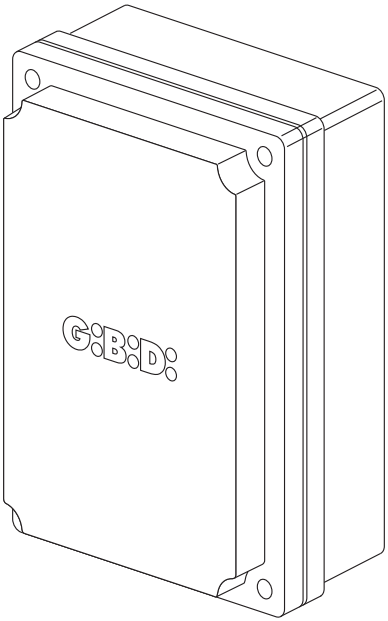


BA24

BA24 - (AS05590)

Electronic control unit INSTRUCTIONS FOR INSTALLATION

UK

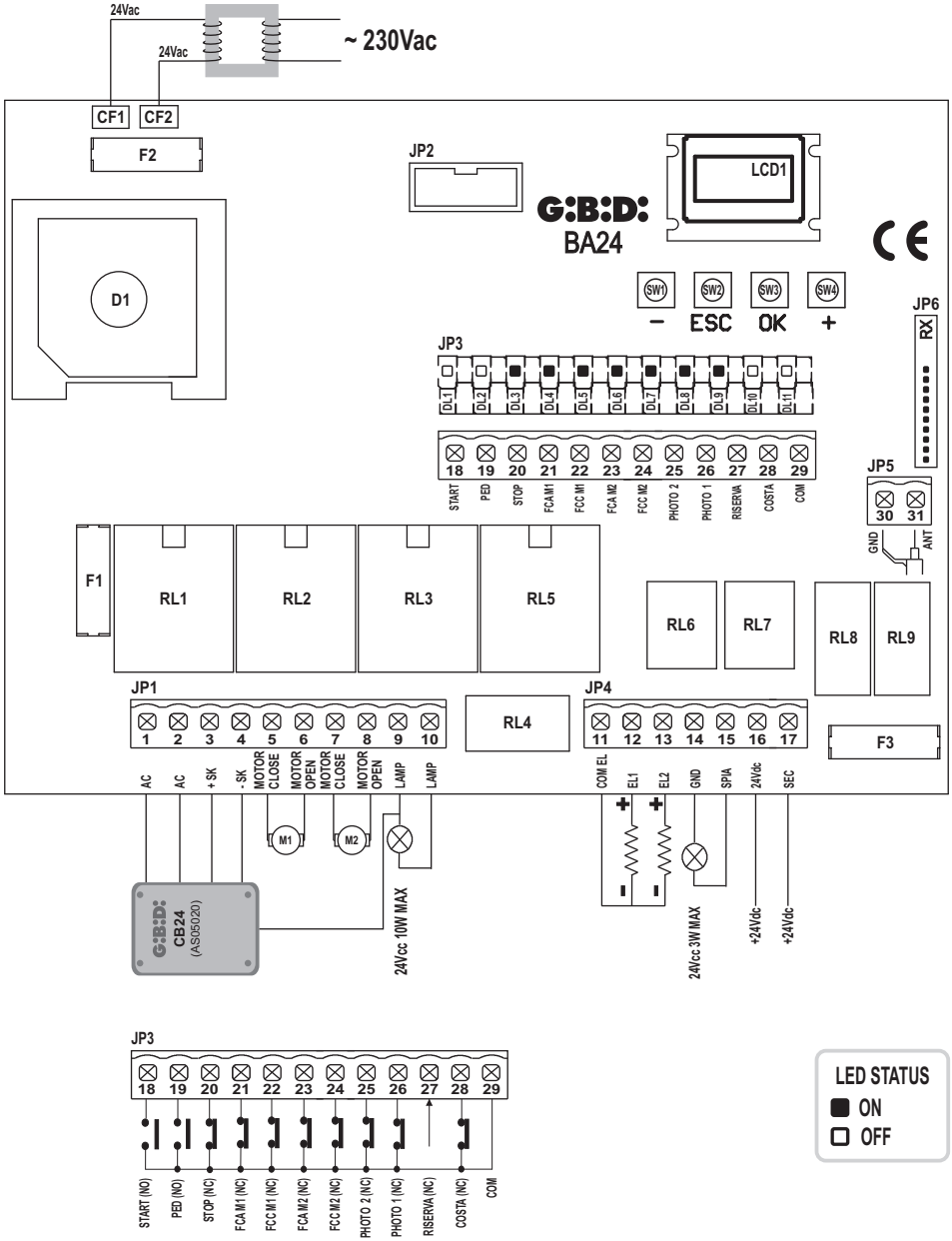
UK

- 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



INSTALLINSTALLATION

