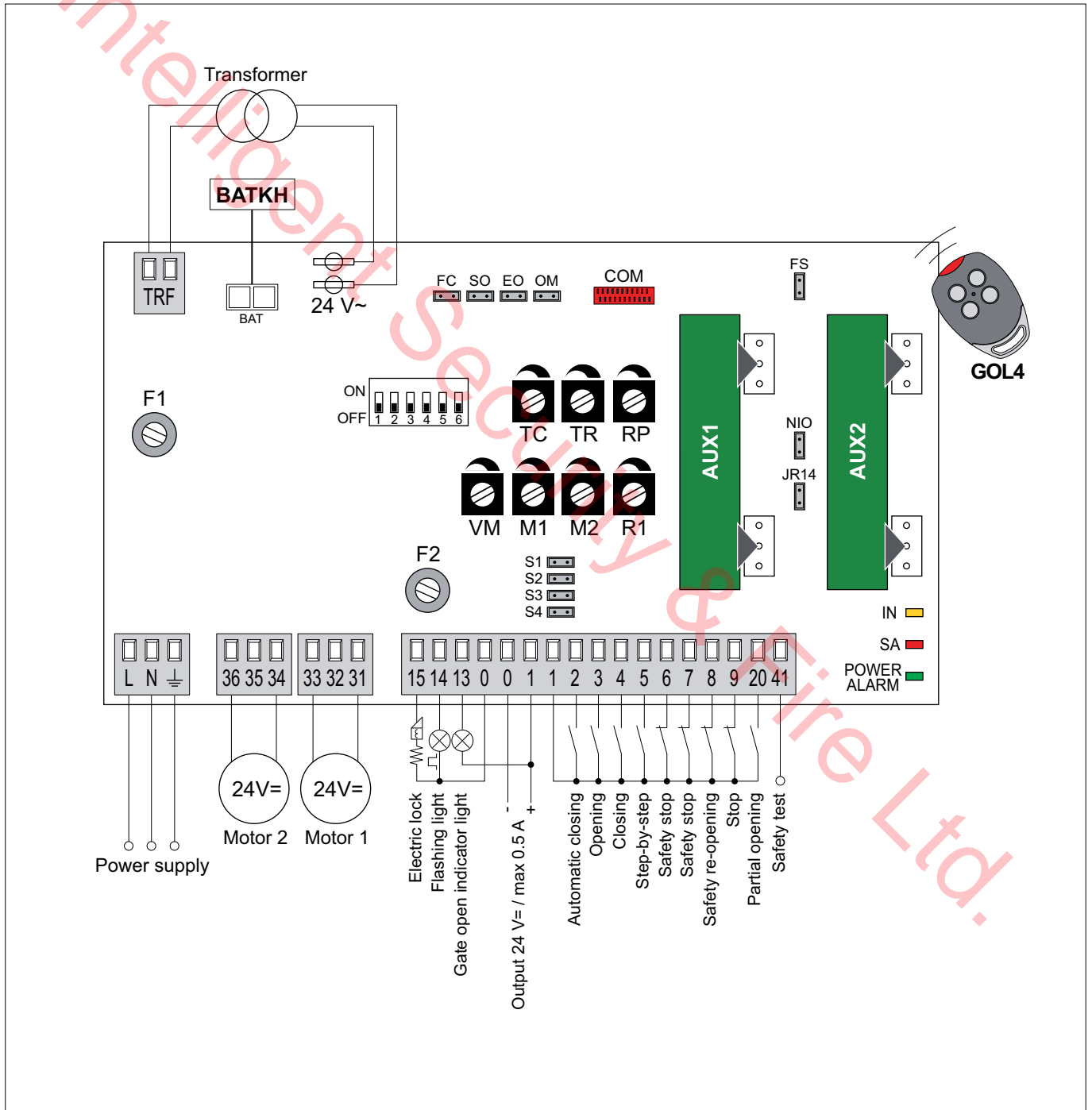


**EN** Installation manual for control panel for automations with one or two 24 V= motor.



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## CAPTION



This symbol indicates instructions or notes regarding safety issues which require particular attention.



This symbol indicates informations which are useful for correct product function.



This symbol indicates instructions or notes intended for technical and expert personnel.



This symbol indicates operations not to be effected for not compromise the correct operation of the automation.



This symbol indicates options and parameters which are only available with the indicated item.



This symbol indicates options and parameters which are not available with the indicated item.

### All right reserved

All data and specifications have been drawn up and checked with the greatest care. The manufacturer cannot however take any responsibility for eventual errors, omissions or incomplete data due to technical or illustrative purposes.

## 1. GENERAL SAFETY PRECAUTIONS



This installation manual is intended for professionally competent personnel only.

The installation, the power connections and the settings must be completed in conformity with Good Working Methods and with the regulations in force.

Before installing the product, carefully read the instructions. Bad installation could be hazardous. The packaging materials (plastic, polystyrene, etc.) should not be discarded in the environment or left within reach of children, as these are a potential source of hazard.

Before beginning the installation check that the product is in perfect condition.

Do not install the product in explosive areas and atmospheres: the presence of flammable gas or fumes represents a serious threat to safety.

The safety devices (photocells, sensitive edges, emergency stop, etc.) must be installed taking into account: the provisions and the directives in force, Good Working Methods, the installation area, the functional logic of the system and the forces developed by the automation.



Before making power connections, check that the rating corresponds to that of the mains supply. A multipolar disconnection switch with a contact opening gap of at least 3 mm must be included in the mains supply. Check that upstream of the electrical installation an adequate residual current circuit breaker and an overcurrent cut out are fitted.

When requested, connect the automation to an effective earthing system carried out as indicated by current safety regulations.

