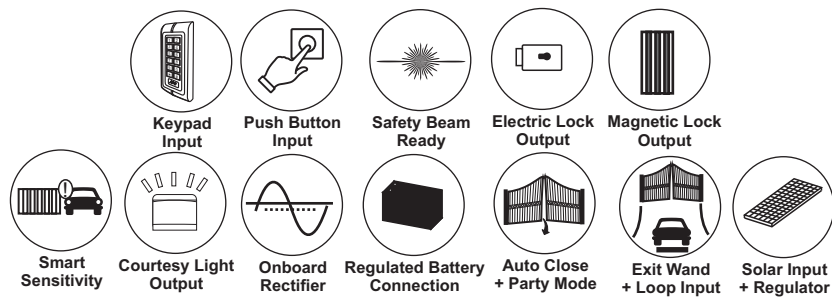
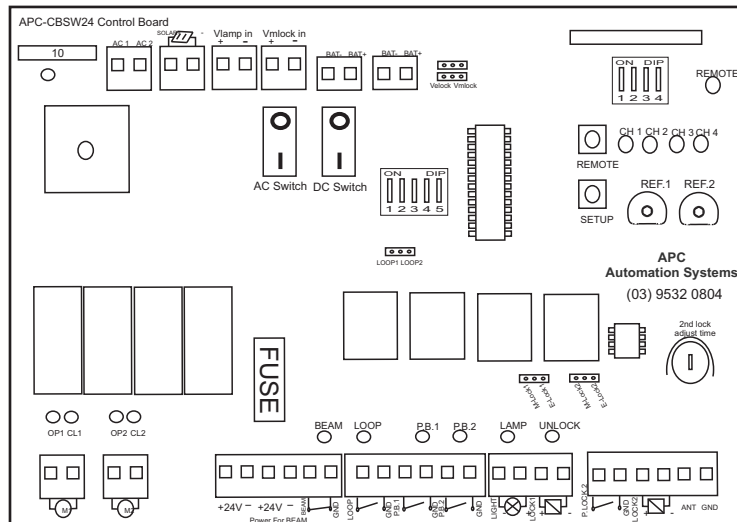


# (((APC))) Automation Systems

## APC-CBSW-24 V1.5 SMART 24V System Installation Guide



**When running any wiring you MUST always switch off the system power switches AND also unplug the input power source and the batteries.**

**Before beginning your installation please read this manual thoroughly and observe the wiring for the connection of any and all accessories related to your installation**

# Attention Installer

There is no substitute to the benefits of reading and understanding the manual

**The warranty covers faulty products only and not problems or damage caused by the installer  
Pictures of the installation are always requested for troubleshooting or technical support**

*As an installer or DIY you have undertaken the responsibility to install this automation system  
It is of utmost importance to read the instruction manual and understand it before proceeding.  
If in doubt after reading please call us and ask questions before proceeding.*

**In addition to the above the following must be observed to make the installation process**

1

The remote controls combined in this kit are already paired into the system. If Wireless buttons have also been purchased together with the kit then they have also been paired into the system.

2

This Gate automation control panel has been tested and pre-configured with the factory default setting. This means that the automation kit will work correctly for most size and weight gates with only the Setup procedure. A small adjustment to the over current setting may be required for your gates.

**DO NOT ADJUST OVER CURRENT SENSING UNTIL ALL SETUP AND TROUBLESHOOTING PROCEDURES HAVE BEEN USED**

\* See REF1 & REF2 in the control panel manual

3

Motor(s) test and limit switch setup (if applicable) must be carried out according to the description in the motor manual prior to connection to the control panel. Failure to do so will result in damage to the control panel.

4

The M1 and M2 on the control board are voltage OUT and NOT VOLTAGE IN, **DO NOT** connect a power source to this output. Doing so will immediately burn the control board.

5

M1 & M2 have LED indicators (Green for Opening and Red for Closing) The LED's are above the M1 & M2 outputs it is of utmost importance that you must be aware of the following:

A. Observe the colours sequence during the cycles (Green while Opening and Red while Closing)

B. The LED's must switch off within 5 seconds once the gate(s) reach the full open or full close

6

The battery/batteries system must be connected correctly and according to the manual to avoid damaging the control board, incorrectly connecting the battery/batteries will result in damage to the control board.

Congratulations on the purchase of your APC Australia® Gate Automation System.

**For your convenience any Remote's and wireless buttons supplied with the kit are already paired with the system.**

# Contents

|  |  |
|--|--|
| <b>Page 1</b><br>Preliminary Checks<br>Safety Information<br>Features<br>How to use the Push in Connectors       | <b>Page 12</b><br>Using your Wireless Equipment and Operating Range<br>Using Party Mode<br>Wireless Keypad Programming |
| <b>Page 2</b><br>Installation Layouts  | <b>Page 13</b><br>GSM Receiver Connection<br>Exit Wand Sensor Connection   |
| <b>Page 3</b><br>Tools Required<br>Solar panel and Bracket Assembly<br>Successful Setup Flowchart                | <b>Page 14</b><br>Wired Keypad Connection and Programming  |
| <b>Page 4</b><br>Control Board Quick Reference Guide   | <b>Page 15</b><br>Wired Push Button Connection   |
| <b>Page 5</b><br>Fixing the Control Box<br>Power Connection Precautions<br>ON and OFF Switches                   | <b>Page 16</b><br>Intercom Connection  |
| <b>Page 6</b><br>Extending the External Transformer<br>External Transformer Connection<br>Solar Panel Connection | <b>Page 17</b><br>Photoelectric Sensor Connection  |
| <b>Page 7</b><br>Battery Connection and Fitting<br>Motor Connection Terminals                                    | <b>Page 18</b><br>Retro Reflective Sensor Connection   |
| <b>Page 8</b><br>Motor 2 Delay Settings<br>Setting the Automatic Close Timer<br>Overcurrent Sensing              | <b>Page 19</b><br>Courtesy Light Connection<br>External Antenna Connection<br>12V DC output for Accessories            |
| <b>Page 9</b><br>Double Gate System Setup Cycle  | <b>Page 20</b><br>Electric/Magnetic Lock Settings<br>Electric Lock Connection  |
| <b>Page 10</b><br>Single Gate System Setup Cycle   | <b>Page 21</b><br>Magnetic Lock Connection   |
| <b>Page 11</b><br>Onboard Receiver Configuration<br>Wireless Equipment Pairing and Deleting                      | <b>Page 22</b><br>Pedestrian Gate Access control and Lock Connection   |
|  | <b>Pages 23-24</b><br>Troubleshooting  |
|  | <b>Page 25</b><br>Compatible Equipment   |

## 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 leafs 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(s) to swing open fully to the desired opening angle.
2. The control Panel Box must be installed in the area within 9 meters maximum cable distance from motor and cannot be damaged.
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 assist in preventing accidents or injuries.
10. Keep the remote controls in safe place and away from children.

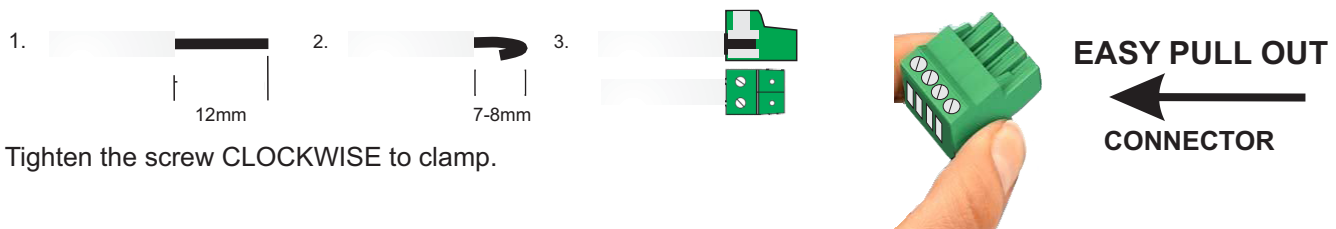
## Control Panel Features

Low Consumption (Standby ~30mA)  
Over Current Sensitivity  
Built in Solar Regulator  
Remote and Wireless Button Compatibility  
Automatic Close  
Party Mode (Cancel Auto Close)  
Dedicated Safety (PE) Sensor Output  
Dedicated constant 24v Output  
Loop/Exit Wand Input  
Input for Push Button, keypad, fingerprint reader and other access control compatibility  
Automatic Lock Output  
Pedestrian Gate Lock Output Electro-Mechanical Lock Support  
Courtesy Lamp Output

## Phoenix Connectors

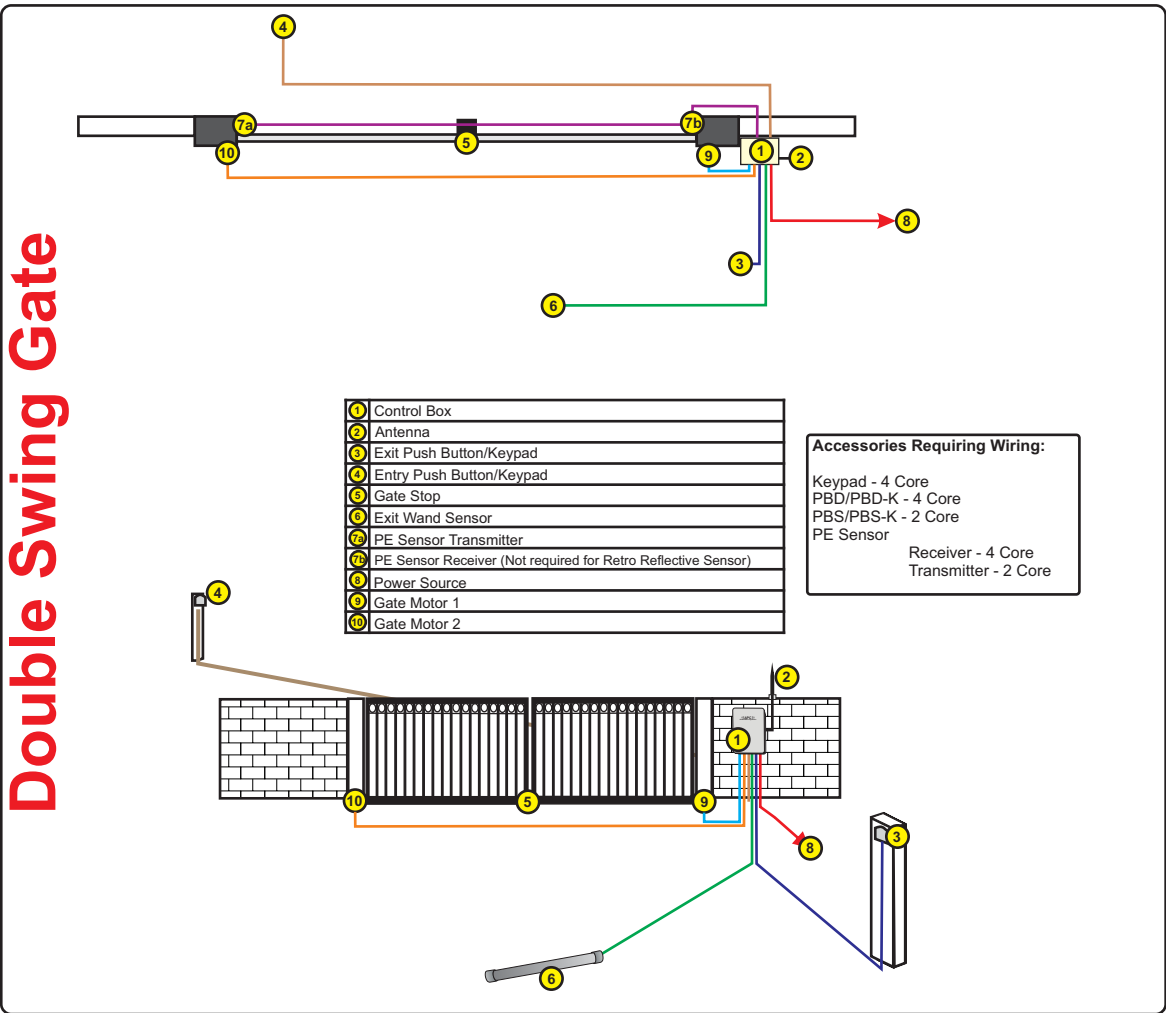
All Connectors are Pull-Out Connectors for ease of installation.

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.

