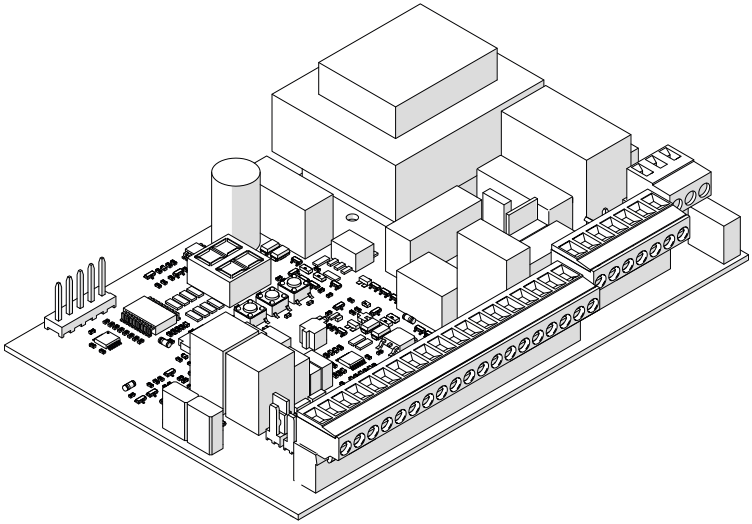
624BLD

EN



2easy

EN Translation of the original instructions

This manual was published in 2024.

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CONTENTS

TABLES

APPENDICES

1. INTRODUCTION TO THE INSTRUCTION MANUAL

This manual provides the correct procedures and requirements for installing the 624BLD and maintaining it in a safe condition.

In Europe the automation of a barrier/bollard falls within the scope of the Machinery Directive 2006/42/EC and relative harmonised regulations. The party automating a new or existing barrier/bollard becomes the Manufacturer of the Machine. By law, it is therefore obligatory, among other things, to assess the risks posed by the machine (automated barrier/bollard in its entirety) and adopt protective measures to satisfy the essential safety requirements laid out in Appendix 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 barrier/bollard must be performed in full compliance with the local laws, standards and regulations of the country in which it is to be installed.

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

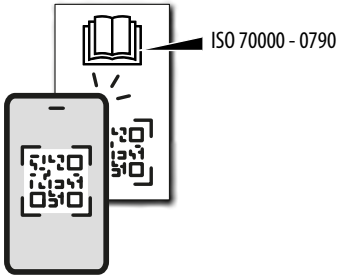
SAFETY WARNINGS FOR THE INSTALLER

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 ISO 70000 - 0790 icon on the product.



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. 624BLD

2.1 BOARD IDENTIFICATION

The 624BLD board is identified by the label on the board (✎**1**).

2.2 INTENDED USE

The 624BLD electronic board is designed to control FAAC vehicle barriers (230 V~ / 115 V ~) or 230 V~ FAAC bollards. You can control one or two barriers and, depending on the model, up to three bollards. Each barrier/bollard must be controlled by a separate board.

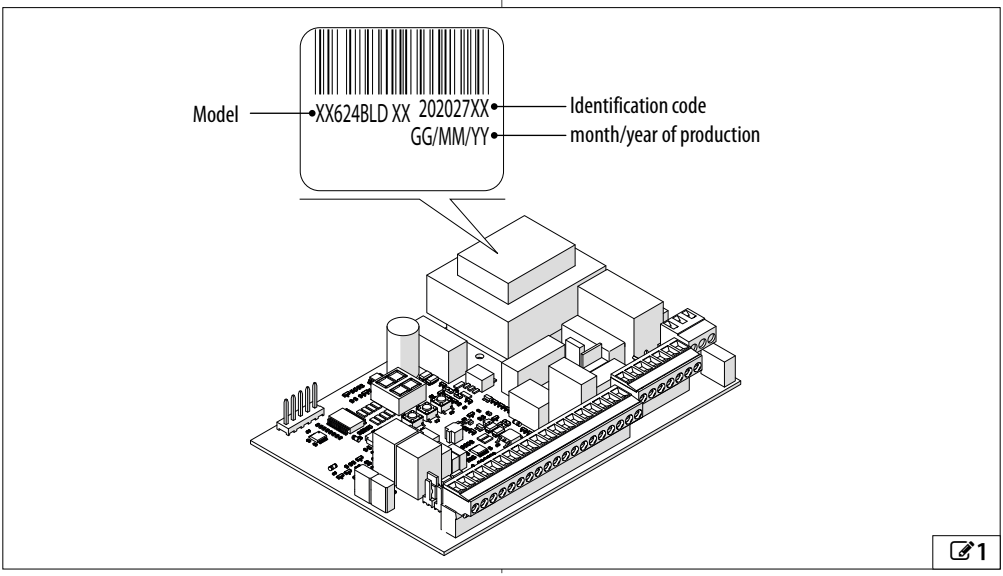
Any other use that is not expressly specified in these instructions is prohibited and could affect the integrity of the product and/or represent a source of danger.

2.3 LIMITATIONS OF USE

- Do not use with barriers/bollards where the technical data on the rating plate are outside the limits specified in the board's instruction manual.
- It is prohibited to use the product in any configuration other than that intended by FAAC S.p.A. It is prohibited to modify any of the product's components.

2.4 UNAUTHORISED USE

- Uses other than the intended use are prohibited.
- It is prohibited to install the 624BLD 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 624BLD 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 624BLD.
- Do not expose the 624BLD to corrosive chemical or environmental agents.



✎**1**

2.5 TECHNICAL SPECIFICATIONS

■ **Equipment provided**

- Integrated in barriers 620, 640 and 642 (✎ **2**).
- Integrated in the JE275 enclosure to be installed externally to control the J200, J275 - J275 2K, J355 M30, J355 M50 and JS series bollards (✎ **3**).

■ **Programming from the board**

Programming from the board is via the display and dedicated buttons.

■ **Diagnostics**

Via LEDs and the display.

■ **Configuration of 2 automations**

The Primary-Secondary configuration allows you to install two opposing or interlocked barriers or bollards in multiple configurations.

■ **Bus 2Easy**

FAAC Bus 2Easy devices (photocells and control devices) can be connected.

■ **4 programmable outputs**

There are 4 outputs that can be programmed with 18 different functions.

■ **Built-in detector with 2 independent channels**

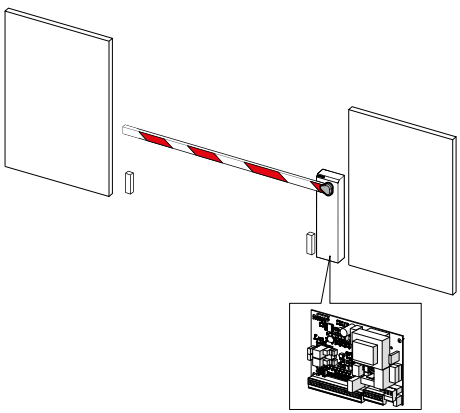
For technical specifications see 🖇 **1.**

OPTIONAL ACCESSORIES

■ **Radio system**

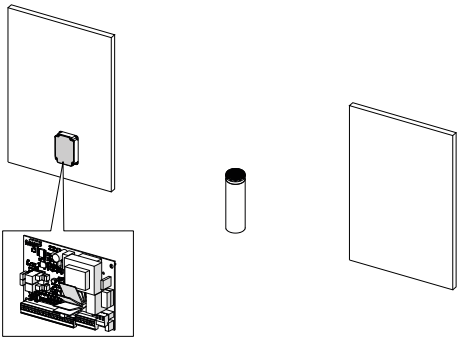
The electronic board is equipped with a 5pin MINIDEC board, DECODER and RP/RP2 receiver.

624BLD integrated in the barrier



✎ **2**

624BLD supplied with the JE275 enclosure



✎ **3**

SAFETY FUNCTIONS

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

ACTIVATION TYPE	TYPE OF USE		
	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 Sensitive presence detection protection device, designed and installed in such a way that a person cannot be touched by the moving leaf

■ **Safety functions of 624BLD**

Inputs	Programming	Functions	Protection type according to EN 12453	Device performance level	624BLD Performance level
FSW	Failsafe enabled on OUT1/OUT2/OUT3 o1 / o2 / o3 = 00 P1 / P2 / P3 = no	Contact prevention using presence detection devices (ESPE)	E	PI c Category 2	PI c Category 2

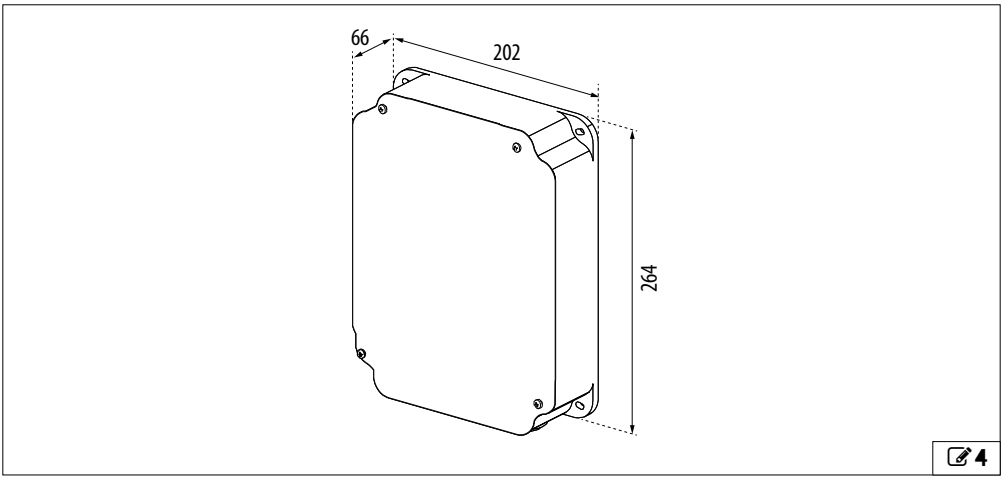
■ **Additional protection functions**

Inputs	Programming	Functions	Protection type according to EN 12453	Device performance level	624BLD Performance level
FSW	Failsafe enabled on OUT1/OUT2/OUT3 o1 / o2 / o3 = 00 P1 / P2 / P3 = no or Periodic inspection at a minimum interval of 6 months	Additional devices to reduce the likelihood of contact	D	–	–
Bus 2Easy	BUS 2easy photocells	Additional devices to reduce the likelihood of contact	D	–	–

TECHNICAL DATA

Technical data	624BLD 230 V	624BLD 115 V	JE275
Power supply voltage	220-240 V~ (+6% -10%) @50/60 Hz	110-120 V~ (+6% -10%) @50/60 Hz	220-240 V~ (+6% -10%) @50/60 Hz
Absorbed power	7 W	7 W	7 W
Max. motor power	1000 W	1000 W	1000 W
Accessories output voltage	24 V ⎓	24 V ⎓	24 V ⎓
Max. accessories and BUS 2easy load	500 mA	500 mA	500 mA
Protection fuses	F1 = F 5A F2 = T 0.8 A	F1 = F 10A F2 = T 0.8 A	F1 = F 10A F2 = T 0.8 A
Ambient operating temperature	-20 °C to +55 °C	-20 °C to +55 °C	-20 °C to +55 °C

