

# ECI 109-5 LCD Closed Loop Door Operator Board Instruction Manual

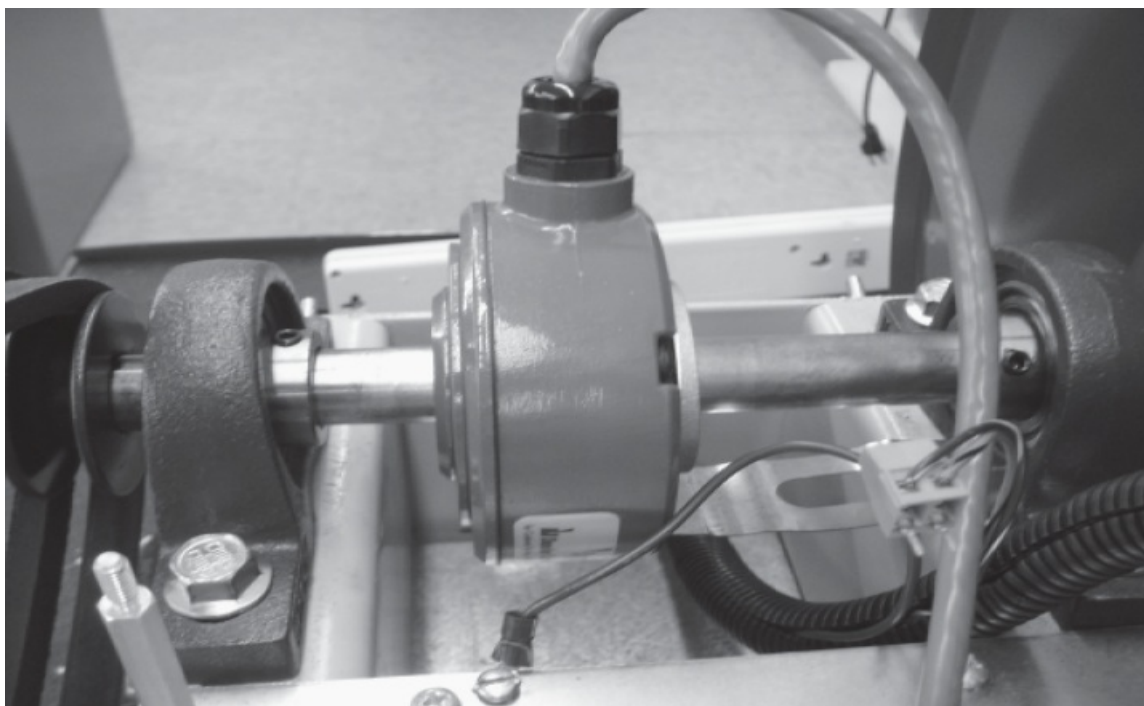
[Home](#) » [ECI](#) » ECI 109-5 LCD Closed Loop Door Operator Board Instruction Manual 

## Contents

- 1 ECI 109-5 LCD Closed Loop Door Operator Board
- 2 Revision Sheet
- 3 Warning and Disclaimer
- 4 Trademarks
- 5 Safety Information
- 6 Introduction
  - 6.1 Point of Contact
- 7 Installing the ECI 109-5 LCD board
  - 7.1 Electric Wiring of the Control Board
- 8 LCD Display Menu Structure
- 9 Board Provides the Following Features
- 10 Parameters and there Functions
  - 10.1 Learning Cycle
- 11 103109-5 LCD Control Board Adjusting Procedures
  - 11.1 Manually Move the Doors
- 12 Parameter Ranges
  - 12.1 Adjusting Operating Parameters (Editing Parameters)
- 13 Board Fuses
  - 13.1 Door Stall Timer
- 14 Input & Output Terminals
  - 14.1 For Old MAC and 104 Conversions
- 15 Microswitch Wiring
- 16 Troubleshooting Guide
- 17 Warranty Policy
- 18 Documents / Resources
  - 18.1 References
- 19 Related Posts



## ECI 109-5 LCD Closed Loop Door Operator Board



### Revision Sheet

Revision Number	Date	Revision Description
1.0	12/15/2010	New Manual.
2.0	12/31/10	Added Troubleshooting Guide.
3.0	2/19/2013	Added open PL speed and open PL position.
4.0	8/29/2013	Logo change.

