

SAM WITH TRUST BOARD



NOTE: This is a quick set up guide only and we highly recommend reading the full instruction manual.

MOTOR OVERVIEW & PRE-CHECKS

The SAM is an electromechanical swinging gate operator designed for gates up to 2.5m and 300Kg. The table below shows all the lengths and weights accordingly.

GATE LENGTH (m)	GATE WEIGHT (Kg)
1	300
1.5	285
2	250
2.3	200
2.5	150

Some important preliminary checks before automating a gate are:

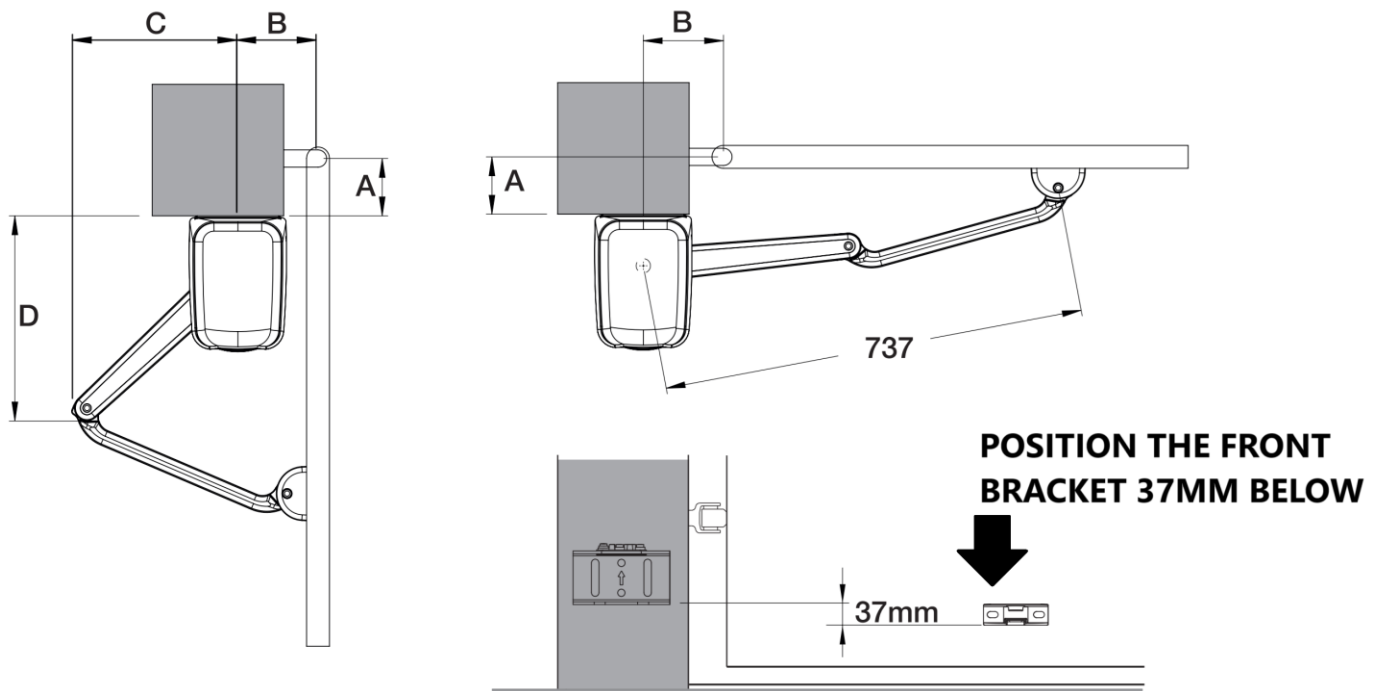
- Try and open the gate manually, the leaves must move without effort and without point of resistance throughout the travel.
- The hinges and components subject to wear must be in good working conditions.
- When the gate is closed, check that the leaves are aligned.
- The pillars supporting the gate must be suitable for fixing the gate operators.
- Check that there is enough space for the installation of the operator in safe and comfortable conditions.

INWARDS OPENING GEOMETRY

Geometry on swinging gates is very important. Below the primary quotations 'A' and 'B' along with the secondary quotations 'C' and 'D'.

Make sure to have enough space 'C' for the articulated arm to fit when the gate is in the open position.

Make sure the front bracket is installed 37mm below the rear bracket and the length of the arm is about 737mm when the gate is in the closed position (as per diagram below).

