



# DTS EM Swing Motor

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# SWING GATE MOTOR

## Features

1. Manual release in case of power failure or maintenance.
2. Commercial & solar energy power can be switched optionally.
3. Immediate stop function.
4. Adjustable time of high & slow speed.
5. Adjustable force of high & slow speed.
6. Auto close function.
7. Adjustable closing time delay for motor with electric lock.
8. Single & double swing option.

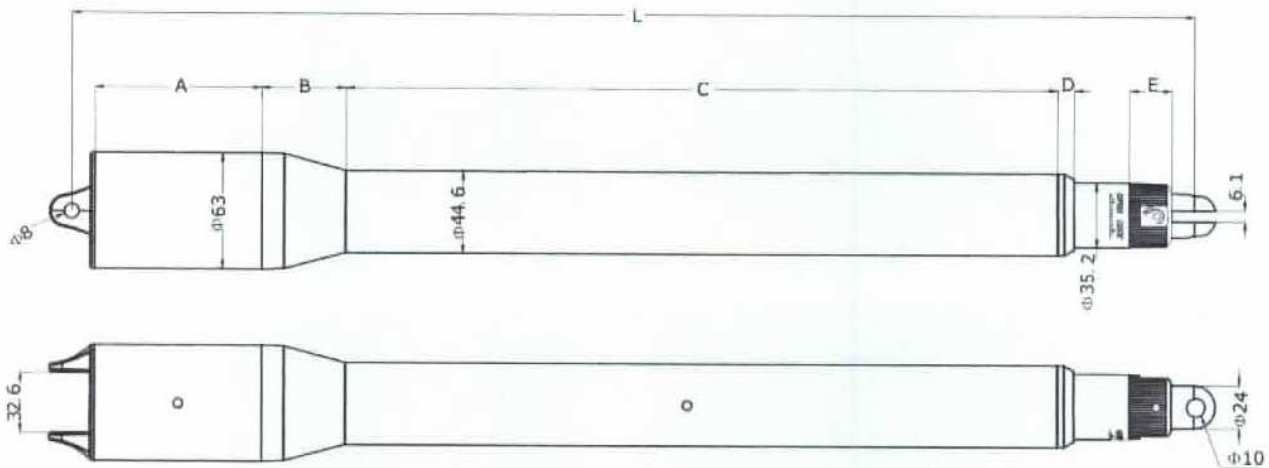
## Technical specifications

### Electrical.

Operating voltage	DC 24V
Electronic controller	Microcontroller based
Safety detection	Over current detection
Safety barrier	Infrared beam sensor
IP Rating	IP66

