

**FAAC**



# E145S Quick Start Guide

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**These instructions are to be considered as a rapid guide for installation and to confirm the correct handing and polarity of the motors. They can also be used to confirm the operating logics before additional safety devices are fitted to the system as specified by the Risk Assessment undertaken by the installer. The installer should still familiarise themselves with the full manual and the safety information contained within. (available at <https://www.faac.co.uk/accessories-and-control-boards/control-boards/for-swing-gates/e145S-control-board>)**

#### CE DECLARATION OF CONFORMITY

The manufacturer

**Company name:**

FAAC S.p.A. Soc. Unipersonale

**Address:**

Via Calari, 10 - 40069 Zola Predosa BOLOGNA - ITALY

hereby declares that the following product:

**Description:**

control board

**Model:**

E145

conforms to the essential safety requirements of the following ECC directives:

Low Voltage Directive 2014/35/EU

Electromagnetic Compatibility Directive 2014/30/EU

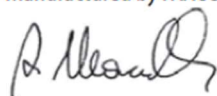
Directive ROHS 2011/65/EU

Furthermore, the following harmonised standards have been applied:

EN 60335-1:2012 + A11:2014 - EN 61000-6-2:2005 - EN 61000-6-3:2007 + A1:2011

**Additional note:** this product underwent tests in a typical uniform configuration (all products manufactured by FAAC S.p.A.).

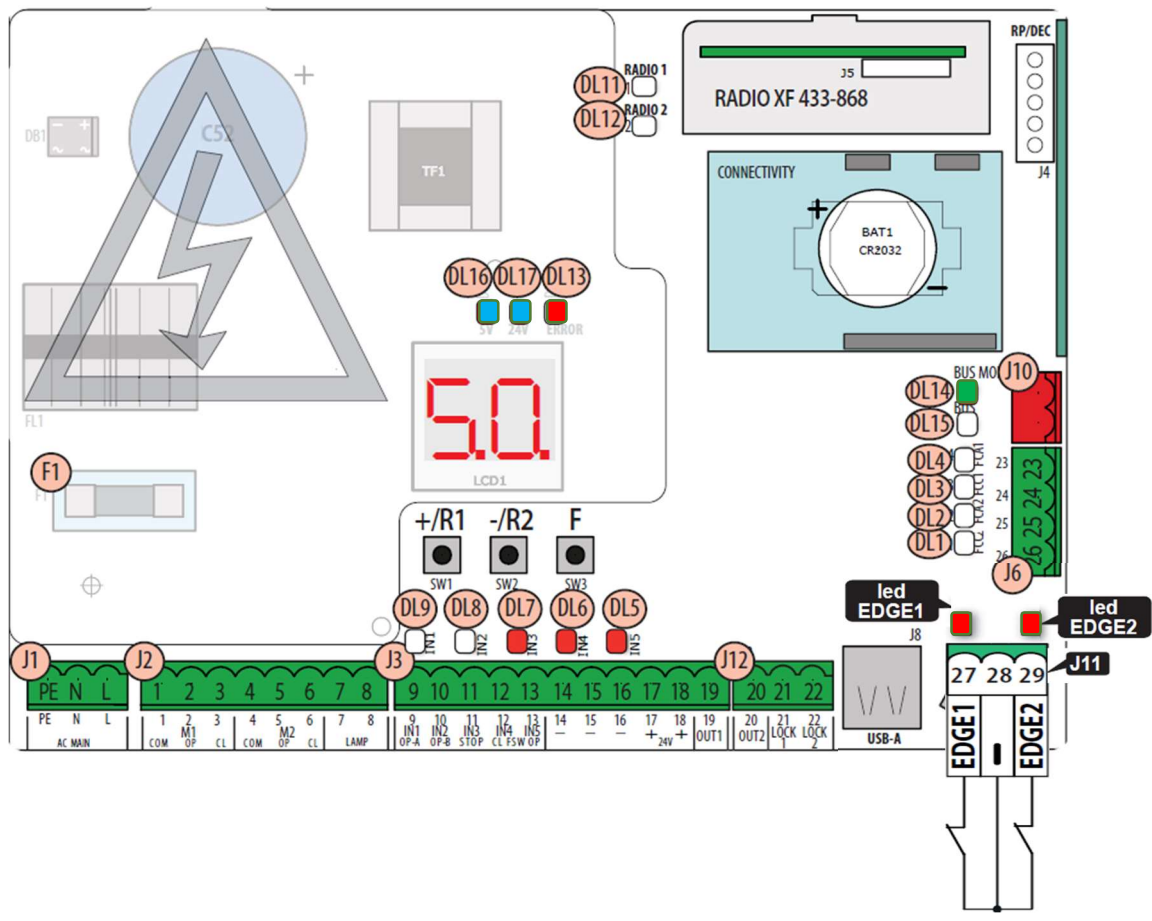
Bologna, January the 1<sup>st</sup> 2016



