V4.01

Automation Systems

Proteous Series

SIMPLY24

24V DC Universal Control Board



Attention Installer

The manual should be read cover to cover at least once prior to beginning installation

Installation flowchart on page 4

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1. Product Description

Preliminary checks

To ensure safety and an efficient automation make sure the following requirements are met:

1. The gate structure must be suitable for automation.
2. Make sure that the gate leaf's move properly and uniformly without any irregular friction during their entire travel.
3. The gates hinges must be in good condition with no biting, no rust and must be well greased.
4. The gates should be able to be freely opened and closed before installing the gates automation system.
5. It is strongly suggested to have a gate stop installed for the closed position .

Important safety information

Installer and owners should observe the following:
1. Make sure that there is sufficient space for the gate to Swing open fully without interference.
2. The solar box must be installed in the area within 10 meters maximum cable distance from motor.
3. Do not change with parts or components not supplied by the manufacturer, this includes sensors, buttons, solar panels, transformers and any component not listed in the compatibility list.
4. Make sure all wiring works are correct and in good condition before connecting the battery, solar panel or transformer to the control panel.
5. Turn off the power and disconnect the battery when doing any maintenance.
6. Ensure the control panel box is free from water leakage to avoid short circuiting of the control panel.
7. Do not supply mains power directly to the motor, control box or any accessories.
8. Do not install the operating system if in doubt. Contact the manufacturer.
9. Do not cross the gate while it is operating, Safety sensors are only to prevent accidents or injuries.
10. Keep the remote controls in safe place and away from children.

Before beginning installation the manual should be read thoroughly concerning all aspects of the installation including all precautions and safety information.

Proper steps should be taken to ensure efficient and safe installation for vehicles, property and persons within the operators working radius.

The system is fitted with an over current sensing feature to assist in preventing damages, injuries and death. All precautions must be taken by the installer that adjustments are set correct based on the gates weight, height and length. The system sensitivity should be set to allow consistent operation of the gates under normal operating conditions. This does not include operating against wind. The system may not detect against light loads such as small object, young children and animals. It is the operators duty to ensure that the area is clear prior to operation. Photo sensors or Reflective sensors should always be installed to assist in accident or death prevention. Rubber edging should be installed onto the gates to assist in dampening any accidents or damages.

You agree to install this product following any and all safety requirements listed in this manual or required under local, state or national regulations. APC Automation Systems, its distributors, stockist or sellers are not liable for any direct, indirect, incidental, special or consequentional damages or loss of profit wether based in contract or any other legal theory during the course of warranty or afterwards. If you do not feel capable of properly installing the operator based on the above information or otherwise do not proceed.

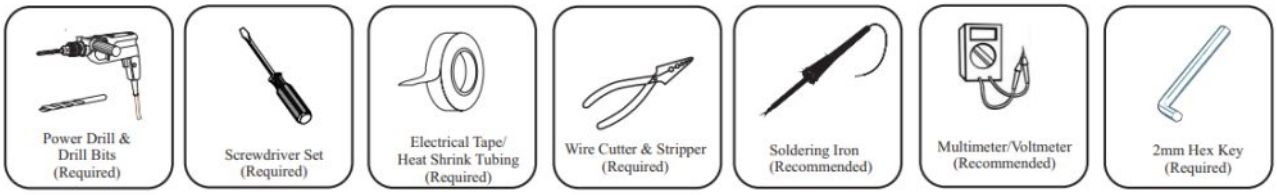
Specifications

Mains power supply	24 Volts AC / DC
Motor power supply	24V DC 280W and 10A per motor
Warning light power supply	24V max 15W
Gate pilot lamp power supply	24Vdc max 10W
Accessories power supply (photocells &)	24 Vdc max 10W
Radio receiver frequency	433.920 MHz
Storable remote controls	170
Radio antenna input	Rg58
Operating temperature	-20°C / +50°C

Main Features

- Automated access command for 1 or 2 24 V_{dc} motors. The dip switches can be used to configure the control unit in relation to the operator.
- Simple ONE PRESS full feature remote Ultra High-Security Rolling Code learning system.
- System can store up to 170 remotes
- Integrated management for electric locks 24V max. 15VA. This output can also be used to control courtesy lights.
- Double NC input for opening and closing limit switch.
- Inputs for start, stop and pedestrian opening wired commands, customisable to open, stop and close.
- Double input for safety devices: PHO1 during closing and PHO2 during closing and/or opening.
- Possibility of powering 24VDC accessories.
- Input for gate status pilot light signaling the position of the leaves.
- Input for external antenna that can be used for increasing the range of the transmitters.
- Flasher control with/without integrated intermittency function.
- Adjustable auto closing setting from 0 - 180 seconds with trimmer.
- Obstacle sensitivity adjustment with trimmer.
- Motor force adjustment with Power trimmer.
- Incorporated radio receiver (433.92MHz)
- Slow-speed opening and closing (customisable through dedicated programming).

Tools required



Compatible equipment

The equipment listed below does not affect the warranty of the control panel and have been tested and approved for use.
Limited warranty is applied to the control panel when used with third party equipment.

Single Gate Motors
- APC-PS-2000
- APC-PS-3000
- APC-PT-5000
- APC-PA-4200
- APC-STARK6
- APC-UG1400

Double Gate Motors
- APC-PS-4000
- APC-PS-6000
- APC-PT-9000
- APC-PA-8400
- APC-STARK12
- APC-UG2400

Keypads
- APC-KP1-C
- APC-KP2W
- APC-WF-KP (Mondo)

Push Buttons
- APC-PBS (K/KW)
- APC-PBD (K/KW)
- PB-800B

Solar Panels
- APC-SP24-20W
- APC-SP24-40W
- APC-SP24-60W

Receivers
- APC-LINK2
- APC-CONNECT4
- APC-RX2

Sensors
- APC-PE2000
- APC-RR-11
- APC-LD1-24

Remotes
- APC-RC4S
- APC-RC450S
- APC-RC4-SV

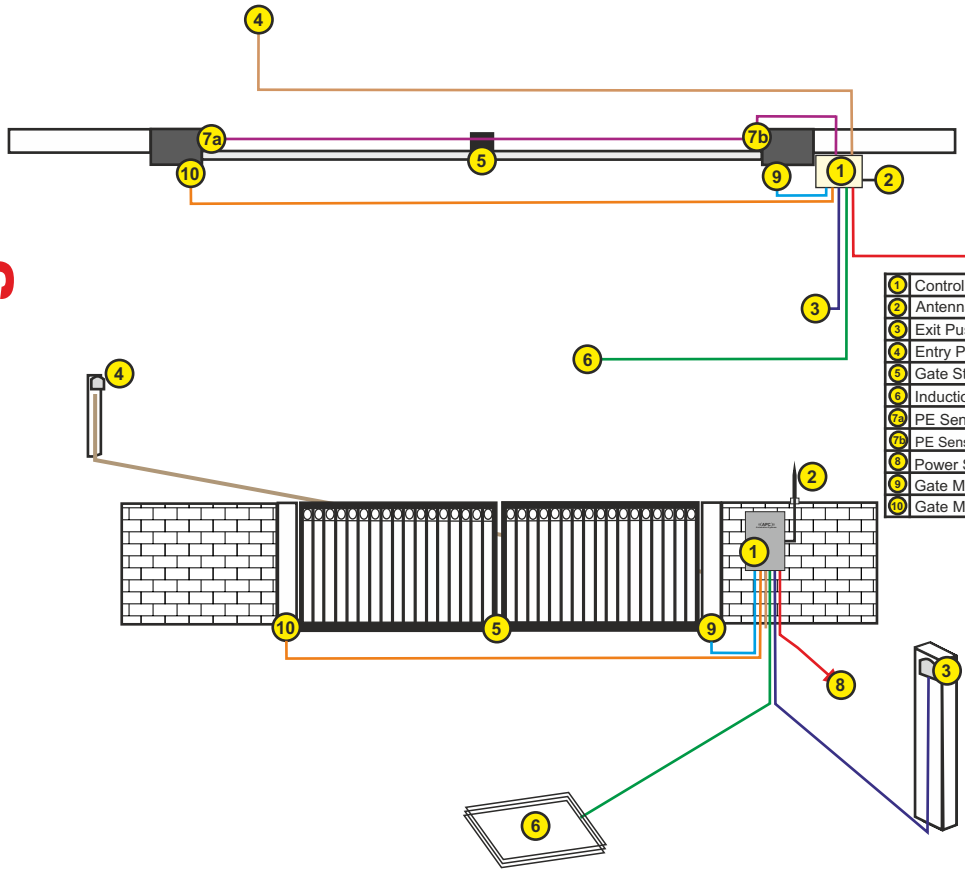
Electric Locks
- APC-EL-12Vs

Magnetic Locks
- APC-ML-280W

External Transformers
- APC External Transformer

Courtesy Light
- APC-ULA

Double Swing Gate

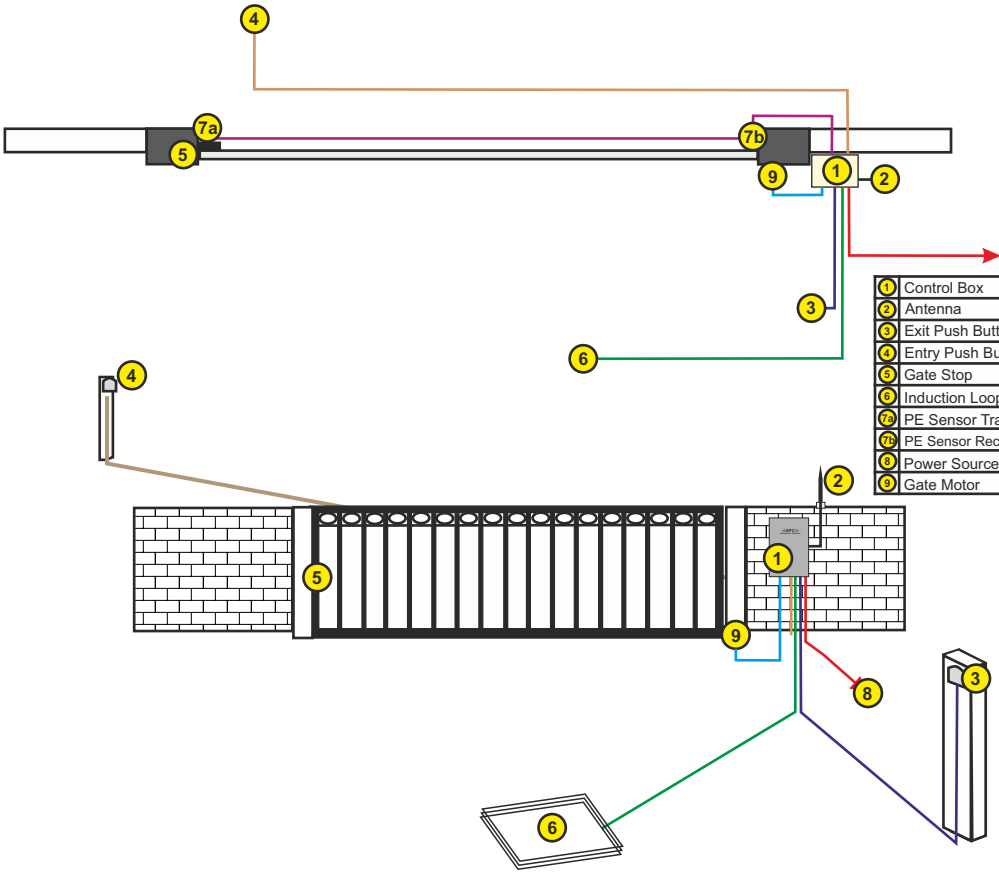


1	Control Box
2	Antenna
3	Exit Push Button/Keypad
4	Entry Push Button/Keypad
5	Gate Stop
6	Induction Loop
7a	PE Sensor Transmitter
7b	PE Sensor Receiver (Not required for Retro Reflective Sensor)
8	Power Source
9	Gate Motor 1
10	Gate Motor 2

Accessories Requiring Wiring:

Keypad - 4 Core
PBD/PBD-K - 4 Core
PBS/PBS-K - 2 Core
PE Sensor
Receiver - 4 Core

