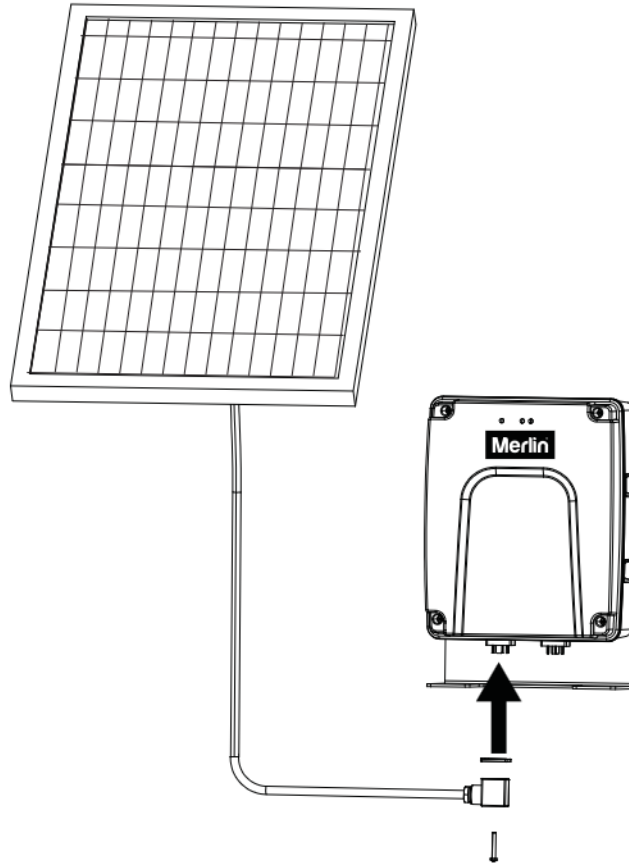


Merlin[®]



gomerlin.com.au

gomerlin.co.nz



SOLAR-KIT

Installation and Operating Instructions

Visit the SOLARKIT landing pages for:

- Product features
- Digital copy of this manual
- Register your warranty



Australia



New Zealand

Owners Copy: SAVE THESE INSTRUCTIONS for future reference





This manual contains **IMPORTANT SAFETY** information
DO NOT PROCEED WITH THE INSTALLATION BEFORE READING THOROUGHLY




SAFETY INSTRUCTIONS


WARNING


- Failure to comply with the following instructions may result in serious injury or property damage.
- Read and follow all instructions carefully.


  These safety alert symbols mean **WARNING** : A possible risk to personal safety or property damage exists.


 **Do not wear rings, watches or loose clothing** while installing or servicing a garage door opener. Wear gloves and suitable protective clothing where appropriate.


 **Installation and wiring** must be in compliance with your local building and electrical codes.

 This appliance should not be used by children or persons with reduced physical, sensory or mental capabilities, or a lack of experience & knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.


 Use only the XinSPower: (Model:A481-3001400S) power supply or the SP40W: solar panel supplied with the unit.


 This unit contains batteries that should only be replaced by a professional.

 If the power cable is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid hazard.

 **Disconnect electric power to the gate opener before making repairs or removing covers.**

 **Only use the SOLAR-KIT with the operators and solar panels specified in this manual.**

 **This appliance contains batteries that are only replaceable by skilled persons.**

 AC power adapter charging should only be used indoors and the unit should not be used while charging via the AC power adapter.



KEEP THESE INSTRUCTIONS

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INTRODUCTION

1 INTRODUCTION

The Solar Power Kit is an alternate power supply option designed to be used with Merlin (or Grifco) automatic gate openers. The solar panel will convert Solar energy into electrical power and store the power within the batteries contained in the Solar Power Supply Enclosure. The stored power is then available to power the gate opener at any time during the day or night regardless of bad weather or lack of sunlight. The Solar Power Kit is ideal for installations where mains power is not available.

The Solar Power Kit is compatible with:

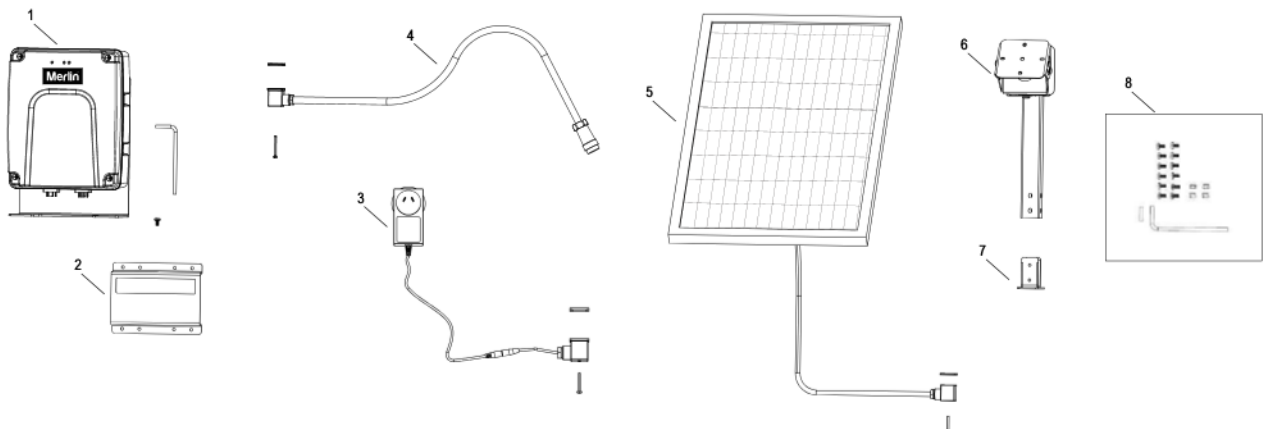
- Slide 600 (MGSK600)
- Swing A 200 (MGASK/MGADK)
- Swing L 300 (MGLSK/MGLDK)
- Swing LR 500 (MRGLSK)
- LG-Drive (GLD-GO)

Before you begin the installation:

- The complete relevant Gate Opener Instruction Manual needs to be referred to for the complete correct installation and setup process.
- This product must be installed by a professional installer.

