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# Owner's Manual

# For

# DIGITAL
# Sliding Gate Motor

# Model: SL-450 ECA

(Version 1)

# 1 Introduction

## 1.0 Specification :

Maximum Gate Weight : 400Kg
Speed: 17cm/Sec.
Power supply: 220 - 245V AC / 50Hz
Motor type: 12VDC
Backup battery: 12VDC / 4AH.

## 1.1 Inclusion

| Description | Q'ty |
|---|---|
| MOTOR | 1 |
| Override Key | 2 |
| Remote control | 2 |
| Mounting base plate | 1 |
| Quadrate washer | 20 |
| Gear rack | 10 |
| Limit stopper | 2 |

## 1.2 General Features

- Rolling-code remote controls for top security.
- Adjustable over current protection for safe opening and closure.
- Built in backup battery for emergency power-fail operation.
- "Service Free" teaching remote controls; no need to access the motor.
- Programmable timer for automatic closure.
- Automatic setup; fast-speed and slow-speed time are set automatically.
- Slow-down & Speed-up in opening and closure modes for soft operation.
- Three operation modes to choose from.
- Access control inputs, to enable full control of the motor.
- Four selectable speed operations by the remote control.
- Automatic courtesy light output, to turn ON any light for 5 minutes.

### 1.3 Before you start installing the operator, please check

1.3.1 Make sure of the flatness of the installation site. Installation on a slope land may cause an unexpected abnormal situation.

1.3.2 Make sure the gate wheels have been mounted properly and are in good condition.

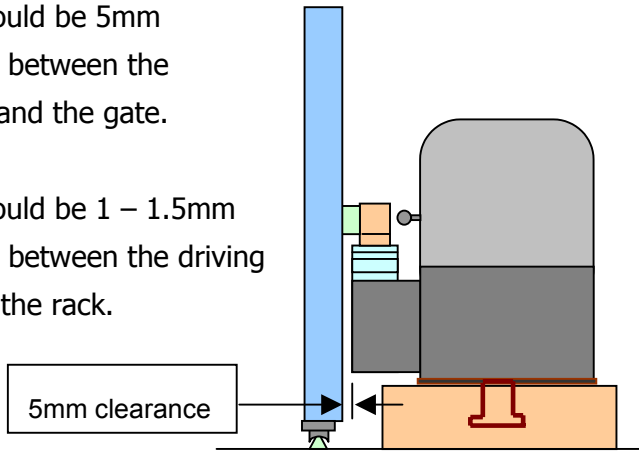
1.3.3 Make sure the sliding rail is mounted straight and flat.

1.3.4 Make sure the top guide is in axis with the rail, lubricated and gives the gate 1mm play.

### 1.4 Choose the position which is suitable for installing the operator

1.4.1 There should be 5mm clearance between the operator and the gate.

1.4.2 There should be 1 – 1.5mm clearance between the driving gear and the rack.




### 1.5 Install the operator and gear rack

1.5.1 Fix the mounting base plate on the ground by use of concrete.

1.5.2 After mounting base plate is fixed, just loose 4 screws and take the controller housing off.

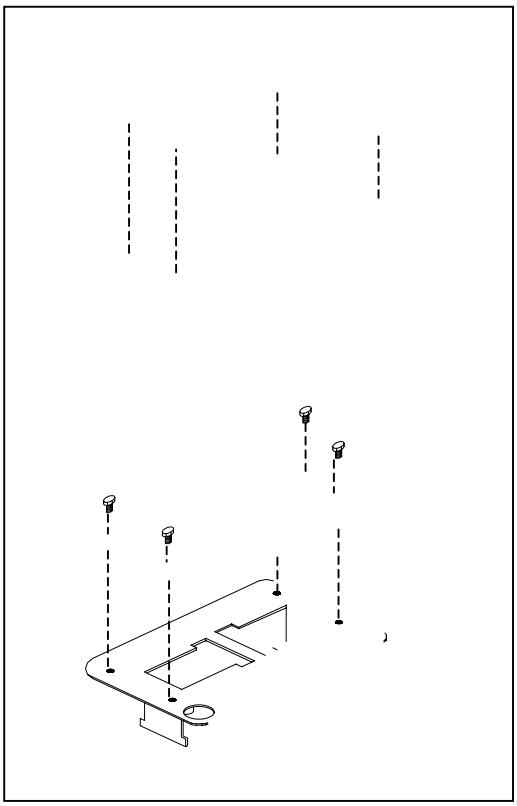
1.5.3 Put the gear box plate onto the mounting base plate, fix it by 4 screws.

