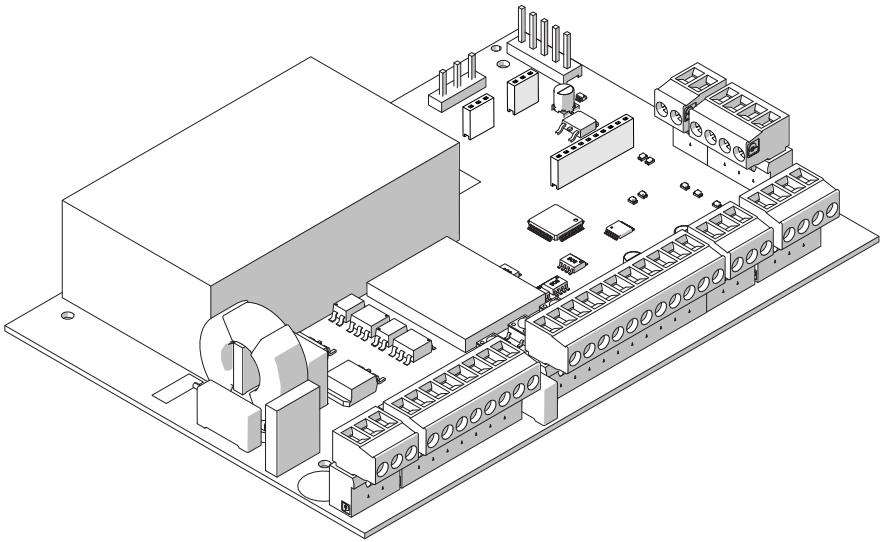
E145S LC

EN



EN

Translation of the original instructions

These instructions are for boards starting from firmware version **1.0**. They will then be valid until a new version is released.

This manual was published in 2025.

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CONTENTS

TABLES

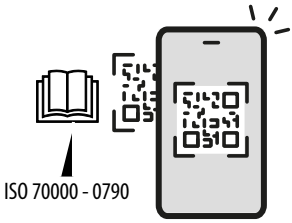
1. INTRODUCTION TO THIS INSTRUCTION MANUAL

This manual provides the correct procedures and requirements for installing E145S LC and maintaining it in a safe condition.
In Europe, the automation of a gate falls under the Machinery Directive 2006/42/EC and the corresponding harmonised standards. Anyone automating a gate (new or existing) is classified as the Manufacturer of the Machine. They are therefore required by law, among other things, to carry out a risk analysis of the machine (automatic gate in its entirety) and take protective measures to fulfil the essential safety requirements specified in Annex I of the Machinery Directive.
FAAC S.p.A. recommends that you always comply with the EN 12453 standard and in particular that you adopt the safety criteria and devices indicated, without exception, including the dead-man function.
This manual contains references to European standards. The automation of a gate must fully comply with any laws, standards and regulations applicable in the country where installation will take place.

Unless otherwise specified, the measurements provided in the instructions are in mm.

SAFETY WARNINGS FOR THE INSTALLER
Before starting the installation, read and comply with the "Safety warnings for the installer" booklet supplied with the product, and these installation instructions. Keep all the printed documentation provided.

ONLINE INSTRUCTIONS
When you receive your goods, to go directly to the specific instructions page for the product, scan the QR code associated with the icon on the ISO 70000 - 0790.



MEANING OF THE SYMBOLS USED
NOTES AND WARNINGS ON THE INSTRUCTIONS

	WARNING - Details and specifications that must be complied with in order to ensure that the system operates correctly.
	RECYCLING AND DISPOSAL - The materials used in manufacturing, the batteries and any electronic components must not be sent to landfill. They must be taken to authorised recycling and disposal centres
	FIGURE E.g.: **1**-3 see Figure 1 - detail 3.
	TABLE E.g.: **1** see Table 1.
§	CHAPTER/SECTION E.g.: §1.1 see section 1.1.
○	LED off
●	LED on
*	LED flashing
*	LED flashing quickly

2. E145S LC

2.1 PRODUCT IDENTIFICATION

The product is identified by labels **A** and **B**.

Once installation is complete, attach label **B** to the relevant board enclosure, in a position that is easily accessible and protected from the elements.

2.2 INTENDED USE

The FAAC E145S LC electronic board has been designed to control actuators (hydraulic or electromechanical) or gearmotors for motorized gates intended for installation in areas that are accessible to people, the main purpose of which is to provide safe access for goods or vehicles or people in industrial, commercial or residential settings.

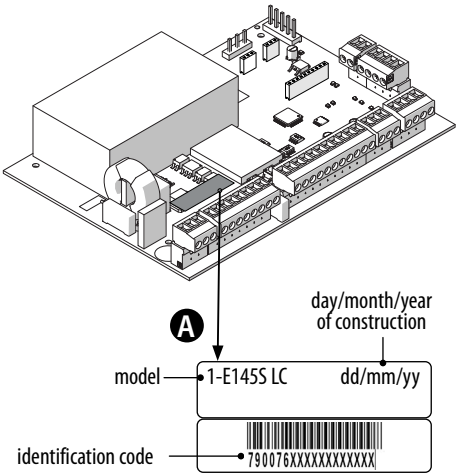
⚠ Any other use that is not expressly specified in these instructions is prohibited and could affect the integrity of the product and/or represent a source of danger.

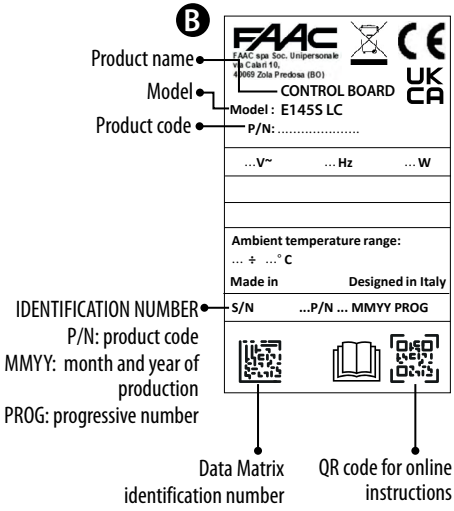
2.3 LIMITATIONS OF USE

- The E145S LC can control one or two 230/150 V~ operators. Mixed configurations are not allowed with sliding gate gearmotors (e.g. you cannot connect a sliding gate gearmotor with a swing gate operator).
- Using the product in any configuration other than that intended by FAAC S.p.A.is prohibited. It is prohibited to modify any of the product's components

2.4 UNAUTHORISED USE

- Do not use on motors or devices that are intended for purposes other than operating gates.
- Uses other than the intended use are prohibited.
- It is prohibited to install the E145S LC on smoke and/or fire doors.
- It is prohibited to install the E145S LC in environments in which there is a risk of explosion and/or fire: the presence of flammable gases or fumes is a serious safety hazard (the product is not ATEX certified).
- It is prohibited to power the system with energy sources other than those specified.
- It is prohibited to integrate commercial systems and/or equipment other than those specified, or use them for purposes not envisaged and authorised by the corresponding manufacturers.
- It is prohibited to use and/or install accessories which have not been specifically authorised by FAAC S.p.A.
- It is prohibited to use the E145S LC in the presence of faults which could compromise safety.
- Do not allow water jets of any type or size to come into direct contact with the E145S LC.
- Do not expose the E145S LC to corrosive chemical or environmental agents.





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2.5 TECHNICAL SPECIFICATIONS

E145S LC It is an electronic board designed to control one or two 230/150 V~ motors with an overall power of 900 W (900 W refers to the sum of the loads connected to the two motor outputs irrespective of how they are distributed).

Switching power supply

The switching power supply reduces power consumption in stand-by mode, keeps the output voltage stable even in the event of fluctuations in the mains supply and works over a wide range of input voltages.

Programming

There are two menus for programming from the board, via the display and using dedicated buttons: BASIC and ADVANCED.

In addition, remote programming from Simply Connect provides a larger number of options, including uploading / downloading the programming and updating the board FW.

Low consumption mode

The low power consumption function is available, which reduces power consumption in standby mode in accordance with EU Directive 2009/125/EC and Regulation (EU) 2023/826.

Simply Connect

This CLOUD platform enables remote communication with the automation and offers with modes specific for the installer or user. Simply Connect requires an accessory connectivity module to be plugged in, which is chosen according to technology used:

- XMB (GSM for mobile, Bluetooth Low Energy technology)
- XWBL (WiFi, LAN, Bluetooth Low Energy technology)

BUS 2easy

It is possible to connect FAAC BUS 2easy devices (photocells, sensitive edges and control devices) to the E145S LC board.

Radio system

The electronic board is fitted with an integrated two-channel decoding system that requires either a XF FDS/ XF FDS LC or XF radio module to be installed, to allow various types of FAAC radio controls to be memorised. In addition, a quick insertion (5 pin) connector for FAAC radio/decoder boards is available.

Sensitive edges

The E145S LC has two inputs for connecting NC contact or 8.2KΩ resistive sensitive edges. Up to four 8.2 KΩ resistive sensitive edges can be connected in parallel to each input.

Encoder

An accessory encoder can be connected (e.g. SAFEcoder BUS 2easy) or integrated in the operator (e.g. S800 ENC). The electronic board detects the angular position and the speed of movement of the leaf via the encoder and is able to detect the presence of an obstacle.

Limit switches

E145S LC these have inputs for opening and closing limit switches, which can be used to start the slowdown or stop the movement.

End of travel slowdown

The E145S LC can slow down the movement close to the open and closed positions in order to limit the inertial forces and reduce the vibrations of the gate when it is stopping.

2.6 TECHNICAL DATA E145S LC

Data refers to a 230 V- @50 Hz; 115 V- @60 Hz power supply.

Power supply voltage	220 - 240 V~ @50/60 Hz	110 - 120 V~ @50/60 Hz
Maximum board Power	900 W	1000 W
Max. motor load	800 W	900 W
Power with automation stationary and maximum accessories load	14.6 W	14.6 W
Standby power (low consumption LC)	≤ 0.5 W	≤ 0.5 W
Standby power (low consumption LC) with Simply Connect	≤ 2 W	≤ 2 W
Max. accessories load	24 V⎓ 500 mA BUS 2easy 250 mA	24 V⎓ 500 mA BUS 2easy 250 mA
Max. flashing light load	60 W max	60 W max
Ambient operating temperature	-20…+65 °C	-20…+65 °C
Protective fuse	F 10 A	F 10 A
Weight with packaging	0.7 kg	0.7 kg
Package dimensions	200 x 130 x 70 mm	200 x 130 x 70 mm

For further information on the low power consumption mode, refer to the relevant section.

SAFETY FUNCTIONS

■ **Specifying the minimum levels of protection of the primary edge (EN 12453)**

	TYPE OF USE		
ACTIVATION TYPE	Trained users and unlikely presence of the general public	Trained users and probable presence of the general public	Untrained users
Dead-man mode	**A**	**B**	not allowed
Pulse activation with the automation visible	**C / E**	**C / E**	**(C + D) / E**
Pulse activation with the automation not visible	**C / E**	**(C + D) / E**	**(C + D) / E**
Automatic mode	**(C + D) / E**	**(C + D) / E**	**(C + D) / E**

A Dead-man mode of operation with non self-latching control device.

B Dead-man mode of operation with non self-latching control device with key-operated switch or similar device.

