



**Creating jobs in Australia**

**Smart & Green Auto Gate Operators**



**Australian made XP & XP-R Series Automatic Gate Operators**

**Installation Guide & Owner's Manual – V08.2.5 ©**

## **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](http://www.sungateaustralia.net)**

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<b>From JULY 2015 - Solar models XP-R200 &amp; XP-R200/300 wiring and circuit board changes if your operator was purchased pre-July 2015 then please contact us if you need assistance</b>	

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

## **Professional and DIY Installers**

### **Dear Installer/Owner**

Your Australian Made **SUN-POWER XP Series Auto Gate Operator** has been designed and built to make installation simple and maintenance almost Non - existent.

To save you time, and make installation easier, The Circuit Board is pre-wired & placed under the powder coated, steel weatherproof cover together with the Motor/Gears/Battery, this means that you do not have to spend extra time wiring up to a separate control box. The Radio receiver, Remote Controls [and BONUS Key-pads or Wireless Push Buttons when offered] are pre-programmed. Circuitry for most options is already included. You simply have to connect up the external devices such as Radio Receiver, 12Watt Solar Panel, Antenna, Access systems etc. The design features, in the SUN-POWER XP Series Gate Operators, will save you time on site, and the installation will be neat & tidy.

Apart from its 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 operation of the SUN-POWER XP Gate Operator. If further information is required, please email, fax, phone or write to us.

Note: Primary [Master] Operator has a Circuit Board and can be installed on Left or Right hinge post  
Secondary [Slave] Operator does NOT have circuit board, can also be mounted on Left or Right

### **Introduction:**

The SUN-POWER XP Series INTELLIGENT Automatic Swing Gate Operator is an electronically controlled Automatic Gate Operator for swing gates. A range of features are built in to the XP Series and a range of options is also available.

The Sun-Power XP Series Swing Gate Operators can be used in a variety of situations.

- SOLAR Power
- 240V AC
- 12V AC/DC
- Single Gate or Pair of Gates
- Normal or Restricted side-room applications
- Where a Gate is require to swing beyond 90° and up to 130° [Or less than 90°]

A powerful control system gives the flexibility to change some important characteristics of the operation. Including.....

- **Automatic close**
- **Signal to close**
- **Sensitivity to obstacles**
- **Multi-user function**

The control system also allows for the addition of the following options.

- **Digital Keypads**
- **Push Buttons**
- **Photoelectric cells [240v units only]**
- **Security Systems**
- **Electric Locks etc**

For all its sophistication the Sun-Power XP Series Auto Gate Operator is extremely reliable and its' rugged construction ensures a long trouble free life.

**Take your time - Read & Follow the Manual – Get it right – Enjoy the benefits**

**Essential Information - Do's & Don'ts**  
**Protect your warranty – Read this page carefully**

If you do not understand these instructions, or if you have any doubts, please contact us before you apply any power from any source to the unit or you may void your warranty  
Fax. 02 6280 7592 - email [sales@progressivecontrols.com.au](mailto:sales@progressivecontrols.com.au) - Ph. 02 6280 4655

**Please ensure that you do not commence installation until you have read all XP & XP-R instructions Follow Instructions step by step.**

**240V, 12V, Solar Panel or Battery must not be connected until appropriate** [see item 6 page 9]

**NOTE: SOLAR Panels must be located facing NORTH [at approx. 45° angle] and in FULL SUN – ANY shade on ANY part of the panel will not allow battery to charge correctly.**

**Remember – once you have connected the Battery or any other power the Circuit board is 'LIVE' with 12v power and appropriate care must be taken.**

**DO NOT** connect the **RED** Spade Terminal to the Battery until you are ready to set the Limit Switches [Ref. Page 9] The **RED** Spade Terminal is supplied, disabled\* from the Battery.

\* i.e. not connected to the Battery

The last item to be connected is the SOLAR PANEL, do this after ALL other settings and adjustments have been made.

**ALL input power from any source [such as Solar panel, Battery, 240v] must be disconnected before moving the Circuit Board or changing motor polarity or removing battery.**

**DO NOT alter any pre-wiring of circuit board [except motor polarity\* when necessary]. Altering Pre-wiring [except motor polarity\* Ref. P8] will compromise your warranty.**

**Before** moving the circuit board for any reason such as, and including, changing the Battery or motor polarity, you must first ensure that ALL Power from ALL sources [eg; 240v/12V/ Battery/Solar Panel] is disconnected to avoid potential damage to the circuit board.

The Circuit control board is supplied mounted on top of 4 nylon 'posts' in this position they act as spacers, it is essential that the circuit board is correctly located on top of these posts.

The small circuit board on top of the main circuit board is the Radio receiver.

There is a copper wire [a 'bridge'] connecting the PE terminals, DO NOT REMOVE this 'bridge' unless connecting photoelectric safety cells [240v Operator only] or unless otherwise instructed.

Ensure that there are NO loose wire strands when disconnecting and connecting any cables.



**Do not expose any Circuit/Control board or any electronic circuitry to any**  
**• Moisture • Rain • Lubricants • Insecticide spray or other 'foreign' materials.**

**Installation:**

Standard Installation. [PULL]

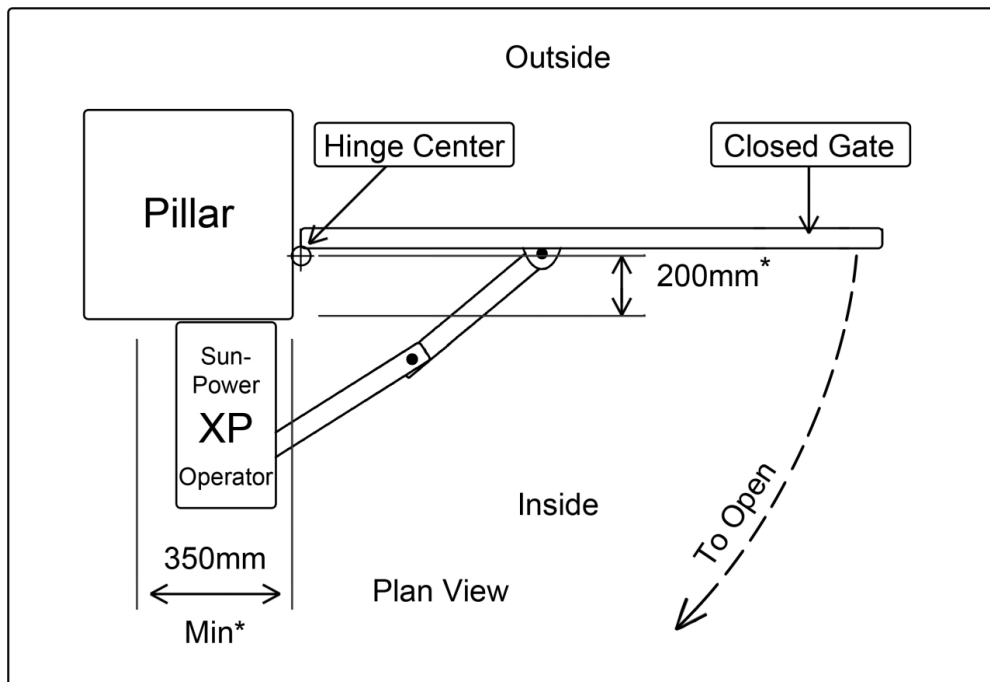
A "Standard Installation" is one where gate[s] open in. [swinging INWARD toward the Motor Housing].

