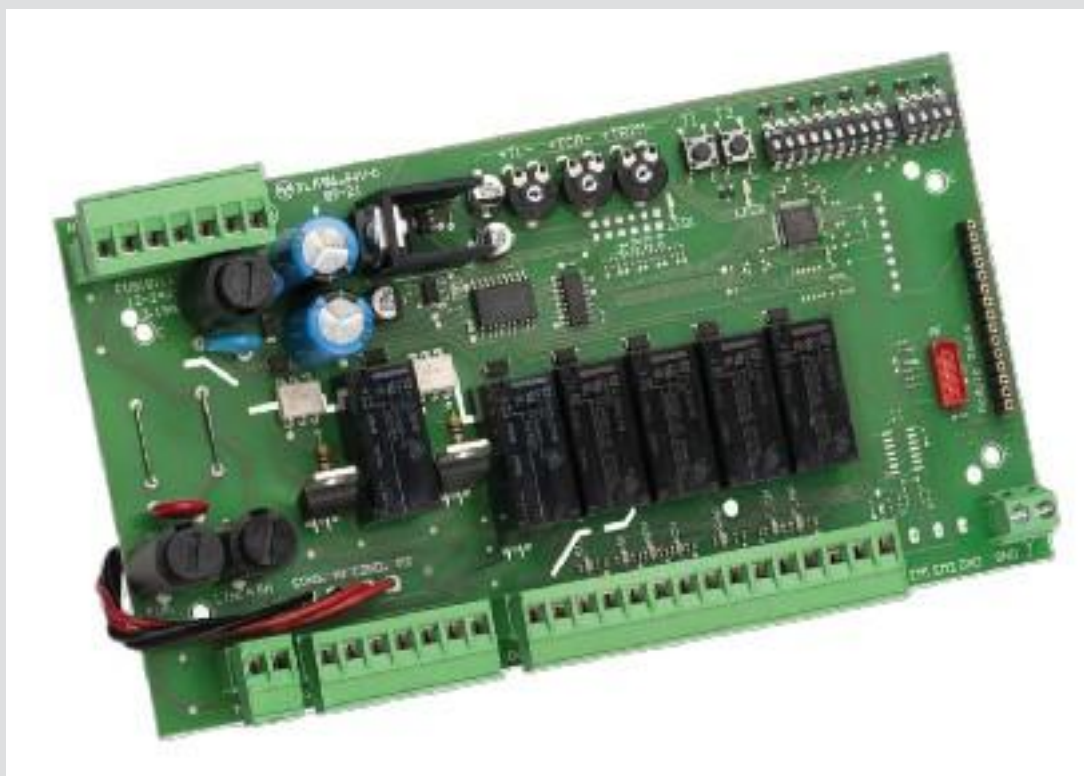


AZ33

APE-152/3003



**Installation manual for replacement
control unit for swing gates
(with 230 VAC motor)**

Abexo®

CE

AUTOMATION ACCESSORIES

ABEXO is a registered trademark owned by
ABTECNO srl - Via Cicogna 95
40068 San Lazzaro di Savena (BO)
info@abtecno.com www.abexo.tech

1- TECHNICAL SPECIFICATIONS

Operating voltage	230Vac $\pm$ 10% (50-60Hz)
Maximum motor power	600W per motor
Service output voltage	24Vac 20W max.
Electric lock output voltage	12Vac 15W max.
Flashing light output voltage	230Vac 200W max.
Courtesy light output voltage	230Vac 200W max.
Gate-open indicator output voltage	24Vac 3W max.
Auxiliary relay output	230Vac / 15A max.
Motor force adjustment	From 50% to 100%
Operating time	80s max.
Plug-in radio module	433,92MHz o 30,900MHz (not included)
Operating temperature	-10°C / +50°C
Maximum humidity	<95% (without condensation)

Control unit compatible with ATI, FERNI and FROG swing gate motors at 230Vac

Removable input/output terminal blocks

LED display of input status

Step-by-step control (PAP) with 2 operating modes and partial opening control (APP)

Safety devices: opening photocell (FAP), closing photocell (FCH) and motor stop control (ST)

Auxiliary relay output

Electronic motor force adjustment (50-100) %

Deceleration at the end of the manoeuvre, both when opening and closing

Water hammer effect can be activated to facilitate the release of the electric lock

Connector for original Came 433.92MHz or 30.900MHZ radio module

2- GENERAL CONDITIONS



Dear Customer, thank you for purchasing our product. Please read this instruction manual carefully and keep it for future reference, as it contains important information regarding the device's operation and safety.