## Installation Sequence

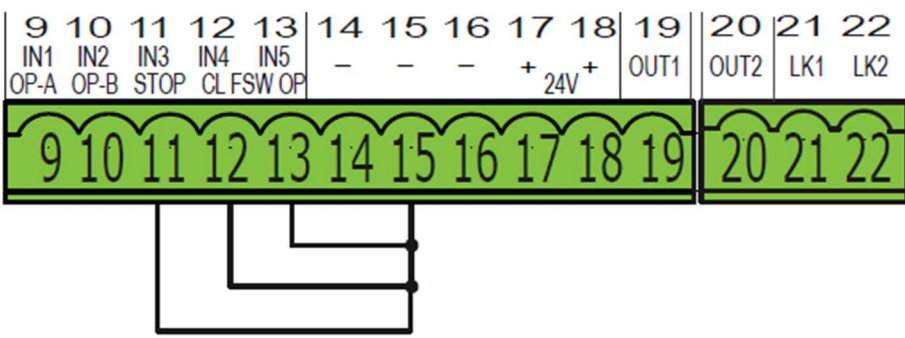
1. Perform A Risk Assessment for the system and resolve by design as many risks as possible
2. Secure the card into a suitable enclosure
3. Mount the motors as detailed in their relevant instructions
4. Use suitable cabling for the motors and accessories (BUS devices must be wired using a minimum 2 core, 0.5mm multi-stranded screened cable (the screen MUST be attached to the Earth Terminal))
5. Wire the electronic control board as per Page 4 for the motors and power supply
6. Please note that J3 Terminal block comes with the Stop, FSW CL and FSW OP pre-linked for first run-up of the system as shown on Page 3
7. Power up the E145 Board (please note that the board will take 5-10 seconds to boot-up)
8. Verify the status of the LED's and Display are as per Page 3
9. Depending on the installation, verify that the LED's on the encoders correspond to those described on Page 5
10. Wire in an OP-A trigger as per Page 4, alternatively program a remote control as shown on Page 11.
11. Familiarise yourself with how to program the E145S control board as per Page 6
12. Begin Basic Programming of the E145S on Page 7
  - a. If Hydraulic motors are used, please note that "F1" and "F2" MUST be set to "50" as torque adjustment is performed on the motors as detailed in the motor manual
  - b. Check Rotation of the motors by using Function "n1" and "n2" for motor 1 and 2 respectively as shown on Page 7
  - c. If using encoders, "EN" must be set to "y" and "bu" function should be followed as shown on Page 7
  - d. Verify that the Gates are in the closed position as detailed on Page 8
  - e. Run Time Learning – "tL" function and follow procedure as detailed on Page 8
13. Provide an opening command to verify that the system works correctly
14. Adjust Operating Logic according to the customer requirement, brief details on Page 10
15. Connect Safety Devices to the system as deemed required by the Risk Assessment carried out previously
  - a. Hard Wired Safety Edges can be wired in J11 Terminals as per Page 3 and correct "So" or "Sc" function adjusted to match on Page 7
  - b. Wireless Safety Edges can be connected via the BUS 2easy connection if using the FAAC XTR and XTS Wireless Receiver system, the "bu" function must also be re-addressed as shown on Page 7
  - c. If not using the FAAC XTR and XTS System please treat the input on J11 as required by the Wireless Safety Edge system being used
  - d. Traditional Photocells can be wired and configured as per Page 4
  - e. FAAC BUS 2easy Photocells can be wired and configured as per Page 5, the "bu" function must also be re-addressed as shown on Page 7
  - f. XGuard Laser Curtains would be configured as Traditional Photocells in 14.c
16. Connect any additional activation commands as per Page 4
17. If using either Safety Edges or Inherent Obstacle Detection as part of the Risk Assessment, there are useful Functions that can be modified to assist in attaining compliance on Page 9
18. If using XGuard Laser Curtains please test these in accordance with BS EN 12445/12453
19. Hand over all relevant documentation to the end customer as required by the Technical File and the Supply of Machinery (Safety) Regulations 2008

# E145S LED Display at first Power On



## J11 Terminals

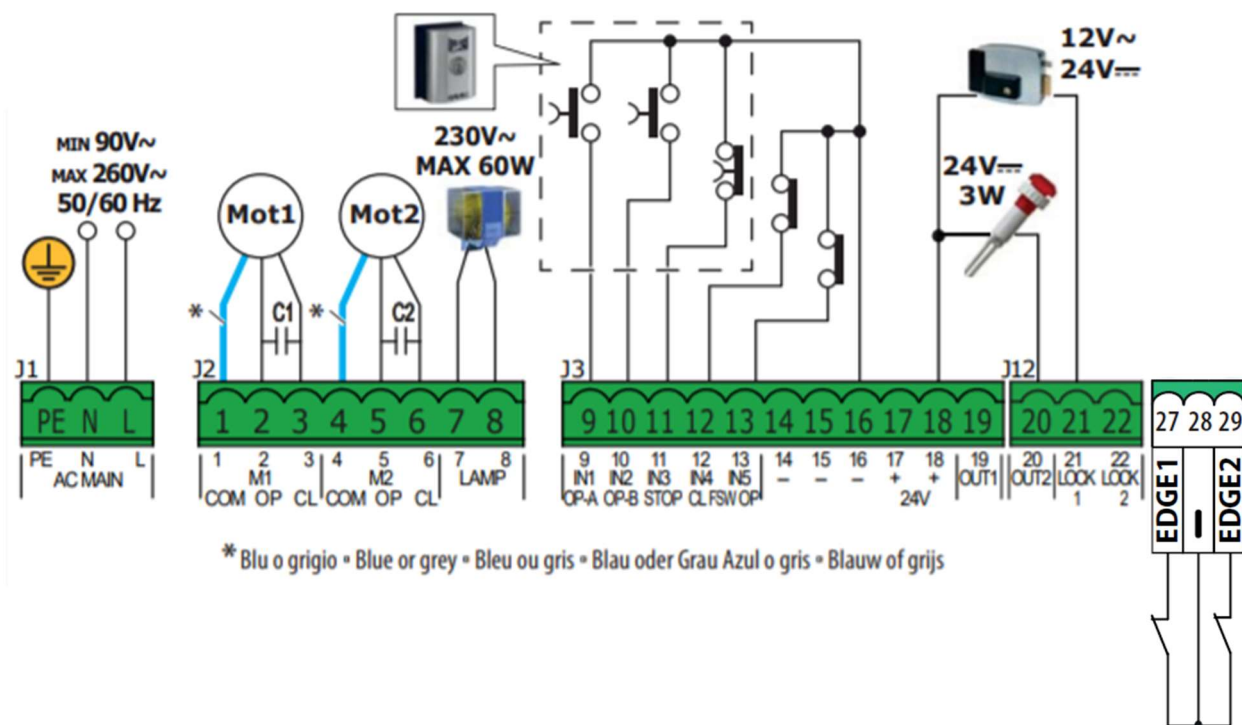
The new J11 Terminal to allow the direct connection of resistive safety edges or N/C safety inputs comes pre-linked and configured to N/C setting, hence the relevant EDGE 1 or EDGE 2 LED being lit on first Power On.