Generally the gate hinge should be no more than 200mm from the rear of the Pier/Post/Pillar, ask us for advice if this distance is greater.

Side room of 350mm is normally required to accommodate the swing of the arms.

Refer to Page 12 if there is restricted side room [See figure 1 Page 5] some pictures of restricted side-room installation are in the "image gallery" at [www.sungateaustralia.net](http://www.sungateaustralia.net)

### Installation procedure:



**Figure 1. Standard Installation:**

**\*Where the distance is greater than 200mm the Secondary arm may need to be extended, contact Sun-Power if you need assistance. Refer page 12 if restricted side room**

1. Ensure that the gates swing freely 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 – some typical examples below

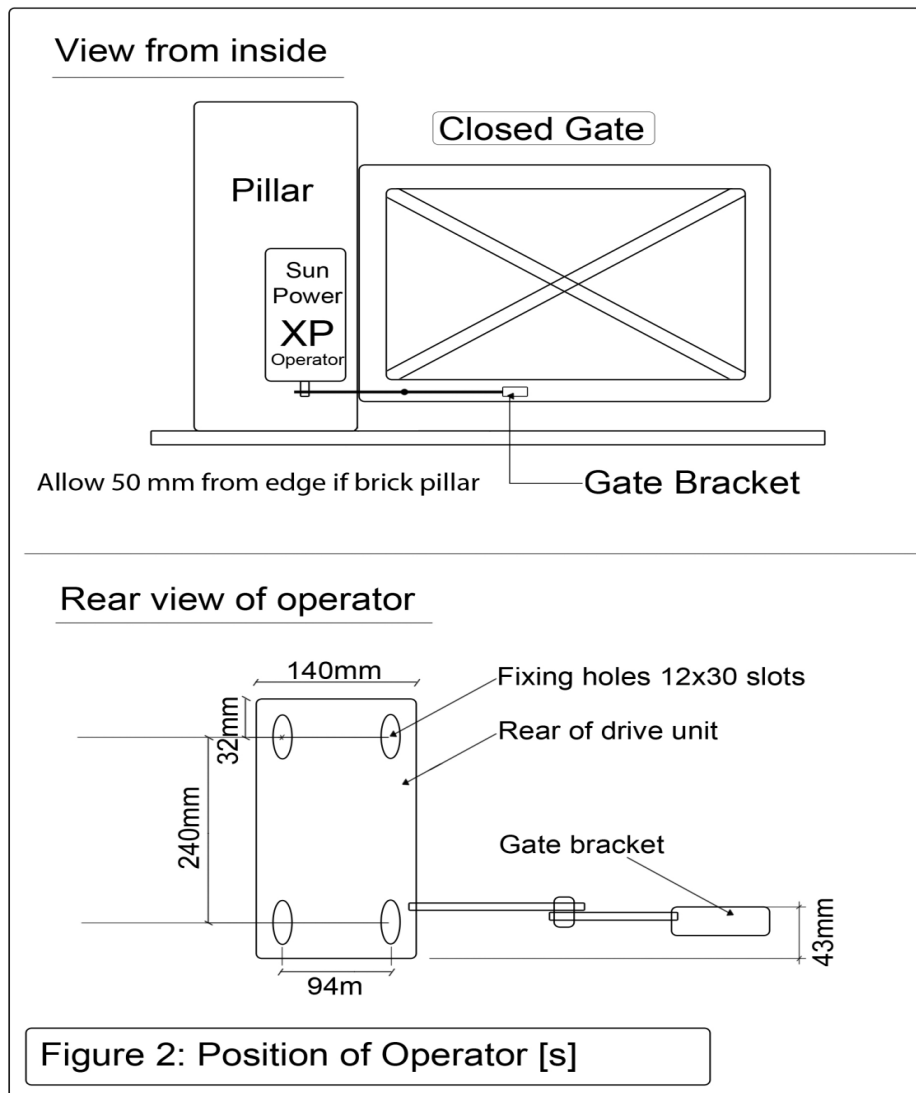


4. Remove the cover, from the XP Operator [**taking care that you DO NOT expose circuit boards to any moisture**] to access the slotted fixing holes cut in the rear of the Chassis.

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 XP-MP Mounting Plate you do not need to fold the Tabs back.**

3.  
Position each unit on Mounting Plate & secure with Washers & Nyloc Nuts

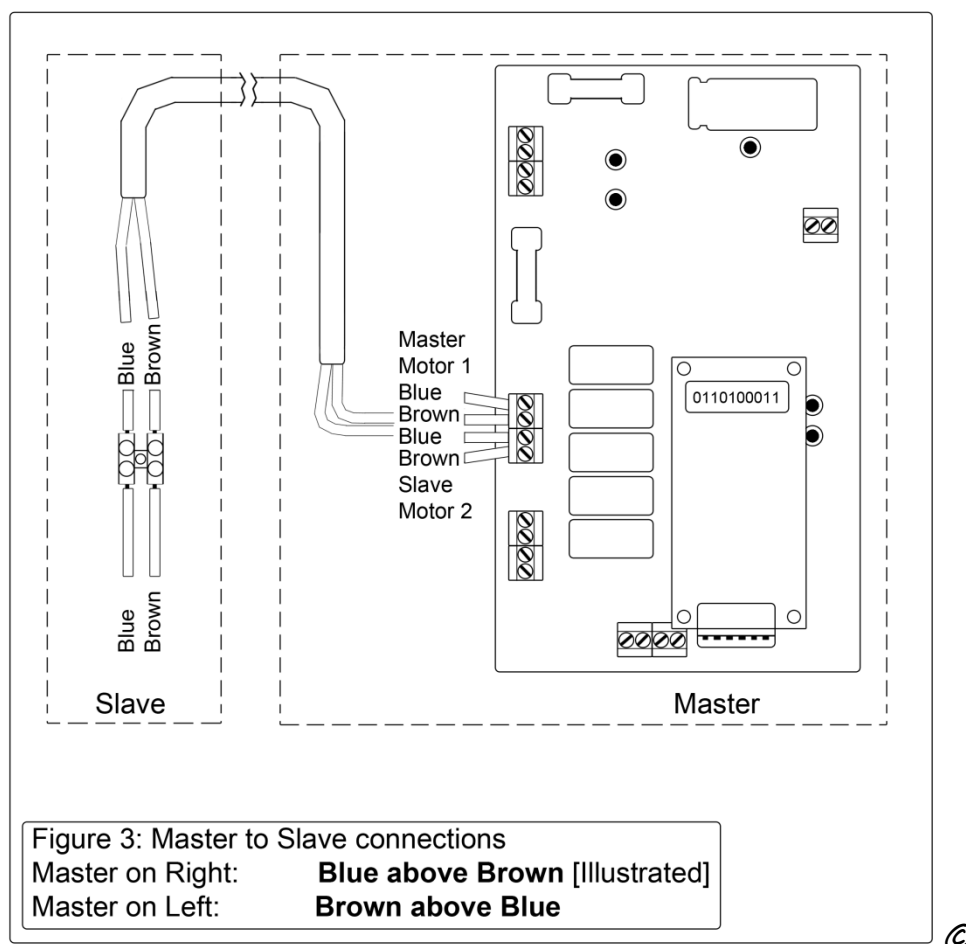
The vertical position is found by locating the gate bracket. The Gate bracket is best placed where there is adequate fixing on the gate and movement of the arms is unrestricted [See Figure 2]



4. If you have a Pair of Gates - Connect the Slave to the Master Unit with 2 Core Flex-Cable [Max load draw 8 Amp at 12 Volts]

[Figure 0.8 cable - .75mm sq – 24/.020 minimum] Refer Figure 3

**All cabling must not be run in conjunction with any high voltage cables or electric fencing – if in doubt, seek advice from a qualified Electrician in Your State or Territory.**



The XP Series Operators are set in the factory for a “Standard PULL Installation” When the Master Operator is placed on the LEFT HAND SIDE [from the inside [motor side] – looking out] the wiring is **Brown** above **Blue** [Ref. Pages 15, 16 & 17].