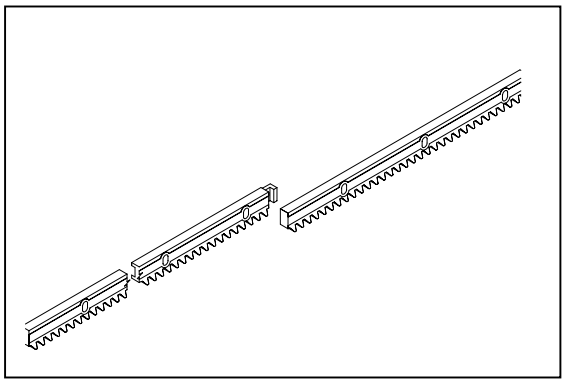
1.5.4 The cables coming from the ground should be led to the controller housing through the holes on the gear box plate and the mounting base plate.

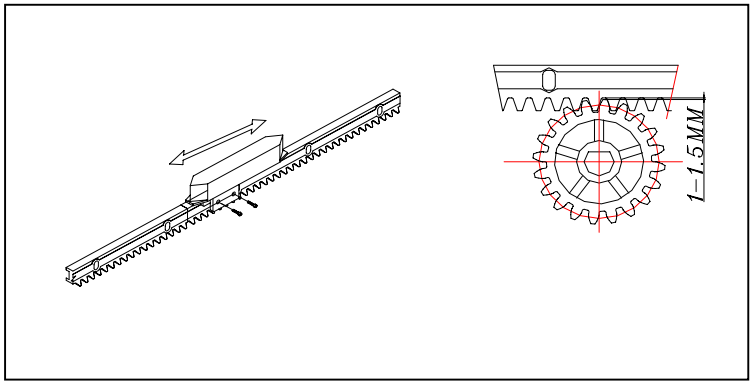
1.5.5 Fix the controller housing on the gear box plate by the same 4 screws.

1.5.6 Fix the gear rack on the gate according to the requirement listed in 2.1.1 and 2.1.2

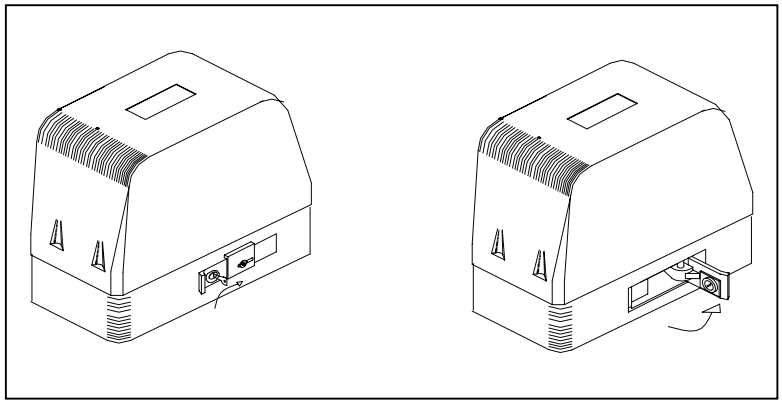
1.5.7 Fix two limit stoppers on both ends of the gear rack.








1.5.8 Turn the release key clockwise and open the cover, the operator can be released. Push the door manual along the rack to check if the transmission from the operator gear to the rack is smooth and if the positions of the limit stoppers are correct.



## 1.6 Control PCB Wiring

1.6.1 Make sure to connect the positive terminal of the battery to the RED wire and the BLACK wire to the negative terminal of the battery.

