E124

FAAC

E124 control unit – rapid guide

WARNINGS

- Important! For the safety of people, it is important that all the instructions be carefully observed.
- Incorrect installation or incorrect use of the product could cause serious harm to people.
- Carefully read the instructions before beginning to install the product and keep them for future reference.
- The symbol ⚠ indicates notes that are important for the safety of persons and for the good condition of the automated system.
- The symbol ☞ draws your attention to the notes on the characteristics and operation of the product.
- Before attempting any work on the control unit (connections, maintenance), always turn off power.
- Install, upstream of the system, a differential thermal breaker with adequate tripping threshold,
- Connect the earth cable to the relevant terminal.
- Always separate power cables from control and safety cables (push-button, receiver, photocells, etc.). To avoid any electrical disturbance, use separate sheaths or a screened cable (with the screen earthed).

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CE DECLARATION OF CONFORMITY

Manufacturer: FAAC S.p.A.
Address: Via Calari, 10 - 40069 Zola Predosa BOLOGNA - ITALY
Declares that: The E124 control unit

- ·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 underwent tests in a typical uniform configuration
(all products manufactured by FAAC S.p.A.).

Bologna, 01 March 2014

The Managing Director
A.Marcellan

TECHNICAL SPECIFICATIONS

Primary power feed from mains	with switching power feed 230/115 V~ - 50/60 Hz
Secondary power feed	24 Vdc - 16 A max. (min. 20 Vdc. - max. 28 Vdc.)
Power absorbed from mains	stand-by = 4W max. ~ 400 W
Max. load for motor	7 A
Power feed for accessories	24 Vdc
Accessories max. current	24Vdc max. 500 mA BUS-2EASY max. 500 mA
Battery charge current	180 mA
Operating ambient tempeature	(-20 - +55) °C
Protective fuses for unit	All self resetting
Protective fuses for power pack	2.5 A
Function logics	Semiautomatic, Automatic, “step-by-step” Semiautomatic, Automatic with reverse during pause, Automatic step-by-step, Safety devices automatic, Safety devices step-by-step automatic, “b” Semiautomatic, mixed logic “bC”, Dead-man, Automatic with timer function
Work time	Programmable (from 0 to 9 min 50 sec)
Pause time	Programmable (from 0 to 9 min 50 sec)

Motor power	Programmable on 50 levels
Motor speed	Programmable on 10 levels
Connector inputs	Switching feeder, Battery, Decoder/Minidec/RP, X-COM, module XF433/868, USB
Terminal board inputs	BUS-2EASY, Inputs from IN1 to IN5, Travel limit device, Encoder.
Terminal board outputs	Flashing lamp, Motors, Electrical lock, OUT1, OUT2 (programmable), power feed to accessories
Programming	1st and 2nd lev. with 3 keys (+, -, F) and LCD display. 3rd lev. with PC connected via USB

☞ ***These instructions are to be considered as a rapid guide for installation. The complete instructions can be downloaded at the following address: www.faacgroup.it***

☞ ***To access PROGRAMMING FROM PC, connect the USB cable to the dedicated connector and consult the relative instructions.***

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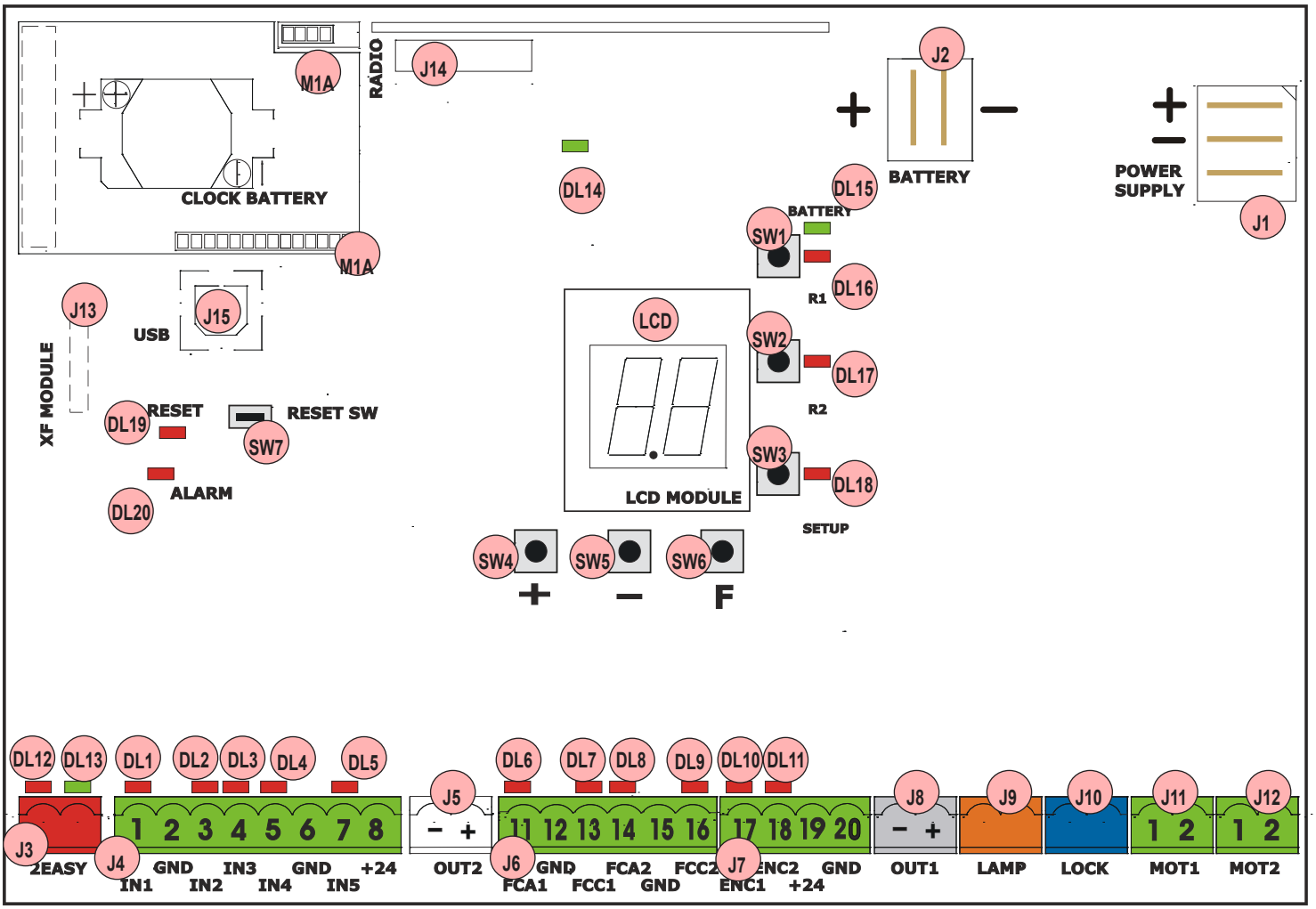
LAYOUT AND COMPONENTS OF E124 BOARD

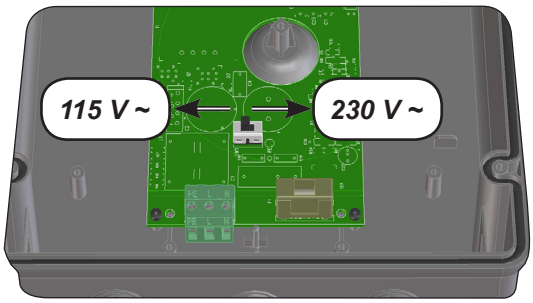


DESCRIPTION OF COMPONENTS

LCD	SIGNALS AND PROGRAMMING DISPLAY
SW1	"**R1**" PROGRAMMING PUSH-BUTTON
SW2	"**R2**" PROGRAMMING PUSH-BUTTON
SW3	"**SETUP**" PUSH-BUTTON
SW4	"**+**" PROGRAMMING PUSH-BUTTON
SW5	"**-**" PROGRAMMING PUSH-BUTTON
SW6	"**F**" PROGRAMMING PUSH-BUTTON
SW7	"**RESET SW**" SOFTWARE RESET PUSH-BUTTON
DL1	INPUT STATUS CONTROL LED "**IN1**"
DL2	INPUT STATUS CONTROL LED "**IN2**"
DL3	INPUT STATUS CONTROL LED "**IN3**"
DL4	INPUT STATUS CONTROL LED "**IN4**"
DL5	INPUT STATUS CONTROL LED "**IN5**"
DL6	INPUT STATUS CONTROL LED "**FCA1**"
DL7	INPUT STATUS CONTROL LED "**FCC1**"
DL8	INPUT STATUS CONTROL LED "**FCA2**"
DL9	INPUT STATUS CONTROL LED "**FCC2**"
DL10	INPUT STATUS CONTROL LED "**ENC1**" (Gatecoder)
DL11	INPUT STATUS CONTROL LED "**ENC2**" (Gatecoder)
DL12	LED FOR DEVICE **BUS-2EASY** ACTIVE
DL13	LED FOR **BUS 2-EASY** DIAGNOSTICS
DL14	LED SIGNALLING PRIMARY POWER ON
DL15	LED SIGNALLING SECONDARY POWER ON

