

## :BA230

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Apparecchiatura elettronica ISTRUZIONI PER L'INSTALLAZIONE

Electronic control unit INSTRUCTIONS FOR INSTALLATIONS

I - Questo prodotto è stato collaudato in GI.BI.DI. verificando la perfetta corrispondenza delle caratteristiche alle direttive vigenti.

- La GI.BI.DI. S.r.l. si riserva la facoltà di modificare i dati tecnici senza avviso, in funzione dell'evoluzione del prodotto.


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- 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.

F - Ce produit a été essayé en Gi.Bi.Di. en vérifiant la correspondance parfaite des caractéristiques aux règles en vigueur.

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## POR FAVOR LEER CON ATENCIÓN ESTE MANUAL ANTES DE PROCEDER CON LA INSTALACIÓN.

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- Gi.Bi.Di. S.r.l. behält sich das recht vor, die technischen daten der produktentwicklung entsprechend ohne voranzeige abzuändern.


## BITTE LESEN SIE VORSICHTIG DIESEN MANUAL BEVOR MIT DER ANGLAGE VORZUGEHEN.

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- Dit product werd gekeurd in Gi.Bi.Di. Er werd nauwlettend gecontroleerd of de kenmerken van het product perfect overeenkomen met de geldige richtlijnen.
- Gi.Bi.Di. S.r.I. behoudt zich het recht voor de technische gegevens te wijzigen zonder waarschuwing vooraf, als dat nodig is voor de evolutie van het product.


## LEES DEZE GEBRUIKSAANWIJZING ZEER AANDACHTIG ALVORENS DE INSTALLATIE AAN TE VATTEN.






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1



| Control unit | BA230 / AS05550 |  |
| :--- | :---: | :---: |
| Type | Electronic control unit for the automation <br> of one or two 230V motors for swinging and sliding gates, <br> overhead doors and barriers |  |
| Power supply | 230 Vac monophase $50 / 60 \mathrm{~Hz}$ |  |
| $\mathrm{~N}^{\circ}$ motors | 1 or 2 |  |
| Motor power supply | 230 Vac |  |
| Flashing light | 230 Vac 40 W max |  |
| Warning light | 24 Vdc 3 W max |  |
| Electric lock | 12 Vdc 15 W max |  |
| Accessory power supply | 24 Vdc 8 W max including safety devices power supply |  |
| Safety device power supply | 24 Vdc 8 W max including accessories power supply |  |
| Radio receiver | Plug-in |  |
| Operating temperature | $-20^{\circ} \mathrm{C}+60^{\circ} \mathrm{C}$ |  |
| Operating time | 300 s max |  |

## TECHNICAL SPECIFICATIONS / FUNCTIONS

- Times self-learning.
- Red warning leds of n.c. contacts. There is not the safety devices led (ex. edge), the possible anomaly is indicated by the writing SAF on the LCD.
- Green warning leds of n.o. contacts.
- 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 o perating 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.
- SAFETY DEVICE choice with N.C. contact or 8 K 2 resistive.
- Specific menu for the exclusion of the accessories not used (photocell 1 , photocell 2 and safety devices).


## UK

- Management of courtesy light with 12 Vdc or 230 Vac output.
- 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 and number of performed cycles.


## INSTALLATION

Use glands adequate to ensure proper mechanical connection of cable and maintain the box protection degree IP55. (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 $1,5 \mathrm{~mm}^{2}$ ) separate from the signal cables (minimum cross-section $0,5 \mathrm{~mm}^{2}$ ).
- 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).


## 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

| 1 | CF1 - CF3 | Primary connection of 230Vac transformer (black cables) |
| :--- | :--- | :--- |
| 2 | CF2 - CF4 | Secondary connection of 14Vac transformer (red cables) |
| 3 | CF5 - CF6 | Secondary connection of 22Vac transformer (blue cables) |
| 4 | CF7 - CF8 | Motor 2 capacitor connection |
| 5 | CF9 - CF10 | Motor 1 capacitor connection |