During installation, maintenance and repair operations, cut off the power supply before opening the cover to access the electrical parts.



To handle electronic parts, wear earthed antistatic conductive bracelets. The manufacturer of the motorisation declines all responsibility in the event of components which are not compatible with the safe and correct operation of the product.

For repairs or replacements of products only original spare parts must be used.

## 2. EC DECLARATION OF CONFORMITY

Manufacturer: DITEC S.p.A.

Address: via Mons. Banfi, 3 21042 Caronno P.Ia (VA) - ITALY

declares that the control panel VIVAH is in conformity with the provisions of the following EC directives:

EMC Directive 2004/108/EC;

Low Voltage Directive 2006/95/EC.

Caronno Pertusella, 13-12-2010

Silvano Angaroni  
(Managing Director)

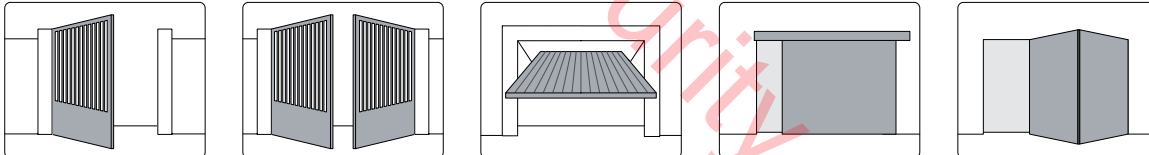
## 3. TECHNICAL DATA

VIVAH	
Power supply	230 V~ / 50-60 Hz
F1 fuse	F2A
F2 fuse	F2.5A
Motor output	24 V= / 2 x 12 A max
Accessories power supply	24 V= / 0.5 A
Temperature	-20 °C / +55 °C
Degree of protection	IP55
Box dimensions	238x357x120



*NOTE: the given operating and performance features can only be guaranteed with the use of DITEC accessories and safety devices.*

### 3.1 Applications



## 4. CONNECTION OF POWER SUPPLY

Fix the control panel permanently. Pass the cables along from the lower side of the container.

Before connecting the power supply, make sure the plate data correspond to that of the mains power supply.

An omnipolar disconnection switch with minimum contact gaps of 3 mm must be included in the mains supply.

Check that upstream of the electrical installation there is an adequate residual current circuit breaker and a suitable overcurrent cutout.

Use a 3x1.5 mm FROR 450/750V type electric cable and connect to the terminals L (brown), N (blue), ⊕ (yellow/green) in the automation.

Secure the cable using a special cable clamp.

Make sure there are no sharp edges that may damage the power supply cable.

Connection to the mains power supply, in the section outside the automation, is made with independent channels and separated from the connections to the control and safety devices.

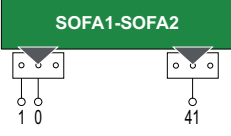
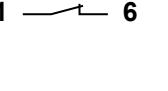
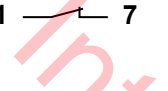

## 5. COMMANDS

Command		Function	Description
1 — 2	N.O.	AUTOMATIC CLOSING	The permanent closing of the contact enables automatic closing.
1 — 3	N.O.	OPENING	The closing of the contact activates the opening operation.
1 — 4	N.O.	CLOSING	The closing of the contact activates the closing operation.
1 — 5	N.O.	STEP-BY-STEP	The closing of the contact activates opening or closing operations in the following sequence: open-stop-close-open. <i>NOTE: if automatic closing is enabled, the stop is not permanent but lasts for a duration set by TC.</i>
1 — 6	N.C.	OPENING SAFETY	The opening of the safety contact stops the opening operation in progress and prevents future opening operations.
1 — 7	N.C.	CLOSING SAFETY	The opening of the safety contact stops the closing operation in progress and prevents future closing operations.
1 — 6 7	N.C.	SAFETY STOP	All operations are stopped and/or blocked when the safety contact is opened. <i>NOTE: it does not carry out the disengagement operation.</i> <i>WARNING: use with photocells only.</i>
1 — 8	N.C.	REVERSE SAFETY CONTACT	The opening of the safety contact triggers a reversal of motion (re-opening) during closing. With SO=ON with the automation stopped, the opening of the contact prevents any operation. With SO=OFF with the automation stopped, the opening of the contact only prevents the closing operation.
1 — 9	N.C.	STOP EMERGENCY STOP	The opening of the safety contact stops the current operation. Connect the opening and closing commands to terminal 9 instead of terminal 1 (9-3, 9-4, 9-20).
1 — 9	N.O.	HOLD-TO-RUN FUNCTION	The opening of the 1-9 contact enables the hold-to-run function: - hold-to-run opening 1-3; - hold-to-run closing 1-4. <i>NOTE: any safety device, automatic closing and plug-in card inserted in AUX1 or AUX2 is disabled.</i>
1 — 20	N.O.	PARTIAL OPENING	The closing of the contact activates a partial opening operation of motor 1 (M1) of the duration set with the RP trimmer. Once the automation stops, the partial opening control performs the opposite operation to the one performed before stop. <i>NOTE: if automatic closing is enabled, the stop is not permanent but lasts for a duration set by TC.</i>