DL16	LED FOR **"SW1"** PUSH-BUTTON (**R1** PUSH-BUTTON)
DL17	LED FOR **"SW2"** PUSH-BUTTON (**R2** PUSH-BUTTON)
DL18	LED FOR **"SW3"** PUSH-BUTTON (**SETUP** PUSH-BUTTON)
DL19	PRESSURE SIGNALLING LED **"RESET SW"** PUSH-BUTTON
DL20	ALARM SIGNALLING LED "**ALARM**"
J1	POWER FEEDER SWITCHING CONNECTOR
J2	SECONDARY POWER SELECTOR
J3	CONNECTOR FOR CONNECTION TO BUS-2EASY DEVICES
J4	CONNECTOR FOR TERMINAL BOARD INPUTS
J5	CONNECTOR FOR OUT2 OUTPUT (see 2nd level prog.)
J6	TRAVEL LIMITS CONNECTOR
J7	CONNECTOR FOR LEAF 1 AND LEAF 2 ENCODER INPUTS
J8	CONNECTOR FOR OUT1 OUTPUT (see 2nd level prog.)
J9	FLASHING LAMP OUTPUT CONNECTOR
J10	CONNECTOR FOR ELECTRICAL LOCK OUTPUT
J11	LEAF 1 MOTOR CONNECTOR
J12	LEAF 2 MOTOR CONNECTOR
J13	CONNECTOR FOR RECEIVER MODULE XF433/XF868
J14	CONNECTOR: DECODER / MINIDEC / RP RECEIVER
J15	USB CONNECTOR FOR PROGRAMMING FROM PC
M1A	ACCESSORIES MODULE CONNECTOR

POWER FEED



J1: Select the correct power feed, by turning the power switching selector to its correct position (Default 230 Vac.)

⚠ ***To ensure correct operation, the switching feeder must be connected to the earth conductor in the system. Install an adequate differential thermal breaker upstream of the system.***

SECONDARY POWER FEED

J2: In the absence of a primary feed from the mains, the control unit can be fed by a secondary low voltage (24Vdc) power feed. Power can be supplied by a pack of batteries, recharged by a battery charger integrated in the board, or by a stabilised power feeder. In both cases, the power supply must have the following characteristics:

Voltage: (24 ± 4) Vdc
Current: 16 A max.

⚠ ***If you use an external stabilised feeder, you must disable the "battery charger" function via the PC (see dedicated instructions).***

INPUTS DEFAULT SETTING

Terminal-board J4

IN1	OPEN A	N.O. contact
IN2	OPEN B	N.O. contact
IN3	STOP	N.C. contact
IN4	FSW OP	N.C. contact
IN5	FSW CL	N.C. contact

Connector J13 – XF Module (OMNIDEC)

Channel 1	OPEN A
Channel 2	OPEN B

Connector J14 - Radio

Channel 1 RP	OPEN A
Channel 2 RP2	OPEN B

TERMINAL BOARD MOTORS

J11 (MOT1): Connection of motor connected to leaf 1, i.e. the leaf which opens first during an opening operation.

J12 (MOT2): Connection of the motor connected to leaf 2, i.e. the leaf which opens second.

⚠ ***If only one motor is connected, it must be connected to terminal J11 (MOT1).***

⚠ ***If, during the first movement of the SETUP procedure, the leaves open instead of closing, the motor connection cables must be changed over.***

LED OPERATION

LED	Description	ON (contact closed)	OFF (contact open)
DL1	IN1 OPEN A	Command enabled	**Command disabled**
DL2	IN2 OPEN B	Command enabled	**Command disabled**
DL3	IN3 STOP	**Command disabled**	Command enabled
DL4	IN4 FSW OP	**Safety devices disabled**	Safety devices tripped
DL5	IN5 - FSW CL	**Safety devices disabled**	Safety devices tripped
DL6	FCA1	**Opening travel-limit devices free**	Opening travel-limit devices engaged
DL7	FCC1	Closing travel-limit devices free	**Closing travel-limit devices engaged**
DL8	FCA2	**Opening travel-limit devices free**	Opening travel-limit devices engaged
DL9	FCC2	Closing travel-limit devices free	**Closing travel-limit devices engaged**
DL10	ENC1	Flashing during operation (Gatecoder)	
DL11	ENC2	Flashing during operation (Gatecoder)	
DL12	SIGNALLING LED FOR DEVICE **BUS-2EASY** ACTIVE		
DL13	SIGNALLING LED FOR **BUS 2-EASY** DIAGNOSTICS		
DL14	LED SIGNALLING PRIMARY POWER ON		
DL15	LED SIGNALLING SECONDARY POWER ON		
DL16	LED FOR **"SW1"** PUSH-BUTTON (**R1** PUSH-BUTTON)		
DL17	LED FOR **"SW2"** PUSH-BUTTON (**R2** PUSH-BUTTON)		
DL18	LED FOR **"SW3"** PUSH-BUTTON (**SETUP** PUSH-BUTTON)		
DL19	LED **"RESET SW"** PUSH-BUTTON		
DL20	ALARM SIGNALLING LED "**ALARM**"		

⚠ ***Flashing LED ALARM indicates alarm in progress (a situation which does not prejudice gate operation)***

⚠ ***LED ALARM on steady light indicates error in progress (a situation which blocks operation until cause of error is eliminated)***

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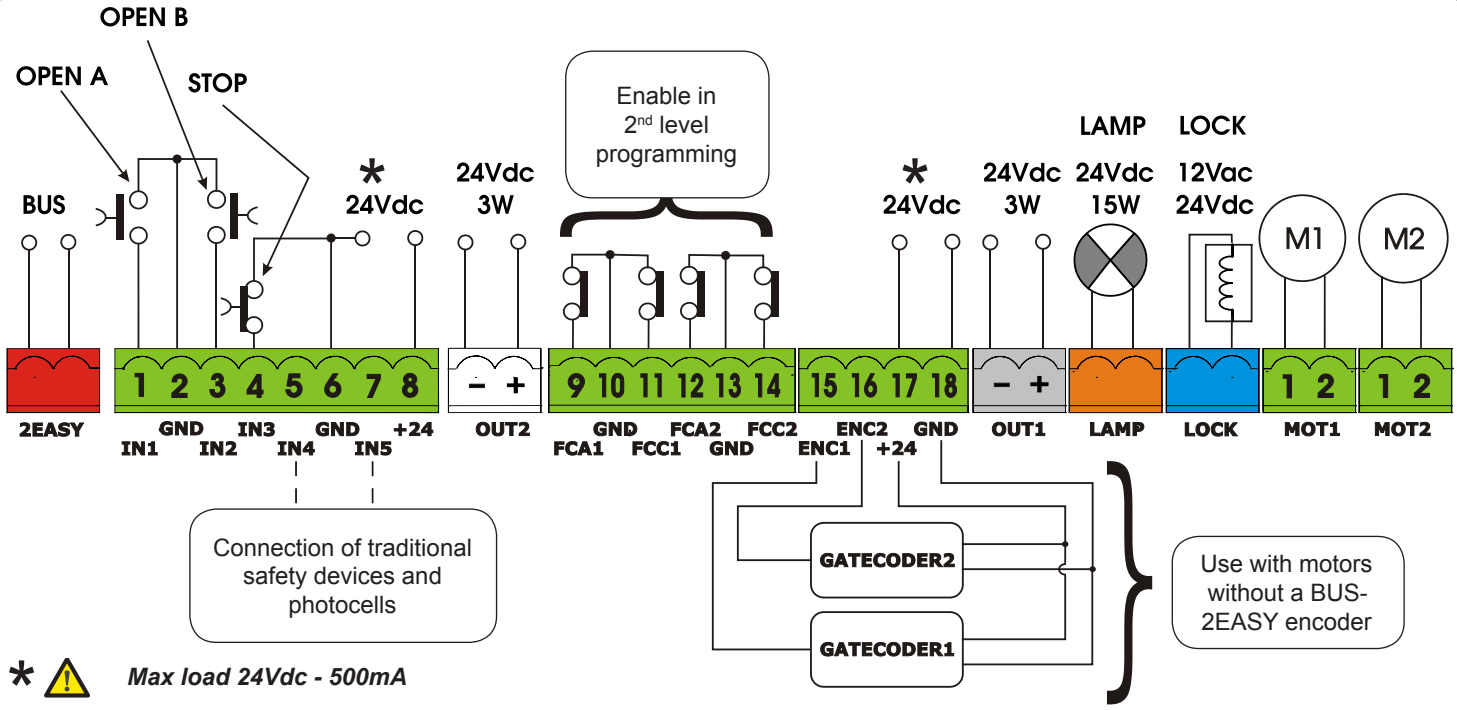
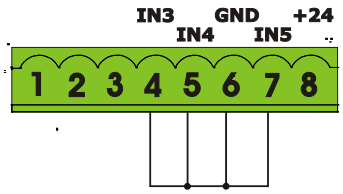
ELECTRICAL CONNECTIONS

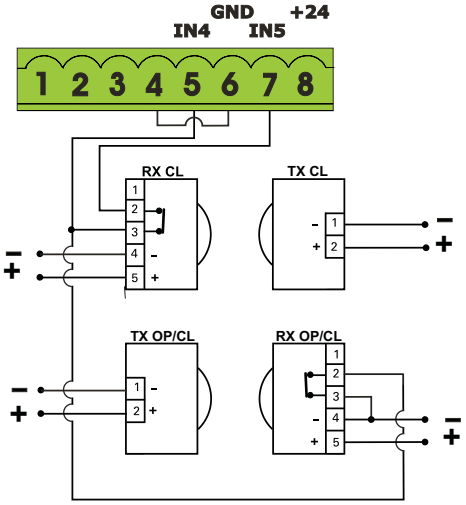


CONNECTION OF TRADITIONAL SAFETY DEVICES

With the E124 control unit, you can use both traditional photocells (N.C. contact with relay) and/or photocells with BUS-2EASY (open collector contact).