When the Master Operator is located on the RIGHT HAND SIDE [motor side - from the inside– looking out] then the motor wires need to be reversed. ie; **BLUE** above **BROWN**.

To accomplish this, locate the connection blocks for each motor on the Circuit board.

Swap\* the **BROWN** & **BLUE** wires for Motor 1 [& Motor 2 if a pair of gates]

[See Figure 3 above].

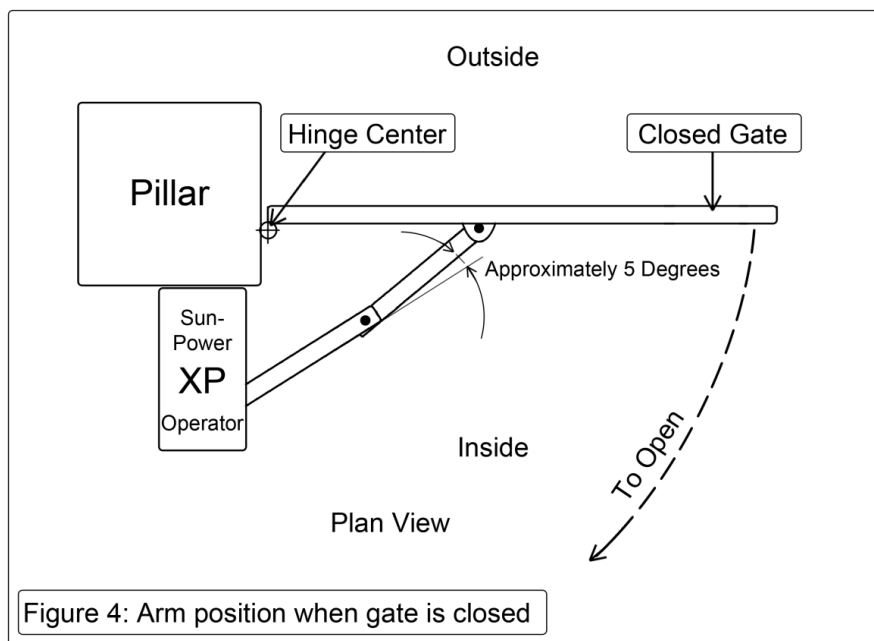
#### **IMPORTANT:**

**\* ALL power including • 240v • 12V • Solar Panel • Battery must be disconnected before attempting to change motor polarity**

#### **5. Location of Gate Bracket on Gate:**

The Gate bracket should be positioned on the gate so that the arms are ALMOST in a straight line when the gates are closed [Refer Page 9 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.





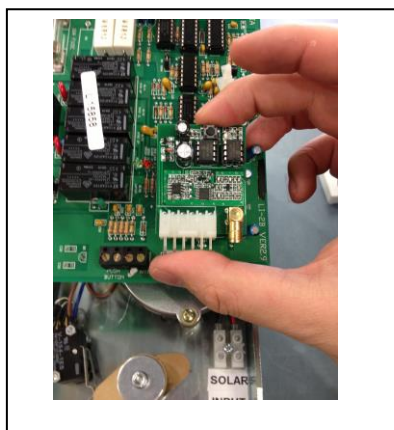
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### INSTALLING THE RADIO RECEIVER:

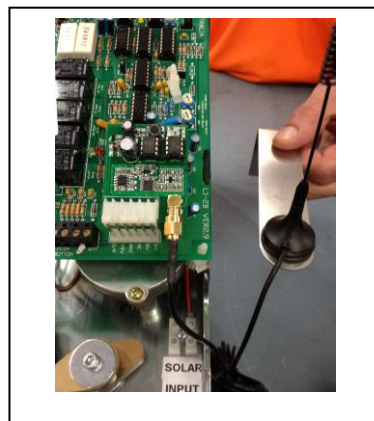
- Step 1. Ensure that Positive lead **[RED]** is disconnected and away from the Battery Positive terminal
- Step 2. Ensure Solar Panel [or Mains power] is NOT Connected to the Gate operator
- Step 3. Line up the ports on the radio receiver [Rx] with the 6 PRONGS on the Main circuit board - now slide the Radio Receiver [Rx] fully onto the 6 prongs at the bottom end of the main circuit board.

### Attaching the Antenna.

- Step 1. Attach the end of the Antenna cable to the Radio receiver board [When ready]



**Attach Radio receiver board**



**Attach Antenna**

### Antenna -/ Continued

For best results the Antenna should be 'Grounded' to metal post or fencing.  
Antenna operates best when mounted vertically

Note: Kits that include a bonus offer come with a Box marked Rx30M or Rx50M  
**Rx30 M** has 5 Remote Controls [Tx10], 2 Keypads [DK50] 2 Weather shields 1 Radio receiver [Rx 30]. The Remotes and Keypads are pre-programmed to the radio receiver.



**Rx50PBM** has 5 Remote Controls [Tx10], 2 Wireless Push Buttons [PB-RAD-2] 2 Weather shields 1 Radio receiver [Rx 30]. The Remotes and Keypads are pre-programmed to the radio receiver.

Refer to pages 22 & 23 for further information on Remotes and Keypads etc

### Installing the 'Optional' Strobe light/Antenna Combo.



a. Connect Antenna Cable to Radio Receiver Board using Brass Connector

b. Insert the two cables from light into Open and Close Ports marked Motor 1 or Motor 2 on Main circuit board

**Caution:** Disconnect all power from Battery/Solar Panel/Power point before you connect light

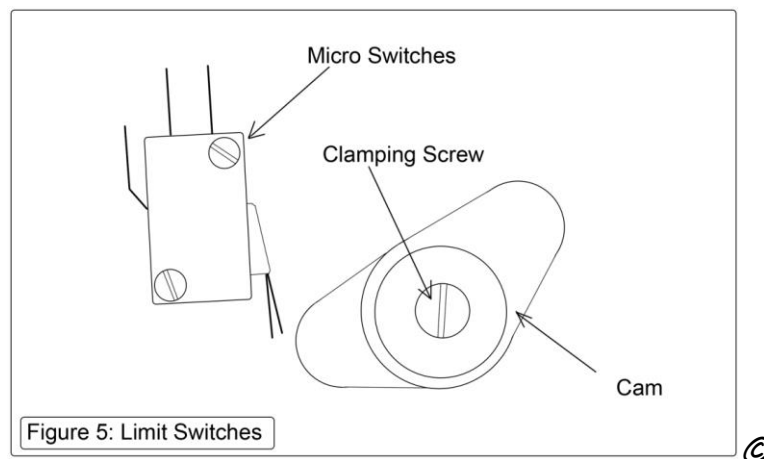
Ensure all excess Cables are placed carefully so they do not cause interference to the mechanism.

### 6. Now you can connect power [12v or 240v or Solar] to the Master Operator and connect the Battery

7. The Limit Switches may now be adjusted [If necessary] [See figure 5.] Each of the Master and Slave Operators has its own pair of cams, one to set the open position & one to set the closed position.