The descriptions and diagrams in this booklet are not binding. While maintaining the main characteristics of the equipment unchanged, the manufacturer reserves the right to update this booklet at any time and without obligation, for technical improvements or for any other commercial reason.

This manual is intended for installers and qualified personnel involved in the installation of electrical equipment, familiar with the construction and accident prevention criteria for automated gates. The materials used must be certified and suitable for the conditions of use of the automation system.

The equipment must be used exclusively for its intended purposes. Any other use is considered improper and therefore dangerous.

Keep children away from gate control devices (remote controls, push-button panel). Do not allow children or animals to play or stand near the gate.

Periodically check the automation system to ensure the absence of imbalances, signs of wear or damage. If any are detected, immediately stop using the gate.

Before carrying out any installation, adjustment, maintenance or cleaning operation on the automation system or its components, disconnect the main power supply through the dedicated magnetothermal switch at the beginning of the system.

The control unit must be connected to the main power supply through an omnipolar magnetothermal switch, with an opening distance between contacts no less than 3mm. This device must be protected from accidental activation (installation of a lockable box).

Post visible signs indicating the presence of an automated gate.

- ☒ Install the control unit away from electromagnetic interference, heat sources and water streams.



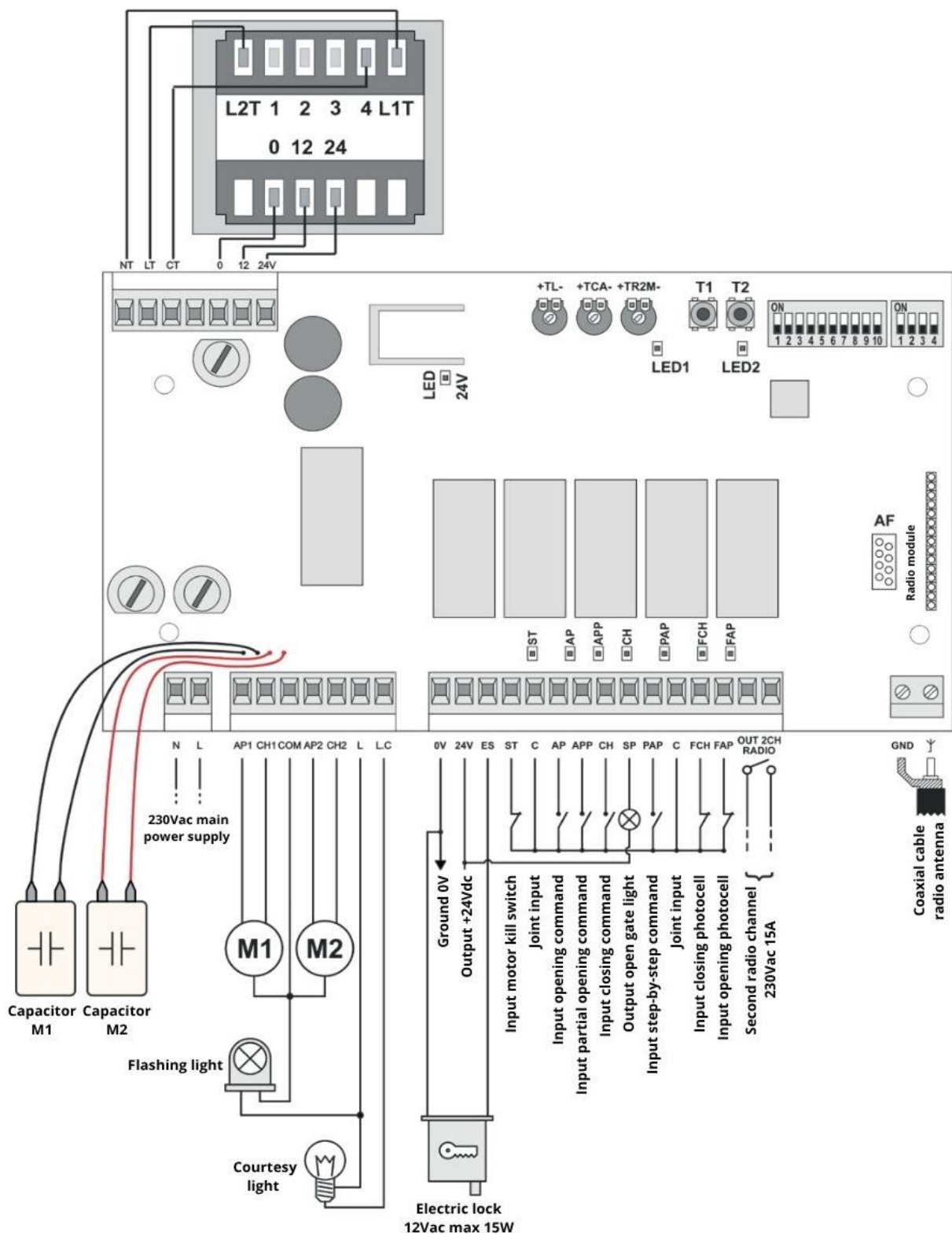
WARNING! Failure to comply with the above instructions will revoke the manufacturer's liability for damage to people, objects and animals resulting from improper use of the control unit.