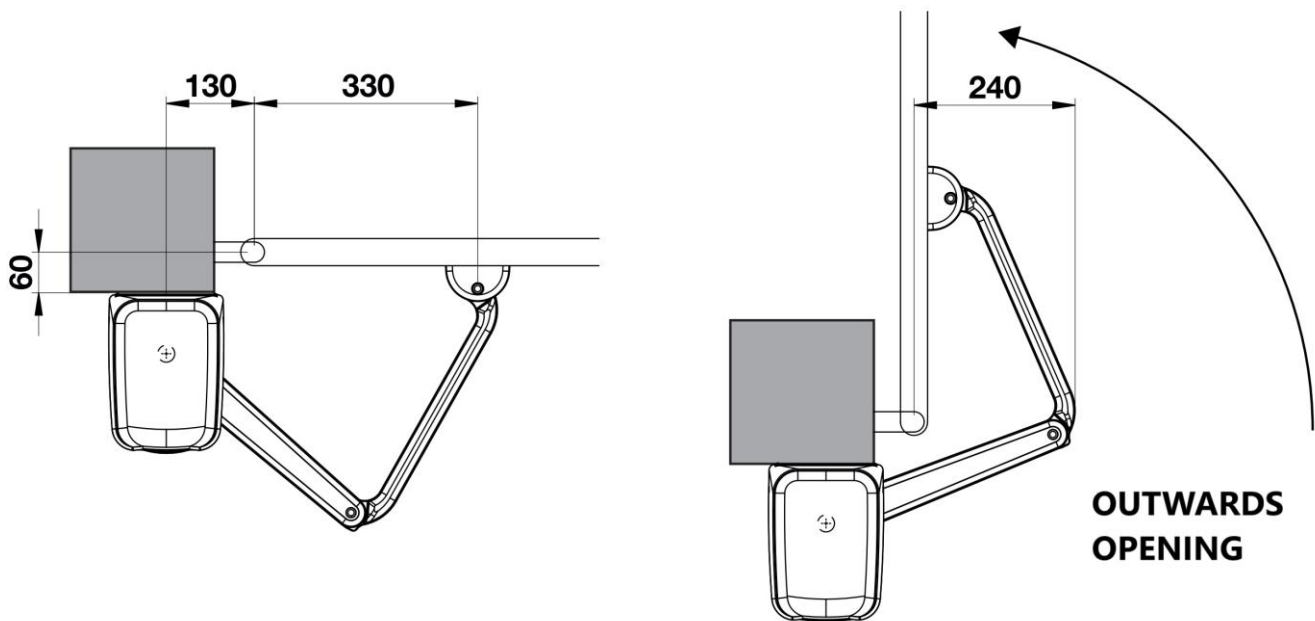


α °	A (mm)	B (mm)	C (mm)	D (mm)
90°	20	140	260	390
90°	50	140	270	380
90°	100	140	290	355
90°	120	140	300	350
90°	150	140	305	340
90°	180	140	315	330
90°	200	140	315	330
90°	250	140	315	325
90°	280	150	300	345

120°	20	250	380	180
110°	20	200	360	260
100°	20	160	330	310
110°	50	210	365	240
100°	50	160	330	305
105°	100	200	360	255