2

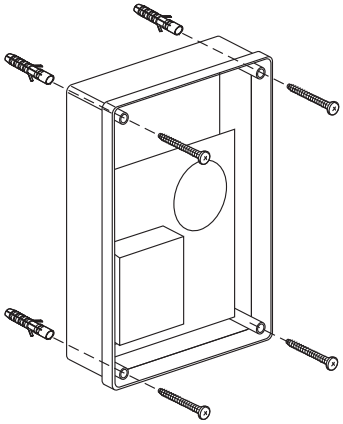
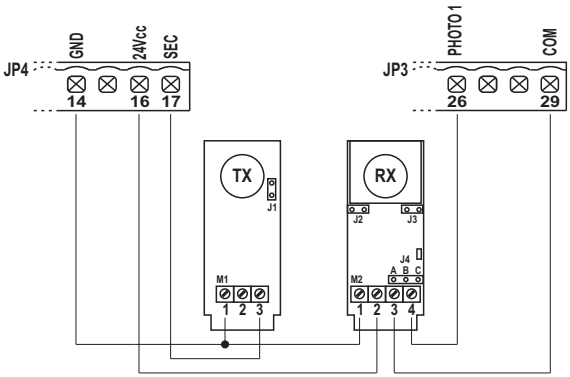


PHOTO TEST

3



4

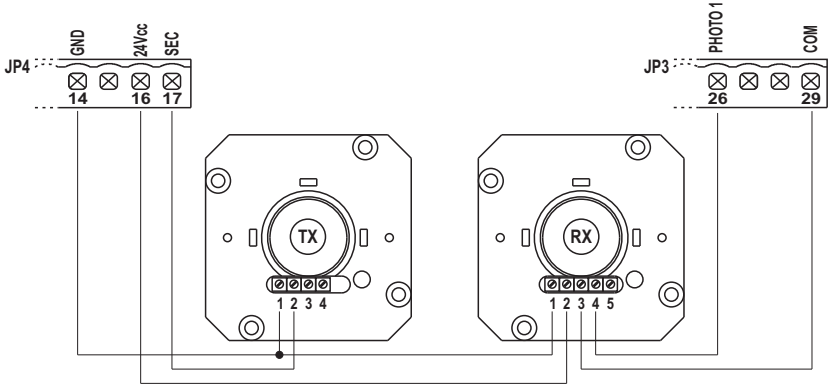
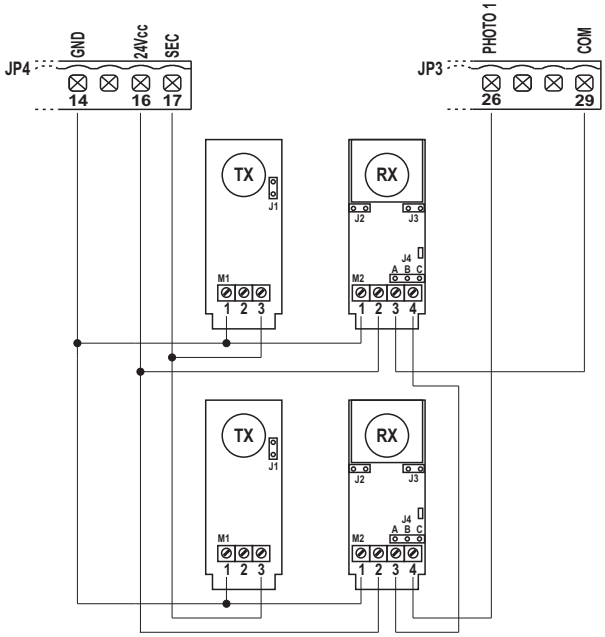
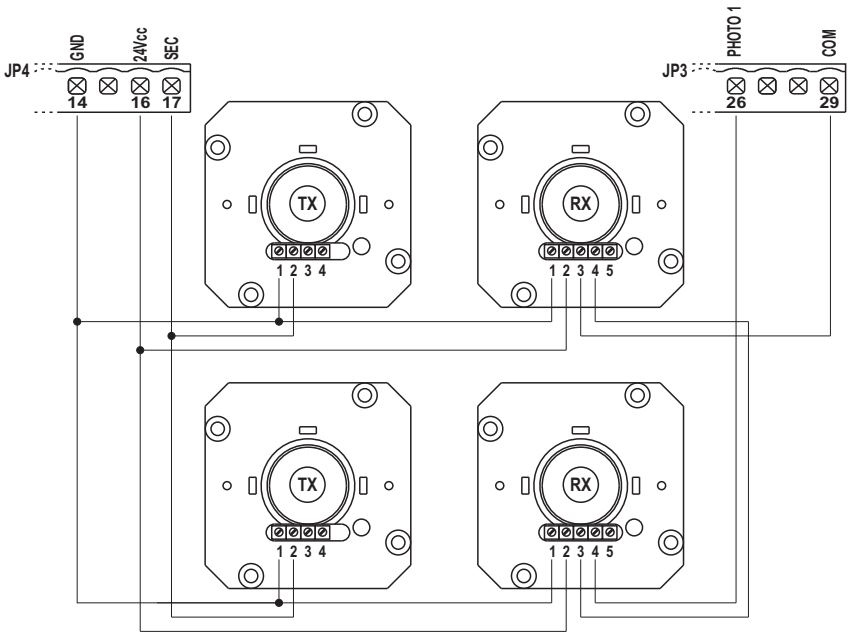