C Force limitation, either by force-limiting devices or by sensitive protective devices

D Additional device to reduce the likelihood of contact between a person or obstacle and the mobile leaf used in combination with force limitation (**C**)

E Presence detection protection device, designed and installed in such a way that a person cannot be touched by the moving leaf

■ **Safety functions of E145S LC**

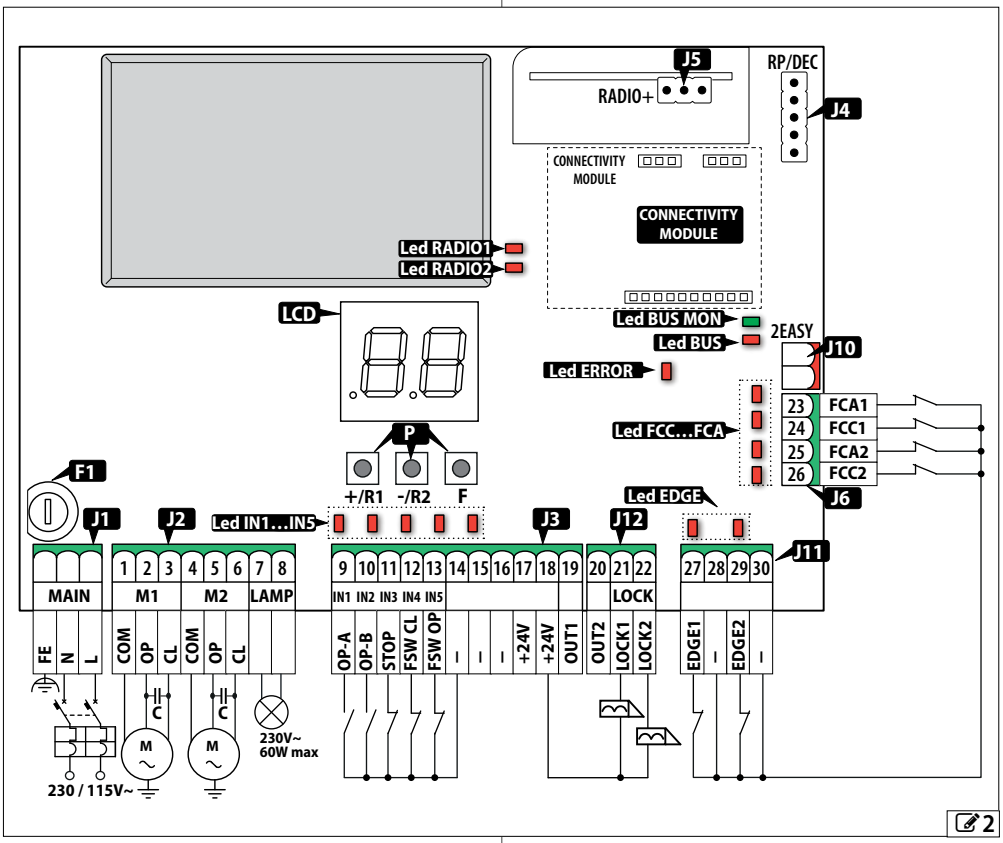
Inputs	Programming	Functions	Protection type according to EN 12453	Device performance level	Performance level E145S LC
FSW OP FSW CL	Failsafe enabled on OUT1/OUT2 IF = I/2/3 o1 / o2 = 01	Contact prevention using presence detection devices (ESPE)	E	PI c Category 2	PI c Category 2
	Failsafe enabled on OUT1/OUT2 IF = I/2/3 o1 / o2 = 01 Ph = no, oP = Y	Force limitation by means of sensitive edges with NC contact (PSPE)	C		
EDOP+ EDOP - EDCL+ EDCL -	OE, CE = Ir/2r/3r/4r	Force limitation by means of resistive sensitive edges 8.2 kΩ (PSPE)	C	PI c Category 2	PI c Category 2
	OE, CE = nc Failsafe enabled on OUT1/OUT2 3F = I/2/3 o1 / o2 = 01	Force limitation by means of sensitive edges with NC contact and TEST input (PSPE)			
STOP	Failsafe=enabled on OUT1/OUT2 2F = I o1 / o2 = 01	Safety STOP for pedestrian door integrated in the sliding leaf or Contact prevention using presence detection devices (ESPE)	E	–	PI c Category 2
BUS 2easy	Sensitive edges BUS 2easy	Force limitation by means of sensitive edges BUS 2easy (PSPE)	C	PI c Category 2	PI c Category 2
	SAFEcoder and anti-crushing functions (EC, F1, F2, IP, r8, r1, r2)	Intrinsic force limitation	C	-	PI c Category 2

■ **Additional protection functions**

Inputs	Programming	Functions	Protection type according to EN 12453	Device performance level	Performance level E145S LC
FSW OP FSW CL	Failsafe enabled on OUT1/OUT2 IF = I/2/3 o1 / o2 = 01 or Periodic inspection at a minimum interval of 6 months	Additional devices to reduce the likelihood of contact	D	–	–
Bus 2EASY	Photocells BUS 2easy	Additional devices to reduce the likelihood of contact	D	–	–

3. ELECTRONIC INSTALLATION

3.1 COMPONENTS



KEY:	
J1	Removable terminal board for the mains power supply
J2	Removable terminal board for connecting motors and flashing light
J3	Removable terminal board for connecting control devices, accessories power supply and output (OUT1)
J4	Connector (5 pin) for FAAC radio/decoder boards
J5	Connector (3 pin) for FAAC XF radio module
J6	Removable terminal board for connecting limit switches
J10	Removable terminal board for connecting BUS 2easy devices
J11	Removable terminal board for connecting sensitive edges
J12	Removable terminal board for connecting electric lock and output (OUT2)
LCD	Programming display

KEY:	
P	Programming buttons
F1	Power supply fuse (F10 A)
CONNECTIVITY	Connector for Simply Connect board

Status LEDs ▭:	
IN1…IN5 LEDs	Inputs for control devices
EDGE LEDs	Inputs for sensitive edges
FCC …FCA LEDs	Inputs for opening/closing limit switches
BUS LED	BUS 2easy devices
BUS MON LED	BUS 2easy line
ERROR LED	Error/alarm signalling
RADIO1 LED	RADIO XF FDS or XF channel 1 (CH1)
RADIO2 LED	RADIO XF FDS or XF channel 2 (CH2)

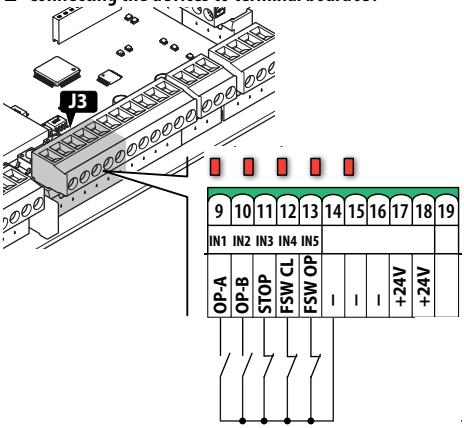
3.2 CONNECTIONS

When inserting connectors and pull out terminal-boards, be careful not to bend the printed circuit so as not to damage the board.

CONTROL DEVICES

Multiple NO contacts on same input must be connected in parallel.
Multiple NC contacts on same input must be connected in series.
Below is a brief explanation of the inputs. The effect a command has may vary according to the operating logic and programming functions.

■ **Connecting the devices to terminal board J3:**



9 OP-A (IN1)
(TOTAL motion command)
NO contact, connect a push-button or another type of pulse generator which, by closing a contact, commands the total opening (OPEN) of the gate.

10 OP-B (IN2)
(Motion command determined by the set operating logic)
NO contact, connect a push-button or another type of pulse generator which, by closing a contact, causes the gate to close (CLOSE in logics C, b, bC) or PARTIAL open (in all other logics):
The partial opening is:
• 50% of the complete opening in systems with only one motor
• complete only for the leaf actuated by motor 1 in two motor systems

11 STOP (IN3)
(Stop command)
NC contact, connect a push-button or another type of pulse generator which, by opening a contact, causes the automation to stop.

If the input is not used, bridge it with the common contacts (-).

12 FSW CL (IN4)
(Photocells active during closing)
NC contact, connect a photocell or another device that, by opening the contact during closing, reverses the gate.
It can be configured to reverse immediately or when the photocell is released by setting programming function Ph.

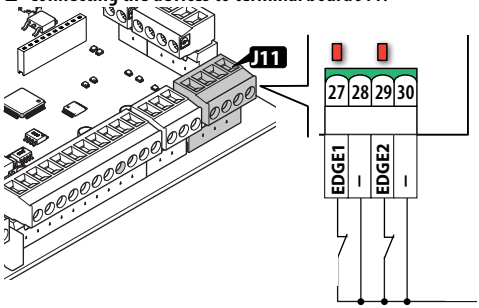
If the input is not used, bridge it with the common contacts (-).

13 FSW OP (IN5)
(Photocell active in opening)
NC contact, connect a photocell or another device that, by opening the contact during opening, reverses the gate.

If the input is not used, bridge it with the common contacts (-).

14…16 – Common contacts / Accessories power supply negative

■ **Connecting the devices to terminal board J11:**



27 EDGE1
(Safety in opening devices active)
Connect a sensitive edge that, when activated during opening, causes the gate to reverse.
This input can be configured by setting programming function OE to connect:
• sensitive edges with NC contact -default-
• resistive sensitive edges 8.2 kΩ

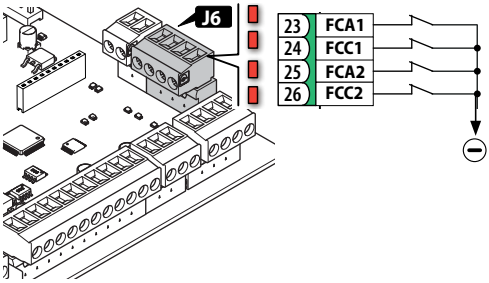
If the input is not used, bridge it with the common contacts (-).

28 – Common contacts / Accessories power supply negative

29 EDGE2	(Safety in closing devices active) Connect a sensitive edge that, when activated during closing, causes the gate to reverse. This input can be configured by setting programming function CE to connect: • sensitive edges with NC contact -default- • resistive sensitive edges 8.2 kΩ

If the input is not used, bridge it with the common contacts (-).

LIMIT SWITCHES

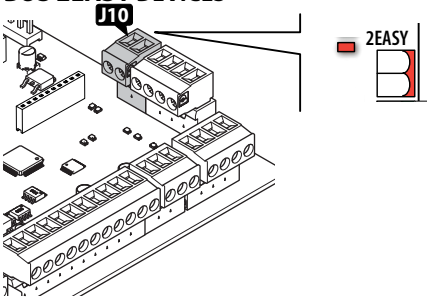


If no limit switches are used, there is no need to bridge the inputs (NC). If at least one limit switch is used, any unused contacts must be bridged with the common contacts (-).

23	**FCA1**	Opening limit switch motor 1 (NC)
24	**FCC1**	Closing limit switch motor 1 (NC)
25	**FCA2**	Opening limit switch motor 2 (NC)
26	**FCC2**	Closing limit switch motor 2 (NC)

To configure connections and functions, see § Accessories.

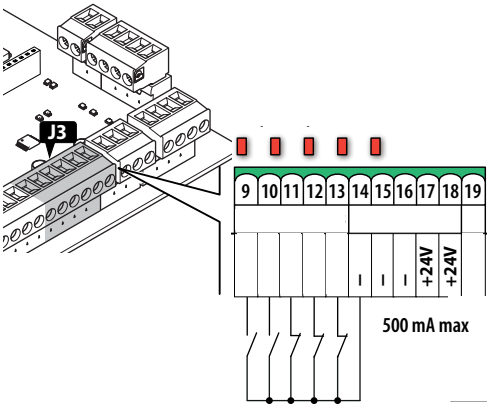
BUS 2EASY DEVICES



If no BUS 2easy devices are used, leave the terminals free.

For connecting and assigning addresses see § Accessories.
Do not exceed the maximum load of 250 mA.

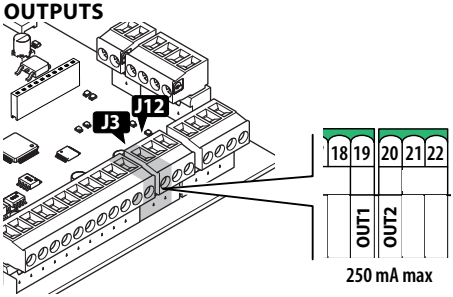
ACCESSORIES POWER SUPPLY



The E145S LC supplies 24 V⎓ and is short-circuit protected with a maximum current of 500 mA for connected accessories.

14…16	**-**	Common contacts / Accessories power supply negative
17 , 18	**+24V**	Accessories power supply positive

OUTPUTS

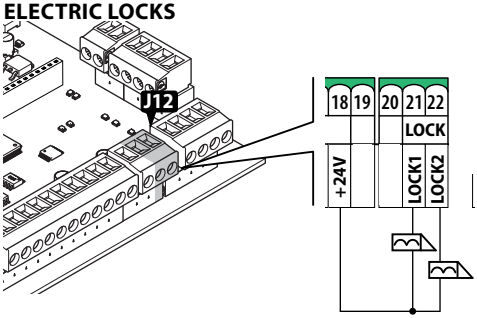


The E145S LC has two Open Collector outputs that are activated according to programming functions o1 and o2.

OUT active	OUT not active
0 V⎓	open circuit

Do not exceed the maximum load of 250 mA for each output.

ELECTRIC LOCKS

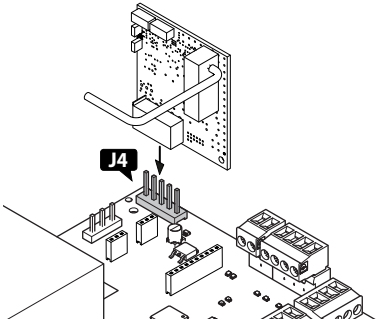


The E145S LC can control up to two electric locks to block the leaves in the closed position.