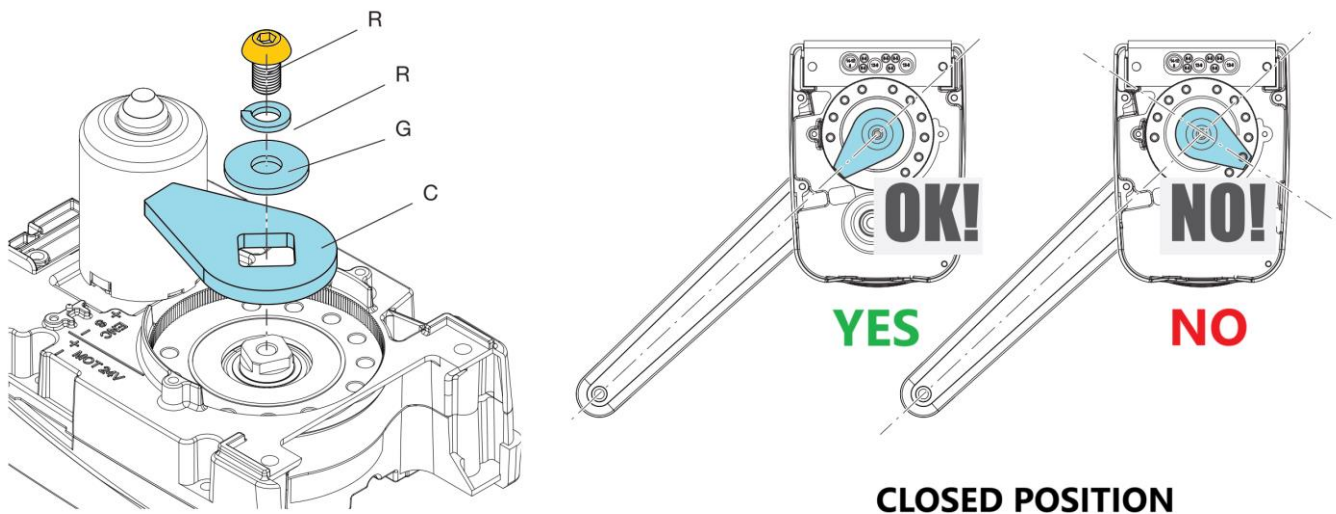
OUTWARDS OPENING GEOMETRY

Below is the diagram with all the relative quotations for a 90° outwards opening.

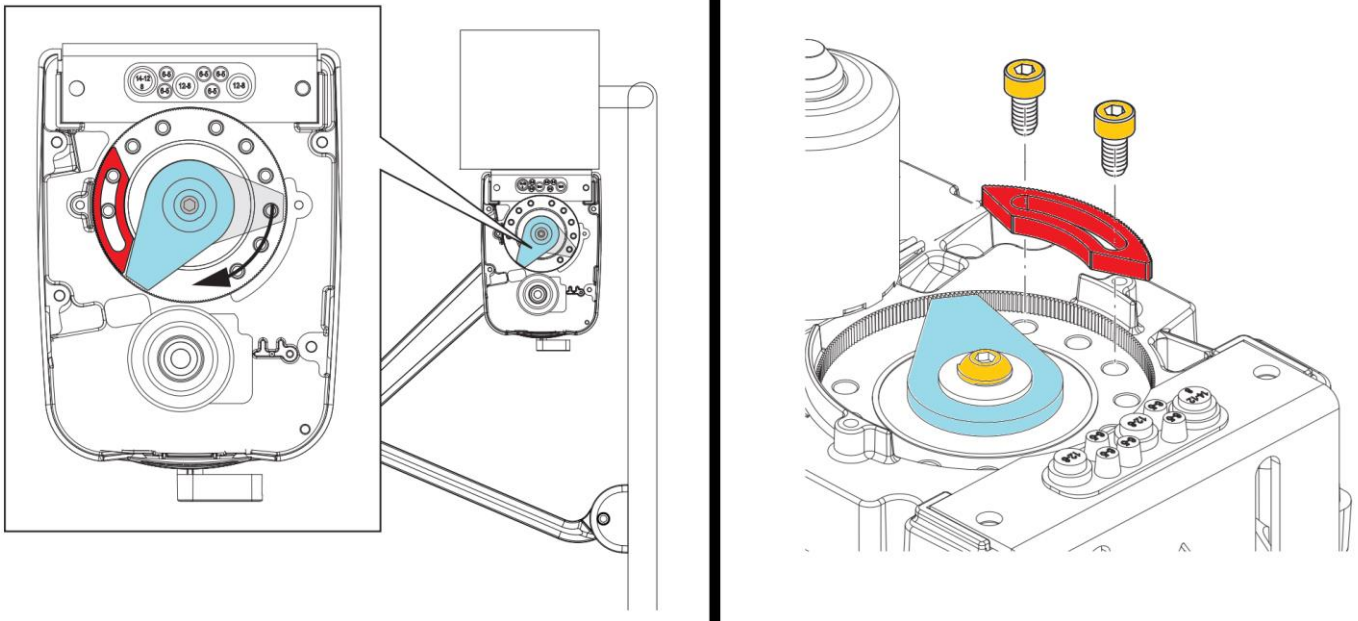


MECHANICAL STOPS

The mechanical stops must be adjusted by using an Allen key to determine the open and close position of the gate. Below the correct assembling and positioning of the mechanical plate when the gate is in the closed position.