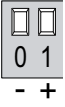









**WARNING:** make a jumper for all the N.C. contacts if not in use. The terminals with the same number are equal.



## 5.1 SOFA1-SOFA2 self-controlled safety edge

Command	Function	Description
 <p>SOFA1-SOFA2</p>	SAFETY TEST	Place the SOFA1-SOFA2 device into its housing for plug-in cards AUX1 or AUX2. With JR14=OFF, connecting terminal 41 enables a safety edge test cycle before every operation. If the test fails the SA led flashes and the test is repeated.
	N.C. OPENING SAFETY	Connect the output contact of device to terminals 1-6 on the control panel (in series with the photocell output contact, if installed). <i>ATTENTION: make a jumper among 41-6 contacts if not used.</i>
	N.C. CLOSING SAFETY	Connect the output contact of device to terminals 1-7 on the control panel (in series with the photocell output contact, if installed). <i>ATTENTION: make a jumper among 41-7 contacts if not used.</i>
	N.C. REVERSE SAFETY CONTACT	Connect the output contact of device to terminals 1-8 on the control panel (in series with the photocell output contact, if installed). <i>ATTENTION: make a jumper among 41-8 contacts if not used.</i>



## 6. OUTPUTS AND ACCESSORIES

Output	Value - Accessories	Description
	24 V= / 0.5 A	<b>Accessories power supply.</b> Power supply output for external accessories, including automation status lamp. Electronically protected output.
1 —  — 13	24 V= / 3 W	<b>Automation status lamp (proportional).</b> The light switches off when the automation is closed; the light switches on when the automation is open; the light flashes with a variable frequency while the automation is operating.
0 —  — 14	<b>LAMPH</b> 24 V= / 25 W	<b>Flashing light.</b> With DIP6=OFF activated during opening and closing operations. Output protected by F2 fuse.
0 —  — 14	24 V= / 25 W	<b>Courtesy light.</b> With DIP6=ON an external courtesy light that turns on for 180 s with every opening (total or partial), step-by-step and closing command can be connected. Output protected by F2 fuse.
0 —  — 15	24 V= / 300 mA	<b>Electric block.</b> It is activated when the automation is closed. Output protected by F2 fuse.
0 —  — 15	12 V~ / 15 W	<b>Electric lock.</b> Connect the supplied 8.2 Ω / 5W resistance in series. Output protected by F2 fuse.
<b>AUX1</b> <b>AUX2</b>		The control panel has two housings for plug-in cards such as a radio receiver type, magnetic loops, etc. Plug-in card operating is selected using DIP1. <i>WARNING: the plug-in cards must be inserted and removed with the power supply disconnected.</i>
<b>COM</b> 		<b>DO NOT USE</b>
<b>BAT</b> 	<b>BATKH</b> 2 x 12 V / 2 Ah	<b>Battery operating.</b> The batteries are kept charged when the power supply is on. If the power supply is off, the control panel is powered by the batteries until power is re-established or until the battery voltage drops below the safety threshold. If this occurs, the control panel turns off. <i>WARNING: the batteries must always be connected to the control panel for charging. Periodically check the efficiency of the batteries.</i> <i>NOTE: the operating temperature of the rechargeable batteries is approximately +5°C/+40°C.</i>


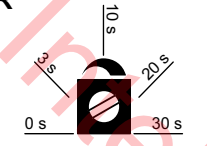




## 7. ADJUSTMENTS




	Description	OFF 	ON 
DIP1	<b>Plug-in cards operation.</b> <i>NOTE: it sets the operating mode of the plug-in cards connected on AUX1 and AUX2.</i>	Step-by-step.	Opening.
DIP2	<b>Restore automatic closing time.</b>	50%	100%
DIP3	<b>Automation status at power on.</b> Indicates how the control panel considers automation when powered up.	Open.	Closed. <i>NOTE: if the automatic closing function is not used, preferably set DIP3=ON.</i>
DIP4	<b>Electric lock release.</b>	Disabled.	Enabled. <i>NOTE: when the electric lock is installed, set DIP4=ON.</i>
	<b>Electric block operation.</b> <i>NOTE: only with EO=OFF.</i>	Powered for the entire opening and closing operation.	Powered only with the automation closed.
DIP5	<b>3 seconds preflashing.</b>	Disabled during opening. Enabled only with automatic closing with TC>3 s.	Enabled for both opening and closing.
DIP6	<b>Output 0-14 operation.</b>	Flashing light.	Courtesy light.

DOKE





















































	Description	OFF 	ON 
FC	<b>Limit switch mode selection.</b>	Stop limit switch.	Slow down limit switch.
SO	<b>Reversal safety switch function.</b>	With the automation blocked, if the contact 1-8 is open, it is possible to activate the opening operation.	With the automation blocked, if the contact 1-8 is open, any operation is impossible.
EO	<b>Electric lock operation.</b>	Powered for 2.5 s at the beginning of the opening operation.	Powered for 1.2 s at the beginning of the opening operation.
OM	<b>Automation type.</b>	Automation with 1 motor or with 2 motors in parallel.	Automation with 2 independent motors.
FS	<b>FUTURE USE</b>	/	/
NIO	<b>Electronic antifreeze system.</b> Maintains motor function even at low ambient temperatures.	Enabled.	Disabled.
JR14	<b>Safety test terminal 41.</b>	Enabled.	Disabled.