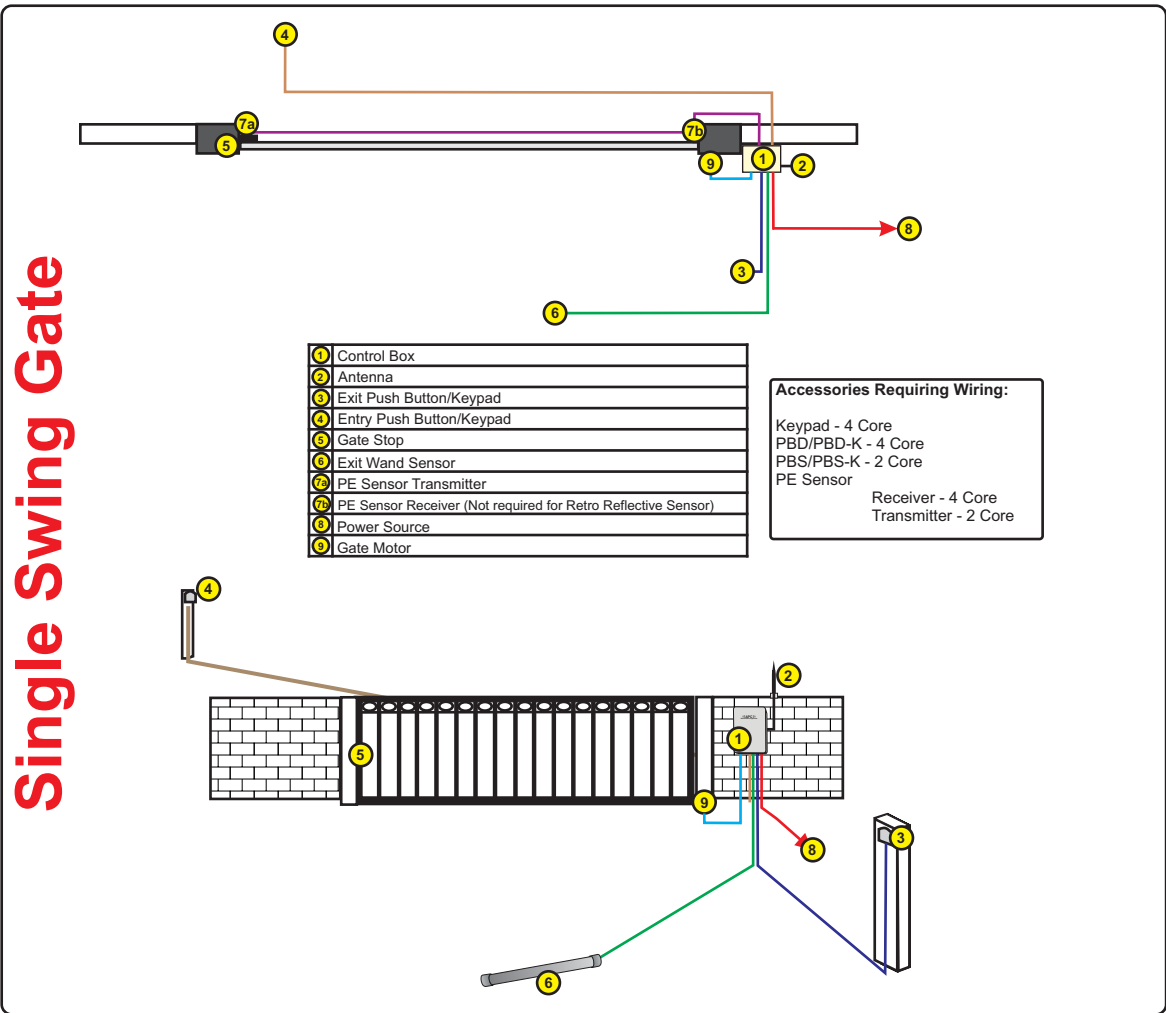


4. Tighten the screw CLOCKWISE to clamp.

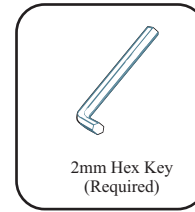
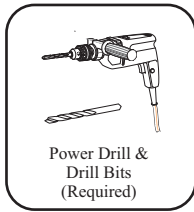
Double Swing Gate



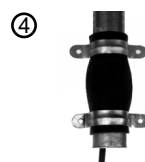
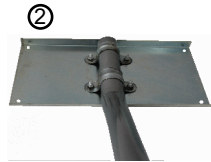
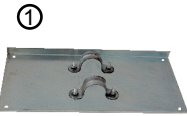
Single Swing Gate



## Required Tools



## Solar Panel and Bracket Assembly



Assemble the 2 clamps to the base plate.

Insert the post into the clamps and tighten.

Line up the solar mounting bracket just above the centre of the solar panel and use short self drilling tek screws to fasten and secure.

Use the flat rubber gasket behind the fixing clamps as shown in fig 4.

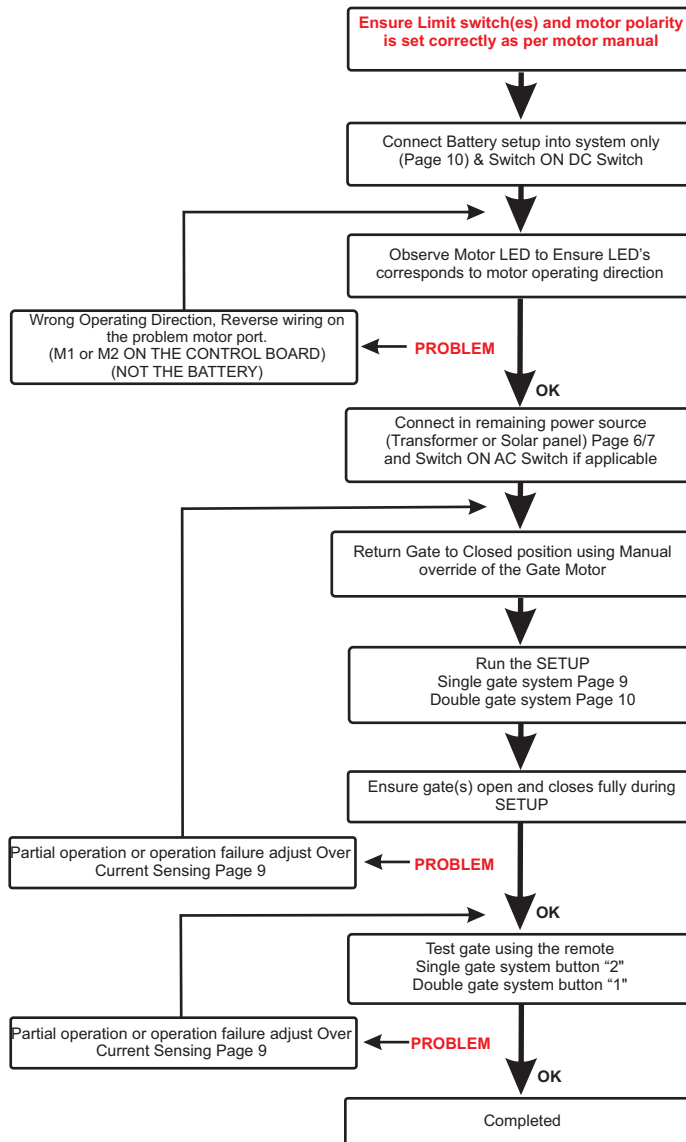
1. The solar panel should be installed at 45° facing mid-day to afternoon sun.

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.

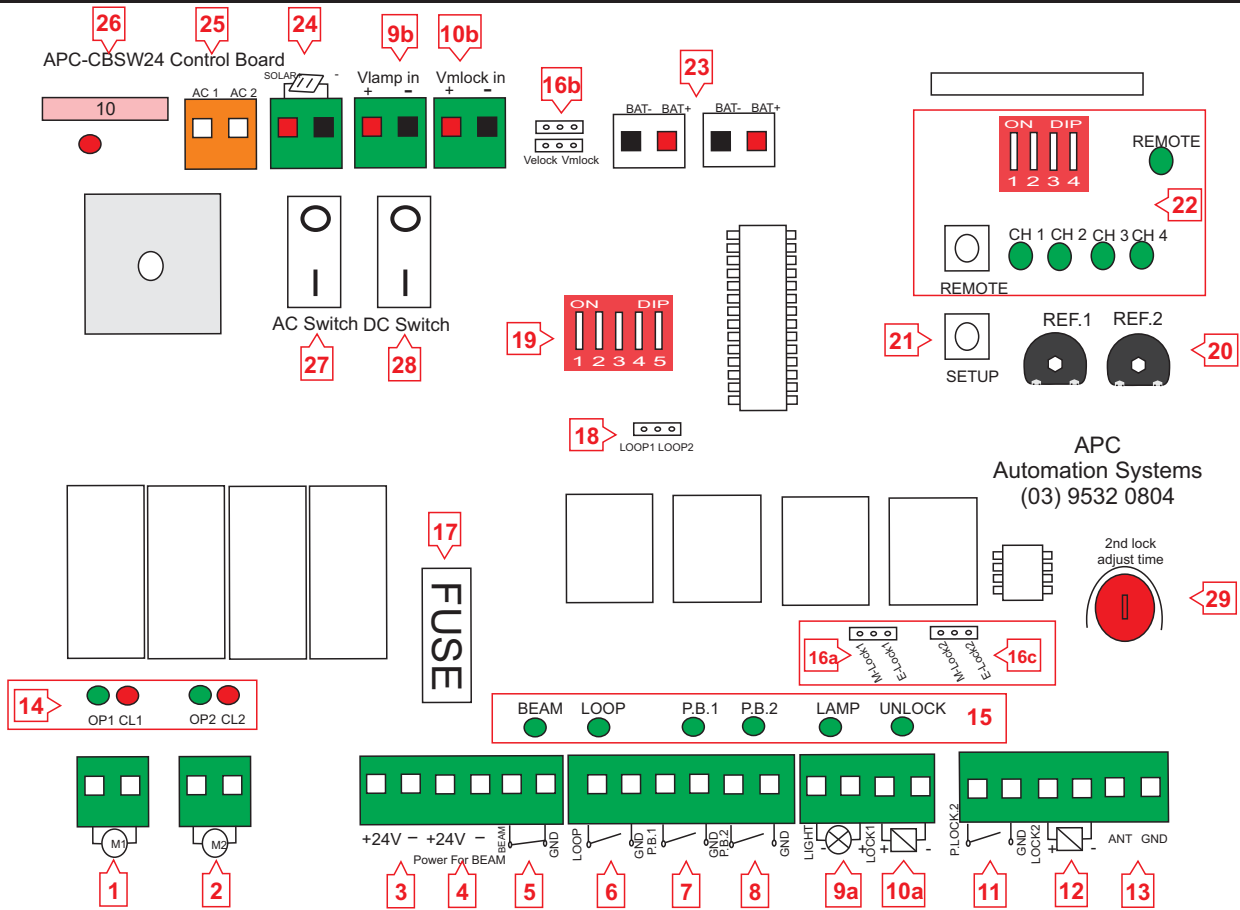
3. Make sure that the two wires of the solar panel do not touch each other at any time during installation.

4. Install the solar panel at least 2m above the ground to protect it from dust and small stones.

## Successful SETUP flowchart



# Quick Reference Guide



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1. Motor 1 Output</li> <li>2. Motor 2 Output</li> <li>3. Constant 24V DC output</li> <li>4. PE Sensor 24V DC output (Closing Only)</li> <li>5. PE Sensor Input (LATCHING N/O DRY Contact)</li> <li>6. Loop Input (MOMENTARY N/O DRY Contact)</li> <li>7. Single/Pedestrian Gate push Button Input (MOMENTARY N/O DRY Contact)</li> <li>8. Double Gate push Button Input (MOMENTARY N/O DRY Contact)</li> <li>9a. Light DC Voltage Output</li> <li>9b. Light DC Voltage Input</li> <li>10a. Automatic Gate Lock Output</li> <li>10b. Magnetic Lock DC Voltage Input</li> <li>11. Lock 2 Push Button Input (CH4) (MOMENTARY N/O DRY Contact)</li> <li>12. Lock 2 Output (CH4) (12V DC)</li> <li>13. 433MHZ Antenna</li> </ul> | <ul style="list-style-type: none"> <li>14. Motor Status Indicators</li> <li>15. Accessories Status indicators</li> <li>16. Lock Type Selection</li> <li>17. Accessories Output Fuse 0.5A</li> <li>18. Loop Configuration (Single/Double opening)</li> <li>19. Motor Delay &amp; Auto Close Configuration</li> <li>20. REF 1 &amp; 2 Adjusters</li> <li>21. Travel Time Programming</li> <li>22. Remote Configuration/Programming/Status</li> <li>23. Battery Output</li> <li>24. Solar Input</li> <li>25. 24V AC Input</li> <li>26. 10A AC Fuse</li> <li>27. AC ON/OFF Switch</li> <li>28. DC ON/OFF Switch</li> <li>29. Lock 2 Time Adjustment</li> </ul> |
|--|--|

## Motor Output Status

- OP1** The Green LED will be ON during the opening cycle of M1 Motor Output (GATE 1)
- OP2** The Green LED will be ON during the opening cycle of M2 Motor Output (GATE 2) **Double Gate System Only**
- CL1** The Red LED will be ON during the Closing cycle of M1 Motor Output (GATE 1)
- CL2** The Red LED will be ON during the Closing cycle of M2 Motor Output (GATE 2) **Double Gate System Only**

## Chanel Status

- CH1** CH 1: Double Gate Channel: Illuminated whilst CH1 Button is pressed on Controller Or PB2 Circuit is activated
- CH2** CH 2: Single Gate Channel: Illuminated whilst CH2 Button is pressed on a Controller Or PB1 Circuit is activated
- CH3** CH 3: Cancel Auto Close Channel (Party Mode): Illuminated whilst CH3 Button is pressed on a controller
- CH4** CH 4: Lock 2 for Pedestrian Gate: Illuminated whilst CH4 Button is pressed on a controller Or P.Lock2 Circuit is activated

- SETUP** Press and hold to initiate the Time Travel learning cycle
- REMOTE** Press once to begin the remote pairing.

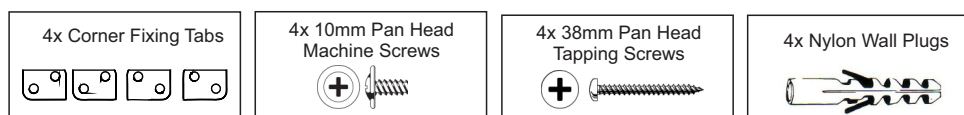
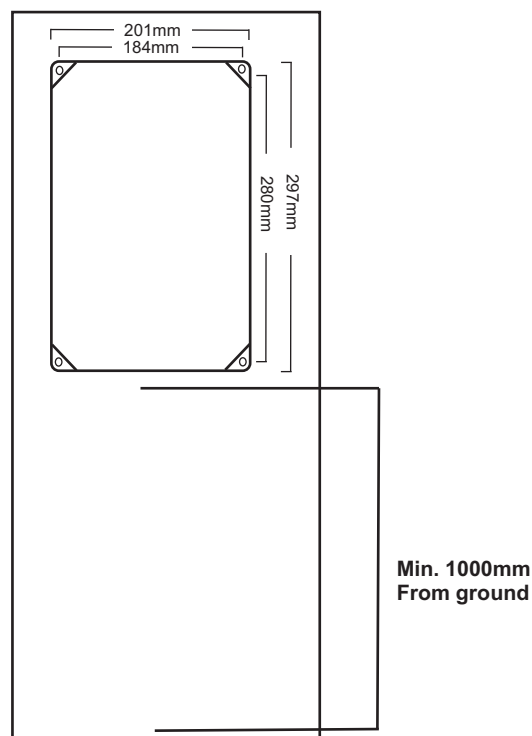
- BEAM** The GREEN LED is OFF in Standby & Opening. It will be ON during the closing cycle to indicate that the safety beam circuit is operational and not Interrupted.
- Loop** The GREEN LED will pulse ON once when receiving contact indicating that the signal was received.
- PB.1** The GREEN LED will pulse ON once when receiving contact indicating that the signal was received.
- PB.2** The GREEN LED will pulse ON once when receiving contact indicating that the signal was received.
- LAMP** This GREEN LED will be ON during the opening operation of the gate(s). It will stay ON while the gate(s) are open, and it will switch OFF after the gate(s) are closed.
- UNLOCK** This GREEN LED will be ON for the first 3 seconds of opening to indicate the lock output is active.
- AC POWER** The RED led will illuminate if an AC power source is switched ON.

