

# TROUBLESHOOTING GUIDE

## for 2022 UL 325 Compliant Gate Operators

NOTE: This guide does not include BLDC Gate Operators, HDSL24UL, HDSW24UL, INSL24UL, and IHSL24UL.

### Models

LA500UL  
LA400UL  
LA412UL  
CSW24UL  
CSL24UL  
RSL12UL  
RSW12UL  
CSW200UL  
SL3000UL  
SL585UL  
SL595UL



EXTERNAL SAFETY  
DEVICES REQUIRED. SEE  
SAFETY SECTION FOR UL325  
ENTRAPMENT PROTECTION  
REQUIREMENTS IN YOUR  
OPERATOR MANUAL.

THESE PRODUCTS  
MUST BE INSTALLED AND  
SERVICED IN ACCORDANCE  
WITH THE OPERATOR MANUAL  
BY A TRAINED GATE  
SYSTEMS TECHNICIAN  
ONLY.



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## SAFETY

### SAFETY SYMBOL AND SIGNAL WORD REVIEW

When you see these Safety Symbols and Signal Words on the following pages, they will alert you to the possibility of **Serious Injury or Death** if you do not comply with the warnings that accompany them. The hazard may come from something mechanical or from electric shock. Read the warnings carefully.

When you see this Signal Word on the following pages, it will alert you to the possibility of damage to your gate and/or the gate operator if you do not comply with the cautionary statements that accompany it. Read them carefully.

#### IMPORTANT NOTE:

- BEFORE attempting to install, operate or maintain the operator, you must read and fully understand the manual provided with your operator and follow all safety instructions.
- DO NOT attempt repair or service of your gate operator unless you are a Trained Gate System Technician.

### ⚠ WARNING

#### MECHANICAL

### ⚠ WARNING

#### ELECTRICAL

### CAUTION

**BEFORE YOU BEGIN****UL COMPLIANT GATE OPERATORS**

The UL standard requires gate operators to monitor for the presence of external entrapment devices and any fault conditions. LiftMaster has not only updated their line of gate operators to meet the new UL 325 standard, they have also taken the opportunity to add a common user interface and common feature sets across the line to increase performance, safety and accessibility. All LiftMaster UL compliant gate operators will come with external monitored retro-reflective photoelectric sensors.



**LiftMaster Monitored Retro-Reflective Photoelectric Sensors (Model LMRRU)**

**UL325 ENTRAPMENT PROTECTION REQUIREMENTS****DEFINITIONS**

**ENTRAPMENT:** The condition when a person is caught or held in a position that increases the risk of injury.

**SLIDE GATE ENTRAPMENT ZONE:** An entrapment zone exists if at any point during travel, the gap between the gate and any opposing fixed edge or surface such as posts, walls, pillars, columns, or the operator itself, is less than 16" (406 mm) in a location up to 6 ft. (1.8 m) above grade.

**SWING GATE ENTRAPMENT ZONE:** Locations between a moving gate or moving, exposed operator components and a counter opposing edge or surface where entrapment is possible up to 1.8 m (6 ft.) above grade. Such locations occur if during any point in travel:

- The gap between the bottom of a moving gate and the ground is greater than 101.6 mm (4") and less than 406 mm (16"); or
- The distance between the center line of the pivot and the end of the wall, pillar, or column to which it is mounted when in the open or closed position exceeds 101.6 mm (4"). Any other gap between a moving gate and fixed counter opposing edges or surfaces or other fixed objects is less than 406 mm (16") (examples are walls, curbs, berms or other immovable objects).

**INDEPENDENT MONITORED ENTRAPMENT PROTECTION DEVICE:** An entrapment protection device is independent if it is a different type (photoelectric sensors, edge device, inherent protection device) from the other devices in the same entrapment zone.

Use the *Site Planning Safety Checklist* to identify entrapment zones found in your installation.

**REQUIREMENTS**

- A **minimum of two** independent monitored entrapment protection devices are required to be installed at each entrapment zone.
- It is the responsibility of the installer to install external monitored entrapment protection devices for **each entrapment zone**.
- A SLIDE gate operator will only operate with a **minimum of two** independent monitored entrapment protection devices installed in each direction; two in the open direction and two in the closed direction.
- A SWING gate operator will only operate with a minimum of two independent monitored entrapment protection devices installed in either the open or closed direction. If no entrapment zone exists in the other direction, an external entrapment protection device is NOT required in that direction. **Liftmaster Swing and Slide gate operators have an inherent entrapment protection device built-in.**

***The installer MUST provide one additional entrapment protection device for each entrapment zone.***

Acceptable entrapment protection device types include:

- Inherent (built into the operator)
- LiftMaster monitored external photoelectric sensors, see Accessory page of the operator manual for acceptable sensors.
- LiftMaster monitored external edge sensors, see Accessory page of the operator manual for acceptable sensors.

## BASIC TROUBLESHOOTING

### MULTI-METERS

The image is an example of a generic multimeter. LiftMaster currently has no intended affiliations with this multi-meter manufacturer. This is not an endorsement for this particular meter model. When shopping for a meter, look for a meter able to fit in a shirt pocket or clip on a belt. A meter with an audio signal (buzzer) for continuity checks is recommended. For testing motor current, a clamp-on ammeter is preferred.



### CHECKING OHMS/CONTINUITY

When checking the operation of a switch, select the ohm mode on multimeter. (The ohm symbol is  $\Omega$ ). Make sure the test leads are plugged into the correct sockets for reading ohms. If there is more than one setting in the ohm section of the meter, select the one with the audio signal. To test a limit switch, connect one test lead to the Common prong and the other to the Normally Closed prong. The meter should read 0 resistance or very low resistance. The electricity is flowing from the Common prong to the Normally Closed prong.

This demonstrates continuity. Activate the switch, the meter will read Infinite resistance or no continuity. Infinite ohms is often expressed as "OL" on the meter, but do not confuse this with zero ohms. In continuity mode, a tone indicates zero ohms. The contacts inside the switch are no longer touching between the Common prong and the Normally Closed prong. Move the test lead from Normally Closed to Normally Open. While the activation arm is not pressed, the meter should read open circuit, demonstrating no continuity. Activating the arm should read 0 resistance, demonstrating continuity. The procedure is called a "Continuity Check" and is used to check for a continuous flow of electricity.