PHOTO TEST

5

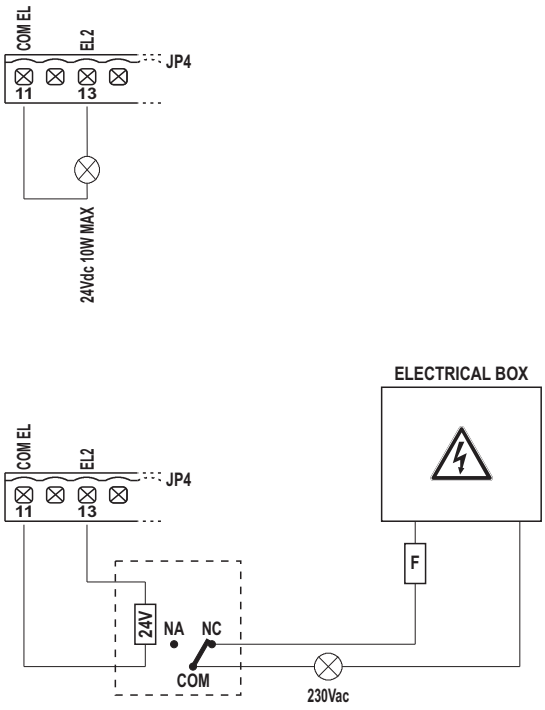


6



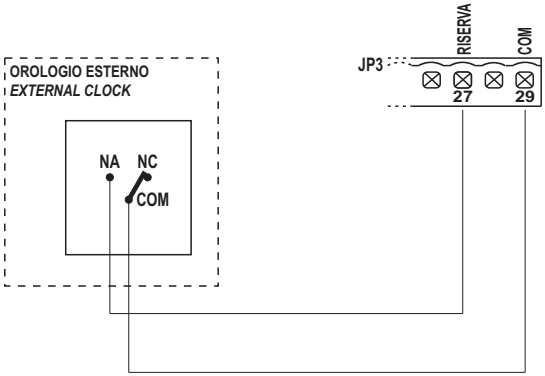
COURTESY LIGHT

7



EXTERNAL CLOCK

8



UK

Control unit	**BA24 / AS05590**
Type	**Electronic control unit for the automation of one or two motors – 24V dc – for swinging and sliding gates, overhead garage doors and barriers**
Power supply	230Vac monophase 50/60 Hz
N° motors	1 or 2
Motor power supply	24 Vdc
Flashing light	24Vdc 10W max
Warning light	24Vdc 3W max
Accessories power supply	24Vdc 8W max including safety device power supply
Safety device power supply	24Vcc 8W max including accessories power supply
Radio receiver	Plug-in
Operating temperature	-20°C +60°C

TECHNICAL SPECIFICATIONS / FUNCTIONS

- Red warning LEDs of N.C. contacts. There isn't the safety devices LED. See “SIGNALLING LED” table.
- Green warning LEDs of N.A. contacts. See “SIGNALLING LED” table.
- Two electrical locks management.
- Safety test run before the opening and closing movement.
- Photocell 1 test run before the opening and closing movement.
- Amperometric circuit test run before the opening and closing movement.
- Stop and motion inversion for 2 seconds after intervention of the safety devices. At the next START pulse the motion reSTARTs in the obstacle freeing direction.
- SEPARATE SAFETY DEVICES POWER SUPPLY. Connect the safety devices that must be tested to this clamp.
- Digital programming of all functions.
- Working time settable independently in opening and closing for each motor.
- Deceleration time settable independently in opening and closing for each motor in the ending motion phase (soft-stop).
- Gate phase shift time settable independently in opening and closing.
- Settable pedestrian working time.
- Pause time settable and differentiated for complete opening or pedestrian opening.
- Thrust force settable on 10 levels for each motor.
- Decelerations selectable and settable independently on 10 levels for each motor.
- Decelerated departure (soft START) that can be selected in 3 different modes.
- Absorption (anti-crushing) control settable on 100 levels for each motor both in thrust phase and in deceleration phase.
- Deceleration enabling: with single or double limit switches reading.
- 4 possible working functions (step-by-step, step-by-step with stop, co-ownership's or automatic, dead-man).
- Possibility to choose the equipment configuration among swinging, overhead/barrier and sliding, single or double.
- SAFETY DEVICE choice with N.C. contact or 8K2 resistive.
- Anti-crushing enabling (motion inversion for 2 seconds and stop) or amperometric detection for limit switch.