## Fixing the Control Box

The supplied fixing screws and wall plugs are for Masonry fixing. When fixing to other surfaces use the appropriate fasteners.

**Eg. For metal surfaces use Tek Screws and for Timber fixing use timber screws.**

1. Install the corner tabs supplied with your kit to the rear of the control box using the 10mm Pan head screws.
2. Choose a location in which to mount the control box. The control box must be kept within 9 metres away from the motor(s) in cabling distance and a minimum of 1m height from the ground.
3. Mark the fixing points of the control box on the mounting surface whilst the box is held perfectly level. A bubble level is ideal to assist in keeping the box level.
4. If fixing to a masonry surface use a 6mm masonry drill bit to drill the fixing points for the wall plugs.
5. Gently tap the wall plugs into place until they are flush with the fixing surface.
6. Hold the control box in place whilst aligning the holes of the corner tabs with the wall plugs then fix into place using the 38mm pan head screws.
7. Apply LIGHT tension to the top of the control box to ensure that it is secured in place.



## Power Input Connection

Please follow the instructions below carefully as this will be the Primary source of power for the Control Board.

1. Ensure that there are no loose strands before inserting the wire into the connector to avoid short circuit.
2. Ensure that the Polarity is correct to avoid short circuit.
3. Ensure all power switches are OFF before connecting.



**DO NOT Connect more than one PRIMARY power source at a time. This Will damage the control board and VOID your Warranty.**

## ON/OFF Switches

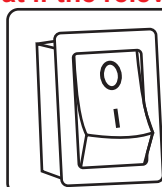
### Powered Systems:

When the AC Switch is in the ON state it will allow the low voltage AC supply to pass through the system. This switch will NOT charge the batteries until the DC switch is also in the ON state.

### Solar Systems:

When the DC Switch is in the ON state it will allow the low voltage DC current to enter the system.

**Please note that if the relevant switch is in the off state the system will discharge the batteries.**



When the switch is pressed in towards the "O" it is in the OFF STATE



When the switch is pressed in towards the "I" it is in the ON STATE



**When running any wiring you MUST always switch off the system power switches AND also unplug the input power source and the batteries.**



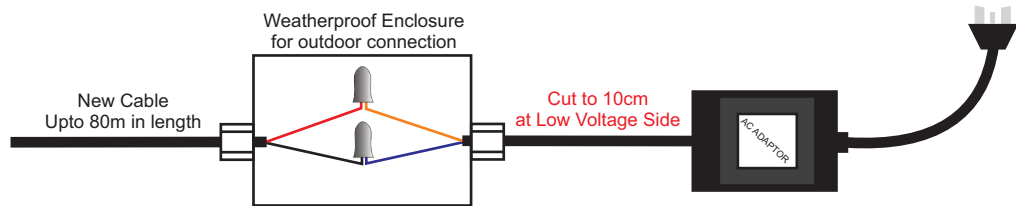


**When running any wiring you MUST always switch off the system power switches AND also unplug the input power source and the batteries.**

## Extending the APC External AC Transformer (Low Voltage)

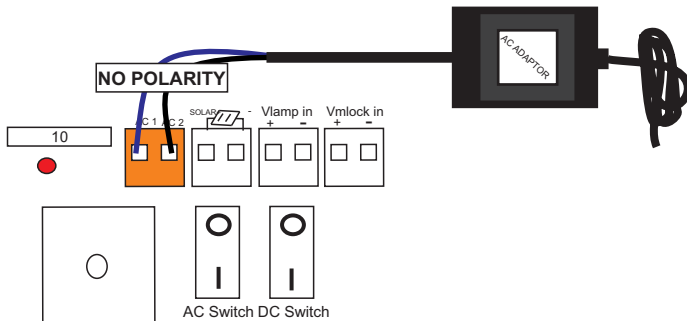
**Maximum cable distance:** The low voltage transformer can be run upto 80m in cable distance when using a 2mm pair conductor. To run the transformer to maximum capacity the cable must be cut at the LOW VOLTAGE SIDE within 10cm from the output.

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



## APC External AC Transformer (Low Voltage Systems)

Part No APC-PS24EXT



**Ensure all power switches are in the OFF position before connecting.**

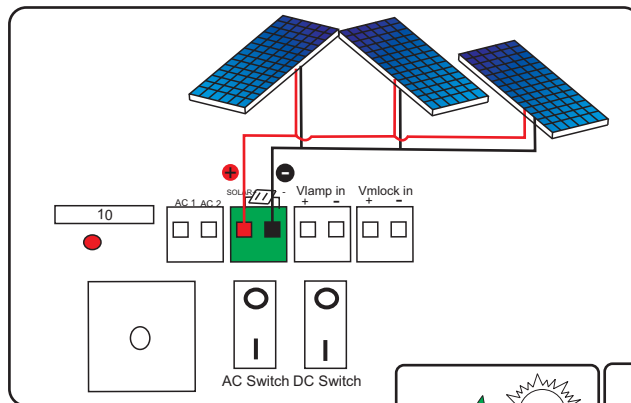
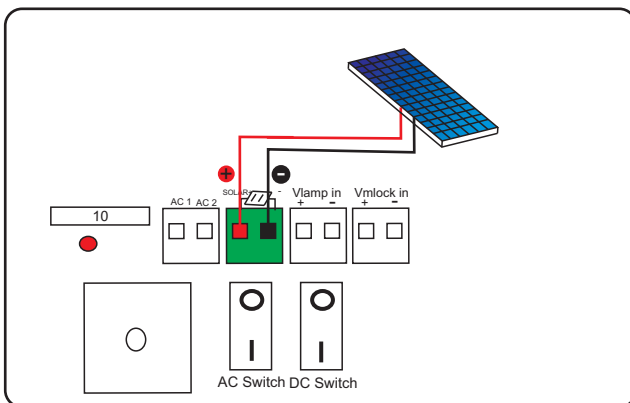
Once the AC Supply is powered and switched ON the RED LED will illuminate indicating the board is powered.

## APC Solar Panel Connection (Solar Systems)

Part No APC-SP24

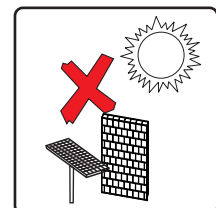
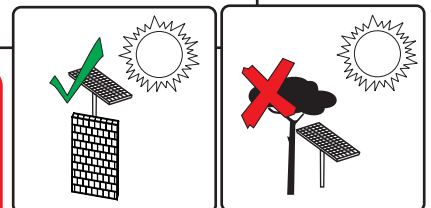
Multiple APC Solar Panels can be wired in parallel to speed up the charging process (see below), When installing multiple collectors consider installing them facing in different directions to gather morning and afternoon sun.

**SUPPORTS APC-SP24-20W, 40W & 60W Panels**  
**MAXIMUM TOTAL INPUT MUST NOT EXCEED 60W**



### Understanding Solar

1. A solar panel CANNOT be installed under a tree or a shaded area, 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.



## Battery Connection

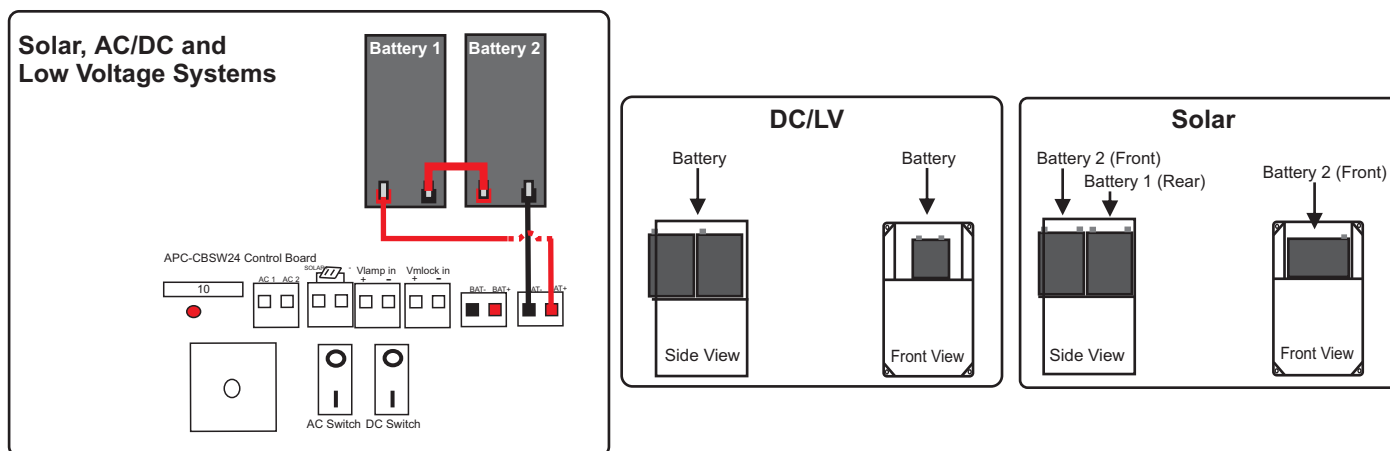


**Incorrect connection of the battery will cause damage and will immediately VOID warranty**

**Before connecting your batteries ensure that the “DC Switch” is in the OFF Position.**

1. Unplug battery connector from control panel.
2. Connect the Red battery lead to the Red (Positive) terminal on the battery 1.
3. Connect the Black battery lead to the Black (Negative) terminal on the battery 2.
4. Connect Negative of battery 1 to positive of battery 2.
5. Plug connector into battery input port on the control board.

Repeat the above if dual batteries are to be connected (Solar systems).



## Gate Motor Connection



**MAXIMUM CABLE DISTANCE BETWEEN MOTOR AND CONTROL PANEL IS 9 METRES**

**Please refer to your gate motor manual for the correct wiring connection to the control box.**

**Motors are generally supplied with a 5 meter cable, for distances up to 9 meters the cable should be replaced with a 2mm pair.**

### M1/M2 Output

**M1 Motor Output - (First motor output/Single gate motor output)**

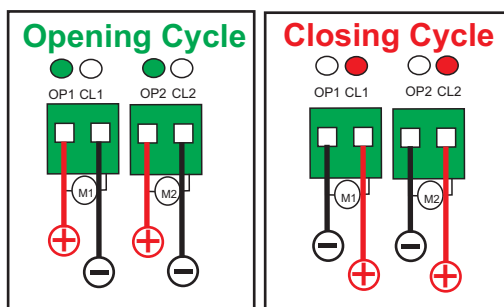
Motor output for the Master (Leading) gate when opening in a double gate installation, second gate to close in a double gate installation.

**Motor output for a Single gate in a Single gate installation.**

**M2 Motor Output - DOUBLE GATE SYSTEMS ONLY**

Motor output for Slave(Trailing) gate when opening in a double gate installation, first gate to close in a double gate installation.

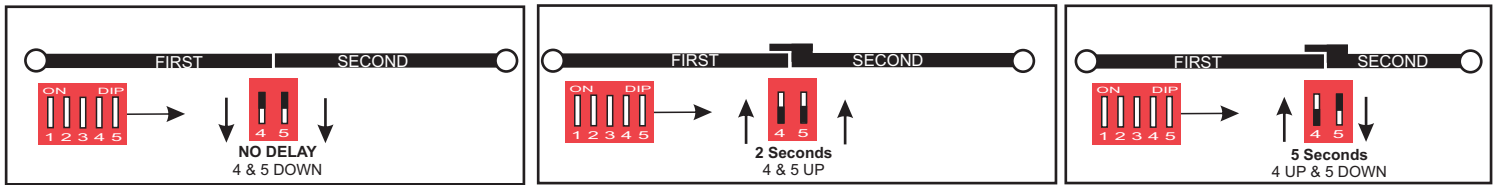
**Always run the motor cables at similar if not equal lengths to avoid a speed difference between the two motors.**



## Setting the Motor Delay (Double Gate Systems only)

Three choices are available for the time difference between Gate 1 operating and Gate 2 operating. No Delay, 2 second Delay and 5 Second Delay.

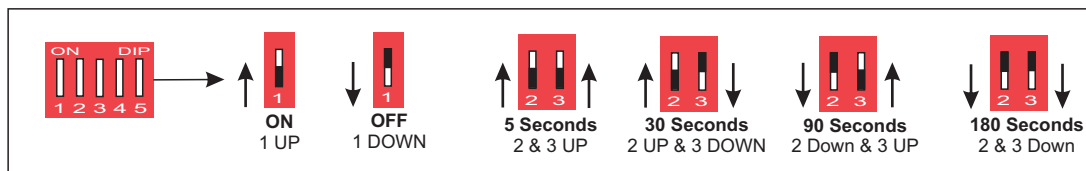
If a rebate, lip or tab is installed on one of the gates and the gates are the same size a 2 second delay will be required. If a rebate, lip or tab is installed on one of the gates and the gates are a different size a 5 delay will be required. If the gates do not have a rebate, lip or tab NO DELAY is required.



## Setting the Auto Close Duration

The simple to set Auto Close has 4 easy to adjust settings; 5,30,90 and 180 Seconds.

To turn on Auto Close Set DIP Switch 1 in the ON position followed by DIP 2 and 3 based on your desired Auto Close duration.



**A PE Sensor or Reflective sensor MUST be connected when using the Auto Close Feature**

## Over Current Sensing



Ref 1 and Ref 2 Trim Pot

More Sensitive



Less Sensitive

## What are the Ref 1 and Ref 2 Trim Pots

These trim pots directly adjust the over current sensitivity of the control board, they are adjusted **ONLY** when the gate(s) fail to fully open/close **UNDER NORMAL OPERATING CONDITIONS**. Adjusting these dials should only be considered after ALL aspects of the installation are confirmed.