### Warning and Disclaimer

Thank you for purchasing equipment from ECI America, Inc. We want your new equipment to operate safely. Anyone who installs or uses this equipment should read this publication (and any other relevant publications) before installing or operating the equipment. To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and usually change with time. It is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation is in compliance with the latest revision of these codes.

At a minimum, you should follow all applicable sections of the National Fire Code, National Electrical Code, ASME A17.1 Safety Code for Elevators and Escalators and the codes of the National Electrical Manufacturer's Association (NEMA). There may be local regulatory or government offices that can also help determine which codes and standards are necessary for safe installation and operation. Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

Our products are not fault-tolerant and are not designed, manufactured or intended for use or resale as online control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear

facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of the product could lead directly to death, personal injury, or severe physical or environmental damage ("High Risk Activities"). ECI America, Inc. specifically disclaims any ex-pressed or implied warranty of fitness for High Risk Activities.

This publication is based on information that was available at the time it was printed. We reserve the right to make changes to the products and/or publications at any time without notice and without any obligation.

## **Trademarks**

All trademarks or registered product names appearing in this document are the exclusive property of Electronic Controls, Inc.

## **Conventions Used**

When you see the "notepad" icon in the left-hand margin, the paragraph to its immediate right will be a special note. Notes represent information that may make your work quicker or more efficient. The word **NOTE:** in boldface will mark the beginning of the text.

When you see the "exclamation point" icon in the left-hand margin, the paragraph to its immediate right will be a warning. This information could prevent injury, loss of property, or even death in extreme cases. Any warning in this manual should be regarded as critical information that should be read in its entirety. The word **WARNING:** in boldface will mark the beginning of the text.

## **Safety Information**

Knowing the safety hazards related to any procedure you are about to perform, know what equipment has been specified for each specific contact, and know what tools and materials you should plan to have available beforehand. Before connecting electrical wiring, take precautions to prevent accidents from happening to yourself and other people around you.

### **Always consider safety first!**

- Wear a hard hat when working in the hoistway.
- Wear safety glasses or goggles when using power tools.
- Always wear protective gloves when installing or removing access covers, conduits, wire way or electrical devices.
- When working on car canopy, always be aware of where the sides of the car are located.
- Use properly grounded cords and power equipment (ground fault circuit interrupters).
- Make sure there are proper clearances in hoistway between the car and other devices.
- Before connecting wiring, cover sharp edges to keep hands and arms from being cut.
- Always assume that a circuit is live, disconnect power from all related circuits before proceeding with wiring.
- Clear wiring sites of any unnecessary materials or equipment.
- Always know where other people are and how the elevator wiring can affect their safety.
- Safety lock and tag out procedures are always required before performing any kind of service, repair, adjustment, lubrication or inspection of power driven equipment. These procedures help to prevent injury or death caused by power driven equipment.
- To reduce the danger of electrical shock, always make sure electrical connections are secure. Also, make sure no bare wires are exposed after pulling electrical cable.

- Use a circuit tester to be certain the circuit is not active before touching it.

## Introduction

This manual is intended to help facilitate the installation of ECI 109-5 LCD closed loop door operator board made by Electronic Controls, Inc. The audience of the material included in this manual is for the certified installation personnel. The ECI 109-5 LCD control boards complies with modern performance specifications and meets or exceeds code requirements. Installation and adjustments must meet local, state and national codes.

## System Overview

The ECI 109-5 LCD door controller is a microprocessor-based elevator door control board that controls all aspects of the door motion including direction, velocity, acceleration, deceleration and force. The 109-5 LCD replaces the Montgomery 105 door board fit, form and functions and will replace the old MAC, 3 board system. The motor controller (MC) is a unique design for simple installation and reliable performance. The motor controller (MC) provides for total control and adjustment through the entire door cycle and includes nudging. The doors are held under power while standing closed, during running and while standing open.

