

# **AUTOMATIC SOLUTIONS**

**Australia Pty Ltd**

## **ASA12 – K44**



### **GENERAL**

#### **ASA12**

Motor Voltage – 240 volt  
Power Absorbed – 730 watts  
Speed – 10 m/min  
Maximum Thrust – 930 N  
Protection Level – IP55  
Duty Cycle – 25%  
Dimensions – 320L x 158W x 352H  
Current Absorbed – 5.2A  
Maximum Leaf Weight – 2000 Kg  
Torque – 32 Nm

#### **K44**

Motor Voltage – 240AC  
Motor Inputs - One  
Battery Charger – N/A  
Receiver – Inbuilt  
Limit Switches – Yes  
Pedestrian Input – No  
Start Input - Yes (NO)  
Stop Input – No  
Photocell Input – Yes (NC)  
Slow Speed Regulator – Yes

## IMPORTANT— READ THIS FIRST

Parts of these instructions are intended as a quick start guide and should be used in conjunction with the full instructions. The quick start instructions provide the basics to get you up and running and are based on the most commonly used installations in Australia. All electrical work in this country is to be performed by licensed electrical contractors. Electricity can kill!

### SAFETY

This booklet will offer you information you may need to install your gear motor and to safeguard your safety.

**However, caution is unquestionably indispensable and nothing is better than preventing accidents.**

**WARNING:** any repair or adjustment of working machinery is strictly prohibited unless all the necessary precautions (electrical supply disconnected and motor off) have been taken in order to avoid possible accidents.

**WARNING:** any repair must be carried out by qualified people.

**WARNING:** All moving mechanisms must be provided with suitable protections.

**WARNING:** Keep the automatic controls out of the reach of children.

**WARNING:** Command pulses must be given from positions where the gate is visible.

**WARNING:** Use transmitters only if you can see the gate.

Read carefully the instructions enclosed in this manual.

Keep this booklet in a suitable place well known to all interested people.

### PRELIMINARY CHECKS

In order to make the automation work efficiently; the gate to automate must have the following characteristics:

- It must be balanced.
- It must slide fluently.
- You must be able to carry out manual closing and opening of the gate without any effort.
- Make sure that the gate has a solid structure and that there is no friction points in its movement.
- Make sure that the gate has both solid opening stops and solid closing stops.

### GENERAL ORDER OF INSTALLATION

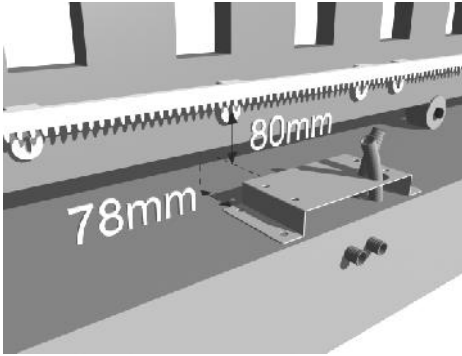
To ensure a good installation of the gear motor, we suggest the following order of installation:

- 1 - Open the box and take out gear motor. Inspect the contents and ensure all components are present.
- 2 - Make sure that the gate is rolling freely and does not bind at any point.
- 3 - Determine the height and position of your motor and mark the mounting base position.
- 4 - Install all conduits for mains power supply and other devices.
- 5 - Install your base ensuring a strong, solid fixing. The motor will generate large amounts of torque at start up.
- 6 - Attach the gear motor to the base.
- 7 - Fix your rack to the gate ensuring that you maintain approximately 1mm gap between the rack and the motor pinion.
- 8 - Attach the limit actuators to the rack at the desired open and close positions.
- 9 - Connect power to the motors control board.
- 10 - Program remote control transmitters.
- 11 - Check motor direction.
- 12 - Program work times.
- 13 - Test your installation.
- 14 - Attach your safety devices and access devices one by one testing for correct operation at each point.

### MAINTENANCE

Periodically check your installation for loose or worn fastenings, correct alignment and operation of your gate and correct operation of your manual override operation. Clean and keep clean all areas of the installation. Remember that the motorisation has been planned in order to help you use the gate. This means that it does not resolve the problems caused by an inadequate installation or by a poor upkeep of the gate.