Note: Firstly mark the position of each Cam as a reference. Loosen the screw holding the Cams.

NOW you can drive the XP Operator with the transmitter & NOTE which cam controls the opening and which cam operates in the closing motion. [The Cam activates a Limit Switch to turn off the Motor] - Re-position each Cam and operate the XP again. Repeat until the Gates open & close to the required positions.



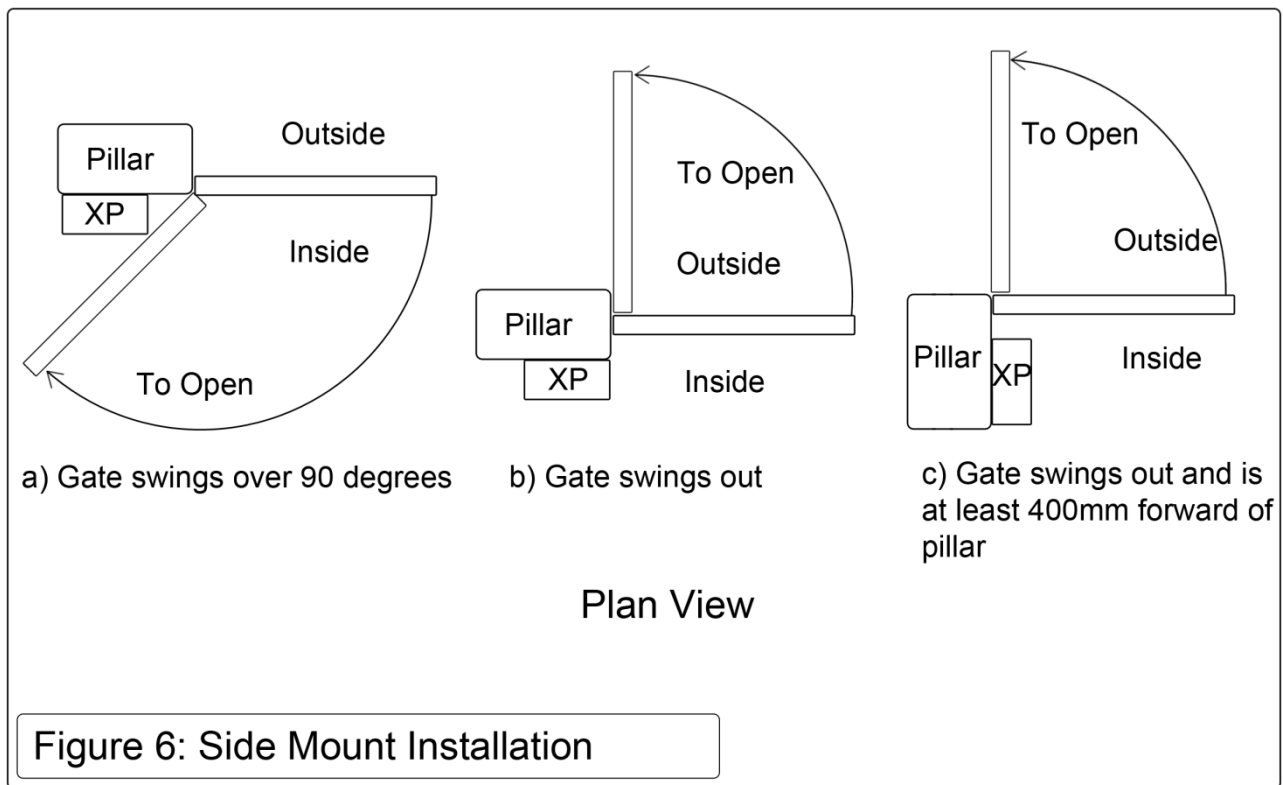
### Side Mount Installation:

The XP Operator may be mounted sideways, with the long side against the Pier/Post, for extra flexibility.

This feature is very useful for situations where ... [Ref. P 10. Fig. 6]

- The Gate must swing further than 90 degrees
- The Gate swings outward.
- The Gate swing outward & it is positioned at least 400mm forward of the back of the Pier/Post

Note: See also section on Out-swing Installation.



When side mounting, 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.

**Side Mount cover sets** with backing plate[s] are available, and must be used for SIDE MOUNT installation, Side mount covers are not included in Kit Prices - POA

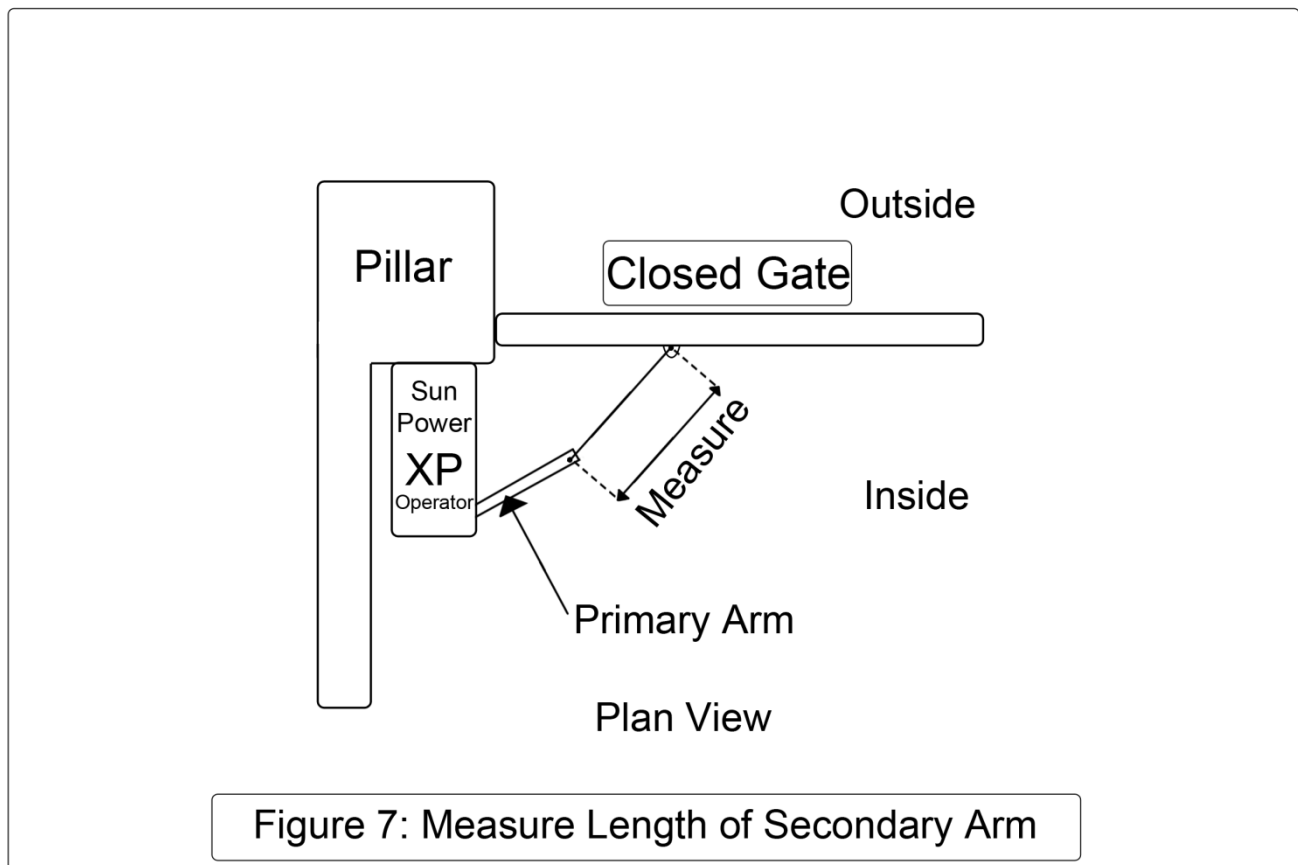
#### Restricted/Limited Side Room Installation:

This term is applied to the situation where the movement of the Standard Arms cannot be accommodated within the side room available. [www.sungateaustralia.net] Images Gallery show a typical limited side room installation.