## Point of Contact

## Information

- Electronic Controls, Inc
- 7073 N. Atlantic Avenue Cape Canaveral, FL 32920
- **Tel:** 1-321-783-5858
- **Fax:** 1-321-783-5959
- [www.eciamerica.com](http://www.eciamerica.com)

## Installing the ECI 109-5 LCD board

### For Old Mac and 104 Conversions

1. Turn OFF all power to the door operator.
2. Remove the cover(s) from the operator.
3. Remove and tag all wires at terminal strips TB1, TB2 and TB3. (See figure 1.)
  1. **WARNING:** TB3 must have the wires connected
  2. A1 – Motor red wire
  3. A2 – Motor black wire
  4. COM – Power supply common black wire
  5. +45V – Power supply red wire. (See figure 1.)
4. Unplug the cam switch cable from CN1. (See figure 1.)
5. Unbolt and remove old board(s).
6. Mount the Encoder on the shaft with the 1.7 inch double Sheave. (See photo 1.)
7. The encoder can be mounted in either direction.
  - **After all hardware is back in place and adjusted**
8. Bolt the ECI 109-5 board in place.

9. Install all the tagged wires into the correct locations on TB1, TB2 and TB3. (See figure 1.)
10. Connect the cam switch cable to CN1. (See figure 1.)
  - **NOTE:** The CN1 connector is a 13 pin male connector and some operators only have an 11 pin female connector. In this case connect the 11 pin female starting with the pin 1 which is the pin closest to the TEST/RUN switch S4. (See figure 1.)
11. Connect the encoder cable to connector X2. (See figure 1.)
  - **NOTE:** Do not apply power at this time.
12. Now go to completing a learn cycle.

## **Electric Wiring of the Control Board**

### **NOTE**

Refer any and all code installation questions to Elevator and Escalator Electrical Equipment Standard CAN/CSA-B44.1/ ASME 17.5

Before applying power verify that the RUN/TEST switch is in the TEST position, the OPEN/OFF/CLOSE is in the OFF, center position and the doors are half way open.

## **LCD Display Menu Structure**

### **Edit Parameters**

Displays the parameters that can be adjusted.

- Close Min Speed
- Close Max Speed
- Close Slow Down
- Close Fault SP
- CL Torque Limit
- Open Min Speed
- Open Max Speed
- Open Slow Down
- Open Fault SP
- Acceleration
- Deceleration
- Nudging
- Open PL Speed
- Open PL Position

### **Load Defaults**

- Loads default parameters.

### **Diagnostics**

- Displays information about the output section of the board.

## Learning Cycle

- Allows the operator to learn the limit switches.

## Technical Support

- Displays company information.

## Rotate Display

- Flips the display to be viewed from the other side of the operator.

## Board Provides the Following Features

**Enter Button:** This button has three (3) uses.

1. Pressing the Enter button moves the user into the highlighted menu field.
2. When in the parameter adjustment field pressing the Enter button while on the highlighted parameter to be adjusted will cause the highlight to be removed. Now adjustments (+ or -) can be made.
3. When finished adjusting a parameter pressing the Enter button will highlight that parameter again allowing the user to move to a different parameter using + or - or escape (ESC) back to the previous menu.

**Plus (+) Button:** This button has two (2) uses.

1. Pressing the + button when on a highlighted menu item causes the highlight to move in the up direction in the menu.
2. Pressing the + button when adjusting parameters will cause an increase in that parameter. For increasing the parameter values and moving the cursor in the up direction in the display menu.

**Minus (-) Button:** This button has two (2) uses.

1. Pressing the – button when on a highlighted menu item causes the highlight to move in the down direction in the menu.
2. Pressing the – button when adjusting parameters will cause a decrease in that parameter.

- **ESC Button:** Pressing the ESC button returns the display to the previous menu.
- **TEST/RUN Toggle Switch:** This allows normal operation or manual mode for programming and adjusting.
- **OPEN/CLOSE Toggle Switch:** This allows for open or close operation when in the manual position.
- **Com Port:** For initial programming of the board.

Microprocessor with a flash program and data ram allows field reprogramming if it is required.

## Nudging

- Programmable CPU for adjustments.
- Built in fuse on the voltage side for board protection. (5 amp)
- LCD screen for field adjustments and display operating status.

