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CE DECLARATION OF CONFORMITY

Manufacturer: FAAC S.p.A.

Address: Via Calari, 10 - 40069 Zola Predosa BOLOGNA - ITALY

Declares that: Control board E721

• conforms to the essential safety requirements of the following EEC directives

2006/95/EC Low Voltage Directive

2004/108/EC Electromagnetic Compatibility Directive

Additional note:

This product has undergone testing in a typical

standard configuration (all products built by FAAC S.p.A.)

Bologna, 01-12-2011

CEO

A. Marcellan

A Mouly

WARNINGS

- Attention! To ensure the safety of people, it is important that you read all the following instructions.
- Incorrect installation or incorréct use of the product could cause serious harm to people.

E721

1 WARNINGS



Before attempting any work on the control board (connections, maintenance), always turn off power.



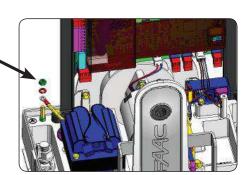
Install, upstream of the system, a differential thermal breaker with adequate tripping threshold.



Connect the earth lead to the appropriate terminal.



Always separate power cables from control and safety cables (push-button, receiver, photocells, etc.). To avoid any electric noise, use separate sheaths or a shielded cable (with earthed shield).



2 LAYOUT AND COMPONENTS

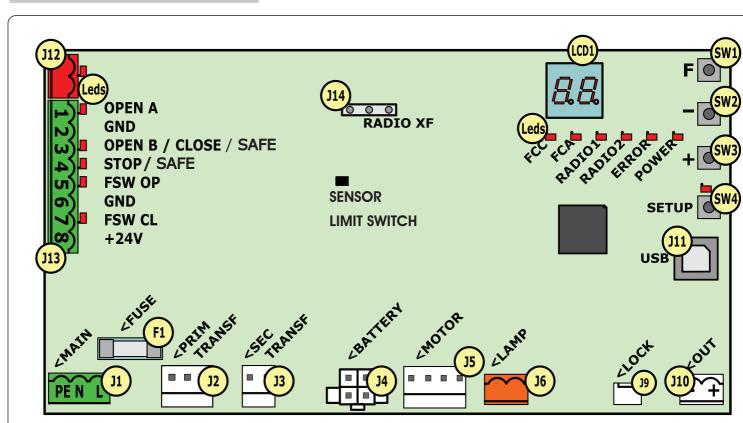


Fig.





2.1 COMPONENT DESCRIPTION

2.1	COMI CIVEIVI DESCRII IICIV
LCD	SIGNALLING AND PROGRAMMING DISPLAY
SW1	PROGRAMMING PUSH-BUTTON " F ".
SW2	PROGRAMMING PUSH-BUTTON "-".
SW3	PROGRAMMING PUSH-BUTTON "+".
SW4	"SETUP" PUSH-BUTTON
LEDs	INPUTS STATUS CONTROL LED
Jl	MAIN POWER SUPPLY CONNECTOR
J2	TRANSFORMER PRIMARY WINDING CONNECTOR
J3	TRANSFORMER SECONDARY WINDING CONNECTOR
J4	EMERGENCY BATTERY CONNECTOR (ACCESSORY)
J5	MOTOR CONNECTOR
J6	FLASHING LAMP CONNECTOR (24 V= - 15W)
J9	MOTOR LOCK AND MOTOR RELEASE CONTACT CONNECTOR
J10	OUT OUTPUT CONNECTOR
J11	USB CONNECTOR FOR PC CONNECTION
J12	BUS-2EASY DEVICE CONNECTION CONNECTOR
J13	INPUT CONNECTOR IN CONNECTOR BLOCK
J14	RADIO RECEIVER MODULE CONNECTOR FOR OMNIDEC
LCD1	SIGNALLING AND PROGRAMMING DISPLAY
Fl	PROTECTION FUSE

2.2 DESCRIPTION OF TERMINAL BLOCK J13

INPUT	No	DESCRIPTION
1	OPEN A	Device with N.O . contact that causes total opening of the gate
2-6	GND	Accessory power supply negative
3 (1)	OPEN B (DEFAULT)	Device with N.O. contact that causes partial opening of the gate
	CLOSE	Device with N.O. contact that closes the gate
	SAFE	Device with N.C. contact that causes the immediate and complete reversal of the gate
4 (1)	STOP (DEFAULT)	Device with N.C . contact that halts the gate
	SAFE	Device with N.C. contact that causes the immediate and complete reversal of the gate
5	FSW OP	Device with N.C contact that reverses the motion during gate opening
7	FSW CL	Device with N.C contact that reverses the motion

3 TECHNICAL SPECIFICATIONS

	or Lon Toan Cito
Power supply	230 V VERSION : 230 V~ 50 Hz 115V VERSION : 115 V~ 60 Hz
Power consumption	10 W
from mains stand-by	
Motor max. load	10A
Accessory	24 V=
power supply	
Accessory	24 V= max. 500 mA
max. current	BUS-2EASY max. 500 mA
Environmental	(-20 - +55) °C
temperature	
Flashing lamp	24 V= - 15 W
load	
Output load	24 V= - 100 mA (2)
Protection	F1 = T1A - 250V∼
fuses	
Function	Semiautomatic, Semiautomatic "st
logics	Automatic, Automatic "step", Aut
	matic with timer function, Automa
	Safety devices, Automatic Safety de
	"step", Automatic with reverse on po
	Semiautomatic "b", Mixed logic "b Dead-man.
Work time	Programmable (from 0 to 10 min
Pause time	Programmable (from 0 to 10 min
OPEN A / OPEN B	Adjustable aver EO lavels
Motor power	Adjustable over 50 levels
Opening-closing	Adjustable over 10 levels
motor speed	Barran ar march B. H. A.
Connector Inputs/	Power supply, Battery, Motor, Modu
Outputs	XF433/868, Motor lock electric release
	teries, Motor Lock, USB
Inputs/Outputs in	BUS-2EASY, OPEN A, OPEN B/CLOSE/S
terminal block	STOP/SAFE, GND, Opening and clos
	photocells, +24 V=, Mains power su
	Flasher, Electric release motor lock,
Programming	1 st and 2 nd level with 3 keys (+, -, F)
	display.



(1) The uses of inputs 3 and 4 can be set by configuring the corresponding parameters at programming level 2 (parameters 🕒 and 50). For the exact description on how to operate the automated system with the chosen logics, please refer to the tables featured at the end of this manual (Par. 10 - OPERATION LOGICS. As for the wiring required using these SAFE configured inputs, please refer to the diagrams shown in Fig.13 and Fig. 14

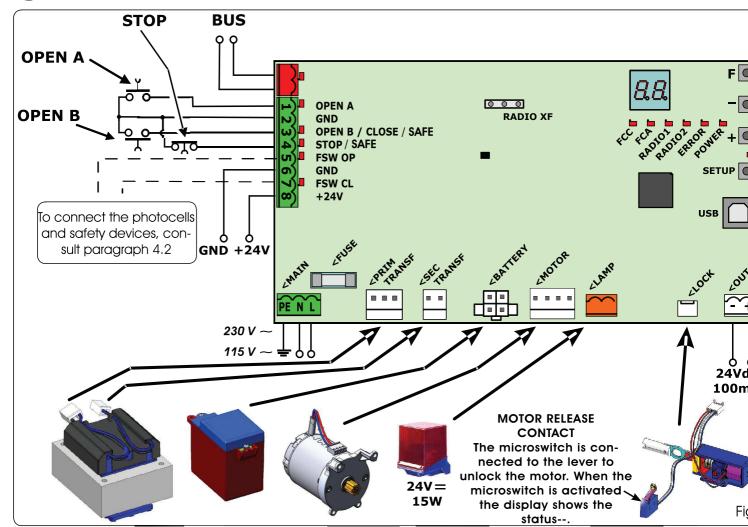


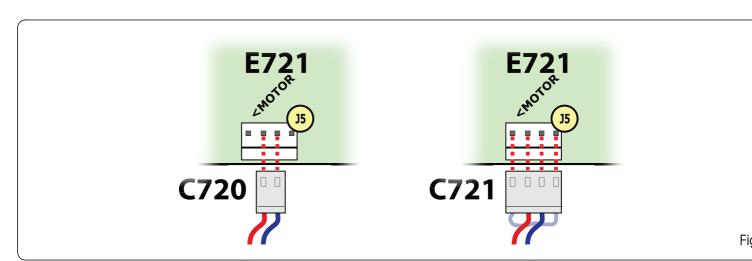
(2) The output load must be considered as already included in the max. current available for the accessories

