

V10 Version





Creating jobs in Australia

Smart & Green Auto Gate Operators

Australian made XP Series Automatic Gate Operators Installation Guide & Owner's Manual – V10 ©

Protect Your Warranty

- Read this manual before you begin installation
- Follow these instructions carefully.
- Refer to manual during installation.
- Refer to this manual before doing any maintenance.

Take your time - Follow this manual - Get it right - Enjoy the benefits

This Instruction Booklet/Owner's Manual should be retained by Gate owner for future reference.

This Manual is available on our web site

www.sungateaustralia.net

129 Gladstone Street, Fyshwick, ACT 2609

Ph: 02-6280 4655 Fax: 02-6280 7592

Email: sales@progressivecontrols.com.au

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Sun -Power Auto Gates reserves the right to make upgrades & alterations without notice

Dear Installer/Owner

Congratulations on your purchase of an **XP Series** Australian Made Automatic Gate Operator. The **XP Series** gate operator is a breeze to install, it is designed and manufactured to be a strong & reliable operator that requires little maintenance. To save you time and make installation easier the **XP Series** has a prewired control circuit board [PCB] which is located under the steel weatherproof cover together with the motor & gears etc.

The XP Series Operator Electric or Solar is the Heart of the complete kit which includes

One Arm assembly & gate bracket One Radio Receiver circuit board + Antenna

Three Remote Controls [Radio Transmitters] One Release tool

One Battery One Installation/Owners Manual

A Bonus Pack is also supplied with your XP Series Gate Operator Kit

This Bonus valued at \$400 Plus includes

Extra remote controls
 Wireless Key Pads
 Steel mounting plate
 or 2 Wireless Push Buttons

Note: Contents of this BONUS PACK may alter.

Circuitry for most options is already included. You simply connect up the external devices with no extra boxes or cables required. The design features in the **XPSeries** gate operator will save you hours on site keeping the installation neat and tidy. Apart from the physical attributes the control circuit has some powerful operating features. These can be adjusted on-site without modification to suit a range of situations.

This manual should answer most of your questions regarding the installation and operating of the **XP Series** gate operator. If further information is required, please contact us.

Note the **SunPower XP Series** gate operator can be purchased as a single gate operator (Primary) which comes complete with the Logic Control Circuit Board and can be installed on either the left-or right-hand side. The dual set includes the above as well as a Secondary (Slave) operator that does not have the Logic Control The buyer also has the option of Electric, SOLAR or 12V AC/DC versions.

For all its sophistication the **XP Series** gate operator is extremely reliable and its robust construction ensures a long trouble-free life. **Please ensure you read these instructions carefully and any other instructions supplied then simply follow the step by step instructions.**

Introduction

The **Sun-Power XP Series** Automatic Gate Operator is an Australian Made electronically controlled automatic gate operator for swing gates. The **XP Series** has a range of features that are built in and some options available and can be used in a variety of situations/

- Solar Power / 240Volt AC / 12 Volt AC/DC
- Inward or Outward swinging gates
- Restricted side room applications
- Single gate or gate pair
- Where a gate is required to swing 90° and up to 130°

A powerful control system gives the flexibility to change some important characteristics of the operation which include

	Automatic Close / Signal to Close
	Sensitivity to obstacles
	Multi-user function
The co	ontrol system also allows for the addition of the following options
	Electric locks
	Photoelectric cells (12V DC)
	Palgate GSM System
	Palgate & Omgate Bluetooth System
	Operation with a wide range of devices

Essential Information for Dealers/Resellers & End Users

Approved Dealers/Resellers:

It is essential that you make yourself and your staff fully aware of these instructions It is essential after installing that you/your staff conduct a 'Handover process' during which you will need to demonstrate in detail all the features of the Gate Operator to the client

Carrying a select range of Spare Parts is highly recommended, this will reduce time & cost involved in repairs etc.