UK

- 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 watch management with three different modalities, number of cycles for scheduled maintenance, installer code and 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 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 the power cables and always keep them separate (minimum cross-section 1.5 mm²) from the signal cables (minimum cross-section 0.5 mm²).
- 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 are 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 application are not used.
- After installation, always check carefully proper functioning of the system and the devices used.
- This instruction manual addresses persons qualified for 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. Check the aim of the final use and make sure that all safety measures are taken.
- 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 device with visible warning plates.
- Warn the user that children or animals may not play or stand around near the gate.
- Appropriately protect the danger points (for example, using a sensitive frame).
- The control board alone will not ensure safety against crushing. Make sure that the safety devices connected to the control board are appropriate for the purpose.

UK

WARNINGS FOR THE USER

In the event of an operating fault or failure, cut the power upstream of the control unit and call Technical Service. Periodically check 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 control unit 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: FASTONS

Terminal	Cable colour	Description
CF1 CF2	RED	Secondary connection of 24Vac transformer

ELECTRICAL CONNECTIONS: TERMINAL BOARDS

Terminal	Position	Signal	Description	
JP1	1	AC	Battery charger equipment connection	
	2	AC	Battery charger equipment connection	
	3	+ SK	Battery charger equipment connection	
	4	- SK	Battery charger equipment connection	
	5	M1	Motor 1	
	6	M1	Motor 1	
	7	M2	Motor 2	
	8	M2	Motor 2	
	9	LAMP	Flashing light output 24Vdc 10W max.	**Working**: Fast flashing in opening, off in stand-by, fast flashing in closing
	10	LAMP	Flashing light output 24Vdc 10W max.	
JP4	11	COM	Negative electrical lock (common)	
	12	EL1	Positive +24 Vdc motor 1 electrical lock	
	13	EL2	Positive +24 Vdc motor 2 electrical lock	
	14	COM	External accessory power supply negative (common)	
	15	WARNING LIGHT	Warning light output 24Vdc 3W max.	**Working**: Slow flashing during opening, fixed light during pause, fast flashing during closing
	16	+ ACC	+24Vdc external accessory power supply (photocells, radio, etc.)	
	17	+ SAF	+24Vdc external safety device power supply	

UK

JP3	**18**	START	START input (N.O.)	
	19	PED	PEDESTRIAN input (N.O.)	
	20	STOP	STOP input (N.C.). If not used, jumper with terminal n° 29	
	21	FCAM1	Opening limit switch input - motor 1 (N.C.) If not used, disable during programming	
	22	FCCM1	Closing limit switch input - motor 1 (N.C.) If not used, disable during programming	
	23	FCAM2	Opening limit switch input - motor 2 (N.C.) If not used, disable during programming	
	24	FCCM2	Closing limit switch input - motor 2 (N.C.) If not used, disable during programming	
	25	PH2	PHOTOCELL 2 input (N.C.). If not used, disable during programming or jumper with terminal n. 29 **Operation**: Input active during both opening and closing. If intercepted, it immediately stops the motion and holds it stopped until the photocell is freed. Upon release, motion always restarts in opening. If intercepted when the gate is closed, following a START command, it does not allow opening the gate and it will be signalled with 5 fast flashes, then the warning light turns on to indicate that the gate is in stand-by. Upon release, the gate will START opening without further commands. If intercepted during pause, it reloads the pause time.	
	26	PH1	PHOTOCELL 1 input (N.C.). If not used, disable during programming or jumper with terminal n. 29 **Operation**: Input active 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 the pause time.	
	27	RESERVE	Multifunctional input	**External clock:** See **PROGRAMMING E9**
	28	EDGE	SAFETY DEVICES input (see menu C9) If not used, disable during programming. **Operation**: Input active during both opening and closing. It stops and inverts the motion for 2 sec. The gate will remain locked until the next START pulse, which will restart it in the obstacle freeing direction. When active in stand-by, after the START/pedestrian the door does not move and 3 long flashes (2 sec.) will signal the anomaly. If active in pause, the door does not close automatically (if expected) and 3 long flashes (2 sec.) will signal the anomaly.	
	29	COM	COMMON INPUTS-OUTPUTS	

JP5	**30**	GND	ANTENNA BRAID input
	31	ANT	ANTENNA SIGNAL input

JP6			Connector for plug-in radio receiver

UK

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	PHOTO1	Always on. It turns off when the photocell 1 is intercepted
DL11	RED	RESERVE	Lights when the contact switch from open to close and remain on until the contact switch off
DL12	GREEN	VCC	Always on. It shows logic circuit power supply

PROTECTION FUSES

Position	Value	Type	Description
F1	15 A	/	Accessories and motor protection, power supply from battery charger circuit
F2	15 A	/	Equipment, motor and safety devices protection
F3	500 mA	FAST	Accessories protection

UK

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
H9 Pause time
E94 Firmware release

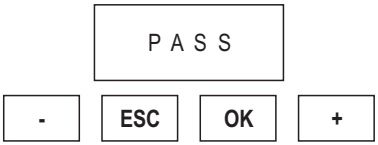
UK

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 M E N U on the display.
	After 3 s appears P A S S 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 E X I T 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: 1 2 3 4** 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.