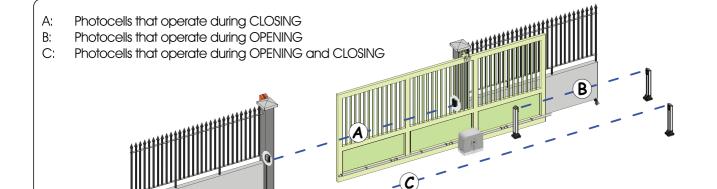


4 ELECTRIC CONNECTIONS

The wiring shown in Fig. 2 refers to the inputs of the board with DEFAULT configuration.











Before connecting the photocells, it is advisable to select Tab. 1 - Addressing BUS-2EASY photocells the type of operation on the basis of the area of movement that they need to protect:

Safety devices during closing: operate only during the automated system closing movement and are therefore suitable for protecting the closing area from the risk of impact.

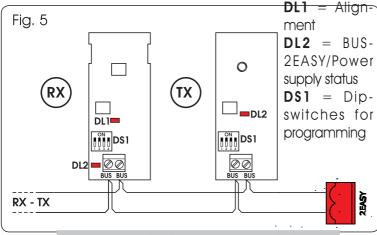
Safety devices during opening: operate only during the automated system opening movement and are therefore suitable for protecting the opening area from the risk of impact.

Safety devices during opening/closing: operate during both the automated system opening and closing movements and are therefore suitable for protecting the entire movement area from the risk of impact.

4.1 BUS-2EASY PHOTOCELLS

This board is equipped with a BUS-2EASY circuit that can be used to easily connect a high number of auxiliary BUS-2EASY devices to the safety device (e.g. up to 16 pairs of photocells), appropriately programmed, using only two cables without polarity.

Before connecting the photocells, it is advisable to select the type of operation (Fig. 4) on the basis of the area of movement the cells must protect and to position the dip switches on both the transmitter and receiver (see Fig. 5) as in Tab. 1.



4.1.1 ADDRESSING BUS-2EASY PHOTOCELLS



It is important to give both the transmitter and the receiver the same address.



Ensure that there are not two or more photocell pairs with the same address.



If no BUS-2EASY accessory is used, leave the BUS-2EASY connector (J12 - fig. 1) free.

Dip1	Dip2	Dip3	Dip4	Re.	Туре
OFF	OFF	OFF	OFF		
OFF	OFF	OFF	ON		
OFF	OFF	ON	OFF	_	OPENING
OFF	OFF	ON	ON	В	Мах. 6 ра
OFF	ON	ON	OFF		
OFF	ON	ON	ON		
ON	OFF	OFF	OFF		
ON	OFF	OFF	ON		
ON	OFF	ON	OFF		
ON	OFF	ON	ON	Α	CLOSING Max. 7 pa
ON	ON	OFF	OFF		Wieski / pe
ON	ON	OFF	ON		
ON	ON	ON	OFF		
OFF	ON	OFF	OFF		OPENING C
OFF	ON	OFF	ON	С	CLOSING Max. 2 pa
ON	ON	ON	ON	/	OPEN PUL

4.1.2 STORING BUS-2EASY ACCESSORIES

At any time it is possible to add BUS-2EASY photo and accessories to the system, simply by followin procedure below:

- Install and programme the accessories with required address (see par. 4.1.1).
- Cut off power to the board.
- Connect both cables of the BUS-2EASY accesso the red terminal block J12 (polarity irrelevant).
- Power the board.
- Quickly press the SETUP push-button (SW4) on register the accessories. Check the operation of installed BUS-2EASY devices.
- 6. The board has stored the BUS-2EASY accessorie

Follow the instructions in the following table to chec the BUS-2EASY connection status is efficient.



The same procedure must be performed MASTER unit also when acquiring a SLAVI connected to the BUS- 2EASY with POLA connection

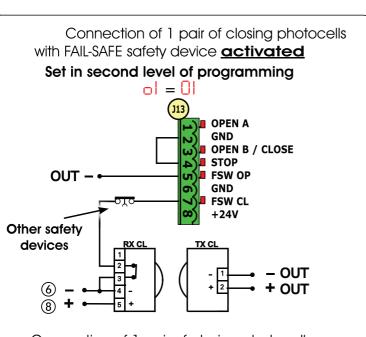
Tab. 2 - Description of BUS-2EASY LED

	•
Fixed ON	Normal activity (LED on even without tocells). No registered photocell enga
Slow flasher	At least one registered photocell engagor not aligned.
Off (flash every 2.5 secs)	BUS-2EASY line short-circuited.
	- BUS-2EASY line disabled (does not su

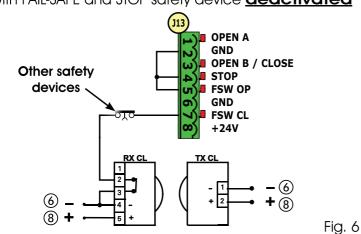


F/4

4.2 TRADITIONAL PHOTOCELLS



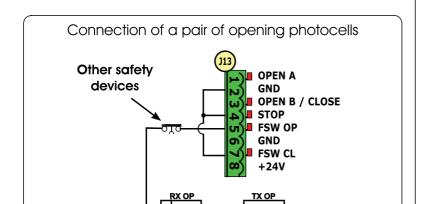
Connection of 1 pair of closing photocells with FAIL-SAFE and STOP safety device **deactivated**

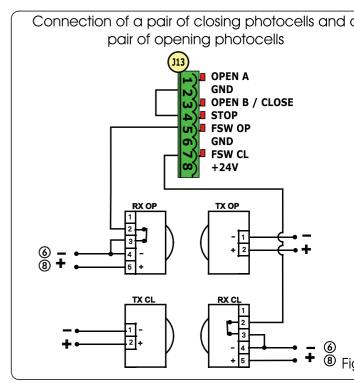


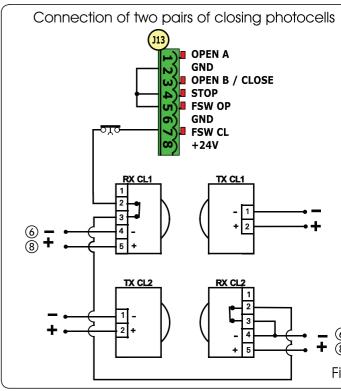
If the FAIL-SAFE safety device is not used, connect the power supply of the transmitters to terminals 6 and 8 of J13.

If the FAIL-SAFE safety device is used, connect the power supply of the transmitters to OUT after setting it as appropriate (see 2nd level programming and Fig. 6).

