AUTOMATIC SOLUTIONS
Australia Pty Ltd

ASA600012V
SOLAR BOOM GATE
INSTALLATION MANUAL

USING THE BOOM GATE - GENERAL DESCRIPTION

- The ASA600012V boom gate is suitable for managing passageways with average levels of transit.
- The movement of the boom is regular with gradual decelerations at the opening and closing positions.
- Adjusting the run between the two mechanical end runs and balancing the barrier by preloading the movement return spring is easy by moving the nut / counter-nut sets.
- In the event of a power cut, a simple key unlocking system allows the boom gate to be unlocked and the boom arm moved with manual assistance.
- The load-bearing casing is made of galvanised steel and is powder-coated.
- Movement is ensured by an asynchronous motor in order to guarantee high levels of reliability over time.

TECHNICAL DATA	ASA600012V
POWER SUPPLY	12 Volt Battery
INPUT POWER (W)	70
INPUT CURRENT(A)	1.0
OPENING TIME (sec)	9.5
CLOSING TIME (sec)	9.5
MAX. BAR LENGTH (m)	6.0mtr / 7.5kg
MOTOR SPEED	1400
OPERATING TEMPERATURE (°C)	-25 +60
THERMAL PROTECTION (°C)	150
PROTECTION RATING (IP)	43
WORKING CYCLE (%) / DAILY MANOEUVRES	90 / > 2000
MOVEMENT	ELECTROMECHANICAL PISTON
UN LOCKING	MANUAL - WITH KEY
DIMENSIONS AND WEIGHT	324x282x1130mm / 44.5 kg

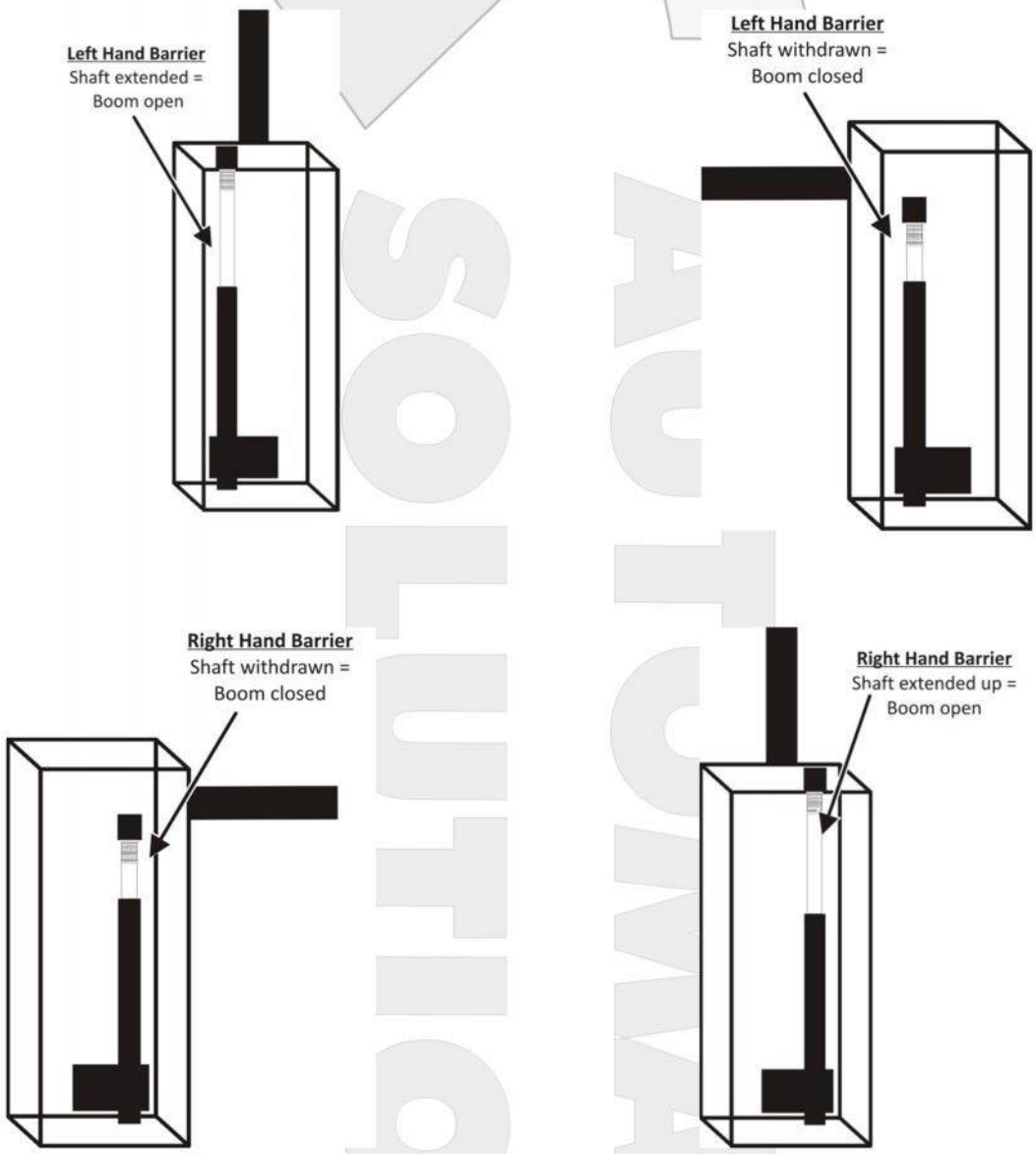
SUGGESTED ORDER OF INSTALLATION

1. Unpack all package contents and ensure all parts are correct and available.
2. Examine site conditions to determine left or right installation and suitability for base installation.
3. Install base plate if required.
4. Modify left – right configuration of the boom gate if necessary.
5. Securely fasten the boom gate to the prepared base.
6. Attach the boom.
7. Install boom support if used.
8. Adjust boom tension as required.
9. Adjust open and close stops.
10. Apply power to the control board.
11. Program the board and test the operation.
12. Make adjustments as necessary.
13. Attach safety and ingress and egress devices one at a time testing after each addition.