UK

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

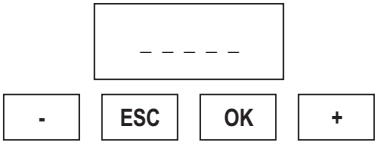
The ESC button will move the flashing digit to the left until the first digit.

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 P A S S 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.



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”

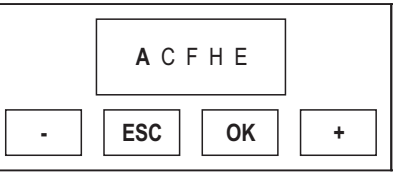
In this case the buttons + and OK will mean:

+ → START
OK → STOP

UK

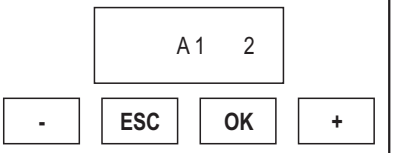
MENU A: SYSTEM CONFIGURATION AND OPERATING LOGIC SELECTION

Example Programming **MENU A**



When the display shows the main menus (letters A C F H E or just some of them depending on which password has been 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

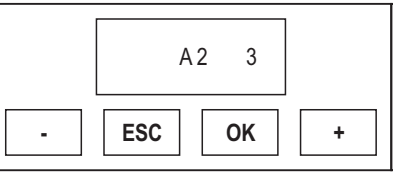


By means of + or – buttons you can select the submenus (A1, A2, A3,…) The digits on the lcd are fixed to show that is no possible any modification. The button ESC lets you to go to the upper level (menus A, C, F, H E).

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 + and – 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. With this setting, the outputs for the electrical lock 2 can be used for a 3 minutes timed courtesy light.
		3	It configures the system for two motors.

UK

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.
A3	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.
A3	AUTOMATIC / CONDOMINIUM LOGIC	4	It enables the AUTOMATIC/CONDOMINIUM logic **Operation:** START → open Next START(s) → uninfluential if the system is opening, or it re-charges the pause time (if the gate is in pause) and the automatic closing is activated. After pause time: - 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.
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 – AMPEROMETRIC LEVEL during 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.

UK

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 A C F H E or just some of them depending on which password has been 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.
C 2 2 **-** **ESC** **OK** **+**	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)

UK

Description **MENU C**

Menu	Function	Status	Description
C1	FAST CLOSING	1	It disables the fast closing function
		2	Enables fast closing function. **Operation:** Active only on photocell 1. 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 SWITCHES AND AMPEROMETRIC OPERATION"
		3	Enables the double reading of the limit switch. See paragraph "LIMIT SWITCHES AND AMPEROMETRIC OPERATION"
C5	DECELERATIONS	1	Disables the deceleration function
		2	Enables the deceleration function
C6	ANTI-CRUSHING / LIMIT SWITCH AMPEROMETRIC	1	ANTI-CRUSHING / LIMIT SWITCH AMPEROMETRIC function not enabled
		2	Enables the ANTI-CRUSHING function Amperometric inverts the motion **WARNING:** ENABLE THE ANTI-CRUSHING ONLY IF ALSO THE LIMIT SWITCHES ARE ENABLED
		3	Enables the LIMIT SWITCH AMPEROMETRIC function Amperometric stops the motion
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 N.C. contact enabled
C10	HAMMER STROKE	1	Disables the hammer stroke function
		2	Enables the hammer stroke in closing to allow the electrical lock release. **Operation:** when the START command is given, the sequence is: - electrical lock activation - closing motion **1 s** - opening - after **2 s** electronic lock release Not activated with the sliding configuration. We suggest to not use the "Hammer stroke" function with electro-mechanical operators.