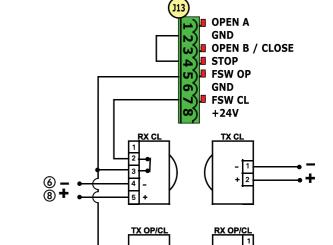
If the FAIL-SAFE safety device is used, even the unused safety inputs must be connected via a shunt lead to the negative of OUT (see Fig. 6).







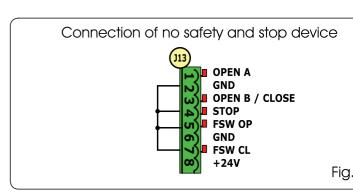
Connection of a pair of closing photocells and a p opening/closing photocells







Connection of a pair of closing photocells, a pair of opening photocells and a pair of opening/closing photocells OPEN A GND **OPEN B / CLOSE** STOP FSW OP GND **FSW CL** +24V Ŧ Fig. 11



4.3 SAFE INPUT CONNECTIONS

By setting: 2nd level o |= | (FAIL SAFE ENABLED)



If the Fail Safe safety device is enabled (parameter that can be set in programming level 2), the negative used for managing the SAFE input is - OUT (see Fig. 13).

Connection of a safety device (other safety devices) to the SAFE input with the FAIL SAFE function enabled

2nd level SP=0 (INPUT 4 = SAFETY EDGE SAFETY) Other safety devices OPEN A **GND** OPEN B / CLOSE - OUT SAFE / STOP FSW OP **GND FSW CL**

2nd level $\Box b = \Box 2$ (INPUT 3 = SAFETY EDGE SAFETY) Other safety devices OPEN A **GND** SAFE / OPEN B / CLC - OUT STOP FSW OP **GND**

FSW CL

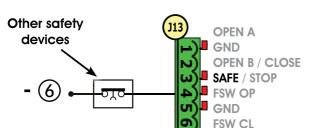
+24V

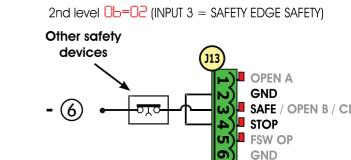
Fig.

If the Fail Safe safety device is disabled (parameter that can be set in programming level 2), the negative used for managing the SAFE input is - (6) (see Fig. 14).

Connection of a safety device (other safety devices) to the SAFE input with the FAIL SAFE function disabled

By setting: 2nd level - I=00 (FAIL SAFE DISABLED) 2nd level SP=0 (INPUT 4 = SAFETY EDGE SAFETY)







5 PROGRAMMING

It is necessary to access PROGRAMMING mode in order to program automated system operation.

Programming is divided in two parts: 1st LEVEL and 2nd LEVEL.



The status of the automated system is normally shown on the display. When push-button F is pressed or when F and + are pressed simultaneously, this gives access to 1st or 2nd level programming. During battery operation the display is off. Briefly press "+" to view the state of the automated system.



To restore the default settings, simply reload the desired default in the first passage of the 1st level programming.



Changes to the programming parameters become effective as soon as they are carried out, while final memorisation occurs only upon exiting programming and returning to the input state display. If the unit is powered down before returning to the input state display, all changes made will be lost.



It is possible to return to the input status display and store all the parameters modified to that moment from any point of the 1st and 2nd level programming by pressing keys F and - simultaneously.



When the board is turned on, the software version of the board with two figures separated by a decimal point appears on the LCD1 display.

5.1 1st LEVEL PROGRAMMING

To access 1st level programming, press push-button F.

- Press **F** (and hold down) to display the function name.
- If you release the key, the display shows the value of the function that can be modified with keys + and -.
- If you press F again (and hold it down), the display shows the name of the next function, etc.
- When you reach the last function, press push-button **F** to exit the program and store the parameters. The d shows again the status of the automated system.

1st LEVEL PROGRAMMING



Display	Function	Defa
ďF	DEFAULT: Configures the parameters with DEFAULT values. If push-button F is released, the value U appears, this means that the standard modified configuration has been selected by means of push-buttons and display. If you wish to maintain this programming, press push-button F again, otherwise press + and select default I .	1
CE	MASTER/SLAVE CONFIGURATION: Configures the board in MASTER mode Configures the board in SLAVE mode Configuring the board in SLAVE mode you will not be able to view the parameters LO-PA-Pb-Ph-Op (for Master/Slave operation see Par. 7.4)	nf
LO	FUNCTION LOGICS: E Semiautomatic. EP Semiautomatic "Step". A Automatic. Al Automatic 1. AP Automatic "Step". AL Automatic with timer function. S Automatic "Safety devices". Automatic Safety Devices "Step". Automatic with reverse during pause. Semiautomatic "b". Mixed (AP pulse/ CH dead-man). Dead-man. Parameter not displayed in SLAVE mode	E
PA	PAUSE TIME A:	

Pause time with a TOTAL opening command. This has effect only if the automatic logic was



Diamle	F aki an	
Display	Function	Defau
Pb	PAUSE TIME B: Pause time with a PARTIAL opening command. This has effect only if the automatic logic was selected. Adjustable from 0 to 59 secs. in one-second steps. Subsequently, display changes to minutes and tens of seconds (separated by a point) and time is adjusted in 10-second steps, up to the maximum value of 9.5 minutes.	20
	E.g. if the display shows 2.5, pause time is 2 min. and 50 secs Parameter not displayed in SLAVE mode	
FO	MOTOR POWER: Adjusts the motor power level = minimum power	50
	50 = maximum power When the power value has been changed, it is advisable to perform a new SETUP (see par. 7.3)	
So	OPENING SPEED: Adjusts the motor opening speed to 10 levels U = minimum speed	08
	When the speed value has been changed, it is advisable to perform a new SETUP (see par. 7.3)	
Sc	CLOSING SPEED: Adjusts the motor closing speed to 10 levels. = minimum speed	08
	When the speed value has been changed, it is advisable to perform a new SETUP (see par. 7.3)	
го	SLOWING DURING OPENING Adjusts the slowing space as a percentage of the total gate travel. Adjustable from 5 (with speed <5), 10 (with speed between 5 and 8), 15 (with speed >8) to 99 % in 1% steps. 5-10-15 = minimum slowing	20
	99 = maximum slowing	
гс	SLOWING DURING CLOSING: Adjusts the slowing space as a percentage of the total gate travel. Adjustable from 5 (with speed <5), 10 (with speed between 5 and 8), 15 (with speed >8) to 99 % in 1% steps. 5-10-15= minimum slowing 99 = maximum slowing	20
Sh	SPEED DURING SLOWING: Adjusts gate speed during slowing.	0
	U = LOW speed	
SE	Exit from programming, data storage, and return to gate status display.	
	OD = CLOSEDOT = FAIL SAFE in progressOI = OPENOB = BUS-2EASY device check in progressOB = Stop then "OPEN"OF = Preflashing then "OPEN"OB = Stop then "CLOSE"OF = Preflashing then "CLOSE"	progres





5.2 2nd LEVEL PROGRAMMING

- To access 2ND LEVEL PROGRAMMING, press push-button **F** and hold down while pressing push-button +:

 if you also release push-button **F**, the display shows the value of the function that can be modified with keys + as
- if you press key **F** (and hold down), the display shows the name of the next function. If you release it, the that can be modified with keys + and - is displayed.
- when you reach the last function, press F to exit programming, and the display resumes showing the autom system status.