2.6 OVERALL DIMENSIONS OF THE JE275 ENCLOSURE



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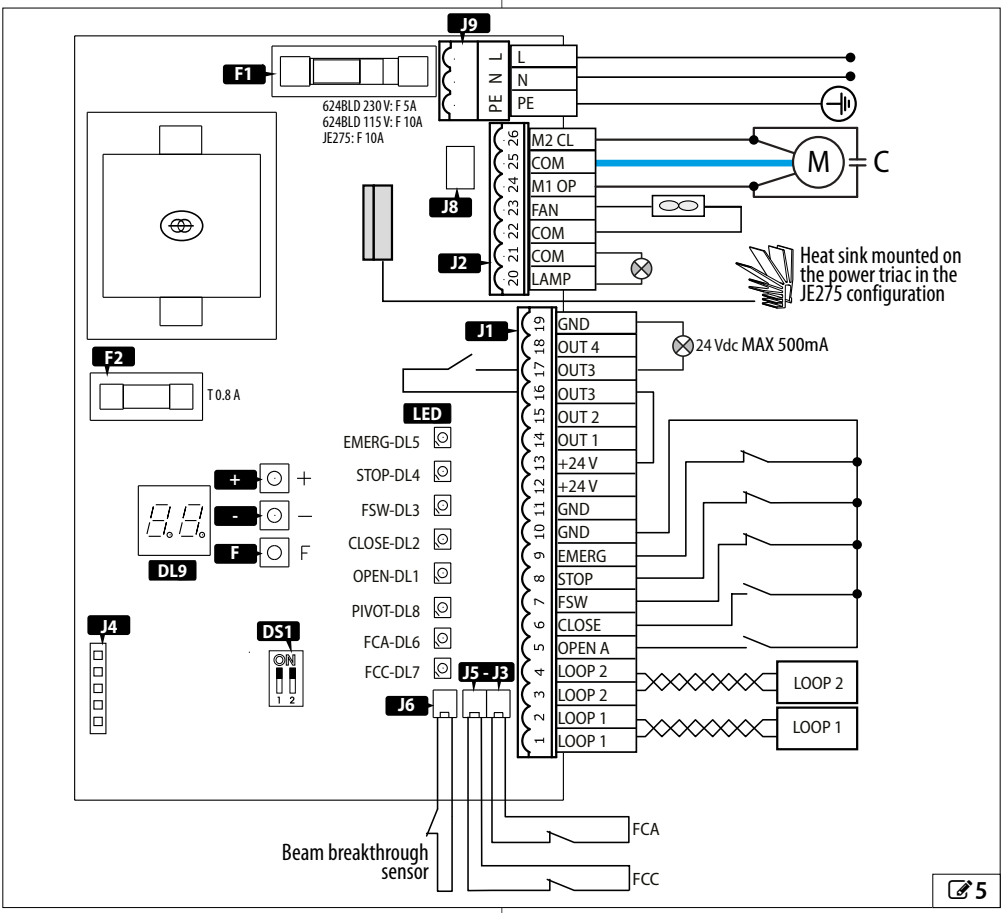
3. ELECTRONIC INSTALLATION

3.1 624BLD COMPONENTS



KEY:	
DL9	Programming display
+ – F	Programming buttons
J1	Low voltage terminal board
J2	Terminal board for connection of motor, flashing light and fan
J3	Opening limit switch connector
J4	5 pin connector Decoder/Minidec/receiver RP and RP2
J5	Closing limit switch connector
J6	Beam breakthrough sensor connector
J8	Motor thrust capacitor connector (not used for JE275)
J9	Terminal board for 230V power supply
DS1	Frequency selector LOOP1 and LOOP2
F1	Mains power supply fuse

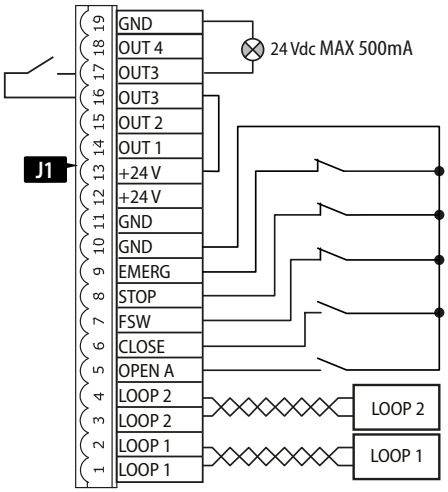
KEY:	
F2	Fuse for accessories power supply T 0.8A
⊛	Transformer

Status LEDs:	
DL1	OPEN input
DL2	CLOSE input
DL3	FSW input
DL4	STOP input
DL5	EMERG input
DL6	Opening limit switch
DL7	Closing limit switch
DL8	Beam breakthrough

3.2 CONNECTIONS

Connections to a single barrier/bollard are described below. For connections to bollards and configurations of opposing or interlocked barriers, refer to the attachments in the appendix.
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 (J1)



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.
For connecting devices to inputs with Failsafe enabled, refer to the Accessories Section.

1-2	LOOP1	The loop connected to the Loop1 input has an OPEN function.
3-4	LOOP2	The loop connected to the Loop2 input has a SAFETY/CLOSE function, i.e.it acts as a SAFETY during closing and, when released, it commands the board to CLOSE.

Inductive (LOOP) detectors must not be used to detect pedestrians, bicycles and motorbikes. If it is not possible to prevent them passing, other devices such as photocells are necessary.
To create detection loops, refer to 1.

5	OPEN A	NO contact, connect a push-button or other type of pulse generator which, by closing a contact, commands the opening of the barrier or the lowering of the bollard
6	CLOSE	NO contact, connect a push-button or other type of pulse generator which, by closing a contact, commands the closing of the barrier or the raising of the bollard.
7	FSW	NC contact, connect a photocell, pressure switch or other device which, by opening a contact during closing, commands the reversal during opening. They never trigger during the opening cycle. If they are activated when the automation is open, the closing safeties prevent the closing movement.

If NO device is connected, bridge with GND. If this connection is made, it is not possible to use the FAILSAFE check.

8	STOP	NC contact, connect a push-button or any other type of pulse generator which, by opening a contact, commands the automation to stop.

If NO device is connected, make a jump with GND

9	EMERGENCY	NC contact, connect a push-button or any other type of pulse generator which, by opening a contact, commands the opening of the barrier or the lowering of the bollard in an emergency and prevents it from operating until the contact is re-established.

If NO device is connected, make a jump with GND

10-11-19	GND	Accessories power supply negative and common contacts
12-13	+	Accessories power supply positive 24 V ⎓. MAX 500 mA

The maximum current limit of 500 mA applies to the sum of all connected accessories, including BUS 2easy. To calculate the maximum power consumption, refer to the instructions of the individual accessories.

■ **Open Collector Outputs**

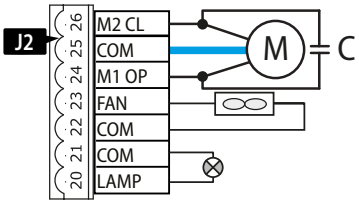
The activation of the output and its polarity can be configured in Advanced programming.

	OUT active	OUT not active
NO polarity	0 V ⎓	open circuit
NC polarity	open circuit	0 V ⎓

14-15	**OUT1** **OUT2**	Open Collector output (GND) with maximum load 24 V⎓ MAX 100mA.
16-17	**OUT3**	Relay output with volt free contact. Contact rating: 24 V⎓ or 24 V ~ / 500mA MAX.
18	**OUT4**	Open Collector output (+24V⎓) with maximum load 24 V⎓ MAX 100mA. Use this output, programmed accordingly, to connect Bus 2Easy accessories.

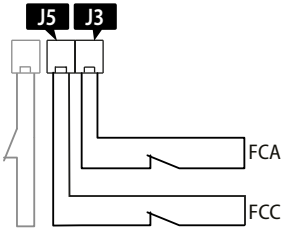
For making the connection and assigning addresses, see the specific section.

MOTOR, FLASHING LIGHT, FAN (J2)



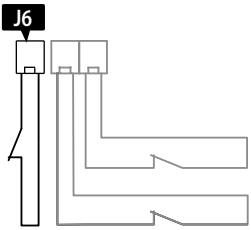
20-21	**LAMP**	Flashing light output 230 V - MAX 60 W
	COM	Flashing light output 115 V - MAX 60 W
22-23	**FAN**	Fan outlet 230 V
	COM	230 V solenoid valve output for bollard
24-25-26	**M1 OP** **COM** **M2 CL**	Motor connection

OPENING AND CLOSING LIMIT SWITCH QUICK INSERTION CONNECTOR (J3-J5)



Quick insertion connector for connecting the opening (J3) and closing (J5) limit switches.

BEAM BREAKTHROUGH SENSOR (J6)



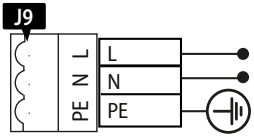
Provided for connecting the breakthrough sensor for the pivoting beam (if present).

The sensor is optional; do not remove the jumper that has already been installed if it is not present.

MOTOR CAPACITOR (J8)

Quick insertion connector for connecting the motor thrust capacitor.

POWER SUPPLY TERMINAL BOARD (J9)



PE	Earth connection
N	Power supply neutral*
L	Power supply line*

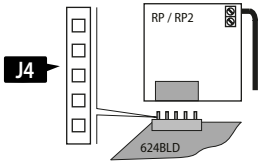
*Depending on the model it can be 230 V~ or 115 V~

For the board to function properly, it must be connected to the earthing conductor of the electrical system. Install a suitable thermal differential circuit breaker upstream of the system.

FREQUENCY SELECTOR (DS1)

DIP SWITCH selector used to set a HIGH or LOW operating frequency of the vehicle detection loops.

RADIO RECEIVER/DECODER BOARD (J4)



The 5-pin quick insertion connector is specifically for FAAC radio or decoder boards.

Insert as shown in the figure.

If a FAAC model RP receiver is used, it is recommended that you install the appropriate external antenna.

If you are using a two-channel RP2 receiver, you can OPEN and CLOSE the automation directly from a two-channel radio control. If you use a single channel RP receiver, you can only OPEN the automation.

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. Program the 624BLD.

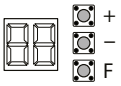
In order for the automation to work properly, set the function dF according to the type of product.

4. Memorise the radio controls (if any) of the system (see the relevant instructions).
5. Carry out the final checks to make sure that the automation system is working correctly with all the devices installed.

4.1 TURN POWER ON TO THE BOARD

1. Switch on the mains power supply.
2. The display shows the automation status.

4.2 PROGRAMMING THE BOARD



To program the way in which the automation is to operate, you must enter programming mode. Programming is divided into 3 levels.

■ **Basic programming**

1. Press and hold the **F** button: the first function (dF) 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 the **F** button and 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.

■ **Expert Programming**

1. Press and hold the **F** button, then the **+** button as well for about 10 s: the first function (OI) 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 and saving the programming**

There are two exit and save modes:

- Scroll through the programming menu to the last function (St) and press the **F** button: the display reverts to the automation status view.

Alternatively, you can:

- Press buttons **F** and **−** simultaneously at any point in the programming of each level: the display reverts to the automation status view.

If you disconnect the power supply before returning to the status screen or saving with **F**, any changes made will be lost.

When you program changes to functions, they take effect immediately.

- In Basic and Advanced programming, the changes are saved when exiting programming and returning to the automation status view.
- In Expert programming mode, to activate the changes made to parameters 01 to 26, you have to:
  1. Exiting from Expert programming.
  2. Select the operating logic CU in basic programming
  3. Exiting from programming mode.

SETTING THE DEFAULT PARAMETERS FOR A SPECIFIC AUTOMATION MODEL

By modifying the dF function, you can automatically load different default settings for a given automation model. The change is made at all levels of programming.

The available default settings (pre-setting) are:

01	Default FAAC barriers standard parameters 1
02	Default FAAC barriers standard parameters 2
03	Default FAAC CITY
04	Default FAAC CITY K
05	Default J275
06	Default J355 M30/M50
07	Default J200
08	Default JS

For the pre-setting parameters to take effect, exit programming mode BEFORE changing any other parameters.
The dF functions always displays 00 as the standard condition. It is not possible to determine which pre-setting was previously set.

■ **Programming example**

If you wish configure the 624BLD board for a FAAC bollard, proceed as follows:

1. In Basic Programming, set the function dF to 03.
2. Exit from Basic programming (the selected pre-setting will be loaded).
3. Return to programming mode and continue with the custom programming.

1 Basic programming menu

Basic function

dF **LOADING THE PRE-SETTING:**

- 00 Neutral condition
- 01 FAAC barriers standard parameters 1
- 02 FAAC barriers standard parameters 2
- 03 Bollard FAAC CITY
- 04 Bollard FAAC CITY K
- 05 Bollard J275
- 06 Bollard J355 M30/M50
- 07 Bollard J200
- 08 Bollard JS

Leave at 00 if you do not wish to change the programming.
The relative default values are loaded in all programming levels according to the selected pre-setting (refer to **5**).

bu **BUS 2easy DEVICE LEARNING**
See the relative section.

