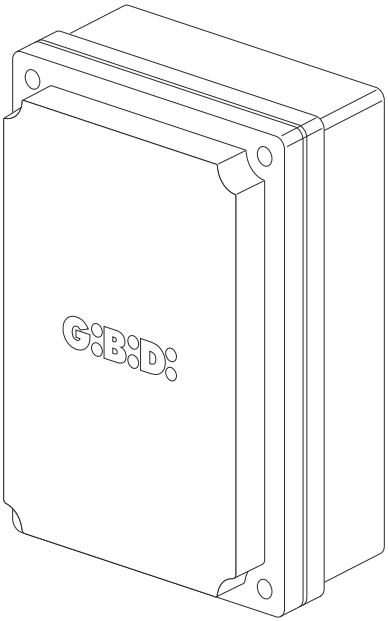


BA230

BA230 - (AS05580)

Electronic control unit
INSTRUCTIONS FOR INSTALLATION

UK

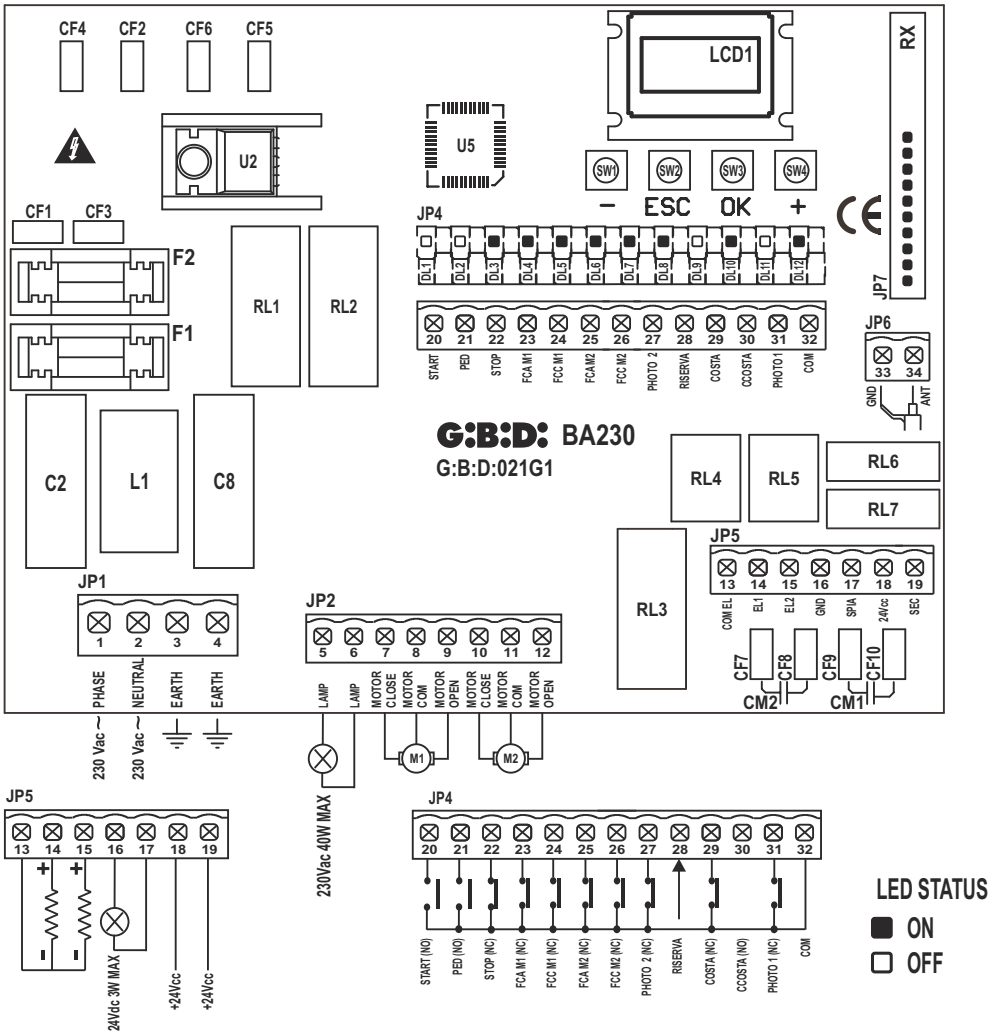
UK

- This product has been tested in Gi.Bi.Di. verifying the perfect correspondence of the characteristics to the current directive.
- Gi.Bi.Di. S.r.l. reserves the right to modify the technical data without prior notice depending on the product development.