## J3 Terminals

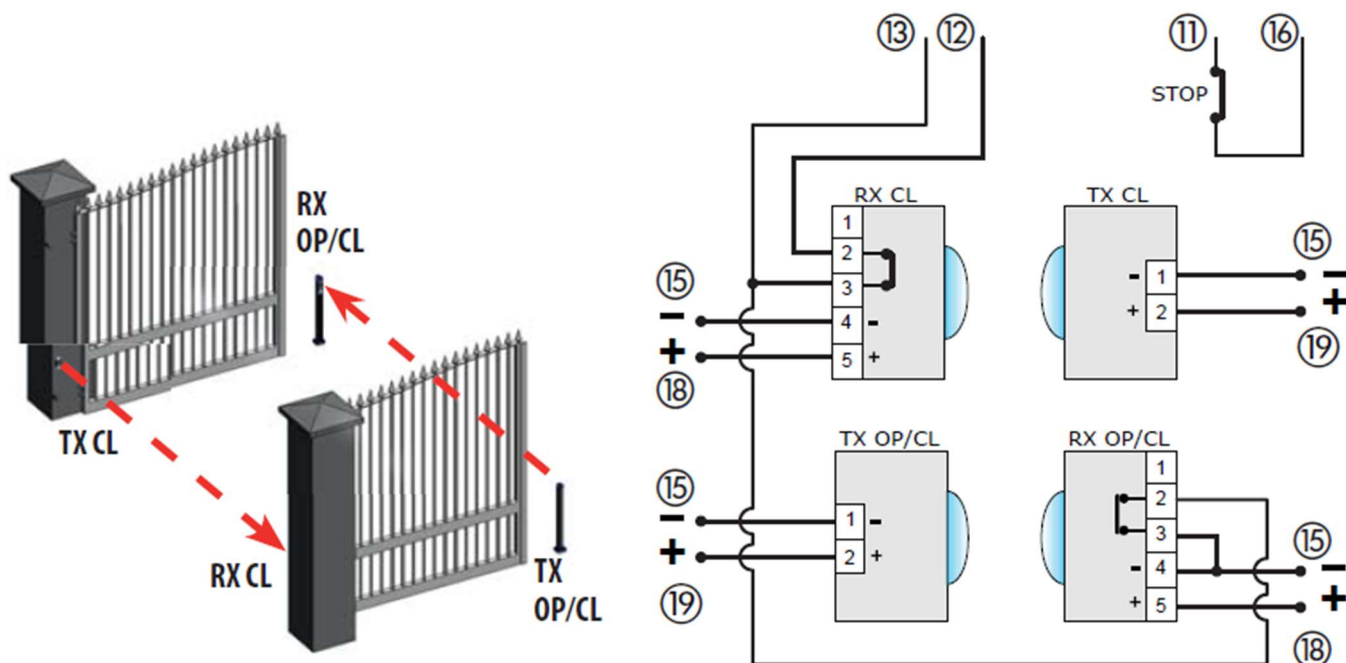
DL7, DL6 and DL5 will only be illuminated if the following terminals are linked out (please note that the board comes with links in place). The links are just to be used for test purposes only and safety devices should be wired in, as detailed in the instructions further below. In no circumstances should the system be handed over to the end user with these links still in place unless it is being controlled via Dead-Man operation and by trained users only.

## Electrical Connections



## Connection of Traditional Photocells

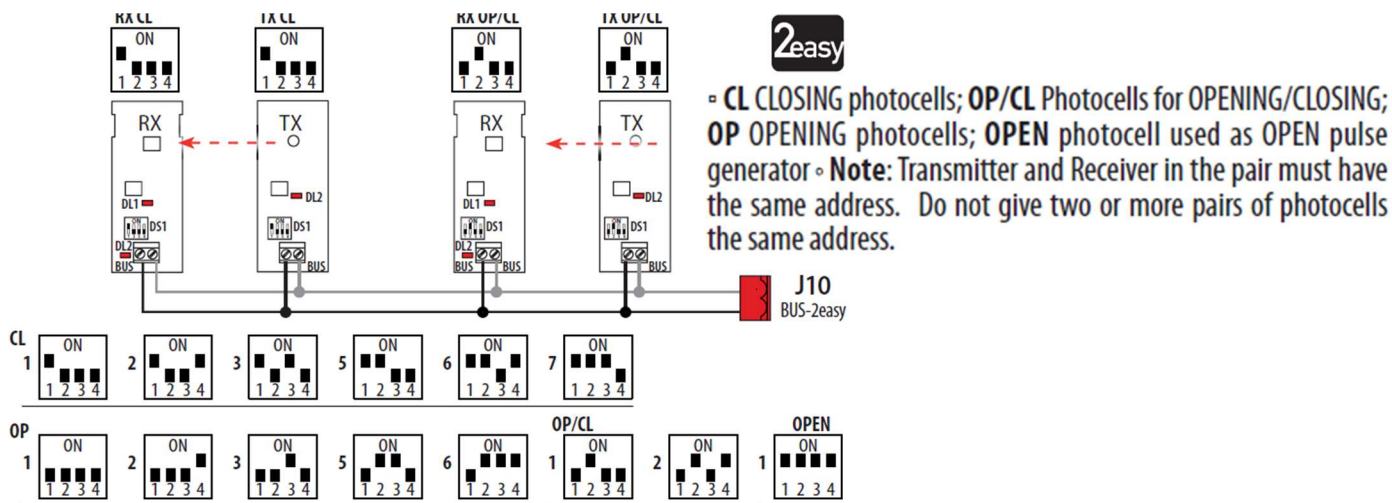
The E145S Control Board allows for the use of traditional photocells (n/c with relay). Below is a layout drawing showing the basic positions normally covered. The wiring diagram is for Fail-Safe enabled photocells. In order to comply with the standards, all devices used for safety should either have a circuit monitored by the control board or be self-monitoring. FAAC Control boards are able to perform the monitoring by the use of a Fail-Safe function, whereby the test negative is momentarily dropped (please note that this may not be compatible with non-FAAC equipment). This function is enabled by entering Advanced Programming (detailed below) and setting function **o1 to O1**.