UK

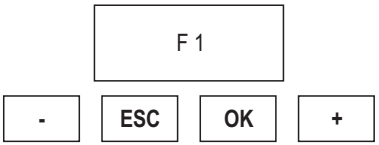
C10	HAMMER STROKE	3	Enables the hammer stroke function both in opening and closing to allow the electric lock release. **Operation:** When the START command is given, the sequence is: - electric lock activation - pulse in closing / opening of **1 s** - opening / closing - after **2 s** electric lock release Not active with sliding configuration We suggest to not use the "Hammer stroke" function with electro-mechanical operators.
C11	FINAL STROKE IN OPENING AND CLOSING	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 decelerations, a pulse of 3 s is given with the power set up in F2 and F6 menus, followed by another pulse of 2 s with the power set up in F1 and F5 menus. When the decelerations are active, the final stroke is given at the end of the deceleration period. The end stroke is controlled by the amperometric level, adjusted in F4 and F8 menus during the first 3 s and in F3 and F7 menus in the following 2 s. The end stroke is not controlled by safety devices. Not active with sliding configuration and dead man logic.
		3	Enables the final stroke in opening and closing **Operation:** At the end of the opening and closing time without decelerations, a pulse of 3 s is given with the power set up in F2 and F6 menus, followed by another pulse of 2 s with the power set up in F1 and F5 menus. When the decelerations are active, the final stroke is given at the end of the deceleration period. The end stroke is controlled by the amperometric level, adjusted in F4 and F8 menus during the first 3 s and in F3 and F7 menus in the following 2 s. The end stroke is not controlled by safety devices. Not active with sliding configuration and dead man logic.
C12	ADDITIONAL TIME T3 IN OPENING AND CLOSING	1	Additional time T3 disabled
		2	Enables the "Additional time T3" function in closing **Operation:** Sets up T3 as the time set up for the deceleration with the same force setting of F2 and F6 menus
		3	Enables the "Additional time T3" function in opening and closing **Operation:** Sets up T3 as the time set up for the deceleration with the same force setting of F2 and F6 menus

UK

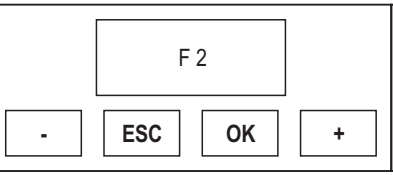
C13	HYDRAULIC LOCKING MAINTENANCE	1	Disables the “Hydraulic locking maintenance” function
		2	Enables the “Hydraulic locking maintenance” function ONLY FOR HYDRAULIC OPERATORS **Operation:** If in last 5 hours the gate has not done any manoeuvre, a pulse in closing of 2 s. is given The activation of the key STOP in any situation disables the function. The function is automatically disabled with SLIDING – DEAD MAN configuration
C14	SOFT START	1	Disables the “Soft start” function
		2	The motion starts decelerated for 0,5 s
		3	The motion starts decelerated for 1 s
		4	The motion starts decelerated for 2 s

MENU F: FORCE AND SPEED ADJUSTEMENT

Example Programming **MENU F**

	When the display shows the main menus (letters A C F H E or just some of them depending on which password has been 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 (F1, F2, F3)... 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, , 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.

UK

	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)

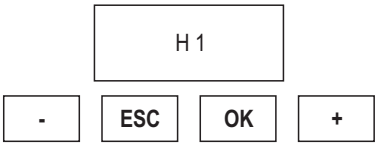
Description **MENU F**

Menu	Function	Description
F1	MOTOR 1 FORCE	Adjusts the thrust of motor 1. 0001 = minimum force 0010 = maximum force
F2	MOTOR 1 DECELERATION SPEED	Adjusts the thrust of motor 1 during deceleration phase. 0001 = minimum force 0010 = maximum force
F3	MOTOR 1 FORCE AMPEROMETRIC	Adjusts the amperometric threshold of motor 1 during the full force motion. 0001 = minimum threshold 0100 = maximum threshold
F4	MOTOR 1 DECELERATION AMPEROMETRIC	Adjusts the amperometric threshold of motor 1 during the deceleration. 0001 = minimum threshold 0100 = maximum threshold
F5	MOTOR 2 FORCE	Adjusts the thrust of motor 2. 0001 = minimum force 0010 = maximum force
F6	MOTOR 2 DECELERATION SPEED	Adjusts the thrust of motor 2 during deceleration phase. 0001 = minimum force 0010 = maximum force
F7	MOTOR 2 FORCE AMPEROMETRIC	Adjusts the amperometric threshold of motor 2 during the full force motion. 0001 = minimum threshold 0100 = maximum threshold
F8	MOTOR 2 DECELERATION AMPEROMETRIC	Adjusts the amperometric threshold of motor 2 during the deceleration. 0001 = minimum threshold 0100 = maximum threshold

UK

MENU H: TIME SETTINGS

Example Programming **MENU H**

	When the display shows the main menus (letters A C F H E or just some of them depending on which password has been 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.
	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. With OK you confirm and go to the next step The ESC button moves the blinking digit to the left until the first digit you can modify.
	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. With OK you confirm and go to the next step The ESC button moves the blinking digit to the left until the first digit you can modify.