### Mechanical Installation

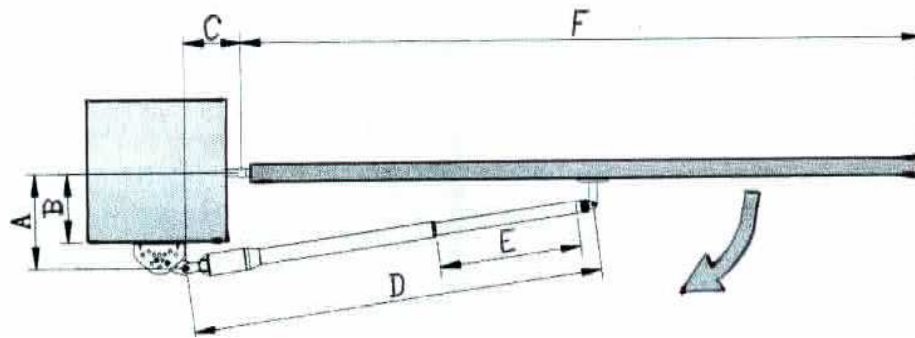
#### Dimensions



Model	A	B	C	D	E	L
EM3 Plus	135	45	550	9	24	805/1255
EM3	135	45	425	9	24	680/1030

## Installation Dimensions

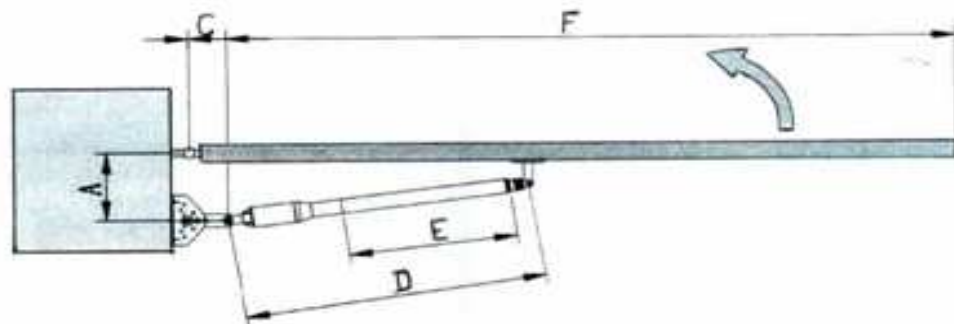
### Inward Swing



Measurement :mm

Model	A	B	C	D	E	F
EM3 Plus	≤ 275	≤ 200	≤ 180	1320	450	≤ 3500
EM3	≤ 225	≤ 150	≤ 130	1086	350	≤ 2500

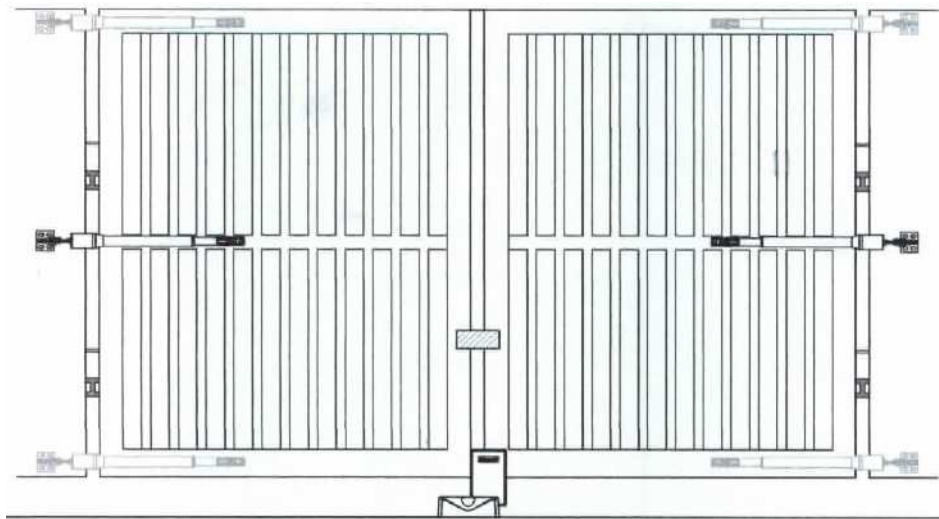
### Outward Swing



Measurement :mm

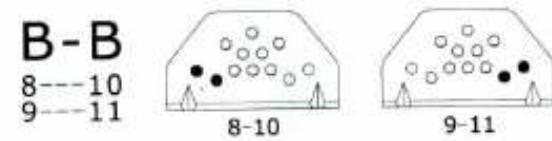
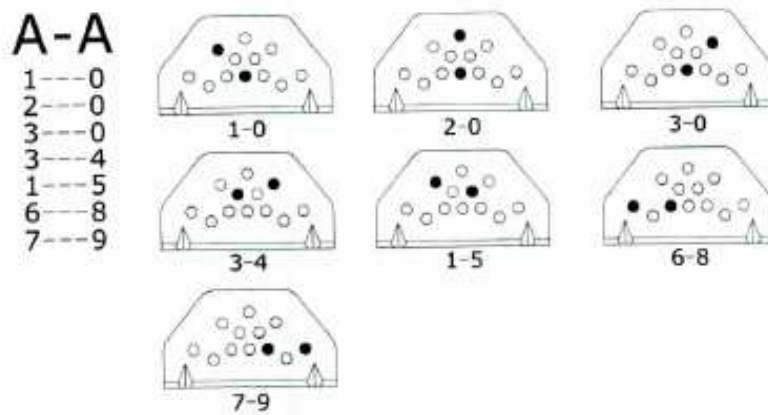
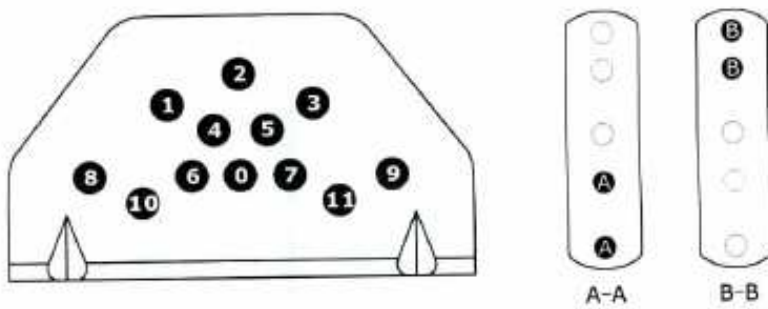
Model	A	C	D	E	F
EM3 Plus	≥ 400	≥ 180	870	450	≤ 3500
EM3	≥ 250	≥ 100	736	350	≤ 2500