### CHECKING VOLTAGE

A multimeter may have several settings for checking voltages. The number associated with each setting is the maximum voltage able to be read. A meter may be damaged if connected to a higher voltage than selected. Either AC or DC must be selected prior to testing any circuit. AC stands for alternating current and DC stands for direct current. AC is usually the incoming line voltage, i.e. 115 VAC, 460 VAC and so on. 24 VAC is also found in the control circuit of an operator. DC is usually a power source from a battery or the control voltage in a logic board. Set the meter to VOLTS AC at the lowest setting which is still higher than the expected voltage. If 115 VAC is expected and the meter has 10 VAC, 50 VAC, 250 VAC and 1000 VAC scales, turn the dial to 250 VAC. Some meters have only one VAC choice and the meter can automatically adjust for the voltage received (auto scaling).

### CHECKING MOTOR CURRENT

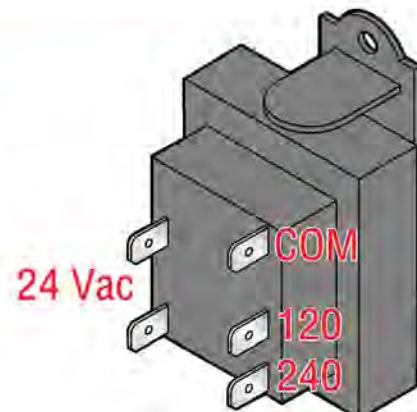
A clamp-on meter is recommended for testing the motor current. These meters work by detecting the magnetic field surrounding a conductor so a high motor current does not pass through the meter. Ensure that when a generic multi-meter is testing current, the leads are placed in series with the current and not in parallel. Otherwise, the meter's internal fuse will blow or will be damaged. In addition, the motor current may exceed the maximum current allowed by the meter's specification, resulting in a blown meter fuse or damage to the internal circuitry.

### TESTING CAPACITANCE

Ensure the meter has the means to test for the capacitance needed to check alternating current motor capacitors. Refer to the operator manual for the meter to learn about this feature.

**BASIC TROUBLESHOOTING****TRANSFORMERS**

Transformers are used to change incoming voltage to a different outgoing voltage. A transformer has a primary side (incoming voltage) and a secondary side (outgoing voltage). The primary side connects to wires from the main power source and the secondary side outputs the transformed voltage. In commercial gate operators, the secondary side is generally 24 Vac. Read the markings on the transformer to determine the primary and secondary voltages. Transformers are rated in VOLT Amps (VA). A transformer can only pass the rated amount of electricity from the main power to the secondary side. Be careful not to overload the transformer. Verify the amperage rating on all devices connected to the 24 Vac side of the transformer including devices attached to the control board. Multiply the Amperage rating for each device by the voltage needed to run the device.



(Example: Block Transformer)

**EXAMPLE FOR CALCULATING AMPERAGE DRAW**

Below is an example of text for a label that could be placed on accessory devices:

Output Rating...5 AMPS 28VAC or DC Max

Power...24VAC @ 30ma

The "Power" rating is required. The transformer's secondary side is 24 VAC and the transformer is rated for 20VA. The example accessory above uses 30 milli-amps, which is .03 Amps. Multiply the volts being used (24V) and the amps (.03A) to get the VOLT Amps (VA) used by the accessory ( $24V \times 0.03A = 0.72VA$ ). That leaves ( $20 - 0.72 =$ ) 19.28VA left for other accessories (photoelectric sensors, loop detectors, etc). Once the total VA exceeds 20VA, the operator may experience failures. For operator setups requiring multiple accessories, calculate total VA draw and upgrade the transformer if necessary (40VA transformers or greater are available). The output rating is how much electricity the accessory is able to have pass through it. This number is useful when determining if an accessory will properly function long term with the operator. The output rating has nothing to do with the required amount of electricity to make the accessory function.

TYPE OF TRANSFORMERS	MODELS
Plug-in Transformer	LA400UL, RSL12UL, RSW12UL
Toroid Transformer	LA500UL, CSL24UL, CSW24UL, HD OPERATORS
Block Transformer	CSW200UL, SL3000UL, SL585UL, SL595UL

## BASIC TROUBLESHOOTING

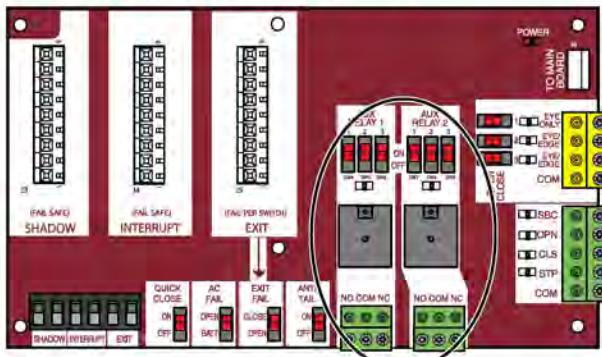
### RELAYS

#### EXPANSION BOARD RELAYS

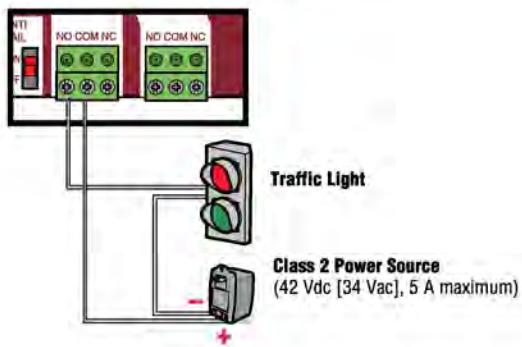
In gate operators, relays are commonly used to control operator functions or activate/deactivate ancillary devices such as heaters or lights. When electricity is applied to a relay coil, it energizes a magnetic field that will close a Normally Open switch or open a Normally Closed switch. A relay typically has prongs labeled COM, NO, NC, and two prongs to power the relay coil. Relays are available with different coil voltages and contact options. The auxiliary relays are single pole, double throw. A pole is another name for a switch. Double pole is two separate switches being turned on or off by the same activation coil (two separate Comms, NCs and NOs). Double throw means there are two positions for the output (NO and NC).

The 2 Auxiliary Relays on the expansion board can be set to activate in different conditions based on how you set the 3 switches for each relay. They can be set to activate any time the gate is open or closed or when the gate is in motion. In one setting you can trip the relay 3 seconds before the gate begins to move and while the gate is in motion. You can set the relay to activate if the gate is forced off the closed limit position. One setting for Aux Relay 1 uses the LEDs for the Open, Close, and Stop inputs to display how many cycles (to the nearest 1000) the operator has performed. The Auxiliary relays can also be used in conjunction with a barrier arm operator for the Sequenced Access Management System (SAMS) or tandem function. See the operator's manual for a list of all the available functions.