**REF 1** Directly controls the over current sensitivity for the **FULL SPEED** portion of the normal operating cycle.

**Furthermore** because the **SETUP** cycle is only run in the fast speed the REF 1 is the only trim pot that should be adjusted if the problem is occurring in **SETUP**.

**REF 2** Directly controls the over current sensitivity for the **SLOW SPEED** portion of the operating cycle and also the **TRANSITION** speed between full speed and slow speed. It is not used in the **SETUP** cycle.

**IMPORTANT:** This step must be adjusted correctly to ensure that the gate is not inconsistent in its operation **BUT** will continue to sense obstructions and wind loading. The adjustment needs to be set taking into consideration that a different temperature after installation will cause a greater resistance.

## How to adjust

Adjusting the pots **CLOCKWISE** will **DECREASE** the sensitivity thus making the system **LESS sensitive** to weight and resistance.

Adjusting the pots **ANTI-CLOCKWISE** will **INCREASE** the sensitivity thus making the system **MORE sensitive** to weight and resistance.

**The pots should be adjusted only in 1mm increment turns until the gate does not over current sense during its travel.**

# GATES MUST BE CLOSED BEFORE BEGINNING THE STEPS BELOW

## Double Gate System SETUP Cycle

Before beginning this step you must first ensure that all your motor wiring connections are connected correctly, there are no loose wire strands and all connection points are joined and insulated correctly.

If you are using a limit switched motor ensure that the limit switches have been set correctly using the backup battery **PRIOR** to connecting to the system.

The purpose of the SETUP cycle is so that the gate control panel can learn its opening and closing limits and learn its slowdown. If the control panel is not setup it may run inconsistently and/or may not reach its stopping points and/or slow down incorrectly.

## Preliminary checks prior to setup cycle

Ensure gate hinges are free with **ZERO** resistance

Ensure gate is free of **ALL** sagging and bowing

Ensure that the arm is straight and not being pulled up or down (Folding Arm Systems)

Ensure that the Actuator is straight and not being pulled up or down (Linear Actuator Systems)

Ensure that limit switches are set correctly

Ensure that the motor polarity is set correctly

### IMPORTANT

If your gate is not open frame and is covered with pickets, sheeting, cladding or any other material the system must not be setup with the presence of ANY wind load. The protection purposes the systems are designed to over current sense under all loads to protect the system from overloading damage.

**1**  
Press and **HOLD** the "Setup" Button.



**2**  
Release the setup button **IMMEDIATELY** after the buzzer sounds.

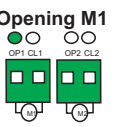


**3**  
Press and **HOLD** "1" on the remote control for one second then release.



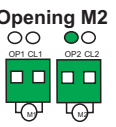
The SETUP cycle will now open and close each gate independently at full speed so that it can learn the time travel distance. It will follow the sequence illustrated below. Once the cycle below is completed the buzzer will sound indicating completion.

**4** **Opening M1**



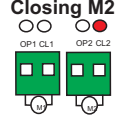
Gate 1 will open to the full open position at full speed. Once at the open position the motor and the **GREEN OP1** indicator LED will switch off.

**5** **Opening M2**



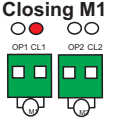
Gate 2 will open to the full open position at full speed. Once at the open position the motor and the **GREEN OP2** indicator LED will switch off.

**6** **Closing M2**



Gate 2 will close to the full close position at full speed. Once at the closed position the motor and the **RED CL2** indicator LED will switch off.

**7** **Closing M1**




Gate 1 will close to the full close position at full speed. Once at the closed position the motor and the **RED CL1** indicator LED will switch off.

**Important !**

Observe the LED indicators as illustrated and detailed above, if the gate(s) reach the open or close position and the motor LED does not switch off immediately switch off both the AC and DC switches immediately and see the troubleshooting section.

**8**



The Buzzer will now sound indicating completion of the setup cycle.  
**If the gate(s) did not reach any of the full open or close cycles or has missed part of the cycle see the troubleshooting section.**

# GATES MUST BE CLOSED BEFORE BEGINNING THE STEPS BELOW

## Single Gate System SETUP Cycle

Before beginning this step you must first ensure that all your motor wiring connections are connected correctly, there are no loose wire strands and all connection points are joined and insulated correctly.

If you are using a limit switched motor ensure that the limit switches have been set correctly using the backup battery **PRIOR** to connecting to the system.

The purpose of the SETUP cycle is so that the gate control panel can learn its opening and closing limits and learn its slowdown. If the control panel is not setup it may run inconsistently and/or may not reach its stopping points and/or slow down incorrectly.

## Preliminary checks prior to setup cycle

Ensure gate hinges are free with **ZERO** resistance

Ensure gate is free of **ALL** sagging and bowing

Ensure that the arm is straight and not being pulled up or down (Folding Arm Systems)

Ensure that the Actuator is straight and not being pulled up or down (Linear Actuator Systems)

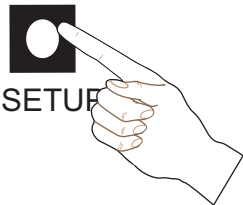
Ensure that limit switches are set correctly

Ensure that the motor polarity is set correctly

### IMPORTANT

If your gate is not open frame and is covered with pickets, sheeting, cladding or any other material the system must not be setup with the presence of ANY wind load. The protection purposes the systems are designed to over current sense under all loads to protect the system from overloading damage.

**1**  
Press and **HOLD** the "Setup" Button.



**2**  
Release the setup button **IMMEDIATELY** after the buzzer sounds.

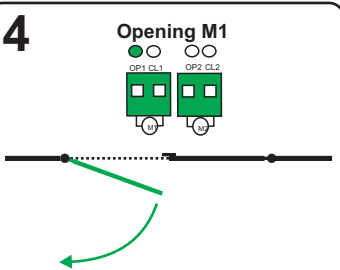


**3**  
Press and **HOLD** "2" on the remote control for one second then release.



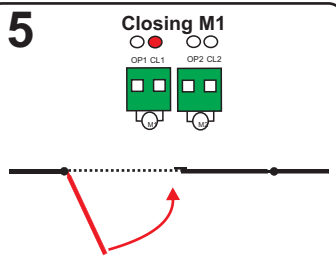
The SETUP cycle will now open and close the gate at full speed so that it can learn the time travel distance. It will follow the sequence illustrated below. Once the cycle below is completed the buzzer will sound indicating completion.

**4** **Opening M1**



Gate 1 will open to the full open position at full speed. Once at the open position the motor and the **GREEN OP1** indicator LED will switch off.


**5** **Closing M1**



Gate 1 will close to the full close position at full speed. Once at the closed position the motor and the **RED CL1** indicator LED will switch off.

### Important !

Observe the LED indicators as illustrated and detailed above, if the gate reaches the open or close position and the motor LED does not switch off immediately switch off both the AC and DC switches immediately and see the troubleshooting section.

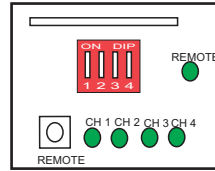
**6**  The Buzzer will now sound indicating completion of the setup cycle.  
**If the gate did not reach any of the full open or close cycles or has missed part of the cycle see the troubleshooting section.**

## APC Smart Receiver Configuration



The APC Smart remote system is designed for user friendly operation. Once a controller is paired into the system it will automatically function based on your system configuration.

To adjust your Control panels functions adjust the DIP switches based on your configuration requirements.



|   |   |   |
|---|---|---|
| <p><b>Double Gate Opening</b></p> <p>Set DIP 1 to the ON Position to Activate the Double Gate opening Function.</p> <p>CH 1 ON CH 1 OFF</p> | <p><b>Single Gate Opening</b></p> <p>Set DIP 2 to the ON Position to Activate the Single Gate opening Function.</p> <p>CH 2 ON CH 2 OFF</p> | <p><b>Party Mode</b></p> <p>Set DIP 3 to the ON Position to Activate the Party Mode Function on your remote.</p> <p><b>Only Required if you are using auto close and wish to cancel from your remote for ONE cycle.</b></p> <p><b>Note: Using the Party Mode Button will turn off the light output regardless of the auto close status.</b></p> |
| <p><b>Lock 2</b></p> <p>Set DIP 4 to the ON Position to Activate the Lock 2 Function.</p> <p>CH 4 ON CH 4 OFF</p>                           |   |   |

## APC Remotes and Wireless Equipment

### Pairing

The original remote's supplied with the gate opener system are already paired.

- Press the small REMOTE button once on the circuit board and the LED Indicator will start to flash.
- Press (1 for DOUBLE gates) or (2 for SINGLE gates)
- Press (1 for DOUBLE gates) or (2 for SINGLE gates) again to test operation

#### Pairing APC Wireless Push Buttons

Ensure the switch is in the ON state using the supplied key

- Press the small REMOTE button once on the circuit board and the LED Indicator will start to flash
- Press the wireless push button for 1 second.
- Press the button to test operation.

#### Pairing APC Wireless Keypads

Use the default pin codes, after successful pairing then you can change the pin numbers

- Press the small REMOTE button once on the circuit board and the LED Indicator will start to flash
- Type (1 1 1 1 # for DOUBLE gates) or (2 2 2 2 # fo Single Gates)
- Type (1 1 1 1 # for DOUBLE gates) or (2 2 2 2 # fo Single Gates) again to test operation.

1

Press this REMOTE button once and the LED indicator will start to flash.

2

Press the button on the remote button for 1 second.

OR

Press the Wireless Push button.

OR

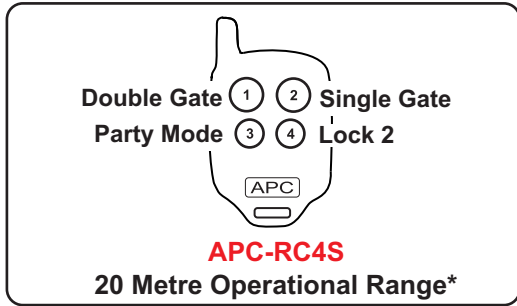
Type in the pin code on the Wireless Keypad.

### Deleting

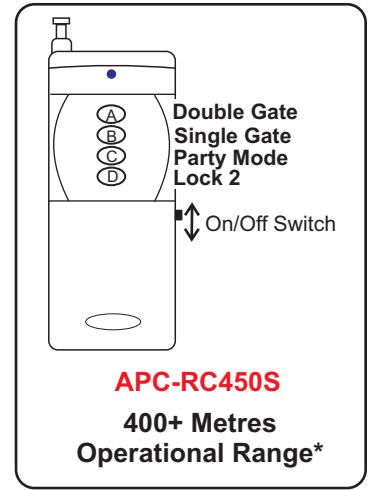
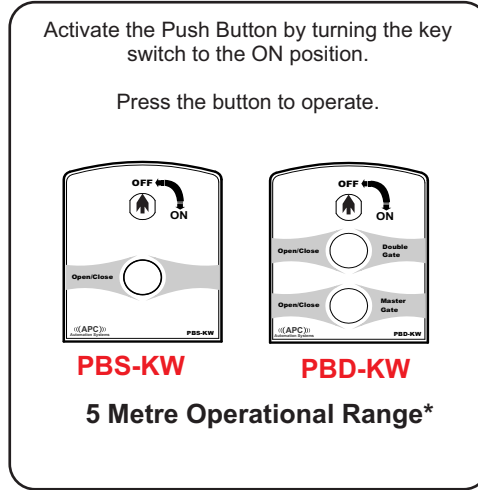
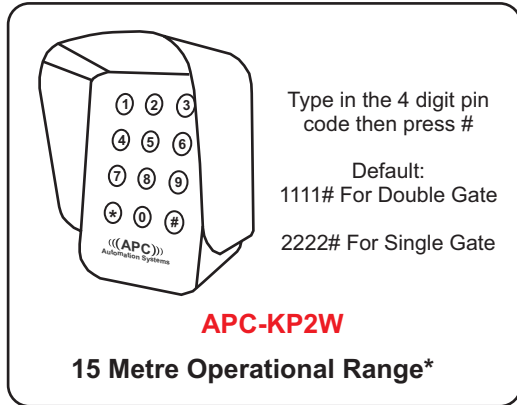
- Press and hold the REMOTE button on the control board until the LED indicator is on solid then release the REMOTE button.

**WARNING:** This will delete all wireless equipment from the system.

# Using your Wireless Equipment



- \* All guideline distances will vary from site to site
- \* All operating ranges are based on a clear environment (interference free)
- \* Metal fences will drastically decrease operating ranges
- \* All operating ranges can be boosted with the ANT-1 Antenna (page 19)



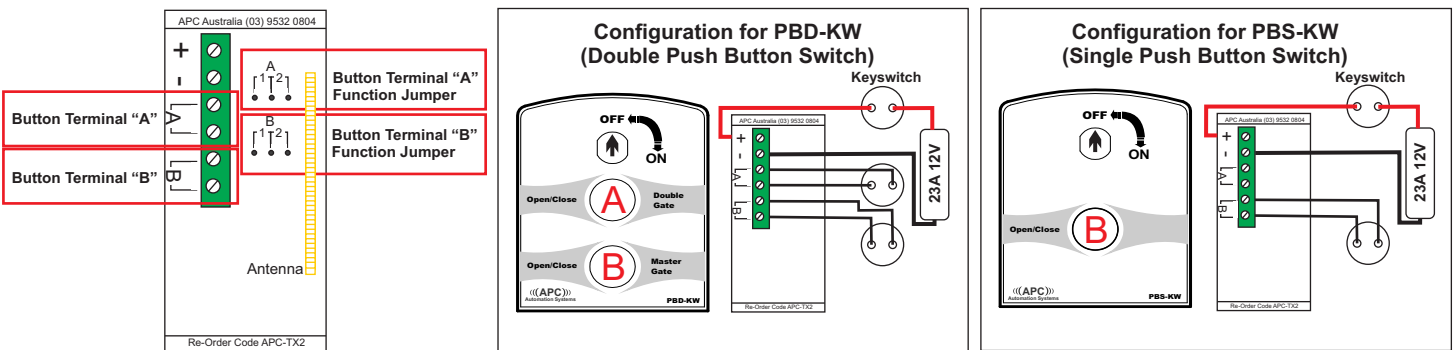
## Party Mode (Cancel Auto Close)

To Cancel the Auto Close feature for ONE cycle

**RC450S Remote:** Simply press and HOLD the “C” button on your RC450S Remote for 5 SECONDS whilst the gate is in the OPEN position.