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.

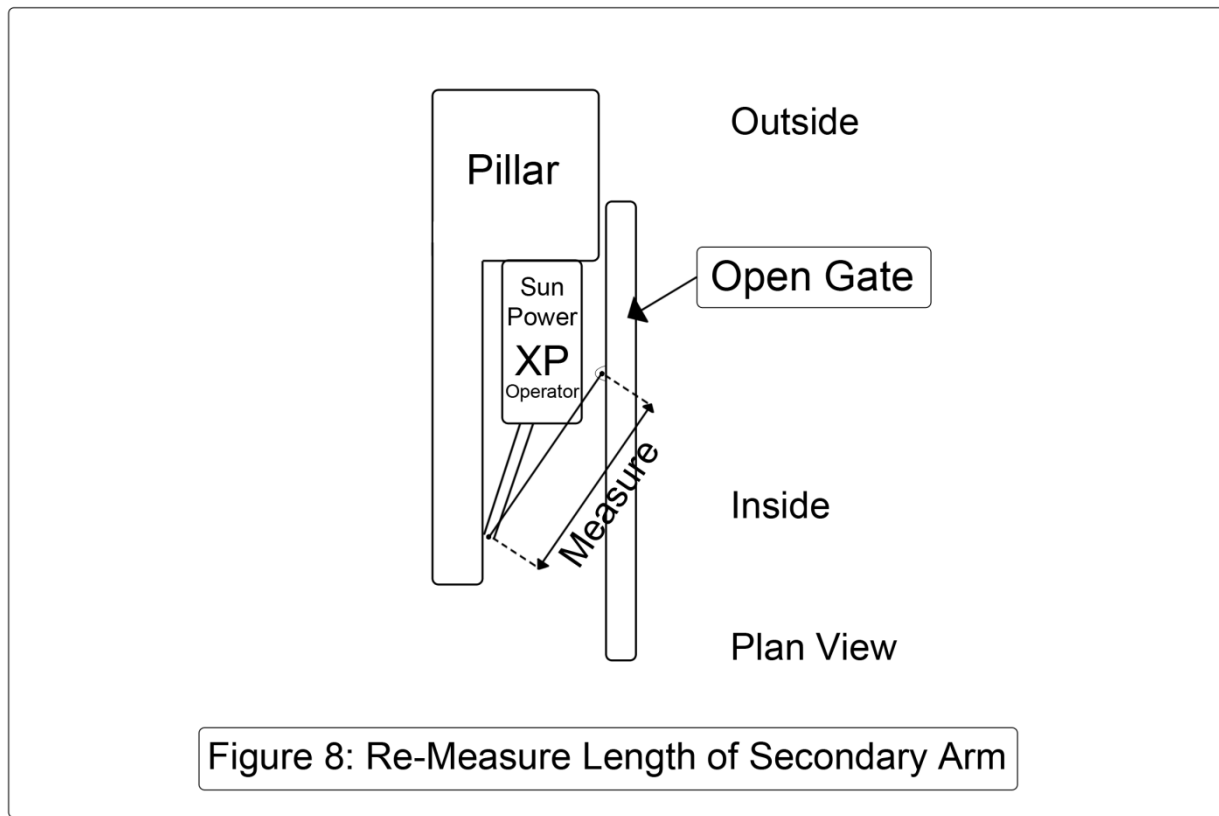
- i. Move the Primary Arm to a position suitable for the closed gate. Remembering that in the closed position the Primary & Secondary arms must stop short of a straight line alignment [See figure 7]



- ii. Mark a point on the gate suitable for the gate bracket. Holding the gate bracket in position, measure the distance between the hole centers on the gate bracket & Primary arm.
- iii. Now move the primary arm to its maximum open position. Open the gate & measure the distance again [See figure 8].
- iv. If the length has changed then the gate bracket must be repositioned & the same process repeated until the dimension remains the same for both positions.

Be careful that the Secondary arm does not conflict with the drive shaft of the Primary arm.





- a. Once the dimension is consistent a new hole can be drilled in the Secondary arm & the arm trimmed to suit. The gate bracket & secondary arm should now be fitted.

#### Out – Swing Installation[PUSH]

In this type of installation the gate swings outward or away from the XP Operator to the open position. [See figure 6/2, 6/3]

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

- The drive through width required - The Placement of the XP Gate Operator - The location of the gate on the Post/Pier/Pillar . Direct support is available from SUN-POWER in these situations. [Photos and/or drawings will assist]

For assistance [if required] please provide a drawing [Mud map] of your situation showing all possible measurements. Width between Piers/Posts/Pillars - Size of Piers/Posts - Single or Double Gates - Position of hinges on Piers/Posts/Pillars

**Note:** The polarity of the Motor connections may need to be reversed for Out- swing operation.

**REMINDER: ALL power inc • 240v • 12V • Solar • Battery must be disconnected before attempting to change motor polarity. Ensure that there are NO loose wire strands when disconnecting and reconnecting any wires/cables**

**WARNING: LIQUIDS AND CIRCUIT BOARDS DO NOT MIX - KEEP DRY ALWAYS**

## Settings:

Important: ALL adjustments to TRIM POTS/Dials must be done slowly and carefully with a correctly sized flat-blade screwdriver or Trim pot adjusting Tool

### Auto Close

The Operator Control Board is supplied with a “JUMPER” installed on a 3 PIN Block. This allows the gate to automatically close after a specific period. This period is adjustable. [Refer to Figure 9]

- i. Turn ‘Auto Close delay’ Trim pot Anti-clockwise to increase the hold-open time delay before gate closes automatically
- ii. Trim pot Clockwise to shorten the hold-open time delay before gate closes automatically

This “JUMPER” fits onto any two of three “PINS”

- When fitted on “PINS” 1 & 2 the gate is set to close Automatically.
- When fitted on “PINS” 2 & 3 the gate will require a \*signal to close [Standard factory setting]
- When there is NO “JUMPER” or it is lost unit will revert to standard factory setting

\*Signal can be from Remote control [Transmitter] - Push Button – Keypad – Intercom etc

### Multi-user Function: [Apartments – Flats – other Multi-user Applications ]

Where the XP Gate Operator is installed for Multi-users [eg: Flats – Apartments etc]

There is a Jumper installed on a 3 Pin Block approx in the middle of the Main Control Board.. If jumper is on pins 1 & 2 the Operator will not allow gate to close on a signal, it will continue to open position, time out then auto close.

If jumper is on pins 2 & 3 [Normal] a signal eg: from remote Control will reverse the direction of the Operator

### Overloads:

The overloads [See Figure 9] are preset to maximum sensitivity, ie. 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, i.e.: the gate STOPS when Closing & STOPS & Automatically 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. To reduce the sensitivity on the Main Circuit Board turn the overload dials in the 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]

### Travel time:

There is a “TRAVEL TIMER” and a Yellow L.E.D & Trim pot dial located to the left of the Auto close jumper. This should be set to approximately 5 to 10 seconds after full operation, ie; after gate[s] reach full travel on Limit Switches in both OPEN & CLOSED position. [Refer. Fig. 9 Pg14 & Fig.10 Pg18]

Travel time can be adjusted by turning\* Dial/Trim pot Anti-clockwise to extend travel time and vice-versa.