2 SALES KIT INVENTORY

- Solar power supply enclosure (Inc batteries)
- Solar power supply enclosure mounting bracket
- 240V Mains power pack with battery charge plug with adaptor cable: XinSPower (Model:A481-3001400S)
- Solar Power Kit to Gate Opener power cable (4m)
- Solar panel with cable (4m) (included with SKU number SP40W)
- Solar Panel mounting bracket (included with SKU number SP-MOUNT-KIT)
- Mounting bracket base plate (included with SKU number SP-MOUNT-KIT)
- Solar Panel mounting hardware (included with SKU number SP-MOUNT-KIT):
 - 1pc X hexagonal socket spanner
 - 1pc X hexagonal socket Driver Bit
 - 4pcs X M6 nuts
 - 12pcs X M6*10 anti-tamper screws



INTRODUCTION

3 TECHNICAL SPECIFICATIONS

SOLAR POWER SUPPLY		SOLAR PANEL	
Rated Voltage	21.6VDC to 35VDC	-	-
Maximum Output Current	5Amps	Peak Power (Pmax)	40W/34.2V
Battery Capacity	2 x 18Ah	Maximum Current	1.17A
Recharge Time (AC Power Charger)	Approx 24 hours	Maximum Voltage	34.2V
Operating Temperature Range	-20°C to +50°C	Operating Temperature Range	-40°to +85°C
IP Rating	IP65	IP Rating	IP65
Dimensions	335mm x 230mm x 210mm	Dimensions	620mm x 400mm x 25mm
Weight	15Kg	Weight	2.6Kg

INTRODUCTION

4 PLANNING

The Solar Power Kit is an alternate power supply option designed to be used with Merlin (or Grifco) automatic gate openers. The solar panel will convert Solar energy into electrical power and store the power within the batteries contained in the Solar Power Supply Enclosure. The stored power is then available to power the gate opener at any time during the day or night regardless of bad weather or lack of sunlight. The Solar Power Kit is ideal for installations where mains power is not available.

The Solar Power Kit is intended for residential applications and light commercial gate operation with limited cycles per day. While our system can operate Up to 300 cycles and 2 weeks of standby time, the Solar Power Kit requires sunlight to recharge the batteries. The number of cycles, connected accessories and number of hours of sunlight will affect the performance. Refer to the solar calculations section below.

When installing the Solar Power Kit, please consider:

- Relative location of the solar panel to the Solar Power Supply Enclosure, as well as the distance from the Solar Power Supply Enclosure to the gate opener.
- Choose a location that faces due North and is fully exposed to sunlight. Partial shade or obstructions will significantly reduce the solar panels ability to recharge the batteries.
- Choose a location that is protected from physical damage or impact.
- Adequately protect the batteries from high and low temperatures. Extreme temperatures will impact the battery performance and lifespan.

Select the site:

Solar recommendations are based on average solar radiation for winter in the zones as shown on the map below. An installation may require one or two solar panels depending on your application, access to solar radiation each day, cycles required each day and the connected accessories.

During extended periods of low solar radiation, charging the Solar power supply system may be required with the AC charging adaptor.

ZONE 1 (9 Hours Sunlight/Day):

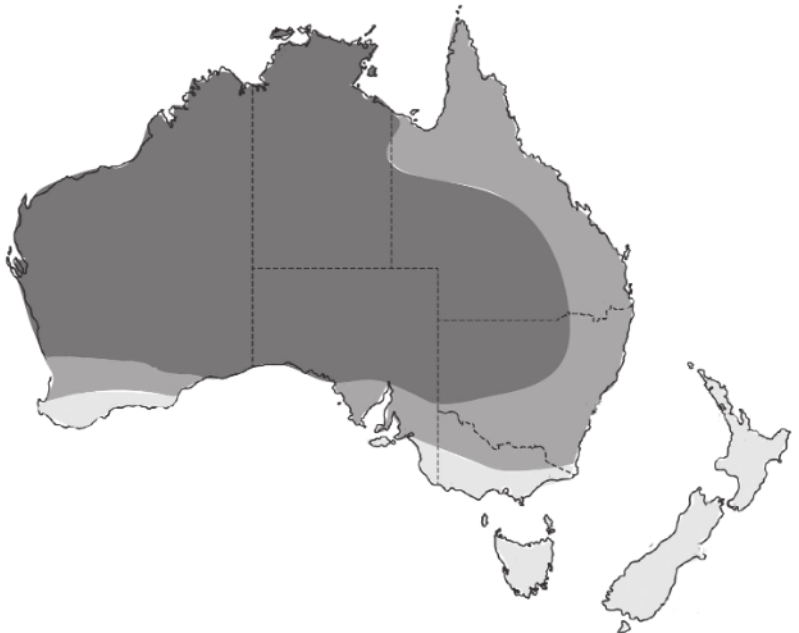
Ideal for Solar application

ZONE 2 (6 Hours Sunlight/Day):

Recommended for Solar application

ZONE 3 (3 Hours Sunlight/Day):

Success of Solar application will depend on the type of gate opener and location of the Solar Panel



NOTE: This is a basic guide. There are many factors that can contribute to affecting the sun hours of your location including change of seasons and weather.

INTRODUCTION

4 PLANNING

TYPICAL SYSTEM STANDBY POWER CONSUMPTION (Ah) FOR 24H

Gate Control Board	1.5
Solar Control Board	0.6
772ANZ Phot Beams (per set)	1.7
HPS15 (per set)	1.7
E8003 Universal Receiver	0.3

Add up the system and connected accessories = total power consumption for 24H.

GENERAL OPERATOR POWER CONSUMPTION WITH CONNECTED ACCESSORIES PER CYCLE (Ah)

Merlin and GRIFCO gate operator with flashing lamp GWS-L24 and ELOCK-R based on 70s complete cycle	0.042Ah per complete cycle
--	----------------------------

Note: The accessories allowable for solar systems are as follows:

- 772ANZ or HPS15 not more than 3 in total
- E8003 only one unit
- ELOCK-R only one unit
- GWS-L24 only one unit

MAG-LOCKS, External receivers, Loop detectors and other active accessories should not be installed as they will consume excessive power from the solar power supply system.