KEY POINTS TO PAY ATTENTION TO

- Ensure the base plate of the boom gate is adequately anchored and there is no excess movement.
- Spend extra time on the spring adjustment to get the boom as perfectly balanced as possible.
- Use the RV1 trimmer during the first movement of programming to set the slowdown and keep it nice and slow.
- Do not be tempted to decrease the slowdown period or increase the slowdown in search of extra speed.
- All booms greater than 3.0 metres long should have a boom support in the closing position.
- If you do not use the full 6.0 metres of boom slide the unused part inside the boom – do not remove any sections.

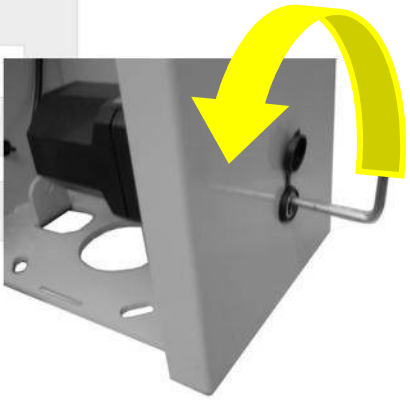
DETERMINING LEFT AND RIGHT INSTALLATIONS



MANUAL OPENING

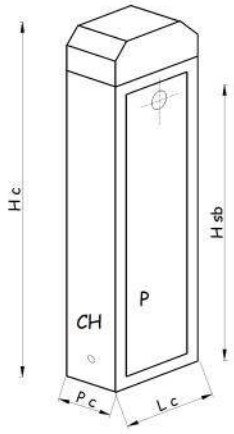
In the event of a power cut or in any other situation which makes it necessary to open the moveable barrier without electrical power, proceed as follows:

- Insert the key supplied in the base of the column in the designated circular hole;
- Turn the key anti-clockwise to unlock the automation-barrier connection (clockwise direction to lock the automation-barrier connection) and use one hand to help the barrier up. The action of the preload spring will help the operation.



OVERALL DIMENSIONS AND POSITIONING

- The barrier movement mechanism is easily adaptable to provide right-hand or left-hand closing (as seen from the barrier side). See instructions for changing the opening side.
- For safe use, it is necessary to provide suitable space for the automation access panel opening (P) and to be able to activate the unblocking key (CH) for the emergency manoeuvre.
- Securing to the ground takes place by anchoring a base plate equipped with suitable anchor bolts or embedded in a purpose prepared concrete pad.



BASE PLATE

Model	Max length L	Hsb	H c	Wid. c	Depth c
ASA6000	6000	900	1225	325	225

SUGGESTED SAFE OPERATING CONDITIONS:

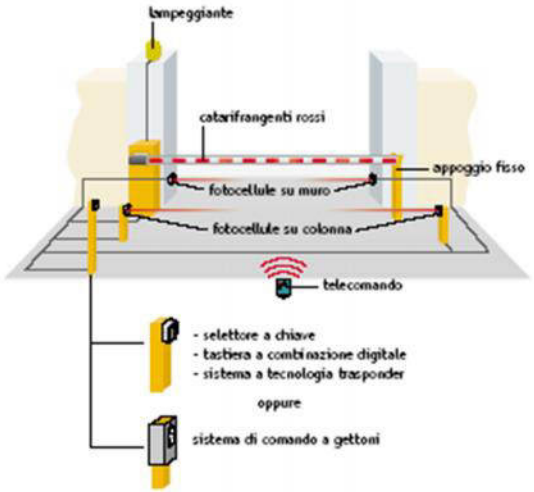
- Affix an adhesive band with reflective strips onto the barrier arm, to highlight it;

- Install a fixed support at the end of the barrier;

- Install a system of photocells, as shown in the figure, to prevent the automatic re-closing system from intervening during the transit of persons or vehicles;

- Check that, in the open and closed positions, the barrier is easily visible both during the day and at night. Add suitable additional lighting where necessary;

- Install a flashing light to activate during barrier movement (optional)



MODIFYING THE BARRIER CLOSING DIRECTION (RIGHT/LEFT)

The barrier is supplied with the closing as requested (right/left) (as seen from the barrier side).
If the direction of access is to be inverted, the barrier is fully reversible and with simple adjustments, it is possible to reverse it, following the instructions below.

- Disconnect any power to the boom gate; lock the boom in the upright (vertical) position using the manual override key and open the front hatch and the head cover.

- Remove the boom from the boom gate hub.

- With the boom removed whilst in the upright (open) position lighten the load on the balancing spring and remove.

- Remove the fasteners from the ends of the motor (threaded lock pin and pin) and remove.

- Reposition the pivoting rocker arm of the automatism to the other side and refit the motor on the opposite side first securing it at the base and then at the top, inserting the pin in the eyelet, and then reload the spring on the other side and pretension.