*\*Always use correct sized flat blade screwdriver to avoid damage to Dials/trimpots*

**GREEN L.E.D** - OPEN Position [Located above relay 4]    **RED L.E.D** - CLOSE Position

## XP Series Auto Swing Gate Operator

**Trim Pot Dials:** [Generally Blue base with White Top] There are Six adjustable [6] Trim Pots  
Settings - Functions - Locations

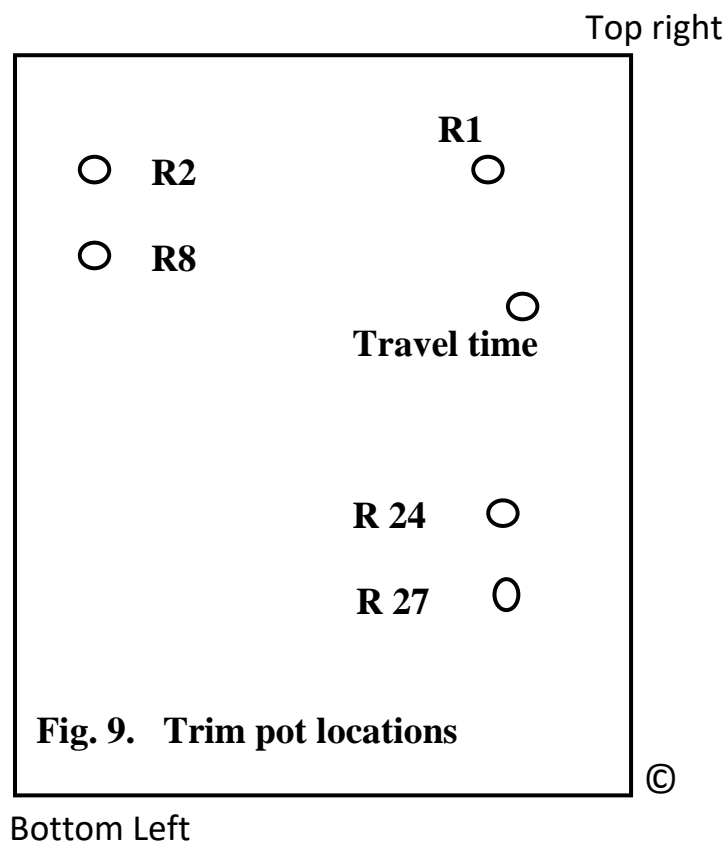
- |                              |                           |
|------------------------------|---------------------------|
| 1. R 1 Auto Close:           | Clockwise = Minimum time  |
| 2. R 2 Motor 1 Auto reverse: | Clockwise = Less power    |
| 3. R 8 Motor 2 Auto reverse: | Clockwise = Less power    |
| 4. Travel Time:              | Clockwise = Minimum time  |
| 5. R 24 Close delay:         | Clockwise = Maximum delay |
| 6. R 27 Open delay:          | Clockwise = maximum delay |

### Notes:

Use only appropriately sized flat blade screwdriver when making adjustments to Trim pot dials

Using incorrect or wrong sized tools will damage Trim Pot dials

Use appropriate care when making sensitive adjustments



**Fig. 9. Trim pot locations**

**WARNING: LIQUIDS AND CIRCUIT BOARDS DO NOT MIX - KEEP DRY ALWAYS**





# WARNING!

## 240v Wiring Diagram ONLY

For Solar operator, refer to Solar Wiring Diagram

XP 240v MAIN  
BOARD ONLY

Control board for  
Sun-Power Oct 2010  
XP 100, XP 100/300

Altering this wiring  
WILL VOID ALL  
WARRANTIES

Auto reverse Motor 1 & 2  
Clockwise = less force

0.5A Fuse

Travel Time LED

Auto close Trimpot  
anti-clockwise =  
increase H-Open time

Battery Neg black

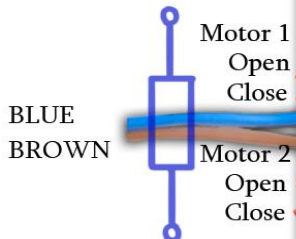
Battery Pos red

DC Neg black  
from T/F

DC Pos red  
from T/F

10A Fuse

Standard installation  
BLUE/BROWN polarity  
Refer P.5 – Fig.3



DO NOT alter wiring.  
[except motor polarity  
when necessary]

Electric Lock  
Photoelectric

C-Tick  
Approval

Disconnect ALL incoming power &  
battery before interchanging Blue &  
Brown Wires

DO NOT apply voltage to this  
Terminal Block

Push Button

Individual serial code

Travel time clockwise  
= minimum time

3 pin block.  
Jumper on 1 & 2  
= Auto Close  
Jumper on 2 & 3  
= Manual Close

Close Delay

Open Delay

To co-ordinate Double  
gates  
Clockwise = Maximum  
delay

XP  
240v MAIN  
BOARD  
ONLY







Altering this wiring  
WILL VOID ALL  
WARRANTIES

# WARNING!

## XP-R SOLAR Wiring Diagram ONLY

**JULY 2015**  
**NEW SOLAR**  
**Circuit board**  
**XP-R200**  
**& XP-R200/300**

Auto reverse Motor 1 & 2  
Clockwise = Less Force

Auto close Trimpot  
Anti-clockwise  
= increase  
Hold-open time

To regulator/battery  
loom. Do **NOT** alter.

**DO NOT** apply voltage to this  
Terminal Block

0.5A Fuse

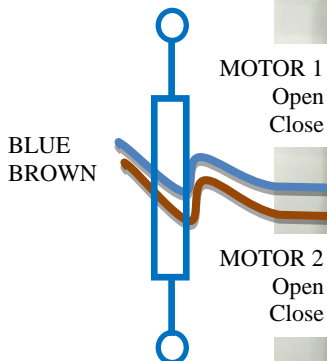
Travel Time LED

Travel time  
Clockwise =  
minimum time

10A Fuse

3 pin block.  
Jumper on 1 & 2  
= Auto Close  
Jumper on 2 & 3  
= Manual Close

Standard Installation  
BLUE/BROWN polarity.  
Refer Page 5, Fig. 3.



**DO NOT** alter wiring  
(except motor polarity  
when necessary).

Close delay

Open delay

To co-ordinate  
Double gates,  
Clockwise =  
Maximum delay

Electric Lock

PhotoElectric

C-Tick Approval

Disconnect ALL incoming power  
& battery before interchanging  
BLUE and BROWN wires.

**DO NOT** apply voltage to this  
terminal block.

Push button

Individual Serial Code

Radio Receiver  
plugs in here.

## XP Series Circuit Board L.E.D light Sequence

XP Series Auto Gate Operators are fully factory tested [before shipping] to work as below.