⚠ **PLEASE READ CAREFULLY THIS MANUAL BEFORE PROCEEDING WITH THE INSTALLATION.**

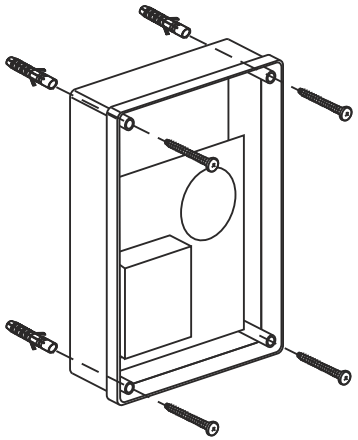
ELECTRICAL CONNECTION

1



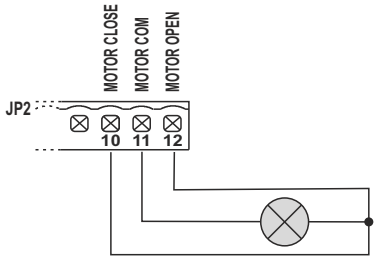
INSTALLATION

2



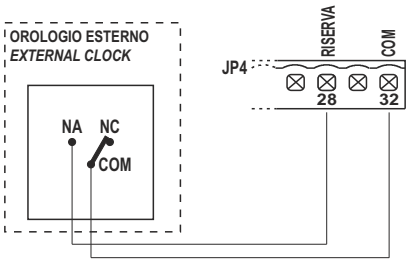
COURTESY LIGHT

3



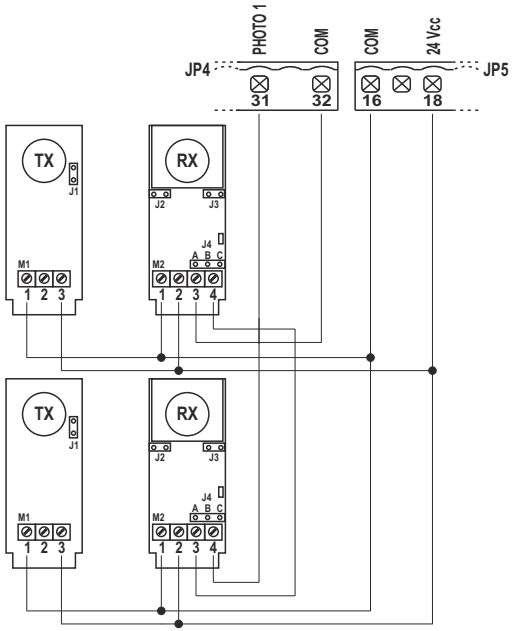
EXTERNAL CLOCK

4



PHOTOCELLS CONNECTION

5



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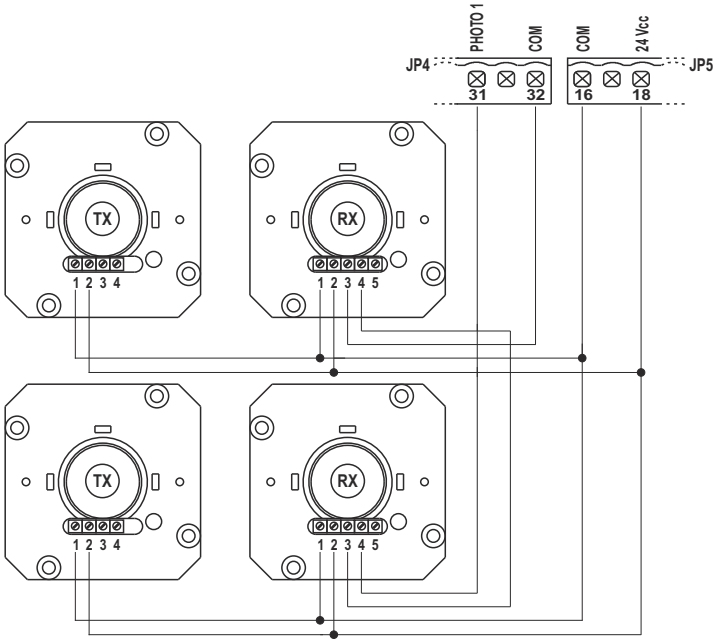
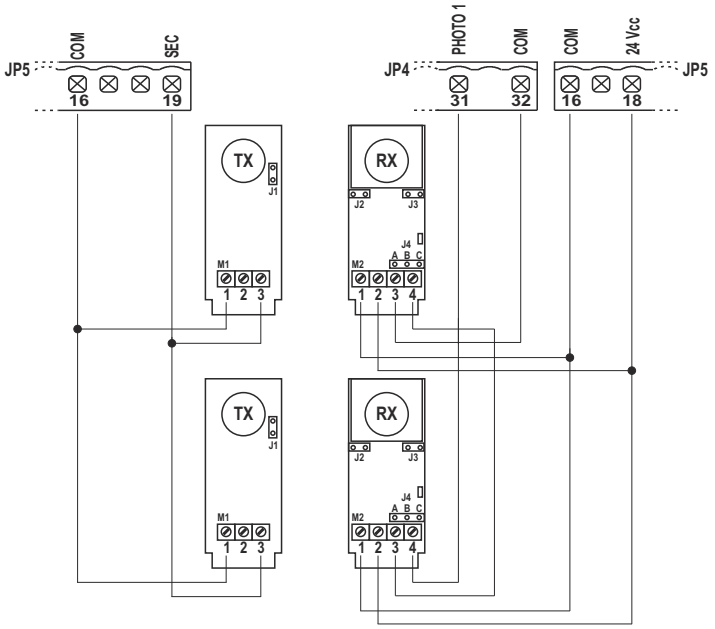
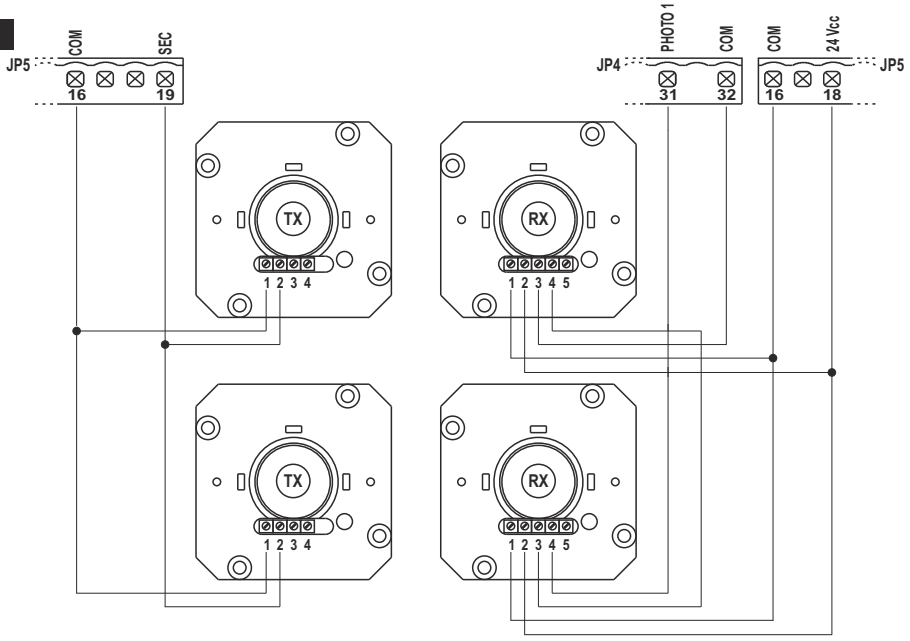


PHOTO TEST

7



8



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Control unit	**BA230 / AS05580**
Type	**Electronic control unit for the automation of one or two 230Vac motors for swinging and sliding gates, overhead doors and barriers**
Power supply	230Vac monophase 50/60 Hz
N° motors	1 or 2
Motor power supply	230 Vac
Flashing light	230Vac 40W max
Warning light	24Vdc 3W max
Electric lock	12Vdc 15W max
Accessories power supply	24Vdc 8W max including safety devices power supply
Safety devices power supply	24Vdc 8W max including accessories power supply
Radio receiver	Plug-in
Operating temperature	-20°C +60°C
Operating time	300s max

TECHNICAL SPECIFICATIONS / FUNCTIONS

- Times self-learning.
- Red warning leds of n.c. contacts. There is not the safety devices led. See “SIGNALLING LED” table
- Green warning leds of n.o. contacts. See “SIGNALLING LED” table
- Two independent 12 Vdc electrical locks management.
- Management of courtesy light with 12 Vdc or 230 Vac output
- Safety test run before the opening and closing movement.
- Photocell 1 test run before the opening and closing movement.
- Stop and motion inversion for 2 s after the intervention of the safety devices. At the next start pulse, the motion restarts in the obstacle freeing direction.
- SEPARATE SAFETY DEVICES POWER SUPPLY. The connection to this power supply will allow the TEST of the devices before the motion. Connect to this clamp the safety devices that will be supplied only during the operating cycle.
- Digital programming of all functions.
- Working time adjustable independently in opening and closing for each single motor.
- Deceleration time adjustable independently in opening and closing for each single motor in the motion final phase (soft-stop).
- Gate phase shift time adjustable independently in opening and closing.
- Adjustable pedestrian working time.
- Adjustable and differentiated pause time for complete or pedestrian opening.
- Adjustable thrust force with 3 modalities on 10 levels for each motor.
- Selectable and independently adjustable decelerations with 3 modalities on 10 levels for each motor.
- Decelerations enabling with single or double limit switch.
- 4 possible working functions (step-by-step, step-by-step with stop, condominium or automatic, dead man).
- Possibility of choosing the system configuration from swing gate, overhead/barrier and sliding gate, single our double.

UK

- SAFETY DEVICE choice with N.C. contact or 8K2 resistive.
- Specific menu for the exclusion of the accessories not used (photocell 1, photocell 2 and safety devices).
- Possibility to program: automatic closing, fast closing, pre-flashing, hammer stroke, final closing and opening stroke, courtesy light, ending movement additional time, flashing light (both flashing and fixed), external clock management with three different modes, number of cycles for scheduled maintenance, installer code, number of performed cycles and power supply days

INSTALLATION

Use cable glands that can assure the correct mechanical connection of the wiring and maintain the IP55 protection degree of the box (2).

