*

Fault of motor thermal. To use the automation again leave the motor still until the alarm ceases.

## TECHNICAL FEATURES - CT3IND CONTROL UNIT

Power supply	230 Vac +-10%, 50Hz singlephase / 400 Vac 50Hz Three-phase
Photocells power supply	24 Vdc 3W MAX
Accessories power supply	24 Vac 3W MAX
Motor output	230Vac single phase 800W Max, 400 Vac THREE-PHASE 1,5KW Max (current limited to 10A), cosΦ > 0.8
Flashing light output	230 Vac 60W MAX for fix light , without self blinking
Courtesy light output	230Vac 100W MAX
Auxiliary function output ( only with card R1). Dry contact output, NOT powered.	230Vac 5A Max, 30Vdc 5A Max



**WARRANTY** - In compliance with legislation, the manufacturer's warranty is valid from the date stamped on the product and is restricted to the repair or free replacement of the parts accepted by the manufacturer as being defective due to poor quality materials or manufacturing defects. The warranty does not cover damage or defects caused by external agents, faulty maintenance, overloading, natural wear and tear, choice of incorrect product, assembly errors, or any other cause not imputable to the manufacturer. Products that have been misused will not be guaranteed or repaired. Printed specifications are only indicative. The manufacturer does not accept any responsibility for range reductions or malfunctions caused by environmental interference. The manufacturer's responsibility for damage caused to persons resulting from accidents of any nature caused by our defective products, are only those responsibilities that come under Italian law.

**DISPOSAL OF THE PRODUCT** - This product is an integral part of the automation, and therefore, they must be disposed of together. As for the installation operations, at the end of the life of this product, the dismantling operations must be performed by qualified personnel. This product is made from different types of materials: some can be recycled, others must be disposed of. Please inform yourselves on the recycling or disposal systems provided for by the laws in force in your area, for this category of product.



**CAUTION!** – some parts of the product can contain polluting or dangerous substances which, if dispersed in the environment, may cause serious harm to the environment and human health.

As indicated by the symbol at the side, it is forbidden to throw this product into domestic refuse. Therefore, follow the “separated collection” instructions for disposal, according to the methods provided for by local regulations in force, or redeliver the product to the retailer at the moment of purchase of a new, equivalent product.

**CAUTION!** – the regulations in force at local level may envisage heavy sanctions in case of abusive disposal of this product.



ALLMATIC S.r.l.  
32026 Borgo Valbelluna - Belluno - Italy  
Via dell'Artigiano, n°1 - Z.A.  
Tel. 0437 751175 - 751163 r.a. Fax 0437 751065  
www.allmatic.com - E-mail: info@allmatic.com