End Users:

We strongly recommend that, before you begin installation, you carefully read this manual and becoming familiar with it's various components & features

The Do's & Don't's section is particularly important

it is recommended that basic information/training is given to other members of your family and /or organization who may use the equipment

Maintenance:

XP Series Auto Gate Operators are low maintenance units, however that does not mean maintenance free.

The following is strongly recommended 3 Monthly routine

- a. Clean Solar Panel
- b. Check that Solar Panel is in clear sunlight, shade of any kind is to be avoided
- c. Remove Cover from Gate Operator and check for Spiders/Ants/Frogs & other pests Mothballs are a strong deterrent for most pests, change as necessary DO NOT place on circuit boards.
- d. Do not apply moisture onto any circuit board.
- e. Circuit boards must be kept DRY & CLEAR of foreign material
- f. Apply grease to gears as necessary



IMPORTANT - SAFETY WARNINGS



Please read these important safety warnings before installing or using this product

- Never let children operate or play with the controls.
- Keep the transmitter/remote control away from the children.
- Do not operate the swing gate unless the gate is in full view and free from objects such as cars, children or people.
- Always keep the moving gate insight and away from any objects until it's completely opened/closed.
- No one should go into the path a moving gate.
- Do not disengage the swing gate motors to manual operation with anyone or any other objects, including motor vehicles, within the gateway.
- The swing gate must be well hinged & balanced.
 Sticking or binding gates can falsely trigger the obstruction sensing of the unit.
- All maintenance should be carried out by qualified personnel.
- Regularly test the swing gate operator to ensure that the obstruction sensor unit is operating properly.
- The swing gate operator has an electronic obstruction system that provides safe and reliable operation. It's however a legal requirement in some countries to also install a photo-electric sensor across the gate way



Standard Installation (PULL)

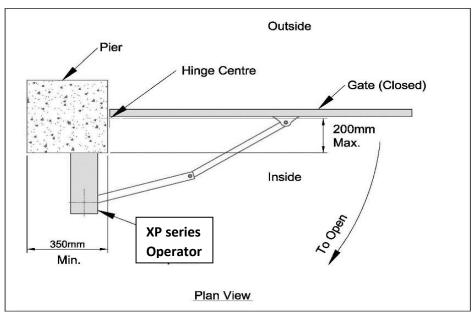


Figure 1: Standard installation.

Note re Figure 1 above: If the Space between Hinge centre and edge of mounting post/pillar/wall exceeds 200mm it may be necessary to extend the Secondary arm.

Installation:

- 1. Ensure that the gates swing freely to 'Open' & to 'Close' and that all existing Latches/Pad bolts/Chains etc are disabled or removed from the gate & Gate posts
- 2. When using a 240v Unit [XP 100 or XP 100/300] the Master operator [the one containing the circuit Board] should be fitted to the Gate Post nearest the Power Supply.
- **3.** Fit the XP/MP Mounting plate complete with Bolts/Nyloc Nuts & Washers some typical examples below









4. Remove the metal cover from the XP Operator [taking care that you DO NOT expose circuit boards to any moisture] to access the slotted fixing holes cut in the rear of the Chassis. Bend the tabs out and bend them back against the rear of the chassis, in this position they act as spacers allowing clearance for the cover[s]

NOTE: If you are using the optional XPV2-MP Mounting Plate you may not need to fold the Tabs back simply remove them.

- 5. Position Gate Operator[s] on Mounting Plate[s] & secure with Washers & Nyloc Nuts
 - 1. Position each unit on the gate post(s) approximately 50mm from the edge of the pier/post. The vertical position is found by locating the gate bracket. The gate bracket is best placed where there is adequate fixing on the gate and the movement of the arms is unrestricted (See Figure 2). The gate operator may now be bolted in place.