**RC4S Remote:** Simply press and HOLD the CH3 button on your RC4S Remote for 5 SECONDS whilst the gate is in the OPEN position.

## APC Smart Wireless Button Configuration



When the jumper is set to “1” and center pin the designated output will operate double gates. Double Gate Setting

When the jumper is set to “2” and center pin the designated output will operate a single gate. Single Gate Setting

## APC-KP2W Pin number programming (4 Digit)

The APC-KP2W has TWO channels, each channel can control a different function on an APC Smart control board. 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.

**-Channel 1 Double Gate (Supports 8 Pin Codes)**

Master Code \*  
0 1 #  
Pin Code #

**-Channel 2 Single Gate (Supports 3 Pin Codes)**

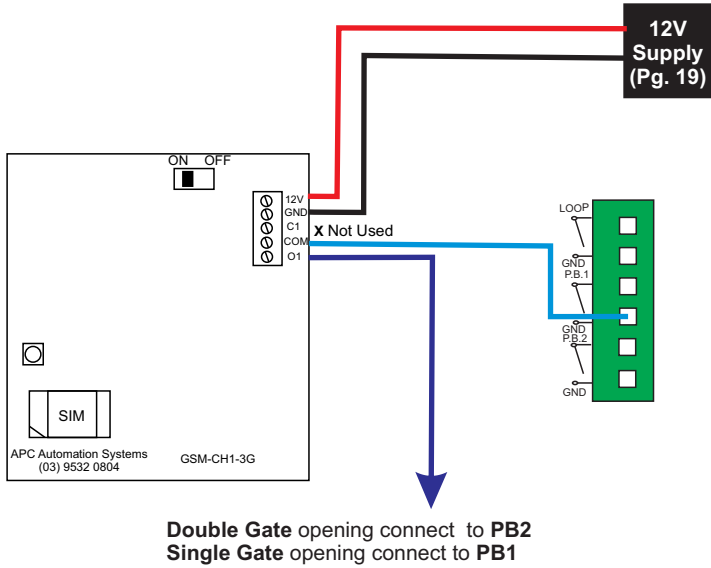
Master Code \*  
0 2 #  
Pin Code #



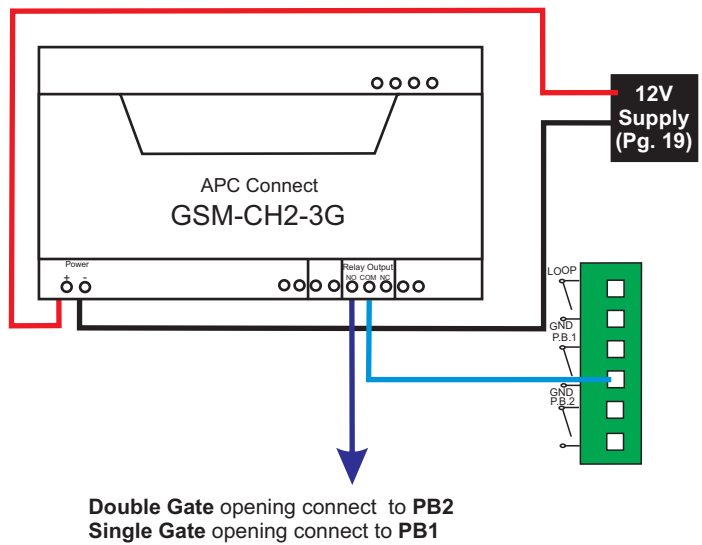
# APC GSM Receiver

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.

## APC-GSM-CH1-3G



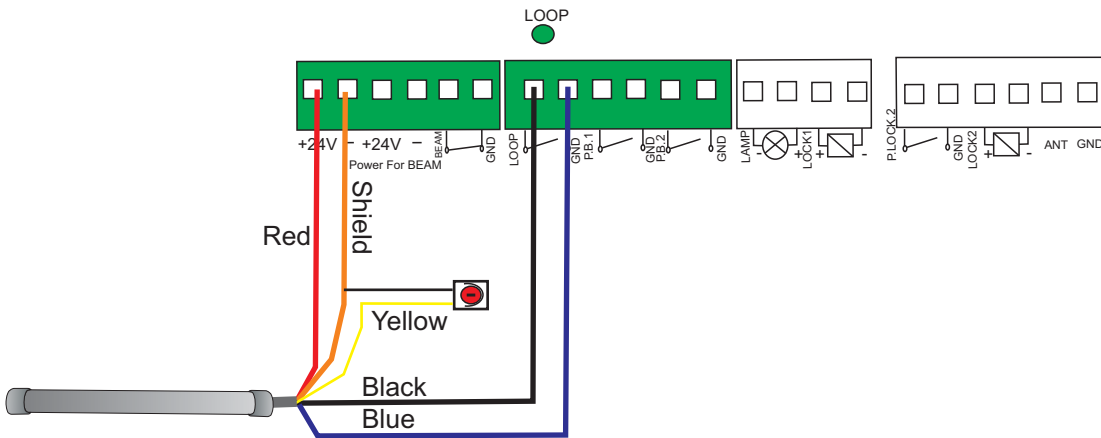
## APC-GSM-CH2-3G



# APC Magnetic Exit Wand Connection (APC-EW-15) For Auto Gate Opening

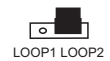
The APC-EW15 can detect vehicles and all metal objects within the detection zone (adjustable sensitivity). Typically and for best results, this is installed underground and connected back to the control panel.

*i* When the Exit Wand is Triggered the LOOP LED will momentarily illuminate.



For Double Gate Opening Set the Loop Configuration Jumper to LOOP 2 and Centre Pin.

For Single Gate/Pedestrian Opening Set the Loop Configuration Jumper to LOOP 1 and Centre Pin.



**!** A Dual PE sensor setup set MUST be used in this application.

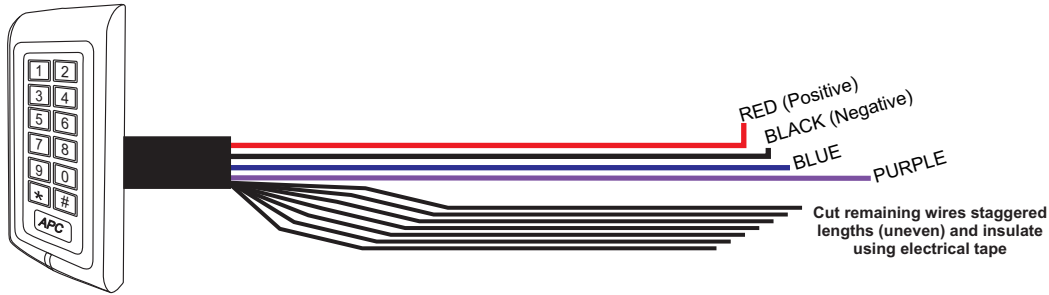
As a Safety feature this sensor will automatically pulse a second time 20 seconds after initial pulse, this will disrupt any short auto close settings (if in use). If using auto close the setting must be set at a higher value than second pulse. i.e 30 second setting on auto close will equal approx 50 seconds real time.



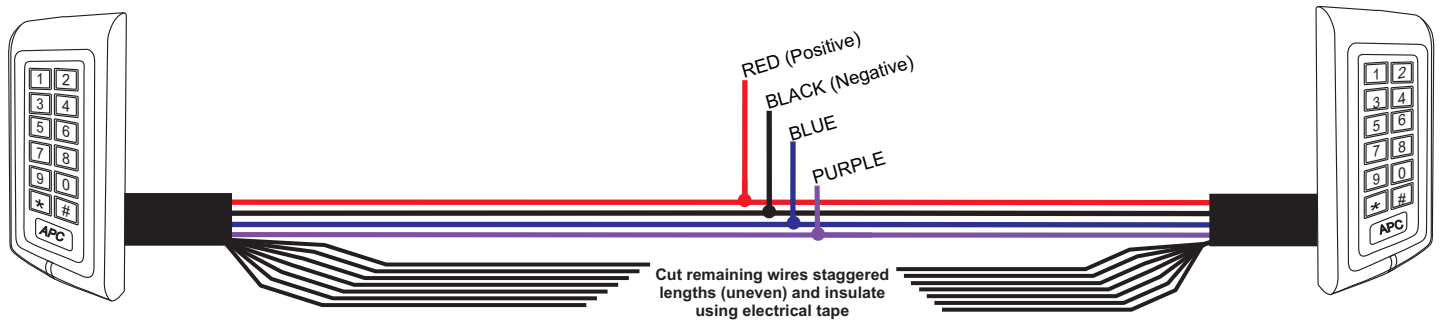
## APC-KP1-C Keypad with Swipe Reader Wiring

Unlike a push button entry switch using a keypad can provide a much higher security 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.

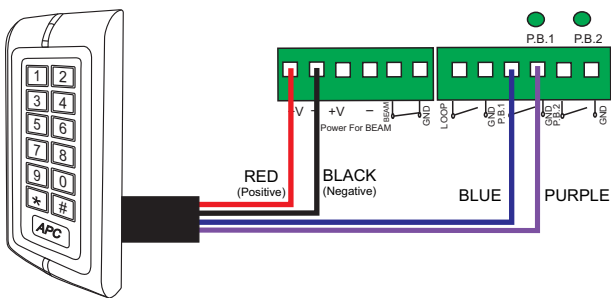
### Wiring a Single Keypad



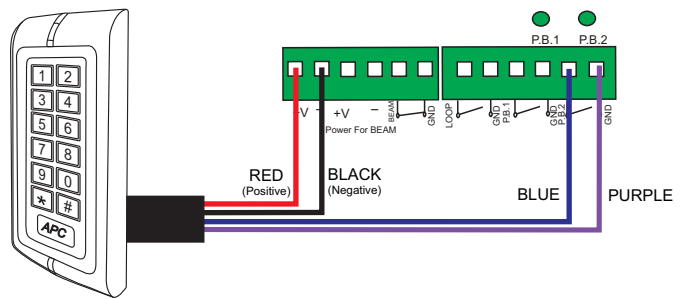
### Wiring in a Second Keypad



### Single Gate



### Double Gate



*i* When the Input is Triggered the PB1/PB2 LED will momentarily illuminate

## Quick Programming Pin Code

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

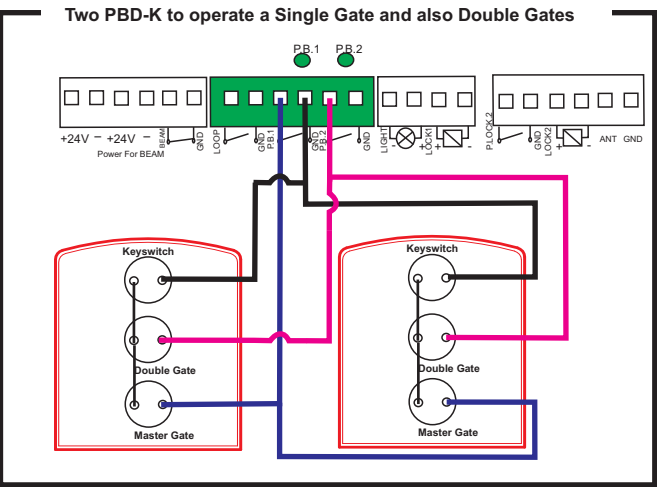
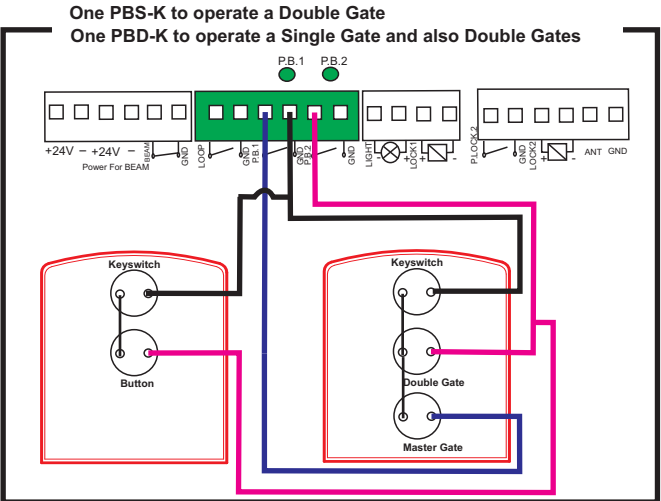
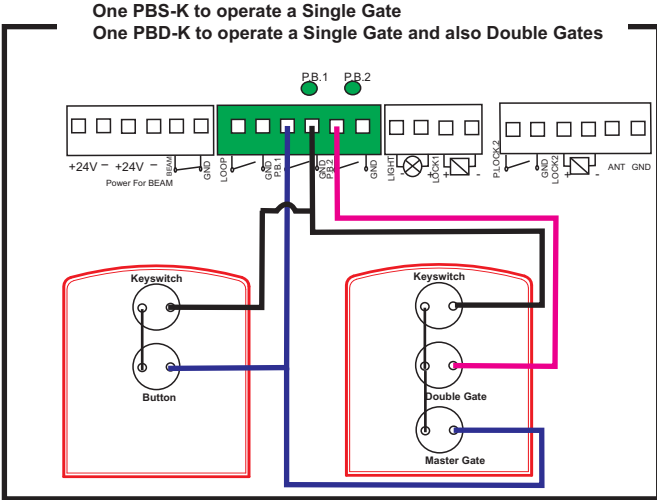
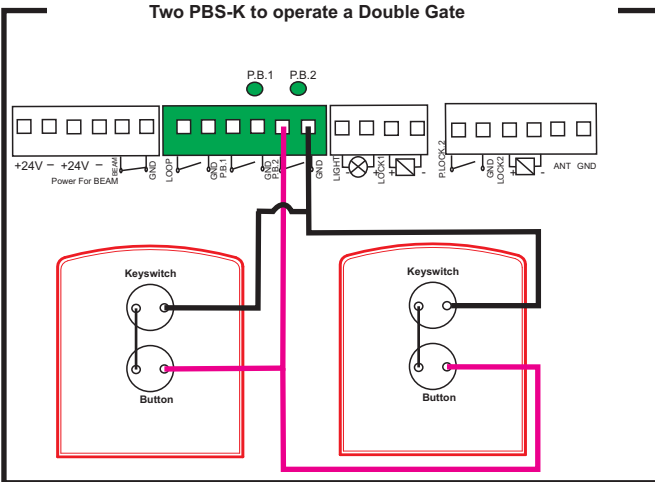
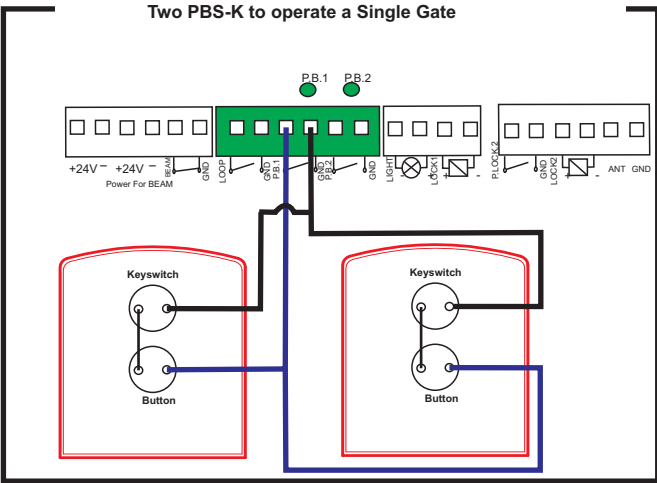
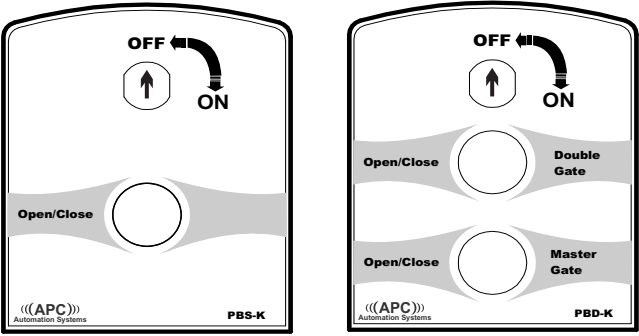
## Quick Programming Swipe Tag