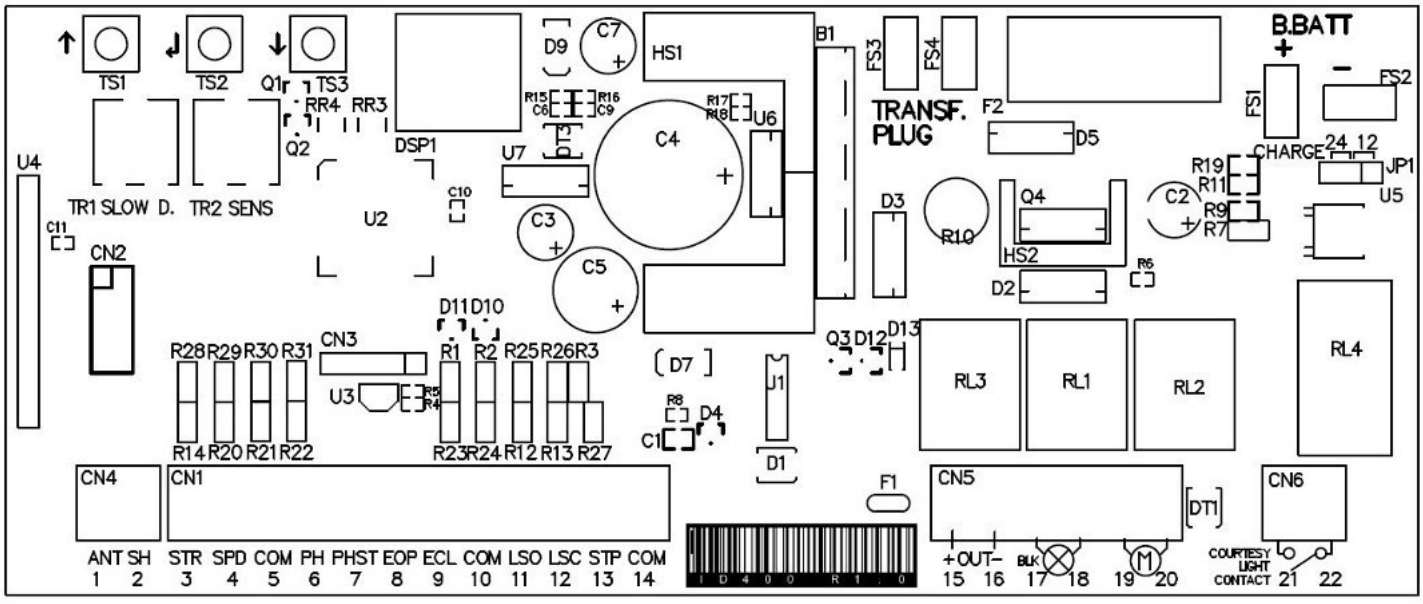
- Install the boom in the open vertical position and adjust the spring so that in manual mode the boom supports itself at 45 degrees – that is that it neither drops suddenly nor rises by itself.

Control unit low voltage
For sliding Gate

ID-400

GB Instructions Manual

Rev. 1



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Important: Read carefully this manual before the installation. This manual is integral part of your product, keep it for reference.

Warnings: First of all verify that this product is suitable for the installation. Read carefully technical characteristic before the installation.
Installation of this control unit must be properly done by qualified installers, following rules and regulations of installation country.
It's mandatory do periodic maintenance each 6 month. Maintenance or repairing must be done by qualified Technicians. Turn power off before maintenance or repairing.
This device is intended for gate automation, any other applications is strongly advised.
Not respecting of rules may cause serious damage to peoples, animals, things. Manufacturer discharges all responsibility for missed respect of rules.
Don't let this control unit unattended or where children can reach

Preliminary checking: Before to install this control unit, verify that all the connected devices respect the technical characteristics mentioned in the table which follows. Verify that a working and suitable life switch is installed upline the installation. Verify that cables composing the installation, are suitable for it.

Technical characteristics

Power Supply	12-20Vac/100-200VA +/-10%
Max. Current out (14-15)	250mA
Embedded Battery charger	12/24V 100mA
Max motor current	8A (200VA transformer)
Max flashing light current	1A
Operating temperature range	-5 +60°C
Backup battery	(2x) 12V 4.5Ah / (1x) 12V 7Ah

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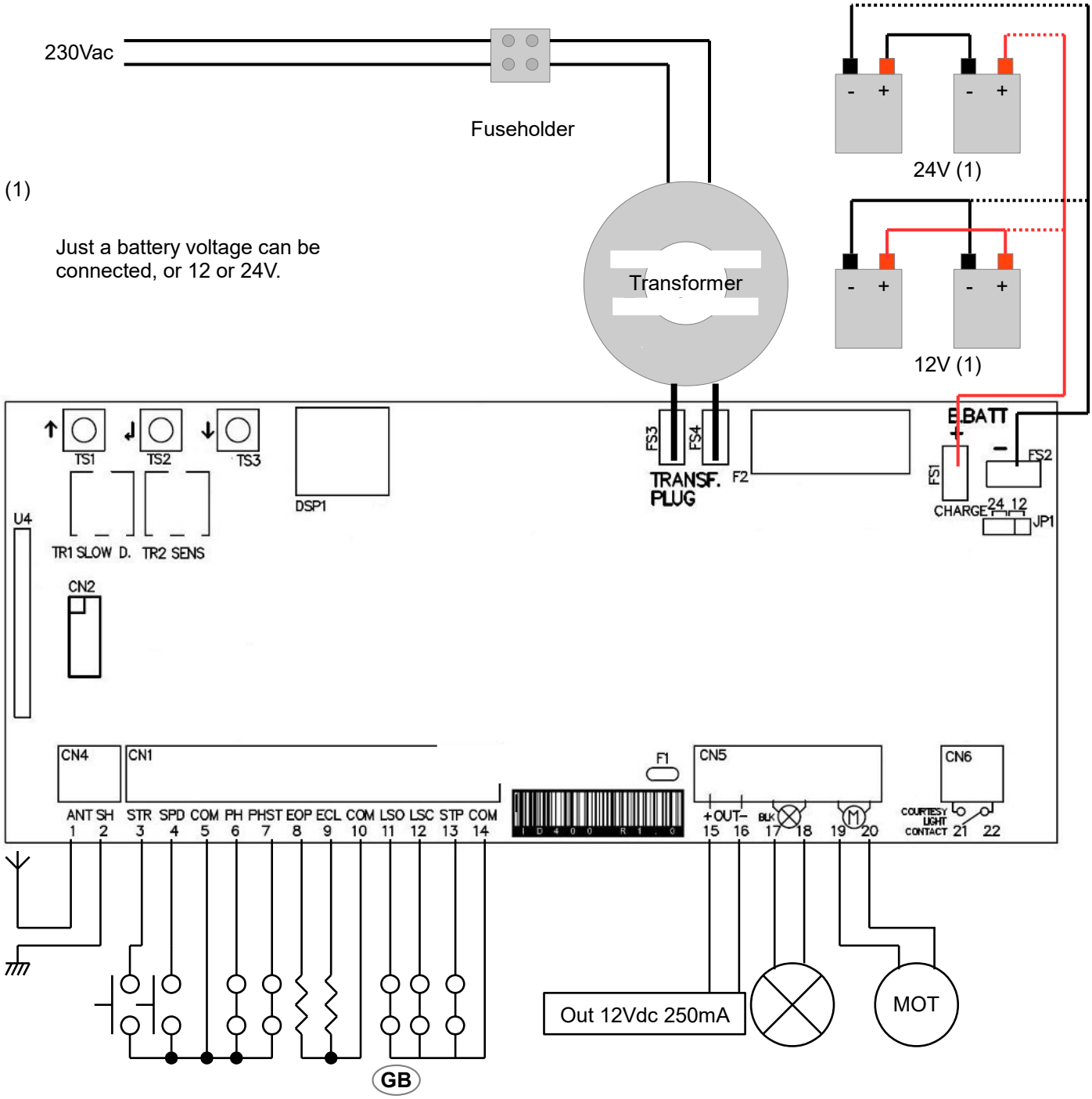
Wiring
Main functions