Standard Installation

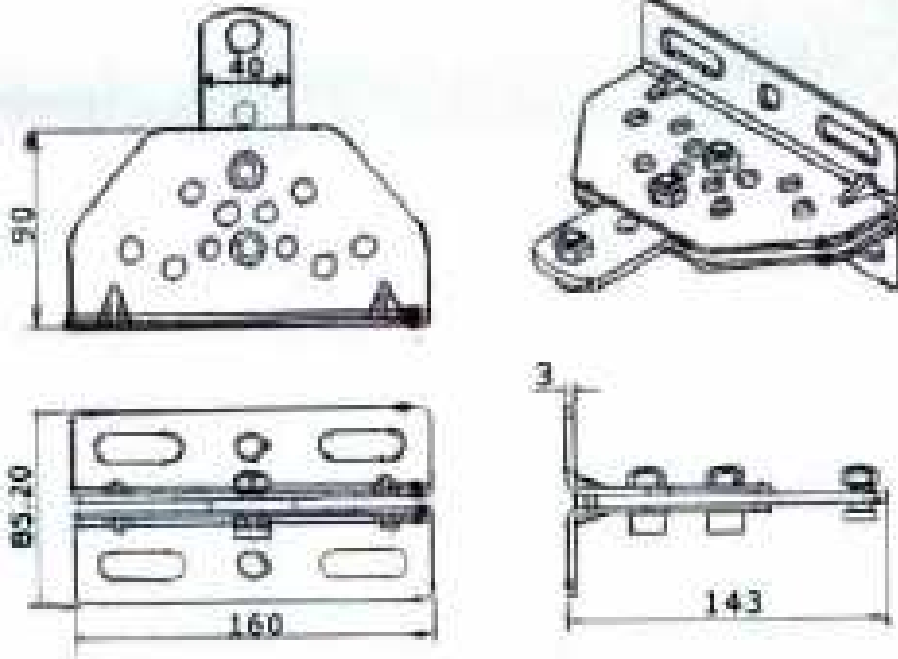


Note: Fixed stoppers must be fitted on the open & close positions of both gates.

Post Bracket (Pb1) Installation options

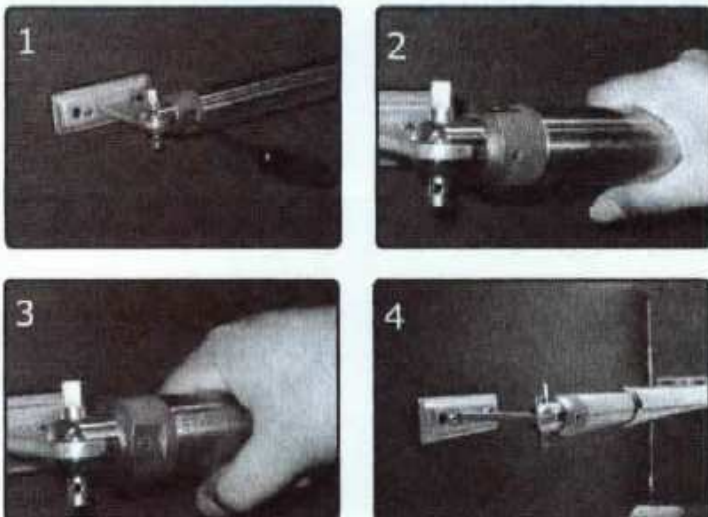
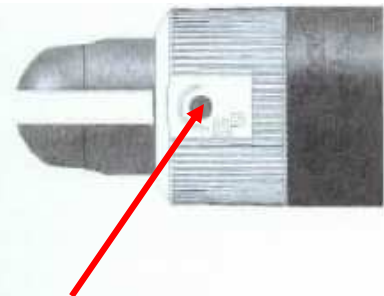