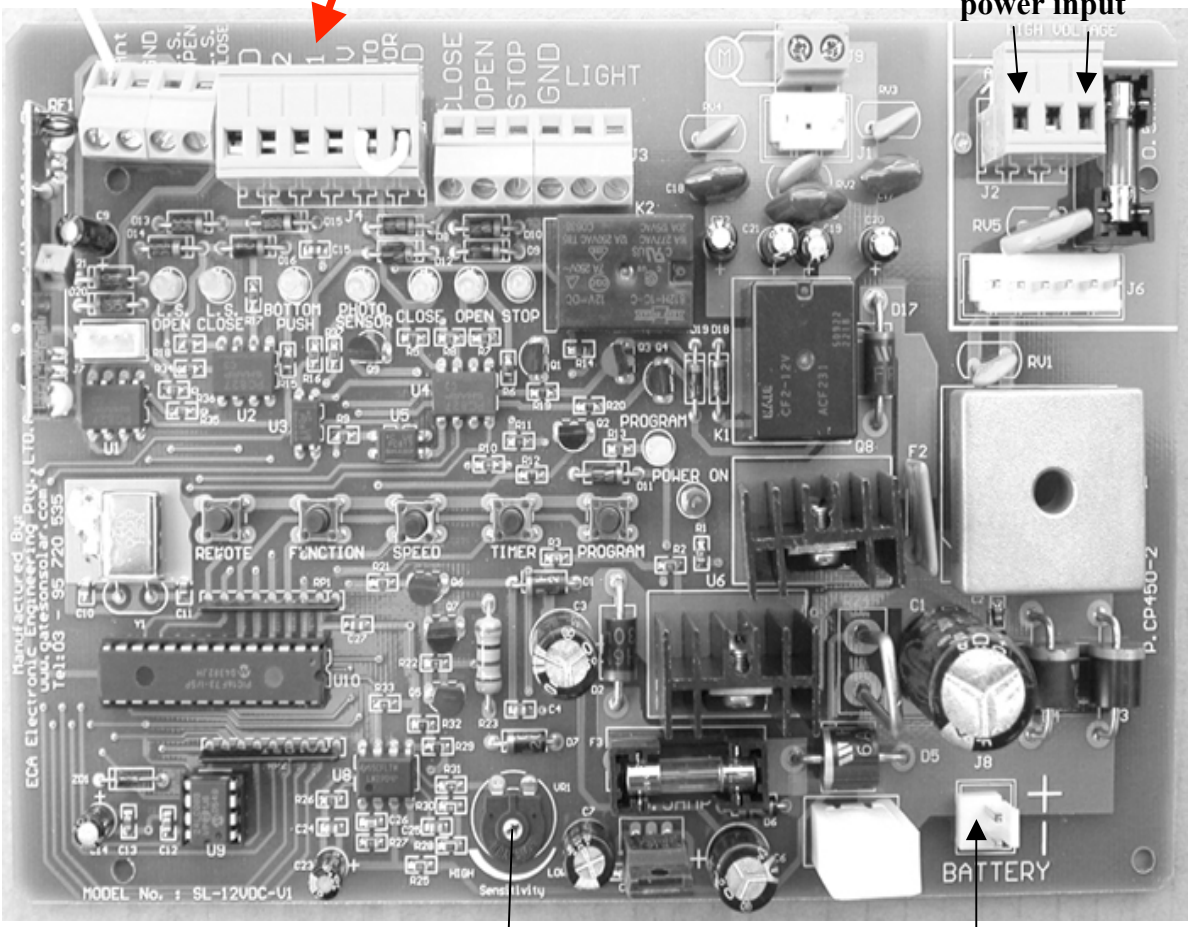
**Wrong connection may cause damage to the battery**.

1.6.2 Connect the wire of the AC 240 V power to the J2.

PB1 + Ground to operate Open & Close Like Normal Gate

PB2 Pedestrian must be voltage free

**240V AC power input**




**Anti-Crash sensor adjustment**

**Battery Plug**

## 2.3.3. Connections in the control panel

| Input / output | Description |
|---|---|
| **LIGHT** output | Normally Open and Common contacts of the light relay for courtesy light switching. |
| **STOP** input | Connect to N.C. push button and to GND to Stop the gate. **Jumper this input to GRD if not in use**. |
| **OPEN** input | Connect to N.O. push button and to GND to Open the gate. |
| **CLOSE** input | Connect to N.O. push button and to GND to Close the gate. |
| **PHOTO SENSOR** Input | Connect to the Normally Close contacts of the photo sensor's relay. Jumper this terminal to GND if photo sensor has not been used, otherwise, the systems wouldn't operate. |
| **P.B.1** Input | Connect to Normally Open Push Button to open and close the gate for manual operation. |
| **P.B.2** Input | Connect to Normally Open Push Button or to the intercom system's relay (must be voltage free contacts) to operate the pedestrian mode – to open 1m' only. |
| **Ant. Input** | Antenna input. Connect to External Aerial Model ANT-433 for extending operation range. |

To add a receiver to work off one button relay wire goes into P.B.1

This is the same as setting up the limits on a gate as the motor calculates the time it takes to open and shut.

