

Instruction manual

SH230 MULTI APE-152/3010

SH230 MULTI AUX APE-152/3011



APE-152/3010 230V GATE CONTROL UNIT WITH MULTIFREQUENCY RECEIVER
APE-152/3011 230V GATE CONTROL UNIT WITH MULTIFREQUENCY RECEIVER
WITH AUXILIARY RELAY

1- UNIT COMPARISON

	Relay AUX	Radiocommands with Fixed, BeB and G codes	Multibrand* Radiocommands
APE-152/3010	-	Y	Y
APE-152/3011	Y	Y	Y

* A list of the compatible multibrand radiocommands is available upon request from our commercial partners.

2- TECHNICAL SPECIFICATIONS

Main power voltage	230Vac $\pm$ 10% (50Hz)
Motor output voltage	230Vac
Max motor power	800W
Flashing light output voltage	230Vac
Max flashing light power	40W
Output auxiliary relay AUX (only FBA and MFA)	Clean contact (5A 250Vac / 5A 28Vdc)
Service output voltage	12Vac
Operating time	Programmable (3÷90) s
Automatic closing time	Programmable (max. 240s)
Radio module	(433,92-868,3) MHz
Box dimensions	(140 x 96 x 50) mm
Degree of protection	IP53
Operating temperature	-10°C / +50°C

3- CONDIZIONI GENERALI



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

- Install the control unit away from electromagnetic interference, heat sources and water streams. The container is made of thermoplastic material with a degree of protection IP56, therefore it's rainproof but not protected from direct water streams.
- Post visible signs indicating the presence of an automated gate.

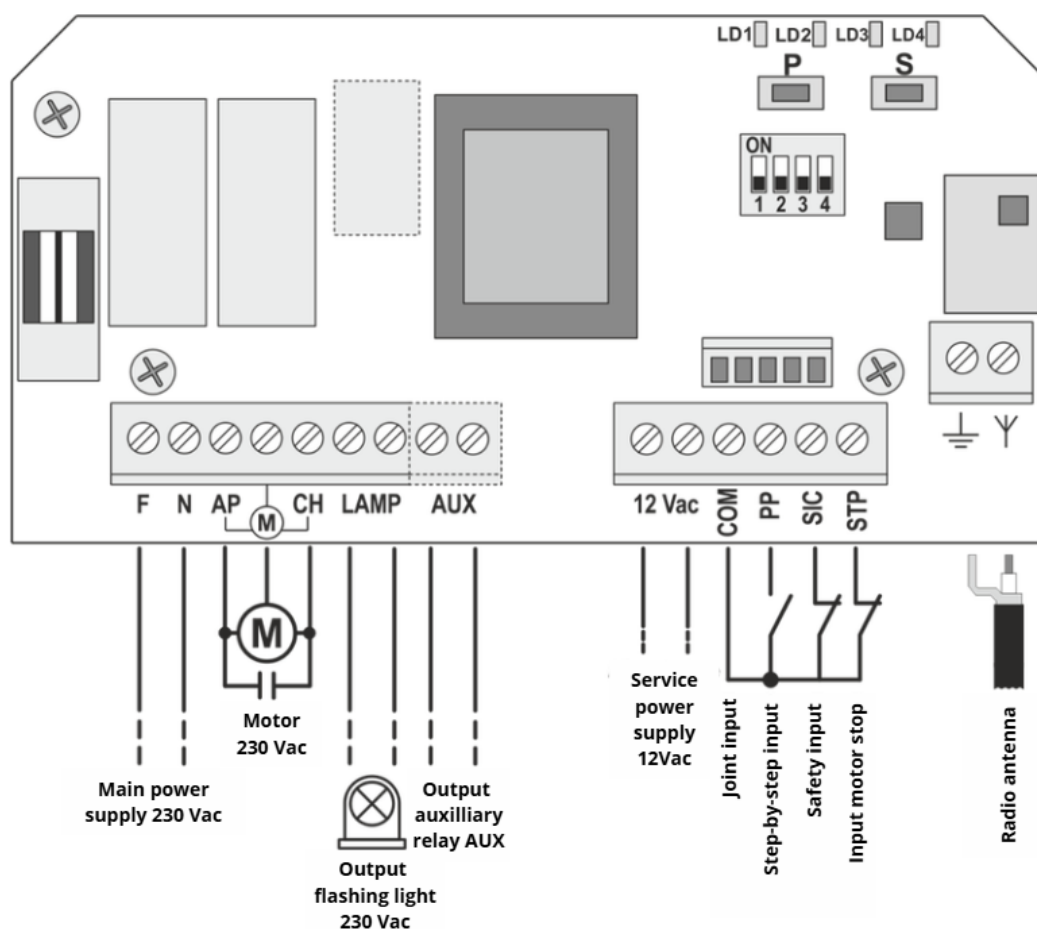
⚠ WARNING! Failure to comply with the above instructions will revoke the manufacturer's liability for damage to people, objects and animals resulting from improper use of the control unit.