Connection of a pair of closing photocells and a pair of opening/closing photocells with **disabled** FAIL-SAFE safety device and STOP

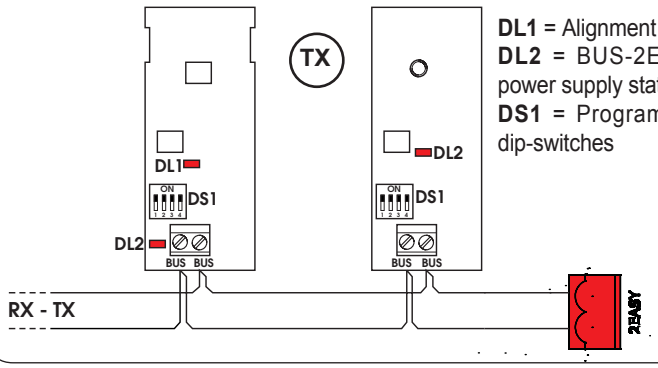


PHOTOCELLS BUS-2EASY

ADDRESSING THE BUS-2EASY PHOTOCELLS

Important: the same address must be given to both transmitter and receiver. Make sure that there are not two or more photocell pairs with the same address. If you are not using any BUS-2EASY accessory, leave free connector BUS-2EASY

The following table shows the programming operations of the dip-switch inside the transmitter and the BUS 2-EASY photocells receiver.



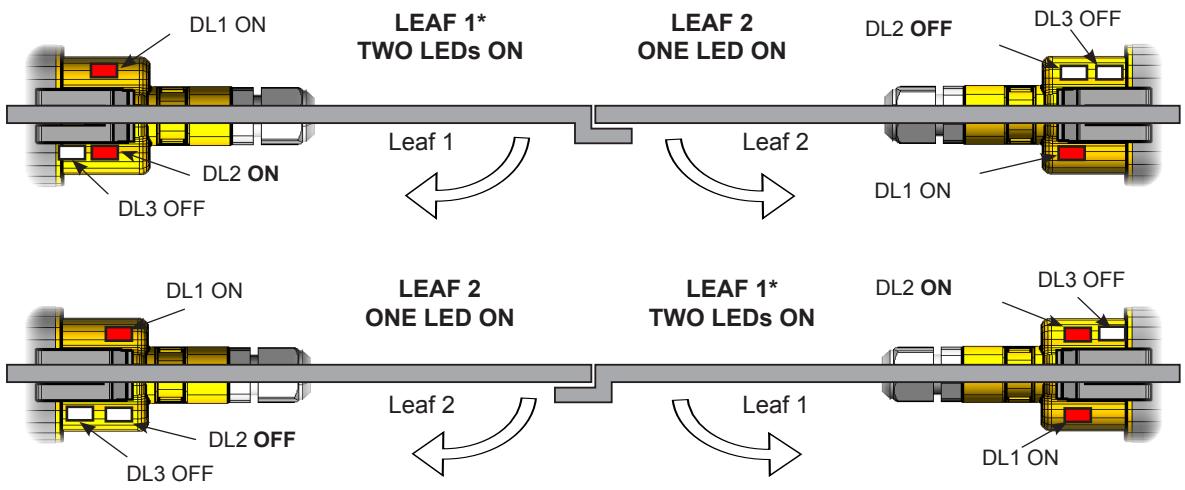
Dip1	Dip2	Dip3	Dip4	Rif.	Type
OFF	OFF	OFF	OFF	B - C	OPENING
OFF	OFF	OFF	ON		
OFF	OFF	ON	OFF		
OFF	OFF	ON	ON		
OFF	ON	ON	OFF		
OFF	ON	ON	ON		
ON	OFF	OFF	OFF	D	CLOSING
ON	OFF	OFF	ON		
ON	OFF	ON	OFF		
ON	OFF	ON	ON		
ON	ON	OFF	OFF		
ON	ON	OFF	ON		
ON	ON	ON	OFF		
OFF	ON	OFF	OFF	A	OPENING and CLOSING
OFF	ON	OFF	ON		
ON	ON	ON	ON	/	OPEN PULSE

ADDRESSING THE BUS-2EASY ENCODERS

Connection of the BUS-2EASY input in the control board is via the bipolar cables which come out of the encoders.

⚠ ***Unlike the case of the photocell devices, the polarity of the BUS-2EASY line connection determines whether the encoder belongs to one leaf rather than to the other.***

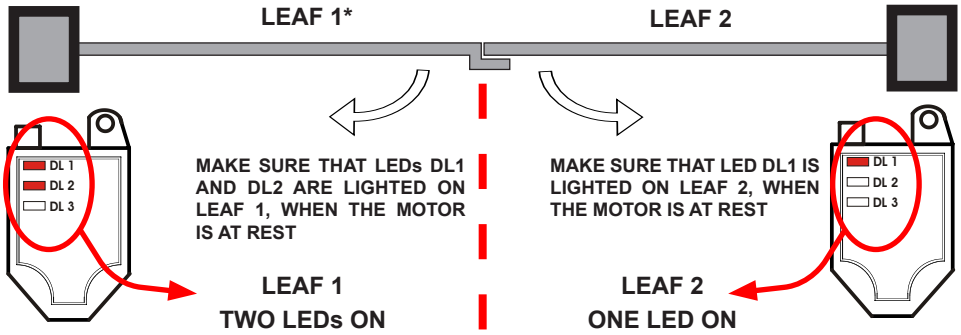
ENCODER WIRING FOR OPERATOR S700H/S800H

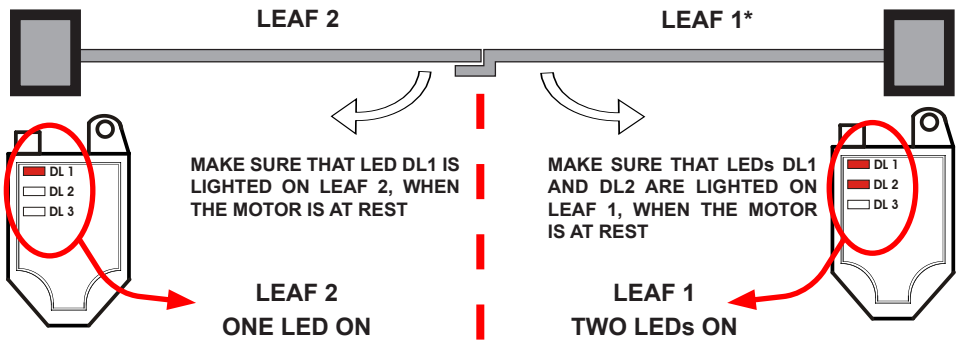


☞ **** LEAF 1 OPENS AS FIRST AND CLOSES AS SECOND. IF NO REBATE IS PRESENT BETWEEN LEAF 1 AND 2, SET LEAF DELAY TO ZERO ON THE CONTROL BOARD.***

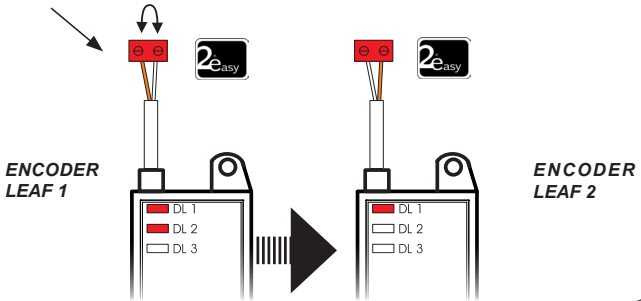
☞ ***REVERSE THE ENCODER WIRES TO EXCHANGE BETWEEN THE ENCODER ASSOCIATED WITH LEAF 1 AND THE ENCODER ASSOCIATED WITH LEAF 2 AND VICE VERSA***

SAFECODER WIRING (Operators 412, 413, 415, 770N, S450H)





ENCODER WIRES REVERSING OPERATION



☞ **** LEAF 1 OPENS AS FIRST AND CLOSES AS SECOND. IF THERE IS NO REBATE BETWEEN LEAF 1 AND 2, SET THE LEAF DELAY TO ZERO ON THE CONTROL BOARD.***

☞ ***REVERSE THE ENCODER WIRES TO EXCHANGE BETWEEN THE ENCODER ASSOCIATED WITH LEAF 1 AND THE ENCODER ASSOCIATED WITH LEAF 2, AND VICE VERSA***

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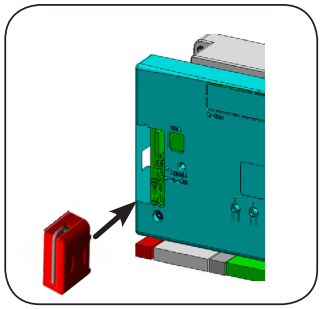
Connector J13 – XF MODULE rapid connection



The control unit has an integrated 2-channel decoding system (DS, SLH, LC/RC) named OMNIDEC. This system makes it possible to save – through an extra receiver module – XF433 or XF868 radio commands of the same frequency, but of a different type (DS, SLH, LC/RC). It is possible to save both total opening (OPEN A) and partial opening (OPEN B) of the automated system, up to a maximum of 256 channels.