Trimmer	Description
<p><b>TC</b></p> 	<p><b>Setting automatic closing time.</b> From 0 to 120 s.</p> <p>With DIP2=OFF, once a safety switch has been activated, the counter starts as soon as the safety switch is released (for example after passing through the photocells), and lasts for a period of time set with trimmer TC (50%).</p> <p>With DIP2=ON, the counter starts when automation is opened and lasts for the entire duration set with trimmer TC (100%).</p> <p><i>NOTE: after the activation of the stop command, once contact 1-9 has closed again, automatic closing is only enabled after a total, partial or step-by-step opening command.</i></p>
<p><b>TR</b></p> 	<p><b>Setting motor 1 (M1) closing delay time.</b> From 0 to 30 s.</p> <p>When closing, motor 1 (M1) arrives after a delay set with trimmer TR relative to motor 2 (M2).</p> <p>When opening, motor 2 (M2) starts after a delay of 3 s relative to motor 1 (M1).</p> <p>With TR=MIN the door wings start simultaneously.</p> <p><i>NOTE: setting TR=MIN with non-overlapping door wings and setting TR&gt;3 s with overlapping door wings is recommended.</i></p>
<p><b>RP</b></p> 	<p><b>Motor 1 (M1) partial opening adjustment.</b></p> <p>Adjust the percentage of partial opening of motor 1 (M1) from 10% to 100% of the total operation.</p>
<p><b>VM</b></p> 	<p><b>Operation speed adjustment.</b></p> <p>Adjusts the automation operation speed.</p> <p>The closing speed is the same as the opening speed.</p>
<p><b>M1-M2</b></p> 	<p><b>Motor 1 (M1) operating time adjustment.</b> From 5 s to 30 s.</p> <p><b>Motor 2 (M2) operating time adjustment.</b> From 5 s to 30 s. <i>(or from 5 s to 45 s depending on the settings in paragraph 6.4).</i></p> <p>The opening/closing operation is shown in chapters 11, 12 and 13: the operation consists of a part with the speed set with trimmer VM, the duration set with trimmer M1/M2 and deceleration to a fixed speed when both opening and closing.</p> <p>When opening, this deceleration lasts a maximum of 10 s and when closing, it lasts until the mechanical stop or a stop limit switch is reached (with FC=OFF).</p>
<p><b>R1</b></p> 	<p><b>Force adjustment.</b></p> <p>The control panel is fitted with a safety device which, when it detects an obstacle:</p> <ul style="list-style-type: none"> <li>- during opening, stops movement with a disengagement operation;</li> <li>- during closing, before deceleration, inverts movement;</li> <li>- during closing, during deceleration with FC=ON stops movement and with FC=OFF inverts movement.</li> </ul>

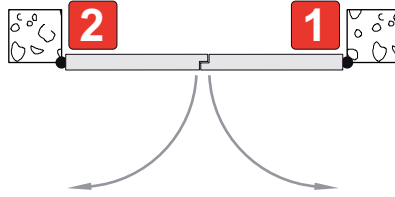
LED	On	Flashing
<b>IN</b> 	Receipt of command or change in status of a dip-switch.	/
<b>SA</b> 	At least one of the safety contacts is open.	<p>••••• Safety test failure (terminal 41).</p> <p>Operations count performed (only when control panel is switched on):</p> <p>• = 1000 operations</p> <p>••••• = 10000 operations</p>
<b>POWER ALARM</b> 	Power supply on.	<p>••••• Incorrect selection of type of automation (jumper S1, S2, S3, S4). <i>NOTE: the signal lasts 10 s after which the control panel is automatically reset.</i></p> <p>••••• Absence of motor or incorrect selection of jumper OM. <i>NOTE: the signal lasts 10 s after which the control panel is automatically reset.</i></p>

## 7.1 Selection of automation type

Automation type	S1	S2	S3	S4
Factory settings	 N.C.	 N.C.	 N.C.	 N.C.
<b>OBBI3BH, ARCBH</b>	 N.O.	 N.C.	 N.C.	 N.C.
<b>CUBIC30H, CUBIC6H</b>	 N.C.	 N.O.	 N.C.	 N.C.
<b>CUBIC30H+CUBIC30LI, CUBIC6H+CUBIC6TC CUBIC6H+CUBIC6TIG</b>	 N.C.	 N.O.	 N.O.	 N.C.
<b>BOX3SH</b>	 N.C.	 N.C.	 N.C.	 N.O.
<b>ARC1BH, DOR1BH (recommended dimensions)</b>	 N.C.	 N.O.	 N.C.	 N.O.
<b>ARC1BH (limit dimensions)</b>	 N.O.	 N.O.	 N.O.	 N.C.
<b>DOR1BH (limit dimensions)</b>	 N.O.	 N.C.	 N.C.	 N.O.
<b>FACIL3H</b>	 N.C.	 N.C.	 N.O.	 N.O.
<b>DOKE</b>	 N.O.	 N.O.	 N.C.	 N.C.
<b>LUXO3BH, LUXO4BH</b>	 N.O.	 N.O.	 N.C.	 N.O.
<b>LUXO5BH (recommended dimensions)</b>	 N.C.	 N.C.	 N.O.	 N.C.
<b>LUXO5BH (limit dimensions)</b>	 N.O.	 N.C.	 N.O.	 N.C.

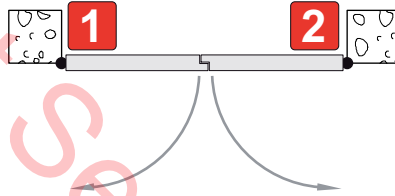
## 8. CONNECTION OF MOTORS

Motor 2	Control panel terminal board	
	34	36
OBBI3BH	Black	Blue
ARCBH ARC1BH	Black	Blue
CUBIC30H	Black	Blue
CUBIC6H CUBIC6HV	Black	Blue
LUXO3BH LUXO4BH LUXO5BH	31/34	33/36
FACIL3H	Blue	Black



Motor 1	Control panel terminal board	
	31	33
OBBI3BH	Blue	Black
ARCBH ARC1BH	Blue	Black
CUBIC30H	Blue	Black
CUBIC6H CUBIC6HV	Blue	Black
LUXO3BH LUXO4BH LUXO5BH	31/34	33/36
FACIL3H	Black	Blue

Motor 1	Control panel terminal board	
	31	33
OBBI3BH	Black	Blue
ARCBH ARC1BH	Black	Blue
CUBIC30H	Black	Blue
CUBIC6H CUBIC6HV	Black	Blue
LUXO3BH LUXO4BH LUXO5BH	31/34	33/36
FACIL3H	Blue	Black