4- 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.

5- WIRING DIAGRAM



F	Mains phase input 230Vac
N	Mains neutral input 230Vac
AP	Motor, opening coiling
CH	Motor, closing coiling
LAMP	Output flashing light 230Vac
AUX	Output auxiliary relay with clean contacts (only FBA and MFA)
12Vac	Output operating voltage 12Vac
COM	Joint input
PP	Step-by-step input (NO)
SIC	Safety input (NC)
STP	Input motor stop (NC)
	Antenna shield
	Conductor antenna

LEGENDA	
	(NC) Usually closed port, short circuit with COM if not in use.
	(NO) Usually open port, leave open if not in use.

6- INPUT-OUTPUT CONNECTIONS

- Connect the **F** and **N** clamps to the main power supply 230Vac.



WARNING! During the connection of inputs and outputs the unit must be unpowered.

- Connect the motor according to the opening (**AP**) and closing coiling (**CH**), the central clamp is reserved for the joint connections.
- Connect to the **LAMP** clamp a flashing light 230Vac.
The light is powered directly by the unit, it's not necessary to use any other clamp for power.
- An additional device (e.g. courtesy light) can be connected to the **AUX** clamps (only FBA and MFA).
It's a clean contact relay, so it's necessary to power the additional device externally.
- The **12Vac** clamps provide alternating tension to power external devices (e.g. photocell).
- Use the **COM** clamp as a joint slot for the **PP**, **SIC** e **STP** inputs.
- To the **PP** (NO) clamp can be connected a button or a key switch for the step-by-step function
- To the **SIC** (NC) clamp can be connected a safety device (e.g. photocell). If the contact opens while the automation is closing (engaging the photocell), the control unit re-opens it or stops the movement according to the mode selected. The **SIC** clamp doesn't intervene during opening.
- To the **STP** (NC) clamp can be connected a safety device (e.g. emergency button). In case of intervention (open contact), the motor's movement is immediately stopped. After the intervention no other movement is allowed until the successful restoration of normally closed (NC) contact.
NOTE: if no safety device is connected, it's necessary to close the **SIC** and **STP** clamps with the **COM** clamp through a bridge, to ensure the correct functioning of the control unit.

7- RADIOCOMMAND RECORDING

- The **MF** and **MFA** versions can memorize up to 400 codes (fixed, BeB, G and multibrand*).
- The **FB** and **FBA** versions can memorize up to 250 codes (fixed, BeB, G).

* A list of the compatible multibrand radiocommands is available upon request from our commercial partners.

NOTE: each memorized button corresponds to one code.

Example: if you memorize all the channels from a 4-button radiocommand, the control unit will learn 4 codes.

7.1- RECORDING RADIOCOMMAND TO MANAGE THE MOTOR:

Press once the **P** button.

When the red LED **LD1** starts to flash, press and hold the radiocommand's button you want to record until all four red LEDs (**LD1**, **LD2**, **LD3** and **LD4**) are lit, then release. Later it'll show the kind of radiocommand that was recorded (see table at the end of the paragraph).

Repeat this procedure for all the buttons you want to use to manage the motor.

7.1.1- RECORDING RADIOCOMMANDS WITH SEED:

Press once the **P** button.

When the red LED **LD1** starts to flash, press and hold the radiocommand's button you want to record until the red LED **LD2** starts to regularly flash, then release.

Now transmit the radiocommand's SEED code and keep transmitting it until all four red LED (**LD1**, **LD2**, **LD3** and **LD4**) are lit. Later it'll show the kind of radiocommand that was recorded (see table at the end of the paragraph).

NOTE: if you don't know the procedure to transmit the SEED code, keep holding down the button you want to record, it'll be memorized as a fixed code HCS.