⚠ ***Insert and remove the boards only after cutting power.***

PROGRAMMING

Programming is divided in two levels:

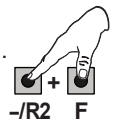
- **BASIC programming**
- **ADVANCED programming**

The programming phases are (see **Tab.**):

1. to access PROGRAMMING (**1A** or **1B**);
2. to show the set values and modify them, if you want. *Changing the values is effective immediately, while the final memorisation must be carried out upon exiting programming* (SE).
3. exit the programming by using SE function. Select Y to SAVE the configuration you just performed, otherwise select no to EXIT WITHOUT SAVING any changes.

You can **EXIT programming at anytime**:

- press and hold **F** and then also **–** to switch directly to SE.



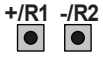
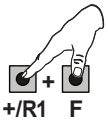
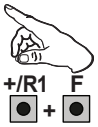
This board also allows **programming using a PC** or **MAC**.
This programming requires connection to PC/MAC via USB cable and USB-B relevant port.
The programming SOFTWARE with relevant instructions, must be downloaded from the website:

www.faacgroup.com

The programming using a PC/MAC, with the **default PASSWORD** does not inhibit the programming by board. The writing PC will be displayed in correspondence with the modified values. **Notes**: when you modify the values by board the previous PC/MAC programming will be overwrote.

☞ *The default password is **0000**.*

The programming using a PC/MAC, with a modified PASSWORD (different from the default one), will inhibit the programming by board. If one of the buttons is pressed, the display will show PC programming for 5 sec and changes will be allowed only by PC /MAC.

	❶	❷		❸
BASIC PROGRAMMING	**1A.** PRESS AND HOLD **F** : THE FIRST FUNCTION APPEARS [1] 	RELEASE **F**: THE FUNCTION VALUE IS DISPLAYED 	USING **+** OR **–**, SCROLL THE AVAILABLE VALUES UNTIL THE THE DESIRED ONE 	PRESS **F**: TO MOVE TO THE NEXT FUNCTION [1] 	FUNCTION SE (LAST BASIC OR ADVANCED FUNCTION) SELECT Y TO SAVE THE PROGRAMMING OTHERWISE SELECT no TO EXIT THE PROGRAMMING WITHOUT SAVING
ADVANCED PROGRAMMING	**1B.** PRESS AND HOLD **F** AND THEN ALSO **+** : THE FIRST FUNCTION APPEARS [1] 	RELEASE THE KEYS: THE FUNCTION VALUE IS DISPLAYED 			

[1] *THE FUNCTION IS DISPLAYED UNTIL YOU HOLD*

Tab. Programming phases.

BASIC PROGRAMMING

Display	Basic Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
cF	0 Configures the parameters with DEFAULT values corresponding to an installation with non-FAAC operators. (see default column 0). 1 Configures the parameters with DEFAULT values corresponding to an installation with operators **FAAC 412, 413/415, 770, 390, 770N** (see default column 1). 2 Configures the parameters with DEFAULT values corresponding to an installation with operators **FAAC 391** (see default column 2). 3 Configures the parameters with DEFAULT values corresponding to an installation with operators **FAAC S700H/ S800H** (see default column 3. 4 Configures the parameters with DEFAULT values corresponding to an installation with operators **FAAC 418.** (see column default 4). 5 Configures the parameters with DEFAULT values corresponding to an installation with operators **FAAC S450H** (see column default 5). PC Mixed configuration from a PC/MAC ☞ ***At the time of changing the set motor type on the board, the relevant defaults are uploaded.***	0	1	2	3	4	5
dF	**DEFAULT:** y indicates that all the set values correspond to the default values. no indicates that one or more set values are different from the default. Set y if you want to restore the default settings.	y	y	y	y	y	y
LO	**FUNCTION LOGICS:** E Semi-automatic EP Semi-automatic Step-by-Step S Automatic Safety Devices SA Automatic with reversal during pause SP Automatic Step-by-Step Safety Devices AI Automatic 1 A Automatic AP Automatic Step-by-Step At Automatic timer b Semi-automatic “b” bC Mixed (Pulses for opening / Dead-man commands for closing) C Dead-man CU Logic modified from a PC/MAC ☞ *Other more detailed programming possibilities are feasible by programming with a PC (see dedicated instructions).*	E	E	E	E	E	E

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Display	Basic Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
PA	**PAUSE TIME A (visualised only if the selected logic allows automatic reclosing):** Pause time following a **TOTAL** opening command. It has only effect if a logic with pause time was selected. Can be adjusted from 0 to 59 sec. in one-second steps. Next, the viewing changes in minutes and ten seconds (separated by a dot) 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, the pause time will be 2 min. and 50 sec.*	30	30	30	30	30	30
Pb	**PAUSE TIME B (visualised only if the selected logic allows automatic reclosing):** Pause time following a **PARTIAL** opening command. It has only effect if a logic with pause time was selected.	30	30	30	30	30	30
Mn	**NR. OF MOTORS:** You can select the number of motors present in the system: 1 = 1 motor 2 = 2 motors *If the SETUP is performed with only one motor, and later two motors are used, the board will signal error 14 - configuration error, which can be deleted by repeating the SETUP with two motors or by returning to one motor.* *If a SETUP is performed with two motors and later only one is used, the board will not signal an error. Only the motor connected to input M1 will move.* *When programming from a PC/MAC, you can select different partial openings.*	02	02	02	02	02	02
F1	**MOTOR 1 POWER :** You can adjust the maximum power of motor 1, which is the same during both opening and closing. 01 = minimum power 50 = maximum power *If the power is modified, we recommend performing a new SETUP - see the related paragraph.* *Other more detailed programming possibilities are feasible by programming with a PC (see dedicated instructions).*	25	25	25	40	25	35
F2	**MOTOR 2 POWER (visualised only with the function Mn = 2):** You can adjust the maximum power of motor 2, which is the same during both opening and closing.	25	25	25	40	25	35
SP	**SPEED:** Adjusts the motion speed of the motors. There are 10 levels. The value is relative and not absolute, because the speed value refers to the weight of the leaf measured during the SETUP cycle 01 = minimum speed 10 = maximum speed *Other more detailed programming possibilities are feasible by programming with a PC (see dedicated instructions).*	08	08	08	08	08	08

Display	Basic Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
En	**ENCODER USE:** You can enable/disable the use of encoders (both BUS and GATECODER encoders): y = encoders on both motors no = encoders disabled *When using configurations 3 or 5 it is mandatory to use the encoder, no is not selectable*	no	no	no	y	no	y
FA	**LIMIT SWITCH WHEN OPENING:** Lets you set or disable use of the opening limit switch on swing-leaves . no = opening limit switches disabled 01 = the limit switch determines the stopping of motion 02 = the limit switch determines the start of deceleration *After having changed the value of this function, SETUP is required: the card will signal error 14 (configuration error) until the SETUP is performed again or until the previous value is restored*	no	no	no	no	no	no
FC	**LIMIT SWITCH WHEN CLOSING:** Lets you set or disable use of the closing limit switch on swing-leaves. no = closing limit switches disabled 01 = the limit switch determines the stopping of motion 02 = the limit switch determines the start of deceleration *After having changed the value of this function, SETUP is required: the card will signal error 14 (configuration error) until the SETUP is performed again or until the previous value is restored.*	no	no	no	no	no	no
Cd	**DELAY FOR CLOSING LEAF (visualised only with the function Mn = 2):** Is the delay time for starting leaf 1 closing with respect to leaf 2. Makes it possible to avoid overlapping of the two leaves. Adjustable from 00 to 59 sec, in 1- second steps. Next the value 59, the viewing changes to minutes and tenths of a second (separated by a decimal point) and time is adjusted in 10-second steps up to the maximum value of 3 minutes. *e.g.: if the display shows 1.2, the time is 1 min and 20 sec*	05	05	05	05	05	05
bu	**BUS-2EASY DEVICES ENTRY:** *See the related paragraph.*	no	no	no	no	no	no
M2	**MOTOR 2 dead-man DRIVE mode (visualised only with the function Mn = 2)** **+/R1** OPENS (visualising oP) until the button is held down **-/R2** CLOSES (visualising cL) until the button is held down	--	--	--	--	--	--

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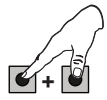
Display	Basic Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
M1	**MOTOR 1 dead-man DRIVE mode** **+/R1** OPENS (visualising oP) until the button is held down **-/R2** CLOSES (visualising cL) until the button is held down	--	--	--	--	--	--
tL	**WORK TIME LEARNING (SETUP):** *See the related paragraph.*	--	--	--	--	--	--
St	**AUTOMATED SYSTEM STATUS:** You can exit programming, choosing whether or not to save the configuration you just performed. 1. set the choice: Y to SAVE and EXIT the programming no to EXIT the programming WITHOUT SAVING 2. press the button **F** to confirm; at the end the display returns to visualize the **automated system status**: 00 = CLOSED 01 = OPEN 02 = Stationary then “OPENS” 03 = Stationary then “CLOSES” 04 = In “PAUSE” 05 = during Opening 06 = during Closing 07 = FAIL SAFE in progress 08 = checking BUS-2EASY devices in progress 09 = Pre-flash then “OPENS” 10 = Pre-flash then “CLOSES” 11 = Emergency open 12 = Emergency close HP = Hold position ***WARNING If power is lost to the board prior to confirmation (step 2.), all changes made will be lost.*** *You can EXIT programming at any time: press and hold* **F** *and then also* **-** *to switch directly to* St.						Y