#### RELAYS ON THE EXPANSION BOARD

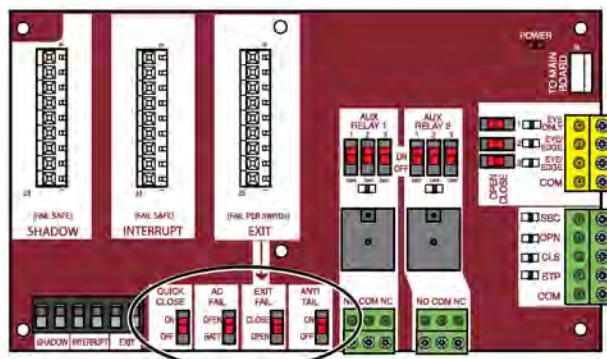


#### RELAY WIRING EXAMPLE



#### EXPANSION BOARD SWITCH SETTINGS

- The Quick Close feature allows the gate to close without having to travel to the full open position. When active, the operator monitors the Interrupt Loop and Close Eyes inputs and once the vehicle clears these devices the gate will reverse and Close.
- When the AC Fail Open switch is selected, the operator will move the gate to the Open position if AC Power is lost. There is a 30-second delay before the gate opens after the loss of primary AC power. If the switch is set for the Battery option, the operator will run on the battery until the battery drops below a certain voltage. At that point, the gate will either open or close depending on how you set the Low Battery switch on the main control board. **NOTE:** The AC Fail Open switch is not functional for AC operators.
- The Exit Fail switch sets the operator to either open or remain closed in the event of an internal detector failure (loop short or open).
- The Anti-Tailgate switch alters the way the Interrupt Loop affects gate operation. When the switch is on, the gate pauses if the gate is closing and the interrupt loop is activated. The gate will stay paused until the vehicle backs off the loop, then continue closing.



## BASIC TROUBLESHOOTING

### ⚠ WARNING

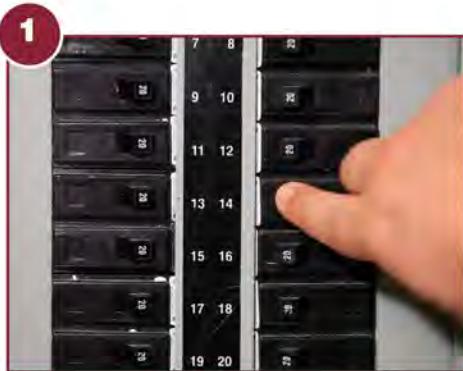
To protect against fire and electrocution:

- DISCONNECT power (AC or solar and battery) BEFORE installing or servicing operator.

### CAPACITOR (FOR AC OPERATORS)

**SYMPTOM:** A bad capacitor will cause a motor to hum when trying to run, or stall while it is running.

#### CHECK THE CAPACITOR:



Disconnect ALL power from operator.



**IMPORTANT:** Discharge the capacitor BEFORE touching it!

Discharge the capacitor by touching a screwdriver across the capacitor terminals (make sure to hold the insulated end of the screwdriver when doing this). You may see a small spark when discharging the capacitor, this is normal.

Visually inspect the capacitor for any burn marks, bubbling or oil leakage. This is a good indication of a bad capacitor.



Using a multi-meter, measure the capacitance between the capacitor contacts. The measurement on the meter should be within the uF rating on the label.

The meter must be capable of making capacitance measurements. See the meter's operator manual for more information.

**SOLUTION:** If the capacitor measures outside of 20% of rated capacitance, it should be replaced.

## BASIC TROUBLESHOOTING

### ⚠ WARNING

To protect against fire and electrocution:

- DISCONNECT power (AC or solar and battery) BEFORE installing or servicing operator.

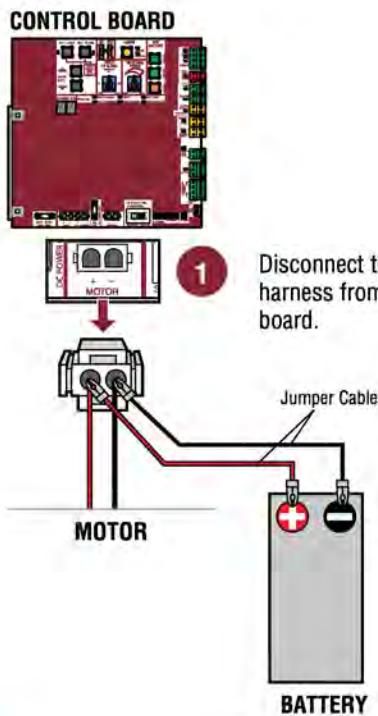
## BRUSHED DC MOTORS

**SYMPTOM:** The motor will not run.

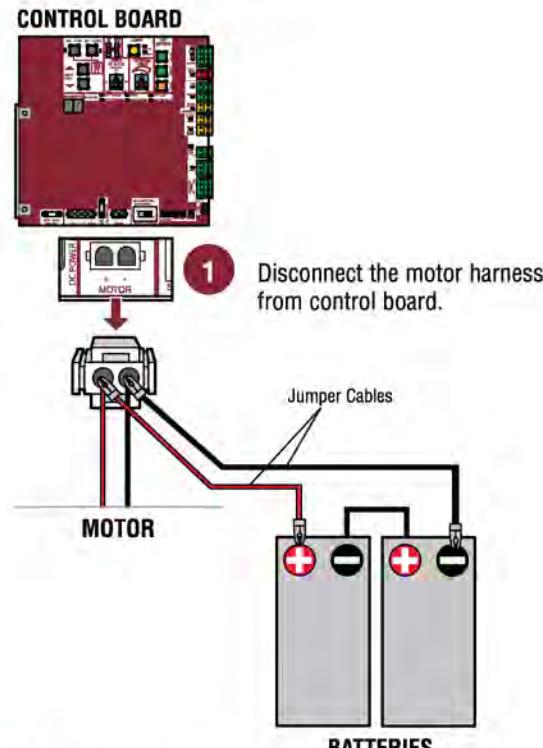
**CHECK THE MOTOR:**

Disconnect ALL power from operator. Disconnect the gate from the operator.

### 12V MOTOR



### 24V MOTOR



2 Connect the battery to the motor harness as shown.

2 Connect the batteries to the motor harness as shown.

**SOLUTION:** If the motor does not run, replace the motor, but if the motor runs, this process does not prove the motor is good.