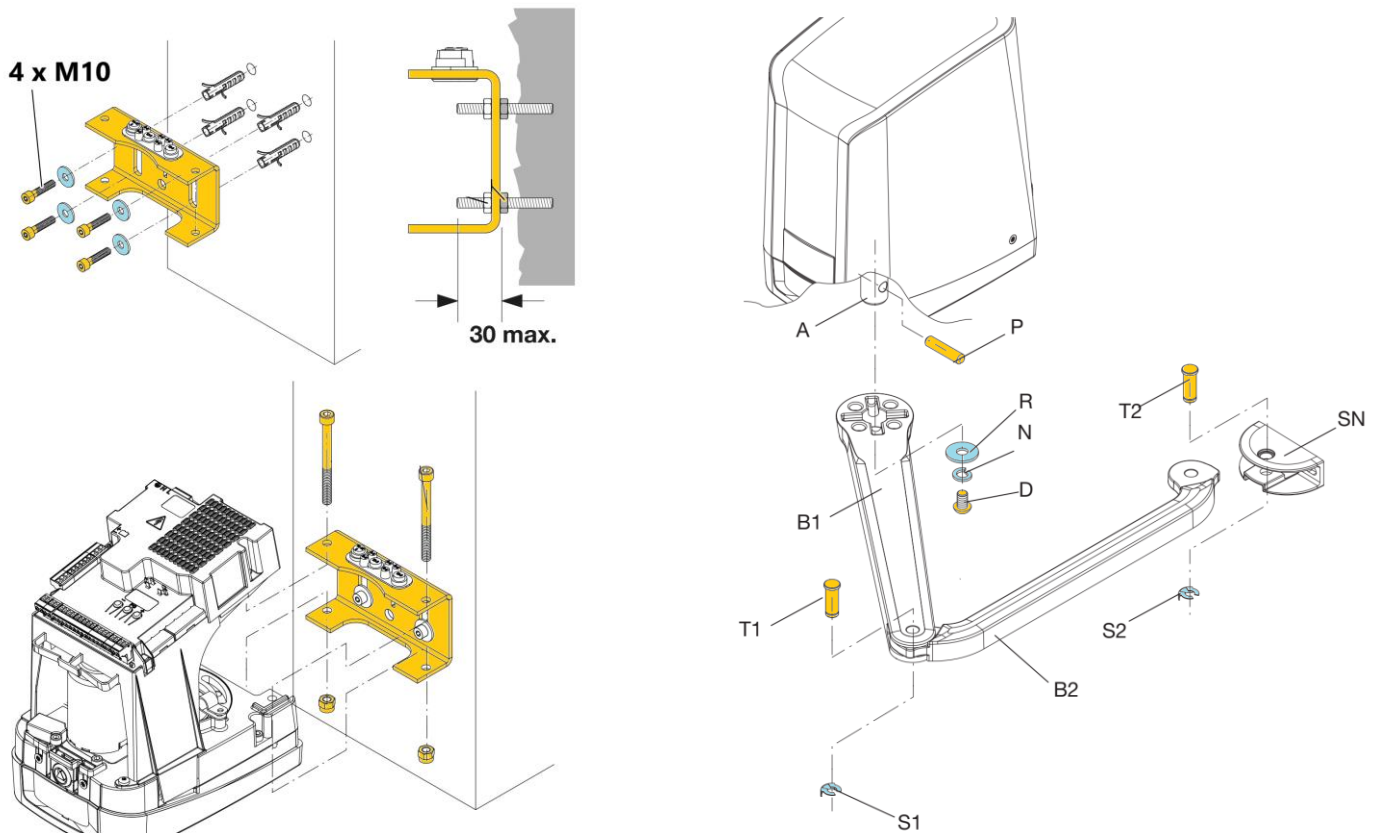


Once the mechanical plate is fixed, you can insert and adjust the mechanical stops accordingly to your desired open and close position, before tightening them down using the Allen key.



MOTOR FIXING

Make sure to use all the nuts and washers that come with the operator and make sure the motor is level.



WIRING DIAGRAM (USING 2 WIRES)

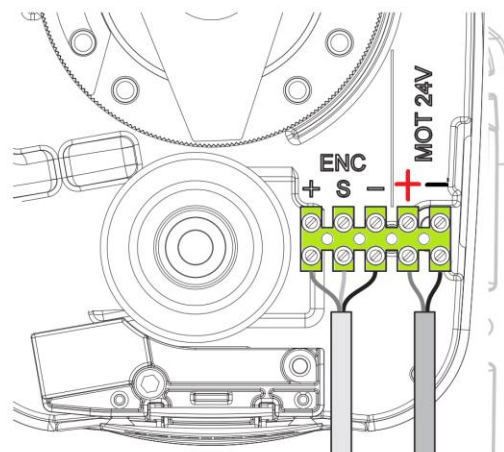
This configuration will purely rely on the mechanical stops built-in into the operator.
The wires for the motor should be at least 1.5mm².