LED's are located as follows [Refer to drawing below for approximate locations]

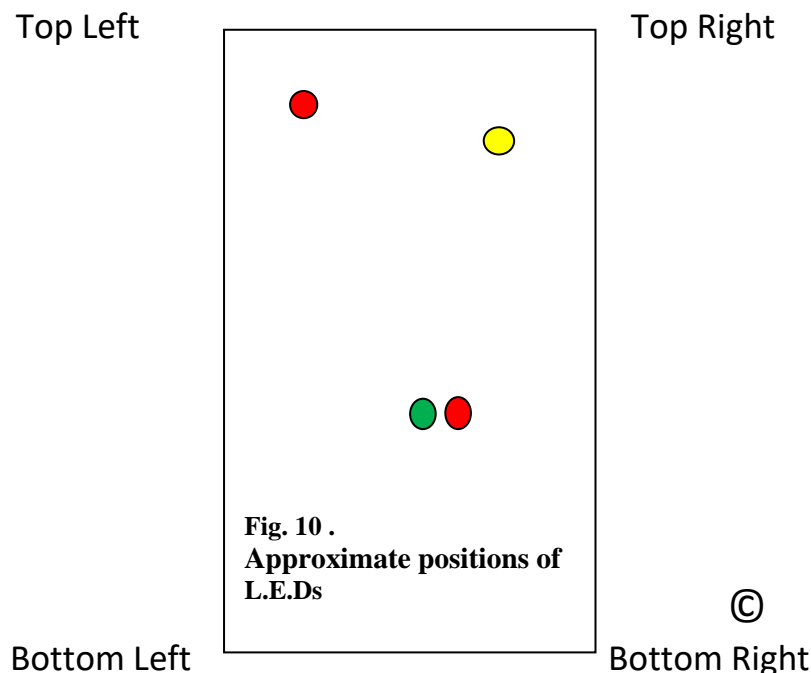
- **YELLOW** – 'travel time' LED – top right hand of the board [Adjustable Ref. Page 13]
- **GREEN** – 'open' LED – bottom centre next to the relays near **RED** 'close' LED
- **RED** – 'close' LED – bottom centre next to the relays near **GREEN** 'open' LED
- **RED** – 'battery reversed' LED – next to battery terminals – Top left.

### Functions:

- Gate inactive no L.E.D lights ON
- Gate opening **GREEN** L.E.D and **YELLOW** 'travel' L.E.D ON
- Gate closing **RED** L.E.D and **YELLOW** 'travel' L.E.D ON
- When limit reached **YELLOW** L.E.D ON until it 'times out' [Adjust to +10 Sec Ref. P.13]
- When timed out NO L.E.D's ON
- If **RED** L.E.D [top left next to power terminals] is on the battery is wired backwards disconnect Battery **IMMEDIATELY !!!**

If **GREEN** L.E.D is on and gate is operated and **GREEN** L.E.D stays ON motor has been shorted out (refer to a SUNPOWER technician)

- If both **GREEN** 'open' and **RED** 'close' L.E.Ds [Centre bottom] are on at the same time main board is in fault mode (refer to a SUNPOWER technician)



**DO NOT APPLY or ALLOW ANY MOISTURE ON TO THE CIRCUIT BOARD**

## Anti – Clash Leaf Delay for Pairs of Gates. [Guide to Trim Pots]

To avoid jamming there is a time delay between the movement of each gate. This delay may be independently adjusted for the Opening sequence & the Closing sequence.

LEFT HAND Installations [Master Operator on the Left] – Trim pot dial “R 24” changes the Closing delay & Trim pot dial “R 27” changes the Opening delay. Turning the dials/Trim pots R24 and R27 Anti-Clockwise gives the Minimum delay.

***\*Always, carefully use correct sized flat blade screwdriver to avoid damage Trim pot dials***

RIGHT HAND Installations [Master Operator on the Right] – Trim pot Dial “R 24” sets the Opening delay & Trim pot dial “R 27” sets the Closing delay. Turning Trim pot dials R24 and R27 Anti-Clockwise gives the Minimum delay.

### Push Buttons, Keypads etc.

A variety of Hard-wired input devices can be used to operate the XP Operator such as Push buttons, Key switches, Keypads etc. Input should be in the form of a MOMENTARY CLOSED CIRCUIT.

**WARNING!! Voltage MUST NOT be applied to the Push Button terminals.** DAMAGE to the Circuitry and loss of warranty 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.

### WIRED PUSH BUTTONS Details & Installation Instructions etc

**PB – 1** is a Standard wired push button [Supplied with 10 metres Fig 8 cable]

Connect wires, either way, into Push Button terminal at front of main circuit board [Ref. Page 15,16 & 17]

**PB – 2** is a wired Push Button with 2 Position key switch. [Button active– Button inactive]

[Supplied with 10 metres Fig 8 cable]

Connect wires, either way, into Push Button terminal at front of main circuit board [Ref. Page 15,16 & 17]

**Ensure that there are NO loose wire strands when connecting any external devices such as Antennas/Push Buttons/Key Switches/Intercoms etc [Loose strands cause problems]**

### **Important Notes:**

Please ensure that all adjustments on Circuit Board[s] are done with appropriate care and sensitivity to avoid damage to equipment.

Correctly sized Trim pot tools or SMALL Flat blade Screwdrivers are the only suitable tools for adjusting a trim pot/dial - Adjustments should be made with due care

All Equipment is thoroughly Factory & Warehouse tested & checked to ensure equipment is ready for shipping.

Ensure Circuit board stays correctly mounted in original position on top of Nylon Mounting Posts, refer instructions on Page 4

**Follow the Manual – Take your time – Get it right - Enjoy the benefits  
Ring or email if you need assistance**

## Solar

DO NOT connect SOLAR PANEL until all other settings and adjustments have been completed

**Step 1.** Locate 2 Way terminal connection block on Top Plate near Motor, this will have Red [Positive] & Black [Negative] wire in one side as part of the standard wiring. Connect wires from the SOLAR PANEL Directly into the opposite side of the terminal block as shown below.



**Important:** A connected SOLAR PANEL delivers an electric charge when it is in any light, YES!! Even if inside so IT IS ESSENTIAL that the SOLAR PANEL and Battery be disconnected before any work or wiring is being done on the Control Board, other than, when adjusting trim pot dials or Limits switches. [Refer Page 4] [Please follow these instructions to avoid damage to your circuit board and loss of warranty]

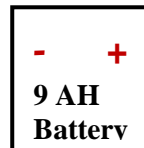
To check incoming voltage from solar panel disconnect panel from gate operator and meter the Fig 8. Cable. The output voltage from the 12 or 20 Watt Panel is [15 – 21v]

**\*Note:** Solar panels greater than 20 Watts may require a regulator – Consult with Sun-Power for further information if you have a need for a panel larger than 20 Watt 12v

**Step 2:** Locate RED wire with Spade Terminal [Which will be disabled from Positive on Battery]  
Connect this wire to the battery and now you are ready to set your Limits.

Negative Black/Blue Wire

Is already connected to battery



Locate Positive Wire [RED]

Connect Red Wire to + on Battery

**XP-R denotes the Model fitted with a Solar regulator capable of operating with Solar Panels up to 20 Watt at 12v – [Pre July 2015 XP Operators use a solar panel up to 12Watt 12V Maximum]**

**Regulator lights:** Yellow = charging Green = battery has full charge.

The lights will only work if the solar panel is plugged in and working.

One of the lights must be on at all times.

When disconnecting regulator always remove red first then black.

When connecting always connect black first.

**All cabling must not be run in conjunction with any high voltage cables or electric fencing – if in doubt, seek advice from a qualified Electrician in Your State or Territory.**

**Notes:** Correct mounting angle for SOLAR Panel is 45 Degrees and facing NORTH in FULL SUN  
Any shade on a solar panel will severely restrict recharging ability and lead to early battery discharge.

**Solar Cable should not be joined - use continuous length only**

Solar Panel may be located up to .....