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1 Antenna

2 Antenna's shield

3 Start input (NO)
It completely opens the gate

4 Pedestrian start in. (NO)
It opens just 1 meter

5 Common

6 Photocell input (NC)
During pause: Reloads pause
During closing: Reverses motors direction

7	Photostop input (NC) *During pause: Reloads pause* *During closing: Reverses motors direction* *During opening: stops the motors and waits till contact returns close.*
8	Analog opening edge input (8K2 ohm) *Waiting an opening command: inhibits opening* *During opening: reverses motor direction for 1 second.* *If not used left unconnected.*
9	Analog closing edge input (8K2 ohm) *It works as opening edge, but for closing.*
10	Common
11-12	Limit switches input (NC). *They can be inverted together with gate direction (see advanced menu).* *Left open in case limit switches aren't used.*
13	Stop input (NC) *It always stops motors and blocks control unit activity.*
14	Common
15-16	Power supply output 12Vdc 250mA
17-18	Flashing light output 12/24V 1A. *It flashes fast opening and slow closing. If mains fails, it flashes very slow (4 sec.)*
19-20	Output motor 8A
21-22	Courtesy light dry contact.
TR1	Slowing down speed trimmer
TR2	Obstacle detection sensibility trimmer
TS1-TS3	Buttons up/down
TS2	Enter button
DSP	Display
FS3-FS4	Transformer input 12-20Vac / 100-200VA
F2	Battery fuse 10A Fast
FS1-FS2	Backup battery input 12/24Vdc
JP1	Backup battery voltage selector 12/24V

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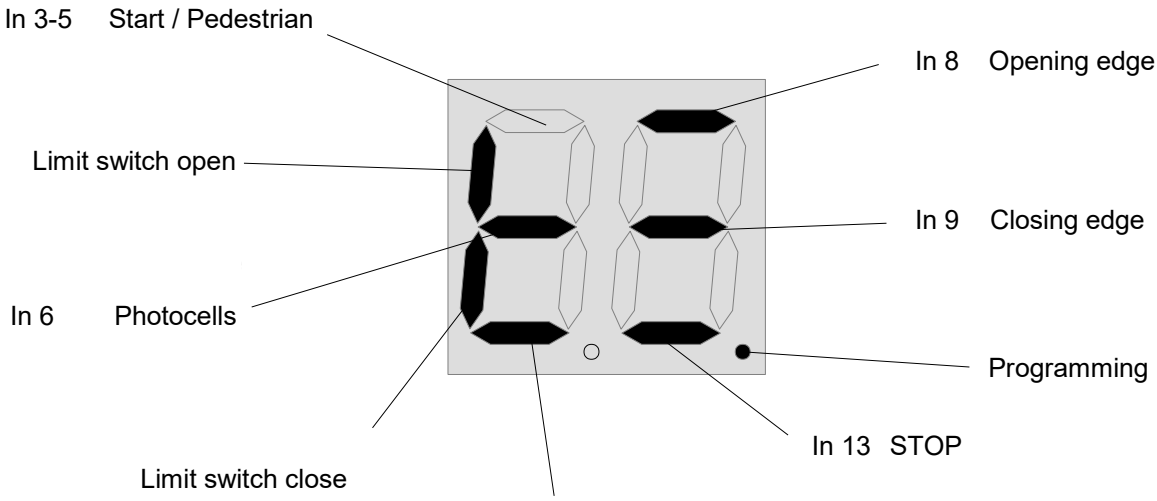
Input status

When the control unit is waiting for an opening or closing cycle, or when it's in pause, status of inputs is displayed as following diagram.



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Quick installation

To program quickly the working times, open the gate , then push TS1 (*up)* until you read Au on the display. The control unit will do several tests and it will learn working times and limit switches installed as well as the gate direction. When the procedure is complete the blinker goes off.

Do not try to do this during setup. You must program through basic programming.