## ASA12 SLIDING GATE MOTOR INSTALLATION



### INSTALL MOTOR BASE PLATE

The position of the motor base plate will vary with each installation but in general the base plate needs to be 78mm from the side face of your gate. The height of the plate will be determined by your site conditions and gate structure.

The motor will generate a large amount of force on starting and for this reason it is important that the motor base is anchored securely to the ground. A few methods of securing are detailed below.

- On new installs with no track you can weld supports and attach your base to the track before concreting the track in.
- If the track exists but a foundation is required for the motor base, then weld a couple of scrap steel lengths to the base before fixing in concrete. This will ensure that the base does not move in the concrete.
- If you have an existing strong foundation use strong purpose made fasteners to secure the base to the foundation.

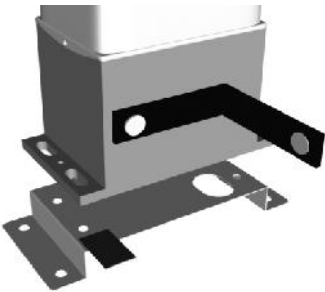
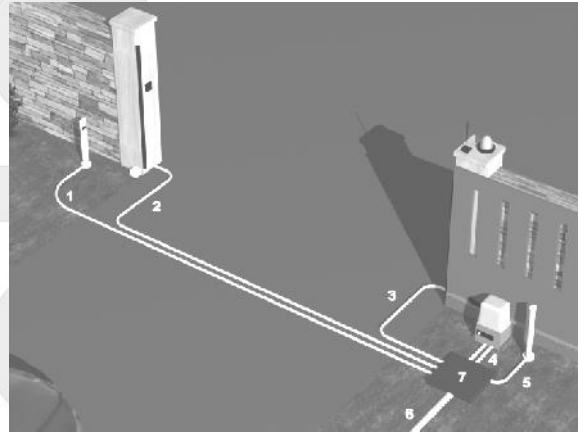
**IMPORTANT:** In all cases install all conduits before securing your motor base. Once the base is installed it is much more difficult to install conduits.

### BOLT DOWN MOTOR

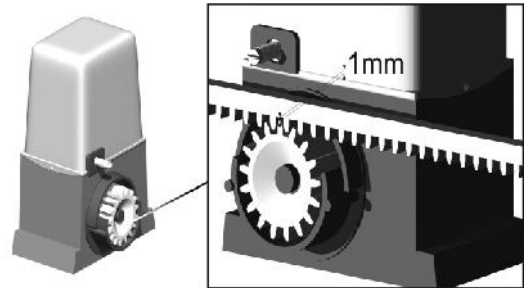
Once your motor base is installed and due time has been given for foundations to dry or settle you can attach your motor to the motor base with the bolts provided.

### INSTALL RACK

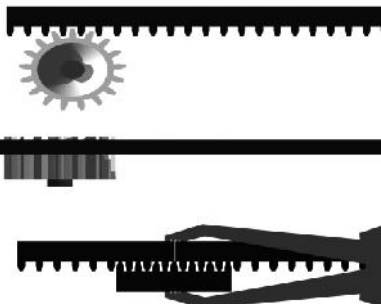
If you have carefully planned your motor base position then it should be possible to sit a length of rack onto the motor pinion and the rack fixing tabs should be in good position against the back face of the gate. Yes? Good. Put the motor in manual mode using your manual override key – insert the key in the keyway and turn – pull the manual override lever out to 90 degrees. You are now in manual mode and the pinion will rotate freely.



Open the gate fully – position your first length of rack on the pinion and against the gate – get this first length roughly level and attach this length at two end points – adjust the height of this length so that there is approximately a 1mm gap between the rack and the pinion – move the gate backwards and forwards along



this length and check for no tight spots or binding – now install the next length in the same way (if the rack has location lugs this helps to position one end and you only need to position the other end and fix, if not you can use another length upside down and a clamp to hold the new length at the correct height and position) - when all lengths are attached and you are happy that you have no tight spots you can set the remaining fasteners on the rack.