## ELECTRICAL CONNECTIONS: TERMINAL BOARDS

| Morsetto | Posizione | Segnale | Descrizione |
| :---: | :---: | :---: | :--- |
| JP1 | 1 | PHASE | Power supply 230Vac |
|  | 2 | NEUTR | Power supply 230Vac |
|  | 3 | GND | Ground wire connection |
|  | 4 | GND | Ground wire connection |


| JP2 | 5 | LAMP | Flashing light output 230Vac 40W | Operation: <br> Fast flashing during opening, off during pause, slow flashing during closing |
| :---: | :---: | :---: | :---: | :---: |
|  | 6 | LAMP | Flashing light output 230 Vac 40 W |  |
|  | 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) |  |


| 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 | SPIA | Warning light output +24 Vdc 3 W max | Operation: <br> Slow flashing during opening, fixed light during pause, fast flashing during closing. |
|  | 18 | + ACC | External accessories (photocells, radio...) +24Vdc power supply |  |
|  | 19 | + SAF | External safety devices +24 Vdc power supply. CAUTION: output present only during the operating cycle |  |


|  | 20 | START | START (N.O.) input |
| :---: | :---: | :---: | :--- |
|  | 21 | PED | PEDESTRIAN input(N.O.) (It opens for the time set in menu H10). <br> WARNING |
| WARter an emergency intervention with motion intervention of the second leaf, the <br> pedestrian command will startboth motors. |  |  |  |
|  | 22 | STOP | STOP input (N.C.). <br> If not used, jump with terminal n 032 |
|  | 23 | FCAM1 | Limit switch input opens motor 1 (N.C.). <br> If not used, disable during the programming phase. |
|  | 24 | FCCM1 | Limit switch input closes motor 1 (N.C.). <br> 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 | PHOTOCELL2 inp Ifnot used, disable <br> Operation: <br> Inputenabled during If intercepted, it sto freed. Upon releas If intercepted when opening of the gate on to indicate that without further com If intercepted durin | ming phase. <br> closing. <br> diately and holds it stopped until the photocell is ts in opening. <br> following a Start command it does not allow the with 5 fast flashes, then the warning light turns nd-by. Upon release, the gate will start opening <br> pause time. |
|  | 28 | RISERVA | Multitasking input | External watch: <br> SEE PROGRAMMING C16-C17-C18 |
| JP4 | 29 | COSTA | SAFETYDEVICES If not used, disable <br> Operation: <br> Input enabled durin It stops and invert pulse, which will ma If the input is enable the door will not mo If the input is enabl automatic closing is <br> THEEDGE ENABL | ing phase. <br> osing. <br> The gate will remain locked until the next Start acle-freeing direction. <br> stand-by, after a Start or a Pedestrian command ( 2 sec.) will signal the fault. <br> pause, the door does not close automatically (if flashes ( 2 sec .) will signal the fault. <br> BYTHE WRITING "SAF" ONTHELCD. |
|  | 30 |  | Not used |  |
|  | 31 | PH1 | PHOTOCELL 1 inp Ifnot used, disable <br> Operation: Input enabled only completely. If the g If intercepted durin It can be enabled to | ming phase. <br> ops and inverts the motion, opening the gate not affect its functioning. use time (if C2 disabled). SING. |
|  | 32 | COM | COMMON INPUTS - OUTPUTS |  |


| JP6 | 33 | GND | ANTENNA BRAID input |
| :--- | :--- | :--- | :--- |
|  | 34 | ANT | ANTENNA SIGNAL input |


| JP7 |  |  | Connector for plug-in radio receiver |
| :--- | :--- | :--- | :--- |

## PROTECTION FUSES

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

## PROGRAMMING PROCEDURE AND SYSTEM CONFIGURATION

The system adjustments can be accessed via the display. There are 5 different menus marked with the letters A, $C, F, H$ and $E$.


|  |  |  |  | 2 <br> The writing PASS appears on the display. <br> Press the OK key to go to step 3. <br> Pressing simultaneously the keys + and - for 3 s , all default settings will be loaded (only the performed cycles settings remain stored). Press the ESC key to go back to step 1. |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| - - <br> - PASS <br> -  <br> - - | $\begin{array}{ll} - & - \\ - & \text { PASS } \\ - \\ - & - \\ \hline \end{array}$ |  |  |  |  |
|  | ESC | OK | + |  |  |



|  |  |  |  | 4 |
| :---: | :---: | :---: | :---: | :---: |
| 4000 |  |  | + | The second figure is flashing. <br> With the + or-keys, the user selects the second digit of the installer code. <br> When the required digit is selected, press OK to confirm and go to step 5. |


|  |  |  |  | 5 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 4600 | $\begin{array}{r} 4 \\ \hline \\ \hline \text { ESC } \\ \hline \end{array}$ | OK | + | The third digitis flashing. <br> With the + or - keys, the user selects the third digit of the installer code. <br> When the required digit is selected, press OK to confirm and go to step 6. |  |


|  |  |  |  | 6 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 4680 |  |  |  | The last figure is flashing. <br> With the + or - keys, the user selects the fourth digit of the installer code. <br> When the required digit is selected, press OK to confirm and go to step. |  |


|  |  |  |  | 7 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 4683 |  |  |  | Now the installer code is complete: ifitis correct, go to step 8. <br> If the installer code is incorrect, go back to step 2. |  |
| - | ESC | OK | + |  |  |