|                 |   |
|-----------------|---|
| * 8 8 8 8 8 8 # | Master Code used to enter programming only  |
| 1               | To enter Pin code programming   |
| User ID #       | Any number between 1-999, this number is unique to each pin code/swipe tag and cannot be used twice |
| SWIPE #         | Swipe the tag past the black APC window   |
| *               | To Exit programming and return to standby state   |
| *               |   |

# APC Wired Push Button 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.

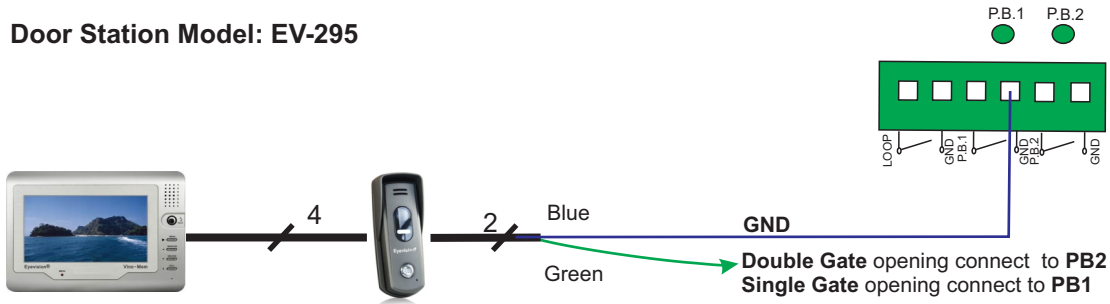
For **Single Gate** operation connect the Button component to **PB1** and **GND**  
 For **Double Gate** operation connect the Button component to **PB2** and **GND**



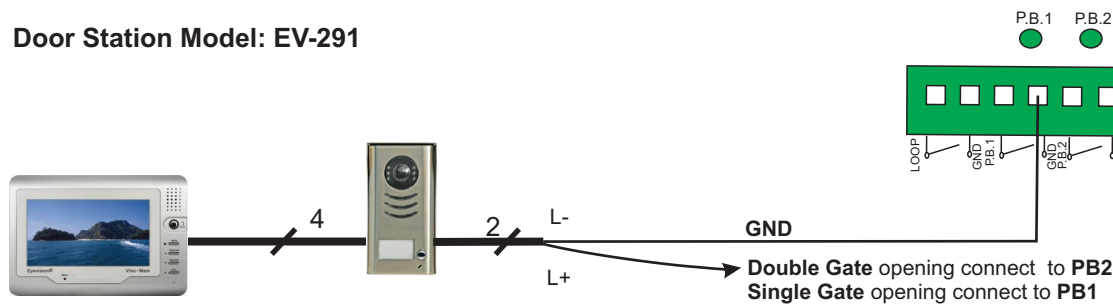
*i* When the push button is pressed the corresponding LED indicator will illuminate momentarily.  
 eg. When a button connected to PB1 is pressed the PB1 LED will illuminate for the duration the button is held.

# Eyevision® 4 Wire Intercom System Connection

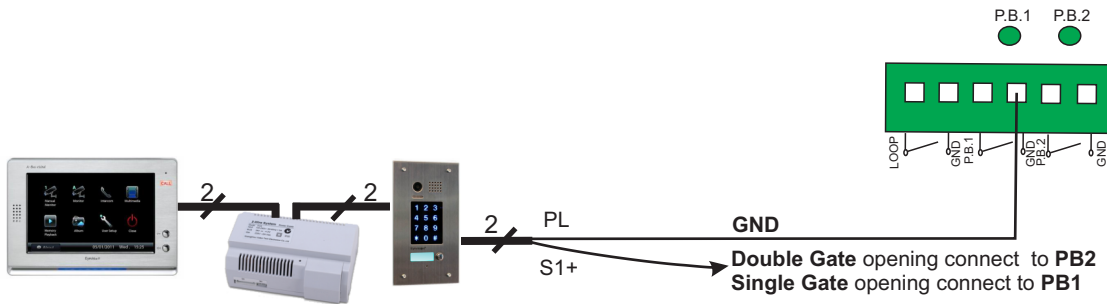
Door Station Model: EV-295



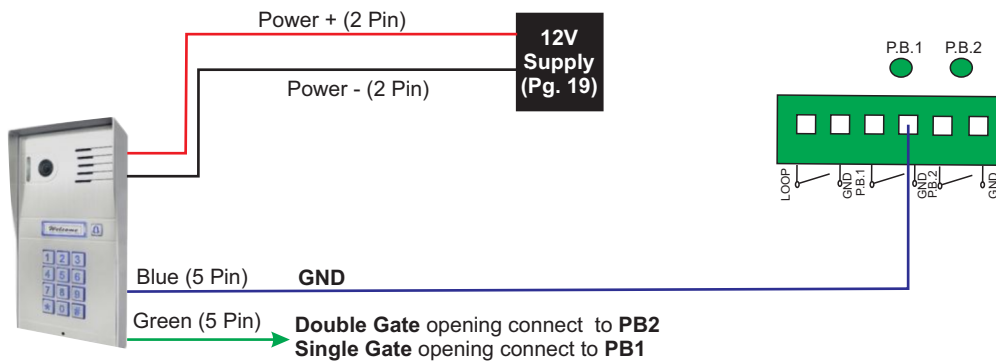
Door Station Model: EV-291



# Eyevision® 2 Wire Intercom System Connection



# Eyevision® 4 Wire HYBRID Intercom and WIFI intercom System Connection



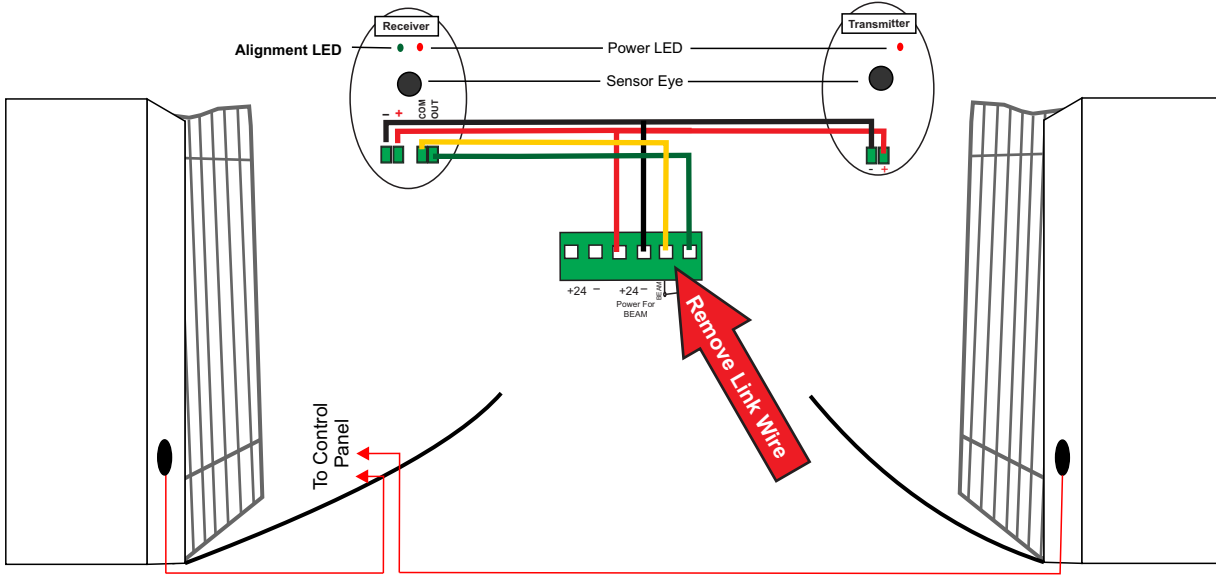
## Connecting a Single PE-2000 set

APC-PE-2000 PE sensor (Transmitter & Receiver) **must be connected back to the control panel.**

Install the PE-2000 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).

**i** The PE Sensor output will only output voltage to the PE sensor connection terminal during the closing cycle

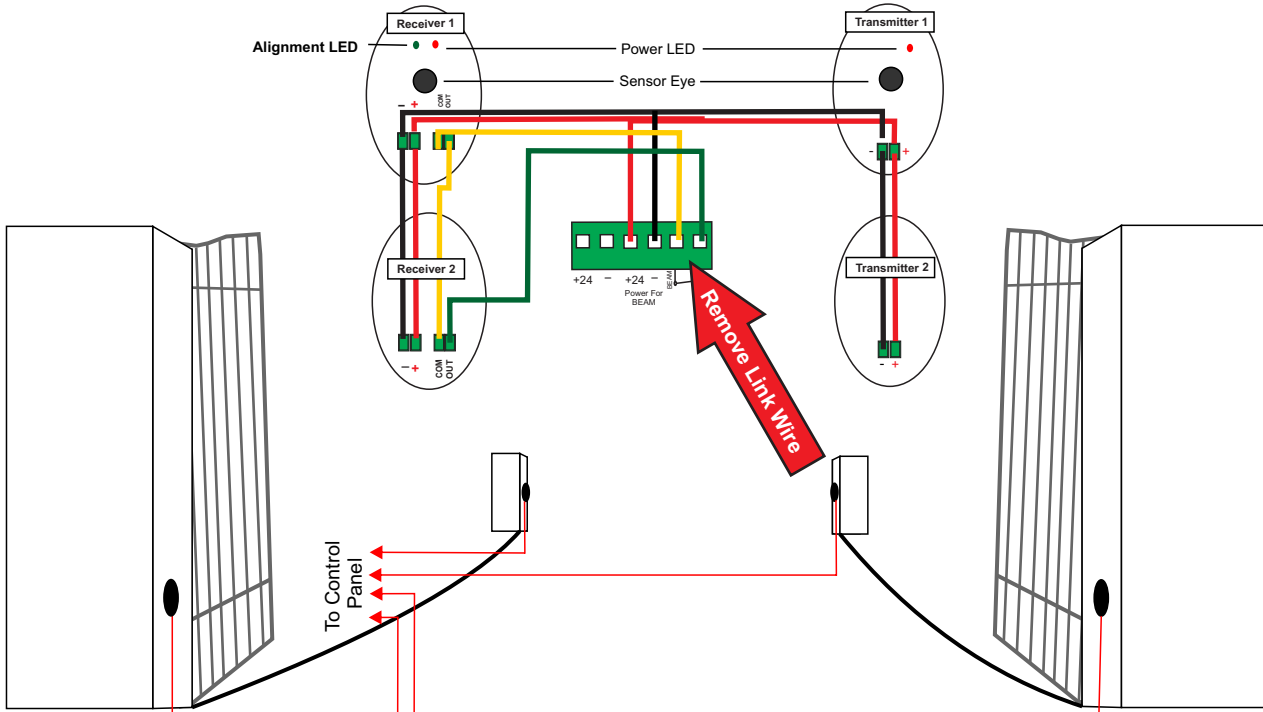


## Connecting Dual PE-2000 sets

Connect Dual PE Sensors in Series for maximum protection for occupants and vehicles. Unlike connecting a single sensor set the dual sensor will detect pedestrians or vehicles entering AND exiting.