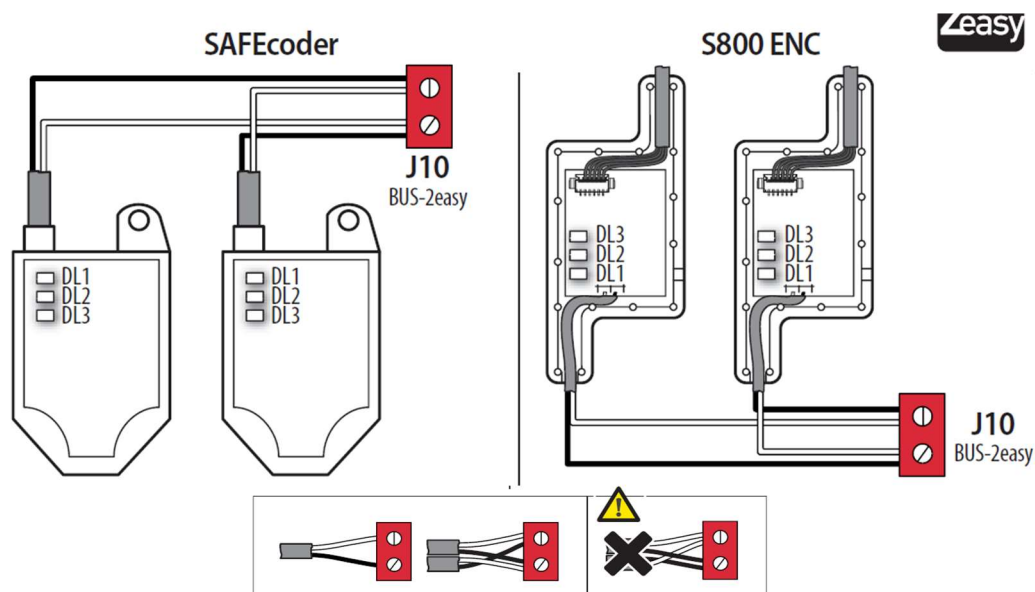
## Connection of FAAC BUS 2Easy Photocells

The E145S Control Board also allows for the use of FAAC BUS 2easy photocells which allow for simpler cabling and a reduced power consumption. FAAC BUS 2easy photocells also remove the need for additional wiring for a monitoring circuit as it is carried through our proprietary FAAC BUS 2easycommunication protocol (Please note that FAAC BUS photocells are only compatible with FAAC Control Boards and those using the BUS Terminal or using the BUS Relay Interface Board).




## Connection of FAAC BUS 2easy Safecoders and S800 Encoders

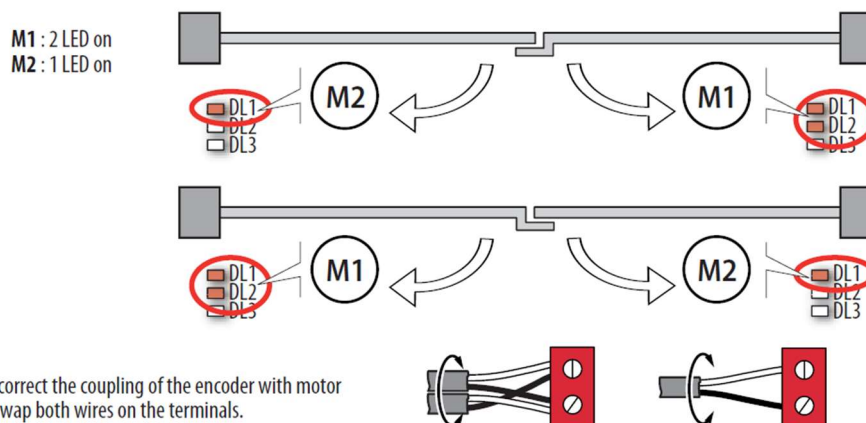
The E145S Control Board also allows for the use of FAAC BUS 2easy Safecoders and the S800 Encoders on the 230v versions. This allows for the control board to have positional accuracy and allows for the possibility of inherent obstacle detection (Force Testing with the use a calibrated instrument to BS EN 12445/12453 norms (such as the Microtronics Blueforce Tester, available from FAAC UK) will be required to confirm suitability but please note that additional devices maybe required such as Safety Edges).



### BUS 2easy Encoder LEDs Status

LED	ON	FLASHING	OFF
DL1	Power present Communication present	Power present Communication absent	Power absent Communication absent
	DL1 must always be on to confirm correct encoder/board connection.		
DL2	Leaf 1	/	Leaf 2
	DL2 indicates the leaf on which the encoder is installed; it must be on for leaf 1 and off for leaf 2.		
DL3	Stationary leaf	Leaf in motion	Stationary leaf
	DL3 indicates pulse reading during leaf movement using steady flashing. In stationary status of the leaf, the DL3 can be either on or off.		

 In case of incorrect connection (DL2 on or off for both of the encoders), during the BUS 2easy accessories learning procedure, the DL1 leds of both encoders are FLASHING.



## Verification of BUS 2easy Connections on J10 Terminal

The J10 Terminal on the E145S Control Board has two diagnostic LED's (DL15 – Red and DL14 – Green). These LED's assist in ensuring that any devices connected on the FAAC BUS 2easy network are installed correctly.

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

### LED DL15 (Red)

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

### LED DL14 (Green)

ON steady	Normal activity (led ON even if there are no devices).
Slow blinking (blink every 2,5 sec)	BUS-2EASY line short-circuit.
Rapid blinking (blink every 0,5 sec)	Error in the BUS-2EASY connection. Repeat the device entry. If the error occurs again, check: - That there are no more than one device in the system with the same address. - Calling error (number > or < the connected BUS devices). - FAIL SAFE error on the BUS device.

## E145S Control Board Programming

Programming is split over two levels:

- Basic Programming
- Advanced Programming

Tab. BASIC programming phases.