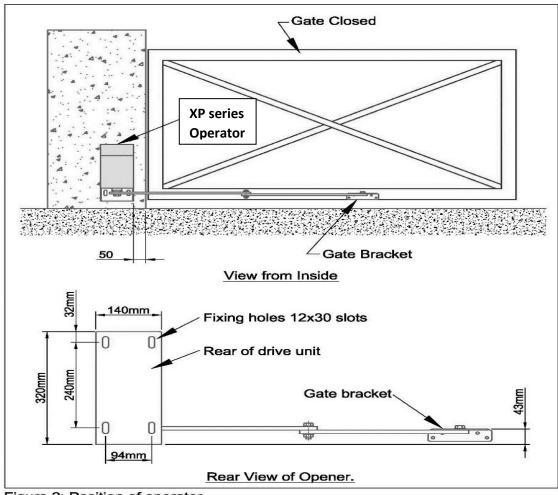


Figure 2: Position of operator.

2. If you have a pair of gates connect the SLAVE to the MASTER unit with 2 core Flex/Cable (Max load 8 Amp at 12 Volts).

DO NOT alter any pre-wiring except Brown & Blue. Altering pre-wiring (except motor polarity Brown & Blue) will compromise your warranty.

The **XP Series Gate Operators** are set in the factory for a "standard installation" with the MASTER [Solar or Electric] placed on the left-hand side (inside looking out). If the master has to be located on the right then the motor wires need to be reversed. To accomplish this, locate the connection blocks for each motor on the Circuit Board. Swap the BROWN and BLUE wires for Motor 1 and 2

(See figure 3 "Master-Slave connections)





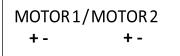


Figure 3 Master-Slave connections

5.

The gate bracket should be positioned so the arms are ALMOST in a straight line when the gates are closed (see figure 4). To check the location of the gate brackets first disengage the Main arm from the drive shaft (using the spanner provided unscrew the bolt until the arm swings freely) then clamp the gate bracket in position. Open and close the gate to ensure the gate bracket is appropriately located.

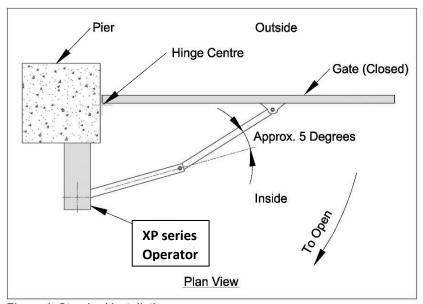
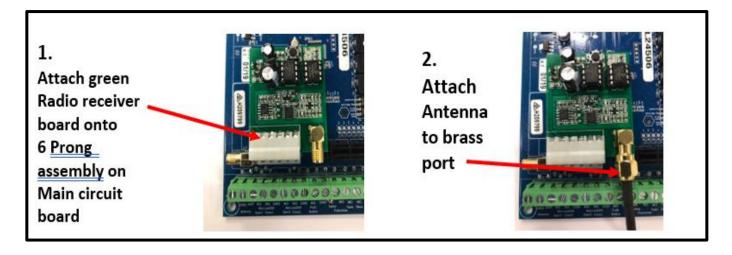


Figure 4: Standard installation.



Connect power (12-volt 24 volt or solar) to the primary operator and connect the battery.

1. The limit switches may now be adjusted (see figure 5) Each of the Master and Slave operators has its own pair of cams, one to set the open position and one to set the closed position. Firstly, mark the position of each cam as a reference point before you loosen the screw holding the cams. Operate the LI-2B operator with the transmitter and note which cam controls opening and which operates the closing motion (the cam love activates a limit switch to turn off the motor).

Reposition each cam and operate the LI-2B again. Repeat until the gates open and close to the required positions.