ADVANCED PROGRAMMING

Display	Advanced Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
bo	**TIME OF MAXIMUM POWER AT STARTING:** You can set the starting time. During start the motors work at maximum power for starting the movement. Adjustable from 00 to 10 sec, in 1-second steps (ignoring the power level selected with F1 and F2). *Other more detailed programming possibilities are feasible by programming with a PC (see dedicated instructions).*	02	02	02	02	02	02
cS	**FINAL STROKE WHEN CLOSING (RAM STROKE) (NOT displayed if function FC = 1):** Lets you enable/disable the ram stroke on swing-leaves. The ram stroke facilitates latching of the electric lock by activating the motors at maximum power during final closing. Y = enabled (for 2 sec) no = disabled *In case of systems with an absolute encoder, to enable this function a setup must be performed using the automatic leaf stop on the mechanical contact point.*	no	no	no	no	no	no
rS	**REVERSE STROKE WHEN OPENING displayed if function FA = 1):** Lets you enable/disable the reverse stroke on leaf doors. The reverse stroke facilitates unlatching of the electric lock. When the automatic system is closed, before starting to open, the motors give a brief push to close. Y = enabled (for 2 sec) no = disabled *In case of systems with an absolute encoder, to enable this function a setup must be performed using the automatic leaf stop on the mechanical contact point.*	no	no	no	no	no	no
EL	**ELECTRIC LOCK ON LEAF 2:** The board has a terminal dedicated to the connection of an electric lock. Normally the electric lock must be connected to leaf 1. If the electric lock is located on leaf 2, adjust the parameter. This parameter does not allow the setting Y if Mn = 2) Y = electric lock on leaf 2 no = electric lock on leaf 1	no	no	no	no	no	no
Od	**DELAY FOR OPENING LEAF (visualised only with the function Mn = 2):** You can set the delay time for starting leaf 2 opening with respect to leaf 1, in order to avoid overlapping of the two leaves. Adjustable from 00 to 59 sec, in 1- second steps. Next the value 59, the viewing changes to minutes and tenths of a second (separated by a decimal point) and time is adjusted in 10-second steps up to the maximum value of 1.3 minutes. *e.g.: if the display shows 1.2, the time is 1 min and 20 sec.*	02	02	02	02	02	02

ENGLISH

Display	Advanced Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
r1	**LEAF 1 DECELERATION:** You can adjust the deceleration space as a percentage of the total travel of leaf 1. Adjustable from 00 to 99 %, in 1% steps. 00 = no deceleration 01 = minimum deceleration space 99 = maximum deceleration space	30	30	30	20	30	30
r2	**LEAF 2 DECELERATION (visualised only with the function Mn = 2):** You can adjust the deceleration space as a percentage of the total travel of leaf 2. Adjustable from 00 to 99 %, in 1% steps. 00 = no deceleration 01 = minimum deceleration space 99 = maximum deceleration space	30	30	30	20	30	30
PF	**PRE-FLASHING:** You can enable/disable the pre-flashing. Pre-flashing duration = 3 sec. You can choose: no = disabled OC = pre-flashing before each movement CL = pre-flashing before a closing movement OP = pre-flashing before an opening movement PA = pre-flashing only at the end of the pause time	no	no	no	no	no	no
Ph	**CLOSING PHOTOCELLS:** The intervention of closing photocells causes the reversing of automated system (opening). You can choose: Y = operate the reversal only after the photocells are released no = operate the reversal immediately	no	no	no	no	no	no
Ad	**ADMAP FUNCTION:** Allows operation in compliance with French regulation NFP 25/362. Y = enabled no = disabled	no	no	no	no	no	no
EC	**ANTI-CRUSHING SENSITIVITY:** Varying this function varies the amount of time after which, in case of obstacle, the board commands reversal of the leaves, or it will command a stop if the leaves are in the contact point search space (see the parameter r8). The fourth consecutive obstacle detected in the same direction and position will be defined as a contact point and the leaf will stop in that position. 01 = minimum sensitivity (maximum time before reversal) 10 = maximum sensitivity (minimum time before reversal)	01	06	06	05	06	05
US	**ULTRA-SENSITIVITY:** This function activates an obstacle detection system, based on the control of the variation of the current absorbed by the motor, causing immediate leaf reversal. Y = active no = excluded	no	no	no	Y	no	Y

Display	Advanced Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
r8	**MECHANICAL STOP SEARCH ANGLE (NOT displayed if function FC or FA = 01):** You can adjust the contact point search angle within which the board will stop movement without reversing, if it encounters an obstacle or the contact point. Adjustable from 0.3 to 20 degrees. From 0.3 to 9.9 degrees, adjustments are made in 0.1 degree steps. From 10 to 20 degrees, adjustments are made in 1 degree steps.	10	10	10	4.0	10	4.0
SF	**SOFT TOUCH: (visualised only with the function En = no):** After touching the travel stop point, the leaves reverse and then rest gently. y = active no = excluded *This function can be useful to respect the impact curve specified by current standards.* *Other more detailed programming possibilities are feasible by PC programming (see dedicated instructions).*	no	no	no	no	no	no
o1	**OUT 1:** You can set the output OUT1 (open collector N.O.) in one of the following functions: 00 = always active 01 = FAIL-SAFE 02 = INDICATOR LIGHT (**off** = closed; **on** = during opening and open/in pause; **flashing** = during closing) 03 = COURTESY LIGHT (stays on for the duration of the movement (even in SETUP) in addition to the set time of function t1 04 = ACTIVE ERROR 05 = automated system OPEN or in PAUSE 06 = automated system CLOSED 07 = automated system MOVING 08 = automated system in EMERGENCY 09 = automated system in OPENING 10 = automated system in CLOSING 11 = *electric lock control before CLOSING* 12 = safety device ACTIVE 13 = TRAFFIC LIGHT function (active when OPENING and with automated system OPEN) 14 = timed output which can be activated from the second radio channel OMNIDEC (see function t1) 15 = output which can be activated from the second radio channel OMNIDEC (step-by-step function) 16 = active during movement of leaf 1 17 = active during movement of leaf 2 18 = Instrusion detection 19 = System working on battery *If tr is displayed, it indicates that the output is used as a TIMER set from the PC/MAC software.*	00	00	00	00	00	00

ENGLISH

Display	Advanced Function	Default 0	Default 1	Default 2	Default 3	Default 4	Default 5
t1	**OUT 1 TIMING (visualised only with the function o1 = 03 or o1 = 14):** You can adjust the timing of OUT 1 output if a timed function has been selected with a time from 1 to 59 minutes in 1-minute steps for functions 03-14	01	01	01	01	01	01
o2	**OUT 2:** You can set the output OUT2 (open collector N.O.). *See the options as o1.*	02	02	02	02	02	02
t2	**OUT 2 TIMING (visualised only with the function o2 = 03 or o2 = 14):** *Adjustable as t1.*	01	01	01	01	01	01
AS	**MAINTENANCE REQUEST - CYCLE COUNTER (linked to the subsequent two functions):** You can enable the signaling of maintenance request, or the cycle counter. y = enable the SIGNALING when the programmed number of cycles has been reached (as defined in subsequent two functions nc and nd). Signaling consists of a pre-flashing of 8 sec (in addition to the time may already be set with the function PF) before each movement. no = enable the CYCLE COUNTER, that will be displayed in the subsequent two functions nc and nd up to a displayed maximum of 65,530. *If the number of cycles performed is greater than 65,530 the subsequent two functions nc and nd will display 65 and 53, respectively.*	no	no	no	no	no	no
nc	**CYCLE PROGRAMMING (THOUSANDS):** If AS = y the display will show the number of thousands of cycles after which the signaling of maintenance request begins (can be set from 0 to 99). If AS = no the display will show the number of thousands of work cycles performed. The value displayed is updated with the succession of the cycles, interacting with the value in nd. *When AS = no you can reset the cycle counter: press simultaneously + and − for 5 sec.*	00	00	00	00	00	00
nd	**CYCLE PROGRAMMING (TENS):** If AS = y the display will show the number of tens of cycles after which the signaling of maintenace request begins (can be set from 0 to 99). If AS = no the display will show the number of tens of work cycles performed. The value displayed is updated with the succession of the cycles, interacting with the value in nc. *e.g.: if the system has performed 11,218 cycles, nc = 11 and nd = 21 will be displayed*	00	00	00	00	00	00

St	**AUTOMATED SYSTEM STATUS:** You can exit programming, choosing whether or not to save the configuration you just performed. 1. set the choice: Y to SAVE and EXIT the programming no to EXIT the programming WITHOUT SAVING 2. press the button **F** to confirm; at the end the display returns to visualize the **automated system status**: 00 = CLOSED 01 = OPEN 02 = Stationary then "OPENS" 03 = Stationary then "CLOSES" 04 = In "PAUSE" 05 = Opening 06 = Closing 07 = FAIL SAFE in progress 08 = checking BUS-2EASY devices in progress 09 = Pre-flash then "OPENS" 10 = Pre-flash then "CLOSES" 11 = Emergency open 12 = Emergency close HP = Hold position	Y

BUS 2EASY DEVICE INSTALLATION

You can add BUS-2EASY devices to the system at any time, proceeding as follows:

1. Cut off the electrical power to the board.
2. Install and set the BUS-2EASY accessories according to the instructions of the devices.
3. Connect the BUS-2EASY devices according to the instructions of Chapter ***ELECTRICAL CONNECTIONS***.
4. Power up the board.
5. Complete the procedure for BUS-2EASY device entry.