LO **FUNCTIONING LOGIC**

A	Automatic	CA	Automatic condominium
AI	Automatic 1	rb	Automatic for bollard
E	Semi-automatic	C	Hold-to-run
P	Car park	r	Remote
PA	Automatic Parking	Cu	Custom
Cn	Condominium		

PA **PAUSE TIME**
(displayed only if an automatic logic has been selected)
Displayed in seconds up to 59, then in steps of 10 s. up to a maximum of 4.1 minutes.
00...59 (Adjustment step: 1 s)
1.0...4.1 (Adjustment step: 10 s)

Fo **MOTOR POWER ON OPENING**
01...50
(levels; 50 =maximum power)

If the bollard quick lowering solenoid valve is not present or not used, it is advisable to leave the default value.

Fc **MOTOR POWER ON CLOSING**
01...50 (levels; 50 =maximum power)

L1 **LOOP1**
Loop connected to input LOOP1 (OPEN function).
Y enabled
no not enabled

Basic function

L2 **LOOP2**
Loop connected to input LOOP2 (SAFETY/CLOSE function).
Y enabled
no not enabled

H1 **BOOST FUNCTION LOOP 1**
Y enabled
no not enabled

This function allows you to increase the level of sensitivity at the time of detection. When the vehicle leaves the loop, the sensitivity returns to the selected level. This system allows you to maintain contact detection even with very high vehicles or during the transit of a tractor unit and trailer.

H2 **BOOST FUNCTION LOOP 2**
Y enabled
no not enabled
See BOOST LOOP1 function

S1 **SENSITIVITY LOOP1**
Regulates the sensitivity of the vehicle detection loop
01...10(sensitivity levels, 10 = maximum sensitivity)

S2 **SENSITIVITY LOOP2**
Regulates the sensitivity of the vehicle detection loop
01...10(levels;10 = maximum sensitivity)

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:

00 Closed	06 Closing
01 Opening pre-flashing	07 Stopped ready to close
02 Opening	08 Stopped ready to open
03 Open	09 Opening in Emergency
04 In pause mode	10 Safety in closing triggered
05 Closing pre-flashing	

The relative default values are loaded in all programming levels according to the selected pre-setting, (refer to ▦ **5**).

▦ **2** Advanced programming menu

Advanced function

bo **MAXIMUM TORQUE AT INITIAL THRUST**

The motor operates at maximum torque (regardless of the power setting) as soon as the movement starts.

Y enabled

no not enabled

PF **PRE-FLASHING**

Allows you to activate the flashing light for 5 seconds before the start of movement.

no Disabled

OC For any movement

PA When the pause time elapses

CL When closing

SC **SLOW CLOSING**

Allows you to set the entire closing phase to slow speed.

Y enabled

no not enabled

tr **DECELERATION TIME AT LIMIT SWITCH**

Used to set the deceleration time (in s) after the opening and closing limit switches have been tripped.

Adjustable from 0 to 10 sec, in 1 sec steps.

00 = deceleration disabled

10 = maximum deceleration

t **WORK TIME (time-out):**

It is advisable to set a value of 5-10 s greater than the time required for the automation to move from the closed position to the open position and vice versa.

Adjustable from 0 to 59 sec, in 1 sec steps.

The display subsequently changes to minutes and tens of seconds (separated by a point) and the time is adjusted in 10 s steps, up to the maximum value of 4.1 minutes.

FS **FAILSAFE**

Activating this function allows the photocells to be tested before each movement of the automation, regardless of the output used. If the test fails, the automation will not start the movement.

Y enabled

no not enabled

To connect devices with Failsafe enabled, refer to the Accessories Section.

Advanced function

o1 **OUTPUT OUT 1 CONFIGURATION**

00 FAILSAFE

01 INDICATOR LIGHT (on during opening and when open or paused, flashing during closing, off when the automation is closed)

02 automation lighting (active when closed and paused, not active when open, intermittent during movement)

03 automation CLOSED

04 automation OPEN or PAUSED, apart from during closing pre-flashing

05 automation OPENING, including opening pre-flashing

06 automation CLOSING, including closing pre-flashing

07 automation STATIONARY

08 automation IN EMERGENCY

09 LOOP1 engaged

10 LOOP2 engaged

11 OPEN for SLAVE 624

12 CLOSE for SLAVE 624

13 Beam BREAKTHROUGH

14 bollard lights

15 bollard buzzer

16 opening limit switch engaged

17 closing limit switch engaged

18 interlock

P1 **OUTPUT POLARITY OUT1**

Y = normally closed

no = normally open

NOTE: if the function of the output is Fail-safe, the polarity must be = no

o2 See o1

P2 See P1

o3 See o1

P3 See P1

o4 If set to 00, the output is specifically for accessories with Bus 2Easy technology. See the relative section for an explanation. This output leaves the configuration possibilities of output 1 unchanged, except for functions 11, 12, 18 which in this case have no effect.

P4 OUTPUT 4 polarity:

Allows the output polarity to be configured.

Y polarity normally closed

no polarity normally open (per Bus 2Easy)

Advanced function

AS **MAINTENANCE REQUEST**

Enables/disables the maintenance alert when the programmed number of cycles has been reached as specified in the following functions (nc, nC).

If enabled, at the end of the countdown the LAMP output is activated for 4 seconds every 30 seconds (action required).

Y enabled

no not enabled

---

nc **THOUSANDS of CYCLES**

This allows a countdown to be set for the system operating cycles.

00...99 thousands of cycles (programmable if AS=Y).

The value displayed is updated as the cycles progress, integrating with the value of nC (a decrease of 100 in nc corresponding to a decrease of one nC).

---

nC **HUNDREDS of THOUSANDS of CYCLES**

This allows a countdown to be set for the system operating cycles.

00...99 hundreds of thousands of cycles (programmable if AS=Y).

The value displayed is updated as the cycles progress, interacting with the value of nc (a decrease of 1 in nC corresponds to a decrease of 100 in nc).

---

h1 **HOLD TIME LOOP 1**

Used to set the presence time on the loop connected to the Loop 1 input. When this time has elapsed, the board calibrates itself and indicates "loop free". An automatic calibration is carried out when the board is switched on.

Y 5 minutes

no infinite

---

h2 **HOLD TIME LOOP 2**

Used to set the presence time on the loop connected to the Loop 2 input. When this time has elapsed, the board calibrates itself and indicates "loop free". An automatic calibration is carried out when the board is switched on.

Y 5 minutes

no infinite

Advanced function

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:

00 Closed	06 Closing
01 Opening pre-flashing	07 Stopped ready to close
02 Opening	08 Stopped ready to open
03 Open	09 Opening in Emergency
04 In pause mode	10 Safety in closing triggered
05 Closing pre-flashing	

The relative default values are loaded in all programming levels according to the selected pre-setting, (refer to ▦ **5**).

▦ **3** Expert Programming

Expert Function		Setting
01	AUTOMATIC CLOSING Enabling this function causes **automatic closing** after the pause time.	Y = automatic closing no = disabled
02	OPERATION WITH 2 SEPARATE INPUTS If you enable this function, the unit operates with two **separate inputs**: OPEN for opening and CLOSE for closing.	Y = operation with 2 inputs no = disabled
03	OPEN AND CLOSE INPUT LEVEL RECOGNITION Level recognition activation for the **OPEN and CLOSE inputs** (**maintained command**). I.e. the board recognises the level (for example, if STOP is pressed with maintained OPEN, when STOP is released, the automation continues to open). If 03 is disabled, the board commands a movement only in response to a change in the input.	Y = level recognition no = status change recognition
04	DEAD MAN OPENING WITH OPEN COMMAND Activation of DEAD MAN opening (command kept pressed). Releasing the OPEN command stops operation.	Y = enabled no = disabled
05	OPEN COMMAND DURING OPENING STOPS MOVEMENT If you enable this function, an **OPEN command** during opening stops the movement. If function 06 = no the system is ready to open. If function 06 = Y the system is ready to close.	Y = stop movement during opening no = disabled
06	OPEN COMMAND DURING OPENING REVERSES MOVEMENT If you enable this function, an **OPEN command** during opening reverses movement. If parameters 05 and 06 = no the OPEN command has no effect during opening.	Y = reverse movement during opening no = disabled
07	OPEN COMMAND DURING PAUSE STOPS MOVEMENT If you enable this function, an **OPEN command** during a pause stops the movement. If the parameters 07 and 08 = no the OPEN command reloads the pause time.	Y = stop movement during pause no = disabled
08	OPEN COMMAND DURING PAUSE CLOSES CAUSES CLOSURE If you enable this function, an **OPEN command** during the pause closes the automation. If the parameters 07 and 08 = no the OPEN command reloads the pause time.	Y = close in pause no = disabled
09	OPEN COMMAND DURING CLOSING STOPS MOVEMENT If you enable this function, an **OPEN command** during closing stops movement, otherwise it reverses the movement.	Y = stop no = reverse
10	DEAD MAN CLOSING WITH CLOSE COMMAND DEAD MAN closing enable (command kept pressed). Releasing the **CLOSE command** stops the movement.	Y = enabled no = disabled
11	CLOSE COMMAND PRIORITY If you enable this function, a **CLOSE command** has priority over OPEN, otherwise OPEN has priority over CLOSE.	Y = enabled no = disabled
12	CLOSE WHEN CLOSE COMMAND RELEASED If you enable this function, a **CLOSE command** closes the automation when released. The unit remains in closing pre-flashing as long as CLOSE is enabled.	Y = close when released no = close immediately
13	CLOSE COMMAND STOP DURING OPENING If you enable this function, a **CLOSE command** during opening stops movement, otherwise the **CLOSE command** causes the automation to reverse immediately or at the end of opening (see also function 14)	Y = CLOSE stops movement no = CLOSE reverses movement

Expert Function		Setting
14	CLOSE COMMAND CLOSES AT THE END OF OPENING If you enable this function and if function 13 = no, the **CLOSE command** closes the automation immediately at the end of the opening cycle (memorises the CLOSE). If parameters 13 and 14 are no CLOSE causes the automation to close immediately.	Y = close at the end of opening no = close immediately
15	STOPPED BY STOP, THE NEXT OPEN COMMAND MOVES THE AUTOMATION IN THE OPPOSITE DIRECTION If you enable this function, when the system is stopped by a STOP command, **a subsequent OPEN** command causes the automation to move in the opposite direction. If function 15 = no it always closes.	Y = move in opposite direction no = always close
16	DURING CLOSING, THE CLOSING SAFETIES CLOSE WHEN RELEASED If you enable this function, during closing, the **CLOSING SAFETIES** stop movement and allow it to resume once they are released, otherwise they immediately reverse on opening.	Y = close when released no = reverse immediately
17	CLOSURE WHEN SAFETIES IN CLOSING ARE RELEASED If you enable this function, the **SAFETIES IN CLOSING** close the automation when released (see also function 18).	Y = close when FSW is released no = disabled
18	AT THE END OF OPENING, THE CLOSING SAFETIES CLOSE WHEN RELEASED If you enable this function and if function 17 = Y, the unit waits for the opening cycle to end before carrying out the closing command issued by the **SAFETIES IN CLOSING**.	Y = close at the end of opening no = disabled
19	DURING CLOSING LOOP2 CLOSES WHEN RELEASED If you enable this function, during closing, **LOOP2** stops the movement and allows it to resume once released, otherwise it reverses immediately on opening.	Y = close when released no = reverse immediately
20	LOOP2 CLOSES IF NOT ENGAGED If you enable this function **LOOP2** closes the automation when released (see also function 21).	Y = close if LOOP2 is free no = disabled
21	AT THE END OF OPENING, LOOP2 COMMANDS CLOSING IF NOT ENGAGED If you enable this function, and if function 20 = Y, the unit waits for the opening cycle to end before carrying out the closing command issued by **LOOP2**.	Y = close at the end of opening no = disabled
22	LOOP1 PRIORITY If you enable this function, **LOOP1** commands have priority over **LOOP2** commands.	Y = LOOP1 priority enabled no = disabled
23	LOOP1 CLOSES IF NOT ENGAGED **LOOP1** commands opening and, once opened, closes if released (useful if a vehicle reverses with consecutive loops). If disabled when **LOOP1** is released, closing is not carried out.	Y = close if LOOP1 is free no = disabled
24	DO NOT MODIFY	-
25	A.D.M.A.P. FUNCTION If you enable this function, the safety devices operate according to French standards.	Y = enabled no = disabled
26	DURING CLOSING, THE SAFETIES CLOSE WHEN RELEASED If you enable this function, during closing the **SAFETIES IN CLOSING** stop movement and reverse the movement when released, otherwise they reverse immediately.	Y = stop and reverse when released. no = reverse immediately.
27	DO NOT MODIFY	-
A1	PRE-FLASHING: Used to set the duration of the required pre-flashing, from a minimum of 00 to a maximum of 10 s in steps of 1 s.	05
A2	TIMEOUT FOR REVERSING AT CLOSURE: If you enable this function, you can choose to reverse or stop the closing movement at the end of the timeout (closing limit switch not reached).	Y = reverse no = stop