INSTALLATION WARNINGS

- Before proceeding with the installation, fit a magnetothermal or differential switch with a maximum capacity of 10A upstream of the system. The switch must guarantee omnipolar separation of the contacts, with an opening distance of at least 3 mm.
- To prevent possible interference, differentiate and always keep the power cables (minimum cross-section 1,5mm²) separate from the signal cables (minimum cross-section 0,5mm²).
- Make the connections referring to the following tables and to the attached screen-print. Be extremely careful to connect in series all the devices that must be connected to the same N.C. (normally closed) input, and in parallel all the devices that share the same N.O. (normally open) input. Incorrect installation or improper use of the product may compromise system safety.
- Keep all the materials contained in the packaging away from children, since they pose a potential risk.
- The manufacturer declines all responsibility for improper functioning of the automated device if the original components and accessories suitable for the specific automation are not used.
- At the end of the installation, always check carefully the proper functioning of the system and the devices used.
- This instruction manual addresses people qualified for the installation of “live equipment”. Therefore, good technical knowledge and professional practice in compliance with the regulations in force are required.
- Maintenance must be carried out by qualified personnel.
- Before carrying out any cleaning or maintenance operation, disconnect the control unit from the mains.
- This control unit may only be used for the purpose for which it was designed.
- Use of the product for purposes different from the intended use has not been tested by the manufacturer, therefore any work is carried out on full responsibility of the installer.
- Mark the automated gate with visible warning plates.
- Warn the user that children and animals may not play or stand around near the gate.
- Appropriately protect the dangerous points (for example, use a sensitive frame).
- The control board alone will not ensure safety again crushing. Make sure that the safety devices connected to the control board are appropriate for the purpose.

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WARNINGS FOR THE USER

In the event of an operating fault or failure, cut the power upstream of the control unit and call the Technical Service.
Periodically check the functioning of the safety devices. Any repairs must be carried out by specialised personnel using original and certified materials.
The appliance is not to be used by children or people with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
Do not touch the card for adjustments and/or maintenance.

WARNING: IMPORTANT SAFETY INSTRUCTIONS.
It is very important to follow the present instructions for your own safety.
Please keep this manual.

ELECTRICAL CONNECTIONS: FASTON

Terminal	Cable colour	Description
CF1 CF3	BLACK	Primary connection of 230Vac transformer
CF2 CF4	RED	Secondary connection of 14Vac transformer
CF5 CF6	BLUE	Secondary connection of 22Vac transformer
CF7 CF8		Motor 2 capacitor connection
CF9 CF10		Motor 1 capacitor connection

ELECTRICAL CONNECTIONS: TERMINAL BOARDS

Terminal	Position	Signal	Description	
JP1	1	L	Power supply 23Vac	
	2	N	Power supply 230Vac	
	3	GND	Ground wire connection	
	4	GND	Ground wire connection	
JP2	5	LAMP	Flashing light output 230 Vac 40W max	**Operation**: Fast flashing during opening, off during pause, slow flashing during closing
	6	LAMP	Flashing light output 230 Vac 40W max	
	7	OPEN	Motor 1 connection 1 (opening)	
	8	COM	Common motor 1	
	9	CLOSE	Motor 1 connection 1 (closing)	
	10	OPEN	Motor 2 connection (opening)	
	11	COM	Common motor 2	
	12	CLOSE	Motor 2 connection (closing)	

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JP5	**13**	COM	Negative electrical lock	
	14	EL1	Positive +12 Vdc motor 1 electrical lock	
	15	EL2	Positive +12 Vdc motor 2 electrical lock	
	16	GND	Negative external accessories power supply	
	17	WARNING LIGHT	Warning light output +24 Vdc 3W max	**Operation**: Slow flashing during opening, fixed light during pause, f ast flashing during closing
	18	+ ACC	External accessories (photocells, radio…) +24Vdc power supply	
	19	+ SAF	External safety devices +24Vdc power supply. **CAUTION**: output present only during the operating cycle	
JP4	**20**	START	START (N.O.) input	
	21	PED	PEDESTRIAN input (N.O.)	
	22	STOP	STOP input (N.C.). If not used, jumper with terminal n° 32	
	23	FCAM1	Limit switch input opens motor 1 (N.C.). If not used, disable during the programming phase.	
	24	FCCM1	Limit switch input closes motor 1 (N.C.). If not used, disable during the programming phase.	
	25	FCAM2	Limit switch input opens motor 2 (N.C.). If not used, disable during the programming phase.	
	26	FCCM2	Limit switch input closes motor 2 (N.C.). If not used, disable during the programming phase.	
	27	PH2	PHOTOCELL 2 input (N.C.). If not used, disable during the programming phase or jumper with terminal n° 32 **Operation**: Input enabled during both opening and closing. If intercepted, it stops the motion immediately and holds it stopped until the photocell is freed. Upon release, motion always starts in opening. If intercepted when the gate is closed, following a Start command it does not allow the opening of the gate: this will be signalled with 5 fast flashes, then the warning light turns on to indicate that the door is not in stand-by. Upon release, the gate will start opening without further commands. If intercepted during pause, it reloads the pause time.	
	28	RESERVE	Multitasking input	**External watch**: SEE PROGRAMMING **C9**
	29	SAFETY EDGE	SAFETY DEVICES input (see menu C9) If not used, disable during the programming phase or jumper with terminal n° 32 **Operation**: Input enabled during both opening and closing. It stops and inverts the motion for 2 s. The gate will remain locked until the next Start pulse, which will make it start in the obstacle-freeing direction. If the input is enabled when the door is in stand-by, after a Start or a Pedestrian command the door will not move and 3 long flashes (2 sec.) will signal the fault. If the input is enabled when the door is in pause, the door does not close automatically (if automatic closing is enabled) and 3 long flashes (2 sec.) will signal the fault.	
	30		Not used	

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JP4	**31**	PH1	PHOTOCELL 1 input (N.C.). If not used, disable during the programming phase or jumper with terminal n° 32 **Operation**: Input enabled only during closing. It stops and inverts the motion, opening the gate completely. If the gate is closed, it does not affect its functioning. If intercepted during pause, it reloads pause time.
	32	COM	COMMON INPUTS-OUTPUTS
JP6	**33**	GND	ANTENNA BRAID input
	34	ANT	ANTENNA SIGNAL input
JP7			Connector for plug-in radio receiver

SIGNALLING LED

Position	Colour	Signal	Description
DL1	GREEN	START	Lights when the START command is activated and turns off immediately after
DL2	GREEN	PEDESTRIAN	Lights when the PEDESTRIAN command is activated and turns off immediately after
DL3	RED	STOP	Always on. It turns off when the STOP command is activated
DL4	RED	FCAM1	Always on. It turns off when reaching the motor 1 OPENING LIMIT SWITCH
DL5	RED	FCCM1	Always on. It turns off when reaching the motor 1 CLOSING LIMIT SWITCH
DL6	RED	FCAM2	Always on. It turns off when reaching the motor 2 OPENING LIMIT SWITCH
DL7	RED	FCCM2	Always on. It turns off when reaching the motor 2 CLOSING LIMIT SWITCH
DL8	RED	PHOTO2	Always on. It turns off when the photocell 2 is intercepted
DL9	RED	RESERVE	Lights when the contact switch from open to close and remain on until the contact switch off.
DL11	RED	-	Not used
DL12	RED	PHOTO1	Always on. It turns off when the photocell 1 is intercepted
DL32	GREEN	VCC	Always on. It shows logic circuit power supply

PROTECTION FUSES

Position	Value	Type	Description
F1	6 A	FAST	Motors and primary transformer protection
F2	315 mA	FAST	Low tension and accessories protection

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CHECK ENABLED INPUT

During stand by (closed barrier) the control unit perform a test to verify the consistency between the enabling of an input by the menu and the status of the relevant contact.