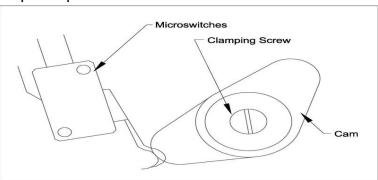


Figure 5: Limit switches

Side Mount Installation

The LI-2B operator may be mounted sideways, with the long side against the pier/post for extra flexibility. This feature is very useful for situations where (refer to figure 6)

- The gate must swing further than 90 degrees
- The gate swingsoutwards
- The gate swings outward and it is positioned at least 400mm forward of the back of the pier/post





Side Mount Picture: Gates shown here are Opening Out with Motor mounted inside

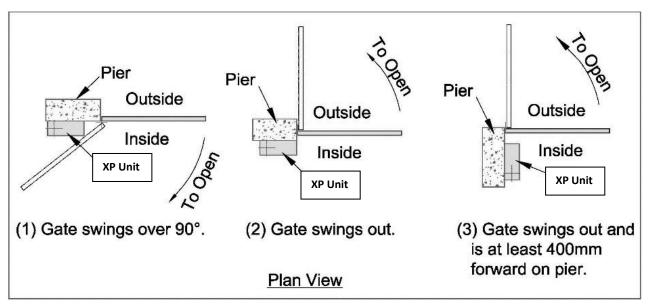


Figure 6: Side mount installations.
See also section on out swing installation

Each **XP**operator should be fitted to the pier/post with its output shaft close to the gate hinge. With this in mind the standard installation instructions may now be followed. Special covers are supplied to suit this type of installation.

Restricted Side Room Installations

This term is applied to the situation where the movement of the standard arms cannot be accommodated within the side room available. In most situations this problem can be overcome by cutting down the secondary arm (the link joining the gate to the primary arm). This new length can be approximated by the following procedure:

1.

Move the primary arm to a position suitable for the closed gate, remembering that in the closed position the primary and secondary arms must stop short of a straight-line alignment (see figure 7)

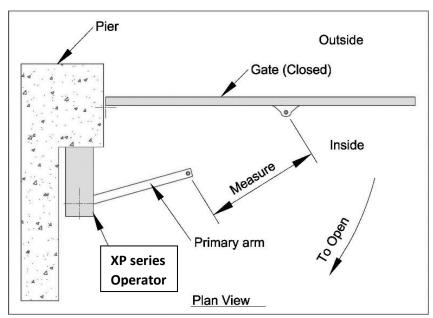


Figure 7: Measure length of secondary arm.

Mark a point on the gate suitable for the gate bracket. Holding the gate bracket in position, measure the distance between the hole centres on the gate bracket and primary arm. Move the primary arm to its maximum open position. Open the gate and measure the distance again (See figure 8). Of the length has changed then the gate bracket must be repositioned and the same process repeated until the dimensions remain the same for both positions. Be careful that the secondary arm does not conflict with the drive shaft of the primary arm.

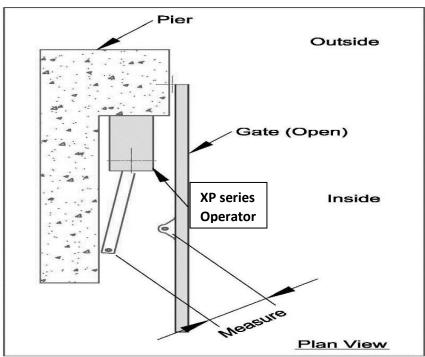


Figure 8: Re-measure length of secondary arm.

Once the dimensions are consistent a new hole can be drilled in the secondary arm and the arm trimmed to suit. The gate bracket and secondary arm should now be fitted.

Out-Swing Installation (PUSH)

In this type of installation, the gate swings outward away from the XP Series operator to the open position.

Several factors must be considered to determine the most suitable arm length. These include

- The drive through width required
- The placement of the gate operator
- The location of the gate on the pier/post

For assistance (if required) please provide a drawing (mud map) of your situation showing all possible measurements.

Possible measurements include width between piers/posts, size of piers/posts, single or double gates, position of hinges on piers/posts etc.