## PROGRAMMING EXAMPLE

| MENU A |  |  | 8 |
| :---: | :---: | :---: | :---: |
| ACFHE |  |  | The 5 main menus appear on the display (letters AC FHE), the A is flashing. <br> Use the + or - keys to select the other menus (the relative letter will blink). <br> Press OK to enter the selected menu (in the example, menuA). |
| $\square$ |  |  | 9 |
|  |  |  | Use the + or - keys to enter the submenus (A1, A2, A3, A4, ...) <br> Press OK to confirm the selected menu; a" $Y$ " will appear next to the menu to indicate that it is enabled. |
|  |  |  | 10 |
|  |  |  | With the + and - keys the other submenus are displayed; follow the same procedure as above. <br> Press ESC to go back to the higher level (menuA, C, F, HE). |



| MENU H | 13 |
| :--- | :--- | :--- |



| MENU E | 20 |
| :--- | :--- | :--- |
| Enter the submenu E to see the ENABLING/DISABLING setting. |  |
| Press OK to enter the menu. |  |



## MENU A: SYSTEM CONFIGURATION AND OPERATING LOGIC SELECTION

KEY + enters the following menu A1-A2-A3-...
KEY - enters the previous menu A3-A2-A1...
KEY ESC leaves the menu
KEY OK enables $Y$ (yes). It enables the function and automatically disables the complementary function (example; the activation of A4 $=1$ motor automatically disables A5 = 2 motors)

| Menu | Function | Status | Description |
| :---: | :---: | :---: | :---: |
| A2 | SWING / OVERHEAD DOOR / BARRIER | Y | It configures the system for swing gate, overhead door or barrier. The activation of this menu automatically disables A3. |
| A3 | SLIDING GATE | Y | It configures the system for a sliding gate. <br> This configuration automatically excludes: <br> gate phase shifts in opening and closing <br> hammer stroke <br> 2 s opening and closing final stroke <br> T3 additional time <br> NOTE: the limit switches are NOT activated automatically, choose the required configuration with menu C5 <br> The activation of this menu automatically disables A2. |
| A4 | 1 MOTOR CONFIGURATION | Y | It configures the system for 1 motor. <br> In the menu C11 it will be possible to set the courtesy light output: <br> $\mathrm{N}=$ courtesy light disabled <br> Y1 = courtesy light on MOTOR 2 output (diagram output 230 Vac ) (3) <br> Y2 = courtesy light on ELECTRIC LOCK 2 output (see diagram 12 Vdc output) <br> The courtesy light output is 3-minutes timed. <br> The activation of this menu automatically disables A5. |


| A5 | 2 MOTORS CONFIGURATION | Y | It configures the system for 2 motors. <br> In the menu C11 it will be possible to set the courtesy light output: surrendering the electric lock2 <br> $\mathrm{N}=$ courtesy light disabled <br> $\mathrm{Y} 1=$ courtesy light disabled <br> Y2 = courtesy light on ELECTRIC LOCK 2 output (see diagram 12 Vdc output) <br> The courtesy light output is 3 -minutes timed. <br> The activation of this menu automatically disablesA4. |
| :---: | :---: | :---: | :---: |
| A6 | STEP BY STEP WITH STOP LOGIC | Y | It enables the STEP BY STEPWITH STOP Logic <br> Operation: <br> If automatic closing has been activated (menu C1) 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. During pause, a Start command closes the gate. <br> Pedestrian command is uninfluential in opening and in pause. In closing it opens both leaves. <br> The activation of this menu automatically disables A7-A8-A9. |
| A7 | STEP BY STEP LOGIC | Y | It enables the STEP BY STEP Logic <br> Operation: <br> If automatic closing has been activated (menu C1) 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. During the pause, a Start command closes the gate. <br> Pedestrian command is uninfluential in opening and in pause. In closing it opens both leaves. <br> The activation of this menu automatically disables A6-A8-A9. |
| A8 | AUTOMATIC / CONDOMINIUM LOGIC | Y | It enables the AUTOMATIC/CONDOMINIUM Logic <br> Operation: <br> Start $\rightarrow$ apre <br> NextStart(s) $\rightarrow$ uninfluential if the system is opening or it reloads the pause time (if the gate is in pause) and the automatic closing is enabled. <br> When the pause time has elapsed, if the automatic closing is enabled (menu C1), the system closes automatically. If the automatic closing is disabled, Start closes the gate. <br> If the opening is pedestrian, a pedestrian command closes the gate. Pedestrian is uninfluential in opening and in pause In closing it opens both leaves. <br> The activation of this menu automatically disables A6-A7-A9. |
| A9 | DEAD MAN LOGIC | Y | It enables the DEAD MAN Logic <br> WARNING: 2 motors always operate <br> Operation: <br> Start $\quad \rightarrow$ closes only if the Pedestrian key is held down. <br> Pedestrian $\rightarrow$ opens only if the Start key is held down. <br> In Dead Man's mode the keys on the control unit mean: <br> Start (Key + ) Pedonale (Key -) $\boldsymbol{\rightarrow}$ open close |