Motor 1 is the first motor to open, whereas Motor 2 is the first to close.

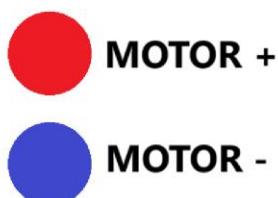
For single gates: The SAM Master is already pre-wired on the board.

For double gates: The SAM Master is already pre-wired on the board, whereas the SAM Slave needs to be wired into the control board.

SLAVE MOTOR 2 (FIRST TO CLOSE)



MASTER MOTOR 1 (FIRST TO OPEN) IS PRE-WIRED ON THE BUILT-IN CONTROL BOARD



240V



WIRING DIAGRAM (USING 5 WIRES)

This configuration will rely on the mechanical stops built-in into the operator as well as on the Encoder. The wires for the motor should be at least 1.5mm², whereas the wires for the Encoder should be 0.5mm².

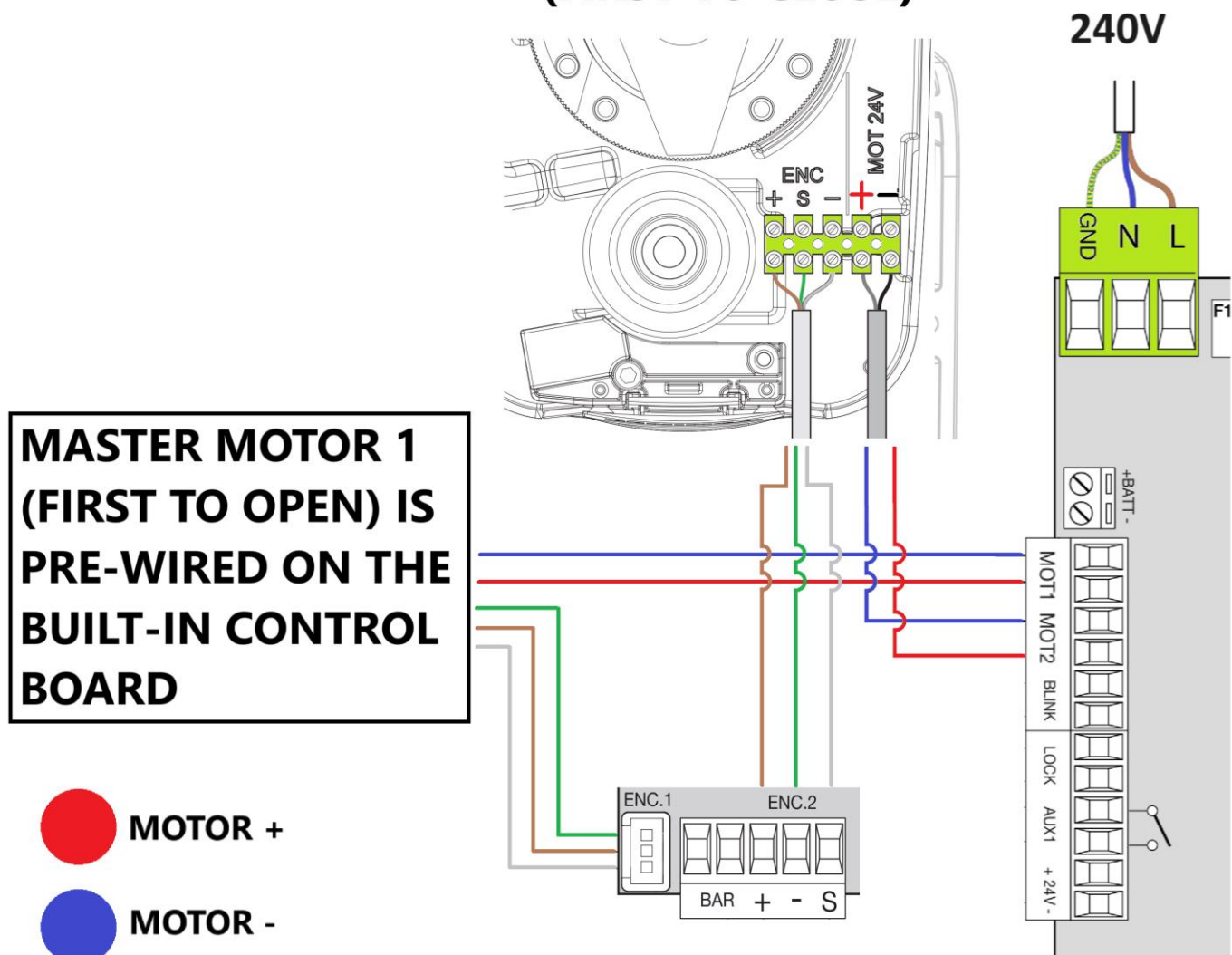
Motor 1 is the first motor to open, whereas Motor 2 is the first to close.