## Parameters and there Functions

- **Close Min Speed:** Minimum allowable speed in the closing direction.
- **Close Max Speed:** Maximum allowable speed in the closing direction.
- **Close Slow Down:** It is the position where the door starts to slow down.
- **Close Fault SP:** Closing speed if there is an encoder failure.
- **CL Torque Limit:** Torque setting for the closing direction.
- **Open Min Speed:** Minimum allowable speed in the opening direction.
- **Open Max Speed:** Maximum allowable speed in the opening directions.
- **Open Slow Down:** It is the position where the door starts to slow down.
- **Open Fault SP:** Opening speed if there is an encoder failure.
- **Acceleration:** How fast the operator moves once it is off either the open or close switch.
- **Deceleration:** How fast it operator slows down once it hit the slow down position.
- **Nudging:** The nudging speed.
- Open PL Speed Speed in the PL zone.
- Open PL Position Initial opening position though the lone area.

**NOTE:** Before applying power verify that the RUN/TEST switch is in the TEST position, the OPEN/OFF/CLOSE is in the OFF, center position and the doors are half way open.

## Learning Cycle

1. Move TEST/RUN switch to the middle position.
2. Place the doors in the middle of the door opening.
  - **NOTE:** During the learn cycle if the operator hits open switch and it is the close the operator board will self correct for the proper direction.
3. Hit the ENTER button. (Operator should move open, close, open and then close)
4. If the learn cycle was completed correctly hit the ESC button.
5. Scroll to the LOAD defaults section of the menu.
6. Hit the ENTER button.
7. Go to TEST and do an open and a close to verify the direction is correct and look at the movement.

## 103109-5 LCD Control Board Adjusting Procedures

### Manually Move the Doors

#### NOTE

- Use the (+) button to raise the number and (-) button to lower the number. (+) Button scrolls up and (-) Button scrolls down.
- At any time during these adjustments and the TEST/RUN switch in the TEST position you can manually open

and close the door with the OPEN/OFF/CLOSE switch to observe your changes.

1. Place the OPEN/OFF/CLOSE toggle switch in the OFF position.
2. Scroll down to edit parameters and hit ENTER.
3. Scroll down to the setting that you want to change, and hit the ENTER button.
4. Adjust the number to the desired setting, hit ENTER to save the new setting.
5. Once you have adjusted the parameters that you want to hit the ESC button.
6. Then check that your changes were proper by using the manual move the door section and verify your adjustments. If they are not ok then go back to section B (manually move the doors).
7. Once the parameters are set to give proper door operation place the OPEN/OFF/CLOSE switch to the OFF position.
8. Place the TEST/RUN toggle switch to run.
9. Observe door operation for several complete cycles.

## **Parameter Ranges**

### **NOTE**

1. Increasing the value of a parameter will cause an increase in that parameter. Example; Increasing Close Max Speed from 30 to 40 will cause the Close Max Speed to be faster.
2. Decreasing the value of a parameter will cause a decrease in that parameter. Example; Increasing Deceleration from 35 to 25 will cause the Deceleration rate to be slower.

- **Close Min Speed:** 1-100
- **Close Max Speed:** 1-100
- **Close Slow Down:** 1-1500
- **Close Fault SP:** 1-100
- **CL Torque Limit:** 1-100
- **Acceleration:** 1-100
- **Deceleration:** 1-100
- **Nudging:** 1-100
- **Open PL Speed:** 1-100
- **Open PL Position:** 1-500
- **Open Min Speed:** 1-100
- **Open Max Speed:** 1-125
- **Open Slow Down:** 1-1500
- **Open Fault SP:** 1-100

### **Adjusting Operating Parameters (Editing Parameters)**

### **NOTE**

- Use the (+) button to raise the number and (-) button to lower the number. (+) Button scrolls up and (-) Button scrolls down.



- At any time during these adjustments and the TEST/RUN switch in the TEST position you can manually open and close the door with the OPEN/OFF/CLOSE switch to observe your changes. You must ESC out of the Edit Parameters before they are saved if a power shut down happens.

1. Place the OPEN/OFF/CLOSE toggle switch in the OFF position.
2. Scroll down to edit parameters and hit ENTER.
3. Scroll down to the setting that you want to change, and hit the ENTER button.
4. Adjust the number to the desired setting, hit ENTER to save the new setting.
5. Once you have adjusted the parameters that you want to hit the ESC button.
6. Then check that your changes were proper by using the manual move the door section and verify your adjustments. If they are not ok then go back to section B (manually move the doors).
7. Once the parameters are set to give proper door operation place the OPEN/OFF/CLOSE switch to the OFF position.
8. Place the TEST/RUN toggle switch to run.
9. Observe door operation for several complete cycles.