Expert Function		Setting
A3	OPENING AT POWER UP: When the power is restored after a power failure, this function can be enabled to command the automation to open (only if the automation is not closed, FCC not engaged).	Y = open no = remain stationary
A4	FAAC CITY PRESSURE SWITCH activation TIME (J5): This is the time after which the unit considers the signal coming from the pressure switch as the CLOSING LIMIT SWITCH. It can be set from 00 to 59 s in steps of 1 s. The display then changes to minutes and tens of seconds (separated by a point) up to a maximum value of 4.1 minutes.	4.0
A5	DISABLE THE BOLLARD PRESSURE SWITCH AT START OF MOVEMENT: In order for the bollard to function correctly, the pressure switch control must be disabled at the start of the upstroke movement (time 0.4 s). For bollards, set this function to Y.	Y = pressure switch disabled at initial thrust no = pressure switch always active
A6	BOLLARD SOLENOID VALVE POWER SUPPLY CHECK (terminals 22-23): FAAC CITY K - J355: solenoid valve output not normally powered - powered during downstroke. FAAC CITY - J275 standard - J200: solenoid valve output normally powered - not powered during downstroke.	Y = for FAAC CITY K /J355 no = for FAAC CITY, J275 and J200
A7	OPENING LIMIT SWITCH POLARITY: Configuration of the limit switch contact	Y = NO polarity no = NC polarity
A8	CLOSING LIMIT SWITCH POLARITY: Configuration of the limit switch contact	Y = NO polarity no = NC polarity
A9	FAAC CITY PRESSURE SWITCH ENABLE (J5): Recognition of the PRESSURE SWITCH contact as safety during the first upstroke phase and as limit switch at the end of FAAC CITY pressure switch activation time (the A4 function):	Y = Operation for FAAC CITY no = Standard limit switch operation
b0	SAFETY ONLY PRESSURE SWITCH FOR BOLLARDS (terminals 7 - GND): Recognition of the PHOTOCELL contact as a safety PRESSURE SWITCH. (the contact is ignored at the start of movement and at the end of the upstroke)	Y = Operation of safety only pressure switch no = Operation of standard photocells
b1	HOLD CLOSE / HOLD OPEN FUNCTION DELAY: Delay time for activating the HOLD CLOSE / HOLD OPEN function (see parameters b3 and b4). The count starts when the corresponding limit switch is reached. If the limit switch is unintentionally released at the end of the set time, the HOLD CLOSE / HOLD OPEN function is activated. 00 = HOLD CLOSE / HOLD OPEN activated immediately 01 to 99 = count in minutes before HOLD CLOSE / HOLD OPEN is activated	30
b2	DO NOT MODIFY	30
b3	HOLD CLOSE FUNCTION: If the closing limit switch is released unintentionally, the board automatically commands a movement for 2 s to try to re-establish the position; if the closing limit switch is not engaged during this time, the automation is activated at most for the work time "t" see 2nd LEVEL. PROGRAMMING:	Y = enabled no = disabled
b4	HOLD OPEN FUNCTION: If the opening limit switch is released unintentionally, the board automatically controls a movement for a time of 2 s to try to re-establish the position; if the opening limit switch is not engaged during this time, the automation is activated at most for the work time "t" see 2nd LEVEL. PROGRAMMING (recommended to set function A3 to Y if function b4 is set to Y)	Y = enabled no = disabled
b5	BOLLARD SOLENOID VALVE CONTROL: Set: Y for J275 /J355/J200, no for FAAC CITY / FAAC CITY K	Y = for J275 / J355 / J200 no = FAAC CITY / FAAC CITY K

Expert Function		Setting
66	EMERGENCY INPUT OPERATING LOGIC: If you activate this function, the emergency input commands a closure that is maintained until the contact is restored. If the function is disabled, the emergency input commands an opening that is maintained until the contact is restored.	Y = enabled no = disabled
67	FORCE ADJUSTMENT WITH CLOSING LIMIT SWITCH ENGAGED This allows you to set a different closing thrust force when the FCC is engaged. Enabling this function allows force adjustment with the closing limit switch engaged	Y = enabled no = disabled
68	FORCE ADJUSTMENT WITH CLOSING LIMIT SWITCH ENGAGED 01…50 (levels: 50 =maximum force)	50
69	2-SECOND OPENING AND CLOSING COMMANDS If you activate this function, the opening command is activated when the automation is open or open in pause, and a closing command is activated when the automation is closed. The opening and closing commands are activated for 2 seconds. To set the time interval between the two commands, see function 6A	Y = enabled no = disabled
6A	Interval between open and close commands If the function 69 = Y, set the interval between the open and close commands. The commands are given in minutes. 00…99	50
6b	Open command always active Open command always active when the automation is open and open in pause	Y = enabled no = disabled
St	AUTOMATION SYSTEM STATUS: Exit from programming, data storage and automation status display.	

00	Closed	06	Closing
01	Opening pre-flashing	07	Stopped ready to close
02	Opening	08	Stopped ready to open
03	Open	09	Opening in Emergency
04	In pause mode	10	Safety in closing triggered
05	Closing pre-flashing		

OPERATING LOGIC CUSTOMISATION

Expert programming mode is also used to customise the logic selected in basic programming.

The functions that can be used for customisation are 01 to 26.

To customise the set logic, proceed as follows:

1. Select the logic that best suits your needs in Basic programming.
2. Go to Expert Programming mode and modify the required functions.
3. Exiting from Expert programming.
4. In Basic Programming, select logic Cu.

The following table shows the default functions associated with the operating logics.

4 Default values of logic customisation functions

Function	A	AI	E	P	PA	Cn	CA	rb	C
01	Y	Y	N	N	Y	N	Y	Y	N
02	N	N	N	Y	Y	Y	Y	Y	Y
03	N	N	N	N	N	N	N	Y	N
04	N	N	N	N	N	N	N	N	Y
05	N	N	Y	N	N	N	N	N	N
06	N	N	Y	N	N	N	N	N	N
07	N	N	N	N	N	N	N	N	N
08	N	N	N	N	N	N	N	N	N
09	N	N	N	N	N	N	N	N	N
10	N	N	N	N	N	N	N	N	Y
11	N	N	N	N	N	N	N	N	N
12	N	N	N	Y	Y	N	N	N	N
13	N	N	N	N	N	N	N	N	N
14	N	N	N	Y	Y	Y	Y	N	N
15	N	N	N	N	N	N	N	N	N
16	N	N	N	Y	Y	N	N	N	N
17	N	Y	N	N	N	N	N	N	N
18	N	Y	N	N	N	N	N	N	N
19	N	N	N	Y	Y	N	N	N	N
20	N	Y	N	Y	Y	Y	Y	N	N
21	N	Y	N	Y	Y	Y	Y	N	N
22	N	N	N	N	N	Y	Y	N	N
23	N	N	N	Y	Y	N	N	N	N
24	N	N	N	N	N	N	N	N	N
25	N	N	N	N	N	N	N	N	N
26	N	N	N	N	N	N	N	N	N

4.3 DEFAULT CONFIGURATIONS OF AUTOMATION MODELS

The default values for the standard configurations are shown in the following tables:

5 Default values of the automation models

Basic programming	FAAC barriers	Reserved for FAAC	FAAC CITY	FAAC CITY K	J275	J355	J200	JS
dF Pre-setting	01	02	03	04	05	06	07	08
bu Bus 2Easy	- -	- -	- -	- -	- -	- -	- -	- -
Lo Logic	E	AI	rb	rb	rb	rb	rb	rb
PA Pause	20	20	30	30	30	30	30	30
FO Opening force	50	50	15	15	15	35	50	35
FC Closing force	50	50	50	50	50	50	50	50
L1 Loop 1	no	no	no	no	no	no	no	no
L2 Loop 2	no	no	no	no	no	no	no	no
H1 Loop 1	no	no	no	no	no	no	no	no
H2 Loop 2	no	no	no	no	no	no	no	no
S1 Sensitivity	05	05	05	05	05	05	05	05
S2 Sensitivity	05	05	05	05	05	05	05	05

Advanced programming	FAAC barriers	Reserved for FAAC	FAAC CITY	FAAC CITY K	J275	J355	J200	JS
bo Boost	Y	Y	Y	Y	Y	Y	Y	Y
PF Pre-flashing	no	CL	no	no	no	no	no	no
SC Slow closing	no	no	no	no	no	no	no	no
tr Slowdown	03	03	01	01	01	01	02	01
t Time out	20	20	12	12	12	30	12	30
FS Fail safe	no	no	no	no	no	no	no	no
o1 Output 1	00	16	15	15	15	15	15	15
P1 Polarity 1	no	no	no	no	no	no	no	no
o2 Output 2	03	17	14	14	03	03	03	03
P2 Polarity 2	no	no	no	no	no	no	no	no
o3 Output 3	01	01	01	01	02	02	02	02
P3 Polarity 3	no	no	no	no	no	no	no	no
o4 Output 4	00	00	00	00	00	00	00	00
P4 Polarity 4	no	no	no	no	no	no	no	no
AS Support	no	no	no	no	no	no	no	no
nc Cycles 1	00	00	00	00	00	00	00	00
nC Cycles 2	01	01	01	01	01	01	01	01
h1 Hold	no	no	no	no	no	no	no	no
h2 Hold	no	no	no	no	no	no	no	no

Expert Programming	FAAC barriers	Reserved for FAAC	FAAC CITY	FAAC CITY K	J275	J355	J200	JS
01	no	Y	Y	Y	Y	Y	Y	Y
02	no	no	Y	Y	Y	Y	Y	Y
03	no	no	Y	Y	Y	Y	Y	Y
04	no	no	no	no	no	no	no	no
05	Y	no	no	no	no	no	no	no
06	Y	no	no	no	no	no	no	no
07	no	no	no	no	no	no	no	no
08	no	no	no	no	no	no	no	no
09	no	no	no	no	no	no	no	no
10	no	no	no	no	no	no	no	no
11	no	no	no	no	no	no	no	no
12	no	no	no	no	no	no	no	no
13	no	no	no	no	no	no	no	no
14	no	no	no	no	no	no	no	no
15	no	no	no	no	no	no	no	no
16	no	no	no	no	no	no	no	no
17	no	Y	no	no	no	no	no	no
18	no	Y	no	no	no	no	no	no
19	no	no	no	no	no	no	no	no
20	no	Y	no	no	no	no	no	no
21	no	Y	no	no	no	no	no	no