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

**i** The PE Sensor output will only output voltage to the PE sensor connection terminal during the closing cycle

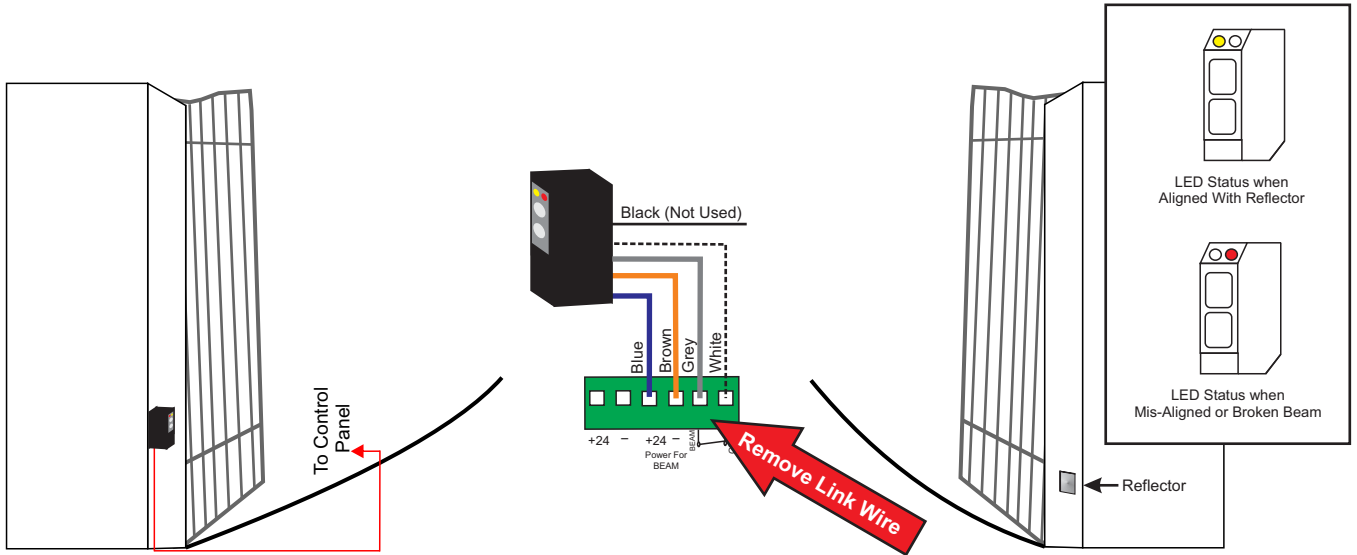


## Connecting a Single RR-11 set

APC-RR-11 Reflective sensor (Transmitter only) **must be connected back to the control panel** (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).

**i** The PE Sensor output will only output voltage to the PE sensor connection terminal during the closing cycle

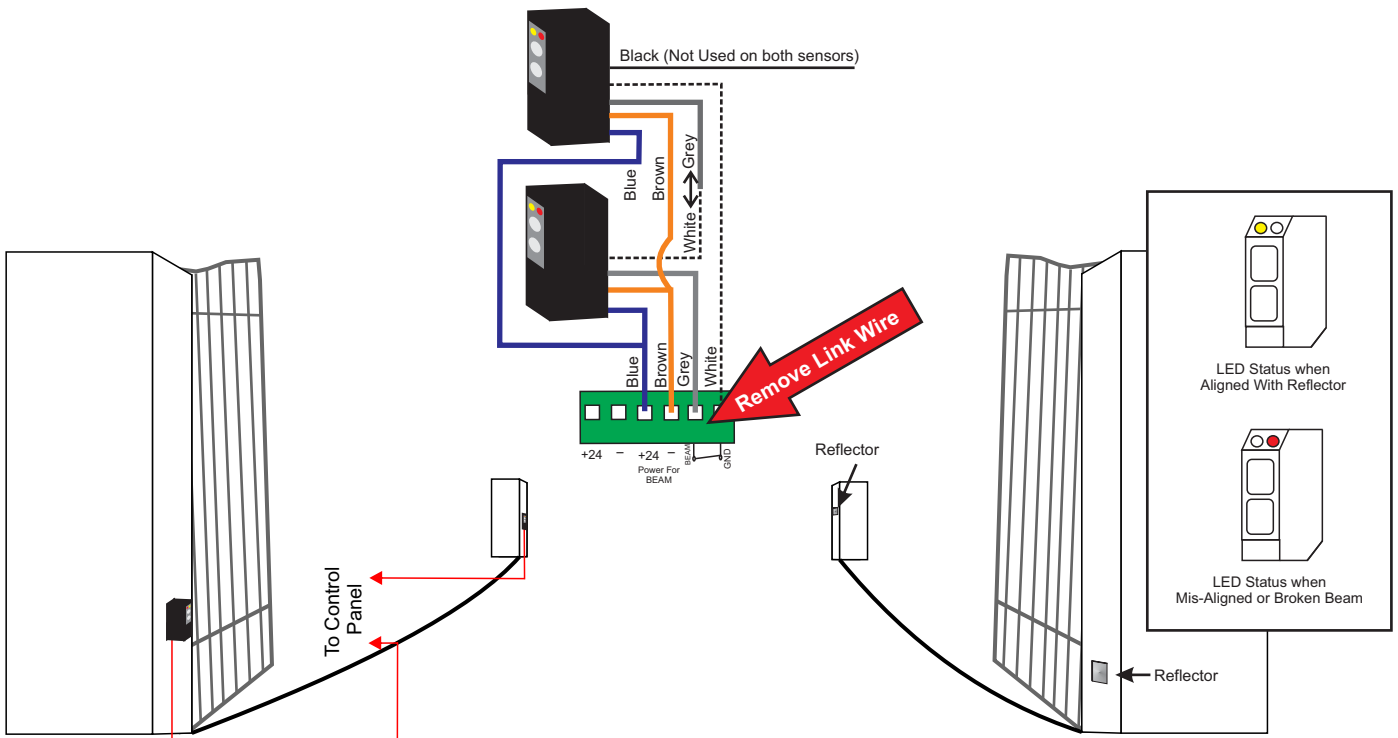


## Connecting Dual RR-11 sets

Connect Dual Sensors in Series for maximum protection for occupants and vehicles. Unlike connecting a single sensor set the dual sensor will detect pedestrians or vehicles entering AND exiting.

BOTH transmitter and the receiver must be inline with each other  
(The inline LED will be ON when Aligned up with the transmitter).


**i** The PE Sensor output will only output voltage to the PE sensor connection terminal during the closing cycle



# Connecting a Courtesy Light

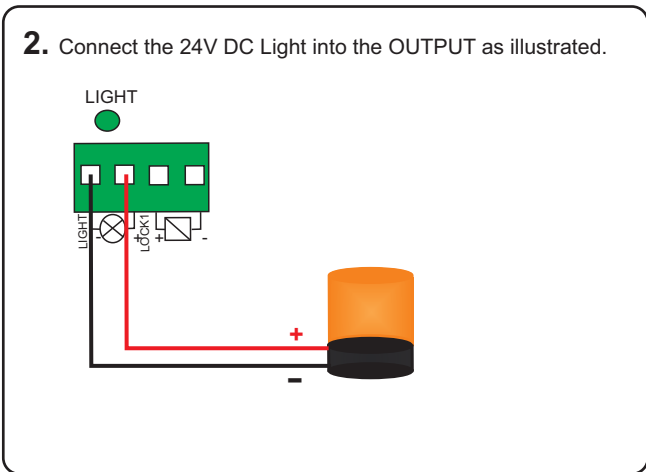
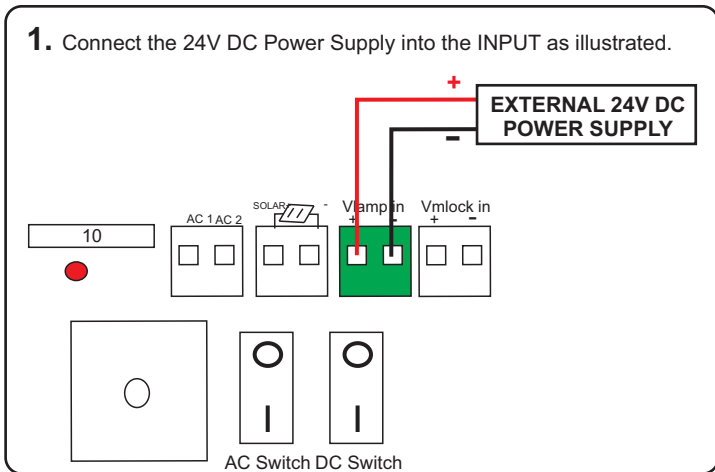
Courtesy Lights are used to alert pedestrians to be cautious as there may be vehicles entering and exiting. A Strobe light is generally used due to their low drawing consumption to operate.

This internal relay will support an output of 24V 10W Maximum, The 24V power source used must be external to the system. Failing to follow the above will cause damage to the system.



**THIS OUTPUT IS NOT USED TO CONNECT DRIVEWAY LIGHTS**

**DC Lights only (24V maximum 10W)**

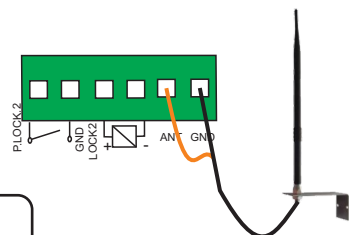



*i* - This output is active when the gate is Opening, Idle in the open position and closing.  
 - The output will turn off when the gate is Closed or Party Mode has been activated.

# Connecting an APC-ANT1 External Antenna

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

Suitable for Residential, commercial and rural installations this antenna used in conjunction with the **APC-RC450S** remote can boost functionality **UPTO 800m** distance. When used in conjunction with **APC-RC4S** it can boost functionality **UPTO 80m** distance.

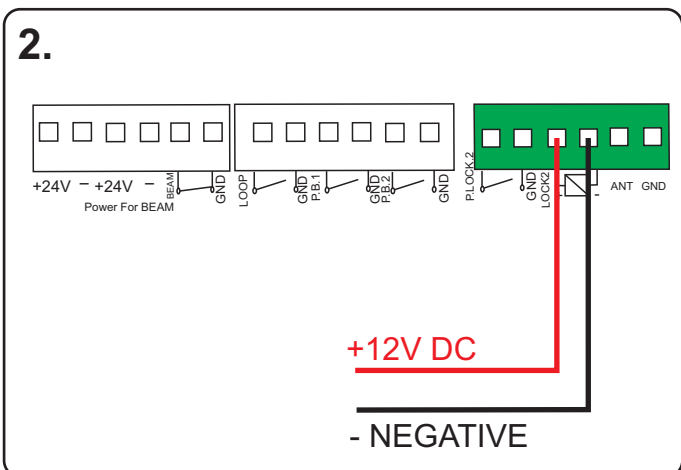
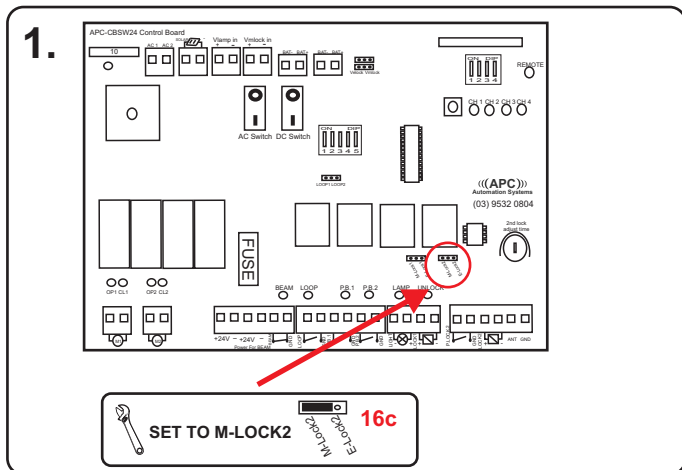


 Inner core of the antenna cable to **ANT** on the control board.  
 Outer core/shield of the antenna to **GND** on the control board.

# 12V DC Output

The Pedestrian gate lock output can be used as a 12V DC output instead to power accessories such as GSM receivers and others accessories which have a limitation on voltage.

Note: When using this feature the LOCK 2 feature will be lost.



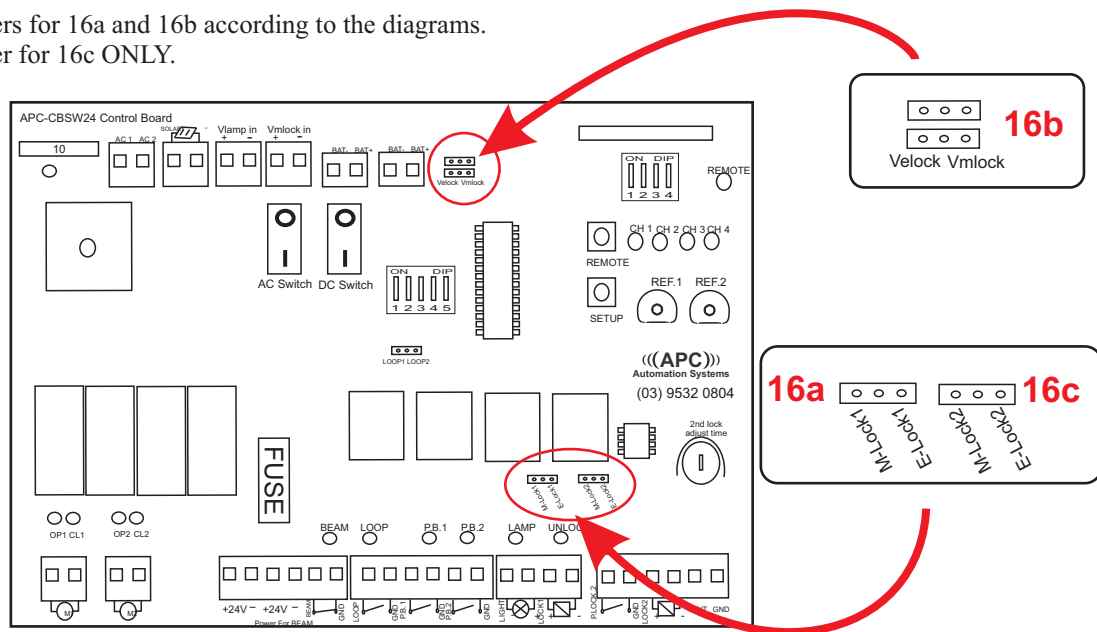
# Setting your Electric/Magnetic Lock type

There are two types of Locks that can be used:


1. Standard Electro-mechanical lock
2. Magnetic Lock

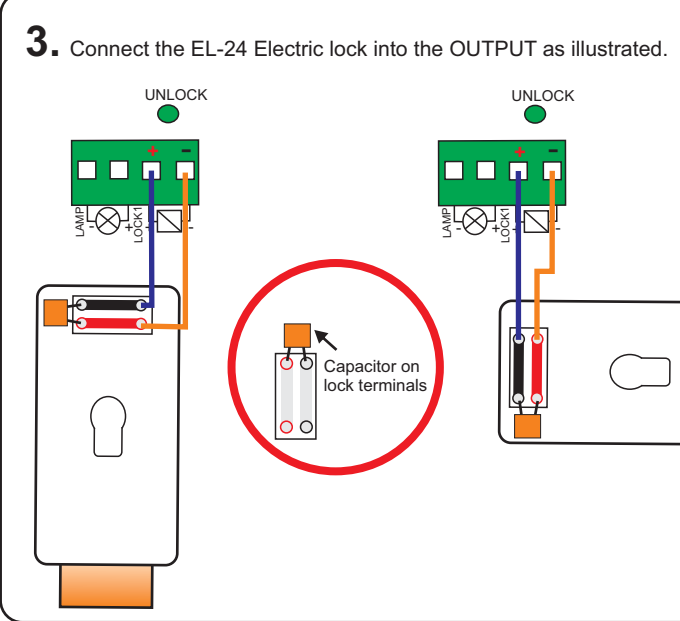
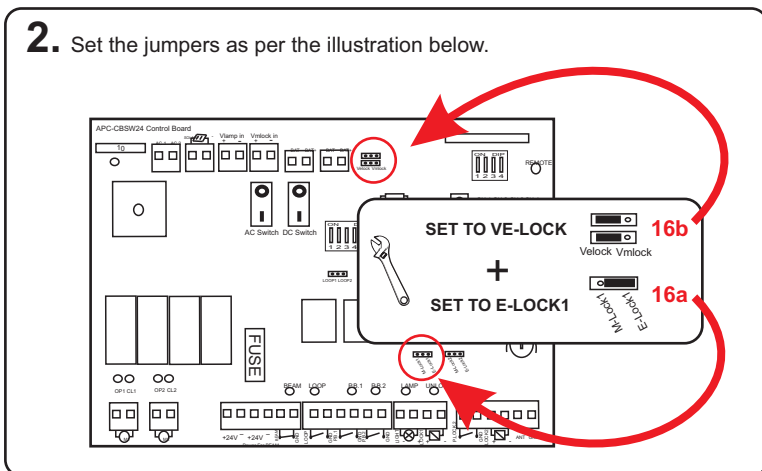
For Lock 1 you Must set the jumpers for 16a and 16b according to the diagrams.