### **Door Closing Force Adjustment**

1. Now that the doors are running at the desired speed and the RUN-TEST switch is still in the TEST position, stop the doors at the mid-point in the closing direction by toggling the OPEN-STOP-CLOSE to the STOP position (center).
2. Adjust the CCL parameter to 0.
3. Toggle the OPEN-STOP-CLOSE to the CLOSE position and increase the CCL parameter until you have achieved desired door close operation. This should put your door closing force below the thirty pound maximum allowed by code.
4. To insure you are below thirty pounds, use an approved pressure gauge per manufacturer's specifications and directions to verify door closing force is to code. (If closing force is over the thirty pound maximum allowed by code adjust the CCL parameter until the closing force is within code.)
5. Open and close the doors with the OPEN-STOP-CLOSE switch several times.
6. Recheck the door closing force again, to insure it is still to code, by physically stalling the doors in the closing direction with your approved pressure gauge.

### **Nudging Adjustment**

1. With the doors open, the OPEN-STOP-CLOSE switch in the STOP position and the RUN-TEST switch in the TEST position simulate a nudge signal by placing a jumper between L1A and D04. The D04 LED should light up.
2. Toggle the RUN-TEST switch to the RUN position.
3. Adjust the N parameter to the desired speed.
4. Toggle the RUN-TEST switch to the TEST position.
5. Remove the jumper between L1A and D04.
6. Verify the jumper between L1A and D04 is removed.
7. Toggle the RUN-TEST switch to the RUN position.
8. Replace door operator cover.

## Adjustments Notes

1. This equipment must be installed, adjusted and maintained to confirm to code requirements.
2. Parameters must be set to conform to kinetic energy code limitations for both maximum and average kinetic energy for ALL doors/all floors (specialty or otherwise heavy doors taken into account).
3. Parameters must be set to conform to closing force limitations. The closing force may not exceed 135 N (30 lbs). During the closing, the kinetic energy may not exceed 10 joules (7.4 lbs. Ft.).

**NOTE:** Refer any and all code installation questions to Elevator and Escalator Electrical Equipment Standard CAN/CSA-B44.1/ ASME 17.5.

## Board Fuses

### Board Location

- F1

### Fuse Type

- AGC5

## Diagnostics Screen

The Diagnostics screen displays the following information

- VBUS = 45V input voltage.
- DRIVE = % of total power being used and the Stall Timer. TEMP = Temperature of the output FETs.
- MOTOR = Current the motor is using.
- SPEED; POSITION=Overall speed in that direction and the encoder position. CYCLE = Total of full cycles of the door operation since being programed.
- DOOR STALL TIMER= 17 seconds in either direction once the door is installed.

**NOTE:** A complete cycle starts at the Full Close, Full Open then back to Full Close.

### Door Stall Timer

If movement of the door is stopped in either direction, for 17 seconds, the operator will quit running. The door stall timer can be reset in one of the following ways

1. A change of direction command from the direction it stalled in from the main controller.
2. Removal of the 45V.
3. Placing the TEST/RUN switch into the TEST position and give the board a direction change with the OPEN/OFF/CLOSE switch then return the OPEN/OFF/CLOSE to the OFF position and the TEST/RUN to the RUN position.