ESTIMATED SOLAR CAPACITY GENERATED PER DAY

Solar zones with approx. available hours of solar access based on winter	Maximum Solar Capacity generated per day	Min. Operating system Ah required per day: Gate control board Solar control board	Estimated Ah available for cycles and accessories per day
Zone 1 with 1 panel	7.65	2.1	5.6
Zone 2 with 1 panel	5.1	2.1	3.0
Zone 3 with 1 panel	2.55	2.1	0.5
Zone 1 with 2 panels	15.3	2.1	13.2
Zone 2 with 2 panels	10.2	2.1	8.1
Zone 3 with 2 panels	5.1	2.1	3

4 PLANNING

$$\text{Estimated gate cycles per day} = \frac{\text{Ah available} - (\text{Ah consumed by the accessories connected})}{\text{Operator Power Consumption with connected accessories per cycle } 0.042\text{Ah}}$$

Example:

- Zone 2 with 1 panel = 3.0 available Ah
- 772ANZ one set = 1.7 Ah
- E8003 connected = 0.3 Ah

$$\text{Estimated gate cycles per day} = \frac{\text{Ah available } 3.0 - (\text{connected accessories } 1 \times 772\text{ANZ}=1.7 + 1 \times \text{E0083}=0.3)}{\text{Operator Power Consumption with connected accessories per cycle } 0.042\text{Ah}}$$

$$\text{Estimated gate cycles per day} = \frac{(3.0 - 2.0)}{0.042}$$

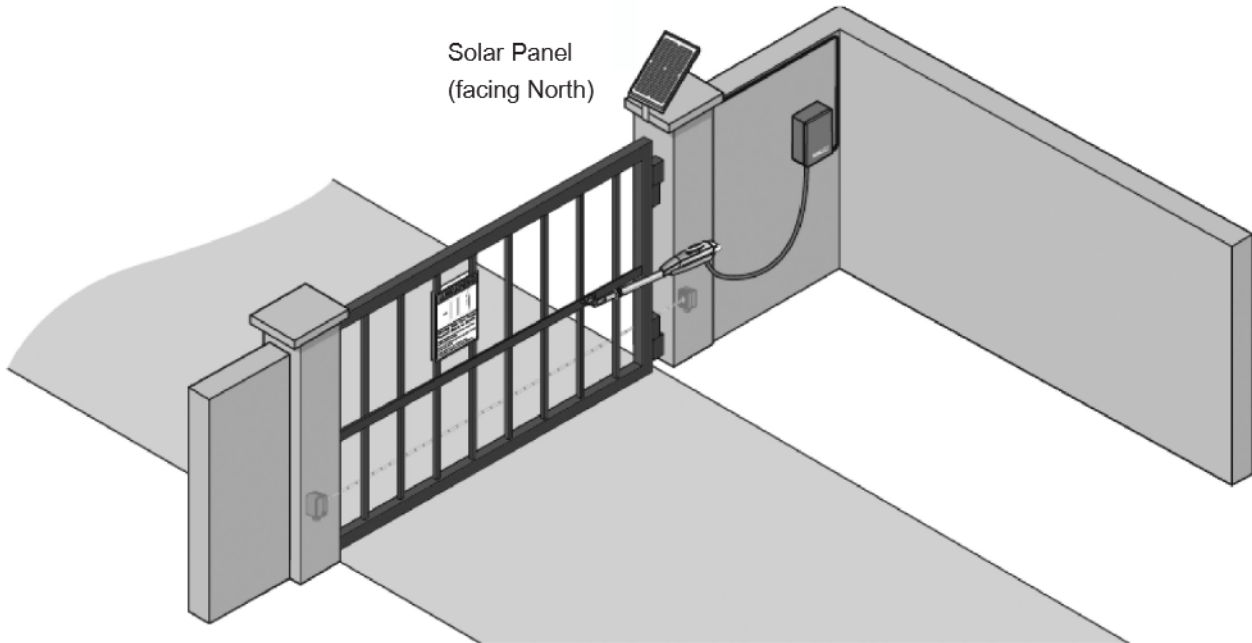
$$\text{Estimated gate cycles per day} = 24$$

Note: Estimated gate cycles per day are based on ideal conditions and good daily solar radiation. There are many factors that can impact on the systems performance including: Gate condition, environment, obstructed solar access etc.

INTRODUCTION

4 PLANNING

Completed Overview



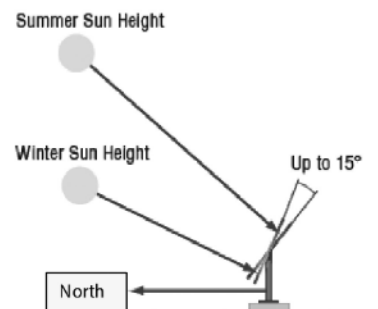
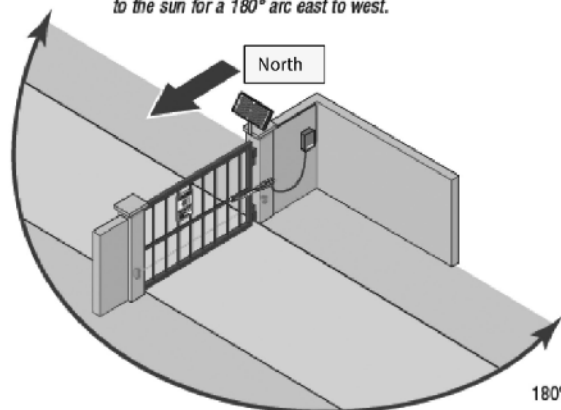
Positioning

The location of the panel(s) is critical to the success of the installation. In general, the panel(s) should be mounted using the provided angle bracket facing due NORTH. The solar panel(s) should be mounted in an area clear of all obstructions and shade from buildings and trees. If the panel(s) is not casting a shadow, the battery is not being charged.

