

CE DECLARATION OF CONFORMITY

Manufacturer: FAAC S.p.A.

Address: Via Benini, 1 - 40069 Zola Predosa BOLOGNA - ITALY

Declares that: 462 DF control board,

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

73/23/EEC and subsequent amendment 93/68/EEC.

89/336/EEC and subsequent amendment 92/31/EEC and 93/68/EEC

Additional note:

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

Bologna, 01 January 2002

The Managing Director
A. Bassi



WARNINGS FOR THE INSTALLER

GENERAL SAFETY OBLIGATIONS

- CAUTION! It is important for personal safety to follow all the instructions carefully. Incorrect installation or misuse of the product may cause people serious harm.**
- Read the instructions carefully before starting to install the product.
- Packaging material (plastic, polystyrene, etc.) must not be left within reach of children as it is a potential source of danger.
- Keep the instructions for future reference.
- This product was designed and manufactured strictly for the use indicated in this documentation. Any other not expressly indicated use may damage the product and/or be a source of danger.
- FAAC accepts no responsibility due to improper use of the automated system or use other than that intended.
- Do not install the equipment in an area subject to explosion hazard: inflammable gases or fumes are a serious safety hazard.
- Mechanical construction elements must meet the provisions of UNI8612, EN 12604 and EN 12605 Standards.
To obtain an adequate level of safety in non EU countries, the above mentioned Standards must be observed in addition to national Standards.
- FAAC will not accept responsibility if the principles of Good Workmanship are disregarded in constructing the closing elements to be motorised, and if any deformation occurs during use of the said elements.
- Installation must meet the following Standards: UNI8612, EN 12453 and EN 12445.
- Before carrying out any work on the system, switch off the power supply.
- The mains power supply of the automated system must be fitted with a all-pole switch with contact opening distance of 3mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.
- Make sure there is a differential switch with 0.03A threshold upstream of the system.
- Check that the earthing system is correctly made and connect the closure metal parts to it. Also connect the Yellow/Green wire of the automated system to the earthing system.
- The automated system includes an intrinsic anti-crushing device consisting of a torque control which, however, must be installed together with other safety devices.
- The safety devices (EN 12978 Standard) protect any dangerous areas against **Mechanical movement risks**, such as crushing, dragging, and shearing.
- Use of at least one indicator-light (e.g. FAAC LAMP MINILAMP, etc.) is recommended for every system, as well as a warning sign adequately fixed to the frame structure, in addition to the devices mentioned at point "16".
- FAAC accepts no responsibility regarding safety and correct operation of the automated system, should components made by manufacturers other than FAAC be used in the system.
- Use only FAAC original spare parts for maintenance.
- Do not make any alterations to the components of the automated system.
- The installer shall supply full information regarding manual operation of the system in case of an emergency, and shall hand over to the user of the system the warning handbook supplied with the product.
- Do not allow children or other persons to stand near the product while in operation.
- Keep remote controls or any other pulse generator well away from children, to prevent the automated system from being activated accidentally.
- The user must refrain from attempting to repair or adjust the system personally and should contact qualified personnel only.
- Anything not expressly provided for in these instructions is not permitted.**

CONTROL BOARD 462 DF

1. WARNINGS

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

- Install, upstream of the system, a differential thermal breaker with adequate tripping threshold.
- Connect the earth cable to the appropriate terminal on the J1 connector of the equipment (see fig.2).
- Always separate power cables from control and safety cables (push-button, receiver, photocells, etc.). To avoid any electric noise, use separate sheaths or a shielded cable (with earthed shield).