Signal	Open contact	Closed contact
PHOTOCELL 1	F	_
PHOTOCELL 2	F	_
SAFETY EDGE	C	_
LIMIT SWITCH	L	_
STOP	S	_

WARNING: The display indication is not a verification of the correct functionality of the input but simply a check on what is enabled by the menu and the input status.
If the menu related to one input is disabled there will not be any check and the display indication will be the one shown in the "Closed contact" column.

PASSWORD MANAGEMENT

You can enter the control board programming menu in 2 different ways, using 2 different password depending on which menu you want to set.

BASIC MODE: when prompted for the password enter 0000. In such a way you enter only the menus listed below

A3 operation logic
A5 automatic closing
F1 motor 1 force
F5 motor 2 force
H1 motor 1 opening time
H2 motor 1 closing time
H4 motor 2 opening time
H5 motor 2 closing time
H9 pause time
E94 firmware release

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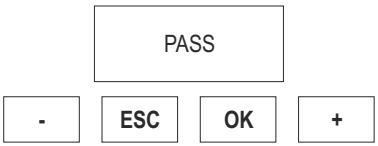
ADVANCED MODE: when prompted for the password enter the default one 1234 . In such a way you enter all the menus.

WARNING: if you change the password in the menu E92, that is if you change the default password 1234 with another one, then you can no more access the system by entering 0000. The only way to do that is by resetting the control board or by entering again the password 1234 in the menu E92.

ENTERING PASSWORD PROCEDURE

	Press ESC and OK button simultaneously for 3 s. At the same time will appear MENU on the display.
	After 3 s appears PASS on the display. Press the OK button to continue with the procedure. Press and hold the ESC key for 3 s to exit and return to previous point. The message EXIT will appear on the display.
	It appears on the display 4 digits (0 0 0 0) with the former of them flashing. If you want to enter the ADVANCED programming, by means of + or – keys type the first digit of the installer code set in the menu E92. Once you get to the desired digit confirm with the OK button and go to the next step. If you want to enter the BASIC programming, confirm the digit 0 **WARNING !** **At first use of the control board the default PASSWORD set in the menu E92 is: 1234** Change the value of menu E92 only after having completed the settings of the menus A C F H E.
	The second digit blinks. If you want to enter the ADVANCED programming, by means of + or – keys type the second digit of the installer code set in the menu E92. Once you get to the desired digit confirm with the OK button and go to the next step. If you want to enter the BASIC programming, confirm the digit 0 The ESC button will move the flashing digit to the left until the first digit.

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	The third digit blinks. If you want to enter the ADVANCED programming, by means of + or – keys type the third digit of the installer code set in the menu E92. Once you get to the desired digit confirm with the OK button and go to the next step. If you want to enter the BASIC programming, confirm the digit 0 The ESC button will move the flashing digit to the left until the first digit.
	The fourth digit blinks. If you want to enter the ADVANCED programming, by means of + or – keys type the fourth digit of the installer code set in the menu E92. Once you get to the desired digit confirm with the OK button and go to the next step. If you want to enter the BASIC programming, confirm the digit 0 The ESC button will move the flashing digit to the left until the first digit.
	By now the installer code is completed: if it is right you go to the next step. If the installer code is wrong the message PASS appears again
	Proceed with the programming of the menus following the instructions in the relevant paragraphs. Once the programming is completed press and hold for 3 s the ESC button to store the settings and exit from programming procedure. Simultaneously appears the message EXIT
	If there is no mismatch between enabling and input status appears the screen you can see here beside, otherwise it will appear an indication of which input has a fault. Refer to the paragraph “CHECK ENABLED INPUT” In this case the buttons + and OK will mean: + → START OK → STOP

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MENU A: SYSTEM CONFIGURATION AND OPERATING LOGIC SELECTION

Example Programming **MENU A**

When the display shows the main menus (letters ACFHE or just some of them depending on which password was used to access programming) let the letter A blink by moving to the right or to the left with the buttons + or –

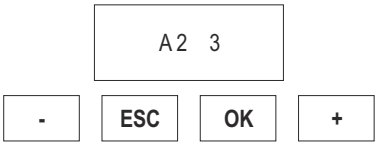
Once the letter A blinks confirm with the OK button

By means of + or – buttons you can select the submenus (A3, A5)
The digits on the lcd are fixed to show that is no possible any modification.
The button ESC lets you to go to the upper level (menus A, C, F, H E).

With OK button you enter the selected menu and the digits start blinking to show that is now possible to modify the values and the ESC button becomes irrelevant.

Right now with + e – buttons you can change the settings of the selected menu.

With the OK button you confirm the data and return to the selected menu with fixed digits.



Right now with + and – buttons you can scroll the other submenus of the menu A and you can follow the same procedure shown above.

The ESC button lets you to go to the upper level (menus A, C, F, H E).

Description **MENU A**

Menu	Function	Status	Description
A1	TYPE OF INSTALLATION	2	It configures the system for swing gate, overhead door or barrier.
		3	It configures the system for a sliding gate. This configuration automatically excludes: ·gate phase shifts in opening and closing ·hammer stroke ·2 seconds final opening and closing stroke. ·T3 time ·hydraulic locking maintenance **WARNING**: the limit switches are NOT activated automatically, choose the best configuration with the menu C4
A2	NUMBER OF MOTORS	2	It configures the system for one motor. In the menu E7 it will be possible to set the courtesy light output: 1 = courtesy light disabled 2 = courtesy light on MOTOR 2 output 3 = courtesy light on ELECTRIC LOCK 2 output The courtesy light output is 3-minutes timed.

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A2	NUMBER OF MOTORS	3	It configures the system for two motors. In the menu E7 it will be possible to set the courtesy light output: 1 = courtesy light disabled 2 = courtesy light disabled 3 = courtesy light on ELECTRIC LOCK 2 output The courtesy light output is 3-minutes timed.
A3	STEP BY STEP WITH STOP LOGIC	2	It enables the STEP BY STEP WITH STOP logic **Operation**: START → open Next START→ stop Next START → close Next START → open If automatic closing has been activated (menu A5) and the opening phase is at the end of the cycle, when the pause time has elapsed (menu H9), the control unit automatically closes the gate. “START” closes the gate PEDESTRIAN is uninfluential in opening. It will be active in stand-by if the pedestrian automatic closing is disabled. In closing, it opens both leaves.
	STEP BY STEP LOGIC	3	It enables the STEP BY STEP logic **Operation**: START → open Next START → close Next START → open If automatic closing has been activated (menu A5) and the opening phase is at the end of the cycle, when the pause time has elapsed (menu H9), the control unit automatically closes the gate. If the door is open, “START” closes the gate PEDESTRIAN is uninfluential in opening. It is active in stand-by if the pedestrian automatic closing is disabled. In closing, it opens both leaves.
	AUTOMATIC / CONDOMINIUM LOGIC	4	It enables the AUTOMATIC/CONDOMINIUM logic **Operation**: START → open Next START(s) → uninfluential if the system is opening, or it zeroes the pause time (if the gate is in pause) and the automatic closing is activated. If the automatic closing is activated, the system closes automatically. If the automatic closing is not activated, a “START” or a pedestrian command close the gate (if the opening is pedestrian). PEDESTRIAN is uninfluential in opening. It is active in stand-by if the pedestrian automatic closing is disabled. In closing, it opens both leaves.