## Post Bracket (Pb1) Installation options (Cont.)



## Manual Release

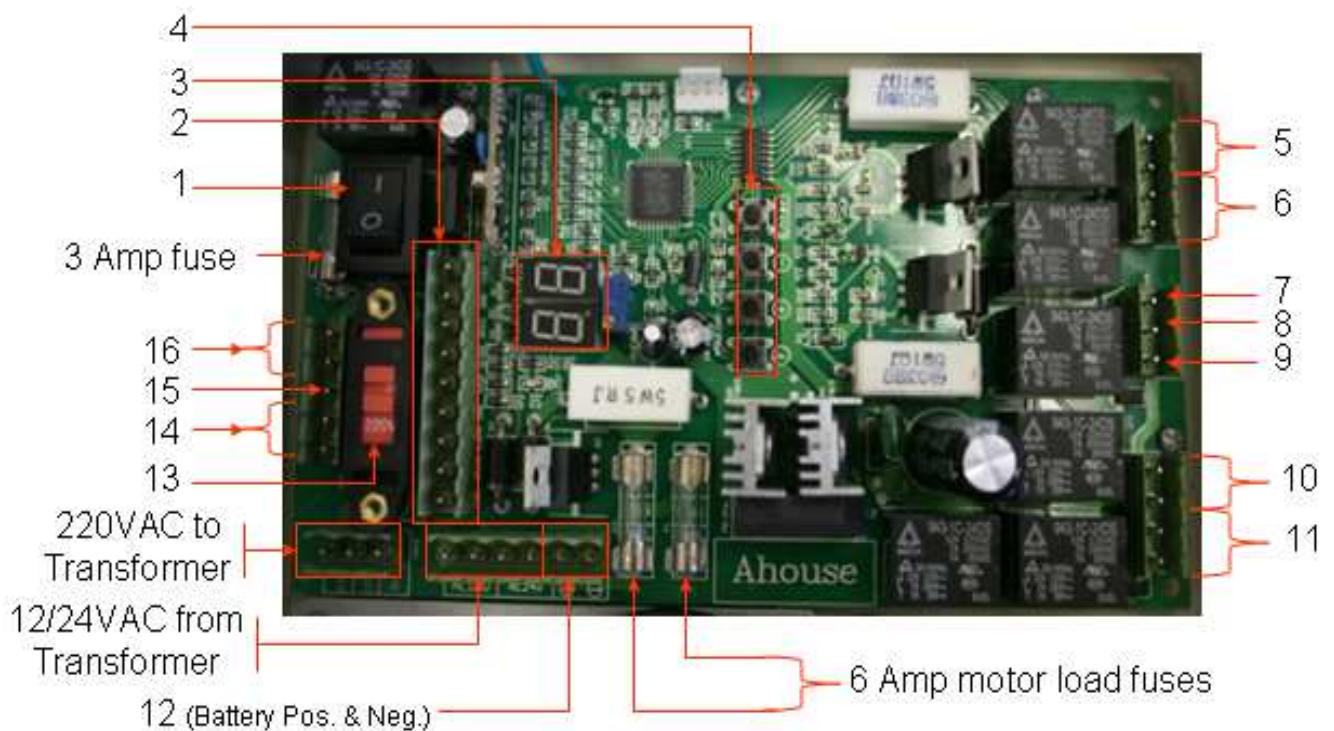
In case of a power failure, the operator can be disengage from the gate. Follow the directions below to release and rotate the operator to enable the manual release function.



1. Using Allen Key to unlock the manual release function.
2. Toward the "open" direction to rotate the moving part of operator
3. 90 degree or 1/4 turn to unlock position.
4. Now the manual release function is enabled, when maintaining or no power.