Expert Programming	FAAC barriers	Reserved for FAAC	FAAC CITY	FAAC CITY K	J275	J355	J200	JS
22	no	no	no	no	no	no	no	no
23	no	no	no	no	no	no	no	no
24	no	no	no	no	no	no	no	no
25	no	no	no	no	no	no	no	no
26	no	no	no	no	no	no	no	no
27	no	no	no	no	no	no	no	no
A1	05	05	05	05	05	05	05	05
A2	no	no	no	no	no	no	no	no
A3	no	no	no	no	no	no	no	no
A4	4.0	4.0	04	04	4.0	4.0	05	4.0
A5	no	no	y	y	y	y	y	y
A6	no	no	no	y	no	y	no	y
A7	no	no	y	y	no	no	no	no
A8	no	no	no	y	no	no	no	no
A9	no	no	y	y	no	no	no	no
b0	no	no	no	no	y	no	y	no
b1	00	00	05	05	05	05	05	05
b2	30	30	30	30	30	30	30	30
b3	no	no	y	y	y	y	y	y
b4	no	no	no	no	y	y	y	y
b5	no	no	no	no	y	y	y	y
b6	no	no	no	no	no	no	no	no
b7	no	no	no	no	no	y	no	no
b8	50	50	50	50	50	35	50	35
b9	no	no	no	no	no	y	no	no
bA	50	50	50	50	50	50	50	50
bb	no	no	no	no	no	no	no	y

4.4 OPERATING LOGICS

In all the logics:
- the STOP command has priority and stops the automation from operating
- the EMR command has priority and opens the automation
- if no devices are engaged, a CLOSE pulse causes the automation to close

■ **Automatic logics:**
- A - Automatic
- AI - Automatic 1
- PA - Automatic Parking
- rb - FAAC-City (bollards)
- CA - Automatic Condominium

■ **Semi-automatic logics:**
- E - Semi-automatic E
- P - Car park
- Cn - Condominium

■ **Dead-man logic:**
- C - Dead-man

■ **Remote logic:**
- r - Remote

■ **Custom Logic**
- CU - Custom (according to Expert programming)

AUTOMATIC LOGICS

In all automatic logics, the OPEN and LOOP1 commands:
- with the automation closed, they open the automation and close it again automatically after a pre-set pause time.
- during closing, reverse to open

■ A **- Automatic**

If the Photocell / LOOP2 **is triggered:**
- during the pause, it reloads the pause time
- during closing, it reverses to open and closes again after the pause time

■ AI **- Automatic 1**

If the Photocell / LOOP2 **is triggered:**
- during pause, causes it to close when released
- during opening, when the movement has ended and when released, it closes the automation
- during closing, it reverses to open. When the movement has ended and when released, it closes the automation immediately

■ PA **- Automatic Parking**

If LOOP2 **is triggered:**
- during opening, when the movement has ended and when released, it closes the automation

If the Photocell / LOOP2 **is triggered:**
- during closing, it stops the movement. When released, it continues to close

■ CA **- Automatic Condominium**

If LOOP2 **is triggered:**
- during opening, when the movement has ended and when released, it closes the automation
- during closing, it reverses to open. When the movement has ended and when released, it closes the automation.

If the Photocell is triggered:
- during closing, it reverses to open and closes again after the pause time

■ rb **- FAAC city (for bollards)**

If the Photocell / LOOP2 **is triggered:**
- during the pause, reloads the pause time
- during closing, it reverses to open and closes again after the pause time

SEMI-AUTOMATIC LOGICS

In all semi-automatic logics, the OPEN command:
- with the automation closed, it causes the automation to open
- during closing, it reverses to open

■ E **Semi-automatic E**

OPEN command:
- during opening, it stops the movement
- when open, it closes the automation

If LOOP1 **is triggered:**
- with the automation closed, it opens the automation
- during closing, it reverses to open

If the Photocell / LOOP2 **is triggered:**
- during closing, it reverses to open

■ P **- Car park**

If LOOP1 **is triggered:**
- with the automation closed, it opens the automation. When the movement has ended and when released, it closes the automation
- during closing, it reverses to open. When the movement has ended and when released, it closes the automation

If the Photocell / LOOP2 **is triggered:**
- during closing, it stops the movement. When released, it continues to close

■ Cn **- Condominium**

If the Photocell is triggered:
- during closing, it reverses to open and closes again after the pause time

If LOOP1 **is triggered:**
- with the beam closed, it commands the opening
- during closing, reverse to open

If LOOP2 **is triggered:**
- during opening, when the movement has ended and when released, it closes the automation
- during closing, it reverses to open. When the movement has ended and when released, it closes the automation

DEAD MAN LOGIC - MAINTAINED

■ C **- Dead-man**

Logic C requires the use of maintained OPEN and CLOSE commands.

The control must be activated intentionally and the barrier/bollard must be visible.
- Maintained OPEN opens the automation
- Maintained CLOSE closes the automation

If photocells LOOP1 **and** LOOP2 **are triggered:**
- during closing, they stop the movement

REMOTE LOGIC

This logic is dedicated to the secondary board in the opposing barriers application.

CUSTOM LOGIC

When a standard logic is customized in Expert programming mode, a CU - custom logic is created.

5. PUTTING INTO SERVICE

5.1 FINAL CHECKS ON THE BARRIER

1. If foot traffic cannot be excluded, check that the forces generated by the beam fall within the limits permitted by the standard. Use an impact force tester in accordance with EN 12453 and EN 12445. For non-EU countries, of there are no specific local regulations, the force must be less than 150 N. Check that the maximum force required to move the beam by hand is less than 220 N.
2. Check the automation system is working properly with all the devices installed.

5.2 CLOSE THE ENCLOSURE

Close the enclosure in which the board is housed.

5.3 FINAL OPERATIONS

Make sure that the system delivery requirements have been fulfilled (otherwise arrange for them).

6. ACCESSORIES

6.1 BUS 2EASY DEVICES

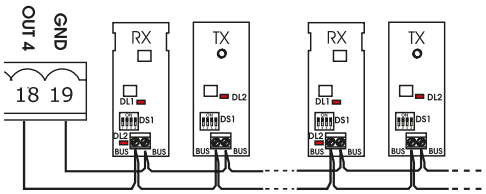
The board allows FAAC Bus 2Easy devices (photocells, sensitive edges, control devices and encoders) to be connected to output OUT4, configured as Bus 2Easy.

The board controls the BUS 2easy control devices only if the firmware has been updated to version FW 2.1 or later. If no BUS 2easy accessories are used, leave terminals 18 and 19 free (do not bridge them).

BUS 2EASY CONNECTIONS

Connect the devices in terminals 18 and 19.

Do not exceed the maximum load of 500 mA.
The overall length of the Bus 2Easy cables must not exceed 100 m.
The connection on the Bus 2Easy line does not require a matching polarity connection.



■ **BUS 2easy photocells**

1. Assign an address to the BUS 2easy photocells by setting the four DIP switches on both the transmitter and the corresponding receiver (▦ **6**).

The transmitter and receiver of a pair of photocells must have the same DIP switch settings.
There must never be more than one pair of photocells with the same DIP switch setting. If there is more than one pair of photocells with the same DIP switch setting, it generates a conflict error on the board and prevents the automation from working. Detection devices do not generate conflicts with control devices and vice versa.

2. Register the Bus 2Easy devices (§ specific section).
3. Check the Bus 2Easy devices (§ specific section) and make sure that the automation operates according to the type of control devices installed.

▦ **6** Assigning an address to Bus 2Easy photocells

Key: 0=OFF , 1=ON

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

Type of use:

FSW CL	Photocell active during closing
OPEN	Photocell for OPEN A

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

■ **Control devices**

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.
No two devices should have the same address. If there is more than one device with the same address, it generates a conflict error on the board and prevents the automation from working. Detection devices do not generate conflicts with control devices and vice versa.
Do not use the BUS 2easy line for emergency stop commands.

2. Register the BUS 2easy devices (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.

7 Addressing Bus 2Easy control devices

Key: 0=OFF , 1=ON

DIP switch 5, if present, in the ON position enables the device for 2 commands.

0 0 0 0	Open A_1	0 0 0 0	Open A_1	Close_2
0 0 0 1	Open A_2	0 0 0 1	Open A_1	Close_3
0 0 1 0	Open A_3	0 0 1 0	Open A_1	Stop
0 0 1 1	Open A_4	0 0 1 1	Open A_1	Close_1
0 1 0 0	Open A_5	0 1 0 0	Open A_2	Close_2
0 1 0 1	Stop	0 1 0 1	Open A_2	Close_3
0 1 1 0	Stop NC_1	0 1 1 0	Open A_2	Stop
0 1 1 1	Stop NC_2	0 1 1 1	Open A_2	Close_1
1 0 0 0	Close_1	1 0 0 0	Open A_3	Close_4
1 0 0 1	Close_2	1 0 0 1	Open A_3	Close_5
1 0 1 0	Close_3	1 0 1 0	Open A_3	StopNC_1
1 0 1 1	Close_4	1 0 1 1	Open A_3	Close_1
1 1 0 0	Close_5	1 1 0 0	Open A_4	Close_4
1 1 0 1	Close_6	1 1 0 1	Open A_4	Close_5
1 1 1 0	/ not used	1 1 1 0	Open A_4	StopNC_2
1 1 1 1	/ not used	1 1 1 1	Open A_4	Close_1

E.g.: In order to have OPEN A on different connected devices, set OPEN A_1 on the first and OPEN A_2 or OPEN A_3 on the second...

*Stop NC also generates a stop when the device is disconnected. If you do not require this function, use one "Stop".

REGISTERING BUS 2EASY DEVICES

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 BUS 2easy:

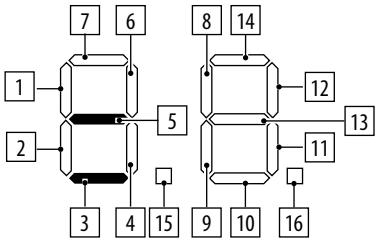
1. Go to Basic programming
2. At step bu, release the **F** button and press the **+** button for 1 s. The display shows -- for a moment, then returns to the standard condition. The storage procedure has been completed.

VERIFYING BUS 2EASY DEVICES

1. Go to the bu function in basic programming. The display shows status Bus 2Easy:

Ξ	The Bus 2Easy photocells are not engaged
cc	Bus 2Easy short circuit / overload (error 36)
Er	Bus 2Easy line error (check the addresses and repeat the registration)

2. To check the operation of the registered devices, activate each device individually and check that the corresponding segment lights up.



1	Control device - Open A. Lights up when the command is activated.
2	Control device - Close. Lights up when the command is activated.
3	Closing photocells. Turns off when the photocell is engaged.
4	Photocells for Open impulse. Lights up when the command is activated.
5	Bus 2Easy status (normally on) Turns off with the Status active.
6	Control device - Close. Lights up when the command is activated.
7	Closing photocells. Turns off when the photocell is engaged.
8-14	Not used
15	Loop 1 status
16	Loop 2 status

6.2 RELAY PHOTOCELLS

Photocells are additional type D detection devices (according to EN 12453) that reduce the likelihood of contact with the moving beam. The photocells are not safety devices according to standard EN 12978.

Using relay photocells with NC contact. If multiple photocells are used, the contacts must be connected in series. If the FSW input is not used, it must be bridged to the GND terminal (or to the output programmed as Failsafe, if enabled).

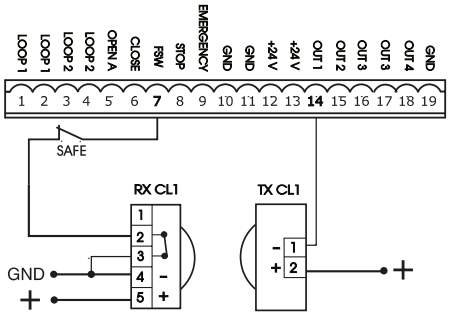
■ **Functional test (Failsafe)**

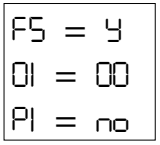
Failsafe is a functional test that is carried out before a movement: the board momentarily disconnects power to the transmitters and checks the change in status of the input. If the test fails, the board generates an error and prevents the automation from moving.