For single gates: The SAM Master is already pre-wired on the board.

For double gates: The SAM Master is already pre-wired on the board, whereas the SAM Slave needs to be wired into the control board.

***** This configuration is useful if the gates are large and/or overlapped and/or it's a windy area *****

SLAVE MOTOR 2 (FIRST TO CLOSE)



FIRST STEP OF PROGRAMMING

Once the operators have been wired up on the Trust control board we can proceed with the programming. A few settings need to be checked and changed first.

TCA (Automatic Closing Time)

From the factory, the TCA is switched 'ON', which means the gate is going to automatically close after a certain time. Below the steps to switch this feature 'OFF'.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Scroll down once to 'LOG' and press 'PG'.
- The display should read 'TCA', press 'PG' and you should read 'ON'.
- Press the '-' or '+' button to switch the setting 'OFF' and press 'PG' to confirm.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

LOGIC (L o U)		
MENU	FUNCTION	ON-OFF- (Default)
TCA	Enables and disables automatic closure. On: automatic closure enabled. Off = automatic closure disabled	(ON)

ESA (Energy Saving Function)

From the factory, the 'ESA' setting is switched 'ON', which means the gate is switching 'OFF' the power supply to accessories once its fully closed or opened.

Below the steps to switch this feature 'OFF'.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Scroll down once to 'LOG' and press 'PG'.
- The display should read 'TCA', scroll down until you read 'ESA', press 'PG' and you should read 'ON'.
- Press the '-' or '+' button to switch the setting 'OFF' and press 'PG' to confirm.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

LOGIC (L o U)		
MENU	FUNCTION	ON-OFF- (Default)
ESA	Enables or disables the "ESA" energy saving functionality. On: The control unit, once the manoeuvre has terminated and enabling time is up of the service light, removes the power supply to the accessories output, setting in stand-by status. <i>The power supply of the accessories however remains enabled, only for the necessary time, if the AUX1/AUX2 parameters need it.</i> Off: Energy saving disabled. To use if you want to have the accessories power supply always enabled, for example if using 24 Vdc, or other devices that need to be always powered.	(ON)

1MOT (One Motor Only – Single Gate)

From the factory, the '1MOT' setting is switched 'OFF', which means the control board is expecting to run two motors (a double swinging gate). **If you only have a single gate, you need to switch this setting 'ON'.**

Below the steps to switch this feature 'ON'.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Scroll down once to 'LOG' and press 'PG'.
- The display should read 'TCA', scroll down until you read '1MOT', press 'PG' and you should read 'OFF'.
- Press the '-' or '+' button to switch the setting 'ON' and press 'PG' to confirm.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

LOGIC (LOG)		
MENU	FUNCTION	ON-OFF- (Default)
1MOT	Selection of the motors 1 or 2 operating mode. On: Use for a single motor, connected to output M1 Off: Use for two motors.	(OFF)

MINV (Motor Inversion)