2 nd LE\	2 nd LEVEL PROGRAMMING F + +				
Display	Function	Defa			
ьо	MAXIMUM TAKE-OFF POWER: The motor works at maximum power (ignoring the selected power level) during the movement take-off.	ПО			
	PREFLASHING:				
PF	Allows 5 types of preflashing to be selected, with a duration equal to 3 secs. Description: The preflashing is a closing movement. Description: The preflashing before a closing movement. Description: The preflashing before an opening movement. The preflashing only at end of pause.	mo			
. –	PREFLASHING TIME (visible only if preflashing is selected in the previous menu):				
LP	Adjusts preflashing time from 1 to 10 sec. in 1 second steps. Of the maximum preflashing time from 1 to 10 sec. in 1 second steps.	U			
Ph	CLOSING PHOTOCELLS:				
1 1	Activate the function if you want the closing photocells to lock movement and reverse it on disengagement. Normally, operation of the closing photocells immediately puts the gate into reverse when this function is off.				
	= reversal on disengagement = immediate reversal to opening. Parameter not displayed in SLAVE mode				
nP	OPENING PHOTOCELLS:				
יט	Activate the function if you want the opening photocells to lock movement and reverse it during closing. Normally, with this function off, operation of the opening photocells determines the resumption of movement on their disengagement.				
	 = immediate reversal to closing = resumption of motion on disengagement Parameter not displayed in SLAVE mode 				
Ad	ADMAP FUNCTION				
	Permits activation of operation in accordance with French standard NFP 25/362.				
	∃ = active □ = excluded				
EC	ENCODER:	08			
	The "virtual" encoder on the board operates as an anti-crushing device and manages the slowing and partial opening start points. If the gate strikes an obstacle during the opening or closing stage, the "virtual" encoder causes reversal of the motion. The second obstacle detected in the same direction causes the motor				

to stop. An alarm is signalled in both cases (see section on alarms).



MOTOR LOCK:



Ц

Display	Function	Defau
PO	PARTIAL OPENING: It is possible to adjust the width of the partial leaf opening as a percentage of the total gate travel. Adjustable from 0 to 99% in 1% steps. O = no partial opening O = minimum partial opening O = maximum partial opening	50
E	TIME-OUT It is advisable to set a value higher than the time taken by the gate to open or close fully. Adjustable from 10 to 59 sec. in 1 second steps. Subsequently, display changes to minutes and tens of seconds (separated by a point) and time is adjusted in 10-second steps, up to the maximum value of 9.5 minutes. E.g.: if the display shows 2.5, pause time is 2 min. and 50 secs. When using a system with MASTER/SLAVE configuration you must set a WORK TIME on the MASTER unit that takes into account the movement time of both leaves.	2.5
ol	OUT 1: Allows output OUT (open collector N.O.) to be activated in one of the following functions: \[\begin{align*} \text{OU} = Always enabled (supplies 24V voltage= with a max absorption of 100 mA)} \] \[\begin{align*} \text{OI} = FAIL-SAFE (monitors the correct operation of the connected traditional photocells)} \] \[\begin{align*} \text{O2} = WARNING LIGHT (off when closed, on during opening and open/pause, flashing during closing)} \] \[\begin{align*} \text{O3} = COURTESY LIGHT (see next function)} \] \[\begin{align*} \text{O4} = ALARM, BATTERY operation} \] \[\begin{align*} \text{O5} = gate OPEN or PAUSED} \] \[\begin{align*} \text{O5} = gate in MOTION} \] \[\begin{align*} \text{O8} = gate OPENING} \] \[\begin{align*} \text{O9} = gate CLOSING} \] \[\begin{align*} \text{O1} = ACTIVE safety} \] \[\begin{align*} \text{I} = timed output that can be activated by second radio channel (see next function)} \] \[\begin{align*} \text{O2} = output that can be activated by second radio channel (step function)} \]	00
El	TIMING OF OUT 1 (only if option 03 or 11 is selected at the previous step): Can be used to adjust timing of output OUT if a timed function was selected (e.g. 03 or 11) from 1 to 99 minutes in 1 minute steps.	02
ОЬ	OPEN B / CLOSE / EDGE SAFETY DEVICE: It is possible to select the use of OPEN B input as partial opening, CLOSE command or EDGE SAFETY DEVICE. OD = OPEN B OD = CLOSE OD = SAFETY EDGE SAFETY (N.C. contact) If you select a function logic that involves the use of the CLOSE command (logic b, bL, C) this function will be preset to OD and it will not be possible to change it.	00
SP	STOP / EDGE SAFETY DEVICE It is possible to select the use of STOP input as STOP or EDGE SAFETY DEVICE. OU = STOP OI = SAFETY EDGE SAFETY (N.C. contact)	00
₽	PARTIAL REVERSE: It is possible to set the reverse type (complete or partial) when an obstacle is encountered or when a safety edge is triggered. — Partial reverse activation. When an obstacle is encountered or when a safety edge is triggered the leaf reverses movement for approximately 2" and will then stop edge is triggered it completely reverses movement and will place itself in open or closed position	nc

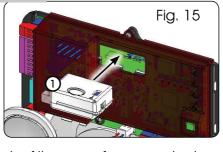




Display	Function		
AS	SERVICE REQUEST - CYCLE COUNTER (combined with the two successive functions): when the set number of cycles is reached with successive functions nc and nd, the system carries out an 8 sec. preflashing sequence (in addition to the sequence already set using the properties function) before each movement. successive functions nc and nd indicate how many cycles the system has performed up to the maximum possible display of 99.990. If the number of cycles is higher than 99.990, the two successive functions nc and nd will show 99 and 99 respectively.	mo	
	This function may be useful for setting programmed maintenance operations or for checking work cycles performed.		
nc	CYCLE PROGRAMMING (THOUSANDS): If A5 = \(\frac{1}{2} \) the display indicates the number of thousands of cycles after which service is required (may be set from \(\frac{1}{2} \) to \(\frac{9}{2} \)). If A5 = \(\frac{1}{2} \) the display indicates the number of thousands of cycles performed. The value displayed is updated with the sequence of cycles, interacting with the value of \(\frac{1}{2} \). If A5 = \(\frac{1}{2} \) press keys + and - for 5 sec. to zero the cycle counter.	00	
nd	CYCLE PROGRAMMING (TENS): If $\overrightarrow{HS} = \begin{subarray}{l} \end{subarray}$ the display indicates the number of tens of cycles after which service is required (may be set from $\begin{subarray}{l} \end{subarray}$). If $\overrightarrow{HS} = \begin{subarray}{l} \end{subarray}$ the display indicates the number of tens of cycles performed. The value displayed is updated with the sequence of cycles, interacting with the value of $\begin{subarray}{l} \end{subarray}$ is updated with the sequence of cycles, interacting with the value of $\begin{subarray}{l} \end{subarray}$. Example: if the system has performed 11.218, it will display $\begin{subarray}{l} \end{subarray}$ and $\begin{subarray}{l} \end{subarray}$ and $\begin{subarray}{l} \end{subarray}$ and $\begin{subarray}{l} \end{subarray}$ in $\begin{subarray}{l} \end{subarray}$ and $\begin{subarray}{l} \end{subarray}$ in $\begin{subarray}{l}$	00	
SE	STATUS OF AUTOMATED SYSTEM: Exit from programming, data storage, and return to gate status display. O = CLOSED O = FAIL SAFE in progress O = BUS-2EASY device check in progress O = Stop then "OPEN" O = Preflashing then "OPEN" O = Preflashing then "CLOSE" O = Preflashing then "CLOSE" O = Preflashing then "CLOSE" O = In "PAUSE" O = During opening stage O = During closing stage O = Motor unlocked		

6 STORING RADIO CODE

The control board is equipped with an integrated dual channel decoding system (DS, SLH, LC/RC) known as OMNIDEC. This system can use an additional receiving module (Fig.