## Input & Output Terminals

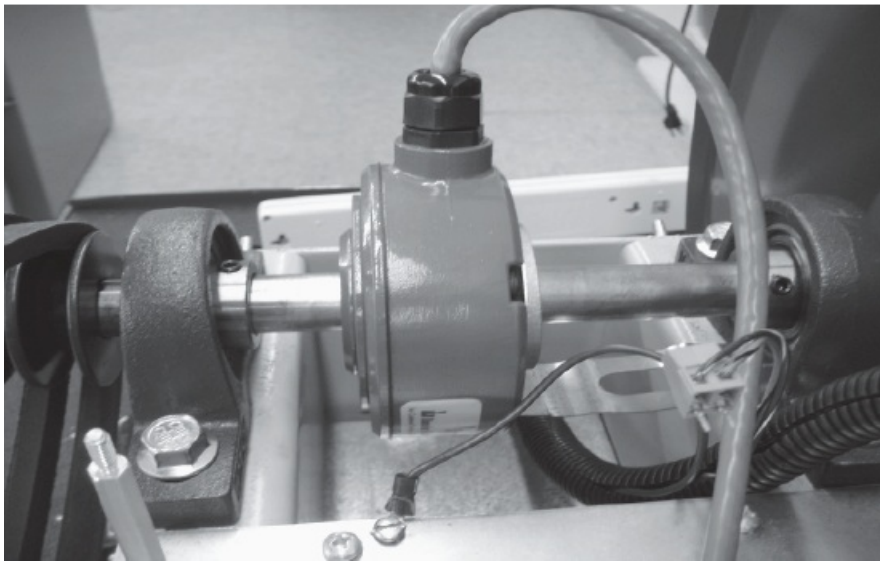
The PM/SSC door operator control requires an input of single phase 115 VAC. When this power is supplied by a transformer, the transformer must have a rating of at least 500 VA. Input and output terminal signals are shown below.

- **L1A to L2A:** 120VAC @ 500 VA. If one of the input lines is grounded, it should be connected to L1A.
- **D03 to L1A:** Open limit signal. A relay across these terminals will be de-energized when the open limit micro switch is actuated. Relay will be energized at all other times.
- **D07 to L1A:** Signal to close. When a relay contact across these terminals is made up, the doors will close.
- **D010 to L1A:** Signal to open. When a relay contact across these terminals is made up, the doors will open.
- **D017 to L1A:** Close limit signal. A relay across these terminals will be de-energized when the close limit micro switch is actuated. Relay will be energized at all other times.
- **D03 to D010:** Auxiliary to "O" relay. A relay across these terminals will be energized only when the doors are opening.
- **D07 to D017:** Auxiliary to "C" relay. A relay across these terminals will be energized only when the doors are closing.
- **D04 to D07:** Reduced speed closing signal. When the doors have a signal to close, and a relay contact across these terminals are made up, the door speed is controlled by N parameter.
- **F NC NO:** Auxiliary C relay switching contact. Designates a form "C" contact on C 1-C relay.
- **F NC NO:** Auxiliary O relay switching contact. Designates a form C contact on 1-0 O relay.
- **OPTION DSD to SS:** Used on some projects for load balancing or other customer requirement.

### For Old MAC and 104 Conversions

1. Turn OFF all power to the door operator.
2. Remove the cover(s) from the operator.
3. Remove and tag all wires at terminal strips TB1, TB2 and TB3. (See Figure 1)
  - **WARNING:** TB3 must have the wires connected
    - A1 – Motor red wire
    - A2 – Motor black wire
    - COM – Power supply common black wire
    - +45V – Power supply red wire. (See figure 1.)
4. Unplug the cam switch cable from CN1. (See figure 1.)
5. Unbolt and remove old board(s).
  - **After all hardware is back in place and adjusted**
6. Bolt the ECI 109-5 LCD board in place.
7. Install all the tagged wires into the correct locations on TB1, TB2 and TB3. (See figure 1.)
8. Connect the cam switch cable to CN1. (See figure 1.)

**NOTE:** The CN1 connector is a 13 pin male connector and some operators only have an 11 pin female connector. In this case connect the 11 pin female starting with the pin 1 which is the pin closest to the TEST/RUN switch S4. (See Figure 1)



Modernize (Convert) any Mac Operator into Close Loop Operation (for less) w/ Board 109-5Kit. A Modernization's team dream product; adding additional profit to the bottom- line! In addition to being a smarter board Big Savings are realized in reduced installation cost: One Man can easily install the conversion kit as neither motor nor operator needs to be replaced. Additionally, in group situations once the first operator has been set-up the parameters can be up loaded to the tool and then down loaded into the additional operators. (The up loaded data can be stored in the job's profile information back at the office for additional back up capabilities.)

Not only do you save hundreds of dollars in labor cost, it's competitively priced. The Savings continue with reduced shipping cost; the entire kit weights only 4lbs. Our Specialized encoder installs on the idler shaft eliminating any belt slippage that can occur in our competitors unit. Additionally, our board was designed to utilize the existing motor encoder if the operator was already set-up for closed loop operation such as with the Kone/MAC-105. The boards, tools or kits come with comprehensive installation manuals and free technical help.