Motor 2	Control panel terminal board	
	34	36
OBBI3BH	Blue	Black
ARCBH ARC1BH	Blue	Black
CUBIC30H	Blue	Black
CUBIC6H CUBIC6HV	Blue	Black
LUXO3BH LUXO4BH LUXO5BH	31/34	33/36
FACIL3H	Black	Blue

## 9. START-UP



**WARNING** *The operations in point 4 are performed without safety devices. The trimmer can only be adjusted with the automation idle. At every start-up the control panel receives a RESET and the first operation is performed at reduced speed (automation position acquisition) one wing at a time (first motor M2 and then motor M1).*

- 1- Make a jumper for the N.C. safety contacts.
- 2- Check the application type selected. Select the type of automation with jumpers S1, S2, S3 and S4 as described on page 10.
- 3- If installed, adjust the opening and closing stop limit switches.  
*NOTE: limit switches must be kept pressed until the operation has been completed.*
- 4- Set TC=MAX and R1=MAX.  
Set TR=MIN or TR>3 s in case of automation with two overlapping door wings.
- 5- Switch on and check that the automation is operating correctly with subsequent opening and closing commands.  
If installed, check that the limit switches are activated.  
*NOTE: if the direction of rotation of the motor is incorrect for the desired direction of the automation, swap the power supply polarity 31-33 or 34-36.*
- 6- If used, adjust the deceleration limit switches during opening and closing and set M1=MAX and M2=MAX. Adjust trimmer VM and check the opening speed and closing speed.  
*NOTE: if the wings reach the mechanical stops too quickly, advance limit switch intervention.*
- 7- If the limit switches are not used:
  - set M1=50%, M2=50% and VM=50%;
  - check that the automation is operating correctly with subsequent opening and closing commands;  
*WARNING: wait for the operation to complete before giving the next command.*
  - adjust the operation time using trimmers M1 and M2 so that the wings approach the mechanical stops slowly. We recommend setting a deceleration time that guarantees completion of the operation even in the presence of friction or other adverse environmental factors (wind, ice, etc.).
- 8- Connect the safety devices (removing the relative jumpers) and check they work correctly.
- 9- If required, adjust the delay time during closing of motor 1 (M1) with trimmer TR.
- 10- If required, adjust the automatic closing time with the TC trimmer.  
*WARNING: the automatic closing time after a safety device has triggered depends on the DIP2 setting.*
- 11- Set the obstacle thrust with the R1 trimmer.  
*NOTE: if the door wing closing second encounters an obstacle, both door wings are reopen and the subsequent closing operation is performed one door wing at a time.*  
*WARNING: check that the working forces exerted by the door wings are compliant with EN12453-EN12445 regulations.*
- 12- If required, adjust the partial opening of motor 1 (M1) with trimmer RP.
- 13- If required, connect the radio receiver by placing it in the housing for plug-in cards AUX1 or AUX2 and program the remote controls as indicated in the installation manual.
- 14- Connect any other accessories and check they operate correctly.
- 15- Once the start-up and check procedures are completed, close the container.

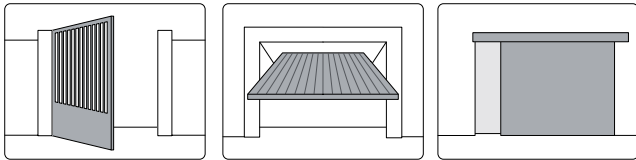


**NOTE: in the event of servicing or if the control panel is to be replaced, repeat the start-up procedure.**

## 10. TROUBLESHOOTING

Problem	Possible causes	Remedy
The automation does not open or close.	No power. (POWER ALARM led off).	Check that the control panel is powered correctly.
	Short circuited accessories. (POWER ALARM led off).	Disconnect all accessories from terminals 0-1 (voltage must be 24 V=) and reconnect one at a time.
	Blown line fuse. (POWER ALARM led off).	Replace F1 fuse.
	Safety contacts are open. (SA led on).	Check that the safety contacts are closed correctly (N.C.).
	Motor(s) not connected. (POWER ALARM led flashing).	Check correct connection of motor(s). Check the setting of jumper OM.
	Wrong selection of automation type. (POWER ALARM led flashing).	Check the correct selection of jumpers S1, S2, S3 and S4.
	Safety contacts not correctly connected or self-controlled safety edge not functioning correctly. (SA led flashing).	Check connections to terminals 6-7-8 on control panel and connections to the self-controlled safety edge.
	The opening and closing commands do not work.	Check that IN led comes on with each opening and closing command.
	Incorrect setting of jumper JR14.	Check the connections of the safeties as described on page 5-6.
	Photocells are activated. (SA led on).	Check that the photocells are clean and operating correctly.
The automatic closing does not work.		Check that the TC trimmer is not set at the maximum.
		Check that contact 1-2 is closed.
External safety devices not activating.	Incorrect connections between the photocells and the control panel.	Connect N.C. safety devices together in series and remove any bridges on the control panel terminal board.
The automation reopens by itself, from the closing stop.	Limit switch not working. (SA and IN leds flashing).	Check the correct working of the limit switches.
The flashing light is not working.	Blown F2 fuse.	Replace F2 fuse.
The electric lock is not working.		
The remote control has limited range and does not work with the automation moving.	The radio transmission is impeded by metal structures and reinforced concrete walls.	Install the antenna outside.
		Substitute the transmitter batteries.

## 11. EXAMPLE APPLICATION FOR ONE-MOTOR AUTOMATIONS



When the control panel is used in applications for automations with one swinging door wing, for up-and-over doors or for sliding doors, these connections can be made:

### (Fig. 11.1) Use without limit switches.

Set OM=OFF.