Single Swing Gate



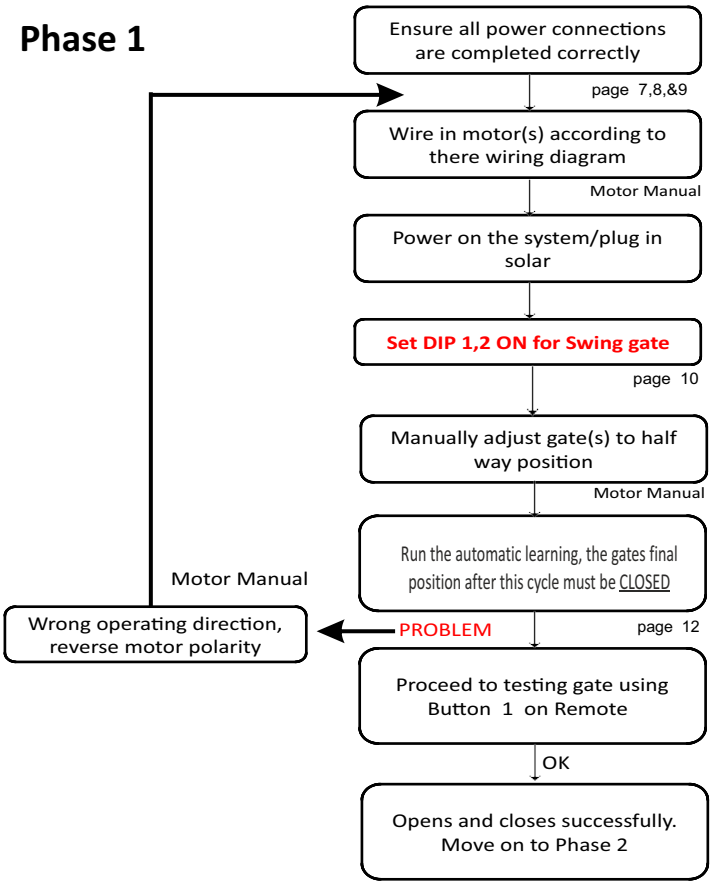
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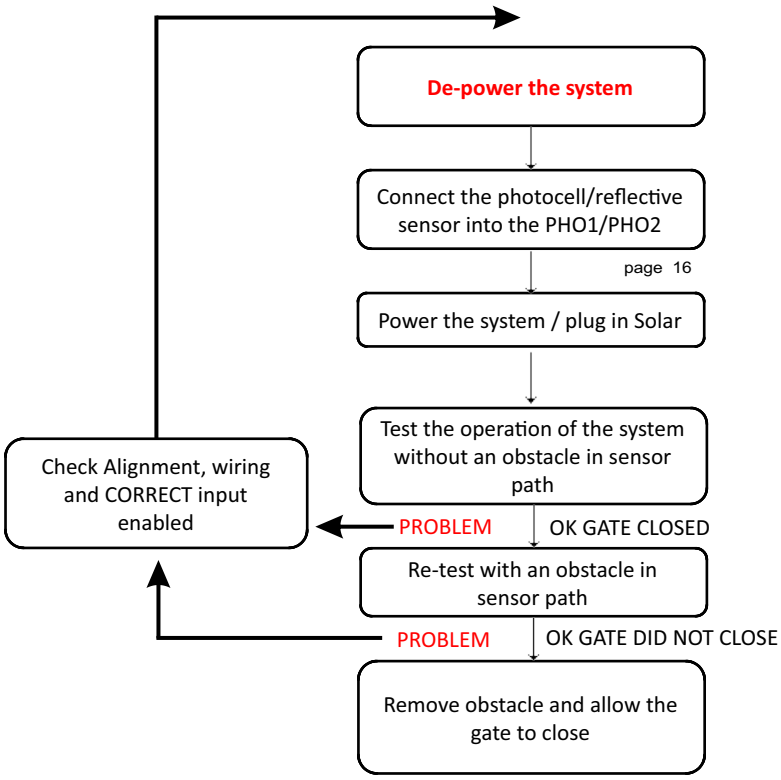
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Transmitter - 2 Core

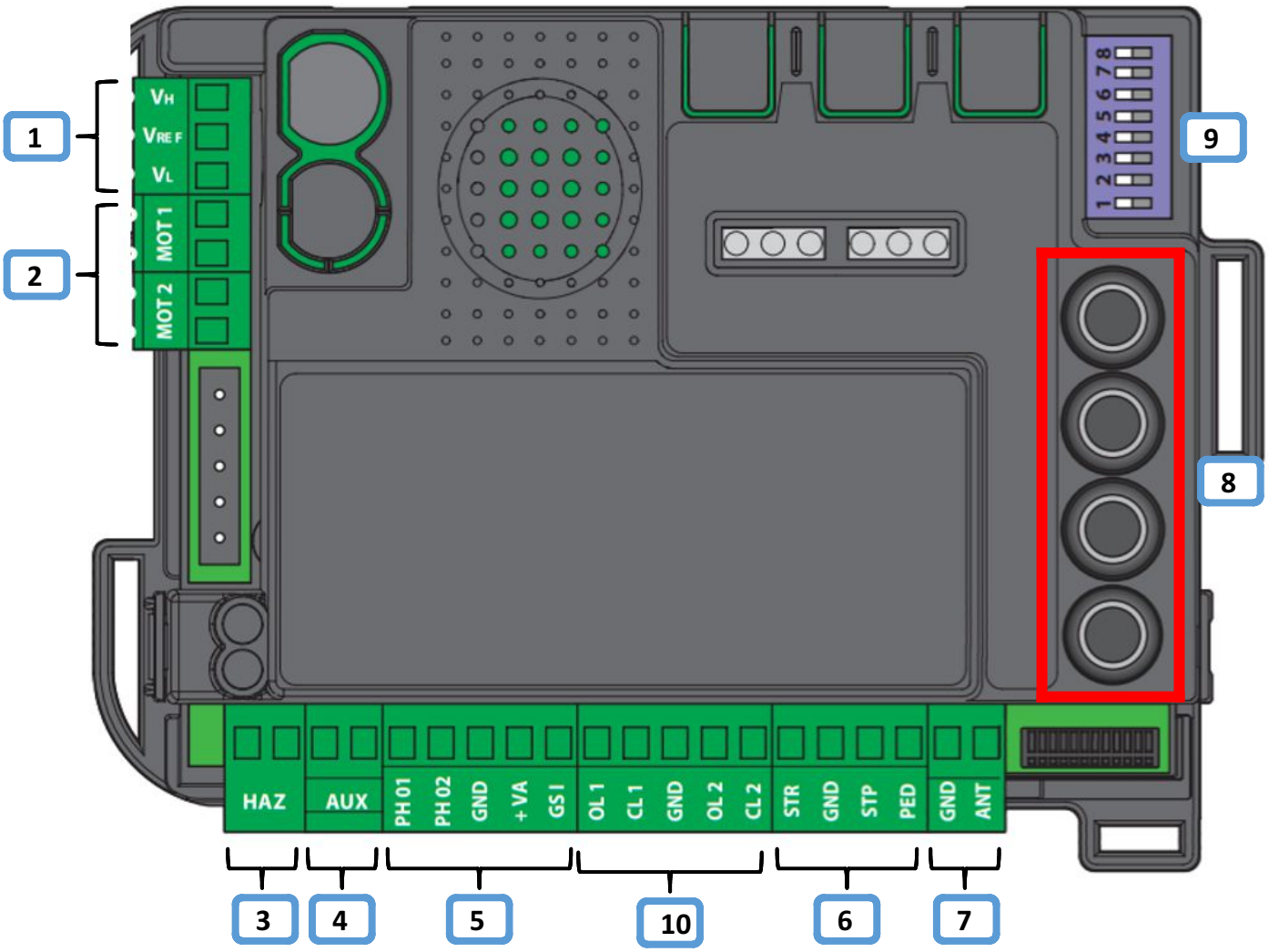
Successful setup chart

Phase 1



Phase 2





1 **Power input**
Ports for battery and mains power wires. See further details and wiring diagrams in **section 2**.

2 **Motor output**
Motor 1 and Motor 2 outputs.
In case of single motor use Motor 1 terminal .

3 **Warning light**
24 Vdc max. 15W warning light.

4 **Electric/magnetic lock**
Default setting for electric lock 12Vdc max 15 W, can be adjusted for magnetic lock see **section 8**.

5 **Safety devices**
PHO1: Normally closed contact for closing
PHO2: Normally closed contact for opening
GND: Common for PHO1, PHO2, +VA, GS1
+VA: Nominal power 24 Vdc
GS1: Positive gate PILOT LIGHT (24Vdc, max 3W)

6 **Wired commands**
ST R: START normally open contact
GND: Common of ST R, ST P, PED
ST P: STOP normally closed contact
PED: PEDESTRIAN normally open contact

7 **Antenna**
GND: Antenna sheath
ANT: Antenna signal

8 **Trimmers**
Power, Obstacle, Pause, Delay

9 **DIP switches**

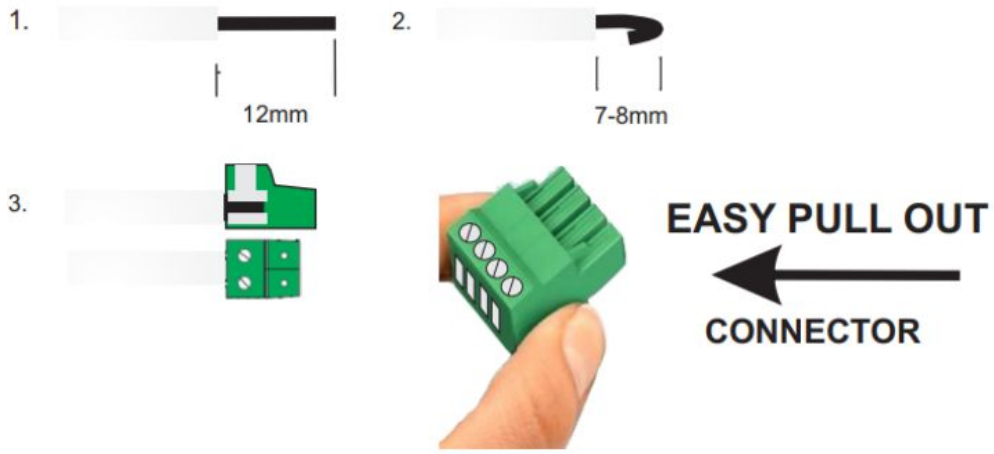
10 **Limit Switches inputs**
NC dry contact(voltage free) limit switches.

2. Power Supply Wiring

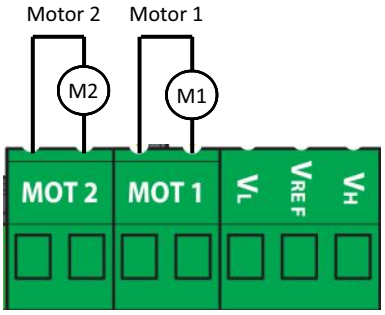
Phoenix connectors

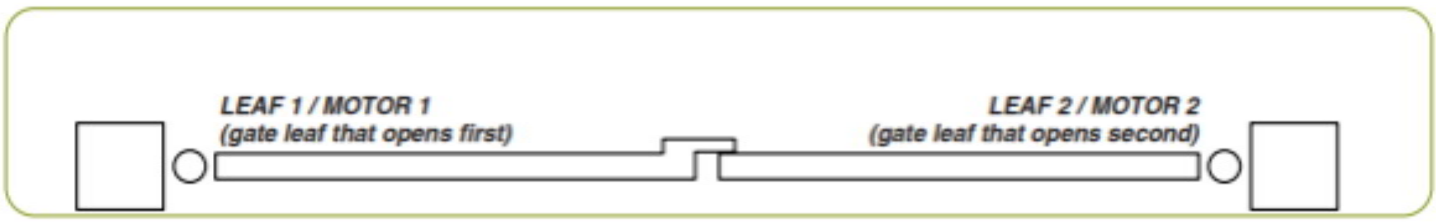
All Connectors are Pull-Out Connectors for ease of installation.

1. Remove Connector from Control Board.
2. Use a Flat head screw driver to loosen the top screw which will open the clamp point.
3. The casing should be stripped to expose ~12mm of the conductor. The conductor should be then folded back to leave a length of ~7-8mm. This method will allow the conductor to have maximum hold whilst in the connector.
4. Tighten the screw CLOCKWISE to clamp.

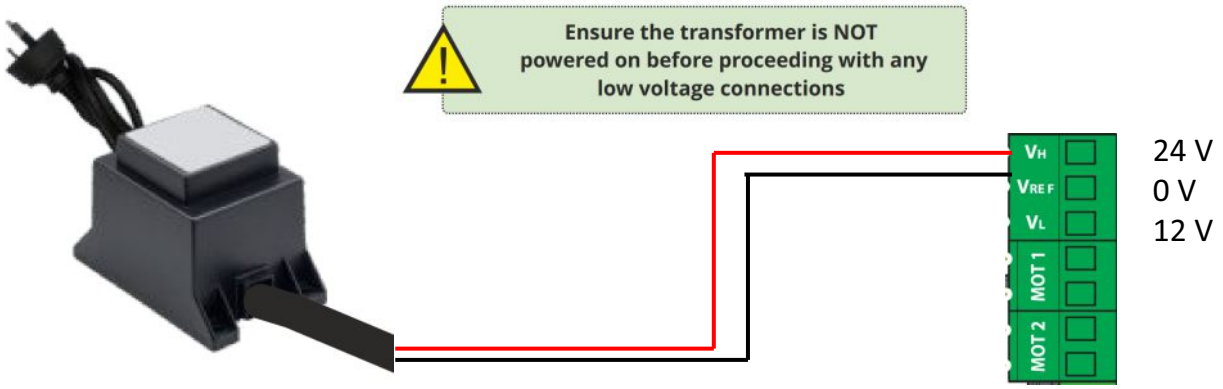


Motor connection





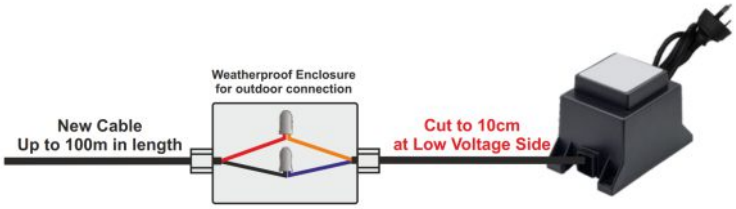
APC external AC transformer (Low Voltage Systems)



Extending the APC External AC Transformer (low Voltage)

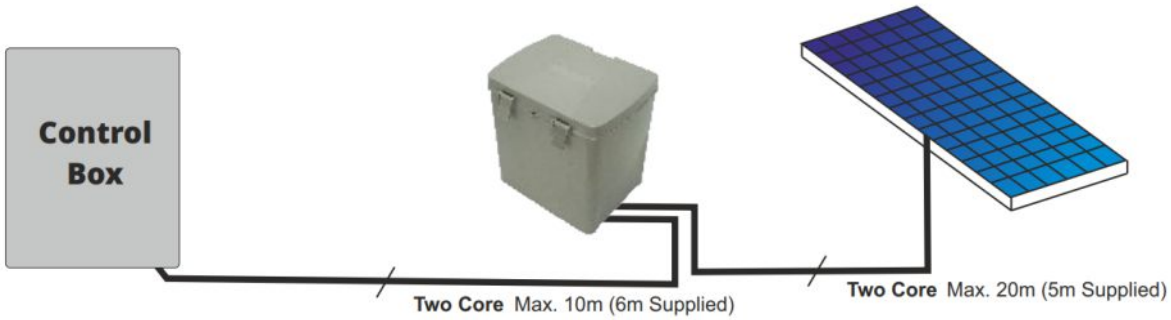
Maximum cable distance: The low voltage transformer can be run up to 100m in cable distance when using a 2mm pair conductor or greater. To run the transformer to maximum capacity the cable must be cut at the LOW VOLTAGE SIDE within 10cm from the output.