15 ref. (1) and radiocontrols of the same frequency to store both total opening (OPEN A) and partial opening (OPEN B) of the automated system.



The 3 types of radio coding (DS, SLH, LC/ RC) can co-exist at the same time on the two channels. It is possible to enter up to 256 radio codes subdivided between OPEN A and OPEN B.



To use the different coding systems on the same channel, finish the learning process

6.1 STORING DS RADIOCONTROLS



It is possible to store a maximum of 256 codes divided between OPEN A and OPEN B/CLOSE.

- On the DS radiocontrol, select the required ON combination of the 12 dip-switches.
- Press and hold down push-button + (SW3) or and then press the SETUP push-button (SW4), to total opening (OPEN A) or partial opening (OP CLOSE) respectively. The corresponding LED (RA or RADIO2) will begin to flash slowly for 5 secs.
- 3. Release both push-buttons.
- 4. Within this 5 second period, press the required button on the radiocontrol.
- 5. The corresponding LED (RADIO1 or RADIO2) will of on with a fixed light for 1 second and then go indicate the setting has been stored.
- 6. To add other codes other than the one you have





7. To use radiocontrols with the same code, copy the ON - OFF combination to the other radiocontrols without the need to change anything on the control liting possible to store a maximum of board.

6.2 STORING SLH RADIOCONTROLS



It is possible to store a maximum of 256 codes divided between OPEN A and OPEN B/CLOSE.

- On the SLH radiocontrol, press and hold down P1 and P2 simultaneously.
- The radiocontrol LED will begin to flash.
- Release both push-buttons.
- Press and hold down push-button + (SW3) or (SW2) and then press the SETUP push-button (SW4), to store total opening (OPEN A) or partial opening (OPEN B/ CLOSE) respectively. The corresponding LED (RADIO1 or RADIO2) will begin to flash slowly for 5 secs.
- Release both push-buttons.
- 6. Within this 5 sec. period while the radiocontrol LED is still flashing, press and hold down the required push-button on the radiocontrol (the radiocontrol LED will come on with a fixed light).
- The corresponding LED (RADIO1 or RADIO2) will come on with a fixed light for 2 seconds and then go off to indicate the setting has been stored.
- Release the radiocontrol push-button.
- 9. Press the stored radiocontrol push-button twice in quick succession.



The automated system will carry out an opening control. Ensure the automated device is free of any obstacle by people or things.

To enable other radiocontrols with the same system code, transfer the system code of the stored radiocontrol pushbutton to the corresponding push-button of the radiocontrols to be added, following the procedure below:

- a. On the stored radiocontrol, press and hold down P1 and P2 simultaneously.
- b. The radiocontrol LED will begin to flash.
- c. Release both push-buttons.
- d. Press the stored push-button and hold down (the radiocontrol LED will come on with a fixed light).
- Bring the radiocontrols closer to one another, press and hold down the corresponding push-button of the radiocontrol to be added, releasing only once the LED on the radiocontrol has issued a double flash to indicate that it has been stored.
- Press the stored radiocontrol push-button twice in quick succession.



The automated system will carry out an opening control. Ensure the automated device is free of any obstacle by people or things.

6.3 STORING LC/RC RADIOCONTROLS



256 codes divided between OPEN A and OPEN B/CLOSE.



Use the LC/RC remote controls only with a 433 MHz receiving module.

- 1. Press and hold down push-button + (SW3) or and then press the SETUP push-button (SW4), to total opening (OPEN A) or partial opening (OP CLOSE) respectively. The corresponding LED (RA or RADIO2) will begin to flash slowly for 5 secs.
- Release the push-button.
- Within this 5 second period, press the required button on the LC/RC remote control.
- The LED will come on with a fixed light for 1 sec indicating that the unit has been stored, and resume flashing for an additional 5 seconds of which time another radiocontrol may be stored
- Once the 5 seconds are up, the LED will go indicate that the procedure is complete.

6.3.1 STORING LC/RC RADIOCONTROLS REMOTELY

With LC/RC radiocontrols, other radiocontrols mo stored in remote mode, i.e. without operating direc the board, using a previously stored radiocontrol.

- 1. Obtain a radiocontrol already stored on one 2 channels (OPEN A or OPEN B/CLOSE).
- 2. Press and hold down push-buttons P1 and P2 sin neously until both LEDs flash slowly for 5 secs.
- Within 5 seconds, push the previously stored radio trol push-button to activate the learning stage of selected channel.
- The LED on the board corresponding to the ch being stored (RADIO1 or RADIO2) flashes for 5 sec within which time the code of another radioc must be sent.
- The LED will come on with a fixed light for 1 sec 5. indicating that the unit has been stored, and resume flashing for an additional 5 seconds of which time other radiocontrols may be stored then it will go off.

6.4 RADIOCONTROLS DELETION PROCEDURE

To delete ALL the codes of the radiocontrols ent simply press down together the two push-buttons + and - (SW2), then press the SETUP push-button (SW 1 second, and hold the first two push-buttons presse

- The 2 LEDs RADIO1 and RADIO2 will flash quick 10 secs.
- The 2 LEDs will come on with a fixed light for 2 sec and then go off (deletion carried out).
- Release both push-buttons.



This operation is <u>NOT</u> reversible. All the codes of the radiocontrols stored as OPEN A and as OPEN B/CLOSE will be deleted.



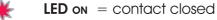
7 OPERATIONAL START-UP

7.1 CHECKING THE LEDS

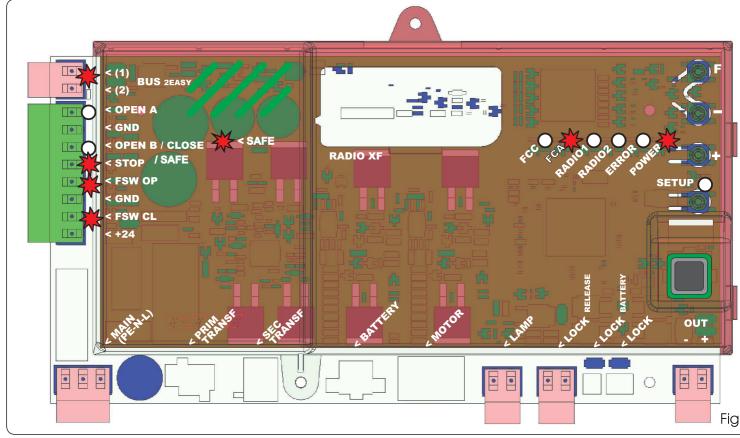
After making all the connections and powering the board, check the status of the LEDs against the status of the i in the following table (in Fig. 16, the condition where the automated system is closed in stand-by).

These LEDs indicate the status of the board inputs and are of considerable importance to automated system mover

Note that:



LED off = contact open



Leds FCA and FCC represent the N.C. contacts of the limit switch built into the board that open when engaged and turn off the associated LED:

Automated system	FCA *
CLOSED	FCC FCC engaged
Automated system	FCA O FCA engaged
OPEN	FCC *



Fixed ON	Mains-powered					
Flashing	Battery-powered					
Off	Board off					



The STOP (SAFE), FSW CL, FSW OP, OPEN B inputs configured as SAFE are safety inputs with N.C. (Normally Closed) contact and therefore the corresponding LEDs must be ON when the automated system is at rest, and off when the connected device is used.



The OPEN A, OPEN B/CLOSE inputs are inputs with N.O. (Normally Open) contact and therefore the corresponding LEDs must be OFF when the automated system is at rest, and on when the connected device is used.



When using equipment programmed as SLAVE the LEDs corresponding to terminal board J13 must be off.