BUS-2EASY DEVICE ENTRY

1. Access BASIC programming and scroll through the functions up until bu. When **F** is released, the display will show the BUS-2EASY devices status *(see the figure)*.
2. Perform the entry: simultaneously press and hold **+** and **−** for at least 5 sec (during this time, the display will blink).
3. Y will appear as a confirmation of entry completion.
4. Release the **+** and **−** buttons. The status of the BUS-2EASY devices will be displayed.

If no BUS device has ever been entered in the board, the display will read no.

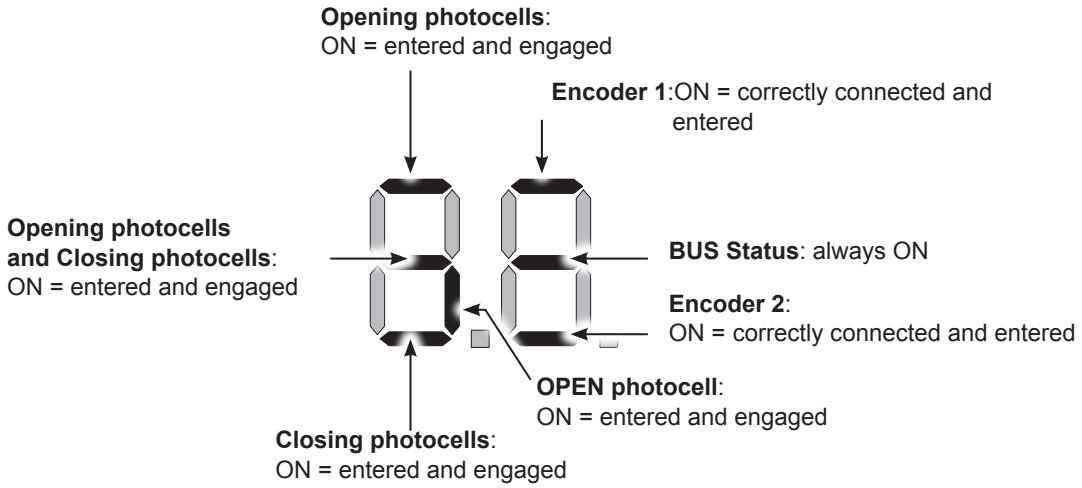
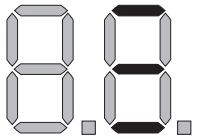


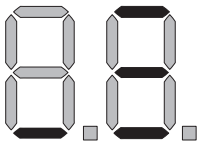
Fig. Visualising the BUS-2EASY status in the function bu: each segment of the display shows one type of device.

Fig. examples of BUS-2EASY status visualization on display.

In STAND BY (gate closed and in stand-by) with BUS-2EASY ***Encoder*** on leaf 1 and leaf 2 and BUS-2EASY ***Photocells*** correctly connected and entered.



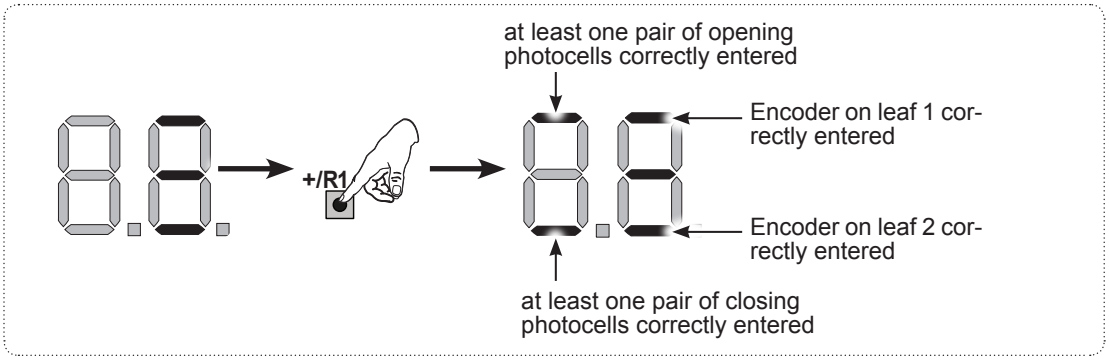
In case of BUS-2EASY ***Encoder*** on leaf1 and leaf 2 and BUS-2EASY ***Photocells*** correctly connected and entered and with closing photocells engaged:



CHECKING THE SECURING DEVICES ENTERED ON THE BOARD

To verify the types of BUS device recognised through the entry:

1. Press and hold the + button during stand-by visualisation; the segments corresponding to at least one entered device will go ON. E.g.:



To check the condition of the BUS-2EASY connection, verify the LED on the board:

LED DL15 (Red)

ON	Safety device engaged or pulse generator active
OFF	NO safety device engaged neither pulse generator active

LED DL14 (Green)

ON steady	Normal activity (led ON even if there are no devices).
Slow blinking (blink every 2,5 sec)	BUS-2EASY line short-circuit.
Rapid blinking (blink every 0.5 sec)	Error in the BUS-2EASY connection. Repeat the device entry. If the error occurs again, check: - That there are no more than one device in the system with the same address. - Calling error (number > or < the connected BUS devices). - FAIL SAFE error on the BUS device.
OFF	Board in Sleep mode (if used).

TIME LEARNING - SETUP

When the board is powered, if a SETUP has never been performed, or if the board requests it, on the display SU indicates that a SETUP must be performed.

During SETUP, the connected BUS-2EASY accessories are always entered. The BUS-2EASY encoders entered by the SETUP must always be enabled using the parameter En (BASIC Programming).

During SETUP all safety devices are disabled! Therefore, carry out the operation avoiding any transit in the leaf movement area.

If a system without an encoder is installed, mechanical stops will be required for the leaves.

Perform the SET-UP as follows:

1. Enter BASIC programming and go to the parameter tL , when F is released -- will appear.
2. Ensure that the gate leaves are closed. Otherwise, proceed as follows:
   - Press and hold -/R2 to close leaf 2
   - Press and hold +/R1 to close leaf 1

Should pressing +/R1 and/or -/R2 command opening of the corresponding leaf, cut off power and, on terminal board J11 or J12, invert the cables of the corresponding motor.

3. With the gate leaves closed, launch SETUP by pressing and holding + and − until S1 begins to flash on the display (about 3 sec).
4. Release + e −. Leaf 1 begins its opening movement.

Operation WITHOUT Safecoder	Operation WITH Safecoder
Leaf 1 automatically acknowledges the mechanical stop.	Leaf 1 automatically acknowledges the mechanical stop. It will in any case be possible to stop leaf movement at any time and in the desired point by sending an OPEN A pulse.

5. On the display S2 will flash (only if 2 motors have been selected): leaf 2 begins opening.

Operation WITHOUT Safecoder	Operation WITH Safecoder
Leaf 2 automatically acknowledges the mechanical stop.	Leaf 2 automatically acknowledges the mechanical stop. It will in any case be possible to stop leaf movement at any time and in the desired point by sending an OPEN A pulse.

Steps 4 and 5 with function FA :

FA = 01 *(the limit switch determines the stopping of motion) with* ***Safecoder*** *installed the OPEN A pulse for stopping motion is ignored.*

FA = 02 *(the limit switch determines the start of deceleration) send an OPEN A pulse only after involving the opening limit switch, without* ***Safecoder****, make sure that the limit switch is engaged before the mechanical stop.*

6. On the display S3 will flash (only if 2 motors have been selected): leaf 2 begins closing.

Operation WITHOUT Safecoder	Operation WITH Safecoder
Leaf 2 automatically acknowledges the mechanical stop.	Leaf 2 automatically acknowledges the mechanical stop. It will in any case be possible to stop leaf movement at any time and in the desired point by sending an OPEN A pulse.

7. On the display S4 flashes: leaf 1 begins closing.

Operation WITHOUT Safecoder	Operation WITH Safecoder
Leaf 1 automatically acknowledges the mechanical stop	Leaf 1 automatically acknowledges the mechanical stop. It will in any case be possible to stop leaf movement at any time and in the desired point by sending an OPEN A pulse.

Steps 6 and 7 with function FC :

FC = 01 *(the limit switch determines the stopping of motion) the OPEN A pulse for stopping motion is ignored.*

FC = 02 *(the limit switch determines the start of deceleration) with* ***Safecoder*** *installed send an OPEN A pulse only after involving the closing limit switch, without* ***Safecoder****, make sure that the limit switch is engaged before the mechanical stop*

8. S5 flashes on the display: both leaves open at full speed.
9. The board will automatically exit the programming menu and will display the automated system status (00) to confirm that the SETUP procedure has been completed correctly. If the procedure is not completed correctly, on the display S0 will start flashing, indicating that a new SETUP procedure must be performed.