7.2- RECORDING RADIOCOMMAND TO MANAGE THE AUX RELAY (only FBA and MFA):

Press twice the **P** button.

When the red LED **LD1** starts to flash, press and hold the radiocommand's button you want to record until all four red LEDs (**LD1**, **LD2**, **LD3** and **LD4**) are lit, then release. Later it'll show the kind of radiocommand that was recorded (see table at the end of the paragraph).

Repeat this procedure for all the buttons you want to use to manage the **AUX** relay.

7.2.1- RECORDING RADIOCOMMANDS WITH SEED:

Press twice the **P** button.

When the red LED **LD2** starts to flash, press and hold the radiocommand's button you want to record until the red LED **LD2** starts to regularly flash, then release.

Now transmit the radiocommand's SEED code and keep transmitting it until all four red LED (**LD1**, **LD2**, **LD3** and **LD4**) are lit. Later it'll show the kind of radiocommand that was recorded (see table at the end of the paragraph).

NOTE: if you don't know the procedure to transmit the SEED code, keep holding down the button you want to record, it'll be memorized as a fixed code HCS.

LD1	LD2	DESCRIPTION
		Radiocommand memorized as fixed code
	 	Radiocommand memorized as Rolling-code
	  	Rolling-code radiocommand memorized as fixed code

 Lit LED  Flashing LED

8- DELETING RADIOCOMMANDS

8.1- DELETING A RADIOCOMMAND: This function allows you to delete individually any of the radiocommands connected to the unit.

Press once the **P** button (the red LED **LD1** starts flashing), then press **S** button. In this phase the red LEDs (**LD1**, **LD2**, **LD3** and **LD4**) are lit. Place the radiocommand you want to delete about 10cm away from the unit, then press and hold the chosen button on the radiocommand until LEDs LD1 and LD2 turn off.

Repeat these steps for all the codes you want to individually delete.

8.2- COMPLETE RADIOCOMMAND RESET: this function allows you to delete all the radiocommands connected to the unit.



WARNING! This operation is irreversible, once deleted all the radiocomands must be once again recorded from scratch.

Press and hold the **P** and **S** buttons for about seven seconds until all the red LED start flashing rapidly, then release the button.

9- UNIT STATUS

LD3	LD4	DESCRIPTION
		The unit is closing (the gate is coming down)
		The unit is opening (the gate is rising)
		The gate is closed
		The gate is open
		The gate's position is unknown
		The gate is waiting for automatic closure (if enabled)

 Unlit LED  Lit LED  Flashing LED

10- LEARNING

In the learning phase the central unit memorizes the time the automation needs to complete the opening and closing movements.

1. Manually position the gate completely open and adjust the opening limit switch inside the motor.
2. Manually position the gate completely closed and adjust the closing limit switch inside the motor.
3. Manually position the gate halfway open and power up the control unit.
4. Put the **DIP2** on ON, and the four red LED **LD1**, **LD2**, **LD3** and **LD4** will light up.
5. Check that the **SIC** and **STP** are connected in NC position and **PP** in the NO position.
6. Give an input to **PP** or press the radiocommand button associated with the motor, to start the closing motion until the limit switch intervenes.

NOTE: if the gate rises, it's an opening motion. You need to turn off the unit, invert the connections **AP-CH** and restart the learning procedure.

7. Completed the closing motion (gate completely shut) give an input to **PP** or press the radiocommand button associated with the motor, the unit will immediately start the opposite movement (the gate will rise) until the limit switch intervenes.
8. Completed the opening motion (gate completely open) give an input to **PP** or press the radiocommand button associated with the motor. The red **LD1**, **LD2** and **LD3** will light up, while **LD4** flashes. The number of flashes (about one per second) represents the time to wait before the desired automatic closure.
*Example: **LD4** flashes 15 times, the automatic closure will start 15 seconds after the opening is complete.*
9. After waiting for the desired automatic closure time, give an input to **PP** or press the radiocommand button associated with the motor, the unit will start the closing motion until the limit switch intervenes.
10. Completed the closing motion (gate completely shut and flashing light turned off), give an input to **PP** or press the radiocommand button associated with the motor, the unit will start the opening movement (the gate will rise) until the limit switch intervenes.
11. No other motions are accepted, turn **DIP2** on OFF. The red LED **LD3** will light up, **LD1**, **LD2** and **LD4** will turn off.
12. The unit is correctly installed and it's now possible to customize the unit's functions.