21 LOCK1	Electric lock on leaf operated by motor 1
22 LOCK2	Electric lock on leaf operated by motor 2

If the BUS 2easy encoder is installed and enabled, the electric lock is activated only just before the leaf opens from the closed position.
If the BUS 2easy is not enabled, the electric lock is activated before each opening movement, irrespective of the position of the leaf.
Use FAAC 12 V~/24 V⎓ electric locks or generic 24 V⎓/0.5A electric locks with a maximum current of 3 A.

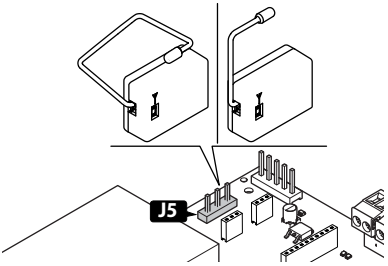
RADIO RECEIVER/DECODER BOARD



The quick insertion connector J4 is specifically for 5-pin FAAC radio or decoder boards.
Insert as shown in the figure.

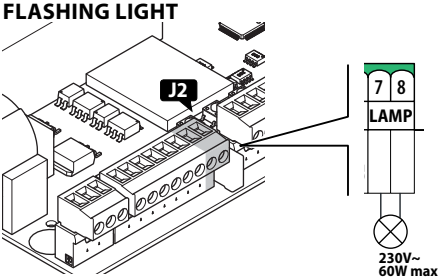
If a FAAC model RP receiver is used, it is recommended to install the appropriate external antenna in order to obtain a sufficient range.

RADIO MODULE XF FDS / XF FDS LC / XF



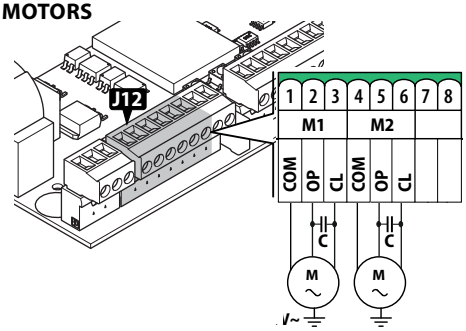
The 3-pin quick insertion connector is specifically for FAAC model XF FDS/XF FDS LC/XF radio modules.
Insert as shown in the figure.
To memorize radio control codes see § Accessories.

FLASHING LIGHT



The flashing light indicates that the gate is moving and must be installed in a position that is visible from both sides of the gate.
The flashing light must be a 230 V~, max 60 W model.
Pre-flashing can be activated before movement using the PF programming function.

MOTORS



COM	Motor COMMON contact
OP	PHASE to open the electric motor
CL	PHASE to close the electric motor
C	Thrust capacitor

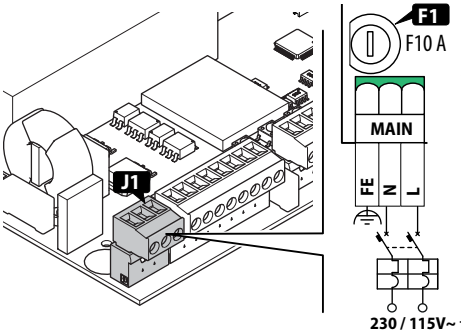
For single operator installations, connect the motor to terminals M1.

For double operator installations, connect:

- the motor that opens first to terminals M1
- the motor that closes first to terminals M2

The operators MUST be connected to the earth of the electrical system.

MAINS POWER SUPPLY



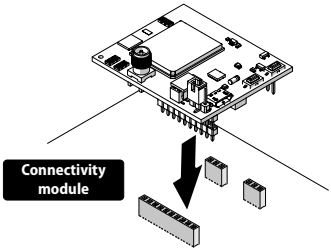
Connect the Phase (L) and Neutral (N) to the 230/115 V~ power supply.

The board has a 10 A fuse on the Phase.

Connect the earth of the electrical system to terminal FE.

SIMPLY CONNECT MODULE (CONNECTIVITY MODULE)

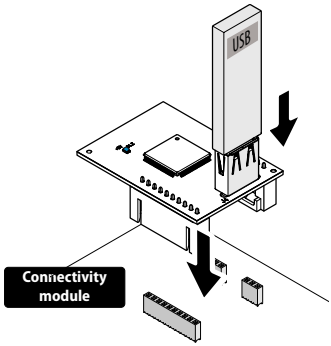
Example, GSM Mobile module, Bluetooth Low Energy:



To install a Simply Connect module, insert the module into the plug-in connectors and install the "Simply Connect PRO" app.

When programming is taking place via Simply Connect, programming via the board is inhibited.

XUSB MODULE (CONNECTIVITY MODULE)



For the XUSB module, see the specific section in the section § Accessories.

The XUSB module can be used as an alternative to the Simply Connect module.

4. START-UP

Carry out following (§ specific sections).

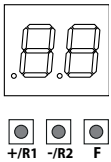
1. Turn power on to the board.
2. Check that the status of the LEDs is correct.
3. Configure the type of automation (Basic programming, cF) and the number of motors (Basic programming, nn).
4. Enable the encoders, if present (Basic programming, En) and the limit switches (Basic programming, FA, FC).
5. Check the leaf movement (Basic programming, n2, nI).
6. Carry out the SETUP procedure that includes the registration of BUS 2easy that are connected (Basic programming, tL).
7. Memorise the radio controls, if used.
8. Complete the required programming.
9. Carry out the final checks to make sure that the automation system is working correctly with all the devices installed.
10. Check that the low power mode is working properly, if enabled (see § 4.7):

- after 5 minutes of stand-by, the board goes into low power mode
- the devices provided wake up the board.

4.1 TURN POWER ON TO THE BOARD

Turn on the mains power supply; the 5V and 24V LEDs come on and the following appears on the display:
bo, then the FW version (e.g. 1.0), then SO (SETUP required).
If the SETUP has already been carried out bo, appears on the display and then the automation status (e.g. 00)
For LED and display signals see § Diagnostics.

4.2 PROGRAMMING



When the display shows the automation status, you can enter basic or advanced programming mode.

■ **Basic programming**

1. Press and hold the **F** button:
   the first function (JC) appears on the display, which is displayed as long as button F remains pressed.
2. Release the button: the display shows the value of the function.
3. Press the **+** or **-** button to modify, then press the **F** button to confirm to go to the next function.

Proceed in the same way for all the functions.

■ **Advanced programming**

1. Press and hold down the **F** button, then the **+** button as well:
   The first function (bo) appears on the display, which is displayed as long as button F remains pressed.
2. Release the buttons: the display shows the value of the function.
3. Press the **+** or **-** button to modify, then press the **F** button to confirm to go to the next function.

Proceed in the same way for all the functions.

■ **Exiting programming mode**

Every modified value becomes effective immediately, but when exiting from programming mode you have to decide whether to save the modifications or not. Modifications are lost if no buttons have been pressed for 10 minutes or if power to the board is disconnected before they have been saved.

1. Press and hold button **F**, and then the **-** button as well.
   Alternatively, scroll through the programming menu until you reach the last function (St).
2. Select:
   Y = save the changes
   no = DO NOT save the changes
3. Press button **F** to confirm: the display reverts to the automation status view.

1 BASIC programming menu

Function		default
JC	**Simply Connect** This code confirms that Simply Connect is available (default not modifiable).	1
LC	**LOW CONSUMPTION** Enables/disables the low power consumption function. Y enabled no disabled	no
CF	**TYPE OF AUTOMATION** 1 swing gate 2 sliding gate	1
dF	**DEFAULT CONFIGURATION** Displays Y if the programming corresponds to the default settings. Select Y if you wish to reload the default values for the type of automation. Y the programming corresponds to the DEFAULT settings no the programming DOES NOT correspond to the default settings	Y
Lo	**FUNCTIONING LOGIC** E Semi-automatic EP Semi-automatic step by step S Automatic Safety SA Automatic Safety 2 SP Automatic Safety Step by Step AI Automatic 1 A Automatic AP Automatic Step by Step At Automatic with Timer Function b Semi-automatic b bC Mixed (Impulse opening / Hold-to-run closing) C Hold-to-run	E
PA	**PAUSE TIME** (displayed only if an automatic logic has been selected) Displayed in seconds up to 59, then in steps of 10 s. 00...59 (Adjustment step: 1 s) 1.0...9.5 (Adjustment step: 10 s)	30
Pb	**PARTIAL PAUSE TIME** (displayed only if an automatic logic has been selected) Carried out after partial opening. Displayed in seconds up to 59, then in steps of 10 s. 00...59 (Adjustment step: 1 s) 1.0...9.5 (Adjustment step: 10 s)	30

Function		default
Mn	**NUMBER of MOTORS** connected 1 1 motor 2 2 motors	2
F1	**MOTOR 1 POWER** 01...50 (levels; 50 =maximum power)	25
F2	**MOTOR 2 POWER** (displayed only if Mn = 2) 01...50 (levels; 50 =maximum power)	25
En	**ENCODER** Enables/disables the encoder on both motors. no disabled Y enabled	no
FA	**OPENING LIMIT SWITCH** (displayed only if CF = 1) Enables/disables the opening limit switches, to stop the automation or start the slowdown. Modifying the value requires a new SETUP. no disabled 01 stop 02 start slowdown	no
FC	**CLOSING LIMIT SWITCH** (displayed only if CF = 1) Enables/disables the closing limit switches, to stop the automation or start the slowdown. Modifying the value requires a new SETUP. no disabled 01 stop 02 start slowdown	no
OE	**OPENING SENSITIVE EDGE** Configures the input dedicated to the sensitive edges that are active during opening. nc = 1 sensitive edge with NC contact* 1r = 1 resistive sensitive edge 8.2 kΩ 2r = 2 resistive sensitive edges 8.2 kΩ 3r = 3 resistive sensitive edges 8.2 kΩ 4r = 4 resistive sensitive edges 8.2 kΩ * Sensitive edges XT S 868 - XR S 868 allow you to enable the Failsafe (function 3F in advanced programming)	nc

2 ADVANCED programming menu

Function		default
CE	**CLOSING SENSITIVE EDGE** Configures the input dedicated to the sensitive edges that are active during closing. nc = 1 sensitive edge with NC contact* 1r = 1 resistive sensitive edge 8.2 kΩ 2r = 2 resistive sensitive edges 8.2 kΩ 3r = 3 resistive sensitive edges 8.2 kΩ 4r = 4 resistive sensitive edges 8.2 kΩ * Sensitive edges XT S 868 - XR S 868 allow you to enable the Failsafe (function 3F in advanced programming)	nc
br	**BRAKING FOR SLIDING GATE** (displayed only if CF = 2) 00 braking disabled 01…10 (levels; 10 =maximum braking)	05
Cd	**LEAF CLOSING DELAY** **(**displayed only if Mn = 2**)** The delay is applied to MOTOR 1. Displayed in seconds up to 59, then in steps of 10 s. 00…59 (Adjustment step: 1 s) 1.0…1.3 (Adjustment step: 10 s)	05
bu	**Learn BUS 2easy devices** See the relative section.	
M1	**MOTOR 1 OPERATION in dead man mode** + OPEN (displaying oP) - CLOSE (displaying cL)	M1
M2	**MOTOR 2 OPERATION in dead man mode** (displayed only if Mn = 2**)** + OPEN (displaying oP) - CLOSE (displaying cL)	M2
tL	**SETUP** See the relative section.	--
SE	**LEAVING THE PROGRAMMING MODE** Y exit saving the settings no exit without saving the settings After having confirmed using button **F**, the display indicates the STATUS of the automation:	Y

00	CLOSED	05	OPENING
01	OPEN	06	CLOSING
02	STATIONARY THEN OPENS	09	PREFLASHING BEFORE OPENING
03	STATIONARY THEN CLOSES	10	PREFLASHING BEFORE CLOSING
04	IN PAUSE	50	(flashing) SETUP required