The deceleration spaces can be configured and modified from the display using the parameters r1 and r2 (see Advanced Programming) without repeating the SETUP.

TESTING THE AUTOMATED SYSTEM

Once installation and programming is completed, ensure that the system is operating correctly.
Be especially careful that the safety devices operate correctly and ensure that the system complies with all current safety regulations.
Close the cover in the provided seat with gasket.

MEMORISING THE RADIO CODE

The control board features an integrated 2-channel decoding system (DS, SLH/SLH LR, RC) called OMNIDEC. This system lets you memorise, using an additional receiver module (on J5 connector) and more radio controls having different technology but the same frequency. You can thus control both total opening (OPEN A) and partial opening (OPEN B).

The different types of radio code (DS, SLH/SLH LR, LC/RC) can coexist simultaneously on the two channels. You can enter up to 250 radio codes divided between OPEN A and OPEN B/CLOSE.

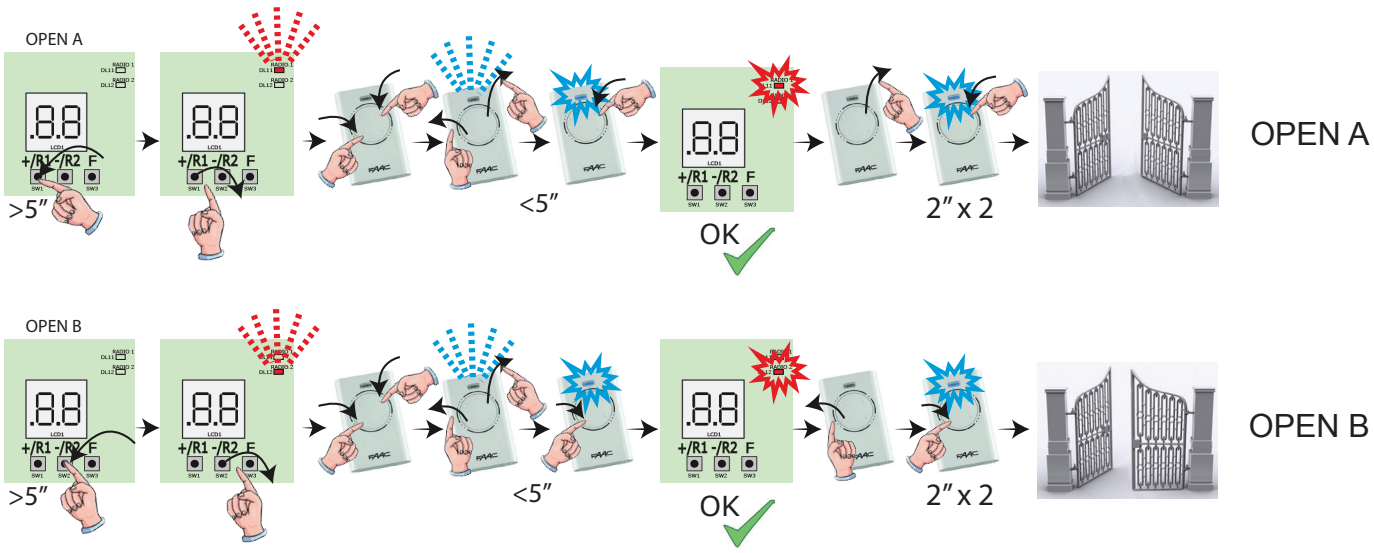
To use different encoding systems on the same channel, you must complete the learning of each encoding system and then repeat the procedure for the other one.

Other, more detailed, programming options are available using a PC/MAC (see dedicated PC/MAC instructions). For example, you can set an automatic OPEN command on the radio channel to command an automatic cycle (open-pause-close) regardless of the selected logic.

MEMORISING THE SLH/SLH LR RADIO CONTROLS

1. Press and hold +/R1 - SW1 (OPEN A programming) or -/R2 - SW2 (OPEN B/CLOSE programming).
2. After keeping the button pressed for about 5 sec, the corresponding radio LED (DL11 or DL12) will begin to flash slowly for about 20 sec.
3. Release the button.
4. Simultaneously press and hold P1 and P2 on the SLH/SLH LR radio control (only MASTER radio control).
5. The radio control LED will begin to flash.
6. Release both buttons.
7. Ensure that LED DL11 or DL12 on the board is still flashing (see point 2) and, while the radio control LED is still flashing, press and hold the desired button on the radio control (the radio control LED will go on steady).
8. The corresponding LED on the board (DL11 or DL12) will go on steady for 1 sec and then go off, indicating that memorisation has been completed.
9. Release the radio control button.
10. To complete memorisation, press the button of the memorised radio control twice in succession. The automated system will perform an opening cycle.

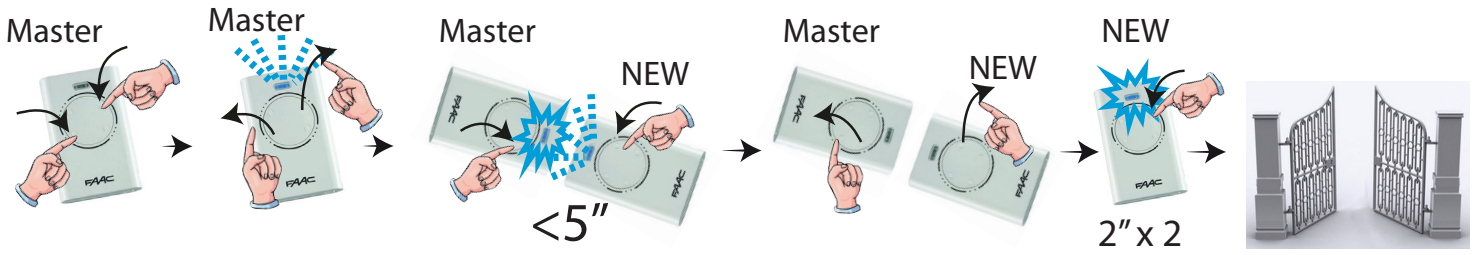
Ensure that there are no obstacles (by people or things) during the automated system movement.



To enable other radio controls with the same system code, you must transfer the system code of the memorised radio control button to the button corresponding to the radio control you wish to add:

1. Simultaneously press and hold P1 and P2 on the memorised radio control.
2. The radio control LED will begin to flash.
3. Release both buttons.
4. Press and hold, while the radio control LED is still flashing, the memorised button (the radio control LED will go on steady).
5. Bring the radio controls close together, press and hold the corresponding button of the radio control you wish to add, and release only after the radio control LED flashes twice, indicating that memorisation has been completed.
6. Press the button of the memorised radio control twice in succession. The automated system will perform an opening cycle.

⚠ ***Ensure that there are no obstacles (by people or things) during the automated system movement.***



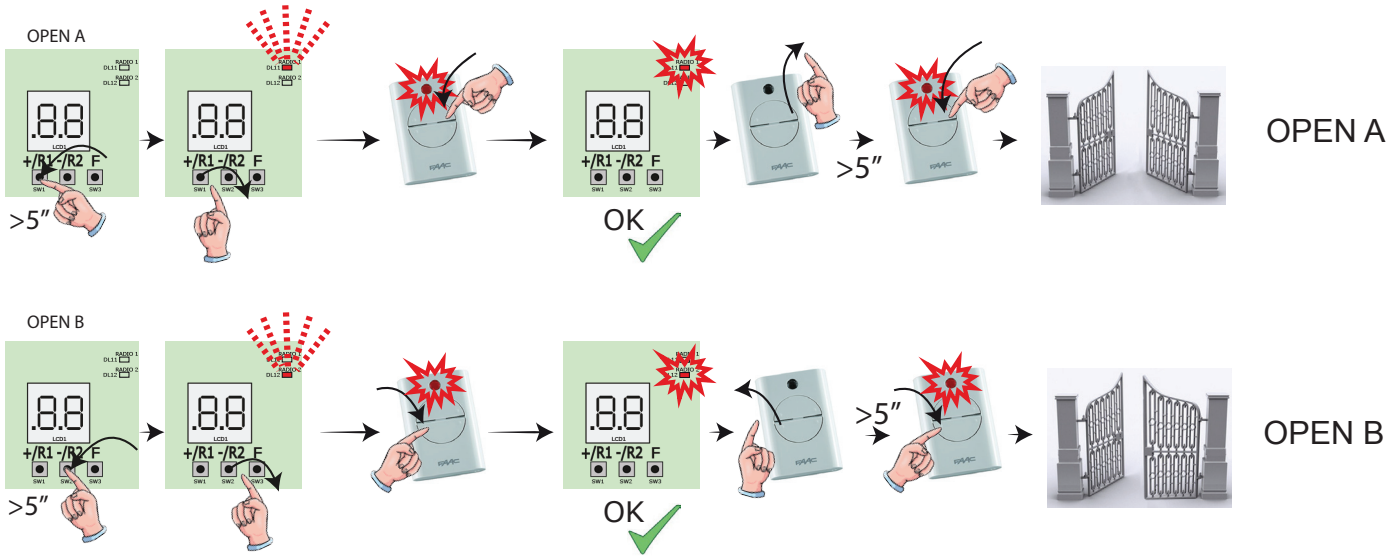
MEMORISING LC/RC RADIO CONTROLS (433MHz ONLY)