3- WARRANTY

This product is covered by a 24-month warranty starting from the documented date of purchase. The warranty covers product malfunction caused by manufacturing defects; therefore, any faults resulting from negligence, improper use, tampering, or weather-related events are excluded. Tampered products will not be repaired.

The manufacturer doesn't assume liability for any damage to objects or people caused by improper use, wrongful application of the usage regulations and illegal uses. It doesn't answer for damage caused by inoperability or inefficiency of the device.

4- WIRING DIAGRAM



CODE	DESCRIPTION
NT	Neutral output 230Vac for transformer
LT	Phase output 230Vac for transformer
CT	Torque limiter input from transformer
0	Potential reference input 0V
12	12Vac input from transformer
24V	24Vac input from transformer

N	Neutral power supply input 230Vac $\pm$ 10% (50-60Hz)
L	Phase power supply input 230Vac $\pm$ 10% (50-60Hz)

AP1	Opening output M1 Motor (following shutter)
CH1	Closing output M1 Motor (following shutter)
COM	Joint Motor output
AP2	Opening output M2 Motor (moving shutter)
CH2	Closing output M2 Motor (moving shutter)
L	Flashing light output 230Vac
L.C	Courtesy light output 230Vac

0V	Potential reference output 0V
24V	Power supply output +24Vac
ES	Electric lock output +12Vac
ST	Input motor kill switch (NC)
C	Joint input
AP	Input opening command (NO)
APP	Input partial opening command (NO)
CH	Input closing command (NO)
SP	Output open gate light
PAP	Input step-by-step command (NO)
C	Joint input
FCH	Input closing photocell (NC)
FAP	Input opening photocell (NC)
CH2	Output second radio channel
GND	Ground antenna
	Antenna connection

LEGENDA	
	(N.C.) Usually closed port, short circuit with C if not in use
	(N.O.) Usually open port, leave open if not in use
	Port LED OFF, the port is open
	Port LED ON, the port is closed

6- INPUT – OUTPUT CONNECTIONS

Connect the control unit to the external transformer:

- Connect the NT terminal to the L1T lead of the transformer.
- Connect the LT terminal to the L2T lead of the transformer.
- Connect the CT terminal to lead 4 (max. pair) of the transformer.
- Connect terminal 0 to the transformer's lead 0.
- Connect terminal 12 to the transformer's lead 12.
- Connect the 24V terminal to the transformer's lead 24.