3. LAYOUT AND COMPONENTS OF 462 DF

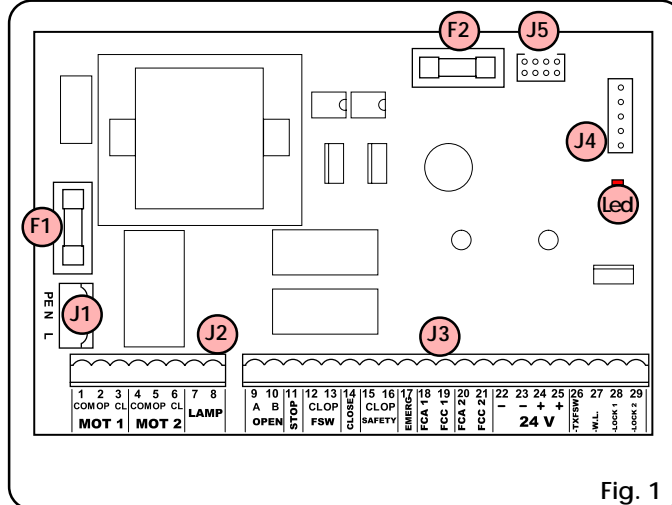


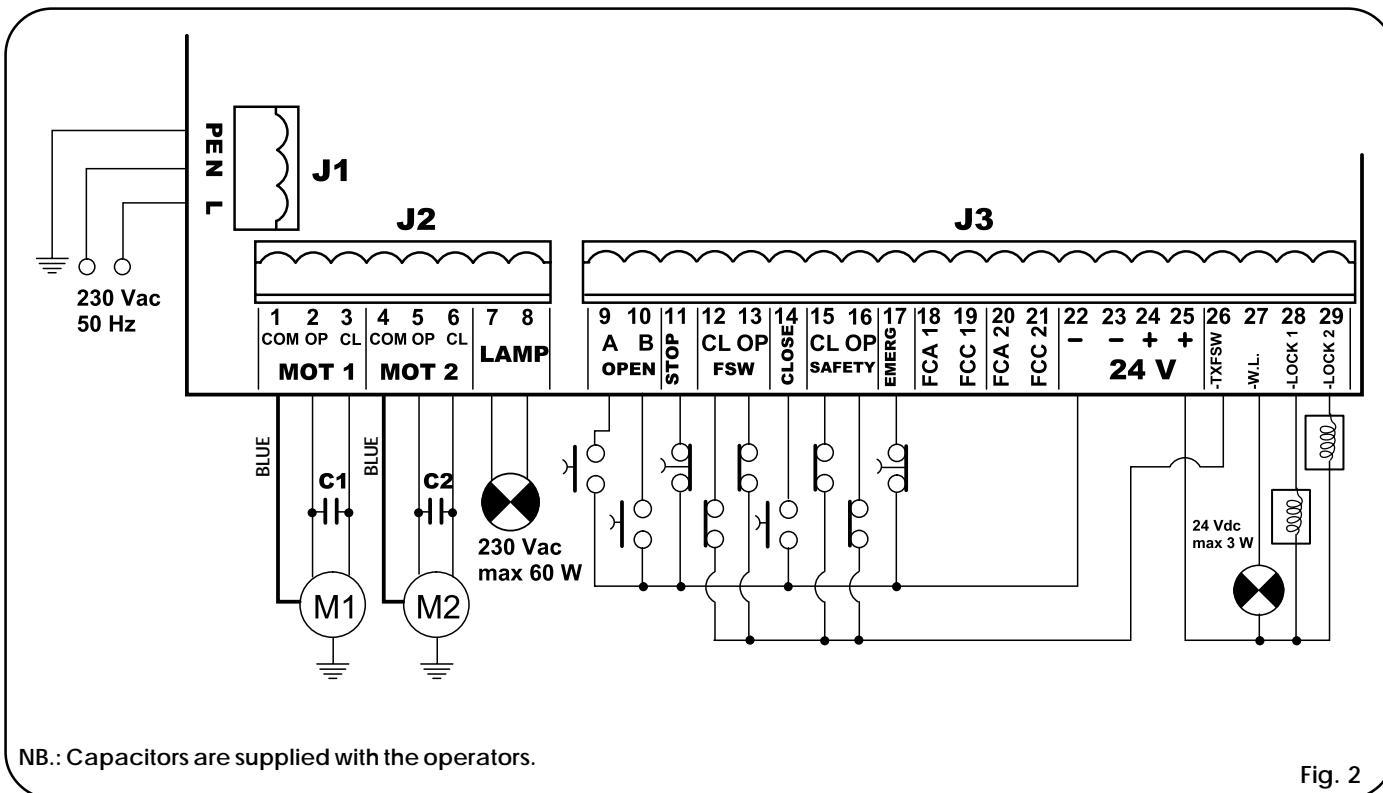
Fig. 1

2. TECHNICAL SPECIFICATIONS

Power supply	230 V- (+6% -10%) - 50 Hz
Absorbed power	35 W
Motor max. load	800 W
Power supply for accessories	24Vdc
Accessories max. load	0.5 A
Power supply for indicator-light	24Vdc max 3W
Electric lock max. load	15 VA
Operating ambient temperature	-20 °C +55 °C
Protection fuses	2 (see fig. 1)
Rapid connector	To connect Minidec, Decoder or RP cards

Led	'POWER ON' LED
J1	230 VAC POWER SUPPLY TERMINAL BOARD
J2	MOTORS AND FLASHING LAMP CONNECTION TERMINAL BOARD
J3	LOW VOLTAGE TERMINAL BOARD
J4	CONNECTOR FOR MINIDEC/DECODER/RP RECEIVER
J5	CONNECTOR FOR DIGIPROGRAM/FAACTOTUM
F1	MOTORS AND TRANSFORMER PRIMARY WINDING FUSE (F 5A)
F2	LOW VOLTAGE AND ACCESSORIES FUSE (T 800mA)

4. ELECTRIC CONNECTIONS



NB.: Capacitors are supplied with the operators.

Fig. 2

4.1. Connection of photocells and safety devices

Before connecting the photocells (or other devices) we advise you to select the type of operation according to the movement area they have to protect (see fig.3):

Opening safety devices: they operate only during the gate opening movement and, therefore, they are suitable for protecting the area between the opening leaves and fixed obstacles (walls, etc) against the risk of impact and crushing.

Closing safety devices: they operate only during the gate closing movement and, therefore, they are suitable for protecting the closing area against the risk of impact.

Opening/closing safety devices: they operate during the gate opening and closing movements and, therefore, they are suitable for the opening and closing areas against the risk of impact.

FAAC recommends use of the lay-out in fig. 4 (in the event of fixed obstacles at opening) or in fig. 5 (no fixed obstacles).

N.B. If two or more devices have the same function, they should be connected to each other in series. N.C. contacts must be used.