UK

H 1 - ESC OK +	Appears again menu H1. With ESC return to the upper level (menu A, C, F, H, E)

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

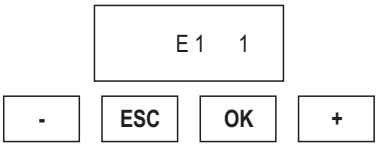
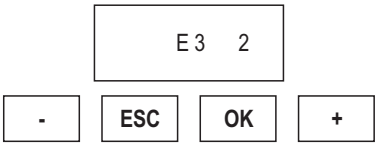
Menu	Function	Description
H1	MOTOR 1 OPENING TIME	Leaf 1 opening time. Tmax 300 s.
H2	MOTOR 1 CLOSING TIME	Leaf 1 closing time. Tmax 300 s
H3	MOTOR 1 DECELERATION TIME	Leaf 1 operating time in deceleration mode. Tmax 100 s
H4	MOTOR 2 OPENING TIME	Leaf 2 opening time. Tmax 300 s
H5	MOTOR 2 CLOSING TIME	Leaf 2 closing time. Tmax 300 s
H6	MOTOR 2 DECELERATION TIME	Leaf 2 operating time in deceleration mode. Tmax 100 s
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 100 s
H8	LEAF 1 PHASE SHIFT TIME IN CLOSING	Delay the START in closing 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 100 s
H9	AUTOMATIC CLOSING PAUSE TIME	Determines the pause time in opening before automatic closing. Tmax 300 s
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

UK

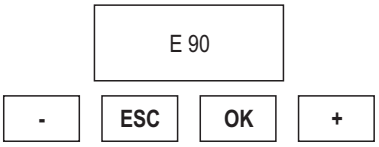
MENU E: ENABLING AND DISABLING

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.

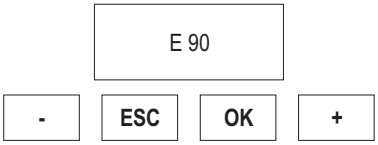
Example Programming **MENU E** **from E1 to E89**

	When the display shows the main menus (letters A C F H E or just some of them depending on which password has been 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 (E1, E3, E5,..) 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 E 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 A C F H E or just some of them depending on which password has been 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.

UK

	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.
	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. With OK you confirm and go to the next step. The ESC button moves the blinking digit to the left until the first digit you can modify.
	The next digit starts blinking With + and – buttons you can modify the value of the blinking digit. With OK you confirm and go to the next step. The ESC button moves the blinking digit to the left until the first digit you can modify.
	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 14 and 17. **Operation:** When the START or the PEDESTRIAN command is given, the power to safety devices is taken off for 0,5 sec. and then restored: if the photocell 1 input opens and immediately goes back to N.C. the motors START, otherwise a fault will be signalled by 4 blinks (1 sec.) of the flashing light.

UK

E3	SAFETY DEVICES 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 amperometric circuit is tested. If an anomaly is detected, it will be indicated by 4 slow blinks (2 sec.) of the flashing light. **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 seconds and then restored: if the inputs of the safety devices open and immediately go back to N.C., the motors START, otherwise a fault is signalled with 3 long flashes (2 sec.). **PHASE 3**: if the edge 8K2 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.). **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 WITH TWO MOTORS	1	Courtesy light not activated with 2 motors
		3	Courtesy light activated with 2 motors **Operation:** Active on the electrical lock output 2 for 3 minutes after the end of the motors movement
E9	EXTERNAL CLOCK	1	Disables the RESERVE input (CLOCK NOT ACTIVE)
		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

UK

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.

UK

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 movement to close the leaf even if there is wind.
The T3 function is not active with the sliding configuration.

LIMIT SWITCHES AND AMPEROMETRIC 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.

IIf 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 to set up the operating time higher than the time necessary to reach the limit switch.
If the decelerations aren't enabled, the limit switches stop the motion if T3 and/or the end stroke in opening/closing aren't present.

The additional time T3 and the end stroke in opening/closing, if enabled, work even in presence of limit switches.

If you use the single reading of limit switches with decelerations activated, during the deceleration phase the intervention of the amperometric threshold will cause the end of the motion (the anti-crushing is not active).

IIf you use the double reading of limit switches with decelerations activated, during the deceleration phase the intervention of the amperometric threshold will cause the activation of the anti-crushing, if enabled.

WARNING:
The C11 menu “FINAL STROKE” is default disabled.
Adjust the limit switches so that they stop the gate motion at about 5 cm from the stop in opening and/or closing.
After defining the correct position of the limit switches, enable the C11 menu selecting the 2 or 3 mode.

BATTERIES USE

If the installation is preset for the use of batteries, the amperometric thresholds and the forces must be set checking the working even when the control equipment is supplied only by the batteries.
When the control equipment is supplied only by the batteries, the voltage of the motor power supply is lower, thus the motor absorptions will be lower too.