Auto Learning transmitters:

It's possible to learn transmitters quickly without using the base menu. To insert a new transmitter transmit 3 times with the new remote, making at least 1 second pause between each transmission. Then transmit 3 times with a transmitter already in memory and then once with the new. When programmation is done, the blinker flash once. **Attention**: function must be enabled, refer to “advanced menu”.

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Trimmer regulations

The slow down speed trimmer regulates the slow down speed. Do not set speed to low (less than 6 cm/sec on the wing edge) to avoid that gate get problems in too cold conditions.

The obstacle sensibility trimmer fine tunes the obstacle detection level learned by the control unit during working times programming. This fine regulation must be do after working times learning.
Normally the trimmer goes in the center, in this position should be possible to respect rules in most of installations. If it's need to resolve problems related to norms or to environmental situations (ex. strong wind) is it possible to regulate this trimmer increasing or decreasing sensibility.

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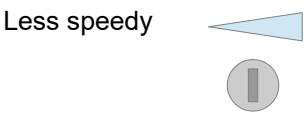
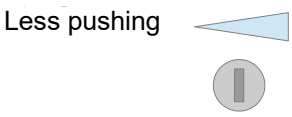


TR1

Slow down speed



TR2

Obstacle sensibility

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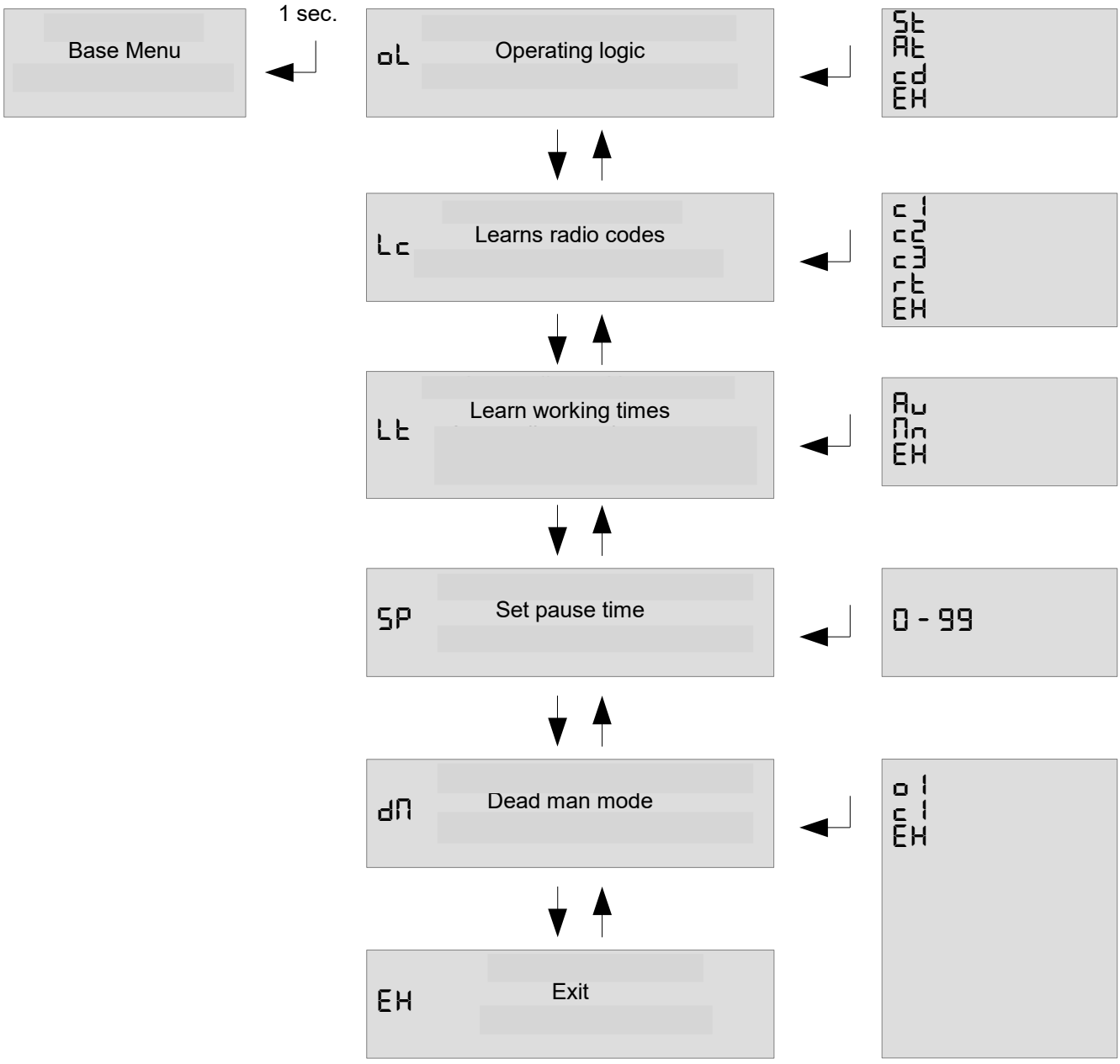
Board Programming

Base Menu

Push TS2 (*enter*) for at least 1 second to enter base menu.
oL is on the display.
With TS1 and TS2 (*up/down)* it is possible to select other functions of this menu.
To exit this menu select EH or push up and down together.
After 2 minutes without actions, the control unit exits itself from this menu.

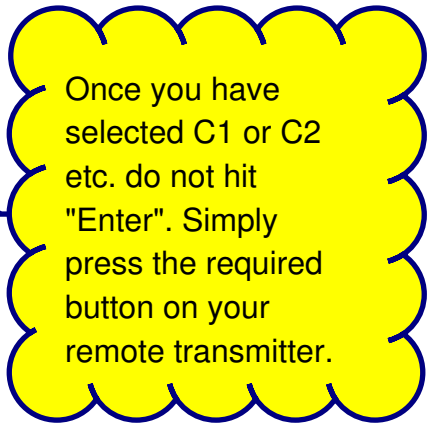
Press and release TS2. Any more than one second and you enter advanced programming.