For Lock 2 you Must set the jumper for 16c ONLY.



# Connecting a Electro Mechanical Lock (EL-24V) as an Automatic Gate Lock

1. 
  - a) Turn off the power point or unplug the solar panel.
  - b) Turn all power switches on the control board to the OFF state.
  - c) Unplug the battery connection.



*i*

You can wire to either side of the coil as shown in the illustrations above.  
 When installing you must install both wires Side-By-Side.  
**A CAPACITOR MUST BE INSTALLED IN CONJUNCTION WITH ANY ELECTRIC LOCK**  
**This lock is NOT Polarity Sensitive.**

Magnetic Locks can be installed on Gate to Post for Single Gates and Gate to Gate for double Gates. A bracket set is available for each type of installation

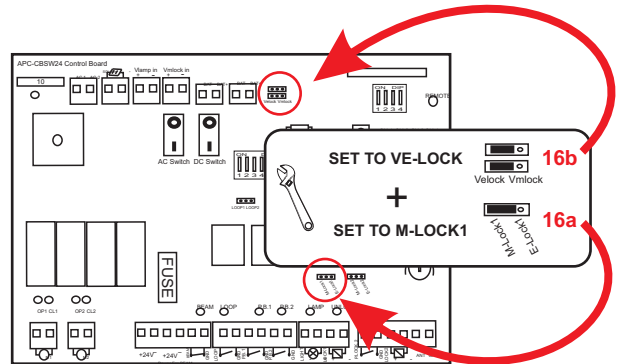
## APC ML-500W ONLY (Internal Power Supply)

1.

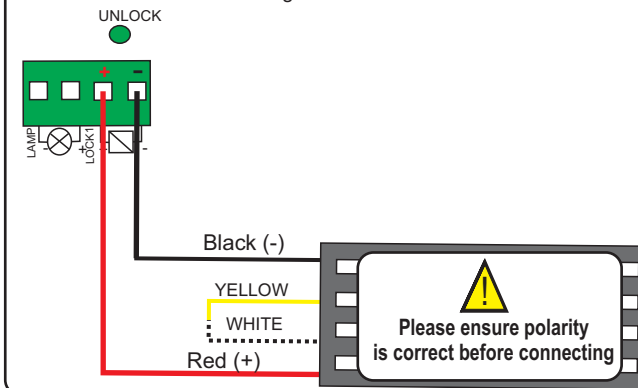


- a) Turn off the power point.
- b) Turn all power switches on the control board to the OFF state.
- c) Unplug the battery connection.

2. Set the jumpers as per the illustration below.



3. Connect the ML-500 Magnetic lock into the OUTPUT as illustrated.



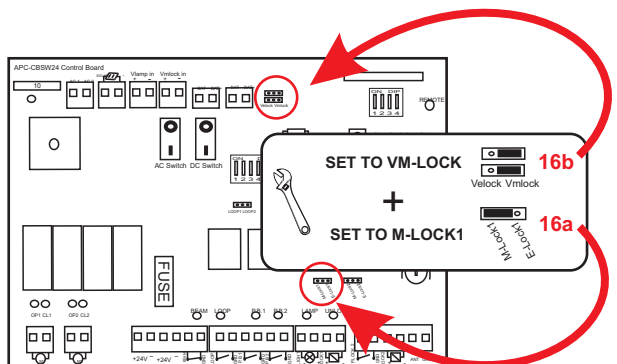
## Other Model/Voltage Magnetic Locks (External power supply)

1.



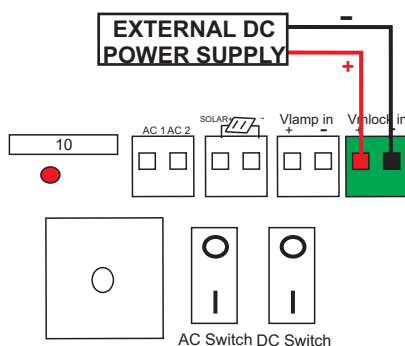
- a) Turn off the power point.
- b) Turn all power switches on the control board to the OFF state.
- c) Unplug the battery connection.

2. Set the jumpers as per the illustration below.

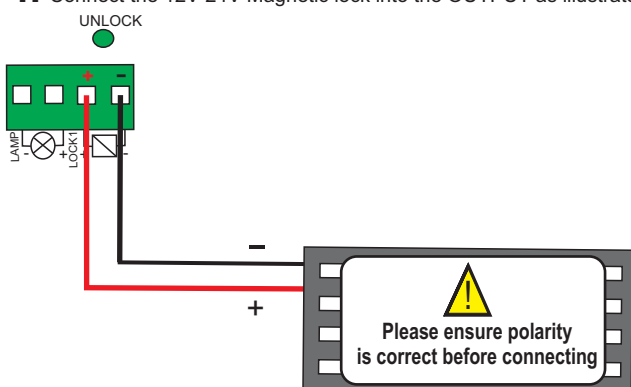


3. Connect the APPROPRIATE 12-24V DC Power Supply into the INPUT as illustrated.

**DO NOT USE THE CONTROL BOARD POWER**



4. Connect the 12V-24V Magnetic lock into the OUTPUT as illustrated.

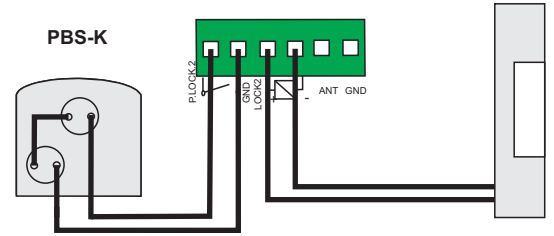
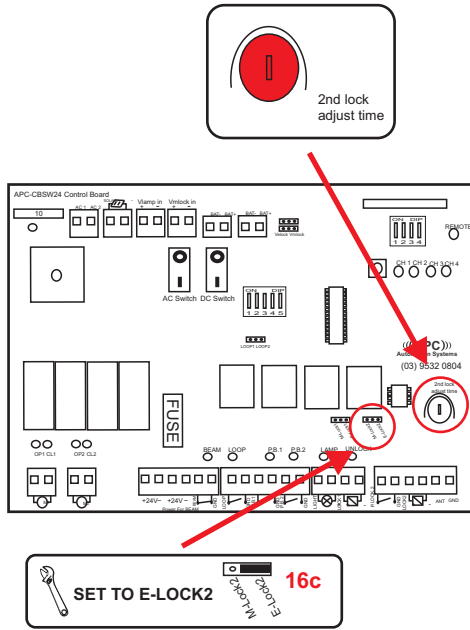




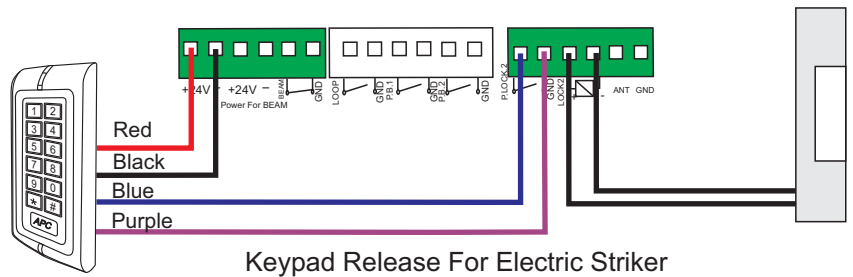
# Connecting and setting an Electric Striker for a Pedestrian Entry Gate

The Pedestrian gate lock is controlled by a momentary button connected to P.Lock 2 or CH4 on your remote. To Adjust the unlocking time of the second lock (pedestrian gate lock) use the 2nd lock adjust time dial located in the bottom right corner of the control board.

**The minimum unlocking time is 1 second (fully anti-clockwise)**  
**The maximum unlocking time is 10 seconds (fully clock-wise)**



Wired Push Button Release (with Isolation Key) For Electric Striker



Keypad Release For Electric Striker

# Troubleshooting

## **Scenario 1**

**Problem:**

Gate will not OPEN/CLOSE Fully.

**Possible Cause:**

Step 1: Review the preliminary steps found in the setup section of the manual.  
Step 2: ONLY after completing step 1: Adjustment of System Sensitivity (REF 1/2).

**Solution:**

Run the SETUP cycle from the CLOSED position, each gate must open once and close once.  
if the gates do not run the full cycle an adjustment of REF 1 may be required.

**Further Information:**

Contact technical support prior to adjusting REF 1 and 2.

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## **Scenario 2**

**Problem:**

System will not power ON.

**Possible Cause:**

Power supply not powered.  
AC or DC switch is not ON.

**Solution:**

Ensure that your power Source is ON.  
Ensure that the AC and DC switches on the control board are both ON.

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## **Scenario 3**

**Problem:**

Gate will not slow down before reaching the open and close positions.

**Possible Cause:**

Setup Cycle not completed correctly.

**Solution:**

Run the SETUP cycle from the CLOSED position, each gate must open once and close once.  
If the gates do not run the full cycle refer back to scenario 1.  
Ensure that the motors switch off at the end of each cycle (using the motor status indicators).

**Further Information:**

If the gates do NOT switch off at the end of there OPEN/CLOSE an adjustments of REF 1/2 will be required.

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## **Scenario 4**

**Problem:**

Double gate system-One Gate is opening and one gate is closing.  
Single gate system- Opening instead of closing.  
Double and Single systems: Auto opening (instead of Auto closing).

**Possible Cause:**

Gate motor polarity is incorrect.

**Solution:**

- Identify the gate which is functioning backwards using the OPN/CLS LED indicators  
- Reverse the polarity of the incorrectly wired motor

**Further Information:**

If the gate motor in question is a folding arm motor the limit switches may need to be reversed or adjusted

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## **Scenario 5:**

**Problem:**

Gate opens but does not close.

**Possible Cause:**

Broken Beam Circuit.

**Solution:**

Reconnect the original loop wire between Beam and Com and check if it is now functional.

**Further Information:**

If the unit becomes functional first check the accessories fuse then check the wiring and alignment of your safety sensor.

## Troubleshooting cont.

### Scenario 6:

**Problem:**

Will not operate by Remote or Wireless button ONLY (Push button and other access control work).

**Possible Cause:**

Remote DIP configuration is not set correctly (Active Operating Channels).  
Remote or wireless button may not be programmed.

**Solution:**

Check your DIP settings on the control board to ensure that the operating channel is active.  
Try re programming the remote or wireless button.

**Further Information:**

Ensure that you activate the relevant Channel for your system.  
DIP 1 ON=Double Gate.  
DIP 2 ON=Single Gate.

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### Scenario 7:

**Problem:**

Solar system will not operate but lights are ON.  
Control panel beeps 3 times.

**Possible Cause:**

Low battery voltage.

**Solution:**

Test your battery voltage. If voltage is low allow the system time to charge through the system.

**Further Information:**

Alternately the batteries can be charged using a trickle charger whilst DISCONNECTED from the system.

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### Scenario 8:

**Problem:**

Both gates open simultaneously.  
One gate opens first and the other gate follows after.

**Possible Cause:**

DIP Settings for MOTOR DELAY are incorrect.

**Solution:**

Adjust the MOTOR DELAY settings.

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## 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.

**Gate Motors**

- APC-520 & APC-620
- APC-790 & APC-890
- APC-W599 & APC-W699
- APC-UG1400DC & 2400DC
- APC-UG1400C DC & 2400C DC
- APC-T575 & APC-T675
- APC-T700S & APC-T800S
- APC-T750L & APC-T850L

**Sensors**

- APC-PE2000
- APC-RR-11
- EW-15

**Keypads**

- APC-KP1-C
- APC-KP1-D
- APC-KP2W

**Push Buttons**

- APC-PBS (K/KW)
- APC-PBD (K/KW)
- APC-PBD211
- APC-PBD164

**Remotes**

- APC-RC4S
- APC-RC450S

**Solar Panels**

- APC-SP24-20W
- APC-SP24-40W
- APC-SP24-60W

**Receivers**

- APC-GSM-CH1-3G
- APC-GSM-CH2-3G
- APC-RCR2

**Internal Transformer**

- PS-24INT

**External Transformers**

- PS-24EXT

**Courtesy Light**

- APC-LAMP24

# (((APC))) Automation Systems

## **APC WARRANTY**

APC 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 parts 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.