NOTE: Tall trees or buildings that do not shade the solar panel(s) in the summer could shade the solar panel(s) during the winter months when the sun sits lower in the sky.



TIP: The area around the solar panel(s) should be clear of shadows or obstructions to the sun for a 180° arc east to west.



TIP: To optimize the system for winter operation the angle can be increased an additional 15° (solar panel(s) sits more vertical).

INSTALLATION

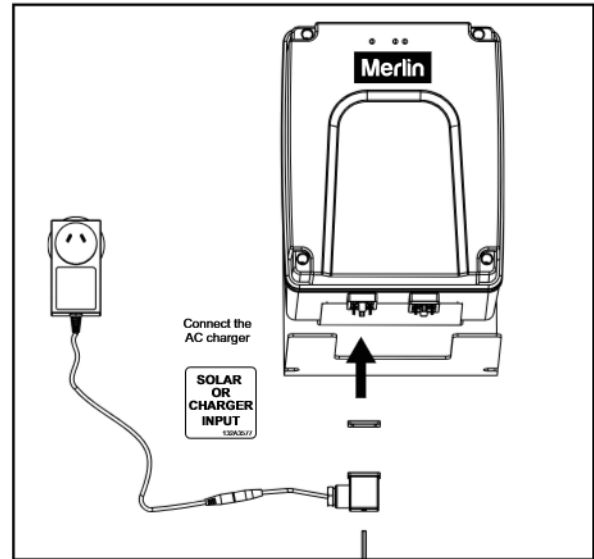
5 PREPARATION - SOLAR POWER KIT

Prior to installation, ensure that the solar power supply is fully charged.

1. Plug the 240V Main Power plug pack into a wall outlet.
2. Plug the Solar Connection plug into the left-hand socket on the Solar Power Supply Enclosure, labelled "Solar + Charger Input".
3. Secure the plug using the screw retained within the plug.

The 1st LED (from left to right) will flash to indicate charging. When the green LED is solid, charging is complete. Once the batteries are fully charged, the Solar Power Supply Enclosure is ready to be installed.

4. When fully charged, undo the screw and remove the 240V power pack and lead. Do not discard as the power pack may be used to charge the batteries when required.

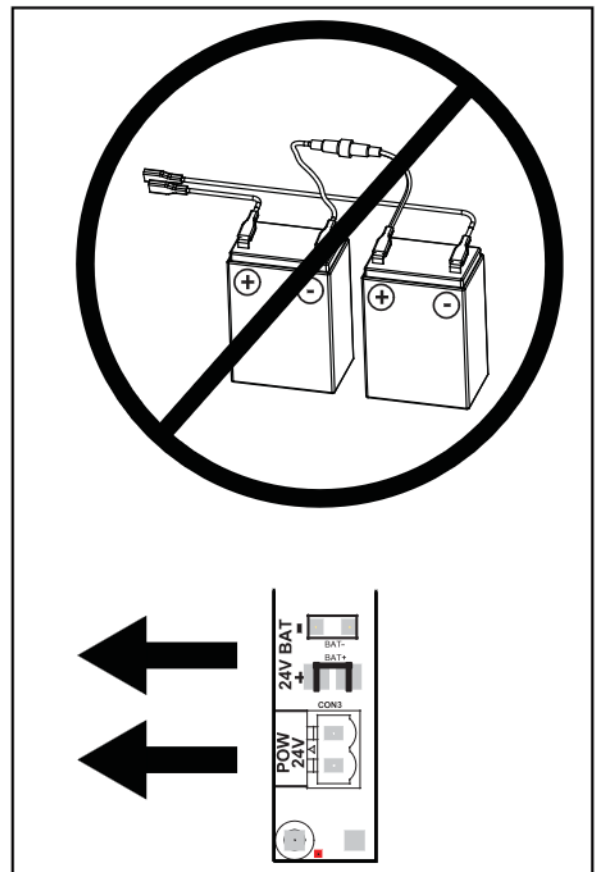


Note: The batteries must be fully charged using the power pack to ensure the battery capacity is maximized. Failure to do so may result in reduced capacity.

6 PREPARATION - GATE OPENER

Prior to installation:

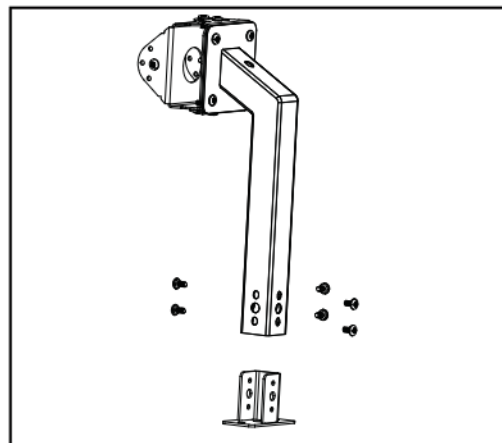
1. Remove any Battery Backup (if installed) The battery backup connected to the gate opener PCB must not be used in conjunction with the Solar Power Kit.
2. Disconnecting the transformer power to the PCB supply to the PCB:
 - Remove the connector to the POW24V input



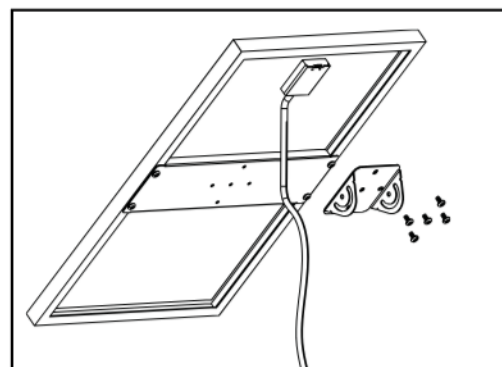
INSTALLATION

7 SOLAR PANEL INSTALLATION

1. Using suitable fixings, attach the solar panel mounting bracket base plate to a sturdy surface.
2. Slide the mounting bracket over the base plate and secure using the supplied screws.