### INSTALL GATE STOPS

This is a critical point in ensuring long trouble free operation of your automation system, yet it is relatively simple. Each gate must have a positive and well secured opening stop and closing stop. There are a range of stops available over the counter or you can make them yourself but the critical point is that the stops must be well secured as the gear motors will exert quite a deal of force on them during programming. In summary when your gate/s open they must hit a positive stop point that stop the gate/s from opening any further and the same at the closed point.

### ATTACH LIMIT ACTUATORS

Now attach your limit actuators to the rack in the desired opening and closing position. The actuators should be positioned to hit the limit spring and activate the switch before hitting the opening and closing stops. If after programming the gate drives hard to either stop adjust the actuators and re program so that the gate does not hit the stops.

# K44 LOGIC CONTROL BOARD INSTALLATION

## BOARD INTERFACE

### TERMINALS – LEFT TO RIGHT

J5 1	240Vac	Mains supply phase
J5 2	240Vac	Mains supply neutral
J1 1	Motor Neutral	
J1 2	Motor Open	240Vac 1HP Max
J1 3	Motor Close	
J1 4	Flashing Light	240Vac 40W Max
J1 5	Flashing Light	
J4 1	24Vac	
J4 2	24Vac	
J4 3	Start Input NO	
J4 4	Photocell Input NC	
J4 5	Common	
J4 6	Limit Switch Open NC	
J4 7	Limit Switch Close NC	
J4 8	Limit Switch Common	
J3 1	Antenna Core	
J3 2	Antenna Shield	
P1	Radio Receiver Programming	
P2	Work Time Programming	
P3	Pause Time Programming	
F1	240Vac Fuse 5A	
F2	24Vac Fuse 2A	
DL1	Programming LED	
DL2	Power Supply LED	

## INSTALL YOUR INPUT LOOPS

The only wiring needed before testing your installation is to install a few loops into the “NC” or normally closed inputs. Cut a few short lengths (50mm) of single core cable and strip the two ends. Connect one end to the “photozell” terminal and one end to the “common” terminal. These will need to be removed later if you add safety beams (photozell) or a stop button to your installation but for now will close the inputs and make the board operational.

## FIT AN ANTENNA WIRE

If you intend using a full antenna, install this now into the antenna terminals taking care not to allow the shield to make any contact with the core of your coaxial. Otherwise cut a small length (150mm) of light cable and strip one end. Place the stripped end into the left hand antenna terminal and secure.

## SET YOUR DIP SWITCHES

Set your dip switches as per the settings below.

**DIP 1 – OFF**  
**DIP 2 – OFF**  
**DIP 3 – OFF**

This is simple step by step logic and can be changed later if desired.

## CONNECT POWER

You can now plug your logic control board into the 240 volt power outlet or have your electrician connect your power via a suitably installed isolation switch and turn your power on.

## PROGRAM YOUR TRANSMITTERS (REMOTES)

To proceed to the next step you need to have programmed a remote control transmitter into the control board. To program a transmitter press “P1” once on the control board and wait for the led “DL1” to light. Press the button (channel) on your remote control transmitter that you wish to use for two seconds and release. Your transmitter should now be programmed. Repeat for other transmitters. Up to 50 codes may be stored. To erase all codes press and hold “P1” until the red LED “DL1” goes out (about 10 seconds)

**IMPORTANT** - (If you are not using transmitters you will need to connect a normally open momentary pushbutton into “COM” and “START” terminals to proceed)

## CHECK FOR CORRECT MOTOR DIRECTION

With your gear motor in manual, position the gate about half way open and lock into automatic mode. Using the transmitter you programmed press the button and release. Because this is the first activation after a power interruption your gate should open. Press your transmitter again to stop the gate. To correct any gate which did not open you have to reverse the motor wires and limit switch wires. Turn off the power, reverse the motor terminals 2 and 3 on J1. You also need to swap your limit switch inputs “FCA” and “FCC” (terminals 6 and 7 on connector J4). Apply power and test again.

### **Setting of the work times.**

Use your manual override key to put the gear motor in manual mode and move the gate to the fully closed position. Re lock your gear motor into automatic mode. Press push button “P2” once and hold (approximately 3 seconds) until the gate starts opening at a reduced speed. The gate will stop when it reaches your open limit switch. After about 1 second of pause the gate will close until it reaches its end limit switch.