ERROR LED flashing indicates alarm in progress (situation does not impair gate operation)



ERROR LED on with a fixed light indicates an error in progress (situation that locks operation until the cause of the error has been removed)

7.2 BATTERY OPERATION



ATTENTION

To optimise energy consumption and protect the charge, during battery operation, when the automated syst stopped and the system is on stand-by, the LCD1 display, the BUS 2easy LED and the FCC and FCA LED will be



7.3 POSITIONING LIMIT SWITCHES



To ensure correct positioning of the limit switch magnets, the control unit must be installed and correctly connected with all control and safety accessories.

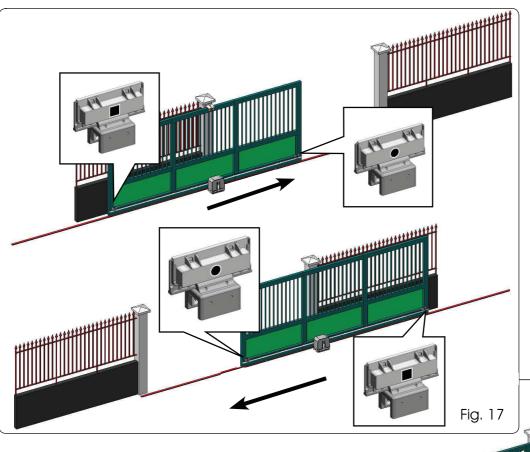
The operator is equipped with a magnetic limit switch sensor built directly into the electronic control board. The gate is stopped, during opening or closing, when the polarised magnet secured to the upper part of the activates the sensor.

- 1. Check that the operator is set for manual operating mode as described in the instructions for the operator.
- 2. Move the gate to **opening** position manually, leaving 40 mm from the limit switch mechanical stop (see Fig. 17).
- Slide the magnet with the **CIRCLE** on the rack in the direction of the motor. As soon as the LED for the FCA limit switch on the board goes off, secure with the appropriate screws.
- 4. Move the gate to **closing** position manually, leaving 40 mm from the limit switch mechanical stop.
- 5. Slide the magnet with the **SQUARE** on the rack in the direction of the motor. As soon as the LED for the FCC limit switch on the board goes off, secure with the appropriate screws.
- 6. Check that the relevant limit switch LED goes off correctly at the end of the opening and closing movement and make the necessary changes to the position of the limit switch magnet position if necessary.





To avoid damage to the operator and/or interruptions in the operation of the automated system, approximately 40 mm must be left from the mechanical limit switch stops.

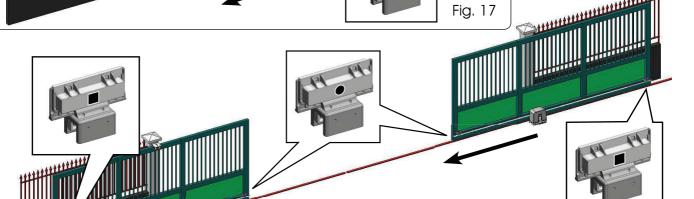




For correct operation of the operator, the magnet with the **CIRCLE** must be used as an OPEN-**ING** limit switch and the magnet with the **SQUARE** must be used as a CLOSING limit switch.

(SEE FIG. 17)

When using a system with MASTER/SLAVE configuration, the limit switch magnets must be installed as shown in Fig. 18.







7.4 MASTER / SLAVE CONFIGURATIONS

Should you need to build a system with opposing leaves that must be activated simultaneously for opening and closing the gate, you must connect and configure two E721 devices in Master/Slave mode. The MASTER equipment (parameter \square but of the first programming level configured as \square But \square) must have all the necessity. connections for correct operation of the system (photocells, safety switches, radio, opening pulses, flashing while the SLAVE equipment (parameter [[of the first programming level configured as [[] [], must not be wired terminal board J13, as all the inputs present are completely ignored. The two devices will communicate with other through BUS-2EASY using two-pole **POLARISED** wiring on the J12 terminal board.

The MASTER device will completely control the SLAVE device through BUS-2EASY and will manage all the mover and time of both leaves.



Avoid any type of connection and wiring to terminal board J13 of the SLAVE unit.

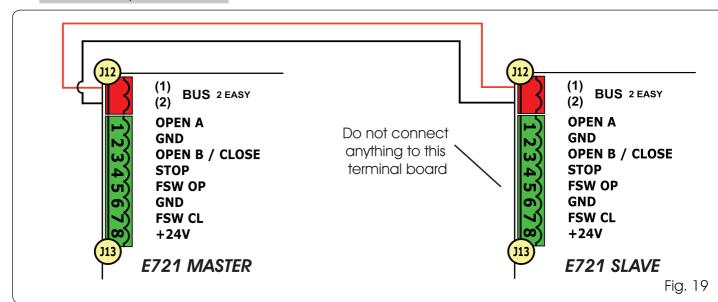


The BUS connection between the two boards must be POLARISED following the sequence of the poles of the J12 terminal board (POLE (1) - POLE (2)) - (see Fig. 19).



When a unit is configured as a SLAVE, this will force the values of some programming parameters no longer displayed in the menu ($\square - PR - Pb - Pb - Pb - Dp$). By placing the board in MASTER mode again, the previously forced values are stored in the program.

7.4.1 MASTER / SLAVE WIRING



7.4.2 MASTER/SLAVE SETUP PROCEDURE



The SETUP request signalled by the flashing 50 on the display can occur both on the MASTER unit and on the SLAVE unit. In the latter case, the MASTER unit will display an error $\frac{1}{2}$. In any case, the SETUP procedure can only be started from the MASTER unit.

To SETUP a MASTER/SLAVE system, follow the steps below:

- 1. Release both leaves, place them in the middle of travel and lock again (see procedure no.1 Par. 7.5 SETU
- 2. Keep pressed the SETUP button on the MASTER board until the MASTER gate begins to move.
- 3. At this point the MASTER gate will perform a complete SETUP procedure (see Par. 7.5 SETUP)
- 4. Once you have correctly completed the SETUP of the MASTER board, the complete SETUP procedure of the board begins (see Par. 7.5 SETUP).
- Once this procedure has also been completed the MASTER checks the position of the SLAVE leaf and place the same position (open or closed) as the MASTER leaf.
- 6. Procedure completed.



7.5 SETUP

■ When the board is powered when no SETUP has ever been carried out, or if the board requires it, the code $\frac{1}{2}$ will flash on the display together with the SETUP LED to indicate that SETUP must be carried out.

To ensure the effective outcome of the SETUP procedure, carefully check the correct polarity of the magnetic limit switches as described in the previous paragraph.

Proceed as follows to carry out the SETUP:

- 1. Place the gate at half its travel (very important for a successful SETUP) and check that both the FCA and FCC LEDs are on. Otherwise, the board will signal error 12 (see tab. 5)
- Press and hold the SETUP (SW4) push-button until the gate begins to move slowly and stops when it reaches the limit switch. If the limit switch reached is the closing switch (with the **SQUARE**) the device stores that point **When an ERROR occurs, LED DL20 come** as the **closing** stop, conversely if the limit switch is the opening switch (with the **CIRCLE**) the device stores that point as the **opening** stop. During that stage, \supset flashes on the display
- The gate automatically begins to move slowly in the opposite direction and then stops when it reaches the limit switch. If the limit switch reached is the opening switch (with the **SQUARE**) the device stores that point as the **opening** stop, conversely if the limit switch is the closing switch (with the **SQUARE**) the device stores that point as the **closing** stop. During that stage, 53 flashes on the display
- According to the final limit switch reached, the device takes up a status of closed ($\square \square$) or open ($\square \square$). In the second case, issue an OPEN pulse to close the gate.