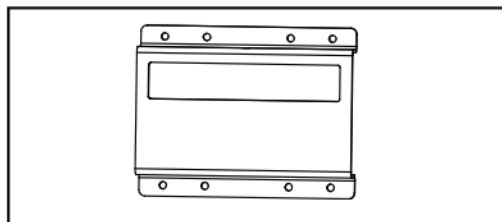


3. Attach the solar panel to the mounting bracket using the supplied screws.
4. Adjust the angle of the solar panel to face the correct direction (see Planning).

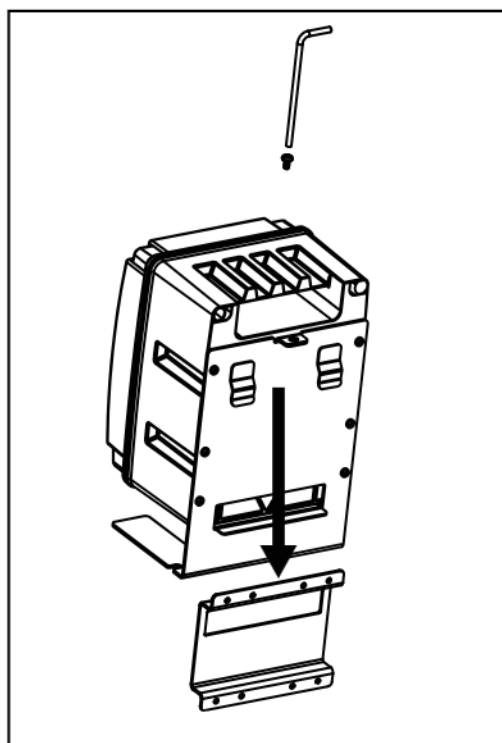


8 SOLAR POWER SUPPLY ENCLOSURE INSTALLATION

1. Install the Solar Power Supply Enclosure mounting bracket. Ensure the bracket is mounted within approx. 3.5m of the Gate Opener.



2. Hook the Solar Power Supply Enclosure onto the mounting bracket and secure with the supplied screw.



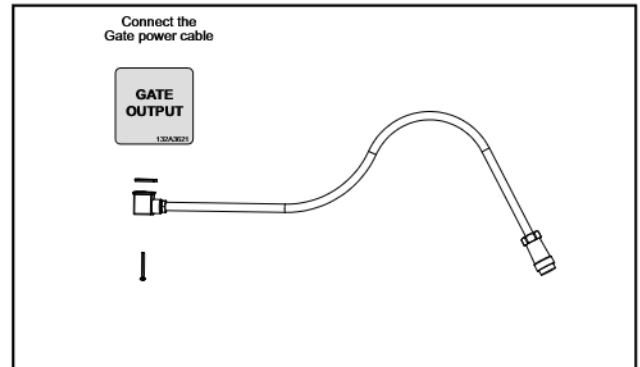
Note: There is no requirement to open the Solar Power Supply Enclosure.

All installation connections are external. Access is only required for battery replacement.

9 GATE OPENER CONNECTION

Gate Opener Connection (connection to Merlin Swing LR 500)

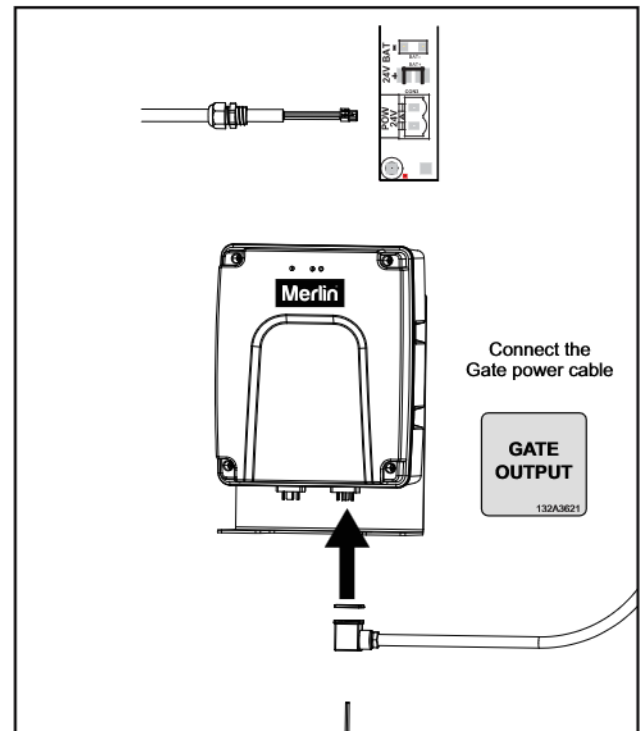
1. Route the gate opener power cable to the gate opener control enclosure.
2. Connect the pre-assembled 4 pin connector to the power 4 pin socket on the bottom of the enclosure.
3. Route the cable to the Solar Power Supply Enclosure.
4. Plug the Gate Opener Power cable to the right-hand socket on the Solar Power Supply Enclosure, labelled "Gate Output" using the rubber grommet and the screw.



Note: Ensure to use the rubber grommet.

Gate opener Connection (connection to Merlin Slide 600 / Swing L 300 / Swing A 200) or Grifco GL-Drive)

1. Cut the 4 pin connector plug off the power cable provided.
2. Route the gate opener power cable through an appropriate penetration in the gate opener base or PCB enclosure. Secure using the supplied gland.
3. Connect the green PCB plug supplied to the cut end of the power cable
4. Connect the PCB connector to the PCB power input
5. Route the cable to the Solar Power Supply Enclosure.
6. Plug the Gate Opener Power cable to the right-hand socket on the Solar Power Supply Enclosure, labelled "Gate Output" using the rubber grommet and the screw.



Note: Ensure to use the rubber grommet.

10 SOLAR PANEL CONNECTION

1. Route the solar panel cable to the Solar Power Supply Enclosure.
2. Plug the Solar Connection plug into the left-hand socket on the Solar Power Supply Enclosure, labelled "Solar + Charger Input".
3. Secure the plug using the screw retained within the plug.