### **Order by part number**

- P/N 109-4 is drop in replacement for the 104 board as well as all earlier MAC 3 board group revisions for open loop performance.. An additional wiring harness may be necessary in certain applications when replacing earlier vintage 3 board group door operator board assembly's ; please order by p/n 109-4/3H
- P/N 109-5 is drop in replacement for Kone/ MAC105 closed loop operators
- P/N 109-5KIT converts any MAC Operator into closed loop operation kit includes 109-5Board & Encoder.
- P/N SDT-1109 is the Hand Held Service Tool for Board 109-5
- P/n ECI-109-5ENC Shaft Encoder
- ECI stocks all motors, encoders and accessories for MAC operators

### **Microswitch Wiring**

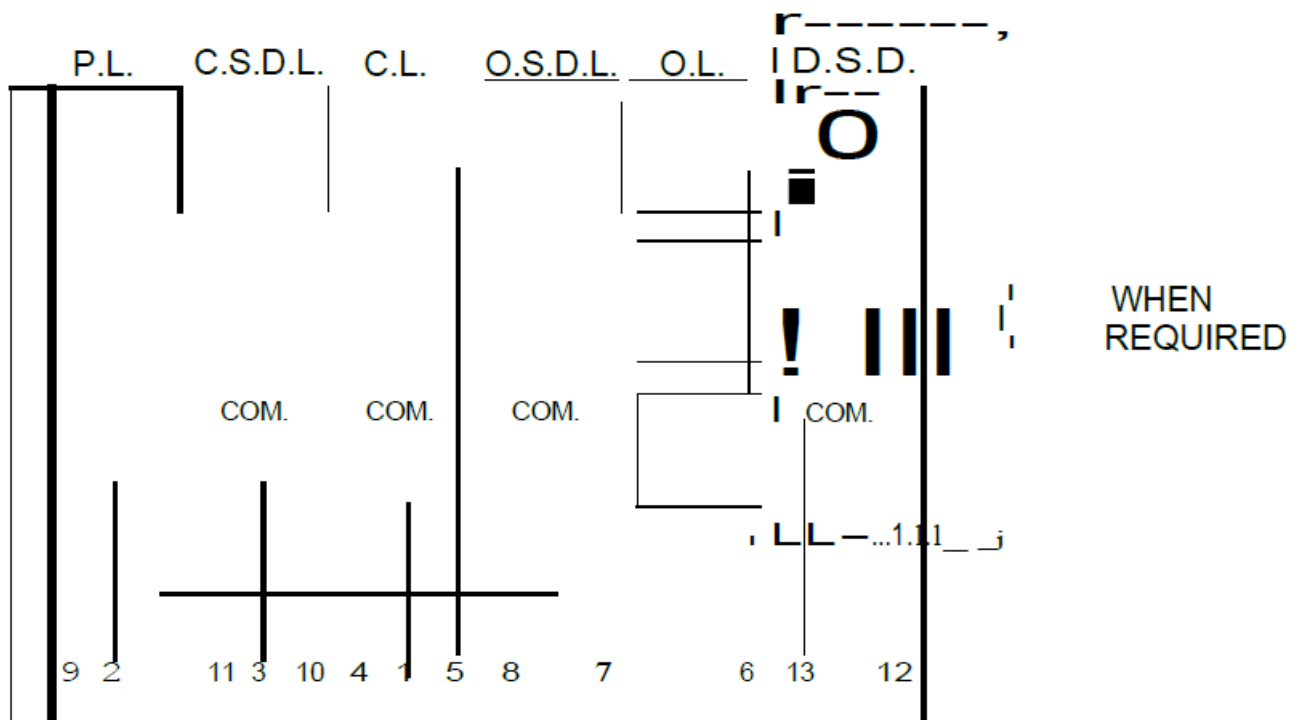


DIAGRAM 1

## DIP SWITCH

1. BLACK
2. RED
3. YELLOW
4. BLUE
5. BROWN
6. ORANGE
7. GRAY
8. VIOLET
9. WHITE/BLACK
10. WHITE/RED
11. WHITE/GREEN
12. WHITE/YELLOW
13. WHITE/BLUE