Note: Use a weatherproof junction box to terminate the new cable to the transformer.

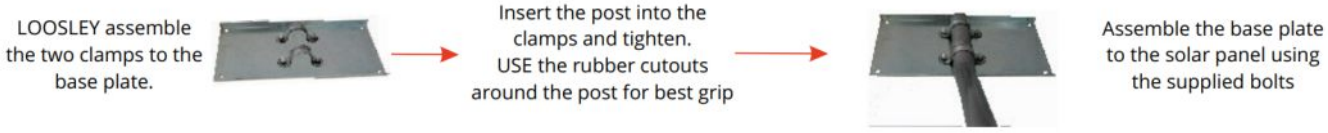


Solar system installation

Taking into account that the solar panels maximum cable distance is 20 metres and the maximum distance between the solar box and the gate controller is 10 metres find a suitable location for the mounting of the box accordingly. Both the solar box and the solar panel are completely weatherproof and can be mounted in complete exposure to the elements.



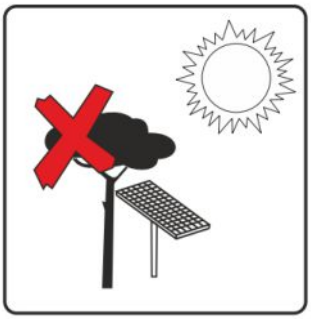
Step 1: Installing the solar panel

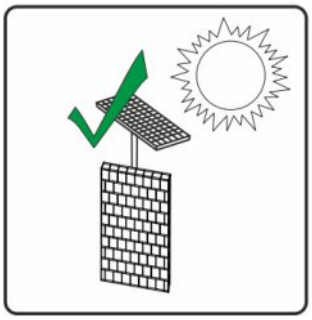


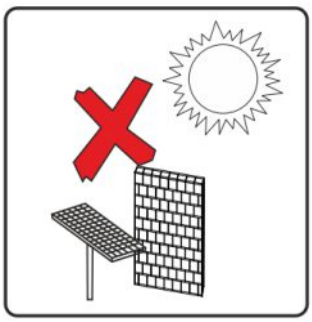
1. The solar panel should be installed at 45º facing mid-day to afternoon sun.
2. Assemble and install the solar panel in a place that is exposed to the sun most of the day and as far as possible from any walls or trees.
3. Make sure that the two wires of the solar panel do not touch each other at any time during installation.
4. Install the solar panel at least 2m above the ground to protect it from dust and small stones.

Solar panel placement

1. A solar panel CANNOT be installed under a tree, it requires sun to charge and maintain the batteries.
2. A solar system is often maintenance free BUT the batteries may require an occasional external charge in the winter months due to lack of sun.
3. Constantly powered accessories such as wired keypads will increase the standby current draw, solar panel or battery upgrades may be required if insufficient sun collection is not achieved.

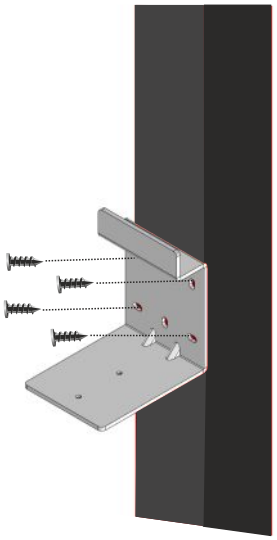




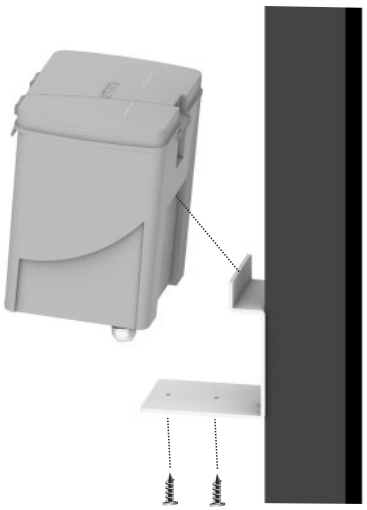


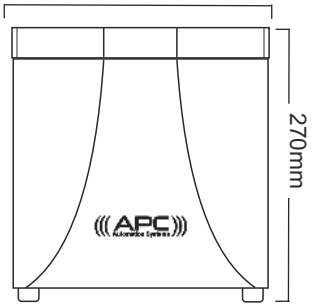
Step 2: Mounting the **APC UNO** Solar Box

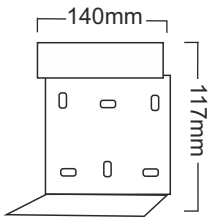
1. Install the bracket to the wall or post using the appropriate fixings whilst adhering to the maximum cable distance of 10m (note that the system is supplied with 6m).



2. Position the solar box onto the installed bracket and secure in place using the two 4mm allen screws at the bottom.







3. Wiring the System to the APC Sun Power

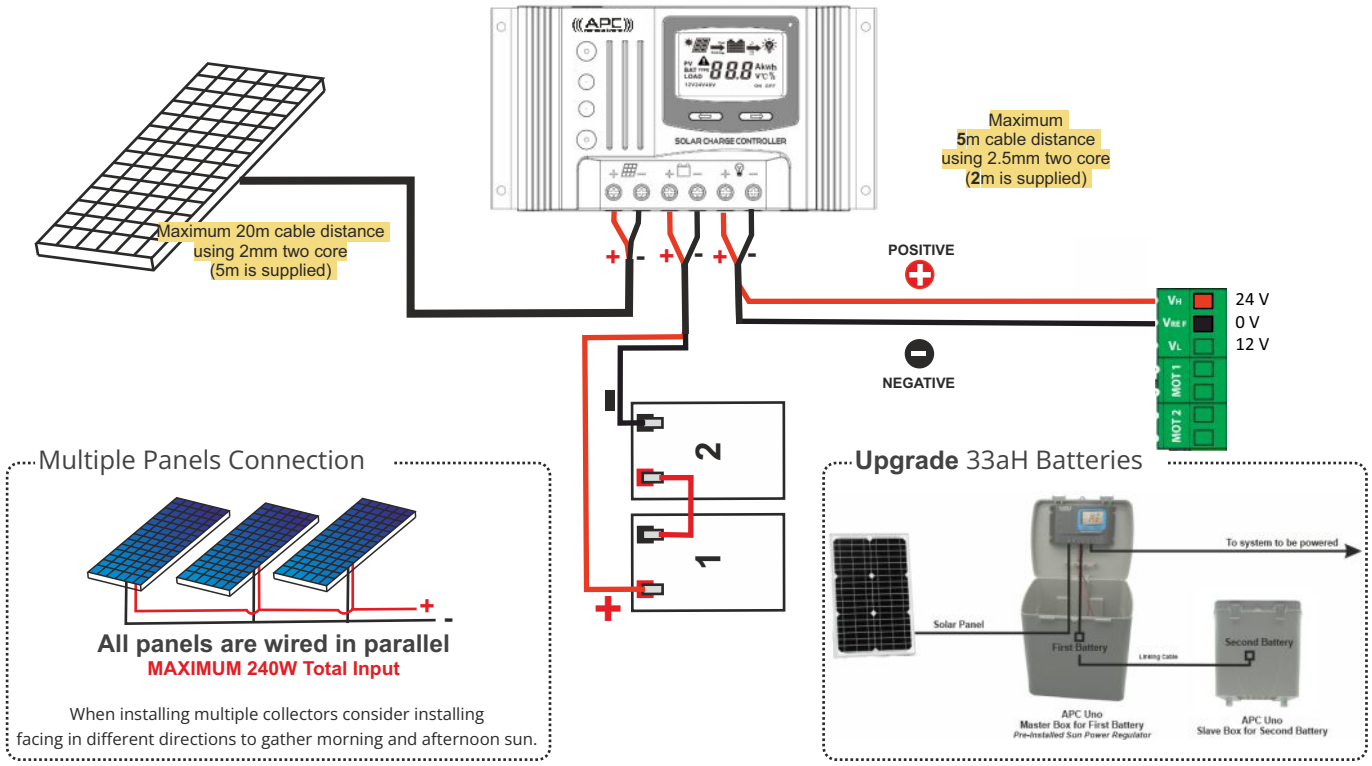
Taking into account that the solar panels maximum cable distance is 20 metres and the maximum distance between the solar box and the gate controller is 10 metres find a suitable location for the mounting of the box accordingly. Both the solar box and the solar panel are completely weatherproof and can be mounted in complete exposure to the elements.

1. Wire the positive and negative of the solar panel to there corresponding terminals.

2. Wire the batteries in series to create a 24V arrangement into the system and wire into the corresponding terminals. Regulator positive direct to battery 1,Regulator negative direct to battery 2,link the remaining terminal of each battery together

3. Wire the regulators load outputs to the control boards green to the 24V DC INPUT moulded connector

4. Plug the 24V DC Input Connector into the control board once ALL wiring works are completed



Energy Saving Mode

This feature cuts the power supply to the photocells when the control unit is in standby, therefore it decreases the power consumption. It is useful in case of battery power supply conditions.

Warnings:

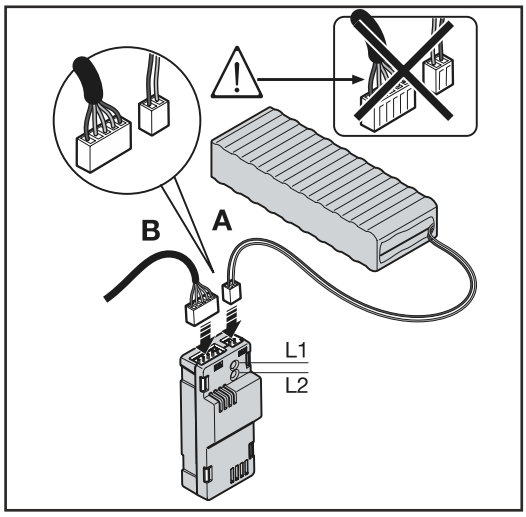
- **When the energy saving mode is activated, the open gate pilot light function is deactivated**
- **The energy saving mode can only be used with safety accessories powered with 24 V DC**

  Once the function is activated, it is necessary to connect the 24 V DC positive pole of the safety accessories (for example: photocells) to terminal GSI. The control devices (receivers and photocells) must be connected to terminal +VA.
- **If you activate the power saving mode all the LEDs will turn OFF after 2 minutes of stand-by.**

Steps for activating the energy saving mode:

1. Press the START button for 4 seconds: all LEDs turn OFF
2. Simultaneously press the SET and START buttons for 2 seconds:
   - If the PHOTO LED is ON
     Energy saving = enabled (if this is the correct setting go to step 5 otherwise proceed to step 3)
   - If the PHOTO LED is OFF
     Energy saving = disabled (if this is the correct setting go to step 5 otherwise proceed to step 4)
3. Press the SET button for 1 second: the LEDs SET and START are ON while the LED PHOTO turns OFF, go to step 5
4. Press the SET button for 1 second: the LEDs SET and START are ON while the LED PHOTO turns ON
5. Press the SET and RADIO buttons simultaneously or wait 10 seconds to exit the procedure: the LEDs return to the normal operation configuration.

The diagram below will illustrate the battery connection input with Battery charging module. Ensure the system is de-powered before beginning the wiring connections.



TESTING AND COMMISSIONING

The following tests should be run immediately after connecting the battery to the control unit.

• Make sure that led “L2” (fig. 1) is on to indicate that the battery is supplying power to the system.

• Make sure that the different LEDs on the control unit confirm that it is operating properly.

Note: If these conditions are not satisfied, it probably means that the battery is completely drained; in this case
proceed to the next step and wait a few hours with the automation system powered by the mains before testing
the operation of the battery again.