To enable the Failsafe test:

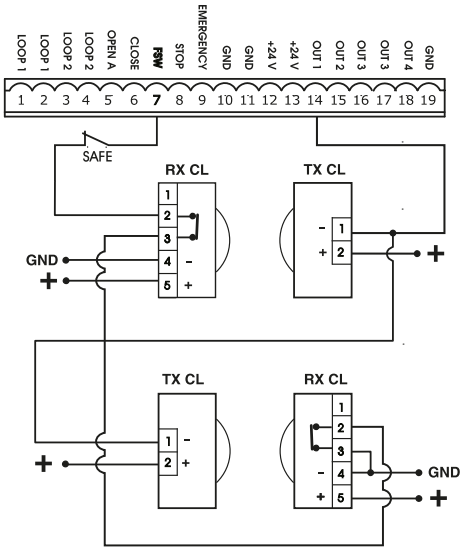
1. Connect the negative of the transmitter to the negative of an output (e.g. OUT1).
2. In advanced programming, enable Failsafe:
   - FS = Y
3. Configure the output used as Failsafe:
   - o1 = 00
4. Configure the polarity as normally open:
   - P1 = no

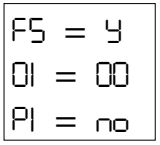
Connection for a pair of photocells with Failsafe function





Connection for pairs of photocells in series with Failsafe function





6

6.3 INDICATOR LIGHTS

24V⎓ INDICATOR LIGHT

The indicator light remotely indicates the status of the automation:

indicator light	automation
off	closed
on	opening/open or paused
flashing	closing

1. Connect the indicator light to the programmable output OUT3 (24 V⎓, 500mA).
2. In Advanced programming, set:

   o3 = 01

   P3 = no
3. Check that the device is working properly.

24V⎓ BEAM LIGHTING

Follow the assembly instructions supplied with the product.

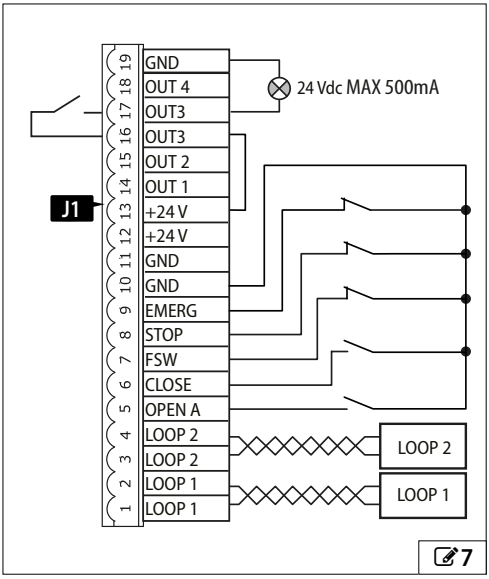
Beam lights	automation
on	closed/paused
off	open
flashing	opening/closing

1. Connect the cable to the board of the barrier **7**.
2. Connect the power supply.
3. In Advanced programming, set: o3 = 02 P3 = no to enable the lighting.
4. Check that the device is working correctly: if the rope light does not light up, switch off the power and invert the wires of the cable.

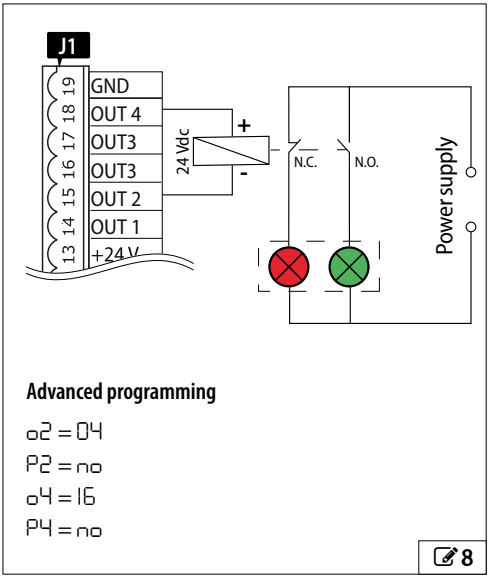
TRAFFIC LIGHT CONTROL

In advanced programming, set the functions as shown in the figure **8**.

For greater safety, enable closing pre-flashing (PF = CL).



7



Advanced programming

o2 = 04
P2 = no
o4 = 16
P4 = no

8

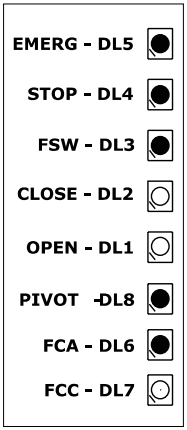
7. DIAGNOSTICS

7.1 SIGNALLING LEDS ON THE BOARD

The items in bold in the table indicate the condition of the LEDs with the board powered, no connected device active, with the automation CLOSED and ready to open

7.2 AUTOMATED SYSTEM STATUS

The display, other than when in the programming menu, provides information regarding the status of the automation.



8 LED diagnostics

LED	Colour	Meaning	●	○
DL5	red	Input status LED EMERG	**Not active**	Active
DL4	red	Input status LED STOP	**Not active**	Active
DL3	red	Input status LED FSW	**Not active**	Active
DL2	red	Input status LED CLOSE	Active	**not active**
DL1	red	Input status LED OPEN	Active	**not active**
DL8	red	Beam breakthrough signal	**Beam not broken through**	Beam breakthrough
DL6	red	Opening limit switch - NC (depending on the direction of travel)	Not engaged	**Engaged** in open position
DL7	red	Closing limit switch - NC (depending on the direction of travel)	Not engaged	**Engaged** in the closed position

●=on ○=off

9

8. MAINTENANCE

8.1 SCHEDULED MAINTENANCE

The table lists the operations that should be performed on a regular basis on the 624BLD board in order to keep the automation working reliably and safely; these are given as a guide only 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.

9 Scheduled maintenance

Operations	Frequency in months
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

Refer to the specific instructions for the devices and the connected operator.
For non FAAC components, refer to the manufacturer's documentation.

8.2 PROGRAMMING THE SCHEDULE 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, it activates the LAMP output for a period of 4 seconds every 30 s.

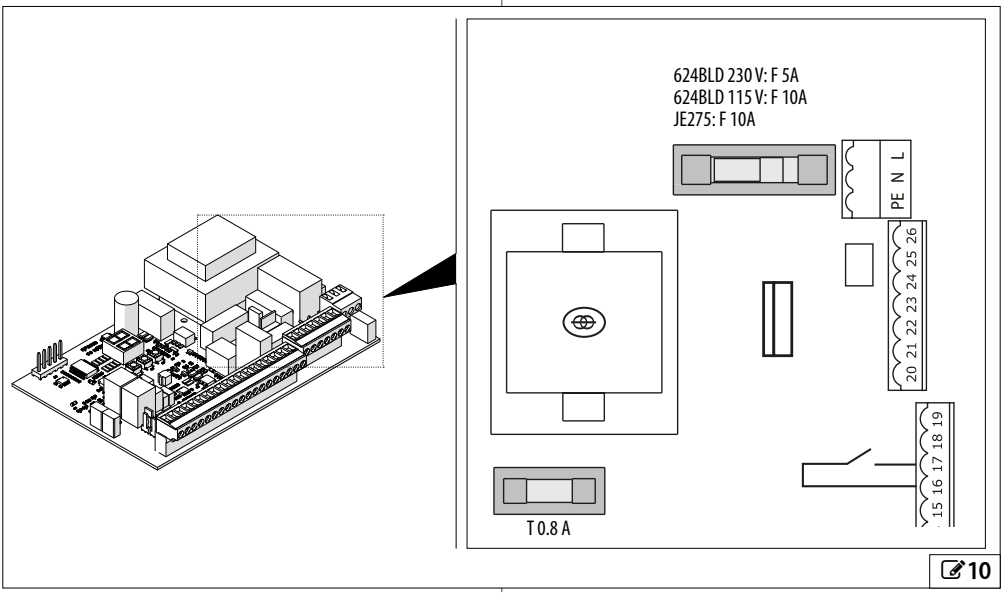
The user should ask the installer to carry out maintenance.

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 nC set the value in hundreds of thousands using the **+** and **-** buttons.
4. Exiting from programming mode to save.

8.3 REPLACING A FUSE

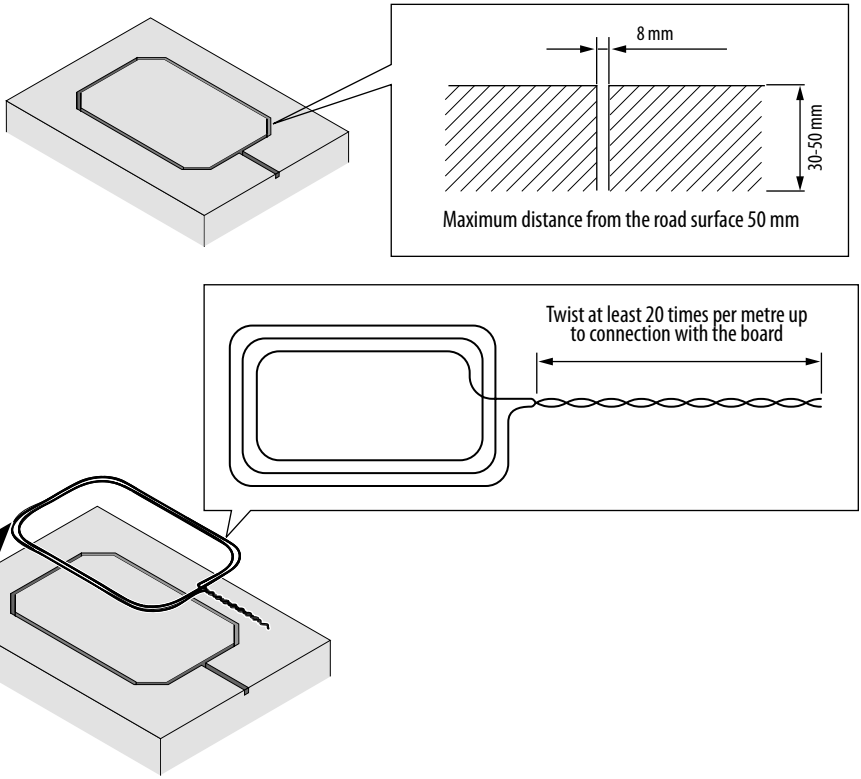
With the power supply disconnected, replace the fuse with one of the same rating (**10**).

Switch the power back on and check that the board and the connected accessories are on.



10

1 Magnetic loop



Minimum LOOP distance	
from FIXED METAL objects	15 cm
from MOVABLE METAL objects	50 cm

Loop perimeter	N° of loop windings
< 3 m	6
from 3 to 4 m	5
from 4 to 6 m	4
from 6 to 12 m	3
over 12 m	2

1. Prepare a PVC cable duct or make a chase in the ground (avoid 45° corners to prevent breaking the cable).
2. Use a normal single-pole 1.5 mm^2 diameter cable. If the cable is buried directly, it must be double insulated.
3. Preferably, induction loops are made square or rectangular.
4. Install the cable with the number of turns indicated in the table.
5. Twist the two ends of the cable from the loop to the 624BLD board at least 20 times per metre.

Avoid making joints in the cable but if it is necessary to do so, solder the conductors and seal the joint with heat shrink sheathing and keep them separate from mains power lines.

11

■ Loop detector features

The 624BLD board has an integrated metal mass detector for detecting vehicles via induction.

- Galvanic separation between the electronics of the detector and the loop
- Automatic system alignment immediately after activation
- Continuous resetting of frequency drifts
- Sensitivity independent of loop inductance
- Loop working frequency regulation
- Loop engaged message with LED display
- Loop status addressable on outputs OUT 1, OUT 2, OUT 3 and OUT 4.

■ Connection

Connect the loops:

- Terminals 1 - 2 for LOOP 1 = loop with opening function

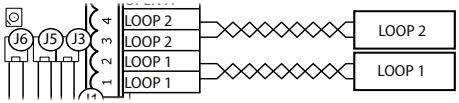
- Terminals 3 - 4 for LOOP 2 = loop with closing and/or safety in closing function

For information on the effect of the signals issued by the loops on the automation, please refer to the section on operating logics.