1. Press and hold +/R1 - SW1 (OPEN A programming) or -/R2 - SW2 (OPEN B/CLOSE programming).
2. After keeping the button pressed for about 5 sec, the corresponding radio LED (DL11 or DL12) will begin to flash slowly for about 20 sec.
3. Release the button.
4. During radio LED flashing, press the desired button of the LC/RC radio control.
5. The corresponding LED on the board (DL11 or DL12) will go on steady for 1 second, indicating that memorisation has been completed, and will begin flashing again for another 20 sec during which you can memorise another radio control.
6. When the 20 sec have elapsed, the LED will turn off, indicating that the procedure has been completed.
7. To add other radio controls, repeat the procedure from point

REMOTE MEMORISATION OF LC/RC RADIO CONTROLS

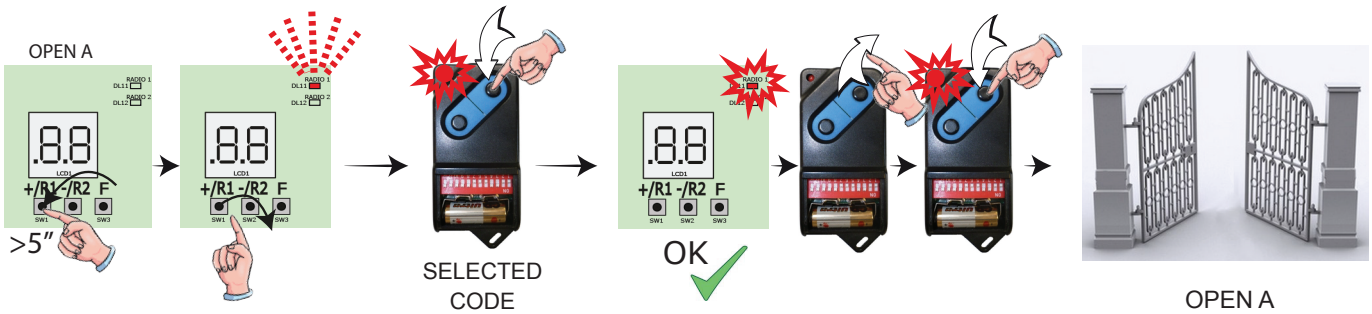
With LC/RC radio controls you can remotely memorise other radio controls, i.e. without working directly on the board, using a previously memorised radio control.

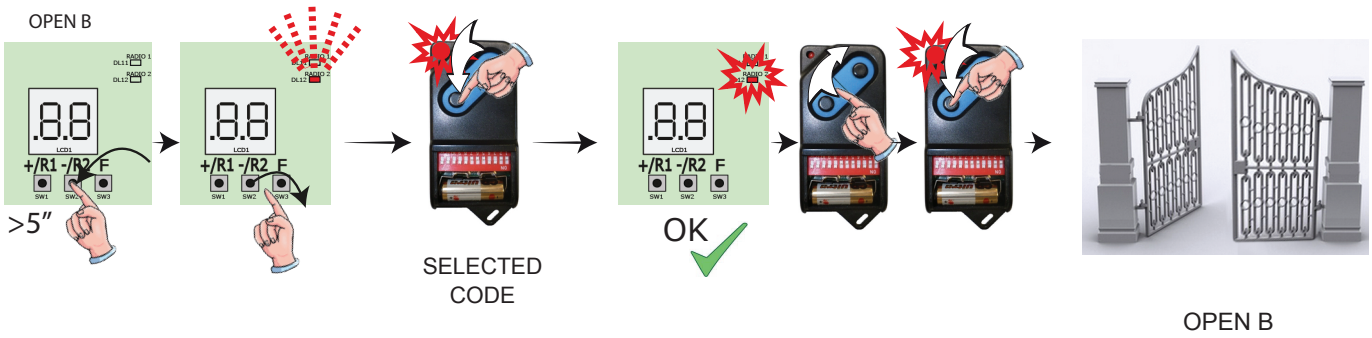
1. Take a radio control that has already been memorised on one of the 2 channels (OPEN A or OPEN B/CLOSE) and move to the vicinity of the board.
2. Simultaneously press and hold P1 and P2 until both LEDs flash slowly for 5 sec.
3. Within 5 seconds, press the previously memorised radio control button to activate the learning phase for the selected channel.
4. The LED on the board corresponding to the channel in learning mode will flash for 20 sec within which another radio control code is transmitted by pressing the button.
5. The corresponding LED on the board will go on steady for 2 sec (indicating that memorisation has been completed) and will begin flashing again for another 20 sec, during which you can memorise other radio controls, and will finally go off.



MEMORISING DS RADIO CONTROLS

1. On the DS radio control, choose the desired ON - OFF combination of the 12 dip-switches.
2. Press and hold +/R1 - SW1 (OPEN A programming) or -/R2 - SW2 (OPEN B/CLOSE programming).
3. After keeping the button pressed for about 5 sec, the corresponding radio LED (DL11 or DL12) will begin to flash slowly for about 20 sec.
4. Release the button.
5. During radio LED flashing, press the button of the radio control you wish to program.
6. The corresponding LED on the board (DL11 or DL12) will go on steady for 1 second and then go off, indicating that memorisation has been completed.
7. To add other different codes, repeat the procedure starting from point 1.
8. To add other radio controls with the same code, set the 12 dip-switches according to the same combination as the already memorised radio control.





DELETING THE RADIO CONTROLS

⚠ ***This operation CANNOT be reversed. This will delete ALL the radio control codes memorised as both OPEN A and OPEN B/CLOSE. The cancellation procedure is active only in gate status visualisation mode.***

1. Press and hold -/R2 

.
2. After pressing for about 5 sec, the DL12 LED begins to flash slowly; after another 5 sec of slow flashing and holding, the LEDs DL11 and DL12 begin flashing more rapidly (cancellation has started).
3. Once rapid flashing has stopped, LEDs DL11 and DL12 will go on steady, confirming the cancellation of all the radio codes (OPEN A and OPEN B/CLOSE) from the board memory.
4. Release -/R2 

. The LEDs will go off, indicating correct cancellation.

SIGNALLING ERRORS AND ALARMS

In case of **ERRORS** (conditions that stop gate operation) or **ALARMS** (conditions that do not compromise gate operation) the display will show the number corresponding to the warning in progress by simultaneously pressing + and −.

These warnings will disappear in the following cycle only if the situation causing them is removed.

Errors

When there is an ERROR the ERROR LED will go on steady. By simultaneously pressing + and − the display will show the corresponding error number.

The following table contains all the errors that can be viewed on the display.

N°	ERROR	SOLUTION
01	Board broken	Replace the board
05	Invalid SETUP	Repeat board SETUP
08	BUS-2EASY device error	Ensure that no two pairs of devices have the same address.
09	BUS-2EASY output short-circuit	Check the connections of the connected and entered BUS-2EASY devices
10	Motor 1 limit switch error	Check the limit switch connections for motor 1
11	Motor 2 limit switch error	Check the limit switch connections for motor 2
12	BUS-2EASY call	Ensure that the BUS devices are operating correctly and, if necessary, repeat BUS device acquisition
13	FAIL SAFE	Check that the safety devices (photocells) are operating correctly
14	Configuration error	Check that the board is configured correctly (basic and advanced programming) and, if necessary, repeat SETUP
17	Motor 1 encoder fault	Check the connections or replace motor 1 encoder
18	Motor 2 encoder fault	Check the connections or replace motor 2 encoder
19	Incorrect memory data	Repeat BUS-2EASY device entry and/or re-program the board
93	High absorption at +24V	Check that absorption by the accessories connected is within permitted limits

Alarms

When there is an ALARM the **ERROR** *LED will begin to flash. By simultaneously pressing + and − the display will show the corresponding alarm number.*

The following table contains all the alarms that can be viewed on the display.

N°	ALARM	Solution/Description
20	Obstacle on MOTOR 1 (only with encoder)	Remove any possible obstacle on leaf 1
21	Obstacle on MOTOR 2 (only with encoder)	Remove any possible obstacle on leaf 2
25	LOCK 1 output short-circuit	Remove the cause of the short-circuit
26	LOCK 2 output short-circuit	Remove the cause of the short-circuit
27	Nr. of consecutive obstacles exceeded during opening	Remove any possible obstacle. Should the problem persist, repeat SETUP
28	Nr. of consecutive obstacles exceeded during closing	Remove any possible obstacle. Should the problem persist, repeat SETUP
30	XF radio code memory full	Cancel the radio codes that are not being used using the PC program or use an additional DEC/MINIDEC/RP module
31	Tampering alarm	Movement was performed with automation in status St= 00 or 01. Perform a manoeuvre cycle.
35	TIMER active and TIMER function operating:	TIMER function is operating
40	Service request	Contact the installer for maintenance
50	The HOLD POSITION is operating (active on PC/MAC)	HOLD POSITION function is operating
60	TIMER active and error in TIMER data	Reload a correct TIMER configuration with the PC/MAC programme
62	Loss of time and date on the board (only if the TIMER is operating)	Reload the time and date with the PC/MAC programme and replace the BAT1 - CR2032 buffer battery
63	JOLLY TIMER is activated	JOLLY TIMER is enabled by terminal board J3
64	TIMER DISABLED is operating	TIMER is disabled by terminal board J3

SEDE - HEADQUARTERS

FAAC S.p.A.

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