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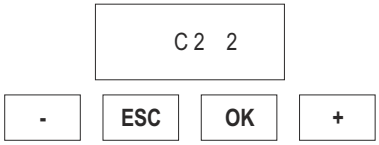
A3	DEAD MAN LOGIC	5	It activates the DEAD MAN logic **Operation**: START → opens only if the START key is held down. Pedestrian → closes only if the Pedestrian key is held down. In Dead Man's mode the keys on the control unit assume the following meanings: START (+ key) → open Pedestrian (- key) → close The opening and closing movements in the dead man's mode stop on the first limit switch it meets. Deceleration is never activated. The only possible regulations are: PHASE SHIFT IN OPENING - PHASE SHIFT IN CLOSING – MOTOR POWER 1 AND 2. If the keys are continuously held down, the flashing light remains active even if the motors stopped on the limit switches. Two motors always working.
A5	AUTOMATIC CLOSING	1	Disables the automatic closing If the pedestrian opening is activated, the PEDESTRIAN key will cause the closing. If the total opening is activated, the START will cause the closing and the PEDESTRIAN key will be uninfluential.
		2	Enables total automatic closing H9 Enables pedestrian automatic closing H11 PEDESTRIAN key uninfluential when in pause
		3	Enables only total automatic closing H9 If the pedestrian opening is acticated, the PEDESTRIAN key determines the closing.
		4	Enables only pedestrian automatic closing H11 PEDESTRIAN key uninfluential when in pause

MENU C: FUNCTION SELECTION

Example Programming **MENU C**

A **C** F H E **-** **ESC** **OK** **+**	When the display shows the main menus (letters ACFHE or just some of them depending on which password was used to access programming) let the letter C blink by moving to the right or to the left with the buttons + or – Once the letter C blinks confirm with the OK button
C 1 1 **-** **ESC** **OK** **+**	By means of + or – buttons you can select the submenus (C1, C2, C3,..) The digits on the lcd are fixed to show that is no possible any modification. The button ESC lets you to go to the upper level (menus A, C, F, H E). With OK button you enter the selected menu and the digits start blinking to show that is now possible to modify the values and the ESC button becomes irrelevant. Right now with + e – buttons you can change the settings of the selected menu. With the OK button you confirm the data and return to the selected menu with fixed digits.

UK



Right now with + and – buttons you can scroll the other submenus of the menu C and you can follow the same procedure shown above.

The ESC button lets you to go to the upper level (menus A, C, F, H E).

Description **MENU C**

Menu	Function	Status	Description
C1	FAST CLOSING	1	It disables the fast closing function
		2	Enables fast closing function Active only on photocell 1. **Operation**: Reduces the stand-by time to 3 seconds following interception and subsequent freeing of the photocells.
C2	FLASHING LIGHT	2	Blinking flashing light output
		3	Fixed flashing light output
C3	PREFLASHING	1	Disables pre-flashing. The flashlight and the motors START at the same time.
		2	Enables 3-second pre-flashing before motor START
C4	LIMIT SWITCH	1	Disables the limit switch reading.
		2	Enables the single reading of the limit switch. See paragraph " LIMIT SWITCH OPERATION "
		3	Enables the double reading of the limit switch. See paragraph " LIMIT SWITCH OPERATION "
C5	DECELERATIONS	1	Disables the deceleration function
		2	Enables the type 1 deceleration function. With this selection you can regulate the motors thrust. A decrease in the leaf speed may be not noticeable.
		3	Enables the type 2 deceleration function. . With this selection, the variation in the leaf speed is more noticeable.
		4	Enables the type 3 deceleration function. Mix of the 2 previous modalities. The functioning is deeply influenced by the type of motor.
		5	Enables the type 4 deceleration function. This modality is to be used in case of emergency or particular functioning conditions. The motor is driven in type 1 modality for 1s, then it turns off for 1s. The door movement intermittent modality is synchronized with the command.
C7	PHOTOCELL 1	1	Photocell 1 disabled
		2	Photocell 1 enabled
C8	PHOTOCELL 2	1	Photocell 2 disabled
		2	Photocell 2 enabled
C9	SAFETY EDGE	1	Safety edge disabled
		2	Safety edge with 8K2 in series resistor enabled
		3	Safety edge with NC contact enabled

C10	HAMMER STROKE	1	Disables the hammer stroke function
		2	Enables the hammer stroke function to help the release of the electric lock/s in OPENING **Operation**: After the Start command, the sequence is: - Electrical locks enabling - 1 s pulse in closing - opening - After 2 s, electrical locks release Disabled with sliding configuration We suggest not to use the “Hammer stroke” function with electromechanical operators.
		3	Enables the hammer stroke function to help the electrical lock/s release in OPENING and CLOSING **Operation**: After the Start command, the sequence is: -Electrical locks enabling -Motor pulse in the electrical lock freeing direction -Motion direction in the required direction -After 2 s, electrical locks release Disabled with sliding configuration We suggest not to use the “Hammer stroke” function with electromechanical operators.
C11	FINAL STROKE	1	Disables the final stroke in opening and closing.
		2	Enables the final stroke in closing **Operation**: At the end of the closing time without deceleration, a pulse of 2 s is given at full power. With active decelerations is given at the end of the deceleration period. The final stroke is not controlled by safety devices. Not active with sliding configuration and with dead man logic
		3	Enables the final stroke in opening and closing **Operation**: At the end of the opening or closing time without decelerations, a pulse of 2 s is given at full power. With active decelerations is given at the end of the deceleration period. The final stroke is not controlled by safety devices. Not active with sliding configuration and with dead man logic
C12	ADDITIONAL TIME T3 IN OPENING AND CLOSING	1	T3 excluded
		2	Sets T3 as the time set for the deceleration with the same setting of menus F1 and F5. The type of functioning is C5-2
		3	Sets T3 as the time set for the deceleration with the same setting of menus F2 and F6. The type of functioning is C5-2
C13	HYDRAULIC BLOCK MAINTENANCE	1	Disables the hydraulic block maintenance

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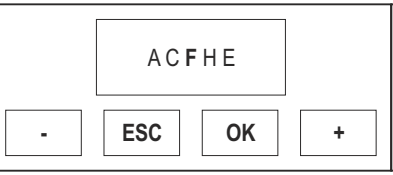
C13	OLEODYNAMIC BLOCK MAINTENANCE	2	Enables the hydraulic block maintenance function ONLY FOR HYDRAULIC OPERATORS **Operation**: If in the last 5 hours the gate has not performed a manoeuvre, a 2 s pulse in closing is given. The enabling of the STOP key in any moment disables the function. The function is automatically disabled with SLIDING - DEAD MAN configuration
C21	SELF - LEARNING	AUTO	Enables times programming in self-learning **Operation**: See “Times self-learning procedure”

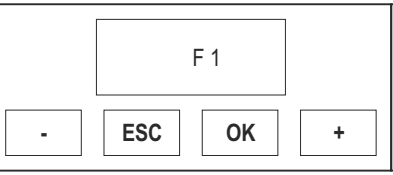
MENU F: FORCE AND SPEED ADJUSTEMENT

Example Programming **MENU F**



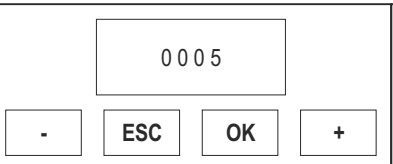
When the display shows the main menus (letters ACFHE or just some of them depending on which password was used to access programming) let the letter F blink by moving to the right or to the left with the buttons + or –

Once the letter F blinks confirm with the OK button



By means of + or – buttons you can select the submenus (F2, F3, F4)
The digits on the lcd are fixed to show that is no possible any modification.
The button ESC lets you to go to the upper level (menus A, C, F, H E).