Note: the polarity of the motor connections may need to be reversed for out-swing installation. See overload section

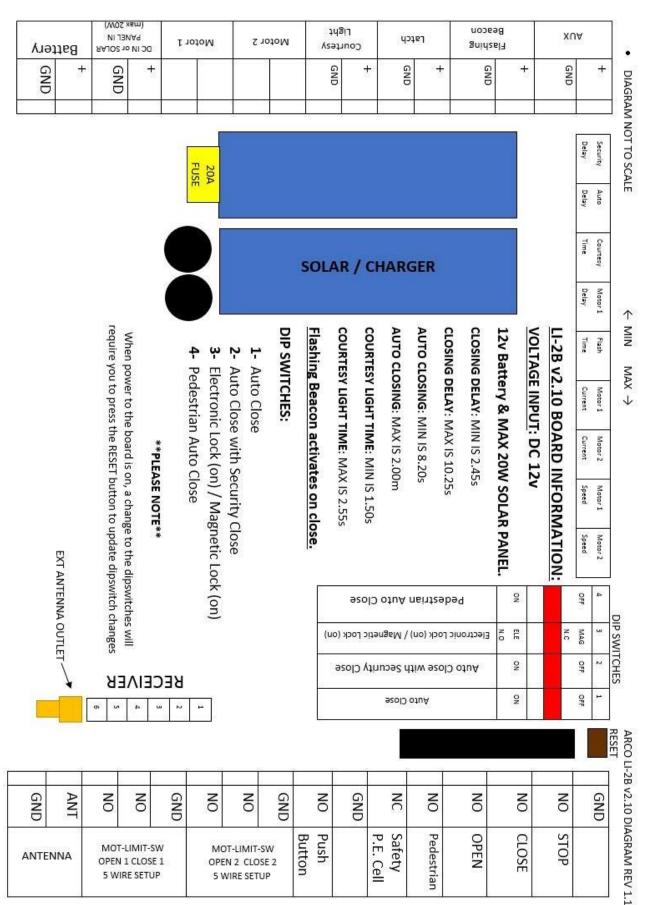


Figure 9 Gate Operator Control Board Normal Operation

RESET. This button needs to be pushed after changing dip switches



DIP SWITCHES The dip switches are used to switch between the modes:

1	OFF		NO	Auto Close
2	OFF		ON	Auto Close with Security Close
3	MA		E	Electronic Lose (on) / Magnetic Lock (on)
4	OF F		ON	Pedestrian Auto Close

Electronic Lock NO/NC Dip switch is sued to choose between electronic lock

NO [Normally Open] or NC [Normally Closed]

Pedestrian Auto Close A DIP switch will select whether the leaf will stay open even if the system is in auto or security close modes

7

MIN MAX

Dela V	Del ay	Time) Dela	Fia e e	Curr ent	Cturr ent	Speed	Speed 2
TRIMPOTS								

Motor 1 - Speed Potentiometer will set the maximum speed for motor 1

Motor 2 - Speed Potentiometer will set the maximum speed for motor 2

Motor 1 - Max Current Potentiometer will set the maximum current for motor 1, used to detect obstruction

Motor 2 - Max Current Potentiometer will set the maximum current for motor 2, used to detect obstruction

Flashing Time: Potentiometer will set the time before auto/security close activation for the flashing light to be activated

Motor 1 - Close Delay Potentiometer will set the time delay for motor 1 to close from activation

Auto Close Delay: Potentiometer will set the time delay for door to close in auto mode. This will also act as the timeout in security close mode

Security Close Delay Potentiometer will set the time delay for door to close in security mode

Courtesy Light Time Potentiometer will set he activation time for the courtesy light to remain on

Standard Operation

On input from either remote control / push button / keypad one gate begins to open. The lock output is also activated for 3 seconds. If you have a pair of gates then after 2 seconds the second gate begins to open.