**BASIC TROUBLESHOOTING****WARNING**

To protect against fire and electrocution:

- DISCONNECT power (AC or solar and battery) BEFORE installing or servicing operator.

**AC MOTORS****SYMPTOM:** The motor will not run.**CHECK THE MOTOR:**

Disconnect ALL power from operator. Disconnect the gate from the operator. Unplug the motor harness from the board and measure the resistance of the motor. Refer to illustrations.

**MODELS SL585U & SL595U - SINGLE PHASE MOTORS**

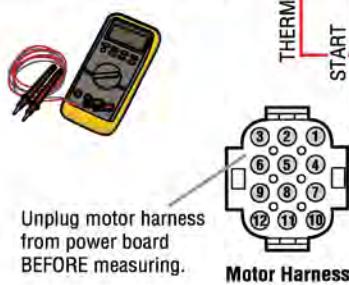
Measure resistance between:

RUN 1 = 600 ohms or less

RUN 2 = 600 ohms or less

START = 50k ohms or greater

THERMAL SWITCH = 0 ohms

**MODELS SL585U & SL595U - THREE PHASE MOTORS**

Measure resistance between:

15 to 7

14 to 8

12 to 6

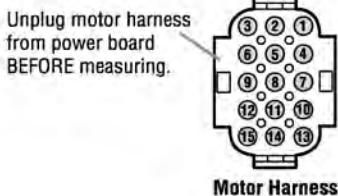
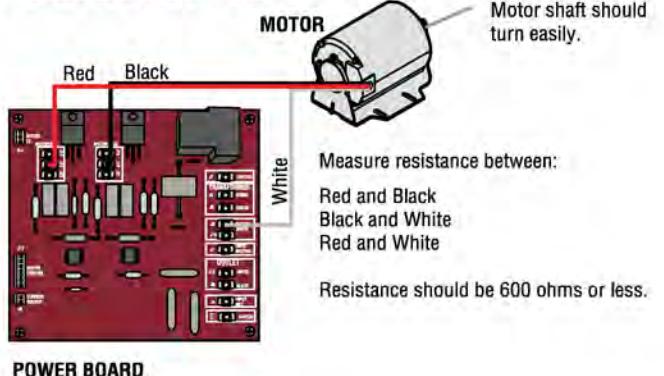
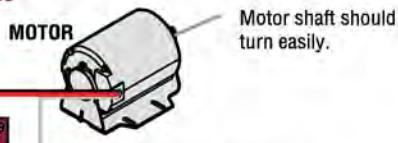
11 to 6

9 to 5



Resistance should be 600 ohms or less

There should be continuity between 1 and 4 (Thermal Switch)

**MODELS CSW200U & SL3000****SOLUTION:** If the motor measured too much resistance, replace the motor.

## BASIC TROUBLESHOOTING

### ERASE MEMORY

#### ERASE ALL REMOTE CONTROLS

1. Press and release the LEARN button (operator will beep and green XMITTER LED will light).
2. Press and hold the LEARN button again until the green XMITTER LED flashes and then release the button (approximately 6 seconds). All remote control codes are now erased.

#### TO REMOVE AND ERASE ALL MONITORED ENTRAPMENT PROTECTION DEVICES (AC OPERATORS)

1. Remove the entrapment protection device wires from the terminal block.
2. Press and release the OPEN LEFT and OPEN RIGHT buttons simultaneously. The handing direction LED will remain solid. The other direction LED will begin flashing (entering setup mode).
3. Press the OPEN LEFT and OPEN RIGHT buttons simultaneously to exit.

#### TO REMOVE AND ERASE MONITORED ENTRAPMENT PROTECTION DEVICES (DC OPERATORS)

1. Remove the entrapment protection device wires from the terminal block.
2. Press and release the SET OPEN and SET CLOSE buttons simultaneously. The SET OPEN and SET CLOSE LEDs will turn on (entering learn limit mode).
3. Press and release both SET OPEN and SET CLOSE buttons again to turn off the SET OPEN and SET CLOSE LEDs (exiting learn limit mode).

#### TO CLEAR WIRELESSLY PAIRED OPERATORS

1. Press and release the LEARN button (operator will beep and green XMITTER LED will light).
2. Press and release the LEARN button for a second time (operator will beep and yellow XMITTER LED will light).
3. Press and hold the LEARN button until the yellow XMITTER LED flashes, and then release. The operator is now unpaired.
4. Repeat this sequence on the opposing operator if possible.

#### TO ERASE LIMITS (DC OPERATORS)

1. To erase the limits, press and hold the SET OPEN and SET CLOSE buttons simultaneously (5 seconds) until both the SET OPEN and SET CLOSE LEDs blink rapidly and the operator beeps.
2. Release the buttons and the SET OPEN and SET CLOSE LEDs will blink slowly indicating the limits will need to be set.

**NOTE:** Any remaining entrapment protection devices will automatically be relearned and any disconnected entrapment protection devices will be unlearned. For a Swing gate operator, a minimum of ONE monitored external entrapment protection device is required in either the open or closed direction to operate the gate. A slide gate operator will only operate with a minimum of two external monitored entrapment protection devices installed, one in each direction. It is the responsibility of the installer to ensure all entrapment zones are protected with a minimum of one external entrapment protection device.

#### TO ERASE HANDING (AC OPERATORS)

1. To erase the limits, press and hold the OPEN LEFT and OPEN RIGHT buttons simultaneously (5 seconds) until both the OPEN LEFT and OPEN RIGHT LEDs blink rapidly and the operator beeps.
2. Release the buttons and the OPEN LEFT and OPEN RIGHT will blink slowly indicating the handing will need to be set.

**Test the operator after any adjustments are made according to the Obstruction Test in the operator manual.**

**Test all entrapment protection devices after any adjustments per the instructions provided with the device.**

## BASIC TROUBLESHOOTING

### PROGRAMMING LIMITS WITH BUTTONS AND REMOTES

For dual gate applications, the limits must be set for each operator. The gate MUST be attached to the operator before setting the limits and force.

Ensure the gate is closed.

1. Press and release the SET OPEN and SET CLOSE buttons simultaneously to enter limit setting mode.
2. Press and hold the OPEN or CLOSE button on the remote control until the gate reaches the desired open position. The gate can be jogged back and forth using the OPEN and CLOSE buttons on the remote control.
3. Once the gate is in the desired open position, press and release the STOP button on the remote control.
4. Press and release the OPEN button on the remote control again to set the open limit.
5. Press and hold the CLOSE or OPEN button on the remote control until the gate reaches the desired close position. The gate can be jogged back and forth using the OPEN and CLOSE buttons on the remote control.
6. Once the gate is in the desired close position, press and release the STOP button on the remote control.
7. Press and release the CLOSE button on the remote control again to set the close limit.
8. Cycle the gate open and close. This automatically sets the force.