To enable the operation of the connected loops:

1. Go to Basic programming and set steps L1 and L2 to Y according to the number and type of loops connected.

If only one loop has been installed, enable only the corresponding programming step.
The operating status of the loop detector is indicated by the display points when viewing the automation status (St step).

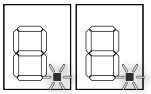


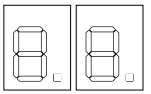
LOOP1	Loop with opening function
LOOP2	Loop with closing and/or safety function

■ Calibration

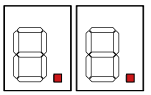
Each time the 624BLD board is powered up, the display shows the status of the automation system and the integrated loop detector automatically calibrates the connected loops. Carry out a calibration by disconnecting the power supply 624BLD for at least 5 s.

Calibration is indicated by the two flashing dots.


Flashing: Loop in calibration


Off: Loops released

Loop 1 Loop 2


On: Loops engaged

Loop 1 Loop 2

■ Sensitivity adjustment

The operating frequency of each detector channel can be set to one of two levels using the DS1 DIP switches.

DIP1	ON	Loop 1 frequency LOW
	OFF	Loop 1 frequency HIGH
DIP2	ON	Loop 2 frequency LOW
	OFF	Loop 2 frequency HIGH

If one of these dip switches is changed, it is recommended that a new calibration be carried out. If two loops are installed, select different frequencies for each loop.

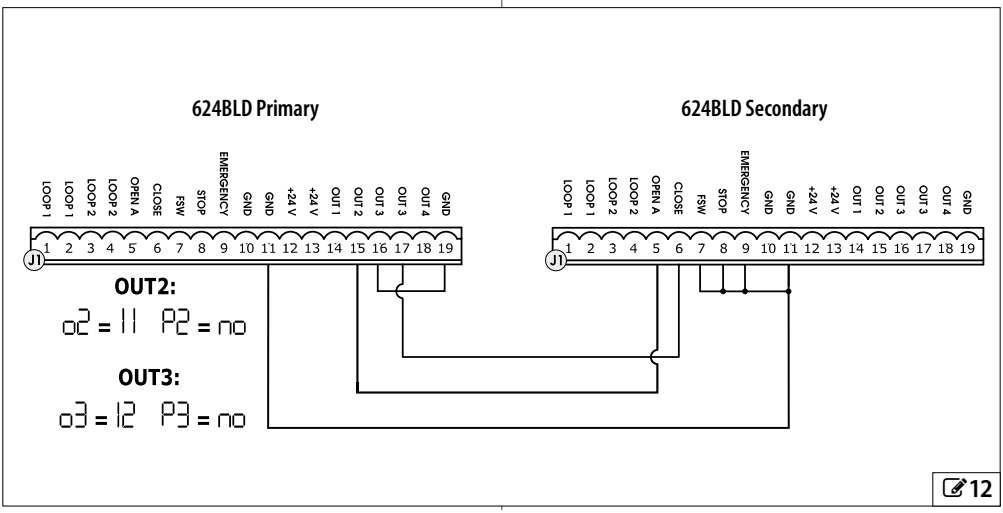
2 Opposing barrier configuration

This configuration makes it possible to install two opposing barriers with synchronous movement. In this configuration, one barrier is defined as the Primary and the other as the Secondary.

The Primary barrier manages all the commands and the safety devices and, through the outputs, the Secondary barrier.

■ **Primary 624BLD / secondary 624BLD configuration**

1. Turn power on to the boards.
2. Programming the Primary 624BLD board:
   - o2=II
   - P2=no
   - 03=I2
   - P3=no
3. Programming the Secondary 624BLD board:
   - In Basic programming, set LO=C.
   - Go to Expert programming and set 03=Y.
   - Go back to Basic programming and set LO=CU.

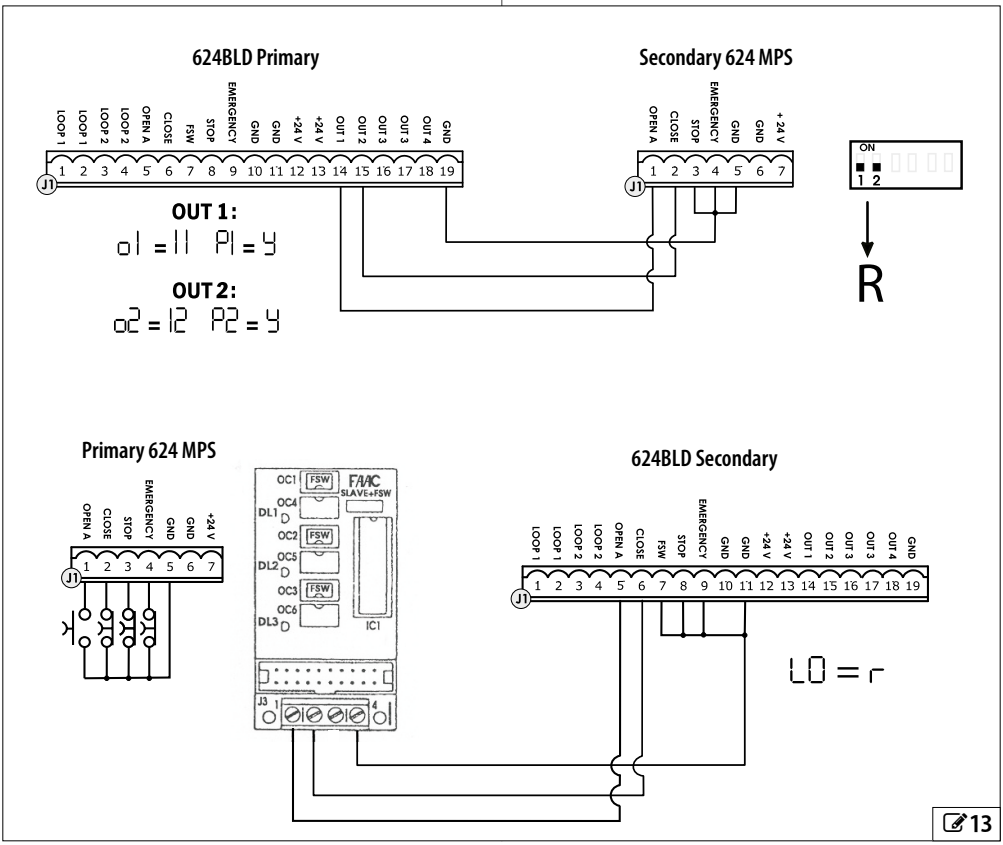


■ **Primary 624BLD /secondary 624 MPS configuration**

1. Turn power on to the boards.
2. Programming the Primary 624BLD board:
   - o1=11
   - P1=Y
   - 02=12
   - P2=Y
3. Programming the Secondary 624 MPS board:
   - Set DIP switch 1 and DIP switch 2 to off and for the rest leave the default.

■ **primary 624 MPS / secondary 624BLD configuration**

1. Turn power on to the boards.
2. Programming the Secondary 624BLD board:
   - In Basic programming, set LO=r.



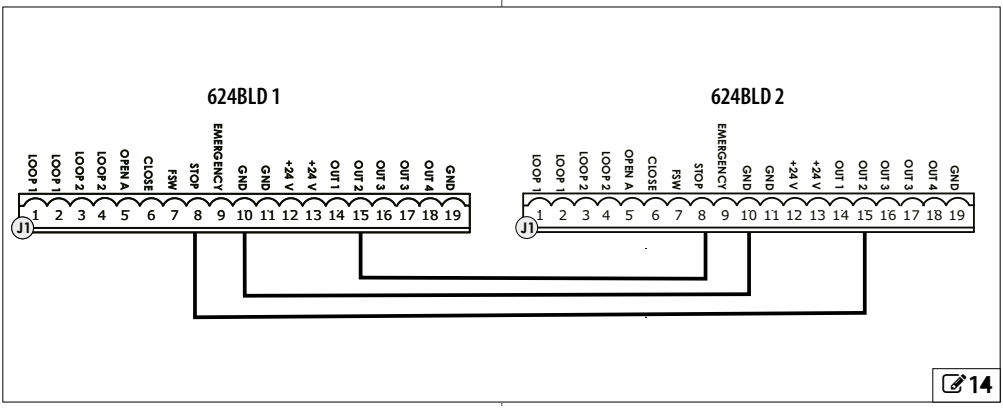
13

3 Interlock configuration

This configuration allows two automations to be controlled where the opening of one is subject to the closing of the other. Operation can be one-way or bidirectional.

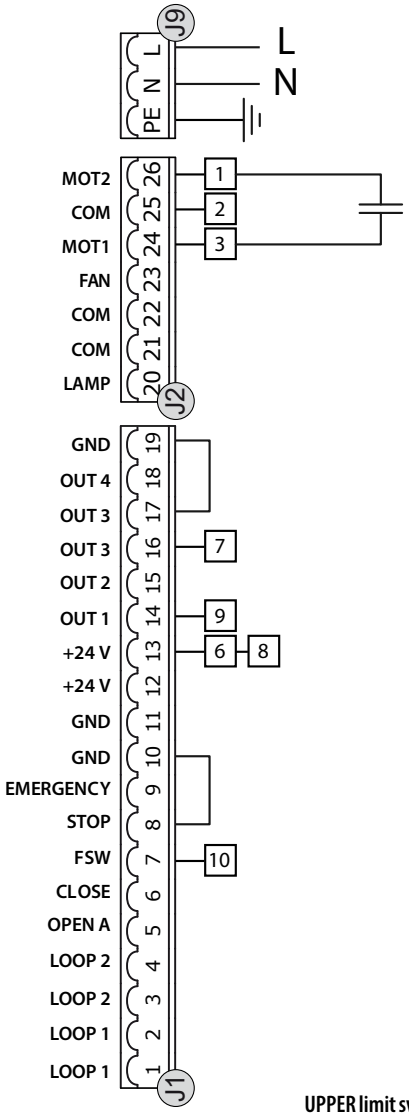
■ **Interlock configuration**

1. Connect the two automations as shown in the figure.
2. In advanced programming, program both boards with o2=18 and PI=no.
3. Carry out the start-up procedure

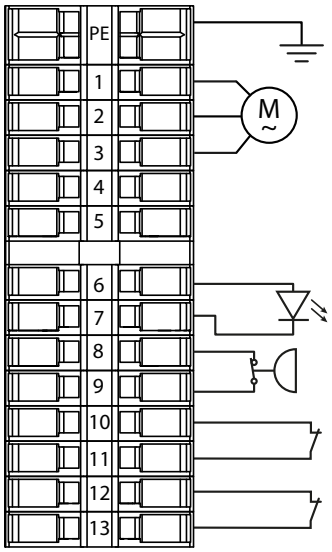


14

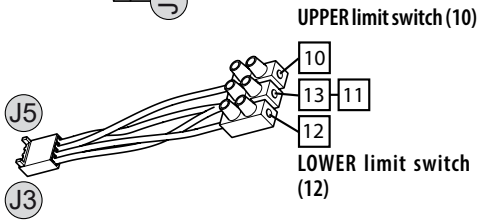
4 J200 connection

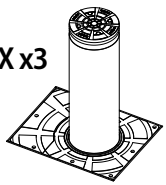


BOLLARD SIDE



TERMINAL	ACCESSORY
1	Motor phase 1
2	Motor common
3	Motor phase 2
4	Heater
5	Heater
6	Head lights +
7	Head lights -
8	Buzzer +
9	Buzzer -
10	Upper limit switch
11	Limit switch common -
12	Lower limit switch
13	Limit switch common -

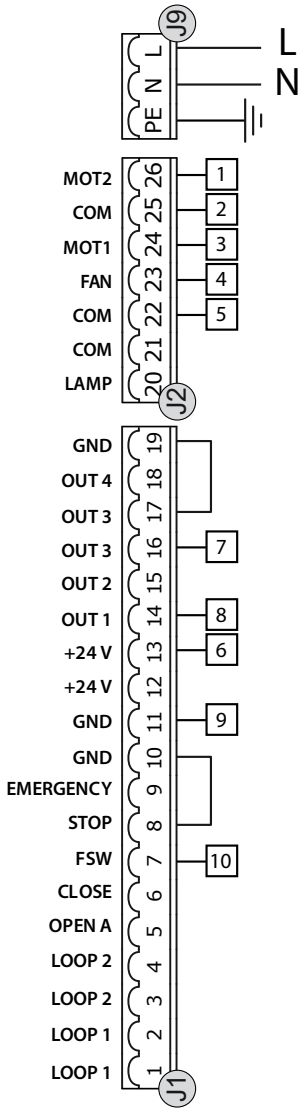


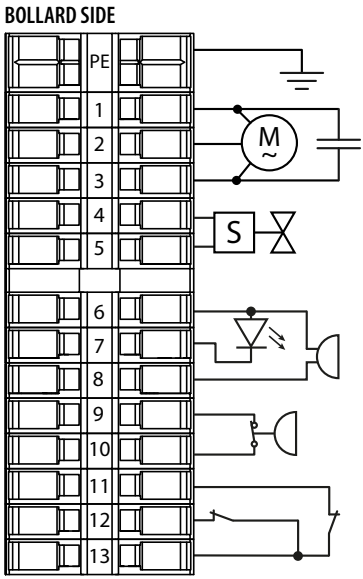


To connect several bollards to a single board, refer to the specific instructions for each bollard.