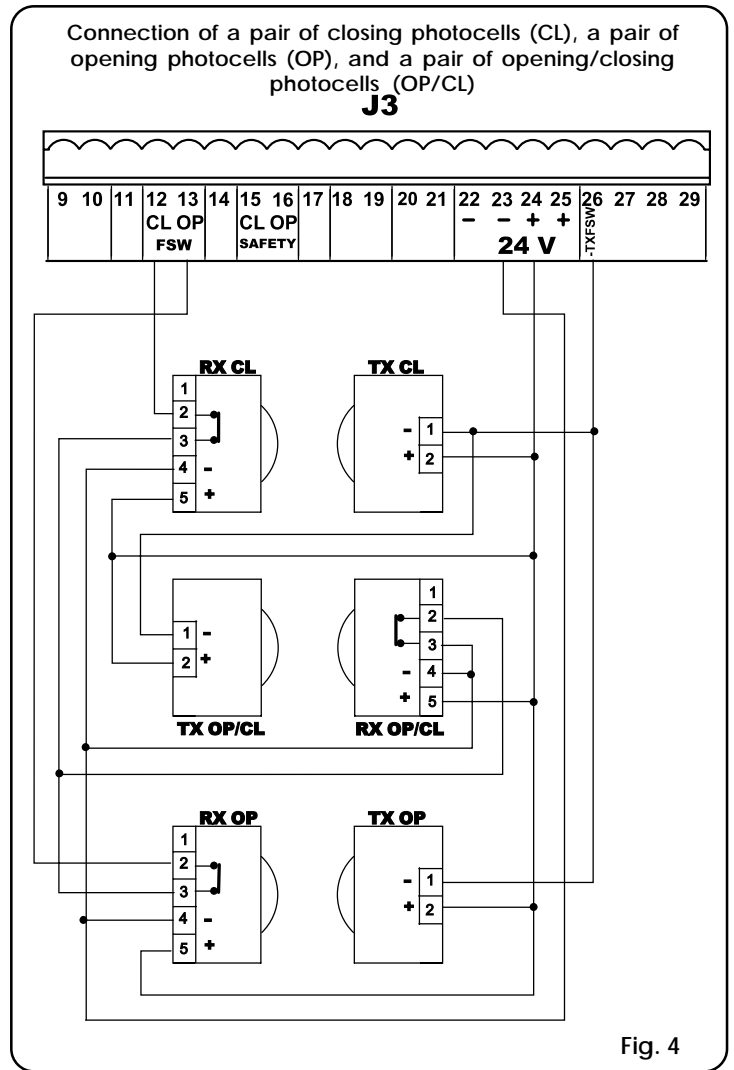
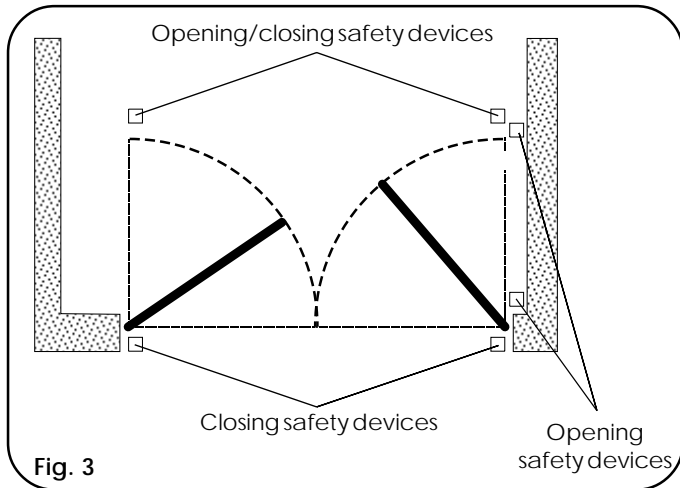


Table: operation of safety inputs in logic A (standard)

LOGIC "A"	PULSES					
	FSW-OP	FSW-CL	FSW-OP/CL	SAFETY-OP	SAFETY-CL	SAFETY-OP/CL
CLOSED	no effect (OPEN disabled)	no effect	no effect (OPEN disabled)	no effect (OPEN disabled)	no effect	no effect (OPEN disabled)
OPENING	blocks and, on release, reverses to close	no effect	blocks and, on release, continues opening	reverses to close	no effect	blocks movement
OPEN ON PAUSE	no effect -opening disabled-	recounts pause time	recounts pause time	no effect -opening disabled-	no effect -closing disabled-	no effect (OPEN/CLOSE disabled)
CLOSING	no effect	reverses to open	blocks and, on release, reverses to open	no effect	reverses to open	blocks movement
STOPPED	no effect -opening disabled-	no effect -closing disabled-	no effect (OPEN/CLOSE disabled)	no effect -opening disabled-	no effect -closing disabled-	no effect (OPEN/CLOSE disabled)

⊖ Effects on other active pulse inputs in brackets.