When limits are set properly, the operator automatically exits limit setting mode.

### HOW MONITORED ENTRAPMENT DEVICES ARE LEARNED

Monitored devices are learned once connected to the board.

1. Connect the Ethernet cable to the LiftMaster Internet Gateway and the router.
2. Connect power to the LiftMaster Internet Gateway.
3. Create an online account by visiting [www.liftmaster.com](http://www.liftmaster.com).
4. Register the LiftMaster Internet Gateway.
5. Use an internet enabled computer or smartphone to add devices. The LiftMaster Internet Gateway will stay in learn mode for three minutes.
6. Press the Learn button twice on the primary operator (the operator will beep as it enters learn mode). The LiftMaster Internet Gateway will pair to the operator if it is within range, and the operator will beep if programming is successful.

### SET THE FORCE AND RUN DISTANCE

1. Press the OPEN test button to open the gate.
2. Press and release both the OPEN LEFT and OPEN RIGHT handing buttons.
3. Press the handing button below the solid LED.
4. Run the operator one full cycle using the test buttons. The initial forces and run distance will be set during this cycle. Create an online account by visiting [www.myliftmaster.com](http://www.myliftmaster.com).

**DIAGNOSTIC CODES****WARNING**

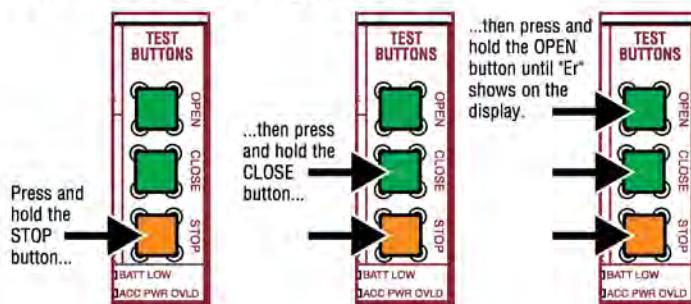
To retrieve logic board diagnostic history, the operator must be activated.

- Replace ONLY with fuse of same type and rating.

For continued protection against fire:

**DIAGNOSTIC CODES****TO VIEW THE CODES**

The codes will show on the diagnostic display.



The operator will show the code sequence number followed by the code number:

**CODE SEQUENCE NUMBER**

The first number shown is the most recent code (example: "01"). The display will show the sequence of codes that occurred starting with "01" and going up to code "20".



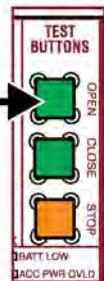
**A SECOND LATER....**

**CODE NUMBER**

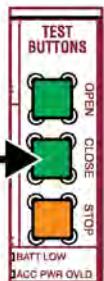
The second number shown after the code sequence number is the code itself (31-99, example "31"). Refer to the chart on the following page for an explanation of each code.

**TO SCROLL THROUGH THE SAVED CODES**

Press the OPEN button to cycle to the most recent code ("01").

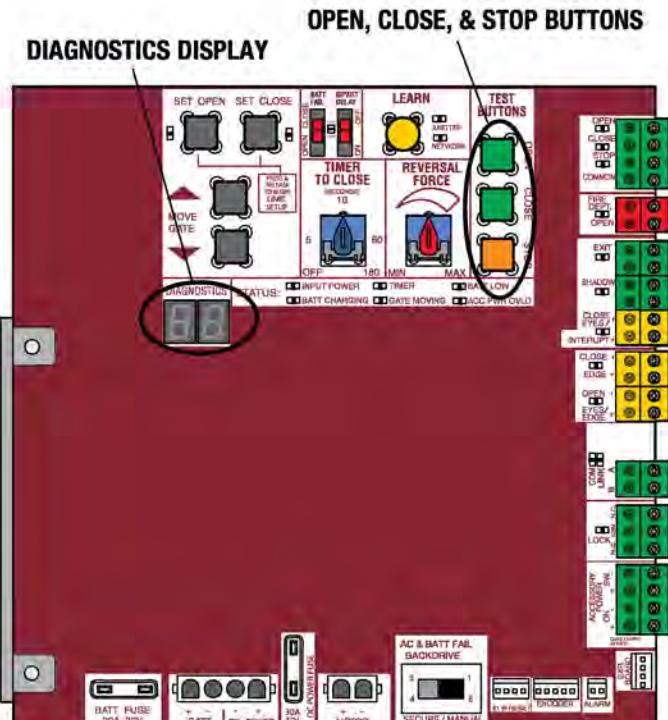


Press the CLOSE button to cycle to the oldest code (up to "20").



The operator will only keep track of up to 20 codes, then will start saving over the oldest codes as new codes occur.

**NOTE:** Some diagnostic codes represent normal operation. See the Diagnostic Codes for more details.

**DIAGNOSTICS DISPLAY****TO EXIT**

Press and release the STOP button to exit. The display will also time out after two minutes of inactivity.

**TO RESET THE CODE HISTORY**

1. Press and hold the STOP button for six seconds. The display will show "Er" then "CL" alternately for six seconds.
2. Release the STOP button. The code history has now been reset and the display will show "—" until a new code occurs.
3. Press and release the STOP button to exit.

**DIAGNOSTIC CODES**

Some codes are saved in the code history and some are not. If a code is not saved it will briefly appear on the display as it occurs, then disappear. When servicing of the operator is complete, erase the code history by pressing the STOP button until the display flashes "Er" then "CL" (about 6 seconds). When the codes have been erased the display will show "\_\_\_".