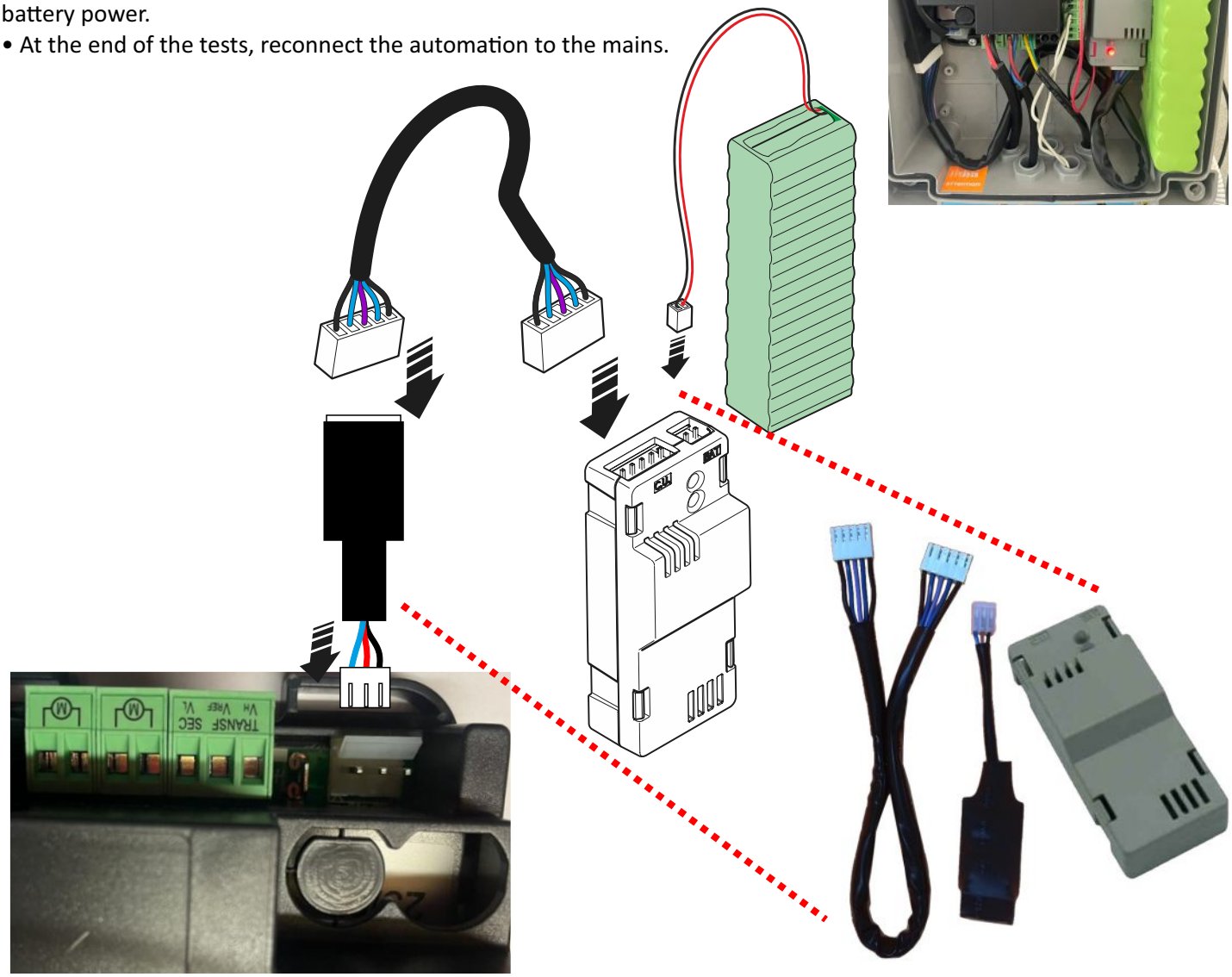


• Connect the automation system to the mains supply and check that the led “L1” (fig. 1) turns on to confirm that
the battery is recharging properly.

• Run at least one open/close cycle to check that the system operates properly when powered off the mains.

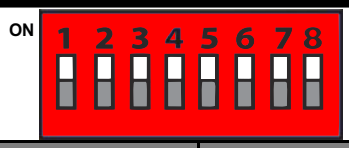
• Disconnect the automation system from the mains, and check that led “L2” (fig. 1) is on; run at least one
open/close cycle to check that everything is working as it should even with battery power.

• At the end of the tests, reconnect the automation to the mains.



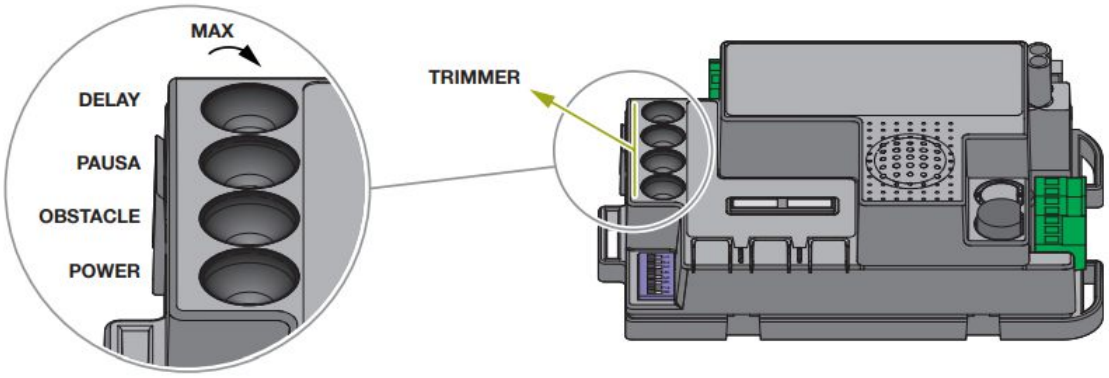
3. Control unit Settings

DIP-Switch adjustment



DIP	DIP-SWITCHES STATUS		Description of operation
DIP 1-2 MOTOR	**ON ON**		For linear actuator swing gate motors
	ON OFF		For articulated arm swing gate motors (longer gate length)
	OFF ON		For sliding gate motors
	OFF OFF		For articulated arm swing gate motors (shorter gate length)
DIP 3 STEP	**3 ON 4 OFF**		Step-by-step command mode: Open / Stop / Close / Stop
	3 ON 4 ON		Step-by-step mode with automatic closing in relation to Pause trimmer.
DIP 4 AUTO	**3 OFF 4 ON**		Opening only command with automatic closing as per pause trimmer adjustment
	3 OFF 4 OFF		Open/Close/Open command (no Stop)
DIP 5 PHO2	**ON**		Safety devices connected to PHO2 set as photocells (movement stopped during opening and closing)
	OFF		Safety devices connected to PHO2 set as edges (reverse of opening movement)
DIP 6 HAZ	**ON**		Intermittent warning light during cycle
	OFF		Fixed warning light during cycle
DIP 7 FAST	**ON**		Immediate re-closing after intervention of PHO1 photocells
	OFF		No intervention of the photocells during re-closing
DIP 8 FUNC	**SWINGING (see DIP 1-2)**	**ON**	RAM function enabled
		OFF	RAM function disabled
	SLIDING (see DIP 1-2)	**ON**	Reverse opening direction (the system must be programmed afterwards)
		OFF	Reverse opening direction (the system must be programmed afterward)

Trimmer adjustment



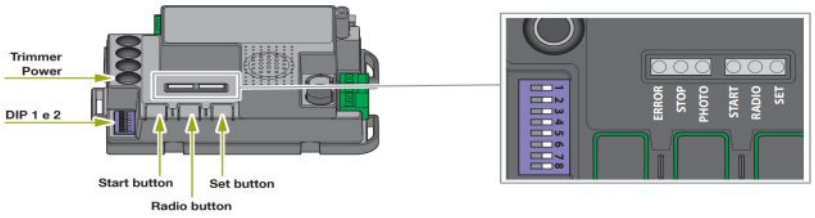
Please not that any adjustments to the trimmers will not take effect until the gate has completed a setup cycle as per Page No 12.

Varying the POWER trimmer has no effect until the stroke is reprogrammed. In normal operation, if the delay trimmer is set to a too low value (not zero : the gate sections must be offset to prevent them overlapping) and Gate 1 arrives before Gate 2 , the control unit will automatically open the gate slightly and the close the sections in the correct order (anti-overlapping mechanism).

POWER: adjustment of the motor power.
Turning the trimmer clockwise increases the motor s power. To validate the modification it is necessary to program the gate path.
OBS: sensitivity to obstacles.
Turning the trimmer clockwise increases the drive time before obstacle detection (less sensitivity). Therefore, in systems with particularly unfavorable mechanical conditions, it is advisable to keep the drive time high.
PAUSE: pause time before automatic gate closing.
Turning the trimmer clockwise increases the pause time from 0 to 180 seconds. Please note: the AUTO DIP switch must be set to ON.

DELAY: staggered closing of the gate leaves.
In case of two connected motors, it adjusts the staggering of the leaves. Turning the trimmer clockwise increases the stagger time from 0 seconds until complete staggering.

4.Gate System Setup Cycle



REMOTE PAIRING & SETUP CYCLE

Scan Me

To start the system setup, one of the following programming procedures must be carried out:
- basic programming of the automation movement: The control unit will learn the gate travel time and force to determine a default slowdown point.
- advanced programming of the automation s movement: Through this process we can adjust the slow down points or remove them completely .

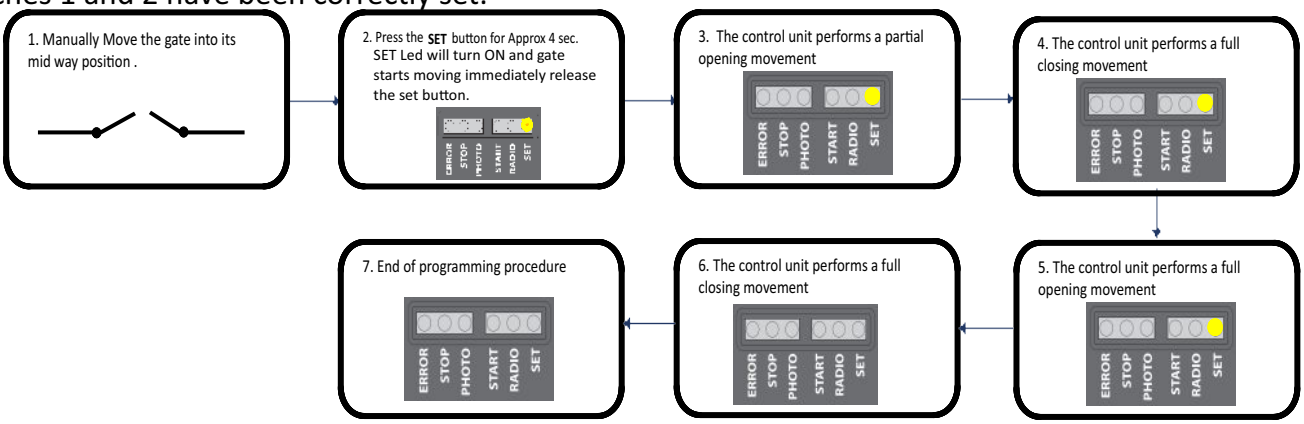
The procedure for programming the partial opening is used to modify the default opening value.

If, at the start of the following procedures, the set , radio and start LEDs flash, it means that the programming protection has been activated, see **section 8.**
To interrupt the following programming sequences at any time, press the SET and RADIO buttons simultaneously or wait 10 seconds.

Basic programming of the automation movement

The control unit will automatically detect if the system is a single or double gate system.

Through this procedure, the control unit memorises the travel time and power required for opening and closing the system. In the case of automations for double-leaf gates, the control unit causes the full opening and closing of one gate leaf at a time. The slowdown points are automatically set to 85% of the opening and closing path. Prior to proceeding with the programming procedure, verify that dip-switches 1 and 2 have been correctly set.



CAUTION! - If the automation starts a closing stroke instead of an opening stroke, proceed as follows:

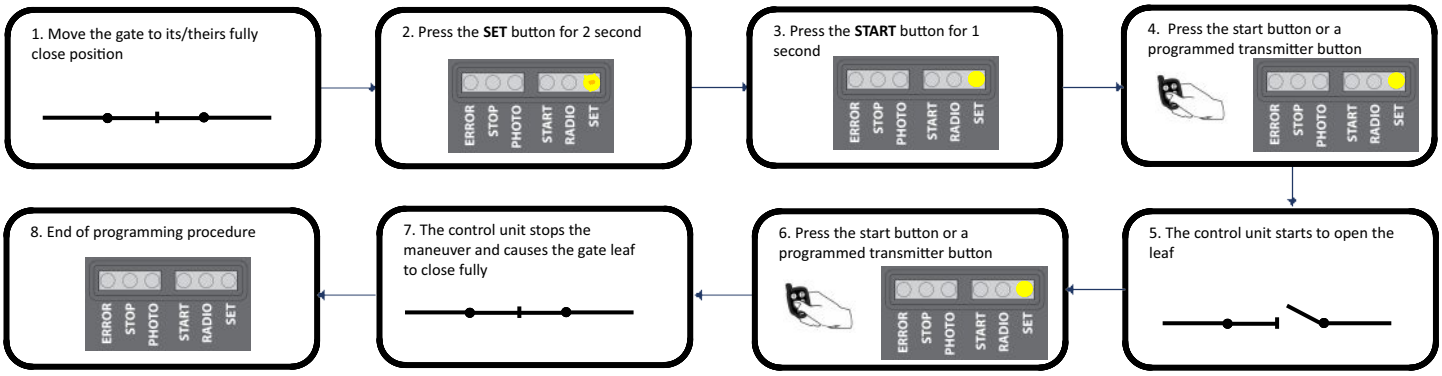
1. quit programming by pressing SET and RADIO at the same time: for SWING GATE MOTORS: swap the motor phases and the inputs of any limit switches for SLIDING GATE MOTORS: change the setting of DIP8.
2. reprogram the stroke from point 1.

If the operator does not recognise the mechanical stops even with the OBS trimmer set to its minimum, you can select the open and closed points during programming by pressing the SET button at the end of points 4, 5 and 6. If the gate has two sections, use the SET button for both sections.