Base menu map



Menu di base
Operating logic oL:
Select oL and push enter, with *up/down* select wanted logic between following end push once *enter*. Check tab operating logics for further informations.
St: Step by step logic.
At: Automatic closing with stop funcion.
cd: Automatic closing for condominium function.
To exit this menu select EH or push *up/down* together.

Lc Learning / removing transmitters code:
Select learning code function Lc and push enter, than select one of following functions with *up/down*.
c 1: learn a start code
c2: learn a pedestrian code
c3: learn a courtesy light code
rt: Delete all transmitters in memory.
See tab operating logics for further informations.
Once selected the channel transmitt the code, on the display is show "oK" for a while if operation is done.
To replace the channel of a code, just select desired channel and transmitt once the same code.
To delete just one code, select rt and transmitt the code to be removed, on the display is show "oK" for a while if operation is done.
To delete all codes, select rt and push *enter*, then confirm with YS.
To exit this menu select EH or push *up/down* together.



Lt learn working time:
Attention: before to start leaning procedure, the gate must be open to do automatic procedure, otherwise must be closed to do the manual procedure. Use "dead man" function to put the gate in the right position.
Is it possible to program working time automatically, please refer to "**Quick installation**".
Select Lt in the base menu and push *enter*, after select the learning mode with *up/down*.
Au: Automatic learning procedure.
Mn: Manual learning procedure.
To exit this menu select EH or push *up/down* together.

Au Automatic procedure for working time learning:
Attention: in this procedure all safety inputs are disabled.
The wings close themselves, in the meanwhile all the working times and values for obstacle detection sensor are learned. If limit switches are connected (coherent with motor direction) the board learn the direction of the gate. If analogue edges are connected, they are automatically enabled.

Mn Manual procedure for working time learning:
Attention: to do this procedure prepare at least a transmitter into memory. In this procedure all safety inputs are disabled.
Gate starts opening, in this phase it's possible to set the slowing down speed with the trimmer 2. If limit switches aren't installed, push enter button or transmit with remote once gate is open. The control unit makes some test of motor consumption to set the threshold for the obstacle detection sensor.
Once the test is finish, you can see M 1 on the display.
In the phase which follows, *enter* button or a memorized code control following sequence: start closing gate, start slowing down, stop the motor. If limit switches are installed, the gate stops itself when completely closed.

SP Set pause time:
Use *up/down* to set the pause time between 0 and 99 seconds. Push *enter* to confirm. To exit without modifications push together *up* and *down*.
Attention, setting a pause time doesn't enables automatic closing, please refer to chapter "oL operating logic" to enable this function.

dM Dead man mode:
Selecting this menu it's possible to control each motor in dead man mode. Push *up* and *down* to select one of following item:
o 1 Open motor
c 1 Close motor
EH Exit
Keep pushed *enter* to start the selected motor in dead man mode.

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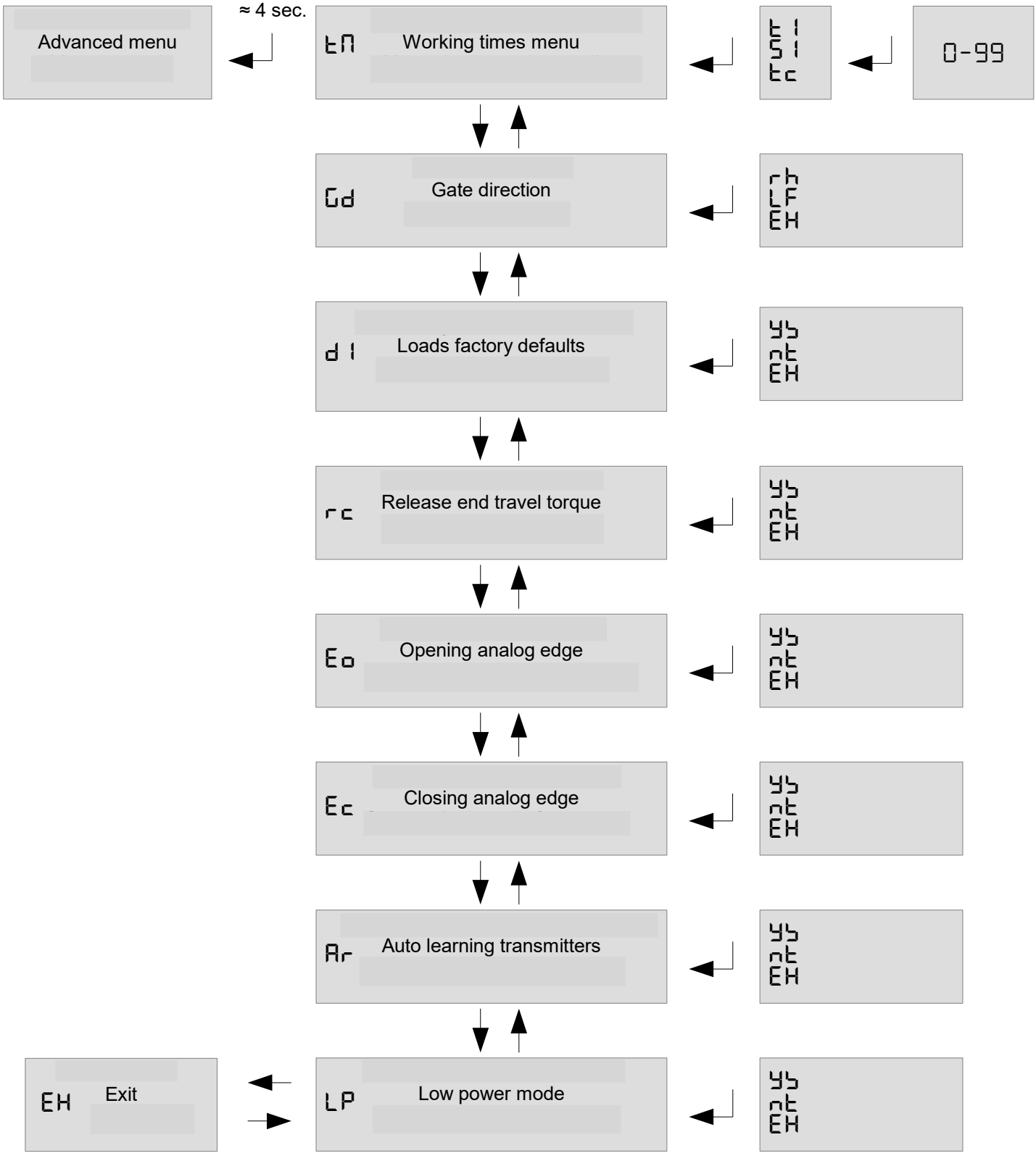
Board Programming