Function		default
bO	**MAXIMUM TORQUE AT INITIAL THRUST** When it starts, the motor operates at maximum power for the time set in this option. 01…10 (Adjustment step: 1 s)	01
cS	**CLOSING THRUST** (not displayed if FC = 1**)** This function assists the closing of the electric lock: it pushes against the closing stop with maximum force for 2 s. DO NOT enable the function if there is not a mechanical closing stop fitted. no disabled Y enabled	no
rS	**REVERSE STROKE FOR OPENING** (not displayed if FC = 1**)** This function assists the release of the electric lock: it pushes against the closing stop before opening. DO NOT enable the function if there is not a mechanical closing stop fitted. no disabled Y enabled	no
Od	**LEAF OPENING DELAY** (displayed only if Mn = 2**)** The delay is applied to MOTOR 2. Displayed in seconds up to 59, then in steps of 10 s. 00…59 (Adjustment step: 1 s) 1.0…1.3 (Adjustment step: 10 s)	02
iP	**REVERSE ON OBSTACLE** This function specifies the amount the leaf is reversed after an obstacle has been detected. no total reverse Y partial reverse (2 s)	no
r1	**SLOWDOWN LEAF 1** (NOT displayed if FA/FC = 2) Specifies the deceleration space for the leaf connected to MOTOR 1 (% of the total length of travel). 01…50 (Adjustment step: 1%)	20
r2	**SLOWDOWN LEAF 2** (NOT displayed if FA/FC = 2 , or if Mn = 1) Specifies the deceleration space for the leaf connected to MOTOR 2 (% of the total length of travel). 01…50 (Adjustment step: 1%)	20

Function		default
PF	**PRE-FLASHING** Enables/disables pre-flashing and specifies when it is activated. The pre-flashing time is fixed: 3 s. no disabled OC for any movement CL when closing OP when opening	no
tP	**PRE-FLASHING TIME** Sets the duration of the pre-flashing. It is displayed when pre-flashing is enabled (function PF). 01 …10 seconds, adjustment step: 1 s	05
Ph	**CLOSING PHOTOCELLS** Specifies the operation of the closing photocells. no reopen immediately Y reopen when the photocells are released	no
EC	**ANTI-CRUSHING SENSITIVITY** (displayed only if En = Y) This function species the speed with which the anti-crushing system triggers after an obstacle has been detected. 00…10 (levels, 10 = maximum sensitivity)	06
r8	**SEARCH FOR STOP** (displayed only if En = Y and FA/FC = no or 2) This function specifies the angular space in which to search for the opening/closing stop. In this space, the automation is stopped by a mechanical stop/obstacle and not by the anti-crushing system. Displayed in degrees and tenths of a degree (separated by a point) up to 9.9, then it is in degrees. 0.3…9.9 (Adjustment step: 0.1°) 10…20 (Adjustment step: 1°)	4.0
tA	**ADDITIONAL OPERATING TIME** (displayed only if En = no and FA/FC = no or 2) Adds additional operating time at the end of the movement. 00…30 (Adjustment step: 1 s)	03
1F	**FAILSAFE ON PHOTOCELLS** 00 = not enabled 01 = enabled on FSW OP input 02 = enabled on FSW CL input 03 = enabled on FSW OP and FSW CL input	00
2F	**FAILSAFE ON STOP** 00 = not enabled 01 = enabled on STOP input	00

Function		default
3F	**FAILSAFE ON SENSITIVE EDGES WITH NC CONTACT and TEST INPUT** 00 = not enabled 01 = enabled on EDOP input 02 = enabled on EDCL input 03 = enabled on EDOP and EDCL inputs	00
o1	**OUT1** Function of output OUT1. 00 disabled 01 FAILSAFE 02 Indicator light (lit during OPENING and in OPEN/PAUSE, off in CLOSED, flashing in CLOSING) 03 timed COURTESY LIGHT 04 ERROR active 05 automation OPEN or PAUSED 06 automation CLOSED 07 automation MOVING 09 automation OPENING 10 automation CLOSING 11 electric lock OPERATION 12 safety active 13 TRAFFIC LIGHT function (active during OPENING and with automation OPEN) 14 timed output that can be activated from the 2nd radio channel OMNIDEC or FDS 15 output (step-by-step function) that can be activated from the 2nd radio channel OMNIDEC or FDS 16 active during the movement of MOTOR 1 17 active during the movement of MOTOR 2 18 INTRUSION alarm (only with encoder installed) 33 Programming in progress from Simply Connect	00
P1	**POLARITÀ DELL'USCITA OUT1** Y = normalmente chiuso no = normalmente aperto NOTA: se la funzione dell'uscita è Failsafe, la polarità deve essere = no	no
t1	**OUT1 TIMING** Displayed if o1 = 03, 11 or 14. Sets the activation duration of output OUT1, if a timed function is programmed. 01…59 seconds, adjustment step: 1 s 1.0…9.5 minutes, adjustment step: 10 s	02

Function		default
o2	**OUT2** Function of output OUT2 (with the same options as o1).	00
P2	**POLARITÀ DELL'USCITA OUT2** Y = normalmente chiuso no = normalmente aperto NOTA: se la funzione dell'uscita è Failsafe, la polarità deve essere = no	no
t2	**OUT2 TIMING** Timing of output OUT2 (with the same options as t1).	02
AS	**MAINTENANCE REQUEST** Enables/disables the maintenance alert when the programmed number of cycles has been reached as specified in the following functions (nc, nd). no disabled Y enabled	no
nb	**HUNDREDS OF THOUSANDS OF CYCLES** Displays the hundreds of thousands of cycles that have been performed. 00…99 (programmable if AS = Y)	00
nc	**THOUSANDS OF CYCLES** Displays the thousands of cycles that have been performed. To reset the cycle counter: press + and − for 5 s 00…65 (programmable if AS = Y)	00
nd	**TENS OF CYCLES** Displays the tens of cycles that have been performed. 00…53 (if AS = no) 00…65 (programmable if AS = Y)	00
St	**LEAVING THE PROGRAMMING MODE** Y exit saving the settings no exit without saving the settings After having confirmed using button F, the display indicates the STATUS of the automation:	Y

00	CLOSED	05	OPENING
01	OPEN	06	CLOSING
02	STATIONARY THEN OPENS	09	PREFLASHING BEFORE OPENING
03	STATIONARY THEN CLOSES	10	PREFLASHING BEFORE CLOSING
04	IN PAUSE	50	(flashing) SETUP required

4.3 OPERATING LOGICS

In all the logics:

- the STOP command has priority and stops the automation from operating

■ **Automatic logics:**

- A - Automatic
- AI - Automatic 1
- AP - Automatic step-by-step
- S - Automatic safety
- SA - Automatic safety 2
- SP - Automatic step-by-step safety
- AT - Automatic timer

■ **Semi-automatic logics:**

- E Semi-automatic E
- EP Semi-automatic step-by-step
- b - Semi-automatic b
- bC - Mixed

■ **Dead-man logic:**

- C - Dead-man

AUTOMATIC LOGICS

In all automatic logics, the OPEN command:
- with the automation closed, opens the automation and closes it again automatically after a pre-set pause time
- during closing, it reverses to open

■ A - **AUTOMATIC**

OPEN command:
- during the pause, reloads the pause time
- during opening, is ignored

Operation of the closing photocells:
- during the pause, reloads the pause time

■ AI - **AUTOMATIC1**

OPEN command:
- during the pause, reloads the pause time
- during opening, is ignored.

Operation of the closing photocells:
- during pause, causes it to close
- during opening, requests closing
- during closing, causes the gate to reverse and then closes it immediately

■ AP

AUTOMATIC STEP-BY-STEP

OPEN command:
- during pause, stops the gate and the next OPEN command closes it
- during opening, stops the gate and the next OPEN command closes it

Operation of the closing photocells:
- during the pause, reloads the pause time

■ S **AUTOMATIC SAFETY**

OPEN command:
- during pause, causes it to close
- during opening, causes it to close
- during opening, stops the gate and the next OPEN command closes it

Operation of the closing photocells:
- during pause, causes it to close
- during opening, requests closing
- during closing, causes the gate to reverse and then closes it immediately

■ SA**AUTOMATIC SAFETY 2**

OPEN command:
- during pause, causes it to close
- during opening, is ignored
- during closing, causes it to reopen

Operation of the closing photocells:
- during the pause, reloads the pause time

■ SP **AUTOMATIC STEP-BY-STEP SAFETY**

OPEN command:
- during pause, causes it to close
- during opening or closing, stops it and the next OPEN command reverses the direction

Operation of the closing photocells:
- during pause, causes it to close
- during opening, requests closing
- during closing, causes the gate to open and then closes it immediately

■ At **AUTOMATIC TIMER**

OPEN command:
- if active at switch-on, opens the automation, otherwise it closes it
- during the pause, reloads the pause time
- during opening, is ignored

Operation of the closing photocells:
- during the pause, reloads the pause time

SEMI-AUTOMATIC LOGICS

In all semi-automatic logics, the OPEN A: command:
- with the automation closed, opens the automation

■ E - **SEMI-AUTOMATIC E**

OPEN command:
- during opening, stops the movement and the next command closes the gate
- when the automation is open, it closes it
- during closing, causes it to reopen

If the Photocell is triggered:
- during movement, commands the inversion

■ EP - **SEMI-AUTOMATIC STEP-BY-STEP**

Command OPEN A or OPEN B:
- during opening or closing, stops the gate and the next OPEN command reverses the direction
- when the automation is open, it closes it

If the Photocell is triggered:
- during movement, commands the inversion

■ b - **SEMI-AUTOMATIC b**

OPEN A command
- during closing, causes it to reopen

CLOSE command (OPEN B)
- during opening or when the automation is open, it closes it

If the Photocell is triggered:
- during movement, commands the inversion

■ bC - **MIXED (b during opening, C during closing)**

This logic uses the OPEN A (OPEN) impulse command to open, and maintained OPEN B (CLOSE) to close. Partial motion is not available.

A maintained command must be activated intentionally and the automation must be visible.

OPEN A command:
- during closing, opens the automation
- when the automation is open, it closes it

CLOSE command (OPEN B)
- maintained closes the automation
- not maintained during opening, stops the automation

If the Photocell is triggered:
- during closing, commands the inversion
- during opening, it stops the movement

DEAD MAN LOGIC - MAINTAINED

■ C - **Dead-man**

Logic C requires the use of the maintained OPEN and CLOSE (OPEN B) commands

The control must be activated intentionally and the gate must be visible

- Maintained OPEN opens the automation
- Maintained CLOSE (OPEN B) closes the automation

Operation of the photocells:
- during movement, stop the automation

4.4 SETUP

The SETUP procedure consists of a series of movements during which the board acquires the length of travel and other leaf parameters. The SETUP procedure also registers the BUS 2easy devices that are present.

SETUP needs to be carried out:
- when S0 flashes on the display (e.g. when the automation is first put into operation)
- after a board has been replaced
- if you wish to modify the length of travel of the leaves
- if there are active errors that require the SETUP procedure to be carried out
- if programming functions are modified that require a new SETUP

Checks prior to SETUP:
- the automation must not be set to manual mode
- if the STOP input is not used, it must be bridged
- make sure that the settings of the following functions in Basic Programming are correct:
  - cF type of automation
  - nn number of motors
  - En encoder (has to be enabled, if present)

While the SETUP procedure is being carried out, prevent transit in the area of movement of the leaves because the safety devices are disabled.

1. Go to the tI function in basic programming. The value displayed is - -.
   The leaves must be closed. To close them now, press the + button for Leaf1 and the - button for Leaf2.
   Press the + and - buttons simultaneously for a few seconds. Release the buttons when the display flashes (- -).
2. SETUP starts. The display indicates the current phases with a flashing code (from S1 to S4, see ⊞ SETUP phases).

If the SETUP procedure doesn't start or stops before it has been completed, the board exits from programming mode and S0 flashes on the display: check the ERRORS that are present (Chapter § Diagnostics).

3 SETUP phases

Display	Phase
S1	Leaf1 opens: searching for the OPEN position
S2*	Leaf2 opens: searching for the OPEN position
S3*	Leaf2 closes: searching for the CLOSED position
S4	Leaf1 closes: searching for the CLOSED position
00	SETUP has been completed. The board exits from programming mode and the display shows the automation status - closed.

* phase NOT carried out in the case of a single leaf automation.

The phases are carried out automatically in sequence. The open/closed position is recognised according to the system configuration:

■ **Timed operation**

Send an OPEN A command as soon as the leaf reaches the mechanical stop.

■ **Operation with encoder**

The board automatically recognises the position if a mechanical stop is present.
If there is no mechanical stop, send an
OPEN A command at the point where you want the leaf to stop.

■ **Operation with limit switches (with or without encoder)**

If the limit switch is programmed to specify the stopping point, the board automatically recognises the position as soon as the limit switch is triggered.
If the limit switch is programmed to specify the slowdown point, it sends an OPEN A command as soon as the leaf reaches the mechanical stop.

■ **Sliding gate**

The board automatically recognizes the positions when each limit switch is triggered.
In this application, the limit switch is used only as a stop device.

The limit switches in this application are indispensable.