THE DRAWING ON THIS PRINT AND INFORMATION THEREIN ARE PROPRIETARY TO ECI, INC. AND SHALL NOT BE USED IN WHOLE OR IN PART WITHOUT ECI, INC. CONSENT.		RELEASE FOR PRODUCTION REV. DESCRIPTION DATE
COMPUTER FILE <i>microswitch-wiring.dwg</i>		<i>Electronic Controls, Inc.</i>
DRAWN BY <i>B.FTSHER 8/31/2010</i>		DRAWING DESCRIPTION microswitch wiring
SCALE SHEET NO. NONE 1 OF 1		DRAWING REVISION IREVA



- Check for binds in the door system.
- Increase the Closing Max Speed.
- Increase the Closing Torque Limit.
- Increase the Acceleration Speed.

#### **Opening Speed too Slow**

- Check for binds in the door system.
- Increase the Opening Max Speed.
- Increase the Opening Torque Limit.
- Increase the Acceleration Speed.

#### **Door not fully Closed**

- Check for binds in the door system.
- Decrease the Close Slow Down.
- Move the limit switch.

#### **Door not fully Open**

- Check for binds in the door system.
- Decrease the Open Slow Down.
- Move the limit switch.

#### **Doors are Slamming Open**

- Decrease the Opening Max Speed.
- Increase the Open Slow Down.
- Move the Limit Switch.

#### **Doors are Slamming Close**

- Decrease the Closing Max Speed.
- Increase the Close Slow Down.
- Move the Limit Switch.

#### **Door Operator not working in Automatic Mode**

- Toggle switch is either in the test or middle position.

#### **Door Operator not working in Test Mode**

- Toggle switch is either in the run or middle position.

## **No power on the board**

- Check the incoming voltage.
- Check the fuse on the board.

## **Nudging Speed to Slow**

- Increase the Nudging Speed.

## **Nudging Seep to Fast**

- Decrease the Nudging Speed.

## **Door Closing Force is to High**

- Decrease the CL Torque Limit.

## **Warranty Policy**

Electronic Controls, Inc warrants this product to be free from manufacturing and workmanship defects under normal use for a period of twelve months (12) from the date on which the product was shipped. In the event this product or any other component part is found to be defective within the warranty period, the purchaser must notify Electronic Controls, Inc within the warranty period and the product or component must be returned to Electronic Controls, Inc within thirty (30) days after notice of the warranty claim. Electronic Controls, Inc entire liability under this warranty and the purchaser's exclusive remedy shall in sole discretion of Electronic Controls, Inc be either of the following

Replacement of the defective product or defective component part. (Or) Repair the defective product or the component part.

This limited warranty does not extend to any labor or other expense incurred by the purchaser and only covers the repair or replacement of the product or component part supplied by Electronic Controls. Any misuse or unauthorized service of the product or any of the component parts shall render this warranty null and void.

In no event will Electronic Controls, Inc be liable for any damages, including but not limited to, any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use the product. Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to all purchasers. Foregoing limited warranty is the sole warranty given by Electronic Controls, Inc and all other warranties, expressed or implied, included but not limited to, the implied warranties of merchantability and fitness for a particular purpose are excluded. Some states do not allow the exclusion of implied warranties so the above may not apply.

Copyright © 2010 Electronic Controls, Inc., ECI® is a registered Trade Marks of Electronic Controls, Inc. The reproduction, transmission or use of this document or contents is not permitted without the express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant of registration of utility model or design, are reserved.

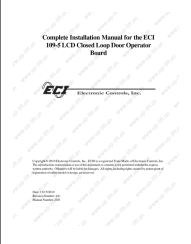
**Date:** 12/15/2010

**Revision Number:** 4.0

**Manual Number:** 20.0

## **Documents / Resources**



	<p><a href="#">ECI 109-5 LCD Closed Loop Door Operator Board</a> [pdf] Instruction Manual</p> <p>109-5 LCD Closed Loop Door Operator Board, 109-5, LCD Closed Loop Door Operator Board, L oop Door Operator Board, Operator Board</p>
--	---

References

-  [ECI America - Elevator Circuit Board and Controller Support](#)