1	2	3
<p>PRESS AND HOLD <b>F</b>: THE FIRST FUNCTION APPEARS </p>	<p>RELEASE <b>F</b>: THE FUNCTION VALUE IS DISPLAYED</p> <p>USING <b>+</b> OR <b>-</b>, SCROLL THE AVAILABLE VALUES UNTIL THE DESIRED ONE</p> <p><b>+ / R1</b> <b>- / R2</b></p>	<p>PRESS <b>F</b>: TO MOVE TO THE NEXT FUNCTION </p> <p>FUNCTION <b>St</b> (LAST FUNCTION) SELECT <b>4</b> TO SAVE THE PROGRAMMING OTHERWISE SELECT <b>no</b> TO EXIT THE PROGRAMMING WITHOUT SAVING</p> <p>PRESS THE BUTTON <b>F</b> TO CONFIRM; AT THE END THE DISPLAY RETURNS TO VISUALIZE THE AUTOMATED SYSTEM STATUS</p>





Tab. ADVANCED programming phases

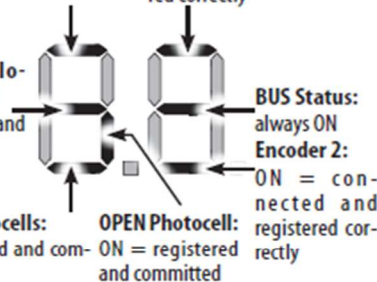
1	2	3
<p>PRESS AND HOLD <b>F</b> AND THEN ALSO <b>+</b>: THE FIRST FUNCTION APPEARS </p> <p><b>+ / R1</b> <b>F</b></p>	<p>RELEASE THE BUTTONS: THE FUNCTION VALUE IS DISPLAYED</p> <p>USING <b>+</b> OR <b>-</b>, SCROLL THE AVAILABLE VALUES UNTIL THE THE DESIRED ONE</p> <p><b>+ / R1</b> <b>- / R2</b></p>	<p>PRESS <b>F</b>: TO MOVE TO THE NEXT FUNCTION </p> <p>FUNCTION <b>St</b> (LAST FUNCTION) SELECT <b>4</b> TO SAVE THE PROGRAMMING OTHERWISE SELECT <b>no</b> TO EXIT THE PROGRAMMING WITHOUT SAVING</p> <p>PRESS THE BUTTON <b>F</b> TO CONFIRM; AT THE END THE DISPLAY RETURNS TO VISUALIZE THE AUTOMATED SYSTEM STATUS</p>

The function is displayed only while the button is pressed

## Basic Programming

Basic Function	Default
<b>CF MOTOR TYPE:</b>	
1 Motors for swing gates	
2 Motors for sliding gates	
PC Mixed configuration from a PC/MAC (e.g.: one swing and one slide)	
<b>DF DEFAULT:</b>	Y
Y Indicates that all the set values are default values.	
no Indicates that at least 1 set value is different from the default values.	
Select Y if you wish to restore the default configuration.	
<b>LO OPERATING LOGIC:</b>	E
E, EP, S, SA, SP, AI, A, AP, At, b, bC, C, CU	
Refer to the specific paragraph for a description of the operating logics.	
<b>PA PAUSE A TIME (only displayed with Automatic logic):</b>	30
Can be adjusted from 00 to 9.5 minutes.	
<b>PB PAUSE B TIME (only displayed with Automatic logic):</b>	30
Can be adjusted from 00 to 9.5 minutes.	
<b>Mn NUMBER OF MOTORS:</b>	2 (swing)
1 = 1 motor	
2 = 2 motors	1 (sliding)
<b>F1 MOTOR 1 POWER:</b>	25
01 = minimum power	
50 = maximum power	
<b>F2 MOTOR 2 POWER (only displayed with the Mn = 2 function):</b>	25
01 = minimum power	
50 = maximum power	
<b>En ENCODER USE:</b>	no
Y = encoders on both motors	
no = disabled encoders	
<b>FA LIMIT SWITCH WHEN OPENING (only displayed with the CF = 1 or CF = PC function):</b>	no
no = opening limit switches disabled	
01 = the limit switch determines when the movement is stopped	
02 = the limit switch determines when deceleration begins	
<b>FC LIMIT SWITCH WHEN CLOSING (only displayed with the CF = 1 or CF = PC function):</b>	no
no = closing limit switches disabled	
01 = the limit switch determines when the movement is stopped	
02 = the limit switch determines when deceleration begins	
<b>So EDGE1: SAFETY IN OPENING</b>	nc
nc = sensitive edges with NC contact	
re = resistive sensitive edges 8.2 kΩ	
Connect a sensitive edge or another device that, when activated during opening, causes the gate to reverse.	
 DO NOT connect more than one resistive sensitive edge on each configured input = re	
<b>Sc EDGE2: SAFETY IN CLOSING</b>	nc
nc = sensitive edges with NC contact	
re = resistive sensitive edges 8.2 kΩ	
Connect a sensitive edge or another device that, when activated during closing, causes the gate to reverse.	
 DO NOT connect more than one resistive sensitive edge on each configured input = re	

Basic Function	Default
<b>Br SLIDING LEAF BRAKING (only displayed with the CF = 2 or CF = PC function):</b>	05
00 = braking disabled	
10 = maximum braking time	
<b>Cd LEAF CLOSING DELAY (only displayed with the Mn = 2 function):</b>	05
Can be adjusted from 00 to 3 minutes.	
<b>bu BUS-2easy DEVICE REGISTRATION:</b>	no
Register: keep + and - pressed simultaneously for at least 5 s (the display flashes during this time).	
Y will appear once confirmation of the completed registration is given.	
Release + and -. The status of the BUS-2easy devices will appear on the display.	
<b>Opening photocells:</b>	
ON = registered and committed	
<b>Encoder 1:</b>	
ON = connected and registered correctly	
<b>Opening and closing photocells:</b>	
ON = registered and committed	
<b>BUS Status:</b>	
always ON	
<b>Encoder 2:</b>	
ON = connected and registered correctly	
<b>Closing photocells:</b>	
ON = registered and committed	
<b>OPEN Photocell:</b>	
ON = registered and committed	
<b>M2 MOTOR 2 dead-man DRIVE mode (only displayed with the Mn = 2 function):</b>	--
+R1	
 OPENS (displaying oP) for as long as the button is pressed	
-R2	
 CLOSSES (displaying cL) for as long as the button is pressed	
<b>M1 MOTOR 1 dead-man DRIVE mode:</b>	--
+R1	
 OPENS (displaying oP) for as long as the button is pressed	
-R2	
 CLOSSES (displaying cL) for as long as the button is pressed	
<b>EL WORK TIME LEARNING OPERATIONS (SET UP):</b>	--
Refer to the relative paragraph.	
<b>SE STATUS OF THE AUTOMATED SYSTEM:</b>	Y
set the selection:	
Y to SAVE and EXIT programming	
no to EXIT programming WITHOUT SAVING	
press F to confirm; when completed, the status of the automated system will appear on the display once again:	
00 = CLOSED	
01 = OPEN	
02 = Stationary and then "OPENS"	
03 = Stationary and then "CLOSSES"	
04 = In "PAUSE"	
05 = Opening	
06 = Closing	
07 = FAIL SAFE in progress	
08 = Verifying BUS-2easy devices	
09 = Pre-flashes and then "OPENS"	
10 = Pre-flashes and then "CLOSSES"	
11 = Emergency open	
12 = Emergency close	
HP = Hold position	