Connection of a pair of closing photocells (CL) and a pair of opening/closing photocells (OP/CL)

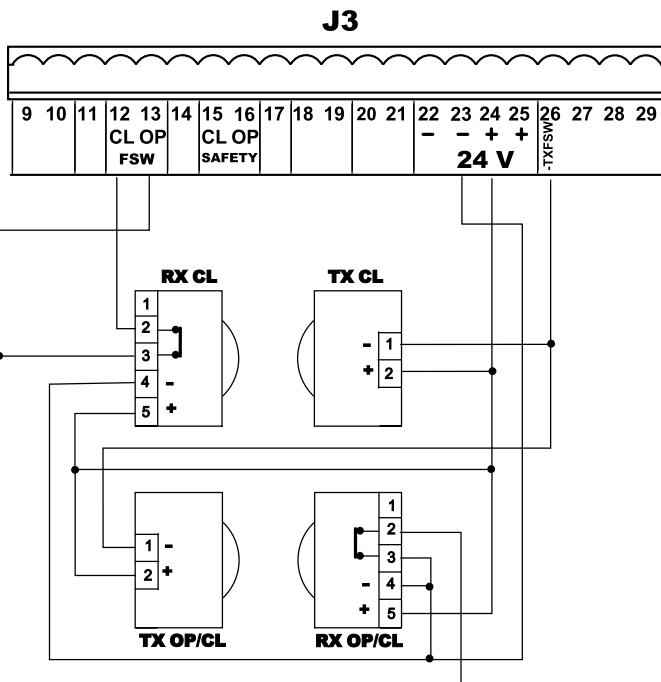


Fig. 5

Connection of two pairs of closing photocells (CL)

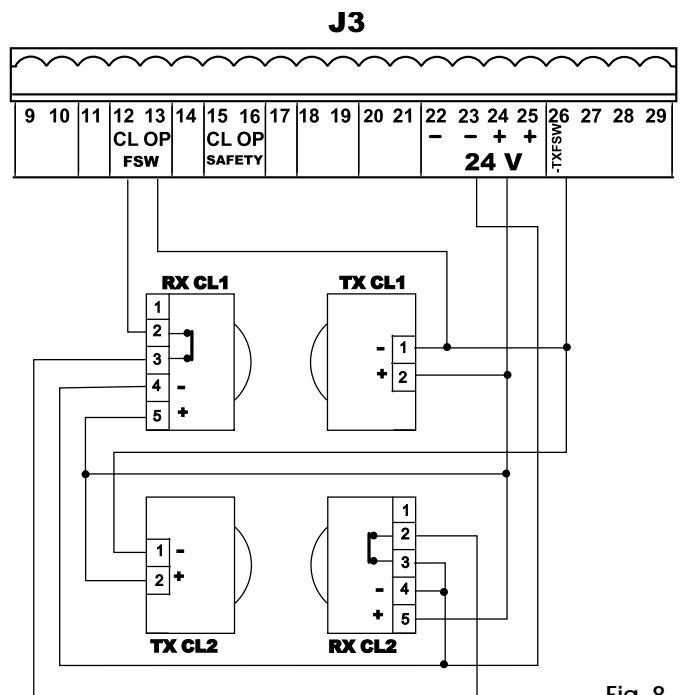


Fig. 8

Connection of one pair of closing photocells (CL)

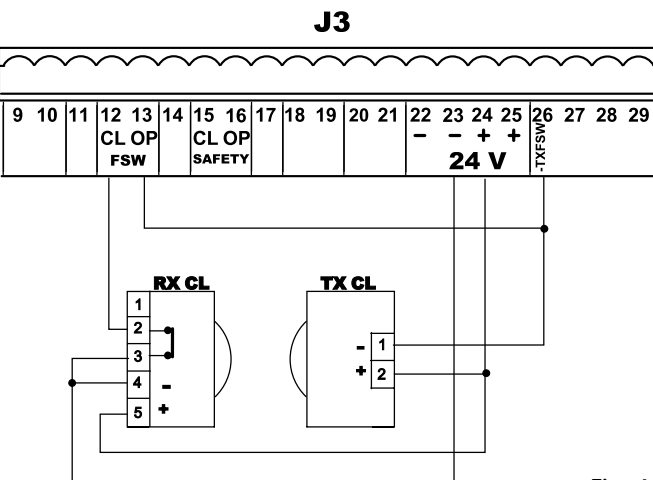


Fig. 6

Connection of one pair of opening photocells (OP)