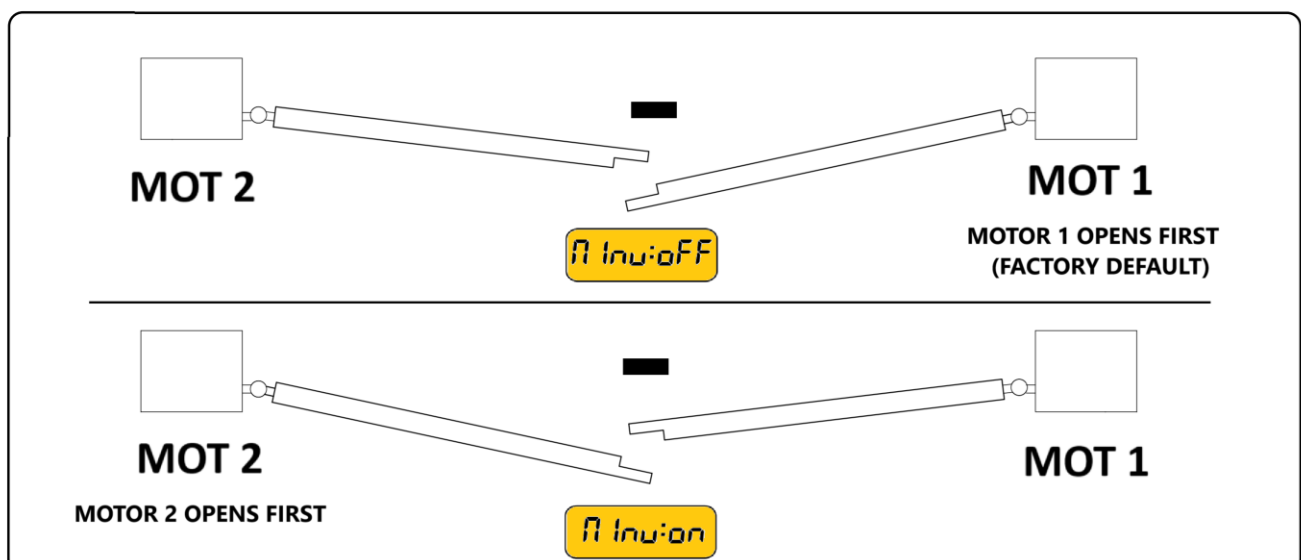
From the factory, the 'MINV' setting is switched 'OFF', which means that Motor 1 will be the first motor to Open. If you have an overlapping of leaves and depending on where Motor 1 is mounted (or wired into the board) you might have to change this setting.

Below the steps to switch this feature 'ON'.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Scroll down once to 'LOG' and press 'PG'.
- The display should read 'TCA', scroll down until you read 'MINV', press 'PG' and you should read 'OFF'.
- Press the '-' or '+' button to switch the setting 'ON' and press 'PG' to confirm.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

LOGIC (LOG)		
MENU	FUNCTION	ON-OFF- (Default)
MINV	Motors start order: On: motor 2 starts first in opening. Off: motor 1 starts first in opening.	(OFF)

See diagram below for more details.



AUTOSET & SECOND STEP OF PROGRAMMING

Once all the above settings have been checked, we can proceed with the Autoset of the operators. This function is very important as it determines the speed of the motors, the slowdown and the leaf delays.

We highly suggest putting the gates in the middle of the driveway before performing an Autoset.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Scroll down until you read 'AUTO' and press 'PG'.
- Here we have three options to choose from ('ENC', 'NLSU', 'LSU'). If the motors are wired with **two wires**, select 'NLSU', whereas if the motors are wired with **five wires**, select 'ENC' and press 'PG'.
- The control board should display 'OPEN' and Motor 1 should start opening. **If the movement of the motors is the opposite of what the display reads, stop the Autoset by pressing 'PG' and reverse the polarity of the motor/s. (Note: If you need to reverse the polarity of Motor 1, just reverse the plug).** Repeat the above steps.
- Once the Autoset is completed, you should read 'OK' on the display and you can exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

You can now adjust all the parameters (e.g. leaf delay, slowdown, torques) in the 'PAR' menu.

We advise to check the following settings:

PM – PS (Torque)

From the factory, the torques are set to 30% but depending on the structure of the gate, the location (e.g. wind) and cycles, you would need to increase these values. Anywhere between 55% and 85% is sufficient.

Below the steps to increase the torque.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Press 'PG' to enter and scroll down until you read 'PMO1' and press 'PG'.
- Press the '-' or '+' button to change the value and press 'PG' to confirm.
- Repeat the above steps to increase the other torque values (PMC1, PMO2, PMC2, PSO1, PSC1, PSO2, PSC2).
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