4.5 CONFIGURING MOVEMENTS AND TIMING

In BASIC PROGRAMMING

- PA **OPEN A pause time**, Pb **OPEN B pause time** In operating logics with automatic closing, the gate remains open for the pause time (configurable specifically for full or partial opening).
- Mn **Number of motors** Before carrying out the SETUP procedure, the number of motors has to be configured in order to specify single or two leaf operation.
- FA **Opening limit switch**, FC **Closing limit switch** If present, the limit switches must be enabled, either for stopping or slowing down the leaf.
- Cd **Leaf closing delay** This function is used in 2-leaf automations to prevent interference between leaves and to handle any overlap.

In ADVANCED PROGRAMMING

- bo **Maximum force at initial thrust time** When it starts, the motor works at maximum force for a few seconds, ignoring the limits set in basic programming (F1, F2). Increase the time in the case of particularly high friction.
- Od **Leaf opening delay** This function is used in 2-leaf automations to prevent interference between leaves and to handle any overlap.

4.6 ADJUSTING THE ANTI-CRUSHING SYSTEM

Anti-crushing protection is obtained by limiting the static force exerted by the operator in the event of impact with an obstacle. When an obstacle is detected, the board also issues a reverse command (partial or complete, according to function IP).
Obstacle detection is via the encoder (if present) or via the activation of a safety edge.
The functions used for adjusting the anti-crushing system are listed below. Some allow the static force or the kinetic energy of the leaf on the obstacle to be limited; others configure the reverse on obstacle. Adjust the functions together, taking into consideration the configuration of the automation and the conditions of use.

For example, in particularly windy areas, with panelled leaves, if the sensitivity of the anti-crushing system is too high, it can cause frequent unwanted reversals to occur.

In BASIC PROGRAMMING

- F1 **Motor 1 Power**, F2 **Motor 2 Power** Decrease the value if you want to limit the static force in the event of impact.
- En **Encoder** If encoders are installed, they must be enabled to detect obstacles.
- r8 **Search for stop** Reverse on obstacle via encoder is not active in the search for stop space.

In ADVANCED PROGRAMMING

- IP **Reverse on obstacle** Specifies the amount by which the leaf is reversed: complete or for 2 s.
- r1, r2 **Slowdown Leaf1, Leaf2** Specifies the extent of the leaf slowdown near the open / closed positions. Alternatively, the slowdown enabled limit switch can be used (FA, FC in basic programming).

The slowdown allows you to limit the inertial forces and reduce the vibrations of the gate when it is stopping.

- EC **Anti-crushing sensitivity** Specifies the speed at which the anti-crushing system triggers after an obstacle has been detected by the encoder.

4.7 CONFIGURING LOW POWER CONSUMPTION (LC)

The **LC (Low Consumption)** function turns off all accessories connected to the +24 V power supply terminals and reduces the voltage of the Bus 2easy and radio devices.

To achieve energy savings, all radio and Bus 2easy accessories in the system must comply with the configuration indicated in the table.
DO NOT enable the LC function if there are any accessories other than those indicated.

■ **Maximum configuration of accessories for LC operation**

Device	max no.
LC radio receiver	1
Pulse generators Bus 2easy LC	2
Wired pulse generators	unlimited
Pairs of photocells	
XP30 B LC	7
or	
XP20 B LC	14
SAFEcoder LC	2
XR S 868 receiver	1

■ **Enabling the LC function**

In basic programming, configure: LC=Y

Once this function is enabled, the automation goes into low power mode every time all the standby conditions are maintained for 5 minutes:

- motors stopped
- terminal board opening and closing inputs NOT ACTIVE
- no active output (e.g. courtesy light NOT on)
- logic status: 00 closed, or 01 open, or 02 stationary then opens, or 03 stationary then closes, or 50 flashing light (SETUP required)
- programming buttons not used
- no programming in progress from Simply Connect

All LEDs and the board display are switched off in low power mode.

■ **Waking up the board from low power consumption mode**

To wake up the board from low power mode and resume normal operation, do one of the following:

- send an open/close command from the terminal board
- send a command from a radio device with an LC receiver
- send a command from the BUS 2easy LC pulse generator (excluding OPEN from photocell)
- press a programming button on the board
- send a command or start programming from Simply Connect.

5. PUTTING INTO SERVICE

5.1 FINAL CHECKS

1. Make sure that the forces generated by the gate are within the limits permitted by the current regulations. Use an impact force tester in accordance with EN 12453. For non-EU countries, of there are no specific local regulations, the force must be less than 150 N. If necessary, make any adjustments that may be needed by referring also to the operator instructions.
2. Carry out a complete functional test of the automation and all the installed devices, including low power mode (if enabled).
3. Refer to the operator instructions for any additional tests that may be required.

5.2 CLOSE THE ENCLOSURE

Close the enclosure in which the board is housed by referring to the specific instructions.

5.3 FINAL OPERATIONS

Make sure that the system delivery requirements have been fulfilled (otherwise arrange for them) i.e. that they correspond to the board installed / replaced.

6. ACCESSORIES

6.1 RELAY PHOTOCELLS

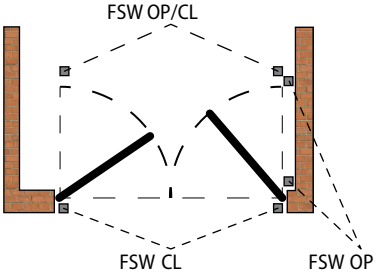
Photocells are additional type D detection devices (according to EN 12453) that reduce the likelihood of contact with the moving leaf. The photocells are not safety devices according to standard EN 12978. Detection devices used as safety accessories (e.g. sensitive edges) to protect against a hazard, must comply with standard EN 12978.

Use photocells with a NC relay contact. If multiple photocells are used, the contacts must be connected in series.

Position and connect the photocells according to their required use:

FSW CL	Photocell active during closing
FSW OP	Photocell active during opening
FSW OP/CL	Photocell always active

The action carried out when the photocells are triggered depends on the operating logic selected.



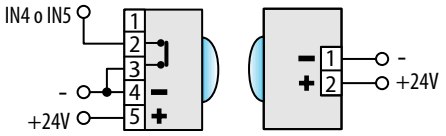
■ **Failsafe**

Failsafe is a functional test that is carried out before a movement. It consists of momentarily interrupting the power supply to the devices and checking the change in status of the input.

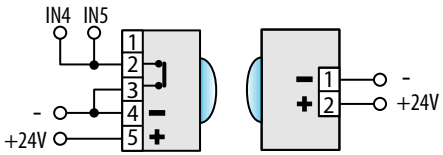
If the test fails, the board generates an error and prevents the automation from moving.

To enable the Failsafe test: connect the negative of the photocell transmitters to an output (OUT1/OUT2) configured as a Failsafe function (⊐I or ⊐2=⊐I) instead of to the accessories power supply negative (-).

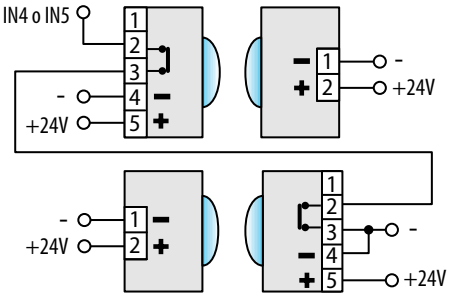
1 pair of closing or opening photocells



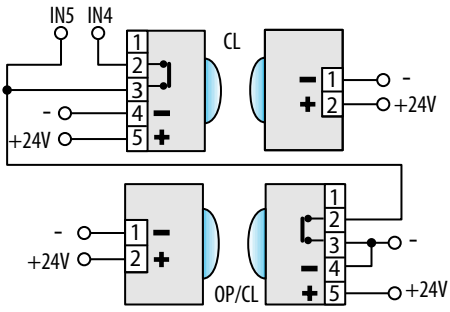
1 pair of opening and closing photocells



2 pairs of closing or opening photocells



1 pair of closing photocells and 1 pair of opening and closing photocells



6.2 SENSITIVE EDGES

The board has two inputs for connecting sensitive edges that are active during opening (**EDOP**) or during closing (**EDCL**) or during opening and closing.

The following types of sensitive edges can be connected:

- resistive 8.2 kΩ (up to 4 edges connected in parallel)
- with NC contact
- with NC contact and **TEST** input

Carry out the connections and programming indicated in the table according to the type of device used.

Specify the type of reverse mode in advanced programming:

- IP =no complete reverse
- IP =Y partial reverse

FAILSAFE

Failsafe is a functional test that is carried out before a movement. If the test fails, the board generates an error and prevents the automation from moving.

4. If the device used has a **TEST** input, connect it to the output (OUT1 or OUT2) configured as Failsafe (o1 or o2 =01).

	INPUTS	BASIC PROGRAMMING	ADVANCED PROGRAMMING
Resistive edge 8.2 kΩ			
active during opening	27 EDOP + 28 EDOP –	OE 1r 1 edge 2r 2 edges 3r 3 edges CE 4r 4 edges	3F =00
active during closing	29 EDCL + 30 EDCL –		
Edge with NC contact			
active during opening	27 EDOP + 28 EDOP –	OE= nc	3F =00
active during opening and closing	27 EDOP + 28 EDOP –	OE= oc	
active during closing	29 EDCL + 30 EDCL –	CE= nc	
active during opening and closing	29 EDCL + 30 EDCL –	CE= oc	
Edge with NC contact and TEST input			
active during opening	27 EDOP + 28 EDOP – 19 OUT1 / 20 OUT2	OE= nc	3F=01 Failsafe test on EDOP input 3F=02 Failsafe test on EDCL input 3F=03 Failsafe on inputs EDOP and EDCL
active during closing	29 EDCL + 30 EDCL – 19 OUT1 / 20 OUT2	CE= nc	o1/o2=01 (**Failsafe**)

6.3 LIMIT SWITCHES

The limit switch inputs are disabled by default.

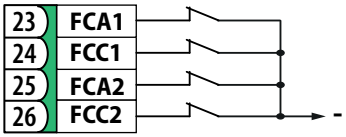
To enable the inputs and specify the function of the connected limit switches (stop movement or start slowdown) use parameters FA and FC in basic programming.

If no limit switches are used, there is no need to bridge the inputs (NC). If at least one limit switch is used, any unused contacts must be bridged with the common contacts (-).

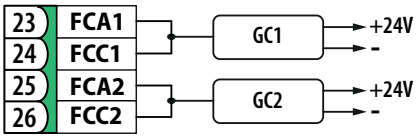
These inputs can be used to connect the Gatecoder accessory (also in combination with the limit switches, if present).

Use parameter En to enable the encoder.

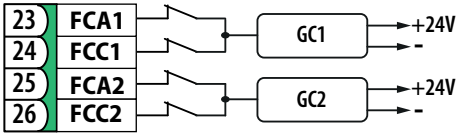
Limit switches



Gatecoder



Gatecoder + Limit switch



GC1	Gatecoder for Leaf1
GC2	Gatecoder for Leaf2

3

6.4 BUS 2EASY DEVICES

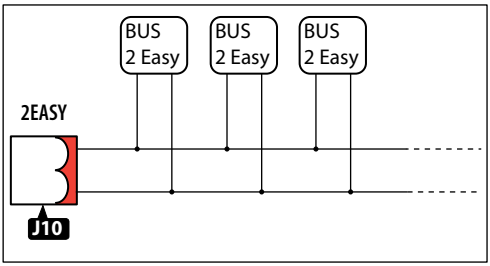
It is possible to connect FAAC BUS 2easy devices (photocells, sensitive edges, control devices) to this board.

If no BUS 2easy accessories are used, leave connector J10 free. Do not bridge.

CONNECTION

Connecting the BUS 2easy devices to connector J10.

The total length of the BUS 2easy cables must not exceed 100 m. The BUS line does not require a polarity-matched connection (apart from the encoder connection, see specific section).
In systems with low power consumption enabled, the cable cross-section must be at least 0.5 mm^2 to support a line length of up to 100 m.



PHOTOCELLS BUS 2EASY

Photocells are additional type D detection devices (according to EN 12453) that reduce the likelihood of contact with the moving leaf. The photocells are not safety devices according to standard EN 12978. Detection devices used as safety accessories (e.g. sensitive edges) to protect against a hazard, must comply with standard EN 12978.

Type of use:

FSW CL	Photocell active during closing
FSW OP	Photocell active during opening
FSW OP/CL	Photocell always active
OPEN	Photocell for OPEN A

The action carried out when the photocells are triggered depends on the operating logic selected.

1. Assign an address to the BUS 2easy photocells by setting the four DIP switches on both the transmitter and the corresponding receiver.

The transmitter and receiver of a pair of photocells must have the same DIP switch settings.
There must never be two or more pairs of photocells with the same DIP switch settings. If there is more than one pair of photocells with the same address, a conflict error is generated.