Code	Meaning	Symptom	Solution	Saved
LIFTMASTER SYSTEM	31	The main control board has experienced an internal failure.	Gate operator will not run.	Disconnect all power, wait 15 seconds, then reconnect power (reboot). If issue continues, replace main control board.
	32	Linear Drive Disengaged (Operator 1)	Gate operator will not run and the gate moves back and forth easily.	Disengage, then re-engage operator. Check wiring and connections.
	33	Linear Drive Disengaged (Operator 2)		
	34	The operator is not receiving information from the Absolute Position Encoder (APE).	The operator will run for a second or two, then stop (there are no obstructions). The diagnostic display shows 34.	<ul style="list-style-type: none"> <li>Check the APE sensor for a blocked diode from dust or debris. Use compressed air to clean the area.</li> <li>Check the APE wire harness connections. A wire may be loose or disconnected from the harness.</li> <li>Replace the APE assembly and wire harness if necessary.</li> </ul> <p>TEST: Attempt to run the operator.</p>
	35	Max-Run-Time Exceeded Error	The gate stops short of the programmed limit.	Check for an obstruction, then reprogram the limits.
	36	Product ID Error	If product ID is not present or damaged while the gate is powered it will continue to run while showing code 36. If power is lost while product ID is damaged or broken it will not run and will also show code 36. If the board was used in a different type of operator it code 36 would show as well (example board out of swing to a slide).	Was the control board just replaced? If so, erase limits, then set limits again. If not, disconnect all power, wait 15 seconds, then reconnect power before changing product ID harness.
	37	Product ID Failure	If product ID is not present or damaged while gate is powered it will continue to run while showing code 37. If power is lost while product ID is damaged or broken it will not run and will also show code 37. The operator will also not be able to set limits.	Unplug product ID harness then plug back in. Disconnect all power, wait 15 seconds, then reconnect power before replacing product ID harness.
	38	Hard Stop Limit (Operator 1), the limit is set too close to a hard stop and the gate is stopping on the hard stop instead of the limit.	The gate will reverse intermittently. The operator may wind up a lot of tension on the chain and flex the chassis. For dual gate installations the gates may not move in sync. This could cause a problem later on if left (nuisance reversals).	<p>Reprogram the limits so they are not close to a hard stop.</p> <p>TEST: Run the operator and check for code 38 on the diagnostic display.</p>
	39	Hard Stop Limit (Operator 2), the limit is set too close to a hard stop and the gate is stopping on the hard stop instead of the limit.		
	40	Battery overvoltage	The operator runs faster than normal and the diagnostic display shows Code 40.	<p>Too much voltage on the battery. Check harness. Make sure you are using the recommended batteries for the operator. Check the battery voltage and battery harness.</p> <p>TEST: After checking the batteries, check for code 40 on the diagnostic display.</p>

**DIAGNOSTIC CODES**

Some codes are saved in the code history and some are not. If a code is not saved it will briefly appear on the display as it occurs, then disappear. When servicing of the operator is complete, erase the code history by pressing the STOP button until the display flashes "Er" then "CL" (about 6 seconds). When the codes have been erased the display will show "\_\_\_".

Code	Meaning	Symptom	Solution	Saved	
<b>LIFTMASTER SYSTEM</b>	<b>41</b>	Battery overcurrent	Code 41 will show up on the diagnostic display. There will possibly be low battery voltage (the LOW BATT LED will be on).	Possible short of the battery charge harness. Check harness. Make sure the recommended battery(ies) are being used. Make sure you do NOT have a 12V battery on a 24V system. Check battery fuse.  TEST: After checking the batteries, check for code 41 on the diagnostic display.	YES
	<b>42</b>	No battery at boot up	Operator will run and the diagnostic display will show Code 42 with power cycle or boot-up. The operator will not run on battery backup after power loss.	Check the battery connections at the main control board and at the battery terminals. Make sure the J15 plug is plugged into the board. Replace batteries if depleted to less than 20V on a 24V system or less than 10V on a 12V system. Make sure there is NOT a single 12V battery on a 24V system.  TEST: After checking the batteries, check for code 42 on the diagnostic display.	YES
<b>INSTALLED SYSTEM</b>	<b>43</b>	Exit Loop Error	Gate will lock in the open position or closed position (depending on the dip switch setting). The exit loop will not be functional and diagnostic display will show Code 43.	LiftMaster Plug-in Loop Detector only. Failure or missing loop. Check loop wiring throughout connection. May be a short in the loop, or an open connection in the loop.	YES
	<b>44</b>	Shadow Loop Error	<b>All Operators:</b> Gate will not close.  <b>Models LA400U, LA412U, LA500U, RSW12U:</b> Gate will not open.		YES
	<b>45</b>	Interrupt Loop Error	Gate will not close.		
<b>LIFTMASTER SYSTEM</b>	<b>46</b>	Wireless edge battery low	The operator will beep 2 times with a command. Critically low battery will cause gate to latch open or closed depending on the board settings (Batt Fail switch settings on DC operator control board and Exit Fail switch setting on the AC operator expansion board).	Replace batteries in wireless edge.	YES
	<b>47</b>	Fault detected in the power board.	Operator will not run.	Replace the power board.	YES
<b>INFORMATIONAL</b>	<b>50</b>	Run-Distance Error	Gate will stop prior to reaching the desired limit setting.	<b>DC Operators:</b> Gate unbalance detected. Make sure the gate is installed on a level surface and not on an excessive grade.  <b>AC Operators:</b> The limits are less than the minimum requirement or longer than what was learned. Check limit positions and proper switch function. Run-distance can be re-learned by setting the handing again.	YES
	<b>51</b>	Pass-point not detected (Operator 1)	Operator runs at a constant slow speed.	Check yellow pass-point wiring. If limits are not accurate, reprogram.	NO
	<b>52</b>	Pass-point not detected (Operator 2)			
<b>INFORMATIONAL</b>	<b>53</b>	Brownout occurred	Operator will run and show code 53.	AC/DC board supply dipped below allowable level. Review power supply and wiring. If rebooting, ensure enough time for discharge of power to force a fresh boot.	YES
	<b>54</b>	Wireless Second Operator Communication Error	Only the commanded operator will respond.	Check the second operator for power. If OFF, restore power and try to run the system. If powered, deactivate the wireless feature and then reprogram the second operator.	YES

**DIAGNOSTIC CODES**

Some codes are saved in the code history and some are not. If a code is not saved it will briefly appear on the display as it occurs, then disappear. When servicing of the operator is complete, erase the code history by pressing the STOP button until the display flashes "Er" then "CL" (about 6 seconds). When the codes have been erased the display will show "\_\_\_".