PARAMETRI (PRr)		
MENU	FUNZIONE	MIN-MAX-(Default)
Pn _o 1	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the opening phase at normal speed - Motor 1	1-99-(30%)**
Pn _c 1	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the closure phase at normal speed - Motor 1	1-99-(30%)**
Pn _o 2	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the opening phase at normal speed - Motor 2	1-99-(30%)**
Pn _c 2	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the closure phase at normal speed - Motor 2	1-99-(30%)**
Pso 1	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the opening phase at slowdown speed - Motor 1	1-99-(30%)**
Psc 1	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the closure phase at slowdown speed - Motor 1	1-99-(30%)**
Pso 2	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the opening phase at slowdown speed - Motor 2	1-99-(30%)**
Psc 2	Adjusts the intervention threshold of the anti-crushing device* (amperometric sensor) during the closure phase at slowdown speed - Motor 2	1-99-(30%)**

SASC - SASO (Inversion on the Limit)

From the factory, once the operator reaches the fully opened or closed position it reverses the movement for a fraction of a second to facilitate the manual release mechanism.

Below the steps to switch this feature 'OFF'.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Press 'PG' to enter and scroll down until you read 'SASC' and press 'PG'.
- Press the '-' or '+' button to set the value to '0' and press 'PG' to confirm.
- Scroll down once and you should read 'SASO' and press 'PG'.
- Press the '-' or '+' button to set the value to '0' and press 'PG' to confirm.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

PARAMETRS (PAR)		
MENU	FUNCTION	MIN-MAX-(Default)
SASc	Sets a short inversion once the closure limit switch point has been reached. It may be useful to facilitate the manual release of the gate. Value expressed in 1/10 (0=0s - 40=4s)	0-40 (10)
SASo	Sets a short inversion once the opening limit switch point has been reached. It may be useful to facilitate the manual release of the gate. Value expressed in 1/10 (0=0s - 40=4s)	0-40 (5)

TCA (Automatic Closing Time)

As mentioned in the paragraph above, from the factory the 'TCA' is switched 'ON'. In the 'PAR' menu you can set how many seconds the gate should stay in the open position, before it starts to close.

Below the steps to set the 'TCA' time.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Press 'PG' and the display should read 'TCA'.
- Press 'PG' to enter and by pressing the '-' or '+' button you can adjust the time. Press 'PG' to confirm.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

PARAMETRS (PAR)		
MENU	FUNCTION	MIN-MAX-(Default)
tca	Automatic closure time Active only with "TCA"=ON logic. At the end of the time set, the control panel commands a closure manoeuvre.	3-240-(40s)

REMOTE CONTROL PROGRAMMING

PP (Step-By-Step)

If a remote control is programmed in Step-By-Step, the gate will open fully.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Scroll down twice to 'RAD' and press 'PG'.
- The display should read 'PP', press 'PG'.
- Take the remote control and press the button that you would like to program in. The display should read 'OK'.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

RADIO (RAD)	
MENU	FUNZIONE
PP	Selecting this function, the receiver sets in standby (Push) of a transmitter code to assign to the step-step function. Press the transmitter key you intend to assign to this function. If the code is valid, it is saved and the message OK is displayed

PED (Pedestrian)

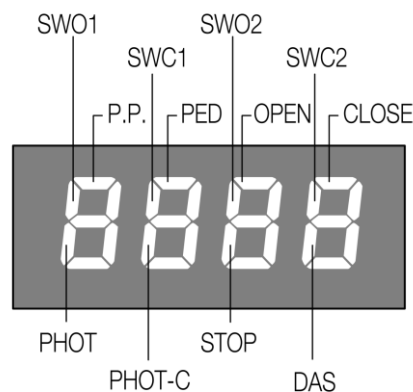
If a remote control is programmed in Pedestrian, the gate will open partially.

- Press the 'PG' button on the control board once, and the display reads 'PAR'.
- Scroll down twice to 'RAD' and press 'PG'.
- Scroll down twice and the display should read 'PED', press 'PG'.
- Take the remote control and press the button that you would like to program in. The display should read 'OK'.
- Exit from the programming by pressing the '-' and '+' button simultaneously 2/3 times.

RADIO (r-Rd)	
MENU	FUNZIONE
<i>PEd</i>	Selecting this function, the receiver sets in standby (push) of a transmitter code to assign to the pedestrian opening function (see TPED parameter). Press the transmitter key you intend to assign to this function. If the code is valid, it is saved and the message OK is displayed

DIAGNOSTIC

On the Trust control board, all the commands, errors and status are displayed through segments on the LCD display. The vertical segments are usually N.C. commands whereas the horizontal segments are N.O. commands.



MANUAL RELEASE

In absence of power supply, the operators can be unlocked by following the below procedure.