The board will automatically exit this mode when complete and led “DL1” will go out. Use your transmitter (or pushbutton) to test your installation.

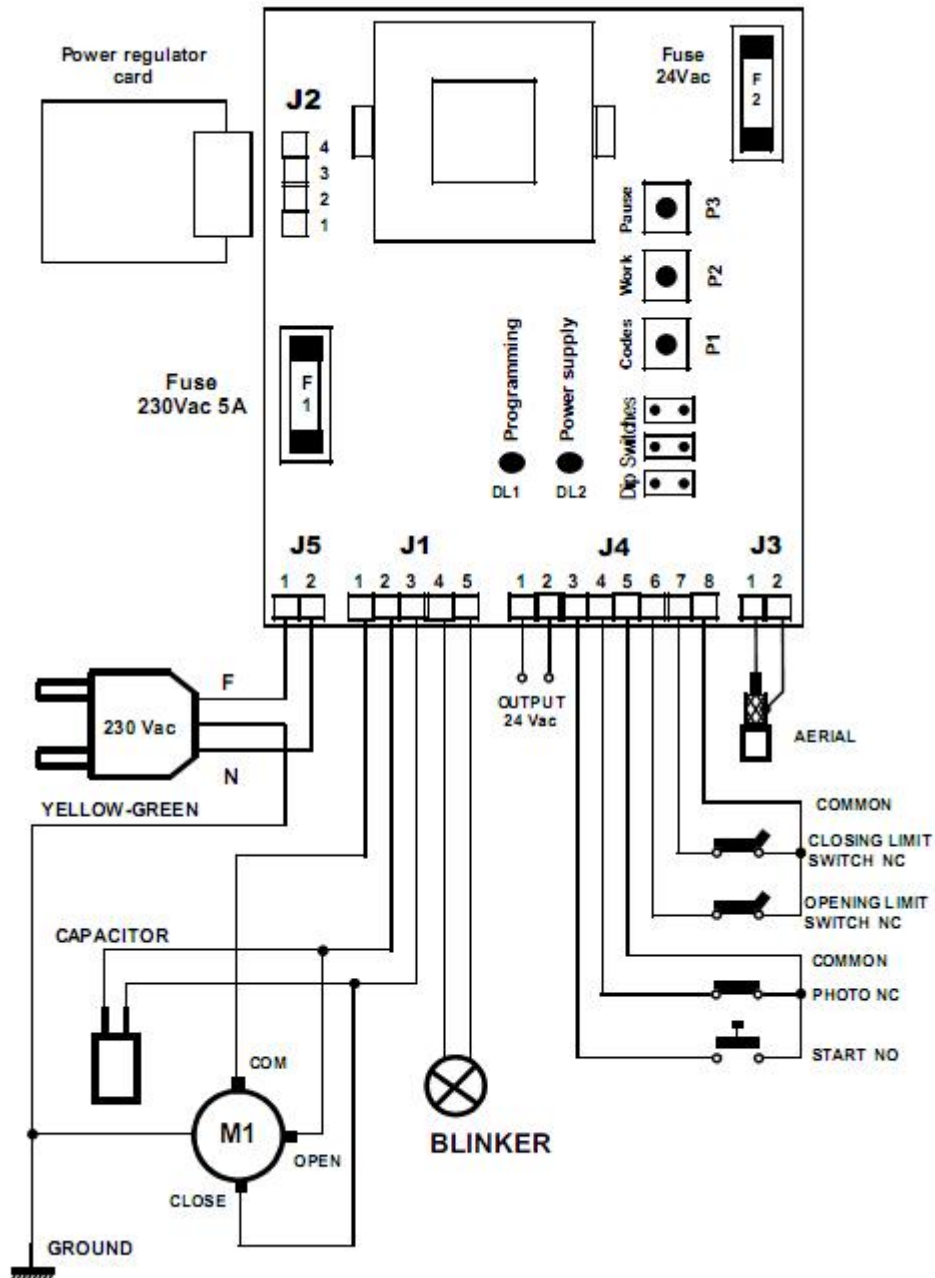
### **Setting the pause time**

Press push-button P3 until the led DL1 lights. Let the desired pause time pass, and then press push-button P3 again.