Advanced Menu

Push enter button till on the display is shown tM. With up/down it's possible to select all items in this menu.
To exit this menu select EH or push *up/down* together.
After 2 minutes without actions, control unit exits itself from this menu.

Advanced menu map



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Advanced menu

tM Working times menu:
In this menu it's possible to modify working times of control unit:
t 1 – Working time motor 1
S 1 – Start time slowdown motor 1
tc – Courtesy light time (x10 sec)
EH – Exits from advanced menu
Once selected working time to be changed, use *up/down* to modify it from 0 to 99 seconds. Push *enter* to confirm.
To exit without modifications select Eh or push together *up* and *down*.

Gd Gate direction:
In this menu it's possible to invert motor direction and limit switches according if gate is right or left. Use up/down to choose right (rh), left (LF) or exit (EH). Push enter to confirm.

d 1 Load defaults:
Choosing this menu and confirming with yes (YS), sets the control unit at factory defaults.

rc Release torque at work end:
Enabling this function, the motors reverse direction for a while to release the torque at end of work. This function is enabled just if limit switches aren't installed. Use up/down to choose yes (YS), not (nt) or exit (EH). Push enter to confirm.

Eo Enable opening analogue edge:
Enabling this function it's enabled the edge active in opening period.

Eo Enable closing analogue edge:
Enabling this function it's enabled the edge active in closing period.

At Enable automatic transmitters leaning:
Enabling this function it's possible to insert new transmitters without accessing base menu. Refer to “Automatic transmitters learning”.

LP Enable low power mode:
In this menu you can enable the low power mode. **Attention**: when this function is enabled, the display is not longer showing input status (Display off in stand-by).

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Operating logic tables

St Step by step

Fase	Comando						
	Start	Pedestrian	Photocell	Photostop	Edge opening	Edge closing	Stop
Closed	Opens	Opens	Ignored	Stops	Stops	Ignored	Stop
Opening	Stops	Stops	Ignored	Stops and waits release	Reverses	Ignored	
Open	Closes	Closes	Ignored	Stops	Ignored	Stops	
Closing	Stops	Stops	Reverses	Reverses	Ignored	Reverses	

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At Automatic closing

Fase	Comando						
	Start	Pedestrian	Photocell	Photostop	Edge opening	Edge closing	Stop
Closed	Opens	Opens	Ignored	Stops	Stops	Ignored	Stop
Opening	Stops	Stops	Ignored	Stops and waits release	Reverses	Ignored	
Open	Closes	Closes	Stops	Stops	Ignored	Stops	
During pause	Exits pause	Exits	Reloads time	Reloads time	Ignored	Reloads time	
Closing	Stops	Stops	Reverses	Reverses	Ignored	Reverses	

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cd Condominium mode

Fase	Comando						
	Start	Pedestrian	Photocell	Photostop	Edge opening	Edge closing	Stop
Closed	Opens	Opens	Ignored	Stops	Stops	Ignored	Stop
Opening	Ignored	Ignored	Ignored	Stops and waits release	Reverses	Ignored	
Open	Ignored	Ignored	Stops	Stops	Ignored	Stops	
During pause	Reloads time	Reloads time	Reloads time	Reloads time	Ignored	Reloads time	
Closing	Ignored	Ignored	Reverses	Reverses	Ignored	Reverses	

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Default settings
Here it follows list of default settings, the same set after a d l command of advanced menu.

Item		Default	
oL	Operating logic	St	Step by step
SP	Pause time	10	10 seconds
t l	Working time	30	30 seconds
S l	Slowing down time	20	20 seconds
tc	Electric lock activation time	12	120 seconds
Gd	Gate direction	rh	Right
rc	Release end travel torque	nt	Not
Eo	Opening analog edge	nt	Not
Ec	Closing analog edge	nt	Not
At	Auto learning transmitters	YS	Yes
LP	Low power mode	nt	Not

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Diagnostic and troubleshooting

The control unit has a self diagnostic software able to find problems. Once a problem occurs, a code is shown on the display in alternance with command status.
Here it follows a troubleshooting table.