2. Register the BUS 2easy photocells (see specific section).
3. Check the BUS 2easy devices (see specific section) and make sure that the automation operates according to the type of photocell installed.

4 Assigning an address to the Photocells

Key: 0=OFF , 1=ON

1 0 0 0		ON – – – – 1 2 3 4
1 0 0 1		
1 0 1 0	FSW CL	
1 0 1 1		
1 1 0 0		
1 1 1 0		
0 0 0 0		
0 0 0 1		
0 0 1 0	FSW OP	
0 0 1 1		
0 1 1 1		
0 1 0 0	FSW OP/CL	
0 1 0 1		
1 1 1 1	OPEN	

SENSITIVE EDGES BUS 2EASY

If the sensitive edge is used to protect against a hazard, it must comply with standard EN 12978.

Type of use:

CL EDGE	Sensitive edge active during closing
OP EDGE	Sensitive edge active during opening

The activation of a sensitive edge causes the direction of movement to reverse, which can be:
- complete if $iP = no$ in programming
- partial (2 s) if $iP = Y$ in programming

1. Assign an address to the device electronics by setting the four DIP switches.

No two devices should have the same DIP switch settings. If there is more than one device with the same address, a conflict error is generated.

2. Register the device (see specific section).
3. Check the BUS 2easy devices (see specific section) and make sure that the sensitive edges are working correctly. When the gate is moving, activate the sensitive edge using an obstacle and make sure that the automation operates according to the type of sensitive edge installed.

5 Addressing Sensitive Edges

Key: 0=OFF , 1=ON

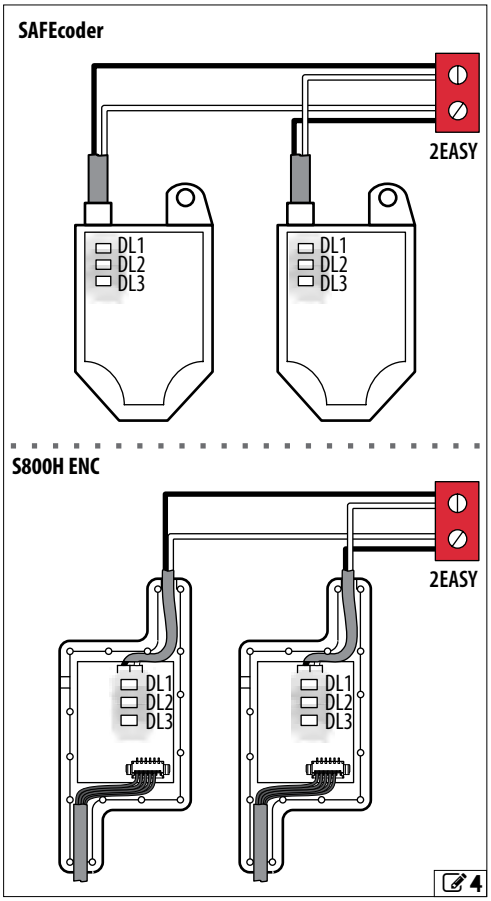
1 1 0 1	CL EDGE
0 1 1 0	OP EDGE

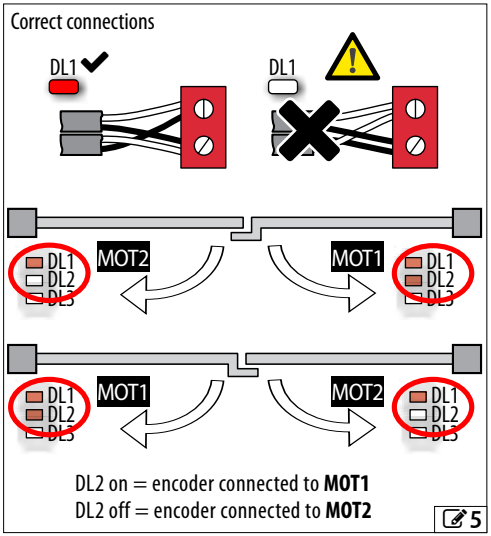
BUS 2EASY ENCODER

1. Connect the cables of the encoder to the 2EASY terminal board.
2. After turning on power to the board, check the LEDs on each encoder with the leaf stationary:
   DL1 lit = encoder powered
   DL2 lit = encoder connected to **MOTOR1**
   DL2 off = encoder connected to **MOTOR2**

> For each encoder that does not appear to be connected to the correct leaf, temporarily disconnect the power supply and invert the 2 wires on the 2EASY terminal board.

3. Register the devices (see specific section).
4. Check the BUS 2easy devices (see specific section).





BUS 2EASY CONTROL DEVICES

Do not use the BUS 2easy line for emergency stop commands.

1. Configure the DIP switches on the device to assign 1 o 2 commands.

Stop NC also generates a stop when the device is disconnected. A command (e.g.: OPEN A_1) must be used on only one of the connected devices.

2. Register the device (see specific section).
3. Check the BUS 2easy devices (see specific section) and make sure that the automation operates according to the type of control devices installed.

6 Addressing Control Devices

Key: 0=OFF , 1=ON

DIP switch 5 enables the device for 1 (OFF)command or 2 (ON) commands

0 0 0 0 0	Open A_1		0 0 0 0 1	Open A_1	Open B_1
0 0 0 1 0	Open A_2		0 0 0 1 1	Open A_1	Open B_2
0 0 1 0 0	Open A_3		0 0 1 0 1	Open A_1	Stop
0 0 1 1 0	Open A_4		0 0 1 1 1	Open A_1	Close
0 1 0 0 0	Open A_5		0 1 0 0 1	Open A_2	Open B_1
0 1 0 1 0	Stop		0 1 0 1 1	Open A_2	Open B_2
0 1 1 0 0	Stop NC_1		0 1 1 0 1	Open A_2	Stop
0 1 1 1 0	Stop NC_2		0 1 1 1 1	Open A_2	Close
1 0 0 0 0	Close		1 0 0 0 1	Open A_3	Open B_3
1 0 0 1 0	Open B_1		1 0 0 1 1	Open A_3	Open B_4
1 0 1 0 0	Open B_2		1 0 1 0 1	Open A_3	StopNC_1
1 0 1 1 0	Open B_3		1 0 1 1 1	Open A_3	Close
1 1 0 0 0	Open B_4		1 1 0 0 1	Open A_4	Open B_3
1 1 0 1 0	Open B_5		1 1 0 1 1	Open A_4	Open B_4
1 1 1 0 0	/		1 1 1 0 1	Open A_4	StopNC_2*
1 1 1 1 0	/		1 1 1 1 1	Open A_4	Close

BUS 2EASY STATUS

To verify the BUS 2easy connection, check the 2EASY LEDs on the board:

BUS MON	●	At least one device is in operation
	○	NO devices in operation
BUS	●	OK
	○	SLEEPING
	✱	SHORT CIRCUIT
	✱	ERROR

The status of the BUS 2easy is also shown in the bu function in Basic Programming:

no	No device registered
-	At least one device registered
cc	BUS 2easy line short-circuited
Er	BUS 2easyline error

BUS 2EASY DEVICE REGISTRATION

Registration is required:

- when the automation system is first started or after the board has been replaced
- following any changes (addition, replacement or removal) to the BUS 2easy devices

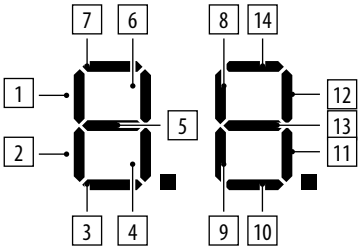
Registration procedure:

The SETUP procedure registers the BUS 2easy devices that are connected. Alternatively, you can carry out the following procedure.

1. With the board powered, go to the bu function in basic programming. If there are no devices registered, no will appear on the display, otherwise segment 13 will be lit (✎ **6**).
   Press the **+** and **-** simultaneously for at least 5 s. The display flashes, then U appears (registration complete).
2. Release the buttons.
3. Exiting from programming mode.

CHECKING THE BUS 2EASY DEVICES

1. Select parameter bu in Basic programming. If there are no devices registered, no will appear on the display, otherwise segment 13 will be lit. This menu can be used to check the operation of the registered devices: activate each device and check that the corresponding segment lights up (✎ **6**).
2. Press the **+** button and keep it pressed; the segments relative to the registered devices will come on. Each segment of the display corresponds to a type of device:



1	Open A control device
2	Open B control device
3	Closing photocells
4	Photocells for Open impulse
5	Opening/closing photocells
6	Close control device
7	Opening photocells
8	Stop control device
9	Closing sensitive edge
10	Encoder - leaf 2
11	Not used
12	Opening sensitive edge
13	BUS 2easy status
14	Encoder - leaf 1
	✎ **6**

6.5 RADIO SYSTEM

The E145S LC is fitted with an integrated two-channel decoding system that requires either a XF FDS or XF radio module to be installed, to allow various types of FAAC radio controls to be memorised.

■ **XF FDS radio module**

This radio module allows you to memorise FAAC radio controls with FDS coding. A maximum of 1600 codes can be memorised. FDS technology is characterized by dual frequency transmission (433 and 868 MHz). XF FDS is not compatible with SLH, SLH LR, RC, DS radio controls.

■ **Radio module XF433 o XF868**

This radio module allows you to memorise FAAC radio controls that use following types of radio code: SLH, SLH LR, LC/RC, DS. It is also possible to use FDS radio controls by following a specific procedure to convert them into SLH mode (see instructions). A maximum of 1600 codes can be memorised. The various types of radio codes can coexist, but the radio module and all the radio controls must have the same frequency.

The commands available are:

- OPEN A on radio channel 1 (CH1)
- OPEN B/CLOSE on radio channel 2 (CH2)
- Alternatively, the second radio channel can be enabled to activate a programmable output (§ Advanced programming)

When it is switched on, the board detects the module and activates the corresponding radio mode.

If the board detects a radio module that is not compatible with any of the radio controls that have already been memorised, the 2 RADIO LEDs flash alternately to indicate the error. It is possible to delete the radio controls, or install a compatible radio module.

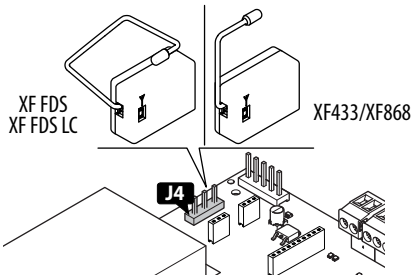
To check which radio mode is active on the board, press the **+** and **-** buttons at the same time.
The display shows the corresponding code (after any Errors / Alarms that may be present):
SL compatible with SLH, SLH LR, LC/RC, DS radio controls
Fd compatible with FDS radio controls

■ **Memory full warning**

If the RADIO LED on the board turns off instead of flashing for 20 s during the radio control memorisation procedure, it means that the radio memory is already full and it is not possible to continue.

INSTALLING THE XF FDS LC/ XF FDS / XF RADIO MODULE

1. The module should only be inserted into the connector with the board turned off and as indicated in the figure.



2. Only switch on power supply after having installed the module. Then memorise the radio controls.

Follow the instructions to memorise the radio controls according to their type.
Carry out the procedure with the radio control approximately 1 m away from the board.

MEMORISING XF FDS RADIO CONTROLS

1. On the board, press the **+** (memorise OPEN A) or **-** (memorise OPEN B/CLOSE) button and release it when the corresponding RADIO LED (**RADIO1** or **RADIO2**) starts to flash for 20 s (time available for the next step).
2. Press and release the button on the radio control that you wish to memorise for the radio channel. To confirm the memorisation, the RADIO LED lights up steadily for 2 s and then starts to flash again for another 20 s (time available to repeat step 2 on another radio control).

The procedure ends after 20 s if no further radio controls are memorised and the RADIO LED switches off.
To add additional radio controls, repeat the procedure from step 1

FDS AND SIMPLY CONNECT

Alternatively, Simply Connect can be used to:

- Register a radio control or radio control kits via the Matrix-code.
- Program all the buttons on the radio control.
- Carry out searches via Matrix-code or advanced filters.
- Assign specific time slots in which to enable or disable a radio control.
- Delete a single command or radio control.

MEMORISING SLH/SLH LR RADIO CONTROLS

Memorise the first Master radio control on the board. Afterwards, it is not necessary to access the board in order to add radio controls.
To check if the radio control is a Master device, press and hold a button and watch the LED:

- flashes briefly, then the light becomes steady = Master
- turns on immediately with a steady light = NON Master

Whenever a new Master is memorised on the board, any SLH/SLH LR radio controls that are already in use are disabled.