## END OF SIMPLE SETUP

If all went well you have finished simple setup. On the following pages you will find some more detailed information and wiring diagrams to enhance and add to your installation.

# ADVANCED PROGRAMMING, ADDING TO AND IMPROVING YOUR INSTALLATION



## DEFINITIONS OF SAFETY INPUTS

### Stop

Input connected to a push-button or switch placed outside the unit. It is employed to cause the gate's immediate stop. This control is used in an emergency situation.

### Photo-cell

Input connected to an optical barrier. It detects and signals the passage of persons or vehicles in the area crossed by the gate or in the nearby area.

### Photostop

Input connected to an optical barrier. It detects and signals the passage of persons or vehicles in the area crossed by the gate or in the nearby area.

### Opening Limit Switch

Input connected to a switch placed outside the unit. The switch operates when the gate has completed its opening phase.

### Closing Limit Switch

Input connected to a switch placed outside the unit. The switch operates when the gate has completed its closing phase.

## DEFINITIONS OF OUTPUTS

### Blinker

Lamp's on/off control. The lamp functions as a warning and optical signaller of potential danger for the gate's motion.

#### Motor

Outputs for the opening/closure control of the motor which drives the first gate wing during the closing phase.

#### DEFINITION OF ACCESSORY INPUTS / OUTPUTS

##### Antenna

Input for the connection of an antenna. This input can only be used if a radio receiver card is connected to the unit.

#### DEFINITION OF OPTICAL SIGNALS

##### DL1 – Programming led (red)

It is lit in the programming phase and during the gate's motion.

##### DL2 –Power supply led (red)

It signals the presence of the mains power supply.

#### DEFINITIONS OF PROGRAMMING KEYS

P1 - Allows to insert/cancel the radio-command codes in the memory

P2 - Allows to set the motors' work time and the M2 motor's closing delay time

P3 - Allows to set the pause time

#### DEFINITIONS OF PROTECTION FUSES

##### F2 – 24Vac fuse (2A)

It protects the electronic unit in case of short circuits or overcurrents on photo-cells or any other accessory devices connected to the card.

##### F1 – 240Vac fuse (5A)

It protects the electronic unit in case of short circuits or overcurrents on mains supply or mains devices.

## DEFINITION OF DIP SWITCH SETTINGS

*“Step-by-step Mode” (No Dips On)* – In step-by-step mode a single command via transmitter or a momentary switch connected to the START input will cause the gate to open. If no other command is issued and at the end of the slow down phase the gate will stop, the operating cycle is complete and the gate waits for a further command to close. If a command is made before the end of any opening or closing cycle the gate will stop. A new command will cause the reversal of the motion.

*“Automatic Mode” (Dip 1 On)* - In automatic mode a single command via transmitter or a momentary switch connected to the START input will cause the gate to open. If no other command is issued and at the end of the slow down phase the gate will stop, the pause period starts and when concluded the gate closes automatically. When the gate is closed the operating cycle is complete and the gate waits for a further command. If a command is made before the end of any part of the opening or closing cycle the gate will stop. A new command will cause the reversal of the motion. If a command is made during the pause part of the cycle the gate will not close automatically and the gate will wait for a new command to close the gate.

*“Immediate Close Mode” (Dip 3 On)* -- This procedure can be enabled or excluded. It is usually employed when the gate must close as soon as the vehicle has passed the photo-cell placed along the way.

**Caution:** This procedure must be excluded when the gate opening is controlled by a clock.

*“Photostop Mode” (Dip 2 On)* - If an obstacle covers the photo-cell during the gate’s motion (opening or closure), or during the period preceding the operating cycle’s start, then the gate is temporarily stopped, until the obstacle is not removed. When the obstacle is removed and the photocell is freed, an opening cycle will start. If an obstacle covers the photostop during the pause period this pause period is reset and the automatic closure is therefore delayed.

*Photo-Cell:* This device has effect only during the closure phase or in the pause period. If an obstacle covers the photo-cell during the closure phase, the gate stops and reverses its motion after approx. 1.5 sec. If an obstacle covers the photo-cell during the pause period the pause time is reset and the automatic closure is therefore delayed.