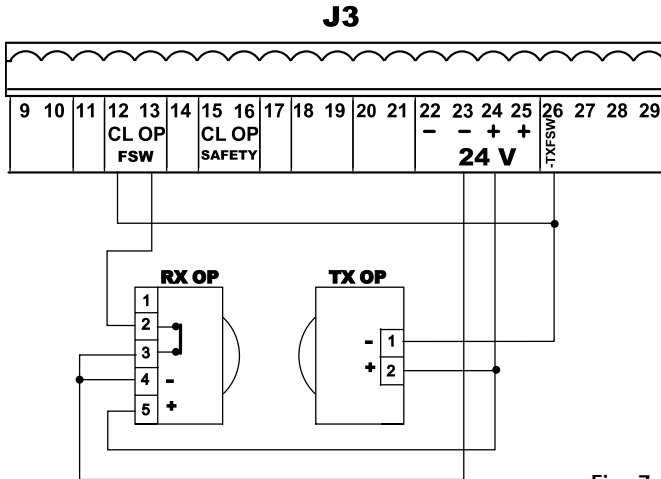


Fig. 7

Note : The connection examples refer to the "FSW" inputs; connections to the "SAFETY" inputs can be obtained with terminals 15 and 16 (instead of terminals 12 and 13).

4.2. Terminal board J1 - Power supply (fig. 2)

- PE: Earth connection
- N : 230 V~ power supply (Neutral)
- L : 230 V~ power supply (Line)

NB.: For correct operation, the board must be connected to the earth conductor in the system. Install an adequate differential thermal breaker upstream of the system.

4.3. Terminal board J2 - Motors and flashing lamp (fig. 2)

- M1 : COM / OP / CL: Connection to Motor 1
Can be used in the single-leaf application
- M2 : COM / OP / CL: Connection to Motor 2
Cannot be used in the single-leaf application
- LAMP : Flashing lamp output (max 60 W 230 V ~)

4.4. Terminal board J3 - Accessories (fig. 2)

For exact operation of inputs according to gate status, refer to the logic table being used (Digiprogram instructions).

OPENA "Total Opening" command (N.O.):

Any pulse generator (push-button, detector, etc.) which, by closing a contact, commands opening and/or closing of both gate leaves.

To install several total opening pulse generators, connect the N.O. contacts in parallel.

OPENB "Partial Opening" command (N.O.):

Any pulse generator (push-button, detector, etc.) which, by closing a contact, commands opening and/or closing of the leaf driven by motor M1.

To install several partial opening pulse generators, connect the N.O. contacts in parallel.

STOP STOP contact (N.C.):

Any device (e.g.: push-button) which, by opening a contact, stops gate movement.

To install several STOP devices, connect the N.C. contacts in series.

NB.: If STOP devices are not connected, jumper connect the **STOP** and – terminals.

CLFSW Closing safety devices contact (N.C.):

Input for connection of safety devices (e.g. photocell) which, when activated during closing, cause a reverse of the movement to complete opening.

They never operate during the opening cycle.

If the closing safety devices operate when the gate is open, they prevent the leaf closing movement.

NB.: If no closing safety devices are connected, jumper connect terminals **CL FSW** and **-TX FSW**.

OPFSW Opening safety devices contact (N.C.):

Input for connection of safety devices (e.g. edge) which, when activated during opening, cause a reverse of the movement to complete closing.

They never operate during the closing cycle.

If the opening safety devices operate when the gate is closed, they prevent the leaf opening movement.

NB.: If no opening safety devices are connected, jumper connect inputs **OP FSW** and **-TX FSW**.