Programming the pedestrian opening width

This procedure allows for defining the width of the pedestrian opening.
Default: it is set as fully open of MOTOR 1 for swing gate motors and 30% of the stroke for sliding gate motors (see dip-switches 1 and 2 for setting the motor type).
To control the pedestrian opening, it is necessary to either program a Remote control button (see **Page 14**) or connect a wired control device on the PED contact (see **section 8**)

Prior to proceeding with this programming procedure, first verify whether either the basic automation movement programming or the advanced programming have been completed.

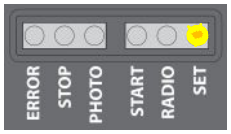


Advanced programming of the automation movement

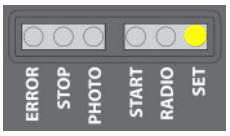
1. Put the gate leaf in the intermediate position



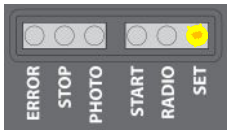
2. Press the **SET** button for 2 second



3. Press the **Radio** button for 1 second

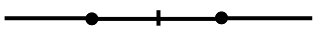


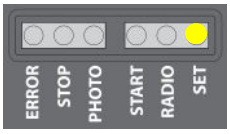
4. The control unit partly opens the gate



5. The control unit waits for the motors to change the direction of their opening movement for 8 seconds or press set to proceed

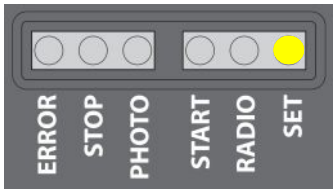
6. The control unit performs a full closing movement





7. Press the **SET** button or a programmed transmitter button





8. The control unit performs the opening movement

9. For slowing down the opening phase, during the movement press the **SET** button or a programmed transmitter button to set the slowdown start point. Alternatively, wait until the movement has been completed

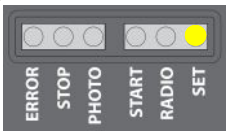
10. The control unit completes the opening phase



11. Press the **SET** button or a programmed transmitter button



12. The control unit performs a full closing movement



13. For slowing down the closing phase, during the movement press the **SET** button or a programmed transmitter button for setting the slowdown start point. Alternatively, wait until the movement has been completed



14. The control unit completes the closing phase

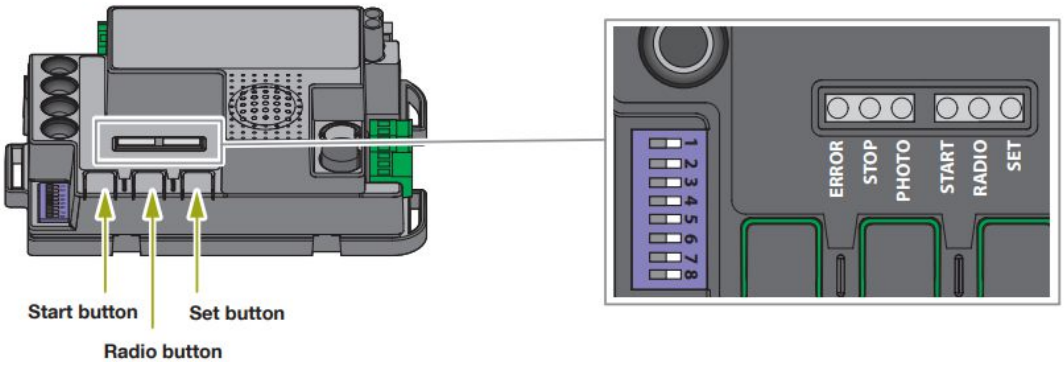
10. End of programming procedure

In the event of motors for hinged leaf (see DIP1 and DIP2 setting), the control unit will open and close one leaf at a time.

If the POWER trimmer is varied, the gate path must be reprogrammed.

If the operator does not recognise the mechanical stops even with the OBS trimmer set to its minimum, you can select the open and closed points during programming by pressing the SET button at the end of points 6, 9 and 13. In the event of two gate leaves, use the SET button for both leaves.

5 Transmitter Programming.

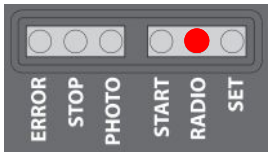


If, at the start of the following procedures, the set ,radio and start LEDs flash, it means that the programming protections have been activated.
To interrupt the following programming procedures at any time, press the SET and RADIO buttons simultaneously or wait 10 seconds

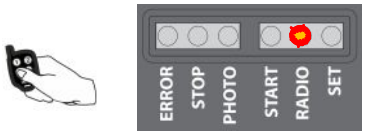
Pairing for full gate operation

This procedure allows for programming the button of the radio control linked to the automation start function.

1. Press the **RADIO** button for 1 second



2. Press the desired button of all the transmitters to be programed

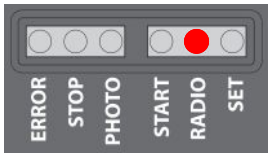


3. Press the **SET** and **RADIO** buttons simultaneously or wait 10 seconds to exit the procedure

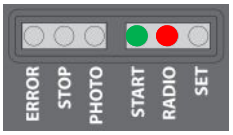


Pedestrian opening button programming

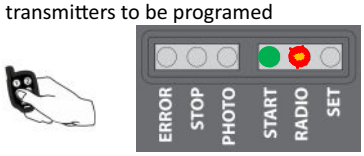
1. Press the **RADIO** button for 1 second



2. Press the **START** button for 1 second



3. Press the desired button of all the transmitters to be programed



This procedure allows for programming the button of the radio control linked to the automation partial opening.

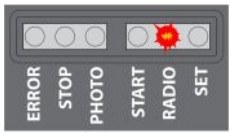
4. Press the **SET** and **RADIO** buttons simultaneously or wait 10 seconds to exit the procedure



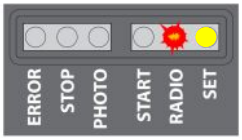
Deleting a single wireless item

This operation deletes a single transmitter from the memory.

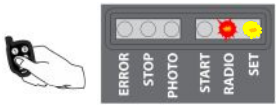
1. Press the **RADIO** button for 4 seconds



2. Press the **Set** button for 1 second



3. Press a button on the transmitter you wish to cancel



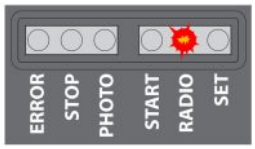
4. Press the **SET** and **RADIO** buttons simultaneously or wait 10 seconds to exit the procedure



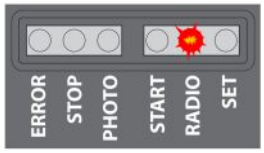
Clearing all wireless equipment

This operation deletes all memorised transmitters.

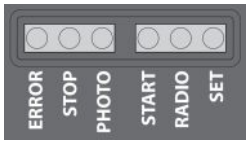
1. Press the **RADIO** button for 4 seconds



2. Press the **RADIO** button for 1 second



3. Memory deletion completed



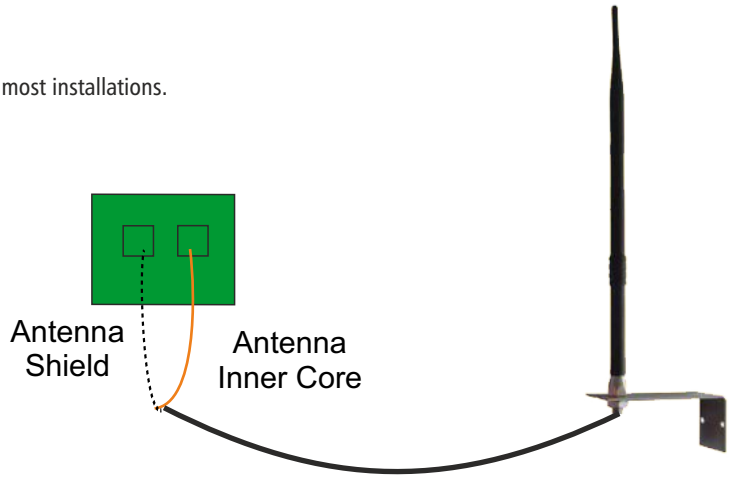
Connecting an APC-ANT1 External Antenna

The ANT-1 external antenna can boost the remote range drastically in most installations.

- APC-RC450S remote can be boosted UP TO 800m distance
- APC-RC4-SV remote can be boosted UP TO 100m distance
- APC-RC4-S remote can be boosted UP TO 80m distance

Inner core of the antenna cable to ANT on the control board.

Outer core/shield of the antenna to ANT Shield on the control board.



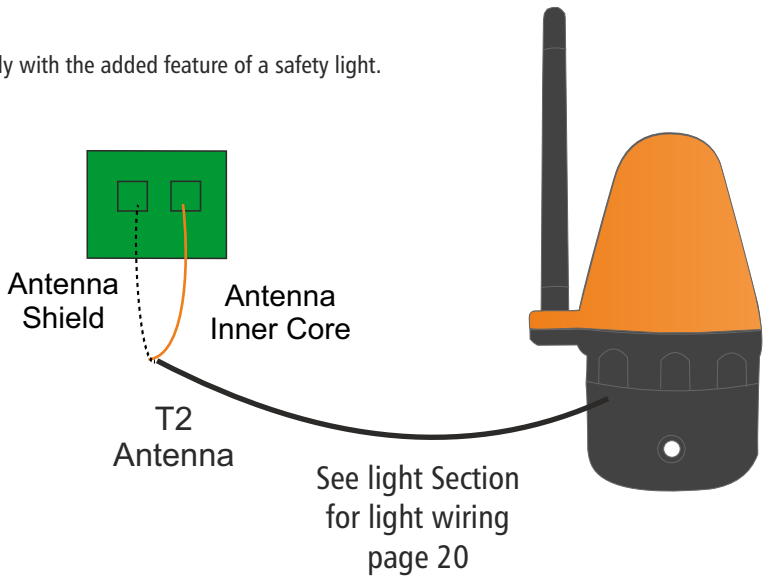
Connecting an APC-ULA Light with External Antenna

The APC-ULA external antenna can boost the remote range substantially with the added feature of a safety light.

- APC-RC450S remote can be boosted UP TO 600m distance
- APC-RC4-SV remote can be boosted UP TO 80m distance
- APC-RC4-S remote can be boosted UP TO 60m distance

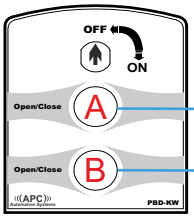
Inner core of the antenna cable to ANT on the control board.

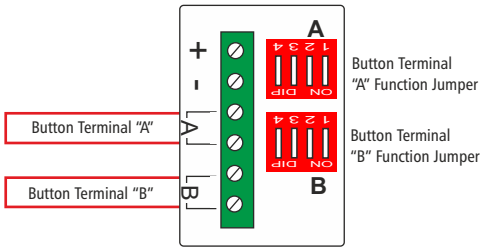
Outer core/shield of the antenna to ANT Shield on the control board.



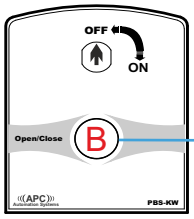
APC Smart Wireless Button Configuration

PBD-KW
(Double Push Button Switch)





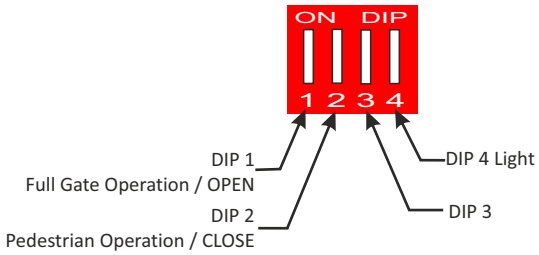
PBS-KW
(Single Push Button Switch)



Max. 20 Metre Operational Range*

Setting

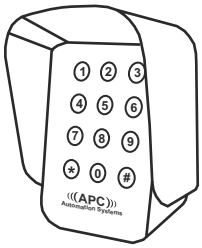
Using the DIP switch associated with the button in use (see linked diagrams on the left). You can adjust your DIP switch to enable it to toggle a specific feature. Simply turn the respective DIP switch to the ON position.



APC-KP2W Pin number programming (4 Digit)

The APC-KP2W has TWO channels, each channel can control a different function on the system. To continue adding pin numbers after adding the first repeat the steps below.

Note: When you add your first pin number to each channel the default pin code will automatically be erased.



Type in the 4 digit pin code then press #

Default:
1111# For Full Gate Opening / OPEN
2222# For Pedestrian Opening / CLOSE

Max. 20 Metre Operational Range*

Quick Programming Pin Code

Channel 1
Full Operation / OPEN
(Supports 8 Pin Codes)

Master Code * 0 1 # Pin Code #

Channel 2
Pedestrian Operation / CLOSE
(Supports 3 Pin Codes)

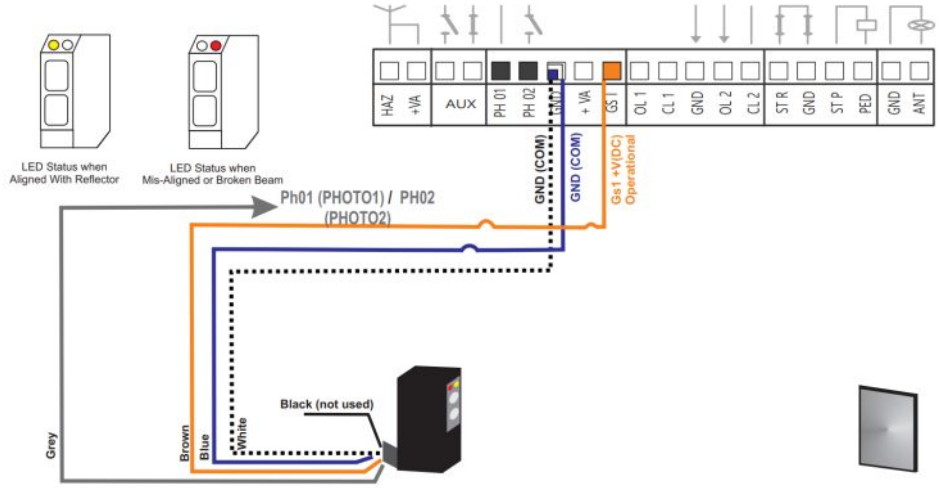
Master Code * 0 2 # Pin Code #

6.Safety Sensor and AUX Output Connections.