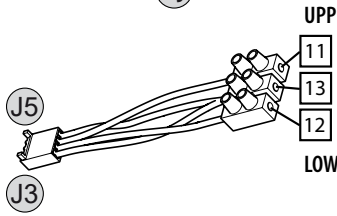
15

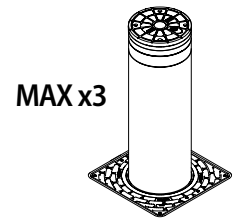
5 Connection diagram J275 - 275 2K





TERMINAL	ACCESSORY
1	Motor phase 1
2	Motor common
3	Motor phase 2
4	Solenoid valve
5	Solenoid valve
6	Headlights/Buzzer +
7	Head lights -
8	Buzzer -
9	Pressure switch
10	Pressure switch
11	Upper limit switch
12	Lower limit switch
13	Limit switch common -

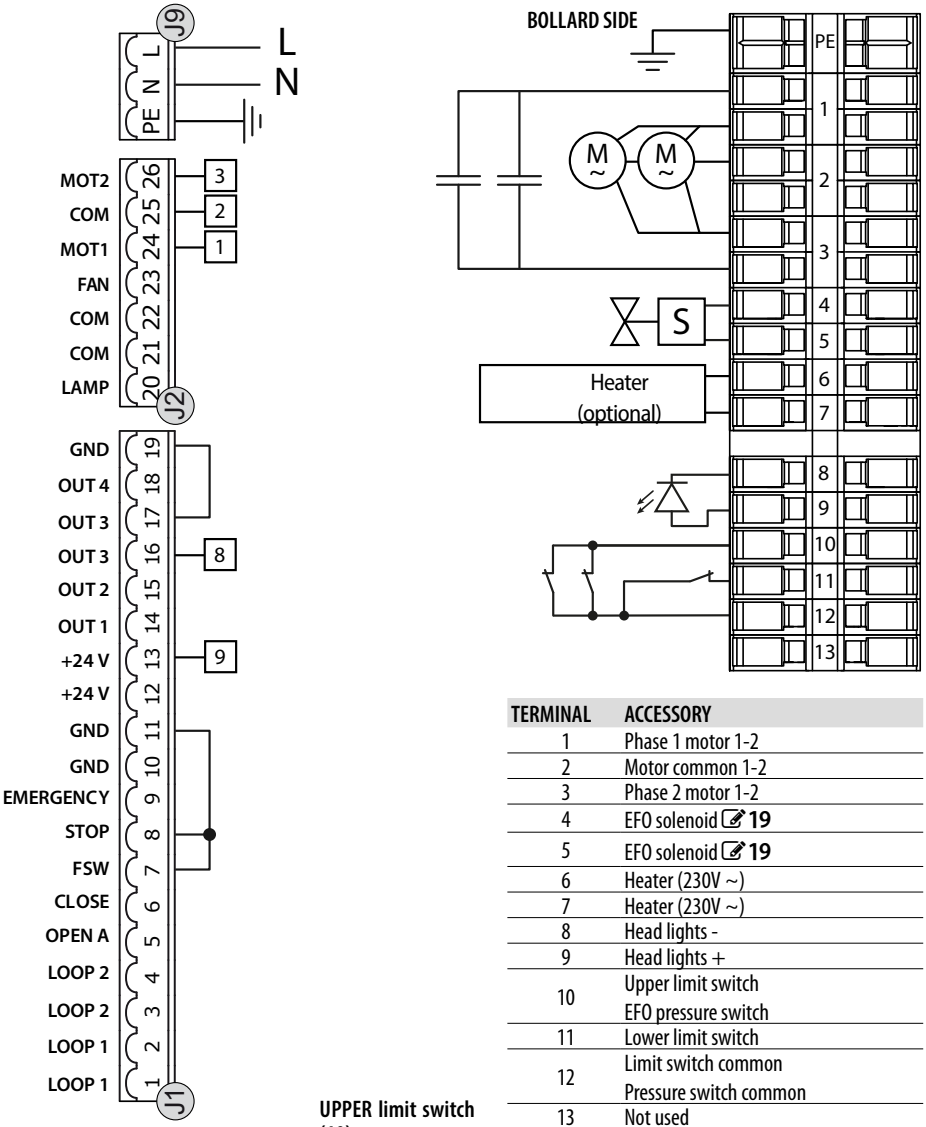




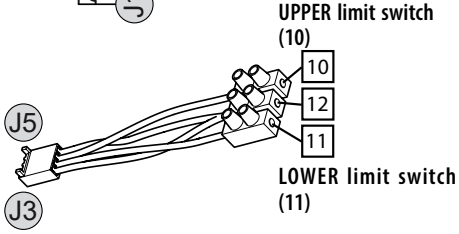
To connect several bollards to a single board, refer to the specific instructions for each bollard.

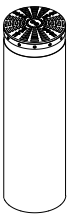
16

6 Connection diagram J355 M30



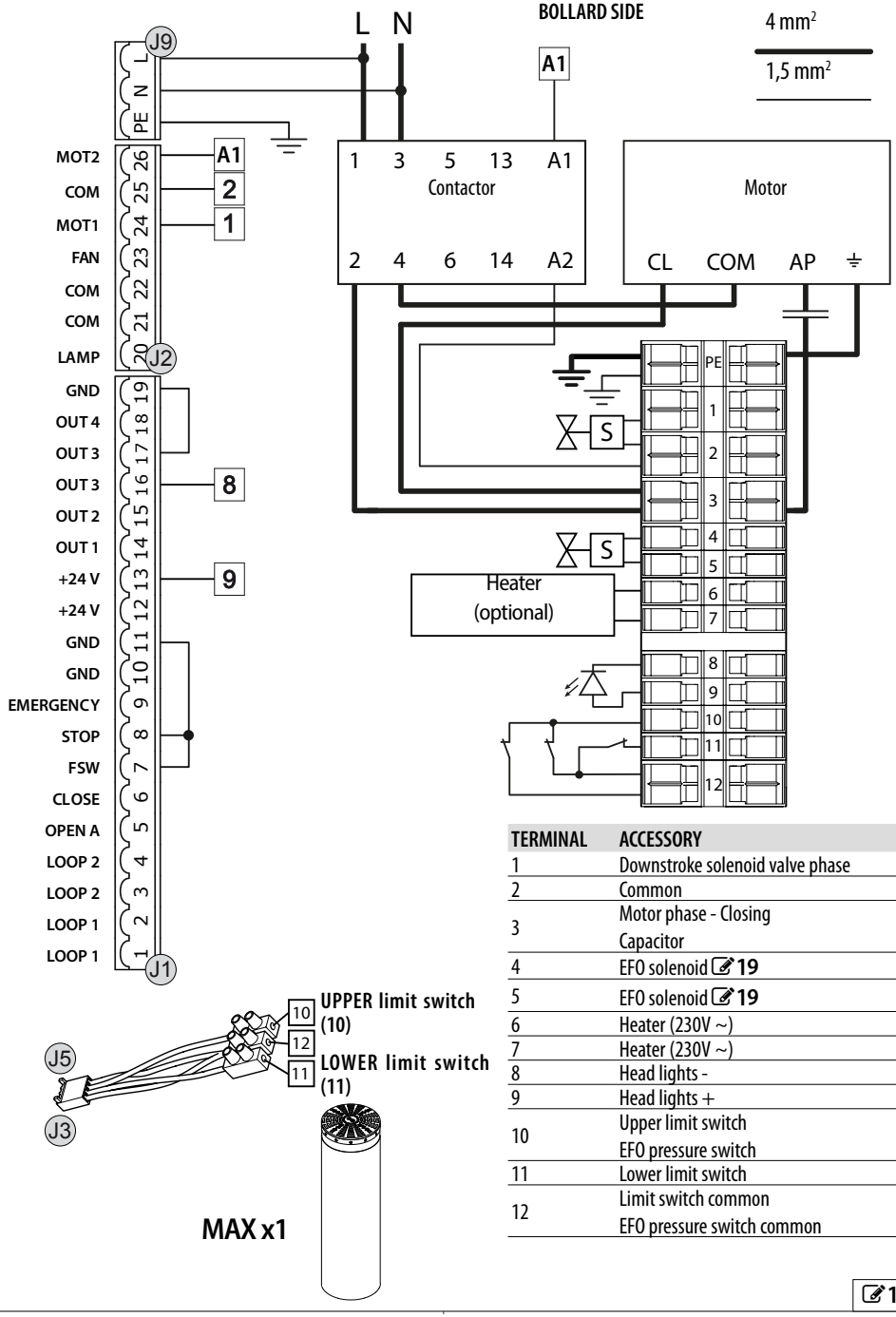
TERMINAL	ACCESSORY
1	Phase 1 motor 1-2
2	Motor common 1-2
3	Phase 2 motor 1-2
4	EFO solenoid ✎ **19**
5	EFO solenoid ✎ **19**
6	Heater (230V ~)
7	Heater (230V ~)
8	Head lights -
9	Head lights +
10	Upper limit switch EFO pressure switch
11	Lower limit switch
12	Limit switch common Pressure switch common
13	Not used





✎ **17**

7 Connection diagram J355 M50



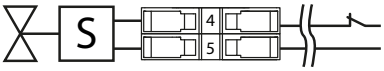
TERMINAL	ACCESSORY
1	Downstroke solenoid valve phase
2	Common
3	Motor phase - Closing Capacitor
4	EFO solenoid ✎ **19**
5	EFO solenoid ✎ **19**
6	Heater (230V ~)
7	Heater (230V ~)
8	Head lights -
9	Head lights +
10	Upper limit switch EFO pressure switch
11	Lower limit switch
12	Limit switch common EFO pressure switch common

✎ **18**

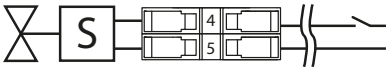
8 Connection diagram EFO

■ **J355 M30**

Connecting EFO NO

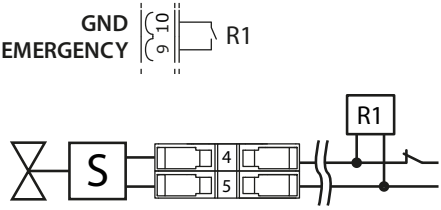


EFO NC connection (only for voluntary activation)

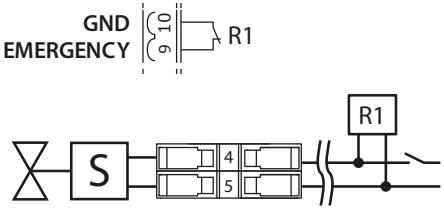


■ **J355 M50**

Connecting EFO NO



EFO NC connection (only for voluntary activation)



19

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