The control equipment checks the level of the power supply voltage:

- with voltage higher than 24V the control equipment is supplied with net voltage, no restriction;
- with voltage lower than 24V the power supply source is the batteries, the motors do not decelerate;
- with voltage around 20-21V, the battery is almost exhausted; it is possible to open the door but not to close it. When the leaf should START the motion, it does not move and the fault “exhausted battery” is signalled by 4 slow blinks of the flashing light;

UK

- with voltage around 16V, the battery is exhausted, no movement is allowed. Following a command, the fault "exhausted battery is signalled with 4 s blinks (fast in opening, slow in stand-by).
  In this case, the battery voltage could be insufficient for both the flashing light and the warning light

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

Fault	Signal	Effect
Photo 2 intercepted in stand-by in presence of START command	5 fast flashings	When released it opens
Hedge intercepted in stand-by in presence of START command	3 slow flashings	Blocked closed door
Hedge intercepted in pause in presence of START command or at the closing beginning	3 slow flashings	Blocked open door
Photo 1 test failed at opening beginning	4 fast flashings	Blocked closed door
Photo 1 test failed at closing beginning	4 fast flashings	Blocked open door
Amperometric circuit test failed at opening beginning	4 slow flashings	Blocked closed door
Amperometric circuit test failed at closing beginning	4 slow flashings	Blocked open door
Hedge N.C. test failed at opening beginning	3 slow flashings	Blocked closed door
Hedge N.C. test failed at closing beginning	3 slow flashings	Blocked open door
Hedge 8K2 test failed at opening beginning	2 slow flashings	Blocked closed door
Hedge 8K2 test failed at closing beginning	2 slow flashings	Blocked open door
Batteries 20-21V in stand-by in presence of START command	4 seconds slow flashing (*)	The only opening is allowed
Batteries 20-21V in stand-by in presence of START command or at closing beginning	4 seconds slow flashing (*)	Blocked open door
Batteries 16V in stand-by in presence of START command	4 seconds fast flashing (*)	Blocked closed door
Batteries 16V in stand-by in presence of START command or at closing beginning	4 seconds slow flashing (*)	Blocked open door
Expired maineinance	1 minute slow flashing with closed door	None

(*) When batteries tension is low the switching on of flashing and warning lights could not be visible.
(*) If the flashing light setting is with fixed light (C2-3), the blinking is not present but only the fixed switching on.

UK

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 (GENERAL AND PEDESTRIAN)

• Parameters type C

- C1 → 1 FAST CLOSING DISABLED
- C2 → 2 INTERMITTENT FLASHING LIGHT
- C3 → 2 PRE-FLASHING ENABLED
- C4 → 3 DOUBLE READING OF THE LIMIT SWITCH ENABLED
- C5 → 2 DECELERATIONS DISABLED
- C6 → 3 LIMIT SWITCH AMPEROMETRIC ENABLED
- C7 → 2 PHOTOCELL 1 ENABLED
- C8 → 1 PHOTOCELL 2 DISABLED
- C9 → 1 SAFETY EDGE DISABLED
- C10 → 1 HAMMER STROKE DISABLED
- C11 → 1 FINAL STROKE DISABLED
- C12 → 1 ADDITIONAL TIME T3 EXCLUDED
- C13 → 1 HYDRAULIC LOCKING MAINTENANCE EXCLUDED
- C14 → 2 SOFT START 0,5 s

• Parameters type F

- F1 → 10 MOTOR 1 FORCE
- F2 → 05 MOTOR 1 DECELERATION
- F3 → 80 AMPEROMETRIC MOTOR 1 FORCE
- F4 → 50 AMPEROMETRIC MOTOR 1 DECELERATION
- F5 → 10 MOTOR 2 FORCE
- F6 → 05 MOTOR 2 DECELERATION
- F7 → 80 AMPEROMETRIC MOTOR 2 FORCE
- F8 → 50 AMPEROMETRIC 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 TIME IN OPENING
- H8 → 5 LEAF 1 PHASE SHIFT TIME IN CLOSING
- H9 → 20 PAUSE TIME
- H10 → 5 PEDESTRIAN OPENING TIME
- H11 → 20 PEDESTRIAN PAUSE TIME

UK

• 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
• 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 normally closed contacts are on and the green LEDs of the normally 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.

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 BA24

are in conformity with the following EEC 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 10/05/2014

The legal Representative
Michele Prandi

NOTES

Cod. AIC5220 - 05/2014 - Rev. 01

GI.BI.DI. S.r.l.
Via Abetone Brennero, 177/B
46025 Poggio Rusco (MN) - ITALY
Tel. +39.0386.52.20.11
Fax +39.0386.52.20.31
E-mail: comm@gibidi.com

Numero Verde: 800.290156

w w w . g i b i d i . c o m