Connect the motor as shown in the figure.

*NOTE: during the opening operation, the polarities are those indicated in the figure.*

Set VM to the desired speed.

Set M1 so as to obtain slow down of the door wing before the mechanical stop.

With the above connections the wing stops on the opening and closing mechanical stop.

When the time set with M1 runs out:

- on opening operation the slow down time is a maximum of 10 s;
- on closing operation the wing slows down until it reaches the mechanical stop.

### (Fig. 11.2) Use with slow down limit switches.

Set OM=OFF.

Connect the motor and slow down limit switches as shown in the figure:

- [A] opening slow down limit switch;
- [C] closing slow down limit switch.

Set VM to the desired speed.

Set M1=MAX.

With the above connections the wing stops on the opening and closing mechanical stop.

After the slow down limit switch has been triggered on opening operation and on closing operation the maximum slow down time is 10 s.

### (Fig. 11.3) Use with stop limit switch.

Set OM=OFF and FC=OFF.

Connect the motor and stop limit switches as shown in the figure:

- [A] opening stop limit switch;
- [C] closing stop limit switch.

*NOTE: a single limit switch can also be installed.*

Set M1<MAX.

Set VM to the desired speed.

Set M1 so as to obtain slow down of the door wing before the limit switch is triggered.

With the above connections, the wing stops when the limit switch operates.

When the time set with M1 runs out:

- on opening operation the slow down time is a maximum of 10 s;
- on closing operation the wing slows down until it reaches the stop limit switch.

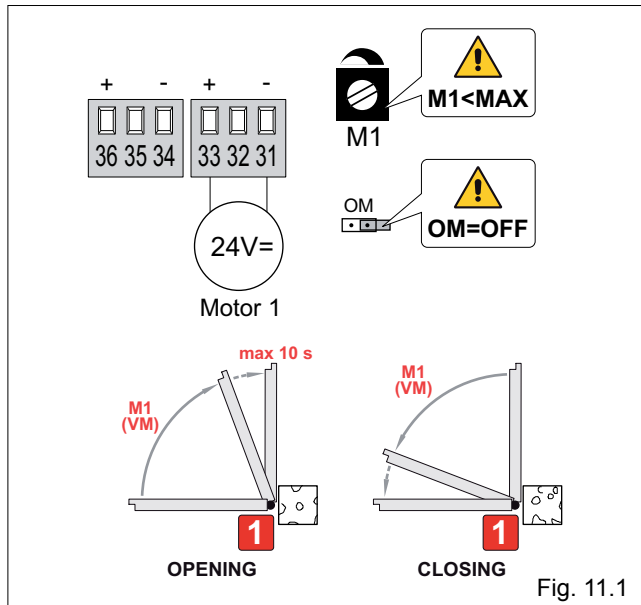


Fig. 11.1

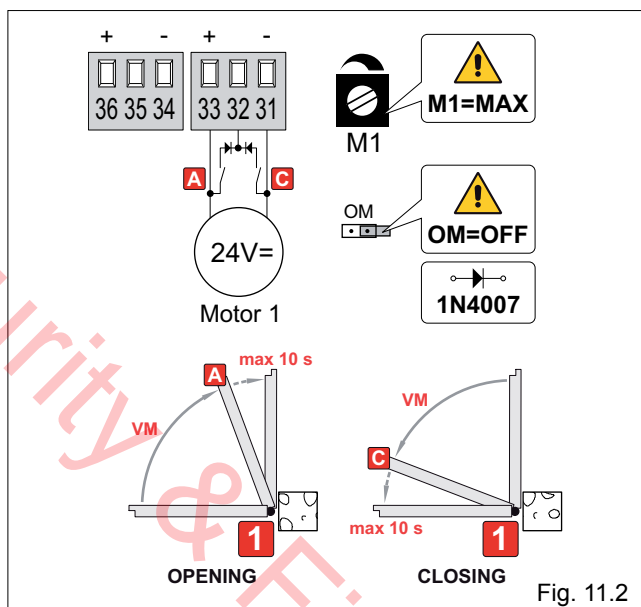


Fig. 11.2

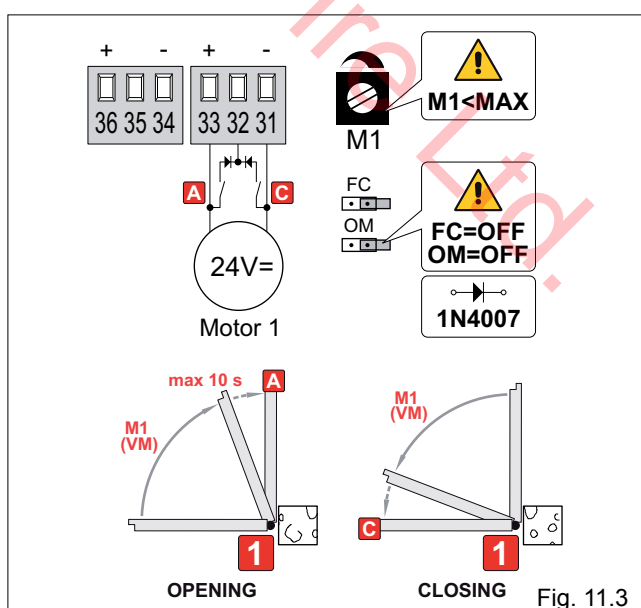
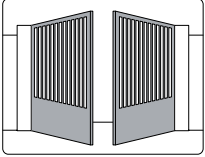


Fig. 11.3

## 12. EXAMPLE APPLICATION FOR TWO-MOTORS SWING GATES



When the control panel is used in applications for automations with two swinging door wings, these connections can be made:

### (Fig. 12.1) Use without limit switches.

Connect the motors as shown in the figure.