Connect the 230Vac mains power supply to terminals N and L.



WARNING! During the connection of inputs and outputs, the control unit must be unplugged.

Connect the motors according to the type of your system:

- System with 1 motor: connect the opening wire to terminal AP2, the closing wire to terminal CH2 and the common wire to terminal COM.
- System with 2 motors: connect the opening wire of the motor on the swing gate to terminal AP2, the closing wire to terminal CH2 and the common wire to terminal COM. Connect the opening wire of the motor on the swing gate to terminal AP1, the closing wire to terminal CH1 and the common wire to terminal COM.

Connect a 230Vac flashing light to the L and COM terminals.

The flashing light is powered directly by the relay, so it is not necessary to take power from other terminals.

Connect a 230Vac courtesy light to terminals L.C and L.

The courtesy light is powered directly by the relay, so there is no need to take power from other terminals.

The 0V terminal is the control unit's grounding and must be used as the negative pole for any external devices powered by the control unit.

The 24V terminal can be used as a pole for powering external 24Vac devices.



WARNING! If replacing the original Came board, it is necessary to reverse the wires between terminals 10-11 corresponding to 0V-24V of the AZ33.

Connect a 12Vac electric lock to terminals ES and 0V.

During each opening cycle, the lock activates for approximately 2 seconds.

Connect a kill switch (NC) to terminals ST and C.

If the button is triggered (contact opens), the motor's movement stops immediately. After activation, no operation can be performed until the contact is restored to its normally closed (NC) condition.

Connect a normally open (NO) push button to terminals AP and C to perform the gate opening command.

Connect a normally open (NO) push button to terminals APP and C to perform the partial opening command.

Connect a normally open (NO) push button to terminals CH and C to perform the gate closing command.

Connect a 24Vac indicator light to terminals SP and 24V to signal the gate status.

Connect a step-by-step (NO) push button to terminals PAP and C.

The operating modes can be selected via the DIP-switch (see paragraph 9).

Connect a closing photocell (NC) to terminal FCH (31) (see paragraph 7).

Connect an opening photocell (NC) to terminal FAP (34) (see paragraph 7).

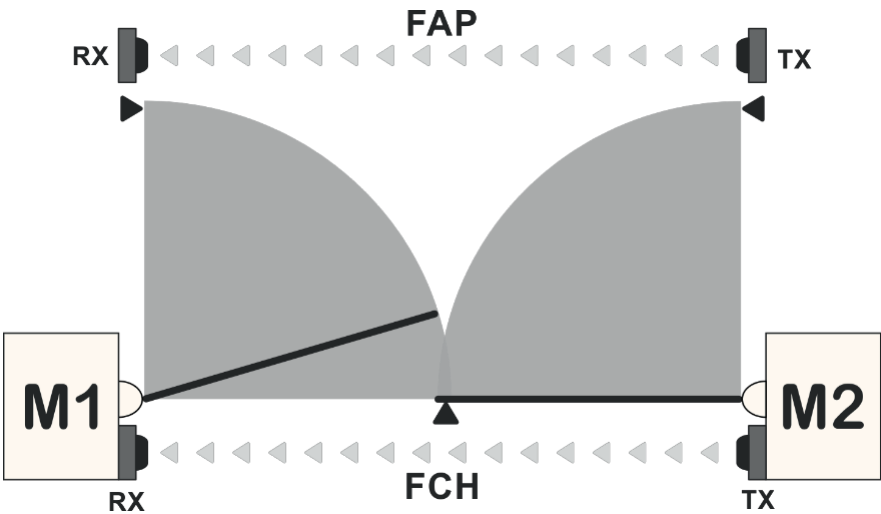
Connect an external device to terminal CH2 RADIO to be controlled via CHANNEL 2 (230Vac – 15A).

Connect an antenna to terminals ANT and GND, ensuring correct connection of the hot pole and grounding (see paragraph 8).