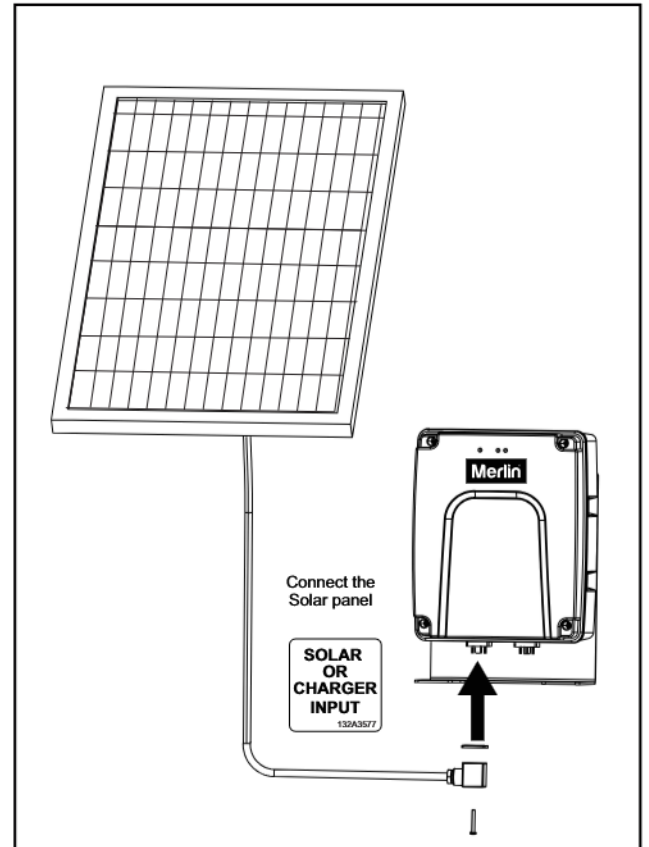
Note: Ensure to use the rubber grommet.

The 1st LED (from left to right) will flash to indicate charging. When the green LED is solid, charging is complete (refer to table on next page).

The Solar Power Kit will automatically turn on when this cable is connected.

The Gate PCB will now have power.

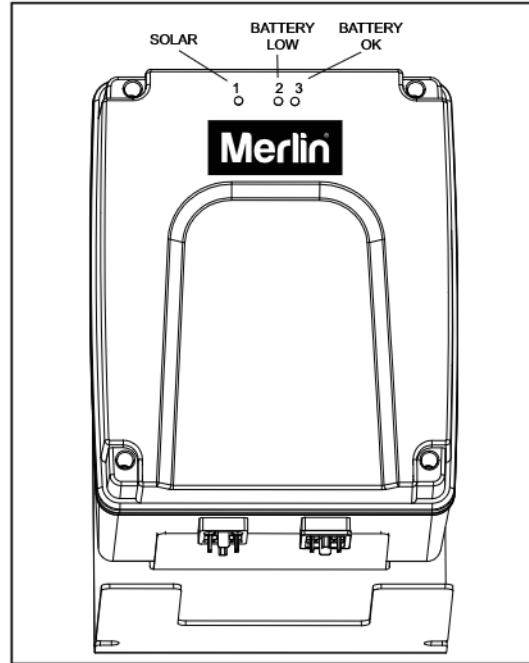
The installation is now complete.



OPERATION

11 LED INDICATORS

The Solar Power Supply Enclosure has 3 LED Indicators to display the status of the Solar Power Kit.



LED1 (GREEN): CHARGING STATUS	LED1 (GREEN)	System Status	Notes	Resolution
	Off	No Power.	No Solar Charge	<ul style="list-style-type: none"> •Check the solar panel connector •Check the solar panel is exposed to direct sunlight.
	Fast Flash every 0.5s	All Ok	Full power charging when the battery voltage <27.6V	None
	Steady Flash every 2s	All Ok	Slow charging status when the battery voltage >27.6V and <28.6V	None
	ON	All Ok	Trickle charging status when the battery voltage ≥28.6V	None
LED2 (RED): Bad or Low battery indicator	LED 2 (RED)	Status	Notes	Resolution
	OFF	No Power	When the battery voltage falls below <21.6V, the solar power supply will shut down until the voltage increases to >21.6V	<ul style="list-style-type: none"> • Check 20A fuse / replace • Check battery health / replace • Check solar panel connections and cables
	Flashing	Monitor	When battery voltage is between >21.6V and <23.6V	<ul style="list-style-type: none"> • Check good solar access to the solar panel
	ON	All Ok	When the battery voltage >23.6V	None
LED3 (GREEN): Good battery indicator	LED 3 (GREEN)	Status	Notes	Resolution
	Flashing	All OK	When the battery voltage falls below <23.6V	None
	ON	All OK	When the battery voltage is above >23.6V	None

DUAL SOLAR

12 DUAL SOLAR OVERVIEW

Refer to the Gate Opener manual for complete wiring instructions.

⚠ WARNING

This product can expose you to chemicals including lead, which are known to cause cancer or birth defects or other reproductive harm.

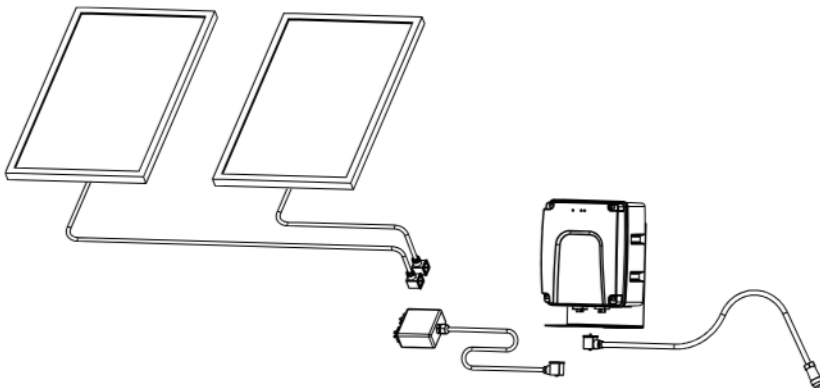
⚠ ⚡ WARNING

To reduce the risk of SEVERE INJURY or DEATH:

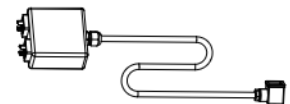
- ANY maintenance to the operator or in the area near the operator **MUST NOT** be performed until disconnecting the electrical power (AC or solar and battery) and locking-out the power. Upon completion of maintenance the area **MUST** be cleared and secured, at that time the unit may be returned to service.
- All electrical connections **MUST** be made by a qualified individual.