*Photostop:* If an obstacle covers the photo-cell during the gate’s motion (opening or closure), or during the period preceding the operating cycle’s start, then the gate is temporarily stopped, until the obstacle is removed. When the obstacle is removed and the photocell is freed, an opening cycle will start. This does not apply when a start command determines the closing phase in step-by-step mode at the end of an opening cycle. If an obstacle covers the photostop during the pause period the pause time is reset and the automatic closure is therefore delayed.

## ELECTRICAL AND MECHANICAL SPECIFICATIONS

**Power supply:** 240Vac - +/- 10%

**Blinker power supply:** 240Vac - 40W max

**Motor power supply:** 240Vac – 1HP Max

**Accessories power supply:** 24Vac - 2W max

**Operating temperature range:** 0 to + 60 °C (internal)

**Motors' work time:** programmable, 0 to 120 sec.

**Pause time:** programmable, 2 to 250 sec.

**Caution:** The unit must be not switched on if the connected loads or the power supply exceed the limits. Failure to observe this precaution can result in damage to persons, animals or objects for which the manufacturer cannot be held responsible.

## ELECTRICAL CONNECTIONS

5 electric connectors are fitted to the card:

J1 5-pole Terminal board for the connection of the devices operating with 240Vac mains power supply (motor, blinker)

J2 4-pole connector for the optional connection of a power regulator card

J3 2-pole Terminal board for the connection of the aerial cable

J4 8-pole Terminal board for the connection of the devices operating at low voltage (commands, safety devices, 24Vac power supply)

J5 2-pole Terminal board for the connection of the 240Vac mains power cable

### Connector J1

Terminal 1 - 230 Vac motor M1 power supply neutral (common)

Terminal 2 - 230 Vac motor M1 power supply phase (opening)

Terminal 3 - 230 Vac motor M1 power supply phase (closure)

Note: connect the capacitor of the motor M1 between terminals 2 and 3.

Terminal 4 - 230 Vac blinker power supply phase

Terminal 5 - 230 Vac blinker power supply neutral (common)

### Terminal Board J2

Terminal 1 – 230 Vac motor M1 power supply common

Terminal 2 – 230 Vac mains power supply neutral

Terminal 3 – 230 Vac mains power supply neutral

Terminal 4 – 230 Vac mains power supply neutral

**Important :** If the power regulator card is not connected to J2, terminals 1 and 2 must be bridged with 4 mm insulated faston terminal.

### Terminal board J3

Terminal 1 – Aerial cable connection (signal)

Terminal 2 – Aerial cable connection (shield)

### Terminal board J4

Terminal 1 – 24Vac power supply for photo-cells or other devices

Terminal 2 – 24Vac power supply for photo-cells or other devices (Common)

Terminal 3 – Opening Start push-button's normally open electric contact

Terminal 4 – Photo-cell's normally closed electric contact

Terminal 5 – Common terminal for all electric contacts of Start and photo-cell

Terminal 6 – Opening limit switch's normally closed electric contact

Terminal 7 – Closing limit switch's normally closed electric contact

Terminal 8 – Common terminal for all electric contacts of limit switches

Important : The normally closed inputs not in use must be fitted with jumpers

### Terminal board J5

Terminal 1 - 230 Vac mains power supply phase

Terminal 2 - 230 Vac mains power supply neutral

## CONNECTION OF THE DEVICES

240Vac mains power supply cable – Terminals 1 and 2 on J5

Warning: The cable's ground pole must be connected to a good ground reference in the gate's nearby area.

Motor 1 – Terminals 1, 2 and 3 on J1

Blinker – Terminals 4 and 5 on J1

Photo-cells power supply – Terminals 1 and 2 on J4

NO start push-button – Terminals 3 and 5 on J4

NC photo-cell contact – Terminals 4 and 5 on J4

NC opening limit switch – Terminals 6 and 8 on J4

NC closing limit switch – Terminals 7 and 8 on J4

Aerial – Terminals 1 and 2 on J3

# CONFORMITY DECLARATION

To EMC directive EN45014 and ISO guide 22

Company name and registered office:

Leb electronics s.r.l.  
Via Valle Maria , 55/a  
46040 Casalmoro (MN)  
Italia

Description of the appliance:

Electronic board for the control of 1 230Vac single-phase asynchronous motor for gate automation.