Connecting a Retro Reflective Sensor (APC-RR-11)

APC-RR-11 Reflective sensor (Transmitter only) **must be connected back to the control board** (see wiring diagram).
Install the RR-11 Reflective sensor on the first entry point of the driveway from post to post at approx. 500mm above ground level.

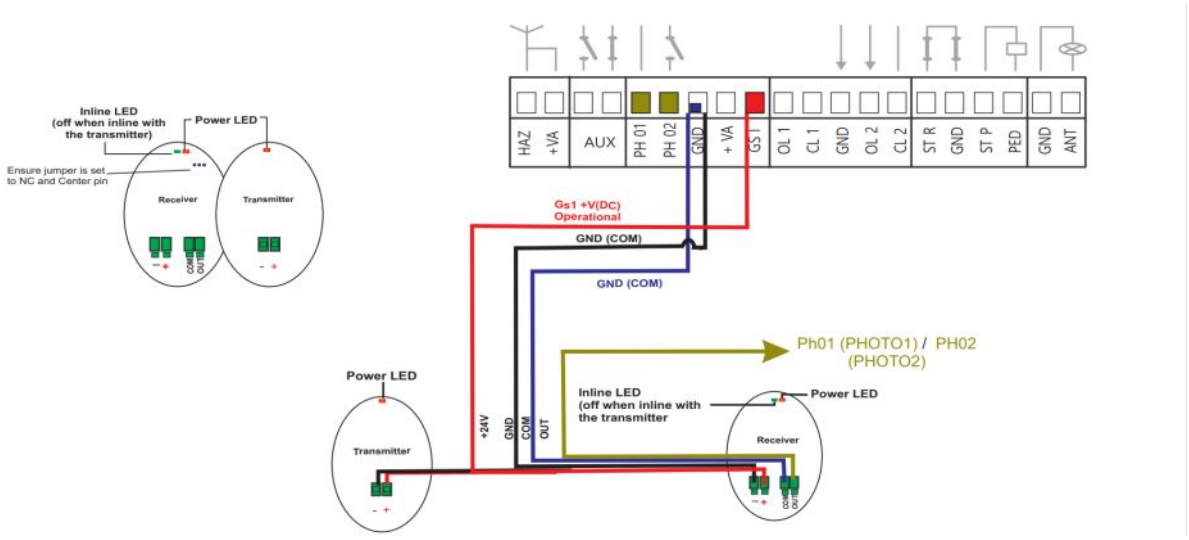
The Transmitter and the Reflector must be inline with each other
(The yellow inline LED will be ON when Aligned with the transmitter).



Connecting a PE Sensor (APC-PE2000)

APC-PE2000 PE sensor (Transmitter & Receiver) must be connected back to the control panel.
Install the PE2000 Photoelectric sensor on the first entry point of the driveway from post to post at approx. 500mm above ground level.

The Transmitter and the Receiver must be inline with each other
(The inline LED will be off when aligned with the transmitter).



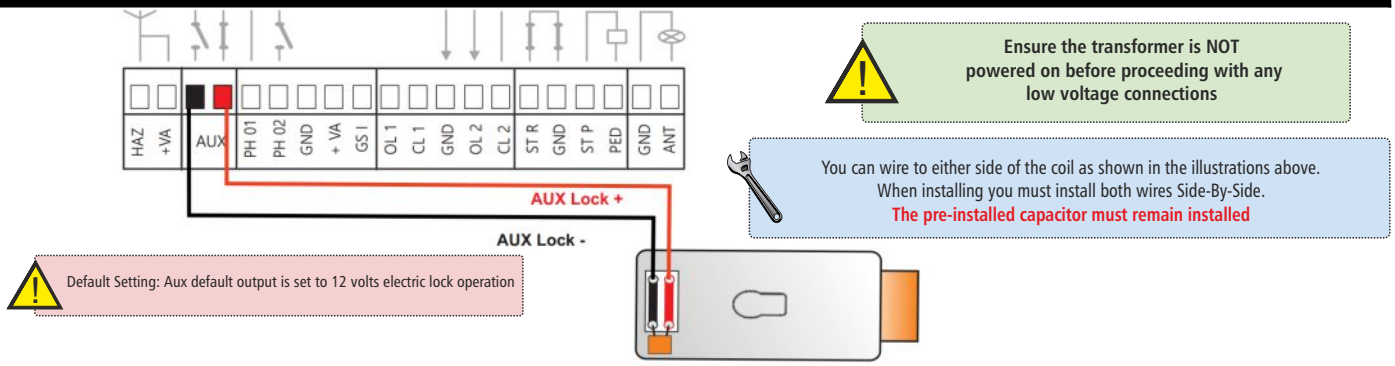
PHO 1 Connection

Photocells connected in PHO1 will only works during the gate closing phase. This is a Normally Closed(NC) input.
Remove the PHO1 Linking wire, while using this input connection.
when intervene during closing they invert the movement and re-opens the gate.

PHO 2 Connection

Photocells Connected in PHO 2 will work for both Opening and closing phase. This a Normally Closes(NC) input.
Remove the PHO2 Linking wire, while using this input connection.
we can change the operational condition of PHO2 using Dip 5 Switch ON/OFF position (page 10).

Connecting an Electric Lock



Operation mode for the AUX output

Warning:

Depending on the applied, it may be necessary to connect a relay with a separate power supply
The resistive load applicable to the AUX terminal must absorb a maximum 24 W
The operating modes of the AUX output are mutually exclusive

The Procedure:

1. Press and hold the START button for 3 seconds, then release
2. Press the RADIO button for 1 second; the STOP LED flashes
   - 1 flash AUX = electric lock
   - 2 flashes AUX = magnetic lock
   - 3 flashes AUX = Monostable by time (2 seconds by default) piloted by remote control button
   - 4 flashes AUX Bistable ON-OFF from remote control button
3. Press the SET button for 1 seconds: the AUX output switches to the next function: the STOP LED flashes indicated the set function
4. Press the SET and RADIO buttons simultaneously or wait 10 seconds to exit the procedure, the LEDs will then turn off

Voltage for the AUX output

Warning:

The AUX output voltage is a division of the accessory voltage, with a peak value higher than 24 V.

Default = 12 V DC

The out put voltage of the AUC contact can be set to 12 V DC or 24 V D, depending on the connected lock or the available relay.

The Procedure:

1. Press the START button for 3 seconds. All LEDs turn off
2. Press the RADIO button for 1 second; the STOP LED flashes
   - If the error LED is ON
     AUX voltage = 12 V DC (if the setting is correct go to point 4 if not proceed to point 3)
   - If the error LED is OFF
     AUX voltage = 24 V DC (if the setting is correct go to point 4 if not proceed to point 3)
3. Press the START button for 1 second. The RADIO LED remains lit and the Error LED turns OFF.
4. Press the SET and RADIO buttons simultaneously or wait 10 seconds to exit the procedure. The LEDs return to normal operation configuration.

Programming of the button linked to the AUX output

This procedure allows for programming the button of the radio control linked to the AUX output.
To use this function, the AUX output must be set to courtesy light (see previous paragraph).

The Procedure:

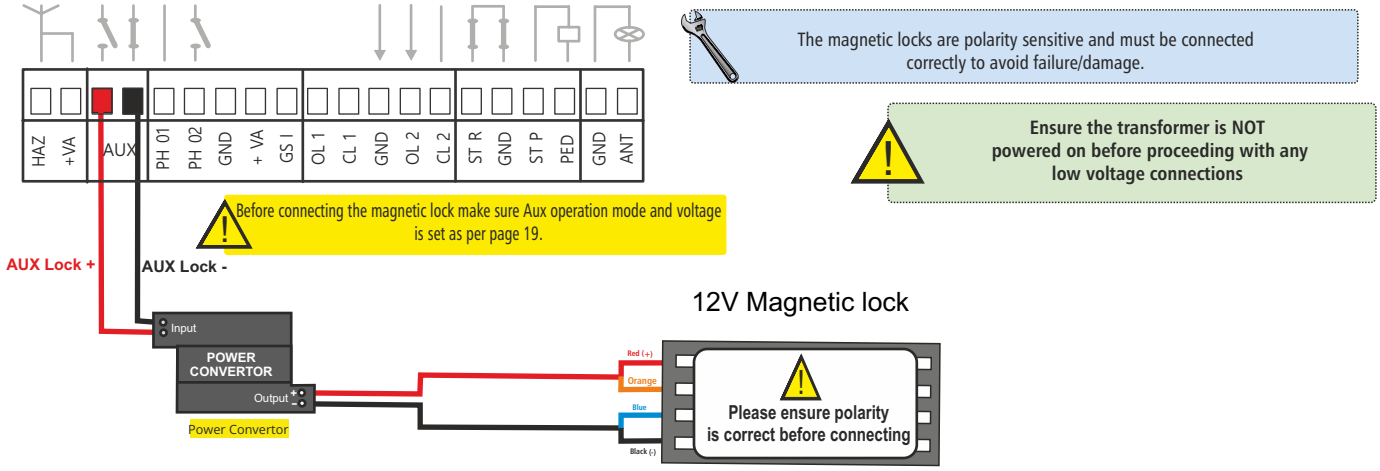
1. Press the RADIO button for 1 second: the RADIO LED turns on

2. Press the SET button for 1 second: the RADIO LED remains lit and the set LED turns on.

3. Press the desired button of all the transmitters to be programmed: the RADIO LED flashes and the SET LED remains on

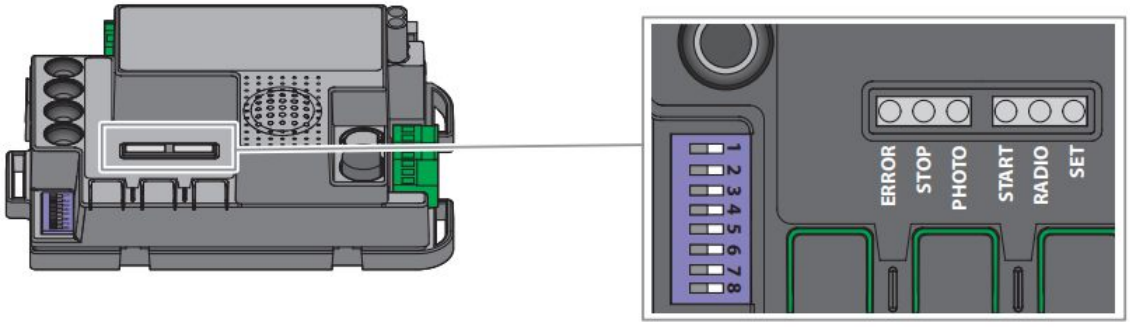
4. Press the SET and RADIO buttons simultaneously or wait 10 seconds to exit the procedure: the RADIO LED and the SET LED turn off.

Connecting a Magnetic Lock with respective AUX Output (12V) NOT SUITABLE FOR SOLAR



The above picture explains about the wiring diagram for 12V Volts magnetic lock wiring diagram. please look on Page 19 to change the AUX output and the AUX Operational Mode.

7.LED Signaling



With the control unit powered up (if control unit protection is not activated) the yellow **Set** led flashes for 5 seconds and, if everything is correctly hooked up, the red **Photo** and **Stop** leds turn on to indicate that the two safety contacts are closed. The yellow Set **LED** is exclusively reserved for programming.

Input status signalling LED

The following signals refer to the control unit in standby mode, that is, powered and inactive for 12 seconds (not during programming).

PHOTO LED: - ON in RED Color If the PHO1 and PHO2 contacts are Closed.
- ON in GREEN color if the PHO1 contact is Open.
- ON in ORANGE color if the PHO2 contact is Open.
- OFF if the PHO1 and PHO2 contact are Open.

GREEN STOP LED: -ON in the fixed mode if the STOP contact is closed - off if the STOP contact is open

GREEN START LED: - ON in the fixed mode if the START contact is closed - off if the START contact is open

RADIO LED: - flashes when a command is received through Automotion plus remotes
- is off when the control unit is in standby mode

Error signalling LED

RED ERROR LED: The red error has two functions:

.- The red error LED flashes during the operation, when a mechanical stress point is detected during the travel the LED flashes for longer times, adjust the OBS Knob .During travel occasional Led error flashing is normal.

-In standby mode, the error type is signaled with a series of flashes at regular intervals(1-second pause between two successive series) according to the following scheme:

Number of flashes per series	Error description
1	On board memory damaged.
2	Photo-test of safety devices failed. .
3	Path program requested. .
4	Input PHO2 set as a resistive edge and check failed.

GREEN START LED, RED RADIO LED AND YELLOW SET LED: If, when attempting to enter into any programming scheme, the set, radio and start LEDs flash fast three times, it means that the control unit protection is active. check Control Unit protection

8. Control Unit Protection Device

Default = control unit protection device not active.

Warning: This programing sequence allows for locking all control unit programing sequences and the settings adjustable through the DIP switches. To perform a new programming sequence or make adjustments to the DIP switches or trimmers, the protection must be deactivated.