The Merlin Gate Opener Solar Kit has been designed to work with up to two 40W solar panels. For most applications, one panel will be adequate to run the system. If you require an additional panel due to your application, operator requirements, solar access and location, refer to the following process.

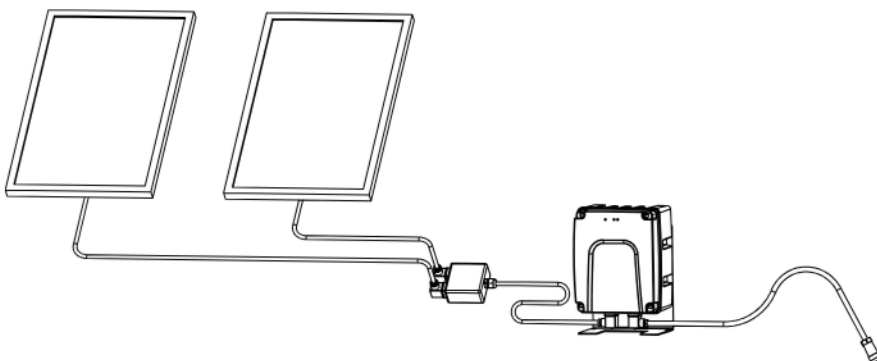
1. Disconnect all power (AC, Solar, Battery Back UP) to the operator before servicing.
2. Disconnect the power from the SOLAR-PSE to the gate operator.



3. After both solar panels have been installed connect the solar panels to the Dual Solar Extension accessory 041A0573 "not supplied".
4. Connect the power cable from the SOLAR-PSE output connection to the gate operator.
5. Connect the Dual Solar Extension cable to the SOLAR-PSE input connection.
6. The installation is now complete.
7. Ensure that the LED 1 on the SOLAR-PSE is ON.

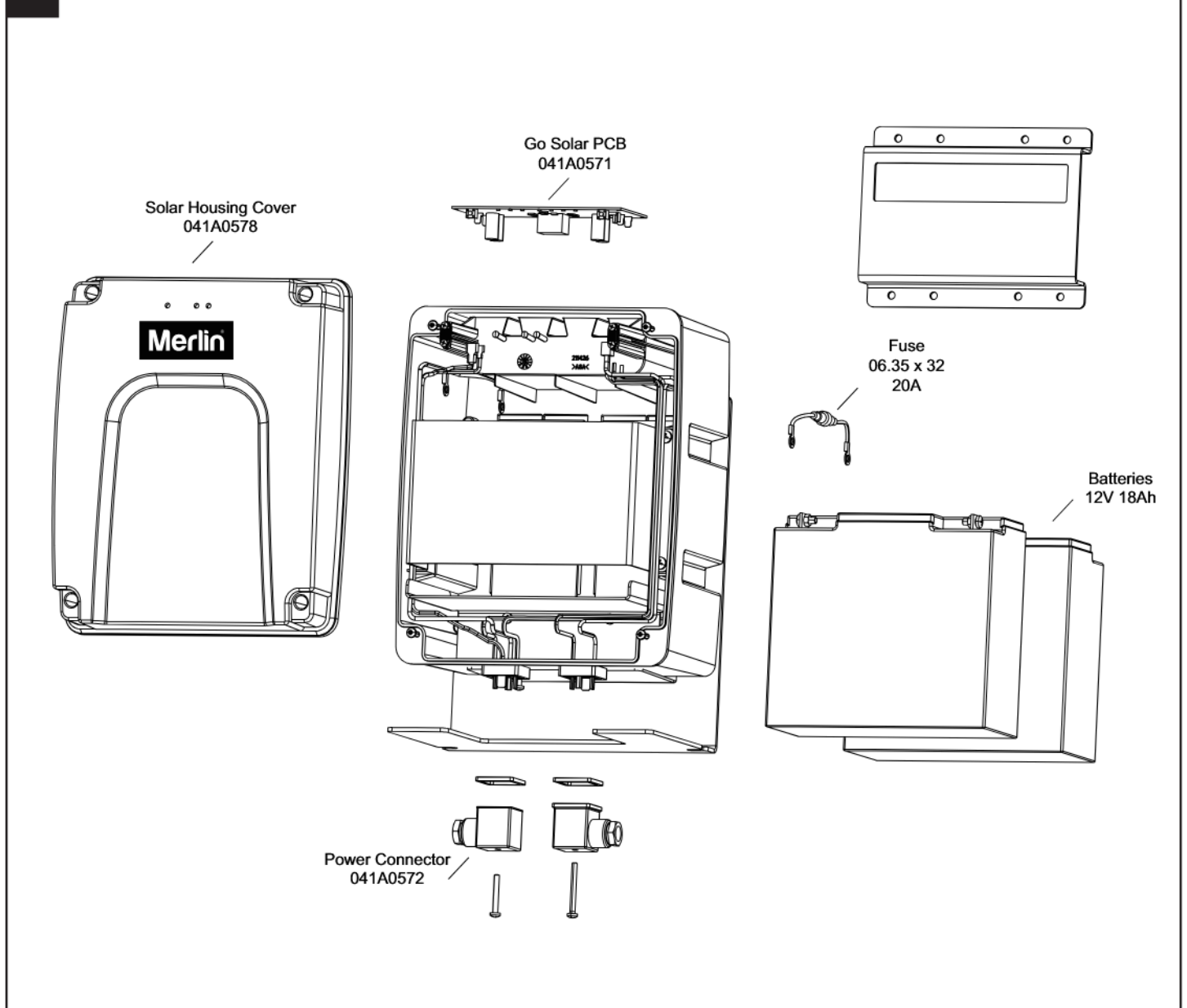


- 041A0573
- Dual solar Extension Cable accessory
- Cable - 4m long
- Used to extend a single solar panel power cord
- Used to connect two solar panels to the SOLAR-PSE power supply