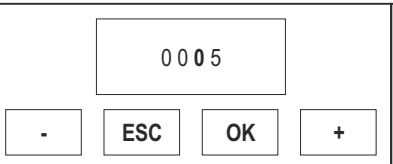
With OK button you enter the selected menu and the value set is shown.



The digits on the lcd are still fixed to shown that is not possible any modification.

The buttons + and – are irrelevant.
The ESC button return to the upper level

With OK button you enter the selected menu and the digits begin blinking.



A digit of the lcd blinks (depending on the menu the blinking digit could be different).

With + and – buttons you can modify the value of the blinking digit.

The ESC button moves the blinking digit to the left until the first digit you can modify.

With OK you confirm and go to the next step.

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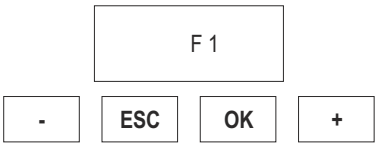
	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. The ESC button moves the blinking digit to the left untill the first digit you can modify. With OK you confirm and go to the next step.
	Appears again menu F2. With ESC return to the upper level (menu A, C, F, H, E)

Description **MENU F**

Menu	Function	Description
F1	MOTOR 1 FORCE	Adjusts motor 1 thrust. 0001 = minimum force 0010 =maximum force. If the value set is less than 10, the type of functioning is Y1
F2	MOTOR 1 DECELERATION SPEED 1	Adjusts motor 1 thrust during deceleration phase. 0001 = minimum force 0010 =maximum force. The motor functioning depends on the choice made in menu C5
F5	MOTOR 2 FORCE	Adjusts motor 2 thrust. 0001 = minimum force 0010 =maximum force. If the value set is less than 10, the type of functioning is Y1
F6	MOTOR 2 DECELERATION SPEED	Adjusts motor 2 thrust during deceleration phase. 0001 = minimum force 0010 =maximum force. The motor functioning depends on the choice made in menu C5

MENU H: TIME SETTINGS

Example Programming **MENU H**

	When the display shows the main menus (letters ACFHE or just some of them depending on which password was used to access programming) let the letter H blink by moving to the right or to the left with the buttons + or – Once the letter H blinks confirm with the OK button

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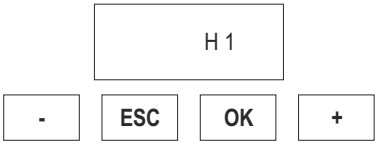
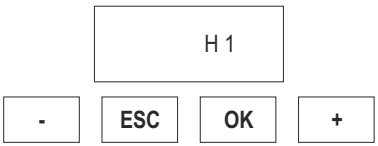
	By means of + or – buttons you can select the submenus (H1, H2, H3,…) The digits on the lcd are fixed to show that is no possible any modification. The button ESC lets you to go to the upper level (menus A, C, F, H E). With OK button you enter the selected menu and the value set is shown.
	The digits on the lcd are still fixed to shown that is not possibile any modification. The buttons + and – are irrelevant. The ESC button return to the upper level With OK button you enter the selected menu and the digits begin blinking.
	A digit of the lcd blinks (depending on the menu the blinking digit could be different). With + and – buttons you can modify the value of the blinking digit. The ESC button moves the blinking digit to the left until the first digit you can modify. With OK you confirm and go to the next step.
	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. The ESC button moves the blinking digit to the left until the first digit you can modify. With OK you confirm and go to the next step.
	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. The ESC button moves the blinking digit to the left until the first digit you can modify. With OK you confirm and go to the next step.
	Appears again menu H1. With ESC return to the upper level (menu A, C, F, H, E)

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Description **MENU H**	**All the times can be set in steps of 1 s**

Menu	Function	Description
H1	MOTOR 1 OPENING TIME	Leaf 1 opening time. Tmax 300s
H2	MOTOR 1 CLOSING TIME	Leaf 1 closing time. Tmax 300s
H3	MOTOR 1 DECELERATION TIME	Leaf 1 operating time in deceleration mode. Tmax 100s
H4	MOTOR 2 OPENING TIME	Leaf 2 opening time. Tmax 300s
H5	MOTOR 2 CLOSING TIME	Leaf 2 closing time. Tmax 300s
H6	MOTOR 2 DECELERATION TIME	Leaf 2 operating time in deceleration mode. Tmax 100s
H7	LEAF 2 PHASE SHIFT TIME IN OPENING	Delay the START in opening of leaf 2 with respect to leaf 1. In the case of a configuration with double sliding gate, the time H7 will not be considered. Tmax 100s
H8	LEAF 1 PHASE SHIFT TIME IN CLOSING	Delay the START in opening of leaf 1 with respect to leaf 2. In the case of a configuration with double sliding gate, the time H8 will not be considered. Tmax 100s
H9	AUTOMATIC CLOSING PAUSE TIME	Determines the pause time in opening before automatic closing. Tmax 300s
H10	PARTIAL OPENING TIME	Determines the pedestrian opening time.
H11	AUTOMATIC PEDESTRIAN CLOSING PAUSE TIME	Determines the pause time in pedestrian opening before automatic closing. Tmax 300 s

MENU E: ENABLING AND DISABLING

The menu E contains submenus with different programming mode. Menus from E1 to E89 have the same programming mode as menu C; menus identified by E90 onwards have the same programming mode of menu F.

Example Programming **MENU E**	**From E1 to E89**
A C F H **E** **-** **ESC** **OK** **+**	When the display shows the main menus (letters ACFHE or just some of them depending on which password was used to access programming) let the letter E blink by moving to the right or to the left with the buttons + or – Once the letter E blinks confirm with the OK button

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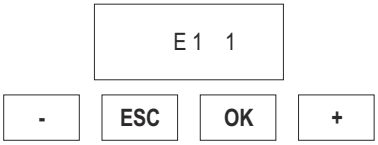
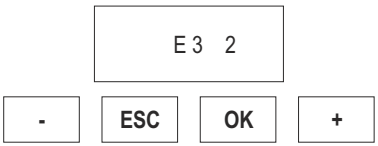
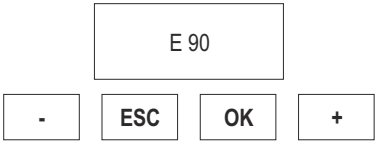
	By means of + or – buttons you can select the submenus (E1, E3, E9,..) The digits on the lcd are fixed to show that is no possible any modification. The button ESC lets you to go to the upper level (menus A, C, F, H E). With OK button you enter the selected menu and the digits start blinking to show that is now possible to modify the values and the ESC button becomes irrelevant. Right now with + e – buttons you can change the settings of the selected menu. With the OK button you confirm the data and return to the selected menu with fixed digits.
	Right now with + and – buttons you can scroll the other submenus of the menu C and you can follow the same procedure shown above. The ESC button lets you to go to the upper level (menus A, C, F, H E).