Gates will fully open unless they meet an obstruction in which case the gate(s) will stop and wait for further signal. If closing gate(s) meet an obstruction they will reverse to the open position.

Auto Close Mode

Gates will automatically close after selected delay time has been reached

Security Close Mode (Multi User Function)

This function is for when the LI-2B gate operator is installed for multi-users (eg flats, apartments etc). In this mode the gate operator will ignore close signals and continue to open (auto-close/security close mode only).

Pedestrian Mode

Select this mode for limited Pedestrian opening

Settings

Overloads – the overloads are pre-set to maximum sensitivity (eg slight pressure will cause the operator to STOP if it is opening or STOP & OPEN if it is closing. Note if these functions are reversed (the gate STOPS when closing and STOPS and REVERSES when opening then the polarity of the motor connections MUST be reversed and the limit switch cams adjusted.

 $There is ONE \ overload for each gate as indicated on the main circuit board (Refer Figure 9). To reduce the sensitivity on the main circuit board, turn the overload dials in the {\it anti-clockwise}$

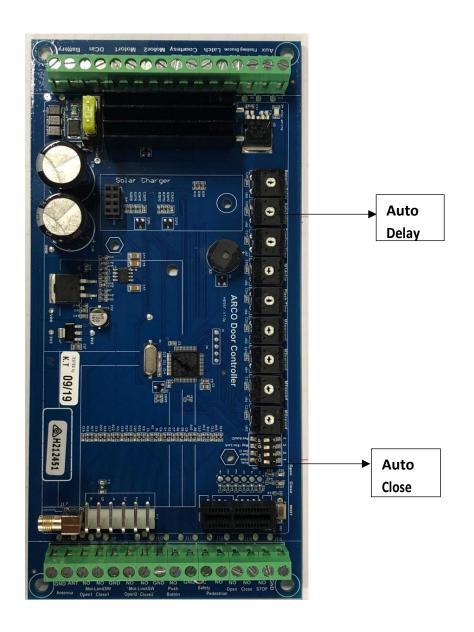
direction. **BE CAREFUL** large reductions in sensitivity may allow the gate(s) to exert excessive pressure on people or vehicles trapped in the path of the gate(s).

Motor 1 Delay – Turning the dials/trimpots anti-clockwise gives the minimum delay. Turning the dials/trimpots clockwise will give the maximum delay.

Auto Close – the operator control board is supplied with a dip-switch installed on the Board. This allows the gate to automatically close after a specific period. This period is adjustable (refer figure 9).

- Turn "auto delay" dial (trimpot) clockwise to increase the hold open time delay before gate closes automatically
- Turn/dial trimpot anti-clockwise to shorten the hold open time delay before gate closes automatically

Push-button/Key-Padetc—a variety of wireless & hard-wired input devices can be used to operate the **XP**Series operator. Input should be in the form of a MOMENTARY CLOSED CIRCUIT. WARNING! Voltage must not be applied to these terminals. Damage to the circuitry will result if voltage is applied. Devices that send a Voltage Pulse (as some intercoms do) must be connected to the circuit board through a relay.



Push-button/Key-Padetc—a variety of hard-wired input devices can be used to operate the **XPSeries** operator. Input should be in the form of a MOMENTARY CLOSED CIRCUIT.

WARNING! Voltage must not be applied to these terminals. Damage to the circuitry will result if voltage is applied. Devices that send a Voltage Pulse (as some intercoms do) must be connected to the circuit board through a relay.



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Electric Lock / Mag Lock- Connection for an electric lock/latch (EL) are provided on the circuit board. (see figure 9). This connection block will supply 12 Volts to energise the lock at the beginning of the opening and closing cycles.





Photo-electric safety cell (240 volt or 12-volt operators only) – A photo electric safety cell (PE) may be fitted to detect obstructions in the path of the gate(s). The PE will check for obstructions during the closing cycle only. If an obstruction is encountered the gate(s) will reverse to the open position. If the gate is set in the automatic close mode, the gate(s) will remain open until the obstruction is cleared.