**NOTE:** during the opening operation, the polarities are those indicated in the figure.

Set VM to the desired speed.

Set M1 and M2 so as to obtain slow down of the door wing before the mechanical stops.

With the above connections each wing stops on the opening and closing mechanical stop.

When the time set with M1 runs out:

- on opening operation the slow down time is a maximum of 10 s;
- on closing the wings slow down until they reach the mechanical stop.

### (Fig. 12.2) Use with slow down limit switches.

Connect the motors and slow down limit switches as shown in the figure:

- [A] opening slow down limit switch;
- [C] closing slow down limit switch.

Set M1=MAX and M2=MAX.

Set VM to the desired speed.

With the above connections each wing stops on the opening and closing mechanical stop.

After the slow down limit switch has been triggered on opening operation and on closing operation the maximum slow down time is 10 s.

### (Fig. 12.3) Use with stop limit switch.

Set FC=OFF.

Connect the motors and stop limit switches as shown in the figure:

- [A] opening stop limit switch;
- [C] closing stop limit switch.

**NOTE:** a single limit switch can also be installed for each motor.

Set M1<MAX and M2<MAX.

Set VM to the desired speed.

Set M1 and M2 so as to obtain slow down of the door wing before the limit switch is triggered.

With the above connections, each wing stops when the limit switches operate.

When the time set with M1-M2 runs out:

- on opening operation the slow down time is a maximum of 10 s;
- on closing operation the wings slow down until they reach the stop limit switch.

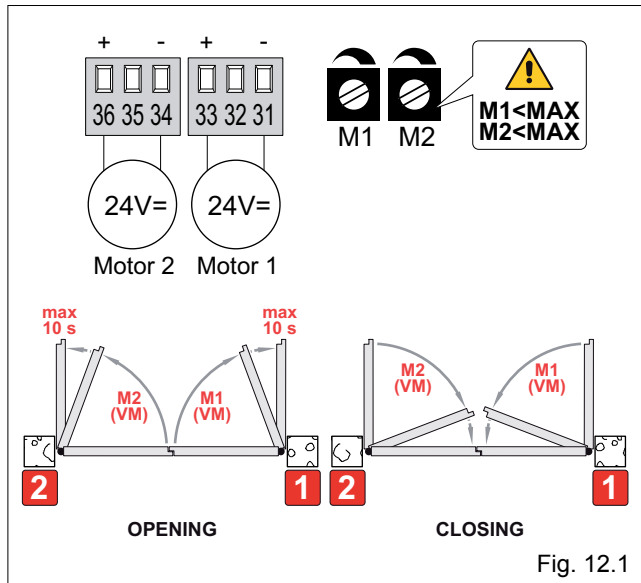


Fig. 12.1

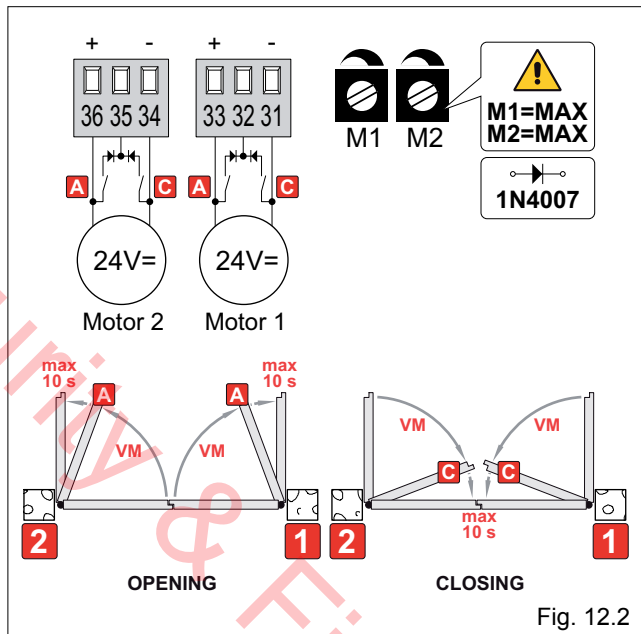


Fig. 12.2

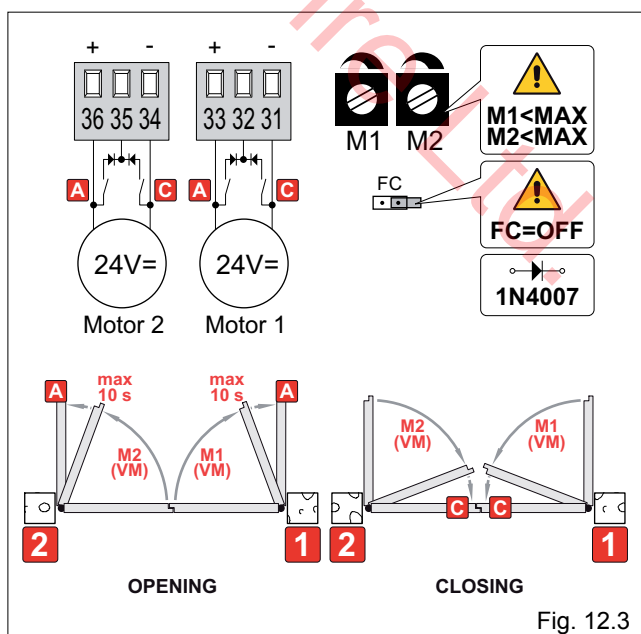
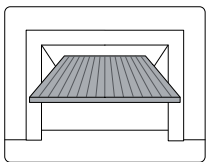


Fig. 12.3

## 13. EXAMPLE APPLICATION FOR UP-AND-OVER DOORS WITH IN-PARALLEL MOTORS



When the control panel is used in applications for automations with up-and-over doors with two parallel motors, these connections can be made:

### (Fig. 13.1) Use without limit switches.

Set OM=OFF.