■ Memorising the first radio control (Master)

1. Press the **+** (memorise OPEN A) or **-** (memorise OPEN B/CLOSE) button on the board and release it when the corresponding RADIO LED (**RADIO1** or **RADIO2**) starts to flash for 20 s (time available for the next step).
2. Press buttons **P1** and **P2** simultaneously on the radio control and release them when its LED starts to flash for 8 s (time available for the next step).
3. Press and release the button on the radio control to be memorised. The corresponding RADIO LED on the board becomes steady for 1 s and then switches off (memorisation complete).
4. Release the button.

When using the memorised button for the first time, press it twice in succession to obtain the command.

■ Adding SLH/SLH LR radio controls

1. Press buttons **P1** and **P2** simultaneously on the already memorised MASTER radio control and release them when its LED starts to flash for 8 s (time available for the next step).
2. Within 8 seconds, press and hold the button that has already been memorised, the LED lights up with a steady light.
3. Bring the radio control that has already been memorised, into contact face to face with the new one to be memorised.
4. Press the button to be memorised on the new radio control and make sure that its LED flashes twice before turning off.
5. Release all buttons.

When using the memorised button for the first time, press it twice in succession to obtain the command.

MEMORISING LC/RC RADIO CONTROLS

1. Press the + (memorise OPEN A) or − (memorise OPEN B/CLOSE) button on the board and release it when the corresponding RADIO LED (**RADIO1** or **RADIO2**) starts to flash for 20 s (time available for the next step).
2. Press and release the button on the radio control to be memorised. The corresponding RADIO LED on the board becomes steady for 2 s (memorisation completed), then starts to flash again. Another radio control can be memorised within 20 s.

The procedure ends after 20 s if no further radio controls are memorised and the RADIO LED switches off. To add additional radio controls, repeat the procedure from step 1.

■ Adding LC/RC radio controls

Use a LC/RC radio control that is already use by the automation, without having to use the board.

1. Take a radio control that is already in use and move close to the board.
2. Press buttons **P1** and **P2** simultaneously on the radio control that is already in use and release them when its LED starts to flash slowly for 5 s (time available for the next step).
3. Press and release the button that has already been memorised (the corresponding RADIO LED on the board starts to flash for 20 s, the time available for the next step).
4. Press the button to be memorised on the new radio control (the corresponding RADIO LED on the board becomes steady for 2 s to confirm the memorisation. It then starts to flash again and another radio control can be memorised within 20 s).

The procedure ends after 20 s if no further radio controls are memorised (the corresponding RADIO LED switches off). To add additional radio controls, repeat the procedure from step 1.

MEMORISING DS RADIO CONTROLS

1. Set the required combination of the DIP switches on the radio control (avoid setting them to all On or all Off).
2. On the board, press the + (memorise OPEN A) or − (memorise OPEN B/CLOSE) button and release it when the corresponding RADIO LED (**RADIO1** or **RADIO2**) starts to flash for 20 s (time available for the next step).
3. Press and release the button on the radio control to be memorised. The corresponding RADIO LED on the board becomes steady for 1 s and then switches off (memorisation complete).
4. To memorize other radio controls, it is possible to set a DIP switch combination that has already been memorised or repeat the procedure for new combinations.

DELETING RADIO CONTROLS

This procedure cannot be reversed. It will delete ALL radio control codes that have been memorised as OPEN A and OPEN B/CLOSE. The deletion procedure is only active in the automation status display mode

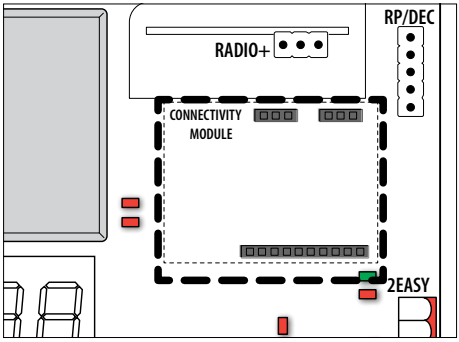
1. Press the − button and do not release it until the LED sequence has finished:
   - after 5 s the **RADIO2** LED starts flashing slowly
   - after 5 s, the **RADIO1** and **RADIO2** LEDs both start to flash quickly (deletion in progress)
   - after 5 s both the LEDs come on steadily (deletion complete)
2. Release the button, both LEDs switch off after approximately 10 s.

6.6 SIMPLY CONNECT

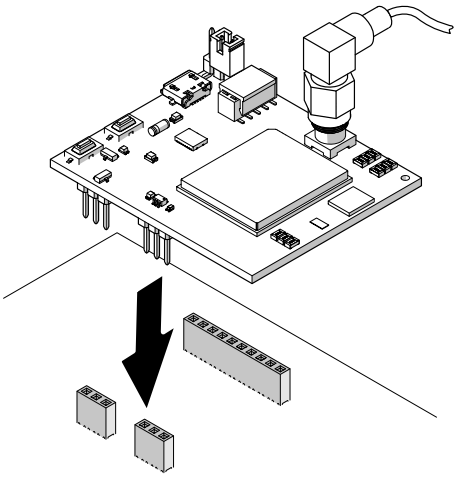
Simply Connect requires E145S LC firmware version FW 1.0 or later.
When programming is taking place via Simply Connect, programming via the board is inhibited.

1. With the power supply switched off, remove the board cover.
2. Insert the module into the dedicated plug connectors.
3. Remove the pre-cut knockouts in the cover according to your needs (7).
4. Fasten the cover on the board.
5. Connect the antenna (XMB) or the LAN cable (XWBL).
6. Power up the board and check the signalling LEDs of the module (see instructions).
7. Install the Simply Connect PRO app.

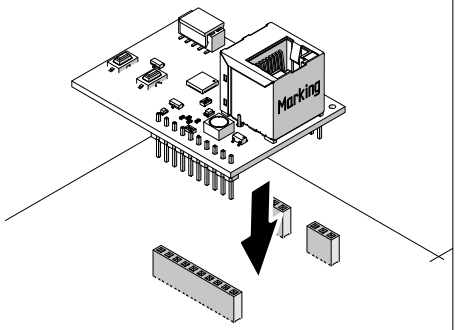
For further information on the features, access the AppSimply Connect and go to the "Tutorials" section in the Help menu.



XMB GSM Mobile, Bluetooth Low Energy



XWBL WiFi, LAN ethernet, Bluetooth Low Energy



7

7. UPDATING THE FIRMWARE

The XUSB module (supplied separately) and a suitable USB memory device (not supplied) can be used to load the firmware (FW) to the board.

USB device requirements Maximum power consumption 500 mA. Formatted with the FAT or FAT 32 file system (the board does not recognise other file systems).

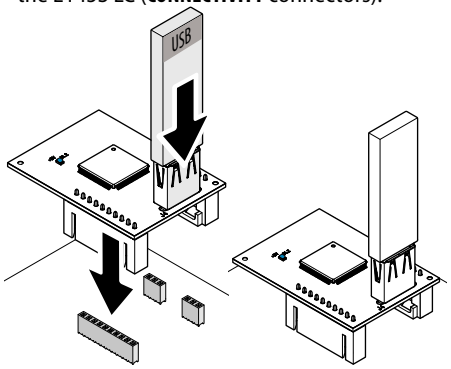
Firmware (FW) The E145S LC FW is supplied by FAAC in a compressed file.

Valid files The names of the files are made up as follows:

E145SLCboard name
_xx revision number: _01, _02...
.xxx file extension: **hex**(file FW)

7.1 INSERT THE XUSB WITH USB

1. Extract the FW file and save it in the root of the USB device, without changing the original filename (**E145S LC_xx.hex**).
2. Insert the USB device onto the XUSB module. Then, with the power disconnected, insert the XUSB onto the E145S LC (**CONNECTIVITY** connectors).



3. Carry out the UPGRADE or DOWNGRADE procedure (see specific section).

7.2 UPGRADE - LOAD THE NEW FW

This procedure is available when there is a more recent FW version on the USB device compared to the one on the board.

1. After having inserted the XUSB and the USB memory device, turn on the board.
   - The board display shows 2 alternating dots (..), then the FW update starts automatically.
   - The board display shows the percentage progress (00-99) and lastly shows 2 alternating dashes (--).
2. Exit from the procedure:
   - switch off the power supply and remove the XUSB. Then switch the board back on and check the FW version.

7.3 DOWNGRADE - LOAD A PREVIOUS FW VERSION

This procedure is available when there is the same or an older version of the FW on the USB device compared to the one on the board.

1. After having inserted the XUSB and the USB memory device, turn on the board.
   - The board display shows no.
2. Press + or − to display y, then press and release **F** (confirm y).
   - The board display shows the percentage progress (00-99) and lastly shows 2 alternating dashes (--).
3. Exit from the procedure:
   - switch off the power supply and remove the XUSB. Then switch the board back on and check the FW version.

■ **If you do NOT wish to downgrade the FW**

- Press **F** at step 2 when the board display shows no.
- The board display shows 2 alternating dashes (--). To exit the procedure, carry out step 3.

■ **Errors**

If there is an error, the LED DL1 on XUSB flashes quickly. Switch the power off and on again; then repeat the procedure from the beginning.

8. DIAGNOSTICS

8.1 FIRMWARE VERSION

The firmware version is show on the display for 5 seconds each time it is switched on.

8.2 CHECKING THE MOVEMENT

Access basic programming and use function n2 for Leaf2 (displayed if the automation is configured for 2 leaves) and function n1 for Leaf1.

1. The function displays - -.
2. Use buttons + and - in dead man mode. One of the expected commands must be given:

+ to OPEN (oP on the display)
- to CLOSE (cL on the display)

Otherwise, temporarily disconnect the power supply and invert the phases (OP/CL) of the motor.

8.3 AUTOMATED SYSTEM STATUS

The display, other than when in the programming menu, provides information regarding the status of the automation system (⊞ **7**).

⊞ **7** Automated system status

00	CLOSED	05	OPENING
01	OPEN	06	CLOSING
02	STATIONARY THEN OPENS	09	PREFLASHING BEFORE OPENING
03	STATIONARY THEN CLOSES	10	PREFLASHING BEFORE CLOSING
04	IN PAUSE	50	(flashing) SETUP required

8.4 LEDS CHECK

⊞ **8** bold indicates the condition of the LEDs with the board powered, the gate at its halfway position and no connected device active (●=on ; ○=off).

ⓘ In low power mode, all LEDs and the display are off.

⊞ **8** Status of the LEDs

LED	colour	meaning	●	○
OPEN A	**red**	Total motion command	active	**not active**
OPEN B	**red**	Partial motion command	active	**not active**
STOP	**red**	Stop command	**not active**	active
FSW CL	**red**	Closing photocell	**not active**	active
FSW OP	**red**	Opening photocell	**not active**	active
EDGE1	**red**	Opening sensitive edge	**not active**	active
EDGE2	**red**	Closing sensitive edge	**not active**	active
FCA1	**red**	Opening limit switch Leaf1	**not engaged**	engaged
FCC1	**red**	Closing limit switch Leaf1	**not engaged**	engaged
FCA2	**red**	Opening limit switch Leaf2	**not engaged**	engaged
FCC2	**red**	Closing limit switch Leaf2	**not engaged**	engaged
ERROR	**red**	Error signalling	error	**no errors**
BUS	**red**	BUS 2easy devices	see § BUS 2easy devices	
BUS MON	**green**	BUS 2easy devices		
RADIO1	**red**	Channel 2 Omnidec (*)	active	**not active**
RADIO2	**red**	Channel 2 Omnidec (*)	active	**not active**

(*) Additional LED status or meanings are shown in the section on the accessory to which it refers.

8.5 ERROR CODES, ALARMS, INFO

When the ERROR LED is lit, notifications in progress can be seen on the display (e.g. Er 07, or multiple notifications e.g. Er 07 16):

- when the board is not in the programming menus, press + and − at the same time.