## Set-Up – Time Learning (tL – function)

S0 flashes on the display indicating that a SET-UP must be performed.



All safety devices are disabled during SET-UP; therefore, prevent any transit in the leaf movement area.



The connected BUS-2easy accessories are always registered during SET-UP.

The deceleration spaces can be configured and modified from the Advanced Programming (r1 and r2) without having to repeat the SET-UP.

Refer to the complete instructions if there are limit switches.

### SETUP WITHOUT ENCODER



If a system without an encoder is installed, the leaves will require mechanical stops.

1. Access BASIC programming and go to the tL function. The -- will appear when the F button is released.
2. Verify that the leaves are closed. Otherwise:
  - Keep the -/R2 button pressed to close leaf 2
  - Keep the +/R1 button pressed to close leaf 1



If the corresponding leaf opens when the +/R1 and/or -/R2 buttons are pressed, disconnect the power and invert the phase wires of the corresponding motor on the J2 terminal board, (terminals 2-3 for the leaf 1 motor and terminals 5-6 for the leaf 2 motor).

3. With the leaves closed, keep buttons + and - pressed (approx. 3 sec) until S1 flashes on the display.
4. Release + and -. Leaf 1 begins its opening movement. Stop the leaf movement by sending an OPEN A pulse as soon as it reaches the mechanical stop.
5. (if  $\overline{Mn} = 2$ ) S2 will flash on the display. Leaf 2 begins its opening movement. Stop the leaf movement by sending an OPEN pulse as soon as it reaches the mechanical stop.
6. (if  $\overline{Mn} = 2$ ) S3 will flash on the display. Leaf 2 begins its closing movement. Stop the leaf movement by sending an OPEN pulse as soon as it reaches the mechanical stop.
7. S4 will flash on the display. Leaf 1 begins its closing movement. Stop the leaf movement by sending an OPEN pulse as soon as it reaches the mechanical stop.
8. The board will automatically exit the programming. The □□ on the display (status of the automated system) confirms that the SET-UP has been completed correctly. The S0 flashing on the display indicates that it is necessary to repeat the SETUP.

### SETUP WITH ENCODER



If there are mechanical stops, the SETUP does not require OPEN A pulses.

1. Access BASIC programming and go to the En function. Set 9 to enable BUS encoders.
2. Go to the tL function. The -- will appear when the F button is released.
3. Verify that gate leaves are closed. Otherwise:
  - Keep the -/R2 button pressed to close leaf 2
  - Keep the +/R1 button pressed to close leaf 1



If the corresponding leaf opens when the +/R1 and/or -/R2 buttons are pressed, disconnect the power and invert the phase wires of the corresponding motor on the J2 terminal board, (terminals 2-3 for the leaf 1 motor and terminals 5-6 for the leaf 2 motor).

4. With the leaves closed, keep buttons + and - pressed (approx. 3 sec) until S1 flashes on the display.
5. Release + and -. Leaf 1 begins its opening movement and will stop as soon as it reaches the mechanical stop. If there is no mechanical stop, stop the leaf movement at the desired point by sending an OPEN A pulse.
6. (if  $\overline{Mn} = 2$ ) S2 will flash on the display. Leaf 2 begins its opening movement and will stop as soon as it reaches the mechanical stop. If there is no mechanical stop, stop the leaf movement at the desired point by sending an OPEN A pulse.
7. (if  $\overline{Mn} = 2$ ) S3 will flash on the display. Leaf 2 begins its closing movement and will stop as soon as it reaches the mechanical stop. If there is no mechanical stop, stop the leaf movement at the desired point by sending an OPEN A pulse.
8. S4 will flash on the display. Leaf 1 begins its closing movement and will stop as soon as it reaches the mechanical stop. If there is no mechanical stop, stop the leaf movement at the desired point by sending an OPEN A pulse.
9. The board will automatically exit the programming. The □□ on the display (status of the automated system) confirms that the SET-UP has been completed correctly. The S0 flashing on the display indicates that it is necessary to repeat the SETUP.