Connect the motors as shown in the figure.

*NOTE: during the opening operation, the polarities are those indicated in the figure.*

Set VM to the desired speed.

Set M1 so as to obtain slow down of the door wing before the mechanical stop.

With the above connections the wing stops on the opening and closing mechanical stop.

When the time set with M1 runs out:

- on opening operation the slow down time is a maximum of 10 s;
- on closing operation the wing slows down until it reaches the mechanical stop.

### (Fig. 13.2) Use with slow down limit switches.

Set OM=OFF.

Connect the motors and slow down limit switches as shown in the figure:

- [A] opening slow down limit switch;
- [C] closing slow down limit switch.

Set M1=MAX. Set VM to the desired speed.

With the above connections the wing stops on the opening and closing mechanical stop.

After the slow down limit switch has been triggered on opening operation and on closing operation the maximum slow down time is 10 s.

### (Fig. 13.3) Use with stop limit switch.

Set OM=OFF and FC=OFF.

Connect the motors and stop limit switches as shown in the figure:

- [A] opening stop limit switch;
- [C] closing stop limit switch.

*NOTE: a single limit switch can also be installed.*

Set M1<MAX. Set VM to the desired speed.

Set M1 so as to obtain slow down of the door wing before the limit switch is triggered.

With the above connections, the wing stops when the limit switch operates.

When the time set with M1 runs out:

- on opening operation the slow down time is a maximum of 10 s;
- on closing operation the wing slows down until it reaches the stop limit switch.

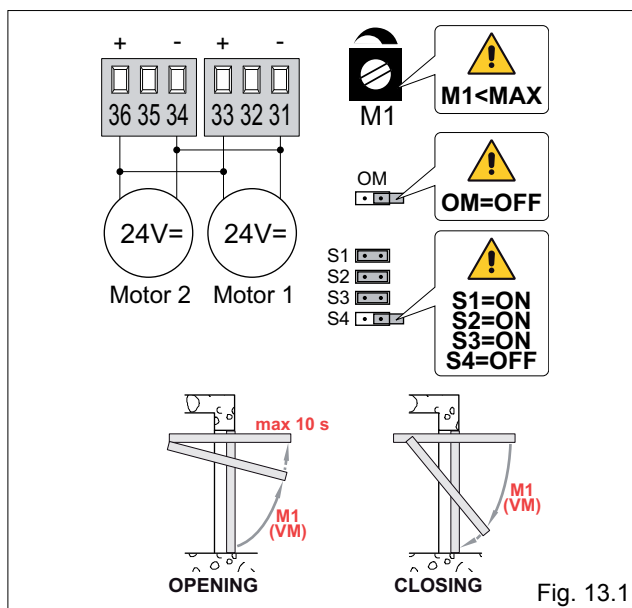


Fig. 13.1

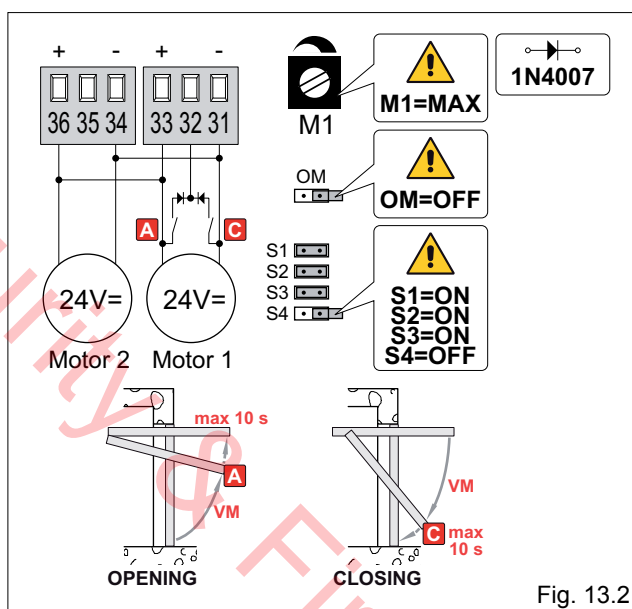


Fig. 13.2

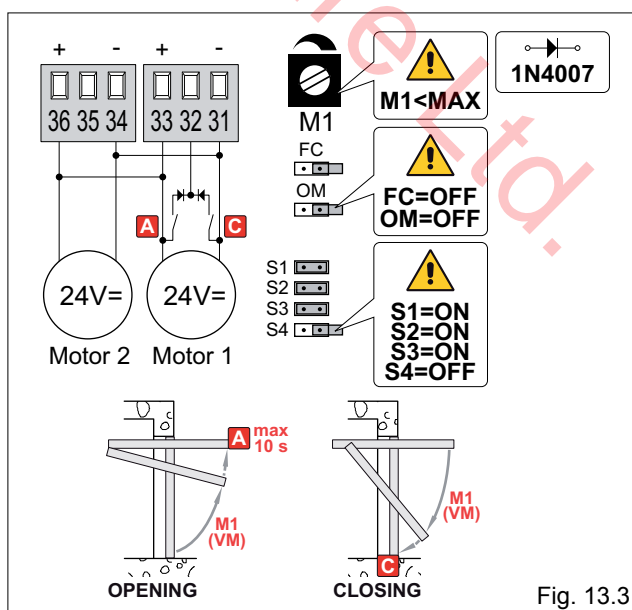


Fig. 13.3



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