## 3. Automatic SETUP - Setting the opening & closing time

After installing the motor, the control panel must be set to learn the opening and closing time as follows:

**Step 1.** Put the gate on manual and open the gate to half open position and re-engage the gate back in gear.

**Step 2.** Press and release Push Button " **TIMER**" on the control panel and the program LED will turn ON.

**Step 3.** Press and release **button ( I )** on the remote control and the set-up will begin.

The gate will open and close twice and the control panel will set the opening and closing time; fast and slow time automatically.

## 4. Operation program

The control panel has three options of programs that you can choose from, for operating the gate.

**Program No. 1 : Semi automatic – Step By Step**

When choosing this type of operation, the gate will open, close or stop by the command of the remote control or the manual push button only (if connected). The first command opens the gate, the second stops, the third closes the gate, and the fourth stops the operation and so on.

**Program No. 2 : Automatic operation**

For automatic closure operation. When pressing the remote control, the gate will open and stay open for a preset time, after which the gate will close automatically.

**Program No. 3 : Secure Automatic operation**

The same as program (II) Automatic operation, but in addition:
After the gate is opened, it will close immediately as soon as the safety photo-electric sensor is cleared.
The gate will stay open for all the preset time of automatic closure as long as no car has passed and cut the photo sensor's beam.

## 4.1. Choosing the required operation program

You can make your selection by the push button "**PROGRAM"** in the control panel, as follows:

Step 1. Press and release Push Button "**PROGRAM"** on the control panel and the program LED will turn ON.

Step 2. Choose and press; On the remote not the board

Button ( I ) on the remote control for operation program No. 1

Or

Button ( II ) on the remote control for operation program No. 2

Or

Button ( IV ) on the remote control for operation program No. 3

The program LED will turn Off to confirm your selection

## 4.2. Setting the auto close timer

This function only works if you have selected program No 2 for auto close

This computerized control panel has a **programmable** auto-close timer that can be set very easily as follows:

Step 1. Press and release Push Button " **TIMER**" on the control panel and the program LED will turn ON.

Step 2. Press and release button (II) on the unit's remote control and the light relay and the program LED will start to flash.

Step3. Wait the period of time you wish to set the Auto Close Time (for example 15 seconds) and then press and release button (II) on the remote control once again.

The PROGRAM LED and the light relay will stop to flash, to indicate that the auto close delay time has been set for automatic operation.

## 5. Choosing the right speed for the motor

The control panel allows you to select one out of four different speeds for the gate to slow down at the end of the travel and ramp-up. To select the right speed do as follows:

1. Press and release **"SPEED"** push button in the control panel and the program LED will turn ON.
2. Press **button ( I )** on the Remote control for **canceling the slow down speed**.
3. Press **button ( II )** on the Remote control for **Medium High speed slow down** => 90%
4. Press **button ( III )** on the Remote control for **Medium Low speed slow down** => 80%
5. Press **button ( IV )** on the Remote control for the **Lowest Speed Slow down** => 70%

## 6. Setting and choosing features

The control panel allows you to set four different functions and features according to your needs;

## 6.1. Choosing the function for the LIGHT RELAY

The Light Relay can operate as a ***Courtesy Light output*** or as a ***warning Light output***. You can choose one of these two option for the light relay to operate;

To select the desired option do as follows:

1. Press and release Push Button **"FUNCTION"** on the PCB and the program LED will turn ON.
2. Press button ( I ) on the remote control to change the setting from "Courtesy Light" to "Warning Light".

If you wish to restore the setting to "Courtesy Light" – repeat step 1 & 2 above.

**Note !**

The Courtesy Light function will turn On the light relay after each operation of the gate and turn OFF automatically after 5 minutes.

## 6.2. Enable / Disable the Photo Sensor function in opening mode

The control panel is responding to the photo sensor in closure mode, which will open the gate each time the photo sensor is triggered during closure time. However, you can set the control panel to respond to the photo senor also in the opening mode. In such a case, the **gate will stop** during opening, if the sensor is triggered.

You can choose and define the photo sensor's function during opening mode, as follows:

Step 1. Press and release Push Button **"FUNCTION"** on the PCB and the program LED will turn ON.