| A9 | DEAD MAN LOGIC | Y | The opening and closing movement in the dead man's mode stops <br> always on the first limit switch. <br> The possible regulations are: PHASE SHIFT IN OPENING - PHASE <br> SHIFTINCLOSING. <br> The enabling of this menu automatically disablesA6-A7-A8. |
| :--- | :--- | :--- | :--- |

## MENU C: FUNCTIONS SELECTIONS

$\mathrm{KEY}+$ enters the following menu $\mathrm{C} 1-\mathrm{C} 2-\mathrm{C} 3-.$.
KEY - enters the previous menu C3-C2-C1...
KEY ESC leaves the menu
KEY OK enables $Y$ (yes). It enables or selects the function
KEY OK enables $N$ (no). It disables the function

| Menu | Function | Status | Description |
| :---: | :---: | :---: | :---: |
| C1 | AUTOMATIC CLOSING | YT | Enables automatic closing after both complete opening and pedestrian opening. |
|  |  | YS | Enables only automatic closing after a complete opening. If pedestrian opening is enabled, the pedestrian key will close the gate. |
|  |  | YP | Enables only automatic closing after a pedestrian opening. |
|  |  | N | Disables automatic closing <br> If the pedestrian opening is enabled, the pedestrian key will close the gate. <br> If complete opening is enabled, a Start command will close the gate and the pedestrian key will be uninfluemtial. |
| C2 | FAST CLOSING | Y | Enables fast closing function <br> Operation: <br> Enabled only on photocell 1. <br> Reduces pause time to 3 s following interception and subsequent freeing of the photocells. |
|  |  | N | Disables fast closing function |
| C3 | PRE-FLASHING | Y | Enables 3-second pre-flashing before motors start |
|  |  | N | Disables pre-flashing. The flashing light and the motors start at the same time. |
| C4 | SAFETY DEVICES TEST See also menu C20 | Y | Enables the safety devices test <br> When the device is enabled (edge intercepted), the writing SAF appears on the LCD <br> Operation: <br> PHASE 1: when the Start or the Pedestrian command is given, the electronic circuitis tested: relay, triac, etc. <br> 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. <br> If the control unit is set for one motor, the test will be performed only for motor 1 circuit. <br> WARNING: During the test, the motors will be activated in opening and closing for about 300 msec . <br> dUE TO THE MOTION, THE DOOR MAY CRASH AGAINST THE MECHANICAL STOPS. CHECK THE SYSTEM SAFETY/INTEGRITY AFTERTHIS PHASE. |


| C4 | SAFETY DEVICES TEST <br> See also menu C20 | Y | The exclusion of SAFETY DEVICE by mean of the menu E3 excludes the safety edge test. <br> PHASE 2: if the edge with N.C. contact is enabled, when the Start or Pedestrian command is given, the power to the safety devices is cut off for $0,5 \mathrm{~s}$ 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. <br> PHASE 3: if the 8K2 edge is enabled, when the Start or the Pedestrian command is given the SAFETY DEV input is tested (value 8 K 2 ). If the value is not correct, the fault is signalled with 2 long flashes ( 2 sec .) of the flashing light. <br> The indication of the fault detected will be only one (the first one to be detected), even if there is more than one fault. |
| :---: | :---: | :---: | :---: |
|  |  | N | Disables the safety devices test. |
| C5 | LIMIT SWITCHES | E1 | Enables the single limit switch reading. <br> See the paragraph "USE OF THE LIMIT SWITCHES" |
|  |  | E2 | Enables the double limit switch reading. See the paragraph "USE OF THE LIMIT SWITCHES" |
|  |  | N | Disables the limit switch reading. |
| C6 | DECELERATIONS | Y1 | Enables the type 1 deceleration function. |
|  |  | Y2 | Enables the type 2 deceleration function. |
|  |  | Y3 | Enables the type 3 deceleration function. |
|  |  | N | Disables the deceleration function. |
| C7 | WATER HAMMER | Y1 | Enables the water hammer function to help the release of the electric lock/s in OPENING <br> Operation: <br> After the Start command, the sequence is: <br> - Electrical locks enabling <br> - 1 s pulse in closing <br> - opening <br> - After 2 s , electrical locks release <br> Disabled with sliding configuration |
|  |  | Y2 | Enables the water hammer function to help the electrical lock/s release in OPENING and CLOSING <br> Operation: <br> After the Start command, the sequence is: <br> - Electrical locks enabling <br> - Motor pulse in the electrical lock freeing direction <br> - Motion direction in the required direction <br> - After 2 s , electrical locks release <br> Disabled with sliding configuration |
|  |  | N | Disables the water hammer function. |
| C8 | FINAL STROKE IN OPENING AND CLOSING | Y | Enables the final stroke in opening and closing <br> Operation: <br> At the end of the opening and closing time without decelerations, a 2 s pulse with full power is given. |