7- PHOTOCELLS

The AZ33 control unit supports the use of one FCH photocell and, optionally, a second one identified as FAP. To disable one photocell (or both), it is necessary to activate DIP8 and/or 9 (see paragraph 9).

NOTE: For swing gates, assign FCH to the position outside the residential perimeter and FAP to the position inside the residential perimeter (see figure below)

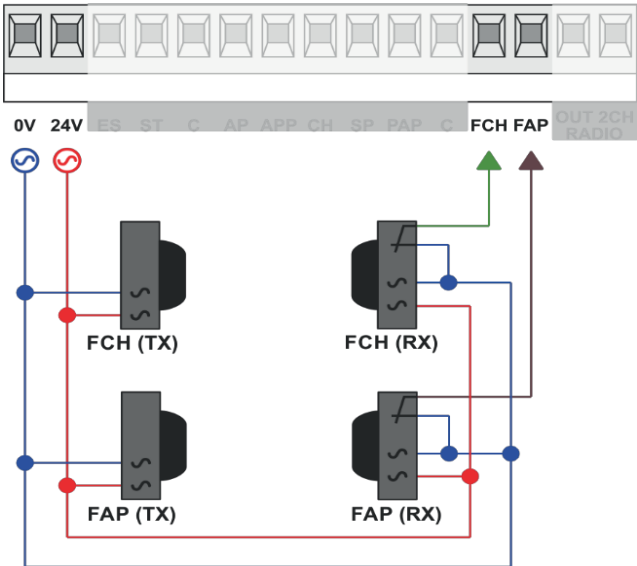


PHOTOCELL	DESCRIPTION	FUNCTION
FCH	Closing photocell	Its intervention only blocks closing movements and immediately performs a reopening.
FAP	Opening photocell	Its intervention only blocks opening movements and immediately performs a re-closing action. The operating mode can be configured with DIP10 (see paragraph 9).

PHOTOCELL WIRING

- Connect the power supply of the TX transmitters and RX receivers to terminals 0V and 24V.
- Bridge terminal 0V with one relay contact of the external receiver, then connect the other relay contact to the FCH terminal input.
- Bridge terminal 0V with one relay contact of the internal receiver, then connect the other relay contact to the FAP terminal input.

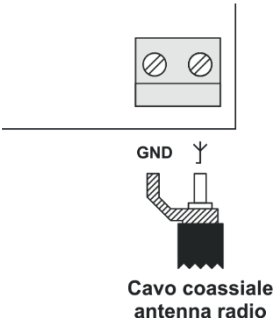
NOTE: Terminals C and 0V are equivalent.



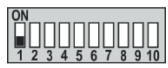
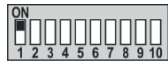
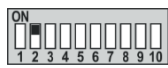
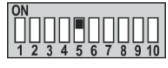
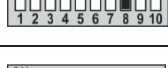
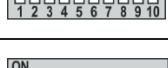
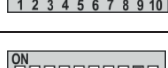
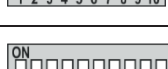
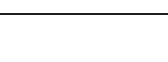
8- ANTENNA

Connect the antenna signal cable to the  terminal and the grounding wire to the GND terminal (see figure opposite).

The presence of moisture in walls or metal parts nearby could negatively affect the range of the system. It is therefore recommended to install the antenna at the highest possible point. Use an RG58 or similar coaxial cable (50 Ohm impedance) with a maximum length of 5 metres.

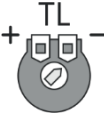


The AZ33 control unit includes two 10- and 4-way dip switches that can be used to modify certain operating parameters.