Example Programming **MENU E** — **From E90**

	When the display shows the main menus (letters ACFHE or just some of them depending on which password was used to access programming) let the letter E blink by moving to the right or to the left with the buttons + or – Once the letter E blinks confirm with the OK button
	By means of + or – buttons you can select the submenus (E90, E92, …) The digits on the lcd are fixed to show that is no possible any modification. The button ESC lets you to go to the upper level (menus A, C, F, H E). With OK button you enter the selected menu and the value set is shown.
	The digits on the lcd are still fixed to show that is not possible any modification. The buttons + and – are irrelevant. The ESC button return to the upper level With OK button you enter the selected menu and the digits begin blinking.
	A digit of the lcd blinks (depending on the menu the blinking digit could be different). With + and – buttons you can modify the value of the blinking digit. The ESC button moves the blinking digit to the left until the first digit you can modify. With OK you confirm and go to the next step.

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0 0 **0** 5 - ESC OK +	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. The ESC button moves the blinking digit to the left until the first digit you can modify. With OK you confirm and go to the next step.
0 0 0 **5** - ESC OK +	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. The ESC button moves the blinking digit to the left until the first digit you can modify. With OK you confirm and go to the next step.
E 90 - ESC OK +	Appears again menu E90. With ESC return to the upper level (menu A, C, F, H, E)

Description **MENU E**

Menu	Function	Status	Description
E1	PHOTOCELL 1 TEST	1	Disables the photocell 1 test
		2	Enables the photocell 1 test The photocell 1 transmitter must be connected to the clamps 16 and 19. **Operation**: When the START or the PEDESTRIAN command is given, the power to safety devices is taken off for 0,5 and then restored: if the photocell 1 input opens and immediately goes back to NC the motors START, otherwise a fault will be signalled by 4 blinks (1 sec.) of the flashing light.
E3	SAFETY DEVICE TEST	1	Disables the safety devices test.
		2	Enables the safety devices test **Operation**: **PHASE 1**: when the Start or the Pedestrian command is given, the electronic circuit is tested: relay, triac, etc. If an anomaly is detected, it will be indicated by 4 long flashes (2 sec.) of the flashing light. The test must be performed when the motors are connected. If the control unit is set for one motor, the test will be performed only for motor 1 circuit. **WARNING**: During the test, the motors will be activated in opening and closing for about 300 msec. DUE TO THE MOTION, THE DOOR MAY CRASH AGAINST THE MECHANICAL STOPS. CHECK THE SYSTEM SAFETY/INTEGRITY AFTER THIS PHASE. The exclusion of SAFETY DEVICE (menu C9-1) excludes the safety edge test.

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E3	SAFETY DEVICE TEST	2	**PHASE 2**: if the edge with N.C. contact is enabled (menu C9-3), when the Start or Pedestrian command is given, the power to the safety devices is cut off for 0,5 s and then restored: : if the inputs of the safety devices open and immediately return NC, the motors start, otherwise a fault is signalled with 3 long flashes (2 sec.) of the flashing light. **PHASE 3**: if the 8K2 edge is enabled (menu C9-2), when the Start or the Pedestrian command is given the SAFETY DEV input is tested (value 8K2). If the value is not correct, the fault is signalled with 2 long flashes (2 sec.) of the flashing light. **WARNING**: The indication of the fault detected will be only one (the first one to be detected), even if there is more than one fault.
E5	INVERSION FROM PEDESTRIAN	1	During the PEDESTRIAN closing, the PHOTO 1 – PHOTO 2 – PEDESTRIAN – START command causes the complete opening.
		2	During the pedestrian closing, the PHOTO 1 – PHOTO 2 – PEDESTRIAN command opens only the pedestrian. The START command causes the complete opening.
E7	COURTESY LIGHT	1	Courtesy light not activated with 2 motors
		2	Enables the courtesy light working on motor 2 output . If the installation has 2 motors the courtesy light will not be active COURTESY LIGHT 230 Vac Timed 3 min after the motors motion end
		3	Enables the courtesy light working on electrical lock 2 output COURTESY LIGHT 12 Vdc. Timed 3 min after the motors motion end.
E9	EXTERNAL CLOCK	1	Disables the RESERVE input
		2	**EXTERNAL CLOCK - CLOSING ALLOWED** Enables the RESERVE input for the connection of an external clock. **Operation**: With the closed contact on the RESERVE input, following a START command, the door will open but it will not close automatically. Following the contact closing, the door will close automatically after the pause time. When the door is open, the closing command can be given with "START" if the menu is STEP-BY-STEP or STEB-BY-STEP WITH STOP. **WARNING**: remember to preset the automatic closing
		3	**EXTERNAL CLOCK - CLOSING NOT ALLOWED** Enables the RESERVE input for the connection of an external clock. **Operation**: With the closed contact on the RESERVE input, following a START command, the door will open but it will not close automatically. Following the contact closing, the door will close automatically after the pause time. It is not possible to activate the closing with the START command. **WARNING**: remember to preset the automatic closing

E9	EXTERNAL CLOCK	4	**EXTERNAL CLOCK - AUTOMATIC OPENING AND CLOSING COMMAND** Enables the RESERVE input for the connection of an external clock. **Operation:** with the closed contact on the RESERVE input, an automatic opening command will activate (with no need of a START command). The door will open, but it will not close automatically. Following the contact closing, the door will close automatically after the pause time. It is not possible to activate the closing with the START command. **WARNING**: remember to preset the automatic closing
E90	CYCLES NUMBER		Allows the setting of a number of cycles (opening+ closing) before the maintenance request. The value set will always be multiplied for 10. If 0000 is set, the numbering is excluded. When the set number of cycles is reached, the maintenance request is signalled by a slow blink of 60 sec. at the end of the movement. The signalling will be blinking even if the C2 menu is set up with fixed light. WARNING: Each time you enter in E90 menu (WITH BLINKING NUMBERS, THAT MEANS READY TO BE MODIFIED) the count of the cycles number resets starting from the beginning.
E92	INSTALLER CODE		Allows the input of the installer code to customize the settings during the programming phase. The INSTALLER CODE is the only way to enter the programming menu.
E94	FIRMWARE RELEASE		Shows the firmware release installed on the equipment. (XX_YY)
E96	NUMBER OF PERFORMED CYCLES		Number of performed cycles. The value displayed on the LCD screen is increased every 10 movements.
E98	NUMBER OF POWER SUPPLY DAYS		Number of control unit power supply days. The data increments when the 24 hours expire. Possible lacks of power supply reset the count of last day

T3 ADDITIONAL TIME

Additional time at the end of the working time (with full force or during deceleration phase according to the settings) that allows to continue the closing movement even if there is wind.
The T3 function is disabled with the sliding configuration.

TIMES LEARNING PROCEDURE

WARNING: start with the gate completely closed.

During the times self-learning phase, motion always occurs at a non-decelerated speed.
If decelerations are needed, stop the leaves before the stroke, then remember to enable the decelerations option (menu C5) and set the decelerations times (menu H3 and H6).
During the times self-learning phase the limit switches are not considered.

Times are programmed by means of sequences of START pulses.

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Select the menu C21 to enter this procedure. (menu C21 blinking)
The times learning procedure starts by pressing OK (menu C21-AUTO)

1 motor configuration
- START → the leaf starts opening.
- When the leaf arrives at the desired opening position → START → the leaf stops.
- Counting of the pause time in opening starts.
- When the desired pause time has elapsed → START → the leaf starts closing.
- When the leaf arrives at the closing position → START → the leaf stops.
- Now the procedure has finished, the menu C21 reappears blinking
- If you want to repeat the operation, press OK
- If you want to finish the times learning operation and save the data, press ESC as long as the horizontal lines appear on the display

2 motors configuration
- START → leaf 1 starts opening.
- START → leaf 2 starts opening
- When leaf 1 arrives at the desired opening position → START → leaf 1 stops.
- When leaf 2 arrives at the desired opening position → START → leaf 2 stops.
- Counting of the pause time in opening starts.
- When the desired pause time has elapsed → START → leaf 2 starts closing.
- START → Leaf 1 starts closing. (phase shift time setting)
- When leaf 2 arrives at the closing position → START → leaf 2 stops.
- When leaf 1 arrives at the closing position → START → leaf 1 stops.
- Now the procedure is over, the menu C21 reappears blinking
- If you want to repeat the operation, press OK
- If you want to finish the times learning operation and save the data, press ESC as long as the horizontal lines appear on the display

The microcontroller does not consider fractions of times of less than 1 second, so the real time is rounded up or down.
The times set following this procedure can be modified later by entering the proper menus and modifying the numeric value.