| C8 | FINAL STROKE IN OPENINGAND CLOSING | Y | If decelerations are enabled, the pulse is given at the end of the deceleration time. <br> The final stroke is not managed by the safety devices. Disabled with sliding configuration and with dead man logic |
| :---: | :---: | :---: | :---: |
|  |  | N | Disables the closing final stroke function. |
| C9 | SAFETY DEVICE | 8K2 | Enables the edge with 8 K 2 in series resistance. <br> Runs the safety test on the 8K2 edge (check the correct resistive value) if enabled with menu $44-E 3$. |
|  |  | NC | Enables the edge provided with n.c. contact (normally closed). Runs the safety test on the n.c. edge if enabled with menu C4-E3. |
| C10 | DISABLED |  |  |
| C11 | COURTESY LIGHT | Y1 | Enables the courtesy light working on motor 2 output. If the installation has 2 motors the courtesy light will not be active COURTESYLIGHT 230 Vac (see diagram). <br> Timed 3 min after the motors motion end. |
|  |  | Y2 | Enables the courtesy light working on electrical lock 2 output COURTESYLIGHT 12 Vdc . <br> Timed 3 min after the motors motion end. |
|  |  | N | Disables the courtesy light. |
| C13 | T3 ADDITIONAL TIME | N | T3 excluded. |
|  |  | YF | Sets T3 as the time set for the deceleration with the same setting of menus F 1 and F 5 . |
|  |  | YS | Sets T3 as the time set for the deceleration with the same setting of menus F2 and F6. |
| C14 | INVERSION FROM PEDESTRIAN | Y | During the PEDESTRIAN closing, the PHOTO1-PHOTO2PEDESTRIAN command will determine only the pedestrian opening. The START will cause complete opening. |
|  |  | N | During the PEDESTRIAN closing, the PHOTO1-PHOTO2-PEDESTRIAN-START command will cause the complete opening. |
| C15 | FLASHING LIGHT | Y | Blinking flashing light output (slow blinking in opening, fast in closing). |
|  |  | N | Flashing light fixed output. |
| C16 | EXTERNAL WATCH, CLOSING ALLOWED | Y | Enables the RESERVE input for the connection of an external watch. <br> Operation: <br> If the contact on the RESERVE input is closed, following a START command the door opens but does not close automatically. When the contact closes, after the pause time the door will close automatically. When the door is open, closing can be started with a START command if the menu enabled is STEP-BY-STEP or STEP-BY-STEP WITH STOP. <br> CAUTION: remember to set automatic closing. |
|  |  | N | Disables the RESERVE input. |


| C17 | EXTERNAL WATCH, CLOSING NOT ALLOWED | Y | Enables the RESERVE input for the connection of an external watch <br> Operation: <br> If the contact on the RESERVE input is closed, following a START command the door opens but does not close automatically. When the contact closes, after the pause time the door will close automatically. Closing cannot be started with a START command. <br> CAUTION: remember to set automatic closing. |
| :---: | :---: | :---: | :---: |
|  |  | N | Disables the RESERVE input. |
| C18 | EXTERNAL WATCH AUTOMATIC OPENING AND CLOSING COMMAND | Y | Enables the RESERVE input for the connection of an external watch Operation: <br> When the contact on the RESERVE input is closet, an automatic opening command will be enabled (a START command is not required). The door will open but will not close automatically. When the contact is closed, the door will close automatically after the pause time. Closing cannot be enabled with START. <br> CAUTION: remember to set automatic closing. |
|  |  | N | Disabilita l'ingresso RISERVA. |
| C19 | OLEODYNAMIC BLOCK MAINTENANCE | Y | Enables the oleodynamic block maintenance function ONLY FOR OLEODYNAMIC OPERATORS <br> Operation: <br> If in the last 5 hours the gate has not performed a manoeuvre, a 2 s pulse in closing is given. <br> The enabling of the STOP key in any moment disables the function. <br> The function is automatically disabled with SLIDING - DEAD MAN configuration |
|  |  | N | Disables the oleodynamic block maintenance |
| C20 | PHOTOCELL 1 TEST | Y | Enables photocell 1 test. <br> The photocell 1 transmitter mustbe connected to the clamps 16 and 19. Operation: <br> Whenthe "Start" or the "Pedestrian" command is given, the power to safety devices is cut off for 0,5 and then restored: if the photocell 1 input opens and immediately returns NC the motors start, otherwise a fault will be signalled by 4 blinks ( 1 sec .) of the flashing light. |
|  |  | N | Disables photocell 1 test 1. |
| C21 | AUTOMATIC PROGRAMMING | Y | Enables times programming in self-learning. Operation: <br> See "Times self-learning procedure". |