DIP	POSITION	FUNCTION	DESCRIPTION
1 OFF		Automatic closure	DISABLED: the gate closes exclusively with a manual/radio command.
1 ON			ENABLED: the gate closes automatically at the end of the waiting period or with a manual/radio command.
2 OFF		Step-by-step PAP command	OPEN-CLOSE: at each press of the PAP, the action is performed according to the sequence indicated in the subject line.
2 ON			OPEN-STP-CLOSE-STP: at each press of the PAP, the action is performed according to the sequence indicated in the subject line.
3 OFF		Radio command	The radiocommand works the same as the step-by-step PAP command.
3 ON			CONDOMINIUM: The radiocommand only opens. The gate closes when the waiting time runs out or with a PAP/CH command.
4 OFF		LAMP pre-warning	DISABLED: the flashing light turns on during the gate's movement.
4 ON			ENABLED: the flashing light turns on 5s before the gate's movement.
5 OFF		Obstacle detection	DISABLED: obstacle detection disabled.
5 ON			ENABLED: obstacle detection enabled.
6 OFF		Dead man	DISABLED: commands PAP, AP, CH and radiocommand work automatically.
6 ON			ENABLED: commands PAP, AP, CH work on a deadman switch and radiocommand is disabled.
7 OFF		Water hammer	DISABLED
7 ON			ENABLED: at the start of the opening maneuver, when the gate is closed, the M2 moving door closes briefly to facilitate the unlocking of the electric lock.
8 OFF		Opening photocell FAP	ENABLED: opening photocell is active and working.
8 ON			DISABLED: opening photocell is inactive.
9 OFF		Closing photocell FCH	ENABLED: closing photocell is active and working.
9 ON			DISABLED: closing photocell is inactive.
10 OFF		Photocell mode FAP	CLOSES: when the FAP opening photocell is activated, the gate closes immediately
10 ON			LOCK: when the FAP opening photocell is activated, the gate stops and remains stationary until it receives a manual/radio command.

DIP	POSITION	FUNCTION	DESCRIPTION
1 OFF		System type	2 DOORS: the gate has two doors.
1 ON			1 DOOR: the gate has two doors.
2 OFF		Slowdown	DISABLED: the entire cycle runs at the same speed.
2 ON			ENABLED: part of the cycle slowed down. NOTA: the deceleration is fixed and cannot be adjusted.
3 OFF 4 OFF		Motors' power	100%
3 OFF 4 ON			75%
3 ON 4 OFF			60%
3 ON 4 ON			50%

10 - TRIMMERS

FUNCTION	DESCRIPTION
	WORKING TIME (1s÷80s): working times adjustment of both leaves to ensure the correct gate movement. NOTE: it is not possible to adjust the working time for each door.
	AUTOMATIC CLOSING TIME (1s÷120s): waiting time before automatic reclosing. NOTE: to facilitate short time settings, the trimmer set at mid-position corresponds to approximately 20s
	- 1-DOOR SYSTEMS: adjustment of PARTIAL OPENING time (from 0% to 100%). Partial opening is a movement that can only be activated when the gate is completely closed; it allows only the M2 door to be opened according to the set percentage. - 2-DOOR SYSTEMS: adjustment of the offset between the two doors when closing in order to prevent them from overlapping. When closing, door M2 (swing door) moves later than door M1 (hinged door) depending on the set time. At 0s, the offset is disabled and the doors close simultaneously.

11- INSTALLATION

- Before proceeding with the AZ33 control unit installation, ensure the system is correctly assembled (motors, gate, safety devices, etc.). Do not connect the control unit to a system that has not yet been fully installed.
- Check that the connections to and from the control unit correspond to the wiring diagram (see section 4).
- Release the motors and position the doors halfway, then lock them in position.



WARNING! Ensure that there are no objects, people or animals within the gate's range of movement. Furthermore, a connection fault in the control unit cannot be excluded, which could lead to the system operating incorrectly and therefore posing a danger.

- Power up the control unit. If any abnormal behaviour is observed, switch off the main switch immediately, then check the connections again.
- Check that the 24V red LED and the red LEDs for the normally closed inputs (ST, FCH and FAP) are switched on.

NOTE: If one or more photocells are disabled, the red LED for that input will be off.