CLOSE "Closing" command (N.O.):

Any pulse generator (push-button, detector, etc.) which, by closing a contact, commands gate closing only.

To install several full opening pulse generators, connect the N.O. contacts in parallel.

CL SAFETY Closing edge contact (N.C.):

Input for connection of safety devices (e.g. edge) which, when activated during closing, causes a reverse of the movement to complete opening. If the OP Safety input is activated within one second after tripping of the safety device, the movement stops.

They never operate during the opening cycle.

If these closing safety devices operate when the gate is open, they prevent the leaf closing movement.

NB.: If no closing safety devices are connected, jumper connect terminals **CL SAFETY** and **-TX FSW**.

OP SAFETY Opening safety devices contact (N.C.):

Input for connection of safety devices (e.g. edge) which, when activated during opening, cause a reverse of the movement to complete closing. If the CL Safety input is activated within one second after tripping of the safety device, the movement stops.

They never operate during the closing cycle.

If these closing safety devices operate when the gate is closed, they prevent the leaf opening movement.

NB.: If no opening safety devices are connected, jumper connect terminals **OP SAFETY** and **-TX FSW**.

EMERG "Emergency Opening" command (N.C.):

Any pulse generator (push-button, etc.) which, by opening a contact, commands an emergency opening irrespective of the status of any other input.

To install several emergency opening pulse generators, connect the N.C. contacts in series.

NB.: If emergency devices are not connected, jumper connect the **EMERG** and – terminals.

FCA1/FCC1/FCA2/FCC2

Inputs for connection of Gatecoder or limit-switches: refer to the Digiprogram or Faactotum instructions.

- Negative for powering accessories / inputs common**+ 24 Vdc - Positive for power supply to accessories**

Important: Accessories max. load is 500 mA. To calculate absorption values, refer to the instructions for individual accessories.

-TX FSW Negative for power supply to photocell transmitters

If you use this terminal for connecting the negative for supplying power to the photocell transmitters, you may, if necessary, also enable the FAILSAFE function (**enable it with the Digiprogram or Faactotum**).

If this function is enabled, the equipment checks operation of the photocells before every opening or closing cycle.

W.L. Indicator-light

Connect a 24 Vdc - 3 W max. indicator-light, if necessary, between this terminal and the +24V supply. To avoid jeopardizing correct operation of the system, **do not exceed** the indicated power.

Operation of the indicator-light:

STATUS LIGHT	CLOSED	OPENING	OPEN/PAUSE	CLOSING	STOPPED
	Off	Lighted	Lighted	Flashing	Lighted

LOCK1 Leaf 1 electric lock

Connect a possible 12 Vac electric lock (releases on opening) between this terminal and the +24V.

LOCK2 Leaf 2 electric lock

Connect a possible 12 Vac electric lock between this terminal and the +24V.

NB.: Activation of the Lock2 output must be programmed with the Faactotum.

4.4. Connettor J4 - Rapid connection (fig. 1)

This is used for rapid connection of Minidec, Decoder and RP receivers. Connect the accessory, with the components side facing the inside of the board. Insert and remove after cutting power.

4.5. Connettor J5 - Rapid connection (fig. 1)

This is used for rapid connection of Digiprogram or Faactotum (to program the board).

5. INSTALLATION

Install the electronic control unit by placing it in enclosures with an adequate degree of protection (min. IP55).

The grommets and tube grippers used for wiring must maintain the enclosure's degree of protection.

The 462 DF is supplied with preset standard programming; customising can be obtained with the Digiprogram or Faactotum programmer.

5.1. Rotation direction check

- 1) Cut power to the 462 DF board.
- 2) Manually move the gate or beam to the mid-point of the opening angle.
- 3) Re-lock the operators.
- 4) Restore power.
- 5) Send an opening pulse and check if the gate or beam is being commanded to open.

If the first pulse commands closing of one or both the leaves, cut power and - on the 462 DF terminal board - reverse the phases of the electric motor being used for closing.