## MENU F: FORCE AND SPEED ADJUSTMENTS

| Menu | Function | Description |
| :---: | :---: | :--- |
| F1 | MOTOR 1 FORCE | Adjusts motor 1 thrust. <br> $0001=$ minimum force. <br> $0010=$ maximum force. |


| F2 | MOTOR 1 DECELERATION SPEED 1 | Adjusts motor 1 thrust during deceleration phase. $0001=$ minimum force. $0010=$ maximum force. |
| :---: | :---: | :---: |
| F5 | MOTOR 2 FORCE | Adjusts motor 2 thrust. $0001=$ minimum force . $0010=$ maximum force. |
| F6 | MOTOR 2 DECELERATION SPEED 2 | Adjusts motor 2 thrust during deceleration phase. $0001=$ minimum force. <br> $0010=$ maximum force. |

## MENU H: TIMES ADJUSTMENTS AND SETTINGS

All 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 | Delays the start in opening of leaf 2 with respect to leaf 1 . In the case of double sliding gate, the time H 7 will not be considered. Tmax 100 s . |
| H8 | LEAF 1 PHASE SHIFT TIME IN CLOSING | Delays the start in closing of leaf 1 with respect to leaf 2 . In the case of double sliding gate, the time H 8 will not be considered. Tmax 100 s . |
| H9 | AUTOMATIC CLOSING PAUSE TIME | Determines the pause time in opening before the automatic closing. Tmax 300 s . |
| H10 | PEDESTRIAN OPENING TIME | Determines the pedestrian opening time. Tmax 300 s . |
| H11 | AUTOMATIC PEDESTRIAN CLOSING PAUSE TIME | Determines the pause time in pedestrian opening before automatic closing. Tmax 300 s. |
| H12 | CYCLES NUMBER | Allows the setting of a number of cycles (opening + closing) before the maintenance request. <br> The value set will always be multiplied for 10 . <br> If 0000 is set, the numbering is excluded. <br> 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. <br> WARNING: Every time you enter the menu H12, the cycles numbering is reset and starts again. |
| H13 | INSTALLER CODE | Allows the input of the installer code to customize the settings in the programming phase. <br> The INSTALLERCODE is the only way to enter the programming menu. <br> WARNING: in case of loss of the installer code, it will be possible to delete the old one by pressing simultaneously the keys + and - for $3 s$ when the writing PASS appears. In this way, all the existing settings are erased and the default ones are automatically set. Only the settings of the performed cycles are still stored in memory. |
| H14 | SOFTWARE VERSION | Shows the firmware version installed on the equipment. (R_XX) |
| H15 | NUMBER OF PERFORMED CYCLES | Number of performed cycles. The value displayed on the LCD is increased every 10 movements. |

(*) time must be sufficient to reach the limit switches

## UK

## MENU E: EXTERNAL DEVICES ENABLING-DISABLING

KEY + enters the following menu E1-E2-E3
KEY - enters the previous menu E3-E2-E1
KEY OK enables $Y$ (yes). Enables the function.
KEY OK enables N (no). Disables the function.
KEY ESC leaves the menu.
WARNING: The STOP key cannot be excluded in menu $E$. If it is not used, jumper the clamps 22-32.

| Menu | Function | Status | Description |
| :---: | :---: | :---: | :--- |
| E1 | PHOTOCELL 1 | Y | Photocell 1 enabled. |
|  |  | N | Photocell 1 disabled. |
| E2 | PHOTOCELL 2 | Y | Photocell 2 enabled. |
|  |  | N | Photocell 2 disabled. |
| E2 | EDGE (SEFETY DEVICE) | Y | Edge enabled. |
|  |  | N | Edge disabled. |

## TIMES MANAGEMENT

## 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.
During the T3 time, the anti-crushing is not active, so the T3 time must start as near as possible to the door stroke.
The limit switch that determines T3 must not be exceeded to maintain the control of the limit switches in case of motion inversion.