## Advanced Programming

Advanced Function	Default
<b>b0</b> TIME OF MAXIMUM POWER AT START-UP	01
<b>c5</b> FINAL STROKE WHEN CLOSING (FLUID HAMMER) (NOT displayed with the $F_c = 1$ function)	no
<b>r5</b> REVERSE STROKE WHEN OPENING (NOT displayed with the $F_R = 1$ function)	no
<b>0d</b> LEAF OPENING DELAY (only displayed with the $m_n = 2$ function)	02
<b>r1</b> LEAF 1 DECELERATION: The deceleration space can be adjusted as a percentage of the total travel of leaf 1. Adjustable from 00 to 99%, in 1% steps. 00 = no deceleration 01 = minimum deceleration space 99 = maximum deceleration space	20
<b>r2</b> LEAF 2 DECELERATION (only displayed with the $m_n = 2$ function): The deceleration space can be adjusted as a percentage of the total travel of leaf 2. Adjustable from 00 to 99%, in 1% steps. 00 = no deceleration 01 = minimum deceleration space 99 = maximum deceleration space	20
<b>PF</b> PRE-FLASHING	no
<b>Ph</b> CLOSING PHOTOCELLS	no
<b>Ad</b> ADMAP FUNCTION	no
<b>EC</b> ANTI-CRUSHING SENSITIVITY (only displayed with the $E_n = 3$ function): Varying this function alters the time after which the board commands the leaves to reverse their direction in case of an obstacle or to stop if they are in the contact point search space (refer to the $r8$ function). The fourth consecutive obstacle detected in the same direction and position will be defined as a contact point and the leaf will stop in this position. 00 = minimum sensitivity (maximum time before reversal) 10 = maximum sensitivity (minimum time before reversal)	05
<b>r8</b> MECHANICAL STOP SEARCH ANGLE (only displayed with the $E_n = 3$ function and $F_c$ and $F_R = no$ or $02$ functions): The mechanical stop search angle within which the board stops the movement without reversing if an obstacle is encountered or the mechanical stop itself can be adjusted. Can be adjusted from 0.3 to 20 degrees. 0.1 degree steps apply when adjusting between 0.3 and 9.9 degrees. 1 degree steps apply when adjusting between 10 and 20 degrees.	4.0
<b>tA</b> ADDITIONAL OPERATING TIME only displayed with the $E_n = no$ and $F_c$ and $F_R = no$ or $02$ functions)	03
<b>o1</b> OUT 1: Default 00 = always active. Output can be configured from 00 to 17.	00
<b>t1</b> OUT 1 TIMING (only displayed with the $o1 = 03$ or $o1 = 14$ function)	02
<b>o2</b> OUT 2: Default 02 = LED - Refer to the options in $o1$ .	02

Advanced Function	Default
<b>t2</b> OUT 2 TIMING (only displayed with the $o2 = 03$ or $o2 = 14$ function): Adjustable like $t1$ .	02
<b>AS</b> MAINTENANCE REQUEST - CYCLE COUNTER (linked to the subsequent 2 functions)	no
<b>nc</b> CYCLE PROGRAMMING (THOUSANDS)	00
<b>nd</b> CYCLE PROGRAMMING (TENS)	00
<b>St</b> STATUS OF THE AUTOMATED SYSTEM: Refer to ST Basic Function.	3

### Out 1 Options available

- 00 = always active
- 01 = FAIL-SAFE
- 02 = INDICATOR LIGHT (off = closed; on = during opening and open/ in pause; flashing = during closing)
- 03 = COURTESY LIGHT (stays on for the duration of the movement (even in SETUP) in addition to the set time of function  $t1$ )
- 04 = ACTIVE ERROR
- 05 = automated system OPEN or in PAUSE
- 06 = automated system CLOSED
- 07 = automated system MOVING
- 08 = automated system in EMERGENCY
- 09 = automated system in OPENING
- 10 = automated system in CLOSING
- 11 = DISABLED
- 12 = safety device ACTIVE
- 13 = TRAFFIC LIGHT function (active when OPENING and with automated system OPEN)
- 14 = timed output which can be activated from the second radio channel OMNIDEC (see function  $t1$ )
- 15 = output which can be activated from the second radio channel OMNIDEC (step-by-step function)
- 16 = active during movement of leaf 1
- 17 = active during movement of leaf 2
- 18 = active during breach alarm

### Useful Functions to protect against the risk of impact/crushing on the main edge

Please note that if you are using either safety edges or inherent obstacle detection (such as encoders), then you must a Force Tester calibrated to BS EN 12443/ 12453 norms and the results must fall within the values there in and in accordance with the risk assessment already undertaken.

- F1** Allows the static thrust force of motor 1 to be adjusted.  
**NOTE:** For hydraulic operators, set the force value to maximum and adjust it via the bypass screws.
- F2** Allows the static thrust force of motor 2 to be adjusted  
**NOTE:** For hydraulic operators, set the force value to maximum and adjust it via the bypass screws.
- En** Enables the encoders to be read by the electronic board, thereby guaranteeing that inversion occurs in the presence of obstacles (set  $E_n = 3$ ).
- cd** Allows the closing delay of motor 1 to be modified in order to obtain a phase shift between the two leaves and reducing the risk of crushing between the two moving leaves.
- r1** Allows the space of reduced speed of leaf 1 to be adapted. The impact at slow speed allows the dynamic force to be reduced.
- r2** Allows the space of reduced speed of leaf 2 to be adapted. The impact at slow speed allows the dynamic force to be reduced.
- EC** Allows the obstacle inversion sensitivity to be adjusted.
- r8** Allows the space before the mechanical stops in which the board does not perform inversions to be modified (set a value between 1 and 49 mm).

## E145S Signalling Errors and Alarms

The ERROR LED (DL13) will flash to signalling an alarm. **Alarms** do not compromise operation. The ERROR LED (DL13) will go on steady to signalling an error. **Errors** stop the operating. Remove the situation causing the error; it will disappear in the following cycle.

By simultaneously pressing + and - the display will show the number corresponding to the error/alarm in progress.