If the instalment is configured as double sliding, the motors will move as indicated in the procedure with the phase shift in opening and closing.
During normal working, phase shifts are zeroed.

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LIMIT SWITCHES OPERATION

If you enable the deceleration function, the limit switches mark the beginning of the deceleration. The gate will keep on his decelerated motion for the time set up in H3 and H6 menus.
If you use the double reading of limit switches, the first reading starts the deceleration and the second one stops it, but it doesn't stop the motion if T3 and/or the end stroke in opening/closing are activated.

Make sure that the times set are higher than the time necessary to reach the limit switch.
If deceleration is not enabled, the limit switches lock the motion.

The additional time T3 and the final opening/closing stroke, if enabled, work even when there are limit switches.

RESET

Press and hold simultaneously ESC and OK keys for 3 s until the writing “PASS” appears on the display.
Then press and hold simultaneously the + and – keys for 3 s.
The default settings will be loaded into memory and will lose all previous settings except the number of performed cycles and powered days.

FLASHING LIGHT SIGNALS SUMMARY

Device	Signal	Effect
Photo 2 intercepted in stand-by after a start command	5 fast flashings	When released, it opens
Edge intercepted in stand-by after a start command	3 slow flashings	Blocked closed door
Edge intercepted in pause after a start command or at closing	3 slow flashes	Blocked open door
Photo 1 test failed at opening	4 fast flashings	Blocked closed door
Photo 1 test failed at closing	4 fast flashings	Blocked open door
TRIAC test failed at opening	4 slow flashings	Blocked closed door
TRIAC test failed at closing	4 slow flashings	Blocked open door
Edge N.C. test failed at opening	3 slow flashings	Blocked closed door
Edge N.C. test failed at closing	3 slow flashings	Blocked open door
Edge 8K2 test failed at opening	2 slow flashings	Blocked closed door
Edge 8K2 test failed at closing	2 slow flashings	Blocked open door
Expired maintenance	1 minute slow flashing with closed door	None

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DEFAULT SETTINGS

- **Parameters type A**
  - A1 → 2 SWING GATE/OVERHEAD DOOR/BARRIER TYPE
  - A2 → 3 2 MOTORS
  - A3 → 2 STEP STEP WITH STOP LOGIC
  - A5 → 2 AUTOMATIC CLOSING ENABLED

- **Parameters type C**
  - C1 → 1 FAST CLOSING DISABLED
  - C2 → 2 INTERMITTENT FLASHING LIGHT
  - C3 → 2 PRE-FLASHING ENABLED
  - C4 → 1 LIMIT SWITCH DISABLED
  - C5 → 1 DECELERATIONS DISABLED
  - C7 → 2 PHOTOCELL 1 ENABLED
  - C8 → 1 PHOTOCELL 2 DISABLED
  - C9 → 1 SAFETY EDGE DISABLED
  - C10 → 1 WATER HAMMER DISABLED
  - C11 → 1 FINAL STROKE DISABLED
  - C12 → 1 ADDITIONAL TIME T3 EXCLUDED
  - C13 → 1 OLEODYNAMIC BLOCK MAINTENANCE DISABLED

- **Parameters type F**
  - F1 → 10 MOTOR 1 FORCE
  - F2 → 05 MOTOR 1 DECELERATION
  - F5 → 10 MOTOR 2 FORCE
  - F6 → 05 MOTOR 2 DECELERATION

- **Parameters type H**
  - H1 → 25 MOTOR 1 OPENING TIME
  - H2 → 25 MOTOR 1 CLOSING TIME
  - H3 → 20 MOTOR 1 DECELERATION TIME
  - H4 → 25 MOTOR 2 OPENING TIME
  - H5 → 25 MOTOR 2 CLOSING TIME
  - H6 → 20 MOTOR 2 DECELERATION TIME
  - H7 → 5 LEAF 2 PHASE SHIFT IN OPENING
  - H8 → 5 LEAF 1 PHASE SHIFT IN CLOSING
  - H9 → 20 PAUSE TIME
  - H10 → 5 PEDESTRIAN OPENING TIME
  - H11 → 20 PEDESTRIAN PAUSE TIME

- **Parameters type E**
  - E1 → 1 PHOTO 1 TEST DISABLED
  - E3 → 1 SAFETY DEVICES TEST DISABLED
  - E5 → 1 IN “PEDESTRIAN CLOSING”, ACTIVATES COMPLETE OPENING
  - E7 → 1 COURTESY LIGHT WITH 2 MOTORS DISABLED
  - E9 → 1 EXTERNAL CLOCK CONTACT DISABLED

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- E90 → 0000 NUMBER OF CYCLES
- E92 → 1234 INSTALLER CODE
- E94 → XX_YY FIRMWARE RELEASE
- E96 → 0000 NUMBER OF CYCLES DONE
- E98 → 0000g NUMBER OF OPERATION DAYS

FINAL CHECK OUT AND TEST

Before giving power to the equipment, the following check outs are required:

1 - Check the electrical connections: a wrong connection may damage both the equipment and the installer.
2 - Check the correct position of the limit switches.
3 - Preset the mechanical stops in opening and closing.
4 - Power the equipment.
5 - Check that the red LEDs of the usually closed contacts are on and the green LEDs of the usually open contacts are off.
6 - Check that on the lcd do not appear any mismatch between enabling and input status
7 - Check that the relative LEDs turn off when limit switches work.
8 - Check that the relative LED turns off when the photocells ray is intercepted.
9 - Check that the motors are blocked and ready to work with GATE AT HALFWAY POSITION.
10 - Remove possible obstacles in the operating area of the gate, then give the command START. At the first command, the equipment starts opening, then check that the motion direction is correct, otherwise power the control unit down, invert the wires in the motors clamps, power the control unit up again and give a new START command.
11 - The gate will stop upon the first limit switch. It is necessary a complete movement to activate the regular working of the decelerations.

BA230 DISPOSAL

Gi.Bi.Di advises recycling the plastic components and to dispose of them at special authorised centres for electronic components thus protecting the environment from polluting substances.

UK

CE Declaration of conformity

The manufacturer:

GI.BI.DI. S.r.l.

Via Abetone Brennero, 177/B,
46025 Poggio Rusco (MN) ITALY

Declares that the products:

ELECTRONIC CONTROL UNIT BA230

are in conformity with the following CEE Directives:

- **LVD Directive 2006/95/CE and subsequent amendments;**
- **EMC Directive 2004/108/CE and subsequent amendments;**

and that the following harmonised standards have been applied:

- **EN60335-1,EN60335-2-103, EN50366**
- **EN61000-6-2, EN61000-6-3**

Date 26/11/2013

The legal Representative
Michele Prandi

NOTE

Cod. AIC5012 - 02/2019 - Rev. 02

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