## TIMES LEARNING PROCEDURE

CAUTION: start with the gate completely closed.
Times are programmed by means of sequences of START pulses.
Select the menu C21 to enter this procedure. (menu C21 blinking).
The times learning procedure starts by pressing OK (menu C21 Y fixed) then:

## 1 motor configuration

- START $\rightarrow$ the leaf starts opening.
- When the leaf arrives at the desired opening position $\rightarrow$ START $\rightarrow$ the leaf stops.
- Counting of the pause time in opening starts.
-When the desired pause time has elapsed $\rightarrow$ START $\rightarrow$ the leaf starts closing.
- When the leaf arrives at the closing position $\rightarrow$ START $\rightarrow$ the leaf stops.
- Now the procedure has finished, the menu C21 reappears blinking (without Y).
- 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 $\rightarrow$ leaf 1 starts opening
- START $\rightarrow$ leaf 2 starts opening
-When leaf 1 arrives at the desired opening position $\rightarrow$ START $\rightarrow$ leaf 1 stops
- When leaf 2 arrives at the desired opening position $\rightarrow$ START $\rightarrow$ leaf 2 stops
- Counting of the pause time in opening starts
- When the desired pause time has elapsed $\rightarrow$ START $\rightarrow$ leaf 2 starts closing
- START $\rightarrow$ Leaf 1 starts closing. (phase shift time setting)
-When leaf 2 arrives at the closing position $\rightarrow$ START $\rightarrow$ leaf 2 stops
- When leaf 1 arrives at the closing position $\rightarrow$ START $\rightarrow$ leaf 1 stops
- Now the procedure is over, the menu C 21 reappears blinking (without Y )
- 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


## WARNING:

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 C6) and set the decelerations times (menu H3 and H6).
During the times self-learning phase, the limit switches and the amperometric thresholds are not considered.
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.

## USING THE LIMIT SWITCHES

If the deceleration function is enabled, the limit switches mark the start of the deceleration time. The gate continues the decelerated motion for the time set in menus H 3 and H 6 .
If 2 limit switches are used, the first one starts the deceleration and the second one ends it.
The deceleration, if enabled, will start upon reaching the limit switches and will last for the time H 3 and H 6 until the second limit switch has been reached, ending the deceleration phase.

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

The simultaneous pressure of the + and - keys for 3 seconds when the writing PASS is displayed will reset all values, and the default settings will be loaded (only the number of performed cycles are still stored).

## FLASHING LIGHT SIGNALS SUMMARY

| Device | Signal | Effect |
| :--- | :---: | :---: |
| Photo 2 intercepted in stand-by after a <br> start command | 5 fast flashings | When released, it opens |
| Edge intercepted in stand-by after a <br> start command | 3 slow flashings | Blocked closed door |
| Edge intercepted in pause after a start <br> command or at closing | 3 fast flashes | Blocked open door |

## UK

| 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 <br> with closed door | None |

(*) If the flashing light setting is with fixed light (C15 d), the blinking is not present but only the fixed switching on.

## DEFAULT SETTINGS

- Active parameters type A:

| A2 | $\rightarrow Y$ | SWING GATE/OVERHEAD DOOR/BARRIER TYPE |
| :--- | :--- | :--- |
| A5 | $\rightarrow Y$ | 2 MOTORS |
| A8 | $\rightarrow Y$ | AUTOMATIC-CONDOMINIUM USING |

## - Parameters type C:

| C1 | $\rightarrow$ | YT | GENERAL AND PEDESTRIAN AUTOMATIC CLOSING ENABLED |
| :---: | :---: | :---: | :---: |
| C2 | $\rightarrow$ | N | FAST CLOSING DISABLED |
| C3 | $\rightarrow$ | Y | PREFLASHING ENABLED |
| C4 | $\rightarrow$ | N | SAFETY DEVICES TEST DISABLED |
| C5 | $\rightarrow$ | E1 | LIMIT SWITCH ENABLED (single pair) |
| C6 | $\rightarrow$ | N | DECELERATIONS DISABLED |
| C7 | $\rightarrow$ | N | WATER HAMMER DISABLED |
| C8 | $\rightarrow$ | N | FINAL CLOSING STROKE DISABLED |
| C9 | $\rightarrow$ | NC | SAFETY DEVICE (EDGE) WITH N.C. CONTACT |
| C11 | $\rightarrow$ | N | COURTESY LIGHT DISABLED |
| C13 | $\rightarrow$ | N | T3 EXCLUDED |
| C14 | $\rightarrow$ | N | IN PEDESTRIAN CLOSING, IT ENABLES COMPLETE OPENING |
| C15 | $\rightarrow$ | Y | INTERMITTENT FLASHING LIGHT |
| C16 | $\rightarrow$ | N | EXTERNAL CLOCK CONTACT DISABLED |
| C17 | $\rightarrow$ | N | EXTERNAL CLOCK CONTACT DISABLED |
| C18 | $\rightarrow$ | N | EXTERNAL CLOCK CONTACT DISABLED |
| C19 | $\rightarrow$ | N | OLEODYNAMIC BLOCK MAINTENANCE DISABLED |
| C20 | $\rightarrow$ | N | PHOTO 1 TEST DISABLED |