Model:

CTR44

Reference rules applied:

EN 50081-1, EN 50082-1, EN 55014

Basic rules applied:

EN 61000-3-2  
EN 61000-3-3  
EN 61000-4-4  
EN 61000-4-2  
ENV 50140

Test laboratory:

Computec

Outcome:

Positive

The manufacturer declares that the above listed products comply to the norms on electromagnetic compatibility provided for by directives 89/336/EEC, 92/31/EEC, 93/68/EEC.

Casalmoro , 20-01-2004

**AUTOMATIC SOLUTIONS AUSTRALIA PTY LTD**  
**PO BOX 1034 CANNING VALE WESTERN AUSTRALIA 6970**  
**TECHNICAL HELP – [service@automaticsolutions.com.au](mailto:service@automaticsolutions.com.au)**

# SELF INSTALL - NEED TECHNICAL ASSISTANCE?

## OPTION 1: DIRECT WITH THE SERVICE DESK – QUICKEST AND MOST EFFECTIVE METHOD

Submit your enquiry direct with the service desk at – [service@automaticsolutions.com.au](mailto:service@automaticsolutions.com.au)

The service desk has the most experienced staff in Australia to help with your problem but they need your help.

- Describe your problem in detail and as clearly as possible. Don't forget to include a telephone number.
- Be certain to detail which model or models of you are working with.
- Send photos of the installation – they love photos. The people at the service desk are good but they are even better when they can see the installation. Send photos of the overall scene so they can see the entire installation. Also send photos of the wiring to the control board and any other part of the installation you think is relevant.
- Send video if appropriate. Smartphone's these days take remarkably good video in small file sizes which can be emailed in a moment. If your problem needs a video to show the issue please feel free to send it.

**NOTE: THIS IS BY FAR THE FASTEST AND MOST SUCCESSFUL WAY TO SOLVE YOUR PROBLEM  
PHOTOS AND VIDEOS ARE THE NEXT BEST THING TO BEING THERE**

## OPTION 2: LODGE YOUR ENQUIRY LOCALLY - SLOWER BUT CAN STILL BE EFFECTIVE

Make contact with the store of purchase. Branch staffs are typically not technicians and dependent on their length of service will have varying degrees of technical knowledge. If they cannot help however they will certainly either source help locally from their technicians or make contact with the service technicians on your behalf.

## OPTION 3: SERVICE CALL WITH AUTOMATIC SOLUTIONS TECHNICIAN – SLOWEST METHOD

If you fall within the local branch service area it may be possible to book a local technician to look at your installation. Wait times will vary dependent on local workloads. The cost is a service fee which includes the first half hour and the hourly rate thereafter. If any Automatic Solutions provided parts are found to be defective and within warranty these will be provided free of charge.

(NOTE: If you suspect that any parts are defective and within warranty you may wish to consider option 4)

*A note on this option: If you decide on this option you will be asked to sign an "authorisation to proceed" which will provide legal authority and payment security. This form has three options available of which only the first two are available to you. The third option is for warranty repairs only for full install customers. Self install customers requiring warranty only service need to refer to option four below.*

**IMPORTANT: IN SHORT THIS OPTION WILL INCUR CHARGES**

## OPTION 4: RETURN THE PRODUCT IF BELIEVED TO BE FAULTY

As a self install customer who has purchased product if you believe the product to be faulty rather than an installation or site problem you have the option of returning the product for evaluation and to exercise your right to a replacement, repair or refund as applicable. All returned product is forwarded immediately to the service technicians for evaluation and response. There are two main methods available to return product –

- Direct to the service centre – this is the quickest method as it cuts out the branch delay
- Via the branch of purchase – slower because of the delay at the branch

When choosing this option you need to complete a product return form. This form gives you all the information on procedure involved and where to send to. These are available at the branch of purchase, can be emailed to you (contact your branch), or available here - <http://automaticsolutions.com.au/page/warranty.php>