Wires from the PE should be attached to the appropriate connection block (see figure 9] Note: Extra power consumption will occur when using Photoelectric Cells so extra Panel(s) and battery(s) will be required when gate(s) are operating on solar power only.

Note: Maximum panel size to be used 20Watt 12V





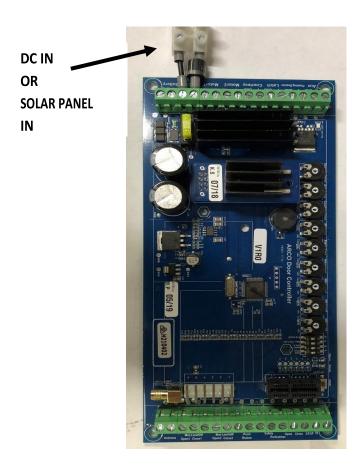


Solar Wiring Detail

DO NOT connect solar panel until all other settings and adjustments have been completed. For optimum charging clean solar panels regularly.

Step 1

Locate the two-way terminal connection block on top plate near motor. This will have Red (positive) and black (negative) wires. Connect solar panel direct to it.





IMPORTANT

As a connected solar panel delivers a charge, the solar panel must be fully covered or Disconnected when any work or wiring is being done on the control board (other than when adjusting Dials/Trimpots or limit switches)

Step 2

Locate **RED** wire with spade terminal (which will be disabled from Positive on Battery). Connect this wire to the **positive** terminal and you are ready to set your limits.

Negative wire is already connected

NEW DIAGRAM REQUIRED HERE

Locate Positive Wire (RED) Connect RED wire to + on Battery

Note: All Gate Operator Kits (Solar, 240 voltand 12 volt) are supplied complete with a **9** AMP hour battery. This battery should be checked regularly.

TROUBLESHOOTING

Poor range with the radio transmitter (Tx). Our standard transmitters are factory tested to 200 metres. 433Mhz Antennas are available to maximise the signal to the Radio Receiver (Rx). Poor range may occur for several reasons. The first two things to check are:

- The Battery in the Tx [Remote Control]
- Antenna installation and wiring

Other causes can be interference from other Radio Sources such as

• Electric fences • Baby monitors • Other local transmitters

Here the best solution is to remove the external source. If this is not possible the problem may sometimes be solved by using special frequency transmitters and a matching Radio receiver (Rx). These are options that must specifically be ordered.

Other faults may be due to incorrect settings. Refer to the "settings" section of this manual to ensure the settings are correct.

Programming Transmitters

Important: The Radio receiver, Remote Controls and Digital Key Pad are generally pre-programmed. Instructions below are for re-programming if necessary.

Remote Control

(TX10)



- 1. Press & release 'LEARN' button On Radio receiver module (red light will turn on)
- 2) Immediately Press preferred button on remote (e.g. 'A' or '1'), and hold for 2 Seconds or until gate begins to drive.
- N.B. Sequence needs to be fairly quick



SPXPPB-RAD-2

Wireless Push button with 2 position key switch.

Button active -

Button inactive

Push Buttons program the same

-

Wireless Keypad With code entry (DK50) For domestic use ONLY



Keypad batteries are fitted with an isolation strip – please remove this strip before using.

- 1)Enter pin code in to keypad (factory default = 1234).
- 2) Press & release 'LEARN' button (red light will turn on)
- 3) Press & hold **# Key** on keypad until gate motor responds.

N.B. Sequence needs to be fairly quick.

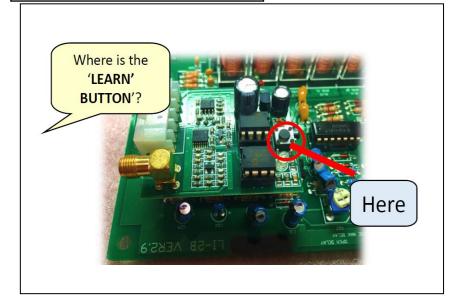
TO CHANGE KEYPAD'S PIN CODE:

Use existing code

(e.g. 1234 by factory default).