## - Parameters type F:

F1 $\rightarrow 10$ MOTOR 1 FORCE

| F2 | $\rightarrow$ | 05 | MOTOR 1 DECELERATION |
| :--- | :--- | :--- | :--- |
| F5 | $\rightarrow$ | 10 | MOTOR 2 FORCE |
| F6 | $\rightarrow$ | 05 | MOTOR 2 DECELERATION |

## - Parameters type H :

| H1 | $\rightarrow$ | 25 | MOTOR 1 OPENING TIME |
| :---: | :---: | :---: | :---: |
| H2 | $\rightarrow$ | 25 | MOTOR 1 CLOSING TIME |
| H3 | $\rightarrow$ | 20 | MOTOR 1 DECELERATION TIME |
| H4 | $\rightarrow$ | 25 | MOTOR 2 OPENING TIME |
| H5 | $\rightarrow$ | 25 | MOTOR 2 CLOSING TIME |
| H6 | $\rightarrow$ | 20 | MOTOR 2 DECELERATION TIME |
| H7 | $\rightarrow$ | 5 | LEAF 2 PHASE SHIFT IN OPENING |
| H8 | $\rightarrow$ | 5 | LEAF 1 PHASE SHIFT IN CLOSING |
| H9 | $\rightarrow$ | 5 | PAUSE TIME |
| H10 | $\rightarrow$ | 5 | PEDESTRIAN OPENING TIME |
| H11 | $\rightarrow$ | 5 | PEDESTRIAN PAUSE TIME |
| H12 | $\rightarrow$ | 0000 | NUMBER OF CYCLES |
| H13 | $\rightarrow$ | 0000 | INSTALLER CODE |
| H14 | $\rightarrow$ | xxxx | SOFTWARE VERSION (format: R__xx) |
| H15 | $\rightarrow$ | 0000 | NUMBER OF CYCLES DONE |

## - Parameters type E:

| E1 | $\rightarrow$ | Y | PHOTOCELL 1 ENABLED |
| :---: | :---: | :---: | :---: |
| E2 | $\rightarrow$ | Y | PHOTOCELL 2 ENABLED |
| E3 | $\rightarrow$ | Y | SAFETY DEVICE (EDGE) |

## FINAL CHECKS AND TESTING

Before powering the control unit, run the following tests:
1- Check the electrical connections: improper connection may be harmful to both the control unit and the operator.
2- Check proper position of the limit switches.

## POWER THE DEVICE

3- Check that the red LEDs of the normally closed contacts are on and the green LEDs of the normally open contacts are off
4- Check that the writing SAF does not appear on the LCD (intercepted or faulty edge).
5 - Check that the relative LEDs turn off when limit switches work.
6 - Check that the relative LED turns off when the photocells ray is intercepted.
7- Check that the relative LED turns off when the safety devices work.
8 - Check that the motors are locked and ready to work with the "GATE COMPLETELY CLOSED".
9 - 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. If not invert the wires in the terminals M1 and/or M2.

## 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.


## SIMPLIFIED PROGRAMMING

1- Connect all the connections (wire motors using a $1,5 \mathrm{~mm}^{2}$ wire)
2- Enter the installation code, and then set the type of function desired from menu A2/A3.
3- Set the number of motors used. Menu A4/A5.
4- Set the operation mode. Menu A6/A7/A8/A9.
5- Go to menu C21, and select «Y» to activate automatic time programming, then press «START» (+ key) (see page 20 "Time learning procedure")
6- Go to menu C 5 to choose the number of limit switches. We recommend programming a single limit switch when stopping points are present.
7- Go to menu C 6 to program slowdowns.
8- Use the dedicated menus to adjust each time parameter.
9- Press «ESC» to exit programming.
10- Check whether the force used by operators on the gate is either sufficient or excessive. Go to menu $F$ to adjust, if necessary.

## CE Declaration of conformity

The manufacturer:

GI.BI.DI. S.r.I.<br>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
- EN61000-6-2, EN61000-6-3

Date 23/03/09



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