9 Errors, Alarms, Info

Error (number on white background)	**Alarm** (number on grey background)	**Info** (**i**)
00	No warnings	
SL	Radio mode present: SLH, SLH LR, RC, DS	
Fd	Radio mode present: FDS	
01	Board failure	Perform RESET. If the problem persists, replace the E145S LC.
04	Accessories power supply fault	Check the accessories connection for short circuits. Check the current drawn by the connected accessories and that maximum indicated load is not exceeded. Check the accessories protection fuse (on boards fitted with one). Perform RESET. If the problem persists, replace the control board.
06	Encoder 2 failure	Make sure that the encoder is connected properly. If the problem persists, replace the encoder.
07	Motor 1 fault	Motor disconnected or short-circuited. Check the wiring. If the problem persists, replace the motor.
08	Motor 2 fault	Motor disconnected or short-circuited. Check the wiring. If the problem persists, replace the motor.
09	Power supply fault/No mains power	Power supply voltage synchronism problem. Check the mains power supply.
13	Radio blocked	The current radio codes are not compatible with the installed radio module. Clear the radio controls, or change the radio module type. The module has been removed or is damaged.
14	Local radio control disabled	The radio controls can only be managed via Simply Connect.
15	SETUP inhibited	Make sure that the STOP contact is not open.
16	Encoder 1 failure	Make sure that the encoder is connected properly. If the problem persists, replace the encoder.
20	FAIL-SAFE test failed	FAIL-SAFE test of a device failed. Check the connections, programming, and that the safety devices are working correctly.
22	Programming data corrupted	Programming data NOT valid or corrupted. Repeat BUS 2easy programming and registration.
23	Wrong encoder	A BUS 2easy encoder has been registered that does not match the number of motors selected. Correct the number of motors in basic programming.
24	Consecutive obstacles in closing	The programmed number of consecutive obstacles in closing has been reached. Remove the obstacle. If the problem persists, repeat the SETUP.
25	LOCK1 fault	LOCK1 fault. Check the connection. Remove the cause of the short circuit.
26	LOCK2 fault	LOCK2 fault. Check the connection. Remove the cause of the short circuit.
31	Consecutive obstacles in opening	The programmed number of consecutive obstacles in opening has been reached. Remove the obstacle. If the problem persists, repeat the SETUP.
32	Movement time-out	The movement is in timeout. Check the manual release. Check the presence of mechanical stops. If limit switches are installed, make sure that they activate correctly. If the problem persists, replace the board or motor.
35	BUS 2easy device fault/conflict	Check the addresses of the devices.
36	BUS 2easy short circuit/overload	Check the connections of the BUS 2easy devices that are connected and registered.

38		Programming parameters changed	Modified programming, NOT consistent with the SETUP. Restore the previous settings or run the SETUP procedure.
39		SETUP incorrect/missing	Perform SETUP.
42	(i)	Partial open	Automation is in partial open mode.
44	(i)	Emergency input active	Check the emergency input.
48		Limit switch fault, leaf 1	Leaf 1 limit switch fault. Check the connection of the limit switches.
49		Limit switch fault, leaf 2	Leaf 2 limit switch fault. Check the connection of the limit switches.
51		Obstacle detected when closing	Make sure that the NC sensitive edge terminals are connected or bridged. Make sure that the sensitive edges are programmed correctly. The notification disappears on the next movement.
52		Obstacle detected when opening	Make sure that the NC sensitive edge terminals are connected or bridged. Make sure that the sensitive edges are programmed correctly. The notification disappears on the next movement.
53		Number of cycles corrupted	Carry out the scheduled maintenance of the system.
60		Maintenance request	Ask the installer to carry out scheduled maintenance.
61		Obstacle detected Leaf1	An obstacle that prevents the leaf from moving has been detected. Remove the obstacle.
62		Obstacle detected Leaf2	An obstacle that prevents the leaf from moving has been detected. Remove the obstacle.
63		Intrusion attempt in progress	An attempt to open the leaf manually has been detected. Start a movement.
65		SETUP in progress	SETUP is in progress. The notification remains as long as the phase is in progress.
76		Radio code memory full	The radio memory is full. Simply Connect allows you to delete any unused radio codes. Use and additional MiniDec/DECODER/RP module if necessary.
80		Safeties in opening disabled	The safety in opening devices have been disabled (via Simply Connect).
81		Safeties in closing disabled	The safety in closing devices have been disabled (via Simply Connect).
82		Opening sensitive edge disabled	The opening sensitive edges have been disabled (via Simply Connect).
83		Closing sensitive edges disabled	The closing sensitive edges have been disabled (via Simply Connect).
87		BUS 2easy device registration in progress	A registration procedure is in progress.
89		Sensitive edge read error	Sensitive edges Failsafe test failed. Check the connections, programming, and make sure that the devices are working correctly.
90		Programming in progress	A registration procedure is in progress via Simply Connect.
99		Control board data deletion	All data on the E145S LC has been deleted.
107	(i)	Acquiring radio on channel 1 in progress	Radio channel 1 is being memorized.
108	(i)	Acquiring radio on channel 2 in progress	Radio channel 2 is being memorized.
110	(i)	Board Display locked	The display of the E145S LC is locked (via **Simply Connect**).

9. MAINTENANCE

9.1 SCHEDULED MAINTENANCE

10 lists the operations that should be performed on a regular basis on the E145S LC board in order to keep the automation working reliably and safely; these are given purely as a guideline and should not be considered exhaustive. The installer/machine manufacturer is responsible for drawing up the maintenance plan for the automation, supplementing this list or modifying the maintenance operations on the basis of the machine characteristics.

10 Scheduled maintenance

Operation	Frequency
Electronic equipment	
Check that the power supply and connecting cables and the cable glands are intact.	12
Check that the connectors and wiring are intact.	12
Check that there are no signs of overheating, burning etc. of electronic components.	12
Check that the earth connections are intact.	12
Check the operation of the circuit breaker and differential switch.	12
Control devices	
Check that the installed devices and radio controls are in good condition and that they operate correctly.	12
Sensitive edges	
Check condition, fastening and correct operation.	6
Photocells	
Check condition, fastening and correct operation.	6
Check the posts, ensuring that they are intact, correctly fastened and free of deformation etc.	6
Flashing light	
Check condition, fastening and correct operation.	12
Complete automation system	
Check that the automation system operates correctly, according to the set parameters, when using the various control devices.	12
Check that the gate moves correctly - smooth, regular and without abnormal noise.	12
Check that both the opening and closing speed are correct and that the stop positions and slow-downs provided for are respected.	12
Check that the manual release operates correctly: when the release mechanism is activated, it must only be possible to move the gate manually.	6
Check that the maximum force required for manual movement of the gate is below 225 N in residential areas and 390 N in industrial or commercial settings.	6
Check that the sensitive edges operate correctly when an obstacle is detected.	6
Check that each pair of photocells is working correctly.	6
Check that there is no optical/light interference between the pairs of photocells.	6
Check the force limitation curve (standards EN 12453 and EN 12445). For non-EU countries, of there are no specific local regulations, the force must be less than 150 N.	6

9.2 CYCLE COUNTER

READING THE CYCLES PERFORMED COUNTER

Add together the readings of functions nb (hundreds of thousands), nc (thousands) and nd (tens) in advanced programming.

RESETTING THE CYCLE COUNTER

In ADVANCED programming, with the function AS = no, go to function nc and press + and - for 5 s.

9.3 MAINTENANCE REQUEST

It is possible to program the number of cycles after which maintenance is required.

When the automation reaches the set number of cycles, there is a pre-flashing of at least 8 s at each movement. The user should ask the installer to carry out maintenance.

1. In ADVANCED programming, function AS, select Y to enable the maintenance request.
2. In function nc set the value in thousands using the + and - buttons.
3. In function nd set the value in tens using the + and - buttons.
4. Exit and save the programming.

9.4 REPLACING A FUSE

Carry tut this operation with the power supply disconnected.

1. Unscrew the fuse holder and replace the component with one of the same rating (see section § Board components).
2. Refit the fuse holder.
3. Switch the power back on and check that the board and the connected accessories are on.

F1 Fuse for mains power supply F 10A

10. INSTRUCTIONS FOR USE

It is the responsibility of the installer to provide the operator of the automation with the instructions for use, maintenance and disposal, appropriately integrating the information provided below.

COMMANDS

■ **COMPLETE OPENING (OPEN)**

Command available in all operating logics.

■ **PARTIAL OPENING (OPEN B)**

Command available in the automatic operating logics.

■ **CLOSE (OPEN B)**

Command available in operating logics C, b and bC.

■ **STOP**

Command available in all operating logics. It has priority over the other commands. It stops the automation and prevents it from being operated until the button is released.

DETECTION DEVICES

■ **Closing photocells**

The command issued when the photocells are triggered during closing depends on the programming:
- open immediately
- stop immediately and open when the photocells are released
- if they are engaged when the leaves are stationary, the closing photocells prevent closing

■ **Opening photocells**

The command issued when the photocells are triggered during opening depends on the programming:
- close immediately
- stop immediately and open when the photocells are released

■ **Opening/closing photocells**

The triggering of the photocells stops the gate and the movement continues when they are released.

■ **Sensitive edge safety**

If an obstacle is detected during opening or closing, the automation reverses partially or totally (programming) and then stops.

■ **Anti-crushing due to obstacle**

If an obstacle is detected during opening or closing, the automation reverses (ANTI-CRUSHING) and then stops.

At the 4th consecutive obstacle when CLOSING, if the board uses AUTOMATIC logic, the automation remains open and an OPEN command is required to close it.

ACCESSORIES

■ **Indicator light**

Lights up during opening and stays on as long as the automation remains open. Flashes during closing. It is off when the automation is closed.

■ **Courtesy light**

Lights up during movements and remains on for the set time.

■ **Traffic light control**

Lights up during opening and remains on as long as the automation remains open.

AUTOMATIC LOGICS

In all automatic logics, the OPEN command:
- with the automation closed, opens the automation and closes it again automatically after a pre-set pause time
- during closing, it reverses to open

■ A - **AUTOMATIC**

OPEN command:
- during the pause, reloads the pause time
- during opening, is ignored

Operation of the closing photocells:
- during the pause, reloads the pause time

■ AI - **AUTOMATIC1**

OPEN command:
- during the pause, reloads the pause time
- during opening, is ignored.

Operation of the closing photocells:
- during pause, causes it to close
- during opening, requests closing
- during closing, causes the gate to reverse and then closes it immediately

■ AP

AUTOMATIC STEP-BY-STEP

OPEN command:
- during pause, stops the gate and the next OPEN command closes it
- during opening, stops the gate and the next OPEN command closes it

Operation of the closing photocells:
- during the pause, reloads the pause time

■ S **AUTOMATIC SAFETY**

OPEN command:
- during pause, causes it to close
- during opening, causes it to close
- during opening, stops the gate and the next OPEN command closes it

Operation of the closing photocells:
- during pause, causes it to close
- during opening, requests closing
- during closing, causes the gate to reverse and then closes it immediately

■ SA **AUTOMATIC SAFETY 2**

OPEN command:
- during pause, causes it to close
- during opening, is ignored
- during closing, causes it to reopen

Operation of the closing photocells:
- during the pause, reloads the pause time

■ SP **AUTOMATIC STEP-BY-STEP SAFETY**

OPEN command:
- during pause, causes it to close
- during opening or closing, stops it and the next OPEN command reverses the direction

Operation of the closing photocells:
- during pause, causes it to close
- during opening, requests closing
- during closing, causes the gate to open and then closes it immediately

■ AT **AUTOMATIC TIMER**

OPEN command:
- if active at switch-on, opens the automation, otherwise it closes it
- during the pause, reloads the pause time
- during opening, is ignored

Operation of the closing photocells:
- during the pause, reloads the pause time

SEMI-AUTOMATIC LOGICS

In all semi-automatic logics, the OPEN A: command:
- with the automation closed, opens the automation

■ E - **SEMI-AUTOMATIC E**

OPEN command:
- during opening, stops the movement and the next command closes the gate
- when the automation is open, it closes it
- during closing, causes it to reopen

If the Photocell is triggered:
- during movement, commands the inversion

■ EP - **SEMI-AUTOMATIC STEP-BY-STEP**

Command OPEN A or OPEN B:
- during opening or closing, stops the gate and the next OPEN command reverses the direction
- when the automation is open, it closes it

If the Photocell is triggered:
- during movement, commands the inversion

■ b - **SEMI-AUTOMATIC b**

OPEN A command
- during closing, causes it to reopen

CLOSE command (OPEN B)
- during opening or when the automation is open, it closes it

If the Photocell is triggered:
- during movement, commands the inversion

■ bC - **MIXED (b during opening, C during closing)**

This logic uses the OPEN A (OPEN) impulse command to open, and maintained OPEN B (CLOSE) to close. Partial motion is not available.

A maintained command must be activated intentionally and the automation must be visible.

OPEN A command:
- during closing, opens the automation
- when the automation is open, it closes it

CLOSE command (OPEN B)
- maintained closes the automation
- not maintained during opening, stops the automation

If the Photocell is triggered:
- during closing, commands the inversion
- during opening, it stops the movement

DEAD MAN LOGIC - MAINTAINED

■ C - **Dead-man**

Logic C requires the use of the maintained OPEN and CLOSE (OPEN B) commands

The control must be activated intentionally and the gate must be visible

- Maintained OPEN opens the automation
- Maintained CLOSE (OPEN B) closes the automation

Operation of the photocells:
- during movement, stop the automation

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