8 TESTING THE AUTOMATED SYSTEM

After installation and programming, check the system is operating correctly. Above all, check that the safety devices operate correctly and ensure that the current safety regulations are met.

Remember that the second programming level features the encoder configuration parameter (parameter EC). This "virtual" encoder located on the board acts as an anti-crushing device. During the open/closing phase, should the gate collide with an obstacle, the "virtual" encoder will cause the motion to reverse. At the next motion in the same direction, an obstacle in the same position will cause the motor to stop. It is essential to correctly configure this parameter to adjust the correct sensitivity of the "virtual" encoder with respect to obstacles during motion.

9 ALARM AND ERROR SIGNALS

If alarms occur (conditions that do not impair the operation of the gate) or errors (conditions that lock the gate operation) the display shows a number relating to the current condition.

The ALARM or ERROR signals disappear at the

9.1 ALARMS

When an ALARM occurs, the ERROR LED b to flash and a number relating to the current fau pears on the display when the + and - keys are pre

Tab. 4 indicates all the alarms that may be shown of display.

Tab. 4 - Alarms

2.2	Limited MOTOR current
24	LAMP output short-circuited
27	Obstacle detection (visible for 10 secs)
30	XF radio code memory-module full (visible for 10 secs)
40	Service request
46	Forced default programming reset

9.2 ERRORS

with a fixed light and a number relating to the cu fault appears on the display when the + and - key pressed.

Tab. 5 indicates all the errors that may be shown a display.

Tab. 5 - Errors

	·
01	Board faulty
0.3	Motor faulty
0.5	FailSafe error
06	Motor lock locked closed (check the moto lock and replace if necessary)
٦٥	Gate too heavy or too much friction (try to increase motor power)
08	BUS-2EASY device error (e.g. same addresson two photocell pairs; check address)
09	Bus2Easy anomaly
10	Both limit switches with the same polarity
12	Limit switch engaged at the beginning of SETUP
15	Time-out finished
90	No communication with the SLAVE unit - SLAVE unit missing
91	Error on the SLAVE unit
9.2	Error on the SLAVE unit
97	Configuration error (C720 detected). Repesetup
98	Configuration error (C721 detected). Repesetup
99	Board faulty

Errors 9091 and 92 are displayed on E721 configured as MASTER and in particular $\frac{1}{2}$ $\frac{1}{2}$ indicate errors present on the SLAVE unit. SI such errors be displayed, we recommend you che the SLAVE unit the type of error shown on the di to solve it and restore correct operation of the sys



locks and op

reverses to opening (see

10 FUNCTION LOGICS



In brackets, the effects on the other inputs when the pulse is active.



The CLOSE command can be enabled on the OPEN B input from programming level 2.



If enabled during leaf motion, the SAFE comm will immediately and completely reverse it; we the automated system is stopped, if kept ena it will prevent its movement.

LOGIC "E"				PULSES			
TATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	STOP	FSW OP	FSW CL	FSW CL
CLOSED	opens the gate	opens the gate partially	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effe (OPEN inh
DURING OPENING	locks operation (1)	locks operation	recloses the gate	locks operation	see 2nd level prog.	no effect	locks and op disengagement locks - stores
OPEN	recloses the gate (1)	recloses the gate	recloses the gate	no effect (OPEN/CLOSE inhibited)	no effect	no effect (CLOSE inhibited)	no effe (OPEN/CLOSE
DURING CLOSING	reopens the gate	reopens the gate	no effect	locks operation	no effect	reverses to opening (see 2nd level prog.)	locks and op disengagement locks - stores
LOCKED	closes the gate	closes the gate	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effect (Of - stores C
LOGIC "EP"		T		PULSES	Γ	T	<u> </u>
STATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	STOP	FSW OP	FSW CL	FSW CL/
CLOSED	opens the gate	opens the gate partially	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effe (OPEN inhik
DURING OPENING	locks operation (1)	locks operation	recloses the gate	locks operation	see 2nd level prog.	no effect	locks and op disengageme locks - stores
OPEN	recloses the gate (1)	recloses the gate	recloses the gate	no effect (OPEN/CLOSE inhibited)	no effect	no effect (CLOSE inhibited)	no effe (OPEN/CLOSE
DURING CLOSING	locks operation	locks operation	no effect	locks operation	no effect	reverses to opening (see 2nd level prog.)	locks and op disengageme locks - stores
LOCKED	resumes motion in reverse direction. After STOP, always closes	resumes motion in reverse direction. After STOP, always closes	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effect (OP - stores CL
LOGIC "A"				PULSES			
TATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	STOP	FSW OP	FSW CL	FSW CL/
CLOSED	opens and recloses after the pause time	opens the gate partially and closes it after pause time B	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effe (OPEN inhili
DURING OPENING	no effect (1)	no effect	recloses the gate	locks operation	see 2nd level prog.	no effect	locks and op disengage (stores CL
OPEN IN PAUSE	reloads pause time (1)	reloads pause time B	recloses the gate	locks operation	no effect	reloads pause time (CLOSE inhibited)	reloads pau (CLOSE inhi
DURING CLOSING	reopens the gate	reopens the gate	no effect	locks operation	no effect	reverses to opening (see 2nd level prog.)	locks and op disengage (stores CL
LOCKED	closes the gate	closes the gate	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effe (OPEN/CLOSE i
LOGIC "A1"				PULSES			
STATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	STOP	FSW OP	FSW CL	FSW CL/
		and a second sec			no effect		no affa
CLOSED	opens and recloses after the pause time	opens the gate partially and closes it after pause time B	no effect	no effect (OPEN inhibited)	(OPEN inhibited)	no effect	no effe (OPEN inhil
CLOSED DURING OPENING		and closes it after pause	no effect recloses the gate	no effect (OPEN inhibited)	(OPEN inhibited) see 2nd level prog.	no effect continues to open and recloses immediately	(OPEN inhi locks and or disengage (stores CL
CLOSED		and closes it after pause	no effect	no effect (OPEN inhibited)	(OPEN inhibited)	no effect	



DURING CLOSING

locks operation

locks operation

no effect

locks operation

no effect



locks and ope disengager (stores CLC

reverses to opening (see 2nd level prog.)