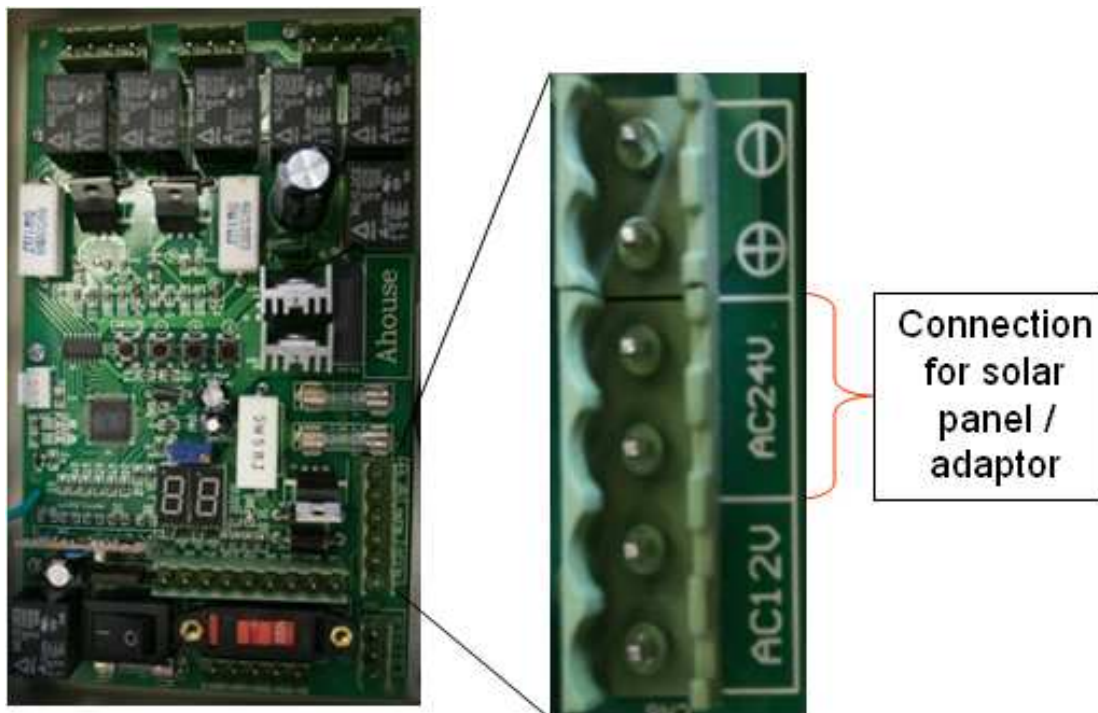
<b>Electrical</b>	<b>EM</b>	
Operating Voltage	DC 24V	
Electronic Controller	Microcontroller Based	
Safety Detection	Over Current Detection	
Safety Barrier	Infrared Beam Sensor (Optional)	
IP Rating	IP66	
<b>Mechanical</b>		
<b>Swing Type</b>	<b>EM 3 Plus</b>	<b>EM 3</b>
Max. Piston Stroke	450mm	350mm
Max. Length of motor	1255mm	1030mm
Max. Leaf's Weight	350 kg/ Leaf	300 kg/ Leaf
Suitable Leaf's Length	2 to 3.5 Meter/Leaf	1.5 to 2.5 Meter/Leaf
Frame Housing	Stainless Steel / Aluminium Alloy	
Driving Method	Screw Driven Piston Type	
Opening Degree	0 to 110 degree	
90 Degree Rotation Time	8 to 12 seconds	
Operating Temperature	-25 degree C to +55 degree C	

### **Process Control Board (PCB)**



- |                                  |  |
|----------------------------------|--|
| 1- Power ON/OFF Switch           | 9 - 15VDC (stable voltage)               |
| 2 - Connections for accessories  | 10 - 24VDC Electric lock                 |
| 3 - Indicator                    | 11 - 24VDC Flashing light                |
| 4 - Function adjustment buttons  | 12 - 24VDC Battery back-up (2 x 12V/7Ah) |
| 5 - Motor A (with electric lock) | 13 - 220 & 110 VAC Switch                |
| 6 - Motor B                      | 14 - 220VAC input                        |
| 7 - 24VDC (unstable voltage)     | 15 - Earth                               |
| 8 - 0V                           | 16 - AC Flashing light                   |