SPARE PARTS AND ACCESSORIES

13 SPARE PARTS



14 ACCESSORIES

1. Dual solar extension cable - 041A0573
2. Solar panel sold separately as SP40W
3. Mounting post sold separately as SP-MOUNT-KIT

WARRANTY

Limited Warranty in Australia and New Zealand

Merlin® Solar Kit

Solar Kit

1 Your consumer rights and guarantees

This Limited Warranty is provided by Chamberlain Australia Pty Ltd, Chamberlain New Zealand Limited (Chamberlain), contact details in Section 5 below. This Limited Warranty applies to the Merlin® Professional Solar Kit (Unit) purchased in Australia and New Zealand, and gives you benefits which are in addition to your consumer rights and remedies under the Australian Consumer Law (or corresponding New Zealand consumer protection laws).

You can find out more information about your consumer rights and guarantees which the law provides in Australia at www.accc.gov.au, in New Zealand at www.consumerprotection.govt.nz. We also provide this statement as required under the Australian Consumer Law:

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

2 What does our Limited Warranty cover?

Chamberlain warrants that, when purchased new in Australia or New Zealand, the Unit is free from defects in materials and workmanship (Limited Warranty) for the Limited Warranty period, subject to the terms and conditions of this Limited Warranty.

The Limited Warranty period (for Batteries see below) is 3 years (36 months) from the date of purchase of the Unit when installed connected to a compatible gate opener as listed in section 1.

The Limited Warranty period for the Solar Kit Batteries included with the Unit is 12 months from the date of purchase.

3 Limited Warranty Conditions

The following terms and conditions apply to your Limited Warranty:

- our Limited Warranty is effective from date of purchase as indicated in Section 2 above;
- proof of purchase of the Unit is required;

Please also see the User Manual for the Unit available on our website, or provided at the time of purchase.

4 What is not covered

- Travel costs incurred by Chamberlain or its authorised dealer and or trained gate technician in either travelling to and from areas outside a capital city area. These costs will be at the purchaser's expense.
- Additional access costs incurred by Chamberlain or its authorised dealer and or a trained gate technician in obtaining access to premises where the Unit is not readily accessible. These costs will be at the purchaser's expense.

Our Limited Warranty covers defects as explained, and does not cover all problems and mishaps that may occur in relation to the Unit including:

- you got what you asked for but simply changed your mind, found it cheaper somewhere else, decided you did not like the purchase or had no use for it;
- you misused the Unit in any way that caused the problem;
- you knew of or were made aware of any deficiencies with the Unit before date of purchase;
- use of the Unit with controls or third party devices or software which has not been supplied, or pre-approved, by Chamberlain;
- problems relating to or residing in third party hardware, software or other items with which our product is used;
- any loss of data related to you or provided by you, or loss related to downtime associated with use of the product, whether through power outage, failure of internet or wireless connectivity, network disruptions, or otherwise;
- non-compliance with the relevant instructions in the User Manual;
- tampering, neglect, abuse, wear and tear, accident, electrical storm, excessive use or conditions other than normal use;
- problems with, or relating to, the gate hardware, including but not limited to the springs, gate alignment, hinges, guides;
- problems caused by electrical faults or replacement of batteries or light bulbs, blown fuses, electrical surges, power surges or power strikes, fire, flood, rain, water, lightning or storms;
- water or moisture ingress that causes corrosion or electrical malfunction;
- corrosion caused by sea air if located near a waterway, beach etc;

- lack of proper maintenance, service or care of the gate and/or Unit; and/or
- damage caused by insects, pests or other after sale damage caused by events or accidents outside Chamberlain's reasonable control and not arising under normal and standard operating conditions.

5 Where you need help with our product

If you have a problem with the Unit or if you are concerned it may be defective, please contact our Customer Service team below:

Australia Phone toll free 1800 638 234

Fax toll free 1800 888 121

Address Unit 1, 75 Epping Road North Ryde, NSW 2113

Email customerservice@chamberlainnz.com

Website www.gomerlin.com.au

New Zealand Phone toll free 0800 653 667

Auckland phone 09 477 2823

Fax toll free 0800 653 663

Email customerservice@chamberlainnz.com

Website www.gomerlin.co.nz

As a first step, our Customer Service team will provide product support assistance to help you try to resolve the problem and in some cases, replacement parts for "do it yourself repairs". If our technical team need to see the product to determine the nature of the fault, we will arrange an inspection by a trained gate technician, or ask that you send the product to us.

Authorisation from Chamberlain is required for warranty service under this Limited Warranty.

6 Delivery Charges

If an inspection is required in order to determine the nature of the fault, please send the Unit freight paid and well packaged in accordance with our instructions. Any costs associated with transporting the Unit will be at Chamberlain's cost if the Unit has breached a statutory consumer guarantee. Repairs and replacement parts provided under this Limited Warranty are free of charge (and repaired items or replacement parts for Units found to be defective will be returned to you at our cost), and warranted by Chamberlain for the remaining portion of the original warranty period. However, if you make a claim under this Limited Warranty, and this Limited Warranty does not apply, or if the law does not provide you with a statutory right or remedy as a consumer, you may be required to pay labour, assessment and/or freight costs and delivery charges to repair, replace and/or return the Unit to you.

7 How to register your product

Please register your Unit and contact details at this link www.gomerlin.com.au/warranty-registration/ for Australia, or www.gomerlin.co.nz/register-your-warranty/ for New Zealand, so that we or your authorised installer can locate your details and provide you with product support assistance as quickly as possible, and keep you up to date with product updates. Registration can also be done by contacting Chamberlain Customer Service.

8 Important Reminder

All other guarantees (other than your statutory rights and guarantees as a consumer under applicable laws) are excluded to the fullest extent that we may lawfully do so. Unless the law requires us to do so, we do not accept any other liability, such as compensation for damages, injury or loss.

Last updated: 7th May 2025