1. Press the START button for 3 seconds:

- if the LEDs SET, RADIO and START are ON
control unit lock = enabled (if this is the correct setting go to step 4, otherwise proceed to step 2)
- if the LEDs SET, RADIO and START are OFF
control unit lock = disabled (if this is the correct setting go to step 4, otherwise proceed to step 3)

2. Press both the START and RADIO buttons for 2 seconds: the LEDs SET, RADIO and START go OFF, go to step 4

3. Press both the START and RADIO buttons for 2 seconds: the LEDs SET, RADIO and START go ON

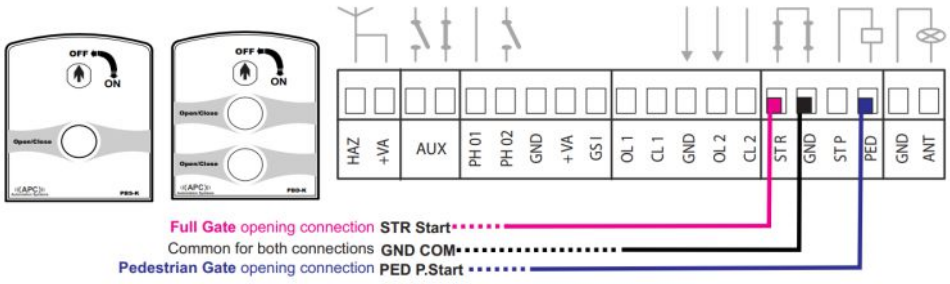
4. Press the SET and RADIO buttons simultaneously or wait 10 seconds to exit the procedure

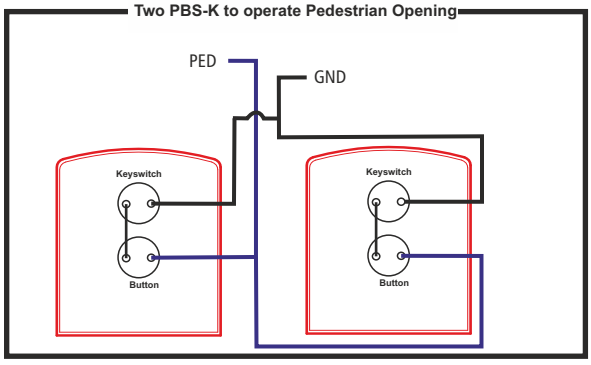
9. Accessories wiring diagram.

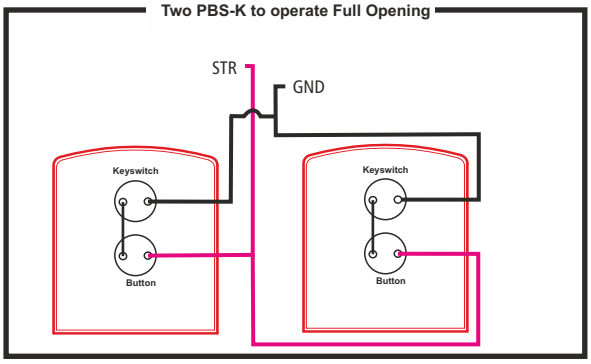
APC Wired Push Buttons Connection

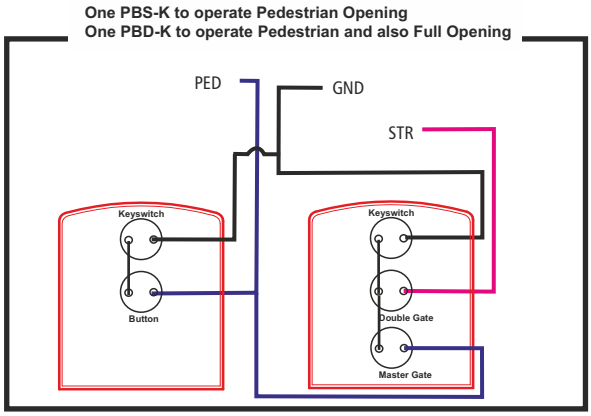
Push buttons are used for opening and closing the gates without using a remote.

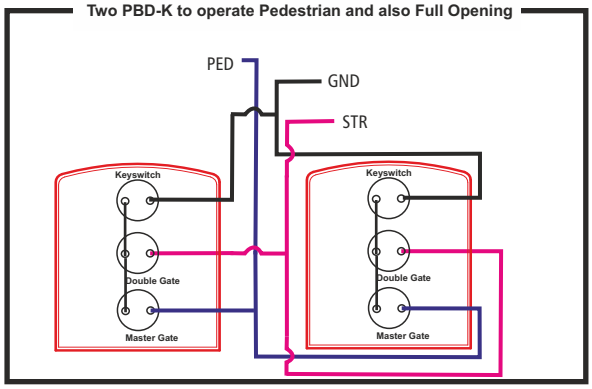
Push buttons can be used for a vast amount of purposes ranging from basic access control for visitors, workers or taking out the bins.

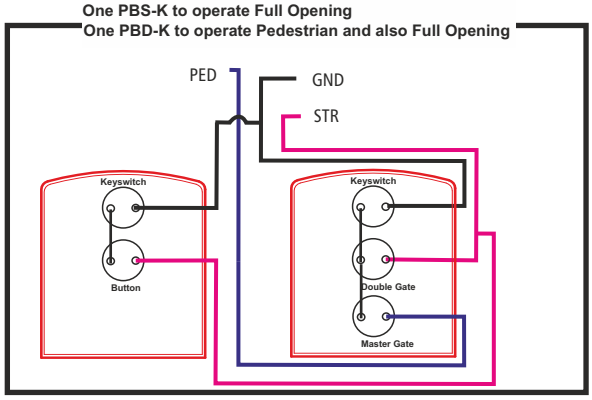










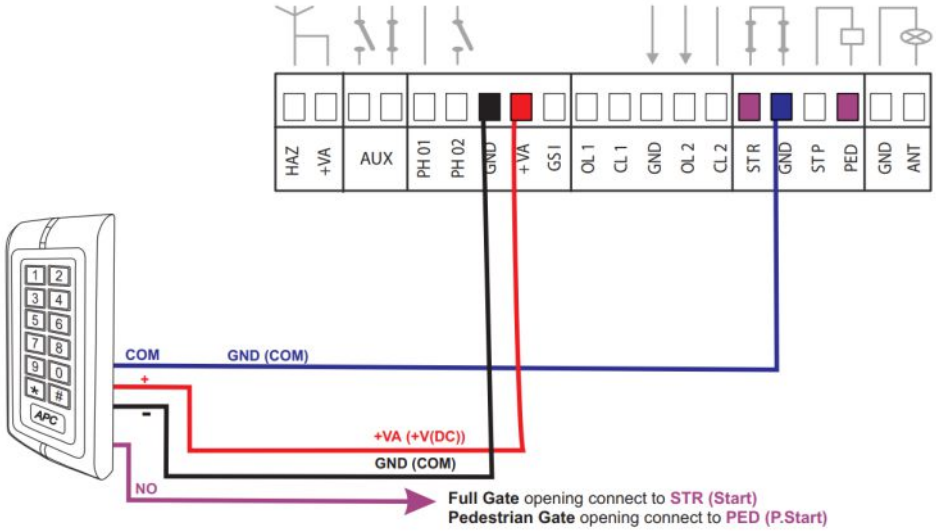


Connecting an APC Keypad (APC-KP1-C)

Unlike a push button entry switch using a keypad can provide a much higher security for access control for guests, workers, tenants etc.

Using a keypad will allow you to manage the users by adding and deleting as required. Its backlit illumination also allows for ease of use at night.

Relay time should be set to ONE seconds



Quick Programming Pin Code / Swipe Tag

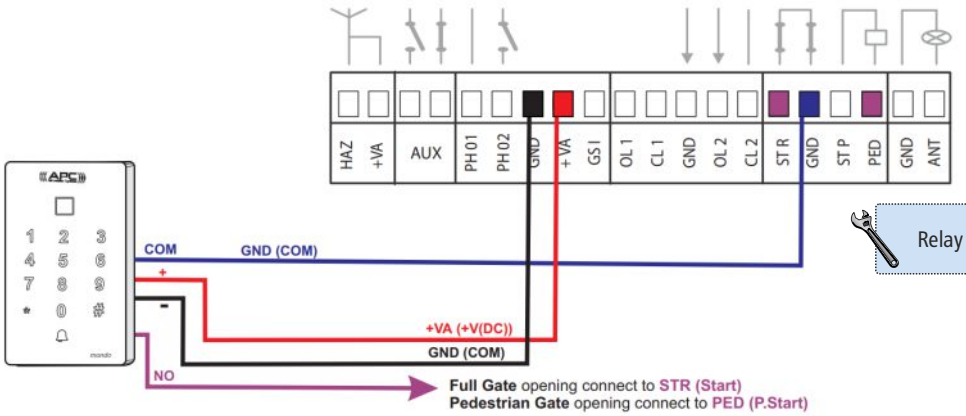
* 8 8 8 8 8 8 #	Master Code used to enter programming only
1	To enter Pin Code/Swipe Card Programming
User ID #	Any number between 1-999, this number is unique to each pin code/swipe tag and cannot be used twice
PIN/SWIPE #	The Pin code you would like to use to open the gate (4-6 Digits) OR Swipe the tag past the black window
*	To Exit programming and return to standby state
*	

Connecting an APC Mondo Wi-Fi Keypad (APC-WF-KP)

Unlike a push button entry switch using a keypad can provide a much higher security for access control for guests, workers, tenants etc.

Using a keypad will allow you to manage the users by adding and deleting as required. Its backlit illumination also allows for ease of use at night.

Furthermore the keypad can be connected to your Wi-Fi network and can be controlled anywhere in the world through the APP.



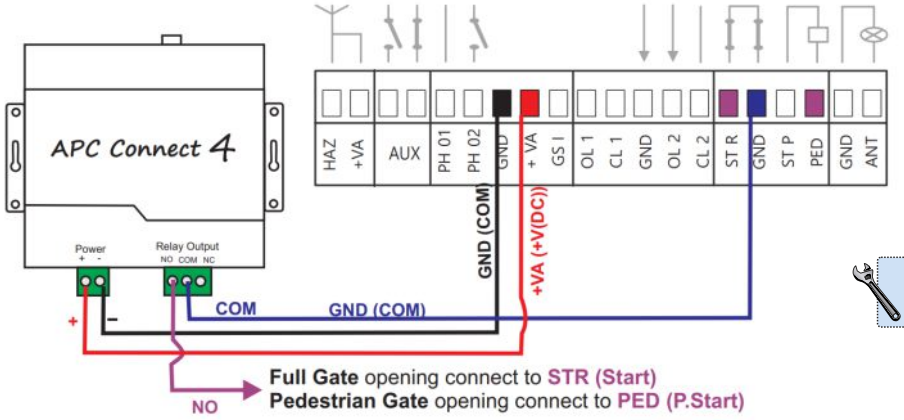
Relay time should be set to ONE seconds

Quick Programming Pin Code / Swipe Tag

* 9 9 9 9 9 9 #	Master Code used to enter programming only
1	To enter Pin Code/Swipe Card Programming
User ID #	Any number between 1-999, this number is unique to each pin code/swipe tag and cannot be used twice
PIN/SWIPE #	The Pin code you would like to use to open the gate (4 Digits) OR Swipe the tag past the red square
*	To Exit programming and return to standby state
*	

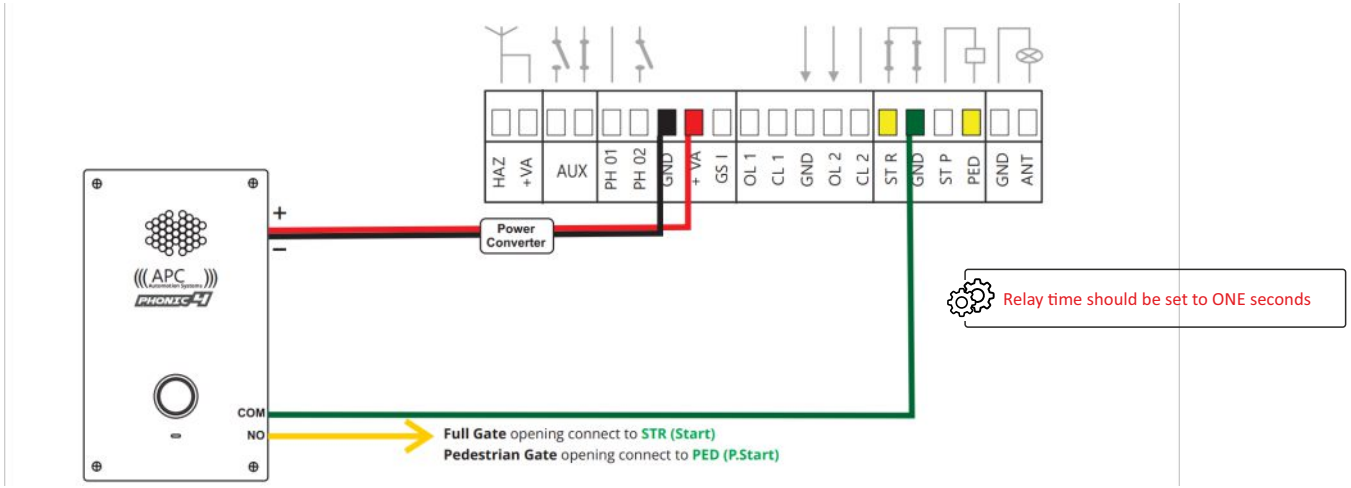
Connecting APC Connect 4 GSM Receiver

A GSM Receiver is the absolute most flexible form of access control. Providing there is good mobile reception at the gate the GSM switch can operate the gate from anywhere in the world. When receiving a call it will automatically reject the call and open or close the gate. SIM CARD IS NOT SUPPLIED.