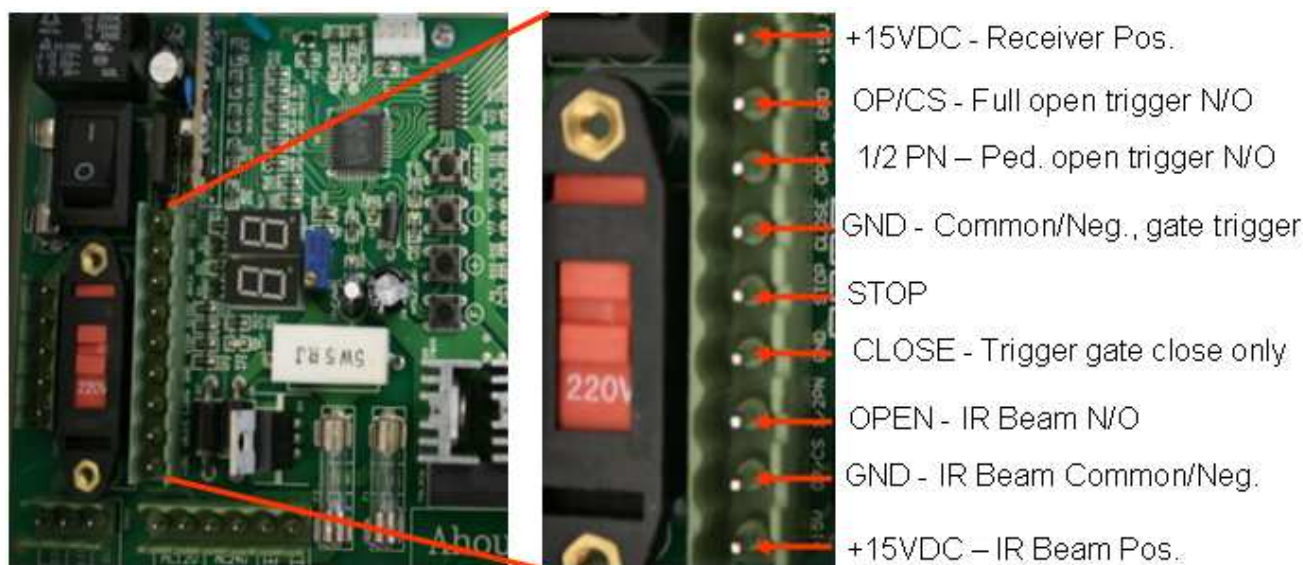
**Solar control system wiring**



**LED Status indications**

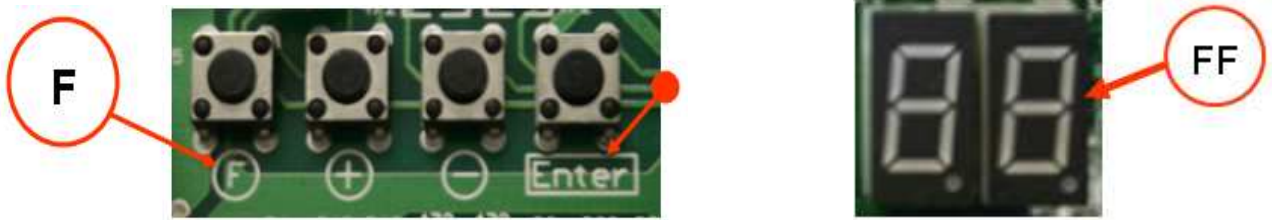
- LED1 – Motor A open
- LED2 – Motor A close
- LED3 – Motor B open
- LED4 – Motor B close
- LED5 – Will blink when power up
- LED6 – Receiver signal
- LED7 – Manual input trigger signal

**Wiring for optional accessories**



**Programming of Transmitter.** (This must be done before programming of motors).

**This transmitter is only to be used for programming of motors.**

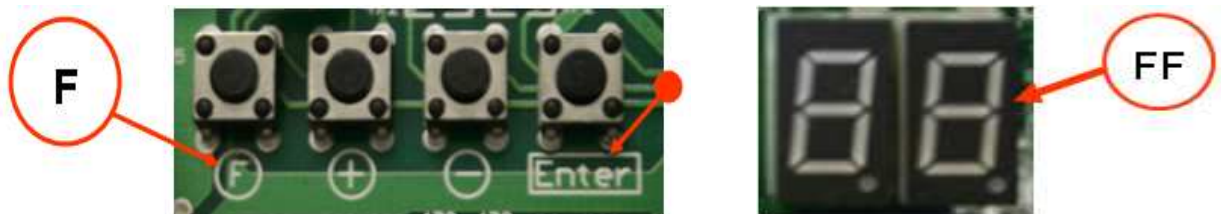


- Press and hold the “F” button on the PCB (process control board) until “FF” starts flashing on the display.