11- PROGRAMMABLE FUNCTIONS

FUNCTION	DIP	POSITION	DESCRIPTION
Auxilliary relay AUX	1 OFF		The AUX relay <u>doesn't depend on</u> the motor's motion
	1 ON		The AUX relay <u>depends on</u> for the motor's motion
Learning	2 OFF		The unit is in operating mode
	2 ON		The unit is in operating time learning mode
Automatic closure	3 OFF		The automatic closure <u>is disabled</u>
	3 ON		The automatic closure <u>is enabled</u>
Dead man	4 OFF		The dead man switch <u>is disabled</u>
	4 ON		The dead man switch <u>is enabled</u>
Only opening	3-4 ON		The only open command <u>is enabled</u> (the closure starts at the end of the waiting time)

- Auxilliary relay **AUX** (only FBA and MFA)
 - Independent from the motor's motion: It's possible to command the relay only with an associated radiocommand (see paragraph 7.2). The relay is configurable bistable, impulsive, timer (seconds) and timer (minutes) modes.
 - Dependent on the motor's motion: the relay is closed every time the unit starts a motion (useful for a curtesy light). The relay is configurable bistable, impulsive, timer (seconds) and timer (minutes) modes.
NOTE: when the **AUX** relay is dependent on the motor's motion, in bistable and impulsive mode the contact stays closed for 60 seconds from the last command received.
- Learning: turn the **DIP2** on ON only in the learning phase. During operating phase, it must be OFF.
- Automatic closure: if turned off, the unit starts a closing motion (the gate lowers) only through a PP command or pressing the radiocommand button associated with the motor.
If it's enabled, the unit will automatically start a closing motion (the gate lowers) after a waiting time pre-determined by the installer during the learning phase.
- Dead man: if disabled, at an input to **PP** or press the radiocommand button associated with the motor, the unit will start the opening movement (the gate will rise) until the limit switch intervenes, or until a manual command or safety feature is engaged. The next move will always be opposite to the previous.
- Only opening command: when enabled only opening movements are possible. Closing motions are possible through a PP command or pressing the radiocommand button associated with the motor when the gate is completely open, or at the end of the waiting time pre-determined during the learning phase.

12- AUXILLIARY RELAY

Bistable mode: at an input from the associated radiocommand the relay closes, at the next it opens. The relay status is maintained until a different input comes in.

 **WARNING!** In the absence of power, the relay will revert to its resting status, which is open.

Impulsive mode: the contact stays closed while the associated button is pressed, once released it opens.

 **WARNING!** Potential signal disturbances could open the contact even if the button is pressed.

Timer (seconds) mode: in this mode, you can set a timer (in seconds) after which the relay opens on its own. The factory settings put the timer at 30 seconds.

 **WARNING!** The timer restarts each time the associated radiocommand is pressed.

Timer (minutes) mode: in this mode, you can set a timer (in minutes) after which the relay opens on its own. The factory settings put the timer at 30 minutes.

 **WARNING!** The timer restarts each time the associated radiocommand is pressed.

12.1 CONFIGURATION RELAY AUX:

- Press and hold the **S** button until the red LED **LD2** turns on, then release.
The LED will start flashing according to the mode selected (see following table).
NOTE: as factory settings the relay is configured into impulsive mode.
- Press the **P** button repeatedly to pass to the next mode in the cycle. Once selected the desired functioning mode, wait for the **LD2** to stop flashing.

NR BLINKS LD2	RELAY MODE
	BISTABLE
	IMPULSIVE
	TIMER (SECONDS)
	TIMER (MINUTES)

12.2 TIMER CONFIGURATION RELAY AUX:

In this phase the timers (seconds or minutes) will be configured at values different from the factory settings.

While in timer mode (seconds or minutes) press and hold the **S** button, after about two seconds the red LED **LD2** will start to flash regularly (on blink per second).

Hold the **S** button and count the **LD2** blinks according to the desired seconds or minutes.

Example: count 5 LED blink to set the timer to 5 seconds/minutes according to the mode pre-selected.

Once the blinks are equivalent to the desired timer, release the **S** button.

13- DISPOSAL

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



14- DECLARATION OF CONFORMITY

With this Ab Tecno S.r.l. declares that the unit is compliant with the essential requisites established by the Directive 2014/53/EU (RED).



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