- 1)Punch in the current code.
- 2)Then press the * key.
- 3)Enter the new code.
- 4)Press the * key again.
- 5)Enter the new code again.
- 6) Press the # key.

When buzzer sounds for 1 second, the change is complete.



Programming your Transmitters:

Troubleshooting Remotes and Keypads/FAQ

I tried changing the pin code on my wireless DK50 keypad. Now I can't remember the new code!

Easily remedied! To reset back to factory default (1234), disconnect the keypad's battery for 15 seconds.

Press and hold the * and # keys together. Keeping them held, reconnect the battery. A 1-second buzzer will sound to confirm the reset. If you get a

3-second beep, you're doing it wrong.

I tried to program a new remote control and/or keypad to the receiver and now NONE of my remote controls work!

Another mistake that is easily remedied! When you tried to program your new transmitter, you possibly held the Learn button down for too long. If held for 6 -8 seconds (or longer), the receiver will delete all previously programmed transmitters (remotes & keypads etc). This is a security feature that is useful when an employee leaves but takes their access remote with them. In deleting all codes, you have accidentally accessed a function normally reserved for technicians only. Simply re-program your remotes and this time only press the programming button until RED light comes on. The Learn sequence needs to be done quickly.

I press the button on my remote and the little light on it isn't coming on. My gate won't open either!

Sounds like a flat battery in your remote! Time for a new one. Your local hardware store should have the right battery to suit your remote.

I press the buttons on my keypad but it's not making any beeps like it used to. What do I do?!

Sounds like a flat battery! Time for a new one! Your local hardware store should be able to provide you with replacement batteries.

There's a green LED lighting up on my keypad. Normally it's red. What does that mean?

That's the early-warning light to let you know that your battery is almost completely flat.

We had someone do some work on our fence last week and now my remote control and keypad do not work.

Electric fences can interfere with communication between your transmitters and the receiver module inside your motor. Have you got your aerial connected to your receiver? Is it mounted properly?

Details & Freight Dimensions Sun-Power XP Series Auto Gate Operators							
Chassis & Case245mm High x 140mm Wide x 335mm Deep							
Primary arm. Pivot centres 540 mm Secondary arm. Pivot centres 545mm							
Sizes & Weights of various Kits:							
XP 100 Single 240v Kit	1 Ctn.	360mm x 325mm x 150mm + 1 Bundle 700 x 75 x 75mm	21 Kg				
XP 100/300 Double 240v Kit	2 Ctns.	360mm x 325mm x 150mm + 1 Bundle 700 x 75 x 75mm	38 Kg				
XP 200 Single Solar Kit	1 Ctn.	360mm x 325mm x 150mm + 1 Ctn 610 x 415 x 170mm	25 Kg				
XP 200/300 Solar Double Kit	2 Ctns	. 360mm x 325mm x 150mm + 1 Ctn 610 x 415 x 170mm	40 Kg				
XP 300 Slave Operator	1 Ctn.	360mm x 325mm x 150mm + 1 Bundle 700 x 75 x 75mm	17 Kg				
Warranty							
Sun-Power XP Series Auto Gate Operators are warranted as follows							
Electronics: 1 Year Mechanical: 2 Years							
All warranties implied or otherwise are "Back to Base"							
ie; Products under claim to be returned for assessment/and or repair at buyer's expense.							
Sun-Power [SP] warrants to replace or repair individual components at their discretion, this may require							
client shipping component[s] [for Sun-Power to assess], at client's cost.							

Record of Purchase: Date:		
Purchased From:	Inv. No	
Product Purchased:		-
Serial No		
Notes:		_

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