- Press and hold the “STOP” button (the button with a square on the transmitter) until the display changes status.
- Allow approximately 20 - 25 seconds for PCB to exit program mode.
  - \* To verify successful TX programming – press & release TX button, LED6 should react.

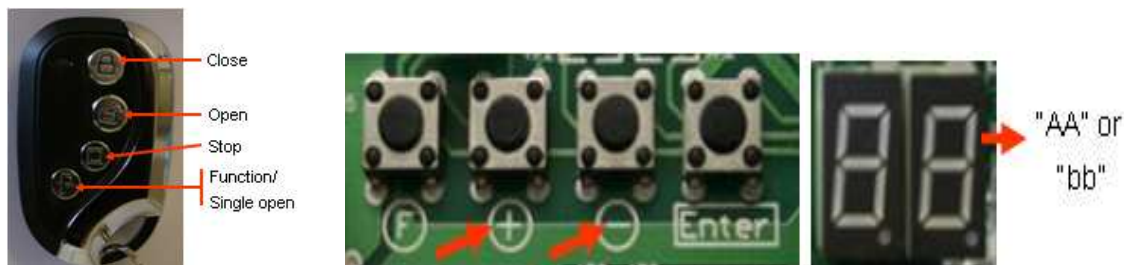
**Master erase the receiver.**



- Press and hold the “F” button on the PCB until “FF” starts flashing on the display.
- Press and hold the “ENTER” button on the PCB (approximately 1 second) until “FF” changes status.



## **Programming motor A (Master).**



- Start with the gate halfway between open and close position.
- Press and hold the “+” button on the PCB until “AA” starts flashing on the display.
- While pressing and holding the “STOP” button on the transmitter, press and hold the “OPEN” button on the transmitter until the gate starts to move. (If the motor starts to close, abort programming, swop motor wires around on the PCB and start again).
- Forceable stop the gate within 7 seconds from time of gate movement.
- While pressing and holding the “STOP” button on the transmitter, press and hold the “CLOSE” button on the transmitter until the gate starts to move.
- Forceable stop the gate before it reaches the close position.
- Manually close the gate.
- While pressing and holding the “P” button on the transmitter, press and hold the “OPEN” button on the transmitter until the gate starts to open.
- Allow the gate to run to the open end stopper.
- While pressing and holding the “P” button on the transmitter, press and hold the “CLOSE” button on the transmitter until the gate starts to close.
- Allow the gate to run to the close stopper.
- Push and release “F” button to go back to main menu which will be on “A1”.

## **Programming motor B (Slave).**

- Start with gate halfway between open and close position.
- Press and hold the “-” button on the PCB until “bb” starts flashing on the display.
- While pressing and holding the “STOP” button on the transmitter, press and hold the “OPEN” button on the transmitter until the gate starts to move. (If the motor starts to close, abort programming, swop motor wires around on the PCB and start again).
- Forceable stop the gate within 7 seconds from time of gate movement.
- While pressing and holding the “STOP” button on the transmitter, press and hold the “CLOSE” button on the transmitter until the gate starts to move.
- Forceable stop the gate before it reaches the close position.
- Manually close the gate.
- While pressing and holding the “P” button on the transmitter, press and hold the “OPEN” button on the transmitter until the gate starts to open.
- Allow the gate to run to the open end stopper.
- While pressing and holding the “P” button on the transmitter, press and hold the “CLOSE” button on the transmitter until the gate starts to close.
- Allow the gate to run to the close stopper.
- Push and release “F” button to go back to main menu which will be on “AO”.
- Allow approximately 20 - 25 seconds for PCB to exit program mode.

## Adjustments

Step 1: Press “F” button, the display must shown the letters “AO”

Step 2: Press “+” button to select the desired function from “A1 – C5”.

Press “-“ button to select backwards.

Step 3: Press “F” button again and the display will indicate numbers.

Step 4: Choose the required number by using the “+” & “-“ buttons.