50 Metres from Gate Operator using 4mm Fig.8 Cable [T/S 2 x 26/0.30]

100 Metres from Gate Operator using 6mm Fig.8 Cable [T/S 2 x 65/0.30]

All Sun-Power Auto Gate Operator Kits [Solar, 240v and 12v] are supplied complete with 9 Amp Hour SLA Battery. This battery should be checked regularly. Instructions for changing battery - refer Page 4  
Quality 9 AH Batteries are available from Sun-Power and from most reputable battery suppliers.

### **Electric Lock:**

Connections for an Electric Lock/Latch [XP-EL-CISA] [XP - EL] are provided on the Circuit Board [Refer Pages 15, 16 & 17]

Generally a 4 Core cable is used as it has an extra layer of insulation. Use Red & Black and connect either way. This connection block will supply 12 Volts to energize the Lock at the beginning of the Opening & Closing cycles.

### **Photoelectric Safety Cell:** [240v & 12v Operator Only]

[Contact Sun-Power if PE is required on SOLAR\_Operator]

There is a copper wire [a bridge] connecting the PE terminals, DO NOT REMOVE unless connecting Photoelectric safety cells or unless otherwise instructed.

Photoelectric Safety Cells [PE] may be fitted to detect obstructions in its path. The PE's 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 Auto Operator is set in the Automatic Close Mode the Gate[s] will remain open until the obstruction is cleared.

Wires from the Photocells should be attached to the appropriate connection block on the XP Circuit board [Refer Pages 15, 16 & 17].

A 4 Core security cable [.7/020 or .14/020] must be used. Switch connections to XP Gate Operator circuit board can be either way. [See Pages 15, 16 & 17]

Switch connections to Photoelectric unit must be terminated to 'Common' and 'Normally closed' [NC] Red must go to Positive and Black to Negative [Refer to instructions with Photoelectric [PE] unit]

Photoelectric safety beams can supplied for use with the XP Solar Gate Operator [but not when used with electric lock] please contact us if you require this. [This is a Pre-Install application]

### **Connecting the 433 mhz antenna**

The Sun-Power standard Radio Receiver [SP Rx 30 Plug-on] is Piggy backed onto the Main Circuit Board it is located on the front Right hand corner.

**Ensure that there are NO loose wire strands when connecting any wires or external devices such as Antennas/Push Buttons/Key Switches/Intercoms etc [Loose strands will cause problems]**

Install Antenna in a position that allows the best clear "LINE OF SIGHT" from all directions, this will allow best reception of signal from Radio Transmitter [Tx]

**Alternate Brand radio receivers and transmitters to match your 'Garage Door Auto' may be available as an optional extra.**

Note: Radio Receiver [Rx] and Radio Transmitter [Tx] models & colours may change without notice.

Note: Optional "HIGH GAIN" Antennas are available to enhance pick up of signal from Radio Transmitter.

Exit Wand:

1. Refer to SPXP-EW157 manual.
2. When using an SPXP-EW157 Exit Wand the move the Jumper to MU setting [top and centre pins] these are located in the centre area of main circuit board.



## **Trouble Shooting:**

Please ensure that you have read and followed ALL of these instructions, plus any other instructions supplied.

### **Poor Range with the Radio Transmitter [Tx].**

Tx10 Transmitters [Remote controls] are factory set to approx. 200 Metres\*

[\*Range will vary due to site conditions]

A 433 Mhz Antenna is included in XP & XP-R Gate Operator Kits to maximize signal to radio receiver [Rx].

Poor range may occur for several reasons. The first things to check are .....

- a. The Battery in the Tx Remote Control.
- b. Antenna installation & wiring connections: incorrect installation - loose strands etc]

Other causes may be interference from other external 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 and must be specially ordered.

Other faults may be due to incorrect settings. Refer to “Settings” section on Page 13 of this manual to ensure all the settings are correct.

All Sun-Power XP Gate Operators include a battery, check battery regularly

### **Low battery power:**

Note: A voltage check does not show AMPS – only a ‘LOAD’ test will show the true state of the battery

- a. Re-charge battery. Check battery quality and replace if necessary.
- b. Check solar output voltage. Ensure that solar panel is in full sun, facing north and is mounted at 45 degrees

### **IMPORTANT:**

**Do NOT alter any pre-wiring of Control Board [except motor polarity\*] Altering Pre-wiring [other than motor polarity] will compromise warranty.**

**\* ALL power including 240v/12V/Solar/Battery must be disconnected before attempting to change motor polarity**

**Ensure that there are NO loose wire strands when connecting any wires or external devices such as Antennas/Push Buttons/Key Switches/Intercoms etc [Loose strands will cause problems]**

**Important: ALL adjustments to TRIMPOT DIALS must be done slowly and carefully with a correctly sized flat-blade screwdriver, the use of incorrect equipment to adjust TRIMPOTS DIALS may cause damage and render circuit board unusable.**

**Take your time   -   Read & Follow the Manual   -   Get it right   -   Enjoy the benefits**

## Programming Transmitters

**Important:** The Radio receiver, Remote Controls and Digital key pad are all 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 motor responds.

N.B. Sequence needs to be fairly  
quick.

Design & colour of remote  
controls may alter



SPXPPB-RAD-2  
Wireless Push button  
with 2 position key  
switch.

Button active -  
Button inactive



SPXPPB-RAD-1  
without key switch

Program push buttons  
the same way  
as Remote Controls

### 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.

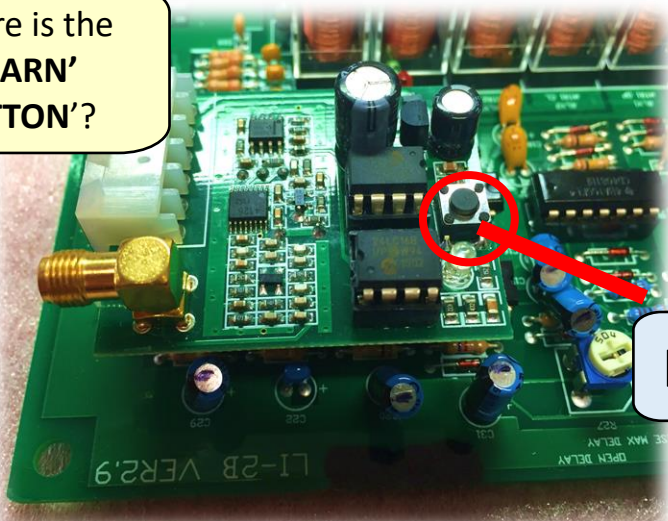
6) Press the # key.

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

Sequence example:

**1234\*8552\*8552#**

Where is the  
**'LEARN'**  
**BUTTON'?**



Here



## 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 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 hold the Learn button down for 1 - 2 seconds. 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 & Case 245mm 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 & XP-R 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 buyers 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 clients cost.

### Disclaimer:

Purchasers and other persons shall use this product at their own risk. The purchaser is solely responsible when permitting other people to use this product. We will not be held liable under any circumstance for incidental or consequential loss or damage arising from the use of this product. We will not be held liable under any circumstance for injury or death arising from the use of this product. This product should not be used by minors.

Before use, purchasers and other persons should check with their local authorities for area specific rules and regulations relating to the use of this product.

Record of Purchase: Date: \_\_\_\_/\_\_\_\_/\_\_\_\_.

Purchased From: \_\_\_\_\_ Inv. No. \_\_\_\_\_

Product Purchased: \_\_\_\_\_

Serial No. \_\_\_\_\_

Notes: \_\_\_\_\_

\_\_\_\_\_