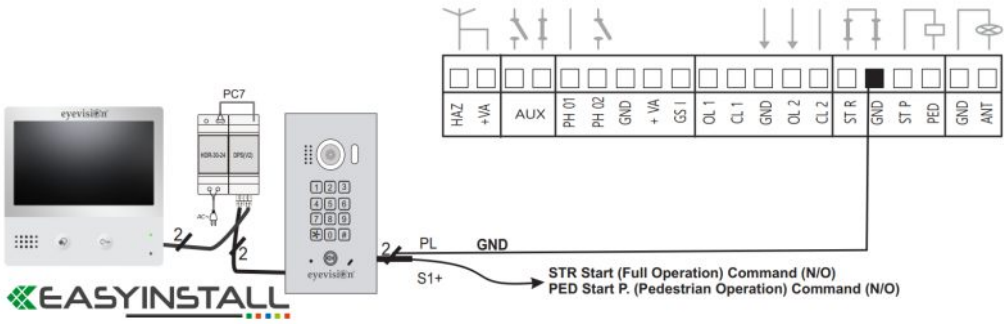
Relay time should be set to ONE seconds

Connecting APC Phonic 4 GSM Audio Intercom

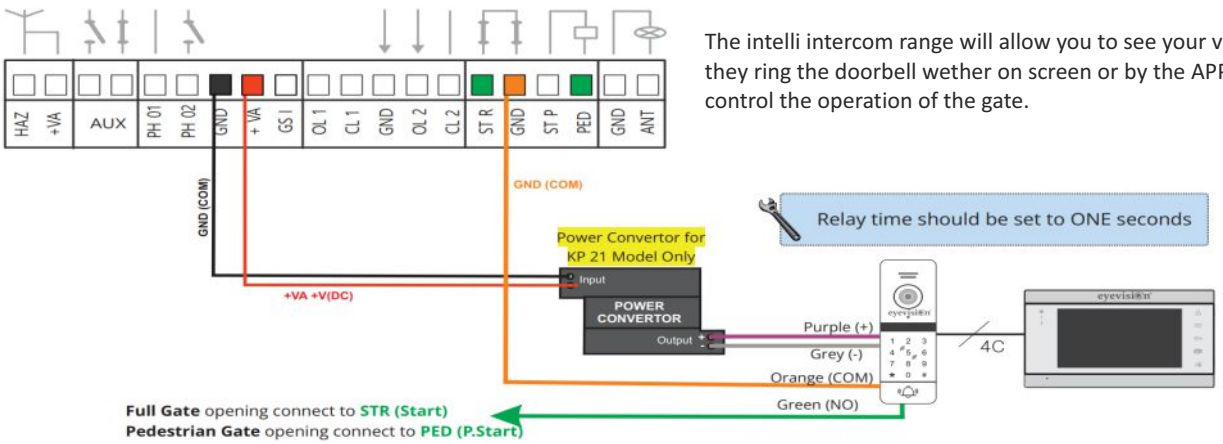


Relay time should be set to ONE seconds

Connecting Eyevision 2 Wire EasyInstall Video Intercom System



Connecting Eyevision Intelli Series 4 Wire Video Intercom System



Relay time should be set to ONE seconds

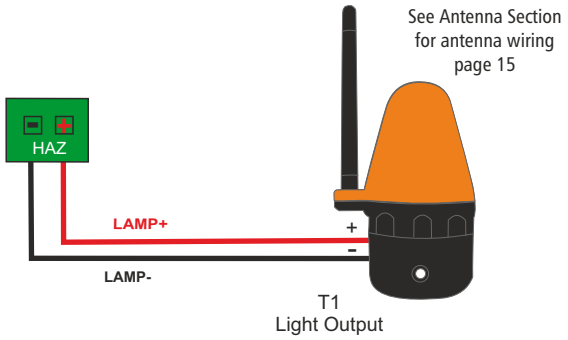
The intelli intercom range will allow you to see your visitors when they ring the doorbell wether on screen or by the APP and also control the operation of the gate.

Connecting an APC-ULA Safety Lamp

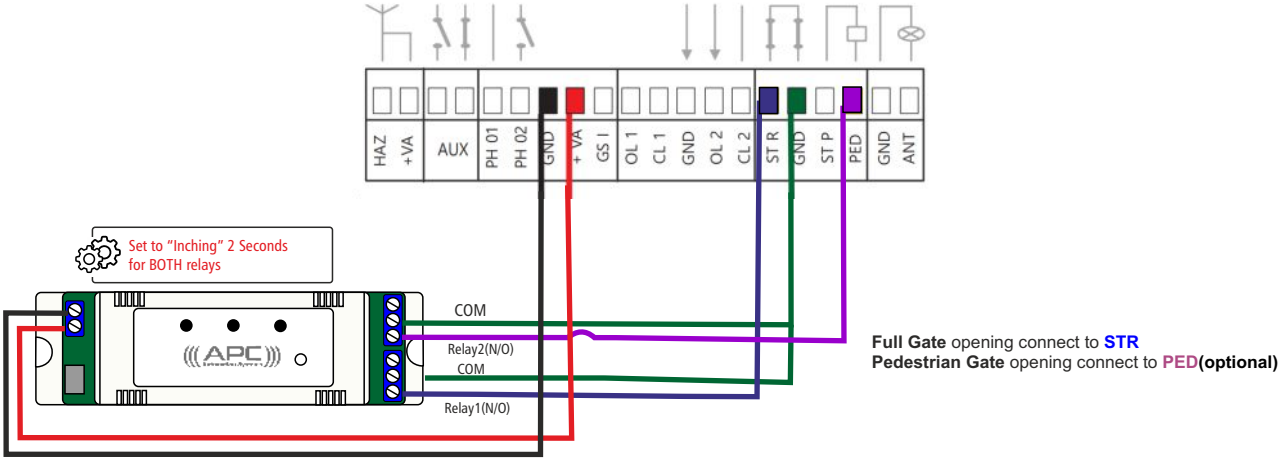
Warning lights are used to alert pedestrians to be cautious as there may be vehicles entering and exiting.
Note: Ensure that the light is set to constant illumination mode (not flashing) as this can be set from the logic parameters below.

This internal relay will support an output of 24V 15W Maximum

Refer page number 10 for change in Light settings Using DIP 6.



• LINK 2 wiring connections



Induction Loops

Before connecting it is important to note that the system must be set to function for induction loops.

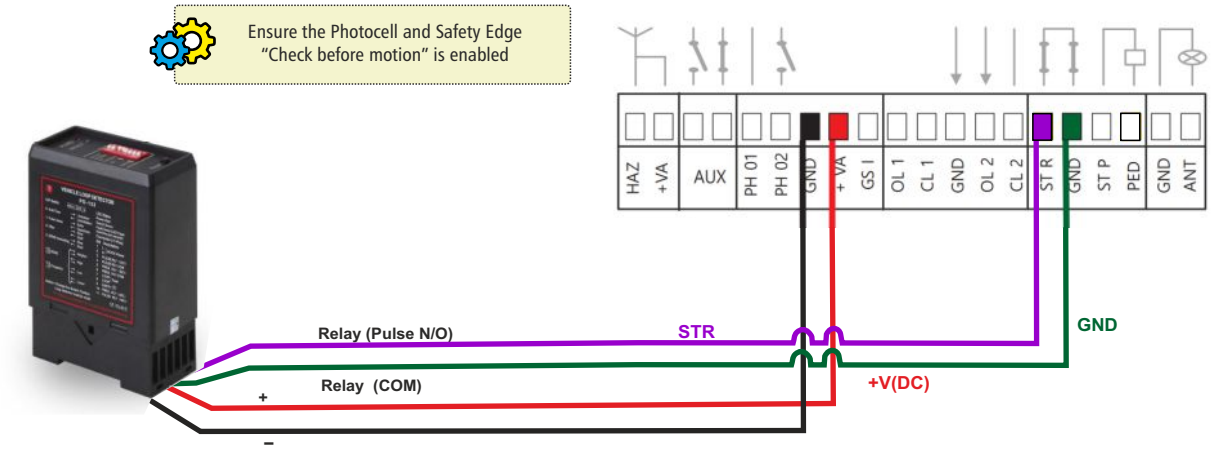
Furthermore at minimum a photocell must be installed and the automatic close timer must be enabled.

DIP Switch 3 OFF and 4 ON
Opening only command with automatic closing as per PAUSE trimmer adjustment.

APC Loop Detector For Auto Gate Opening

The APC Loop Detector will detect vehicles over the induction loop and automatically operate the gates to open.

Ensure the Photocell and Safety Edge "Check before motion" is enabled



9. Troubleshooting

Problem	Symptoms / Causes	Solution
The control unit LEDs are turned OFF	No power to control unit	Check for mains power
	The fuses blown. You must disconnect power before touching fuses. Check for no short-circuits or problems before replacing fuse with one of the same value	Replace the fuses, if the fuses are damaged again, before replacing them, disconnect all cables and check the integrity of the board
	The control unit is operating in the energy saving mode or operating voltage is below the minimum level	Deactivate energy saving mode
The control unit cannot enter programming mode	When the SET button is pressed and all the indication LEDs flash the control unit is in protection mode	Deactivate the protection
The control unit completes the programming setup, but does not respond to commands in the standard operating mode	Problem with safety and/or stop circuits if PHOTO and/or STOP LEDs are OFF. Those LEDs must be red otherwise the gate will not work	Check that PHO1 and PHO2 circuits are closed
Gate is moving but not all the way to fully close and/ or open	Obstacle detection problems. The control unit detects power draw peaks during the movement and goes into obstacle mode	1. Disengage the gate from the moto(s) with manual release; check that the gate is free to move all the way 2. Turn the OBS trimmer slightly clockwise and make sure that that the control unit stops powering the motors at the end of the travel 3. If not sufficient, turn the power knob slightly clockwise and reprogram the automation s movement. 4. Avoid/reduce slowdown travel phase
	Intervention of the photocells/ safety edges. Check that the green PHOTO and STOP LEDs remain lit throughout the entire movement. If there are multiple photocell pairs, these may signal false obstacles	Apply the bridges to PHO1, PHO2 and STOP to check if the program is from the control unit or other circuits connected to these terminals

Problem	Symptoms / Causes	Solution
The radio transmitter does not function	Check that LED on the transmitter is flashing, if not replace the transmitters battery	Check that the RADIO LED of the control unit flashes when pressing a button on the transmitter. If yes, try to reprogram the transmitter.
The transmitter has little range	Note: transmitter s range varies in relation to the environmental conditions	Replace transmitters battery. Connect an extension antenna if not sufficient.
The gate does not slow down	Repeating the automation s movement programming is required	1. Repeat the automation set up cycle 2. If not sufficient, do the advanced programming of automations movement and set a longer slowdown area
No effects when adjusting DIP switches or trimmers.	The control unit protection (lock mode) is active	Deactivate the control unit lock
	No effect with POWER knob, DIP 1-2 or DIP 8	Repeat the automation movement programming
The accessories remain powered with the energy saving function activated	With the control unit in standby mode, the accessories none the less remain powered	Accessories not connected properly

SIMPLY24
24V DC Universal Control Board
MADE IN ITALY

APC Automation Systems

Warranty Terms

APC WARRANTY
APC Automation Systems warrants the original purchasers or the APC gate(s) opening system for a period of twelve months from the date of purchase (not installation), the product shall be free of defects in materials and workmanship under normal use.
During the warranty period, APC shall, as its option, repair or replace any defective product upon return of the product to its factory, at no charge for labour and materials.
Any replacement and/or repaired parts are warranted for the remainder of the original warranty, The original owner must promptly notify APC in writing that there is defect in material or workmanship, such written notice must be received in all events prior to expiration of the warranty.

International Warranty
APC shall not be responsible for any freight fees, taxes or customs fees.

Warranty Procedure
To obtain service under this warranty, AND AFTER CONTACTING APC, please return the item(s) in question to the point of purchase.
All authorized distributors and dealers have a warranty program, anyone returning goods to APC must first obtain an authorization number.
APC will not accept any shipment for which prior authorization has not been used.

Conditions to Void Warranty
This warranty applies only to defects in repairs and workmanship relating to normal use. It does not cover:
- Damage incurred in shipping or handling
- Damage caused by disaster such as fire, flood, wind, earthquake or lightning
- Damage due to causes beyond the control of APC such as excessive voltage, mechanical shock or water damage
- Damage caused by unauthorized attachment, alterations, modifications, or foreign objects.
- Damage caused by peripherals (unless such peripherals were supplied by APC)
- Defects caused by failure to provide a suitable installation environment for the products
- Damage caused by usage of the products for purpose other than those for which it was designed.
- Damage from improper maintenance
- Damage arising out of any other abuse, mishandling, and improper application of the products.

Under no circumstances shall APC be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

Disclaimer of Warranties
This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose). And of all other obligations or purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other
warranty or liability concerning this product.

Out of Warranty Repairs
APC will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions.
Anyone returning goods to APC must first obtain an authorization number.
APC will not accept any shipment whatsoever for which prior authorization has not been obtained.
Products which APC determines to be repairable will be repaired and returned. A set fee which APC has been predetermined and which may be revised from time to time will be charged for each unit repaired. Products which APC determines not repairable will be replaced by the nearest equivalent product available at that time. The current market price for the replacement product will be charged for each replacement unit.