<b>Code</b>	<b>Meaning</b>	<b>Symptom</b>	<b>Solution</b>	<b>Saved</b>
<b>LIFTMASTER SYSTEM</b>	<b>55</b>	System AC Overvoltage	Operator will not function and show code 55.	YES
	<b>56</b>	System AC Undervoltage	Operator will continue to run and show code 56.	YES
	<b>57</b>	Limit Error - Stuck Switch	Operator will not run and show code 57.	YES
	<b>58</b>	Limit Error - Wrong Switch	Operator will not run and show code 58.	YES
	<b>59</b>	Missing Power Board	Operator will not run and show code 59.	YES
<b>EXTERNAL ENTRAPMENT PROTECTION</b>	<b>60</b>	Minimum number of monitored entrapment protection devices (one) not installed.	The operator will not run and the EYES EDGE LEDs will flash on the main board and expansion board.	NO
	<b>61</b>	CLOSE EYE/INTERRUPT held more than 3 minutes on main board	The operator will only move with constant pressure and will beep while moving	YES
	<b>62</b>	CLOSE EDGE held more than 3 minutes on main board		
	<b>63</b>	OPEN EYE/EDGE held more than 3 minutes on main board		
	<b>64</b>	CLOSE EYE/INTERRUPT held more than 3 minutes on expansion board	The operator will only move with constant pressure and will beep while moving	YES
	<b>65</b>	CLOSE EYE/EDGE held more than 3 minutes on expansion board		
	<b>66</b>	OPEN EYE/EDGE held more than 3 minutes on expansion board		
	<b>67</b>	Wireless edge triggered more than 3 minutes	Gate will not move.	YES
	<b>68</b>	Wireless edge loss of monitoring	Gate will not move.	YES
	<b>69</b>	Wireless edge triggered	Gate reverses to the opposite direction.	NO

**DIAGNOSTIC CODES**

Some codes are saved in the code history and some are not. If a code is not saved it will briefly appear on the display as it occurs, then disappear. When servicing of the operator is complete, erase the code history by pressing the STOP button until the display flashes "Er" then "CL" (about 6 seconds). When the codes have been erased the display will show "\_\_\_".

Code	Meaning	Symptom	Solution	Saved
EXTERNAL ENTRAPMENT PROTECTION	70	CLOSE EYE/INTERRUPT triggered on the main board	During the close cycle the gate will stop and reverse to the full open position and the Timer-to-Close becomes disengaged. The gate will not close.	Check for an obstruction in the path of the gate. If an obstruction did NOT occur, check the inputs and wiring on the main control board.
	71	CLOSE EDGE triggered on the main board	During the close cycle the gate will stop and reverse to the full open position and the Timer-to-Close becomes disengaged. The gate will not close.	
	72	OPEN EYE/EDGE triggered on the main board	During the open cycle the gate will reverse for 4 seconds, then stop. The gate will not open.	
	73	CLOSE EYE/INTERRUPT triggered on the expansion board	During the close cycle the gate will stop and reverse to the full open position and the Timer-to-Close becomes disengaged. The gate will not close.	
	74	CLOSE EYE/EDGE triggered on the expansion board	During the close cycle the gate will stop and reverse to the full open position and the Timer-to-Close becomes disengaged. The gate will not close.	Check for an obstruction in the path of the gate. If an obstruction did NOT occur, check inputs and wiring on the expansion board.
	75	OPEN EYE/EDGE triggered on the expansion board	During the open cycle the gate will reverse for 4 seconds, then stop. The gate will not open.	
	80	Close input (EYE/EDGE) communication error between primary and secondary operators	The gate will not move except with constant pressure.	Check inputs and communication method between operators, either wired or wireless. Ensure both operators have power. Erase the wireless communication and reprogram the two operators.
	81	Open input (EYE/EDGE) communication error between primary and secondary operators		
	82	Close input (EYE/EDGE) communication error between main control board and expansion board	The expansion board LEDs are off and the gate will not move.	Check the connections between the main board and the expansion board.
	83	Open input (EYE/EDGE) communication error between main control board and expansion board		

**DIAGNOSTIC CODES**

Some codes are saved in the code history and some are not. If a code is not saved it will briefly appear on the display as it occurs, then disappear. When servicing of the operator is complete, erase the code history by pressing the STOP button until the display flashes "Er" then "CL" (about 6 seconds). When the codes have been erased the display will show "\_\_\_".

Code	Meaning	Symptom	Solution	Saved
91	Force Reversal (Operator 1), the primary operator has detected an obstruction.	When attempting to open or close the gate, the gate stops and reverses about 1 foot and then stops. The diagnostic display shows 91.	<ul style="list-style-type: none"> <li>Press the reset button to shut the alarm off.</li> <li>Check for obstructions and debris in the gate's path. Remove any obstructions or debris.</li> <li>Adjust the limits and force</li> <li>Disconnect the gate and make sure the gate is able to move freely and all hardware is working correctly (i.e. gate hinges or wheels).</li> <li>Make sure the gate and gate operator were installed correctly and the gate meets the specification requirements for the operator.</li> <li>If all other solutions fail, there may be a damaged operator component (i.e. chain, sprockets, gear reducer, motor). Replace gate component if necessary.</li> </ul> <p>TEST: Attempt to run the operator.</p>	YES
	Force Reversal (Operator 2), the secondary operator has detected an obstruction.	When attempting to open or close the gate, the gate stops and reverses about 1 foot and then stops. The diagnostic display shows 92.		
	RPM/STALL Reversal (Operator 1), the primary operator has detected an obstruction.	When attempting to open or close the gate, the gate stops and reverses about 1 foot and then stops. The diagnostic display shows 93.		
93		If you attempt to run the operator again after code 93, the gate will move then stop and reverse about 1 foot, then stop. The alarm will sound for 5 minutes. This means that the operator has detected an obstruction twice in a row (double entrapment).	<ul style="list-style-type: none"> <li>Press the reset button to shut the alarm off.</li> <li>Check the disconnect.</li> <li>Check for obstructions and debris in the gate's path. Remove any obstructions or debris.</li> <li>Adjust the limits and force</li> <li>Disconnect the gate and make sure the gate is able to move freely and all hardware is working correctly (i.e. gate hinges or wheels).</li> <li>Make sure the gate and gate operator were installed correctly and the gate meets the specification requirements for the operator.</li> <li>If all other solutions fail, check the code history for code 34, which indicates the operator is not receiving information from the APE sensor. Check the APE assembly and connections. Replace APE assembly if necessary.</li> </ul> <p>TEST: Attempt to run the operator.</p>	YES
	RPM/STALL Reversal (Operator 2), the secondary operator has detected an obstruction.	When attempting to open or close the gate, the gate stops and reverses about 1 foot and then stops. The diagnostic display shows 94.		
94		If you attempt to run the operator again after code 94, the gate will move then stop and reverse about 1 foot, then stop. The alarm will sound for 5 minutes. This means that the operator has detected an obstruction twice in a row (double entrapment).	<ul style="list-style-type: none"> <li>Press the reset button to shut the alarm off.</li> <li>Check the disconnect.</li> <li>Check for obstructions and debris in the gate's path. Remove any obstructions or debris.</li> <li>Adjust the limits and force</li> <li>Disconnect the gate and make sure the gate is able to move freely and all hardware is working correctly (i.e. gate hinges or wheels).</li> <li>Make sure the gate and gate operator were installed correctly and the gate meets the specification requirements for the operator.</li> <li>If all other solutions fail, check the code history for code 34, which indicates the operator is not receiving information from the APE sensor. Check the APE assembly and connections. Replace APE assembly if necessary.</li> </ul> <p>TEST: Attempt to run the operator.</p>	YES
	AC motor no start condition	a) The gate and motor are not moving or moving too slow. b) The motor is moving, but not the gate c) Gate moves then stops. d) The motor doesn't run		
95		a) The gate and motor are not moving or moving too slow. b) The motor is moving, but not the gate c) Gate moves then stops. d) The motor doesn't run	<ul style="list-style-type: none"> <li>Check for an obstructed gate, binding in the mechanism, and relay board and start capacitor connections.</li> <li>Check the encoder cup and sensor on the limit shaft, and wiring. Check the disconnect lever for SL595U operators.</li> <li>Check the encoder cup and sensor wiring.</li> <li>Make sure that the motor harness is plugged into the connector in the power board that matches the correct input power.</li> </ul>	YES
	Missing or damaged current sensor	The gate will move briefly when commanded then stop. No further operation will be allowed.		
99	Normal Operation	n/a	No action required	YES