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

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

## E145S Operating Logics

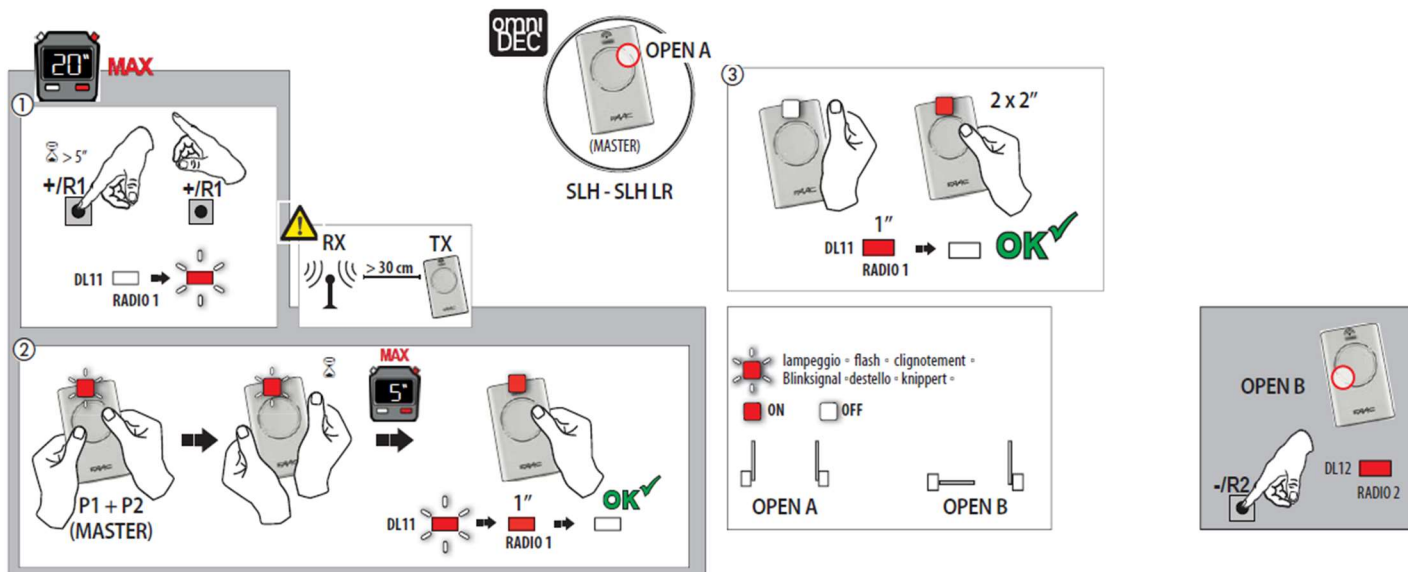
The table below shows only the most commonly used Operating Logics on our control board. For further details, please refer to the main manual for the full list.

LOGIC	Status of the automated system: stopped	Status of the automated system: in motion	Status: photocell action
E Semi-automatic	An OPEN pulse opens the gate and the following one closes it	An OPEN pulse stops the gate when opening and reopens when the gate is closing	The photocells invert during motion
A Automatic	An OPEN pulse opens the gate and closes automatically after the pause time	An OPEN pulse is ignored when the gate opens, is reapplied during the pause and reopens when the gate closes	The closing photocells reapply the pause
C Dead-man (OPEN-B inputs become CLOSE)	Logic with two separate commands: pressed OPEN-A opens; pressed CLOSE closes	An OPEN-A pulse opens when the gate closes; a CLOSE pulse closes when it opens	The photocells invert during motion

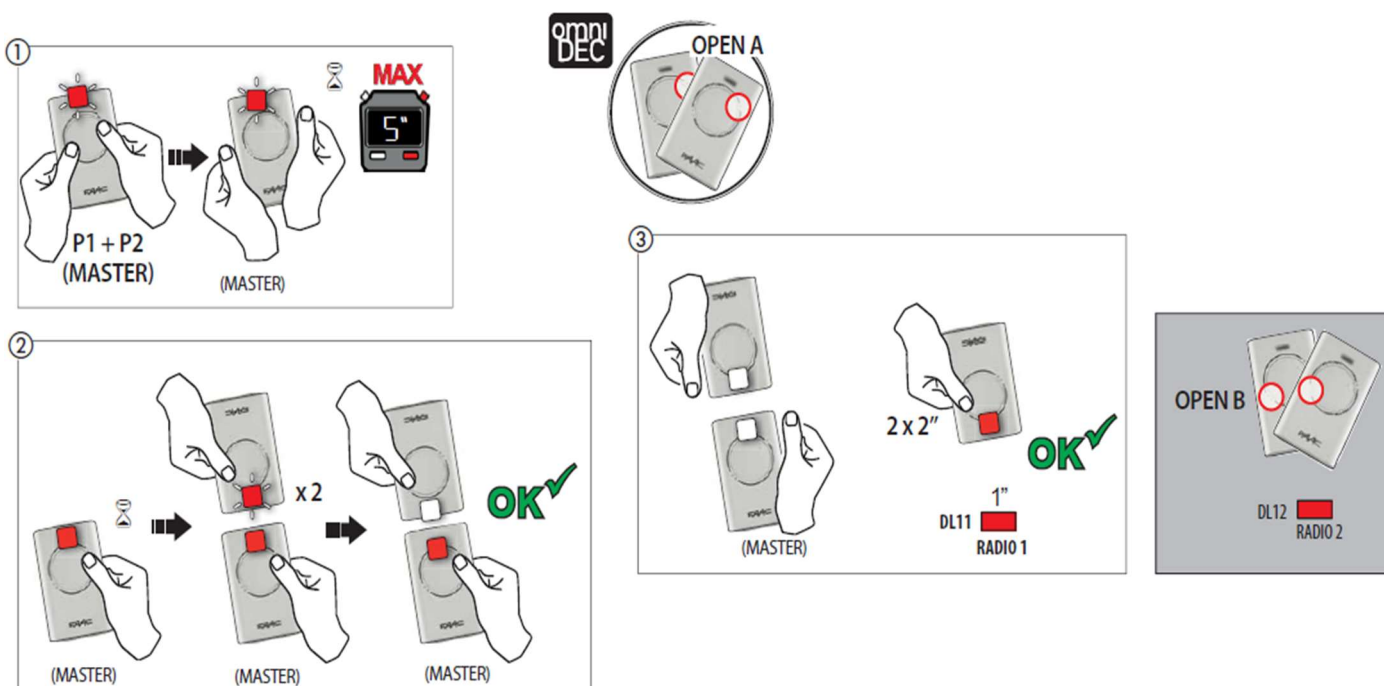


# Programming Remote Controls using the XF Receiver and OmniDec

## Programming a new remote control to a new E145S System



## Programming a new remote control from a working master remote control



## Tutorial Videos available for programming remote controls

FAAC UK have created tutorial videos to assist the installer in the programming of remote controls. Please use the link below to navigate straight to our "YouTube" Channel or use your preferred web browser and navigate to "youtube.com" and search for "FAAC UK" and select our channel and look for the videos required.

<https://www.youtube.com/user/FAACUK>