LOGIO HADII				DILLOTO			
LOGIC "AP" STATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	PULSES	FSW OP	FSW CL	FSW CL/C
CLOSED	opens and recloses after the pause time	opens the gate partially and closes it after pause time B	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effec (OPEN inhibi
DURING OPENING	locks operation (1)	locks operation	recloses the gate	locks operation	see 2nd level prog.	no effect	locks and ope disengagemen locks - stores (
OPEN IN PAUSE	locks operation (1)	locks operation	recloses the gate	locks operation	no effect	reloads pause time (CLOSE inhibited)	reloads pause (CLOSE inhib
DURING CLOSING	reopens the gate	reopens the gate	no effect	locks operation	no effect	reverses to opening (see 2nd level prog.)	locks and ope disengagemer locks - stores (
LOCKED	closes the gate	closes the gate	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effec (OPEN/CLOSE ir
LOGIC "At" (2)				PULSES			
STATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	STOP	FSW OP	FSW CL	FSW CL/C
CLOSED	opens and recloses after the pause time	opens the gate partially and closes it after pause time B	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effec (OPEN inhibi
DURING OPENING	no effect (1)	no effect	recloses the gate	locks operation	reverses to closing (1)	no effect	locks and ope disengagen (stores CLC
OPEN IN PAUSE	reloads pause time (1)	reloads pause time	recloses the gate	locks operation	no effect	reloads pause time (CLOSE inhibited)	reloads pause (CLOSE inhib
DURING CLOSING	reopens the gate	reopens the gate	no effect	locks operation	no effect	reverses to opening (see 2nd level prog.)	locks and ope disengagen (stores CLC
LOCKED	closes the gate	closes the gate	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effec (OPEN/CLOSE ir
LOGIC "\$"				PULSES			
STATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	STOP	FSW OP	FSW CL	FSW CL/C
CLOSED	opens and recloses after the pause time	opens the gate partially and closes it after pause time B	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effec (OPEN inhib
DURING OPENING	reverses to closing (1)	reverses to closing (1)	recloses the gate	locks operation	see 2nd level prog.	continues to open and recloses immediately	locks and o on disengageme CLOSE)
OPEN IN PAUSE	recloses the gate (1)	recloses the gate	recloses the gate	locks operation	no effect	locks and immediately closes on disengagement	locks and clo disengager
DURING CLOSING	reopens the gate	reopens the gate	no effect	locks operation	no effect	reverses to opening (see 2nd level programming) and closes immediately at the end	locks and on dis ment opens an end immediate
LOCKED	closes the gate	closes the gate	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effec (OPEN/CLOSE ir
LOGIC "SP"				PULSES			
STATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	STOP	FSW OP	FSW CL	FSW CL/C
CLOSED	opens and recloses after the pause time	opens the gate partially and closes it after pause time B	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effec (OPEN inhibi
DURING OPENING	locks operation (1)	locks operation	recloses the gate	locks operation	see 2nd level prog.	continues to open and recloses immediately	locks and on disenc opens and at the end closes (OPEN locks - st
OPEN IN PAUSE	recloses the gate (1)	recloses the gate	recloses the gate	locks operation	no effect	locks and immediately closes on disengagement	locks and imm closes on diseng



LOGIC "SA"

STATUS OF AUTOMATED SYSTEM

OPEN A

OPEN B

CLOSE



FSW CL/C

FSW CL

STATUS OF AUTOMATED SYSTEM	OPEN A	OPEN B	CLOSE	3104	F5W OP	F5W CL	FSW CL/C
CLOSED	opens and recloses after the pause time	Opens the gate partially and closes it after pause time B	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effec (OPEN inhib
DURING OPENING	no effect (1)	no effect	recloses the gate	locks operation	see 2nd level prog.	no effect	locks and op disengager (stores CLC
OPEN IN PAUSE	recloses the gate (1)	recloses the gate	recloses the gate	locks operation	no effect	reloads pause time (CLOSE inhibited)	reloads paus (CLOSE inhik
DURING CLOSING	reopens the gate	reopens the gate	no effect	locks operation	no effect	reverses to opening (see 2nd level prog.)	locks and op disengager (stores CLC
LOCKED	closes the gate	closes the gate	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effec (OPEN/CLOSE ir
LOGIC "B"				PULSES			
STATUS OF AUTOMATED SYSTEM	OPEN A	/	CLOSE	STOP	FSW OP	FSW CL	FSW CL/C
CLOSED	opens the gate	1	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effec (OPEN inhib
DURING OPENING	no effect	I	closes the gate	locks operation	see 2nd level prog.	no effect	locks and op disengagemer OPEN/CLC
OPEN	no effect	1	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect	no effect (CLOSE inhibited)	no effec (OPEN/CLOSE ir
DURING CLOSING	opens the gate	1	no effect	locks operation	no effect	reverses to opening (see 2nd level prog.)	locks and op disengagemer OPEN/CLC
LOCKED	opens the gate	1	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect (OPEN inhibited)	no effect (CLOSE inhibited)	no effec (OPEN/CLOSE ir
LOGIC bC	PULSES DURING	OPENING/COMMAND DURING CLOSING	OS MAINTAINED		PUL	SES	
STATUS OF AUTOMATED SYSTEM	OPEN A	/ /	CLOSE	STOP	FSW OP	FSW CL	FSW CL/C
CLOSED	opens the gate	1	no effect	no effect (OPEN inhibited)	no effect (OPEN inhibited)	no effect	no effec (OPEN inhib
DURING OPENING	no effect	1	closes the gate	locks operation	see 2nd level prog.	no effect	locks and ope disengagemen OPEN/CLC
					. •		OI LIVOLO
OPEN	no effect	I	closes the gate	no effect (OPEN/CLOSE inhibited)	no effect	no effect (CLOSE inhibited)	no effect (OPEN/CLOSE in
OPEN DURING CLOSING	no effect opens the gate	1	closes the gate	no effect (OPEN/CLOSE inhibited) locks operation	no effect	no effect (CLOSE inhibited) reverses to opening (see 2nd level prog.)	no effec (OPEN/CLOSE ir
		 		(OPEN/CLOSE inhibited)		(CLOSE inhibited) reverses to opening (see	
DURING CLOSING	opens the gate	/ / COMMANDS MAINTAINED	no effect closes the gate	(OPEN/CLOSE inhibited) locks operation no effect	no effect	(CLOSE inhibited) reverses to opening (see 2nd level prog.) no effect (CLOSE inhibited) SES	no effec (OPEN/CLOSE ir locks and ope disengagemer OPEN/CLO no effec (OPEN/CLOSE ir
DURING CLOSING LOCKED	opens the gate	/ / COMMANDS MAINTAINED	no effect	(OPEN/CLOSE inhibited) locks operation no effect	no effect no effect (OPEN inhibited)	(CLOSE inhibited) reverses to opening (see 2nd level prog.) no effect (CLOSE inhibited)	no effec (OPEN/CLOSE in locks and ope disengagemen OPEN/CLO
DURING CLOSING LOCKED LOGIC "C"	opens the gate	/ / COMMANDS MAINTAINED /	no effect closes the gate	(OPEN/CLOSE inhibited) locks operation no effect (OPEN/CLOSE inhibited)	no effect no effect (OPEN inhibited)	(CLOSE inhibited) reverses to opening (see 2nd level prog.) no effect (CLOSE inhibited) SES	no effec (OPEN/CLOSE ir locks and open disengagemen OPEN/CLO no effec (OPEN/CLOSE ir
LOCKED LOGIC "C" STATUS OF AUTOMATED SYSTEM	opens the gate opens the gate OPEN A	COMMANDS MAINTAINED / / / / / / / / / / / / /	no effect closes the gate CLOSE	(OPEN/CLOSE inhibited) locks operation no effect (OPEN/CLOSE inhibited) STOP	no effect no effect (OPEN inhibited) PUL FSW OP	(CLOSE inhibited) reverses to opening (see 2nd level prog.) no effect (CLOSE inhibited) SES FSW CL	no effect (OPEN/CLOSE in locks and op disengagement OPEN/CLOSE in FSW CL/CLOSE in no effect (OPEN inhibit) locks and on dis
LOCKED LOCKED LOGIC "C" STATUS OF AUTOMATED SYSTEM CLOSED	opens the gate opens the gate OPEN A opens the gate	COMMANDS MAINTAINED / / / / / / / / / / / / / / / / / / /	no effect closes the gate CLOSE no effect	(OPEN/CLOSE inhibited) locks operation no effect (OPEN/CLOSE inhibited) STOP no effect (OPEN inhibited)	no effect no effect (OPEN inhibited) PUL FSW OP no effect (OPEN inhibited)	(CLOSE inhibited) reverses to opening (see 2nd level prog.) no effect (CLOSE inhibited) SES FSW CL no effect	no effection of the control of the c

PULSES

STOP

FSW OP

SEDE - HEADQUARTERS

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