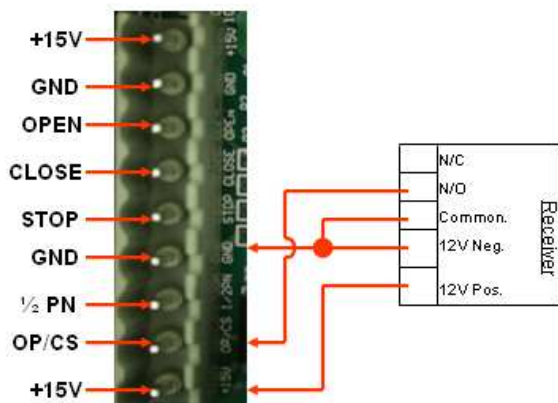
Step 5: Press “Enter” button to store that setting.

Step 7: Exit program mode by powering down & up using the I/O switch on the PCB.

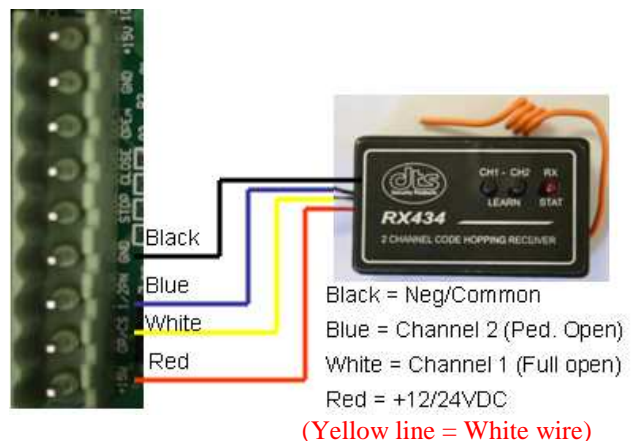
Item	Name	Setting Range	Description	Remarks	
A0	B0	Intermediate stop function with slow speed	0 - 99	Default setting : 15	A0 to A7 : motor A B0 to B7 : motor B
A1	B1	Intermediate stop function with high speed	0 - 99	Default setting : 43	
A2	B2	Time of opening slow speed	0 – 9,9s	Default setting : 5	
A3	B3	Time of opening high speed	0 – 99s	Default setting : 3	
A4	B4	Time of closing slow speed	0 – 9,9s	Default setting : 5	
A5	B5	Time of closing high speed	0 – 99s	Default setting : 3	
A6	B6	Force of opening & closing slow speed	0 - 99	Default setting : 46	
A7	B7	Force of opening & closing high speed	0 - 99	Default setting : 99	
C0	Reverse swing of motor A	0 - 2	"0" neither gate lock or opposite open operation "1" having gate lock operation, but no opposite open operation "2" having both gate lock & opposite open operational	Default setting: 2	
C1	Electrical Lock	0 - 1	"0" no gate lock operation when close "1" having gate lock operation when close	Default setting: 1	
C2	Motor delay setting	0 - 3	"0" only motor A works "1" motor B delay start when opening "2" motor B delay start on open, motor A on close "3" motor A & B starts same time	Default setting: 2	
C3	Auto close time setting	0 – 99s	"0" cancel auto close "1-99 auto close time in seconds	Default setting: 0	
C4	Open & Close delay time	0,1 – 9,9s	Motor B delay open, motor A delay close	Default setting: 2	
C5				Reserved function	

**Please note:** C1, C2 & C3 can be adjusted from 0 – 99, but only the setting as per description range is valid.

## External Receiver Connection



## Optional DTS 2 channel receiver



## **Manufacturers warranty.**

- **All goods manufactured by DTS Security Products carry a 12 month factory warranty from date of invoice.**
- **All goods are warranted to be free from faulty components and manufacture.**
- **Faulty goods will be repaired or replaced at the sole discretion of DTS Security Products, free of charge.**
- **This warranty is subject to the goods being returned to the premises of DTS Security Products.**
- **This warranty excludes lightening damage, insect damage and damage caused by faulty installation.**
- **In the event of the goods being supplied by dealer, merchant, agent or duly appointed installer of DTS Security Products, the claim must be directed to that supplier.**
- **The carriage of goods is for the customer's account.**
- **This warranty is only valid if the correct installation and application of goods, as laid out in the applicable documentation accompanying said goods, is adhered to.**
- **All warranty claims must be accompanied by the original invoice.**
- **The liability of DTS Security Products and / or their distributors is limited as herein set out DTS Security Products and / or their distributors will not be liable for consequential or incident damages howsoever arising.**