6. Enable the “Dead man’s switch” function by setting DIP6 to ON.
 7. Check the correct connection of the motors:
When the AP or PAP button is held down, the M2 leaf (active door) should move to open. After a few seconds, the M1 leaf (passive door) should move. When the AP or PAP button is released, both door leaves will stop.
-  **WARNING!** If one or more doors are not opening in the correct direction, switch off the main power supply immediately and reverse the motor phases (AP/CH) associated with that door.
8. Once correct functioning of the motors and their direction have been checked, move the doors to the fully closed position and restart the control unit.
 9. Set the DIP switches according to the operating mode required.
 10. Perform a series of tests and adjust the gate’s operating time using the TL trimmer (see section 10) until you have found the correct operating time for your system.
 11. Adjust the TCA and TR2M trimmers according to the desired operating modes.

12- INDICATOR (OPEN DOOR WARNING LIGHT)

WARNING LIGHT	DESCRIPTION
OFF	Closed gate
STILL	Open but still gate or unknown position

13- FLASHING LIGHT

FLASHING LIGHT	DESCRIPTION
OFF	Still gate
STILL	Moving gate

14- FUSES

To check and, if necessary, replace the fuses, you must switch off the mains power supply using the circuit breaker located upstream of the system. Do not power the board if it has no fuses or if the fuse ratings differ from those listed in the table below:

FUSE	VALUE	DESCRIPTION
FUS. LINEA	5 A/T	230Vac Power supply input protection
FUS. 12-24V	3,15 A/T	12-24V Power supply protection

15- RADIO MODULE

The AZ33 control unit is equipped with an AF connector compatible with the following original Came receivers:

- AF30 (TOP 30,900 MHz)
- AF43S / AF43SM (TAM/TOP 433,92 MHz)
- AF43SR (ATOMO 433,92 MHz)



WARNING! Before inserting the receiver into the AF connector, ensure that the control panel unplugged.

17.1- PROGRAMMING A REMOTE CONTROL FOR GATE OPERATION

- Press the T1 button; LED2 will start to flash slowly.
- Press and hold the button on the remote control you want to memorize until LED2 stays lit, then release it.
- LED2 goes out, indicating that the remote control is programmed.
- Repeat the steps described above for all the buttons on the remote controls to be programmed.

17.2- PROGRAMMING A REMOTE CONTROL FOR AUXILIARY RELAY (2CH RADIO)

- Press the T2 button, LED2 will start flashing double.
- Press and hold the remote control you want to memorize until LED2 stays lit, then release it.
- LED2 goes out, indicating that the remote control is programmed.
- Repeat the steps described above for all the buttons on the remote controls to be programmed.

17.3 DELETING A COMMAND

- **Press T1 or T2 twice, LED2 will start flashing rapidly.**
- **Press and hold the button you want to delete until LED2 stays lit, then release it.**
- **LED2 goes out, indicating that the remote control is deleted.**
- **Repeat the steps described above for all the buttons on the remote controls to be programmed.**

17.4 TOTAL RESET OF THE RECEIVER

- **Hold T1 and T2 at the same time until LED2 starts flashing rapidly, then release.**

16- DISPOSAL

Disposal of the materials must follow current regulations, and it's advised separating the waste by material (paper, plastic, electrical parts).



17 - DECLARATION OF CONFORMITY

With this the manufacturer declares that the AZ33 control unit is compliant with the essential requisites established by the Directive 2014/53/EU (RED).

	MAINTENANCE LOG
Installer: (name, address, phone number)	

TECHNICAL DATA OF THE MOTORIZED GATE AND INSTALLATION:

Client	(Name, address, contact person)
Order number	(Client's order number and date)
Model and description	(Type of gate)
Dimensions and weight	(Dimensions and weight of the gate)
Serial number	(Gate serial number)
Placement	(Placement address)

LIST OF INSTALLED COMPONENTS:

Motor/Power unit	(Model, type, serial number)
Electrical panel	(Model, type, serial number)
Photocells	(Model, type, serial number)
Safety devices	(Model, type, serial number)
Control devices	(Model, type, serial number)
Radio devices	(Model, type, serial number)
Flashing lights	(Model, type, serial number)
Other	(Model, type, serial number)