Error code	Problem and eventual solution		
E1		Mains power fails, system is running with backup battery. *Verify mains switch and life switch. Verify fuse on transformer (fuse holder).*	
E2		Obstacle detected in the previous cycle. *Verify that gate is free and there's no obstacles in the range. Verify gate wings aren't blocked.*	
E3		Photocells or photostop obstructed for longer than 2 minutes. The gate can't start moving and the blinker could be fixed on. *Verify that photocells and photostop aren't obstructed, and if there's no bugs inside them. Verify wiring to this devices.*	
E4		One of the analog edge is engaged for longer than 2 minutes. *Verify edges aren't engaged, verify wiring to this devices. If no edge installed, disable them in the advanced menu.*	
E5		Stop is engaged for longer than 2 minutes. *Verify wiring to emergency device. If there isn't an emergency device installed, shunt this input with the common.*	
E6		Problem on motor. *Verify connections to the motor, verify motor can work in dead man mode.*	

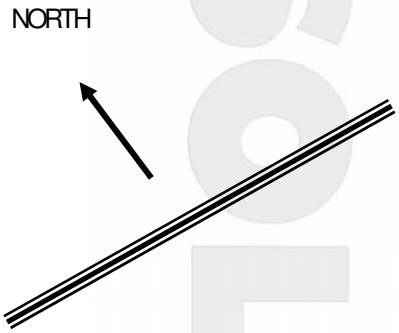
GENERAL SOLAR NOTES

SOLAR PANEL SIZE

Generally speaking simple automatic gate installations will work perfectly in Australia using a 10 watt solar panel. The solar panel size determines the amount of energy you can collect each day. In a simple gate installation we need to collect enough energy to power our control board and run the gate and a 10 watt panel will do this. If however the installation is to include keypads, safety beams or other power hungry devices it may be necessary to increase the solar panel size. Another example where you may wish to consider upsizing your solar panel is where you may have a partially shaded area and you need to collect your energy each day in a shorter period of time. If you do decide to increase the size of your solar panel it may be necessary to install a simple regulator to protect your battery. Check with Automatic Solutions regarding this.

SOLAR PANEL DIRECTION

Your solar panel ideally should be mounted at an angle of 35 degrees and facing north (NB: In Australia).

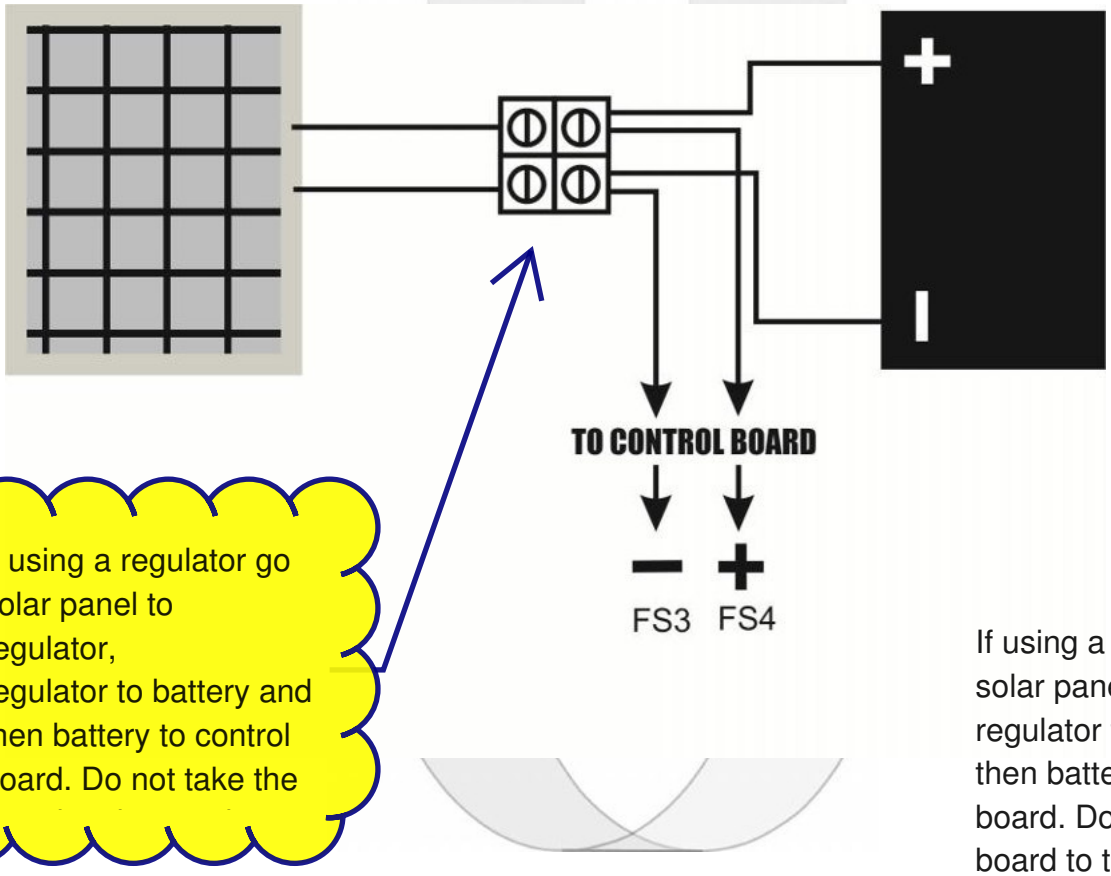


BATTERY SIZE

The battery stores the energy that you collect each day and your system draws on this battery to operate. All batteries have a limit to their storage capacity and can therefore only store enough energy to last our system a certain period of time. What happens if we have for example three days with little or no sunlight, very dark and overcast days? Our battery capacity reduces. The size of the battery will determine the number of days we can have as backup or how many days our system can survive without charging. In general terms bigger is better.

CABLES

Cables must be low voltage cables (5mm is good). Length of cables must be kept to a minimum. Ideally the solar panel will be no more than 10 metres from the battery and the battery will be no more than 5 metres from the motor. Connections must be clean and good quality.



If using a regulator go solar panel to regulator, regulator to battery and then battery to control board. Do not take the board to the regulator.

Solar Panel Connection ID400