Step 2. Press button ( II ) on the remote control to set the "Photo Sensor" to be active during opening mode too.

If you wish the photo sensor to be active only in closing mode – repeat step 1 & 2 above.

## 6.3. Setting the motor to be with or without Soft Start (ramp-up)

The control panel is set to start opening and closing the gate with a soft start, however, you can choose to cancel this feature as follows:

Step 1. Press and release Push Button **"FUNCTION"** on the PCB and the program LED will turn ON.

Step 2. Press button ( III ) on the remote control to cancel the soft start.

If you wish to restore this feature – repeat step 1 & 2 above.

## 6.4. Setting the motor for LEFT or RIGHT installation

The control panel is set **to open to the right** and **close to the left** direction. However, you can change the opening and closing direction of the motor if the motor is installed on the opposite side of the gate.

You can change between opening and closing mode as follows:

Step 1. Press and release Push Button **"FUNCTION"** on the PCB and the program LED will turn ON.

Step 2. Press button ( IV ) on the remote control to swap directions.

If you wish to swap once again and restore the setting – repeat step 1 & 2 above.

## 7. Anti-Crash sensor adjustment:

The level of the Over-Load-Protection can be adjusted by the variable sensitivity pot on the control panel.

To set the sensitivity level of the anti crash sensor do as follows:

Step 1. Press the remote control to close the gate.

Step 2. While closing, press with your hand against the gate to stop the gate from closing.

If the gate stops with an unreasonable force, increase the sensitivity by turning the pot in the control panel to higher sensitivity level to get a satisfactory level of force.

## 8. Remote Control Teaching & Deleting the Memory

The control panel's radio receiver can learn up to 160 remote controls into its memory. It can learn any of the buttons (I), (II) or (III) of the remote control (model TR-4RS) for operating the gates. Button (IV) is reserved for operating Motor-2 **only** as a pedestrian gate, if required. There are two ways of teaching new remote controls:

### 8.1. Teaching remote controls from the control panel

Press and release the "REMOTE" button in the control panel and the program LED light will start to flash indicating that the receiver is ready to learn the new remote control's button. Choose and press one of the buttons (I), (II), (III) or (IV) in the remote control for one second and the LED light will stop flashing to indicate that the remote control's button has been learned into the receiver's memory.

### 8.2. "Service – Free" Teaching Method

This method allows the end user to teach new remote controls into the receiver's memory without the need of neither a technician nor opening the control panel's box. Use an operational remote control of the unit, (a remote control that operates the unit ) to teach a new remote control into the receiver's memory as follows:
Use the remote control that already operates the system and stand about 1m' from the control panel box. Press and hold both the buttons (II) and (I) simultaneously for 5 second. After releasing the buttons of the original remote control, the light relay in the control panel will start to "CLICK", indicating that the receiver is ready to learn the new remote control's button. **Choose**, press and release for one second one of the buttons (I), (II), (III) or (IV) of the **NEW remote control**. The "CLICK" sound of the light relay will stop to indicate that the remote control's button has been learned into the receiver's memory.

### 8.3. Setting PEDESTRIAN MODE by the remote controls.

Button ( IV ) is reserved for pedestrian access only. By programming button ( IV ) of the remote controls into the Control panel, the end user will be able to operate the gate in pedestrian mode.
By pressing button ( IV ) on the remote control, the CP will open the gate for 1m' and stop. The gate will stay open in Semi Automatic Mode (Step By Step Mode) till this button is pressed once again or the gate will close automatically if Automatic Mode is chosen in the CP.

You have to be quick in this part or they don't delete so read the section fully. / Basically you have to be quick pushing the remote button a second time before the light goes out

### 8.4. Deleting all remote controls from the receiver's memory

Press and HOLD the "REMOTE" button in the control panel till the Program LED turns on (a "CLICK" sound will be heard). Now, you have 5 seconds to press and release the "REMOTE" button once again, in order to clear the receiver's memory. If the "REMOTE" push button has not been pressed within the 5 seconds, the control panel will exit this mode and turn off the program LED light indicating **cancellation**.
If you press and release the "REMOTE" push button within the 5 seconds, the program LED light will start to flash indicating that "**Clearing the Memory is in Process**". Please wait one second after the program LED light stops flashing before you operate the system.