**SOLAR****SOLAR TROUBLESHOOTING****SYMPTOM**

The operator alarm will beep three times with a command and the BATT LOW LED will be on when the solar panel is not charging the battery.

**SOLUTIONS**

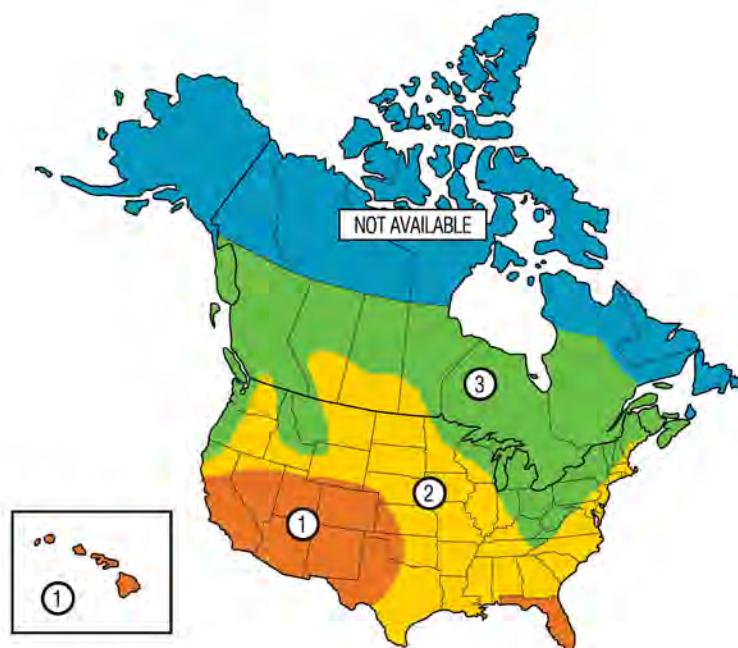
- Check that the correct number of solar panels are connected to the operator. 12V operators require one 10W 12V panel up to a maximum of three 10W 12V panels three solar panels wired in parallel. 24V operators can have up to three arrays of two series wired batteries, with the arrays wired in parallel. See the next page for illustration.
- Check that the correct batteries are used for the application.
- Check that the whole panel(s) is facing south within 150 feet of the operator and receiving full sunlight. Make sure the solar panels are not in the shade.
- Check that the accessories are not drawing current in excess of the maximum 500 mA. Use LiftMaster low current draw accessories. See the solar table in the manual for the recommended current draw.
- Verify the number of gate cycles does not exceed the cycle rating based on the Solar Zone of the installation location.
- Check that the number of gates cycles corresponds with the solar zones (see below). Refer to your gate operator manual for specific gate cycles.
- Ensure that LMRRUL/LMTBUL heater wires are NOT connected.
- The system is not compatible with seven-day timers and party mode.
- Do not leave the system in bypass for extended times.



If using two or more panels, make sure they are mounted side by side and are both facing south.

**SOLAR ZONES**

- 1 ZONE 1 (6 Hours of Sunlight/Day):** Ideal for solar application
- 2 ZONE 2 (4 Hours of Sunlight/Day):** Recommended for solar application
- 3 ZONE 3 (2 Hours of Sunlight/Day):** Success of solar application will depend on type of gate operator and location of the solar panel
- NOT AVAILABLE**



## SOLAR

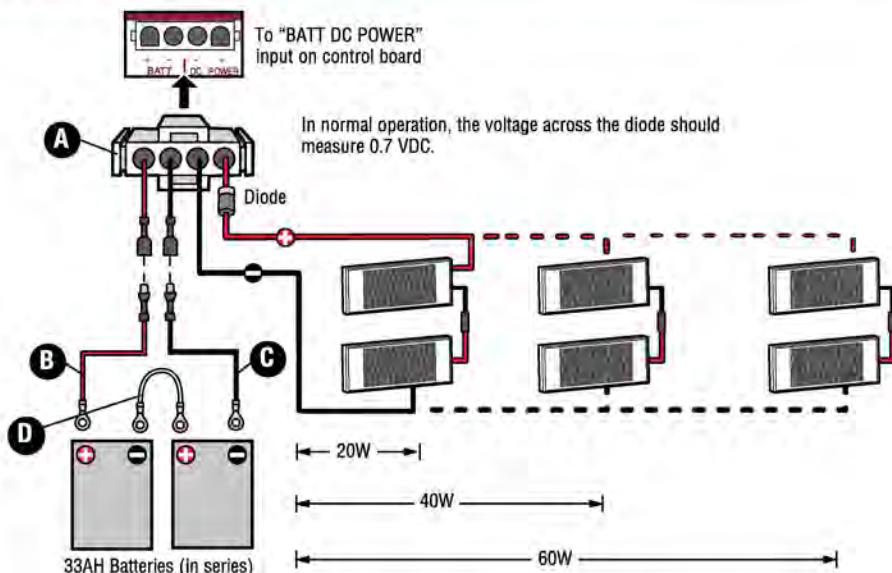
## 24V APPLICATIONS

**Disconnect all power (AC, solar, battery) to the operator before servicing.**

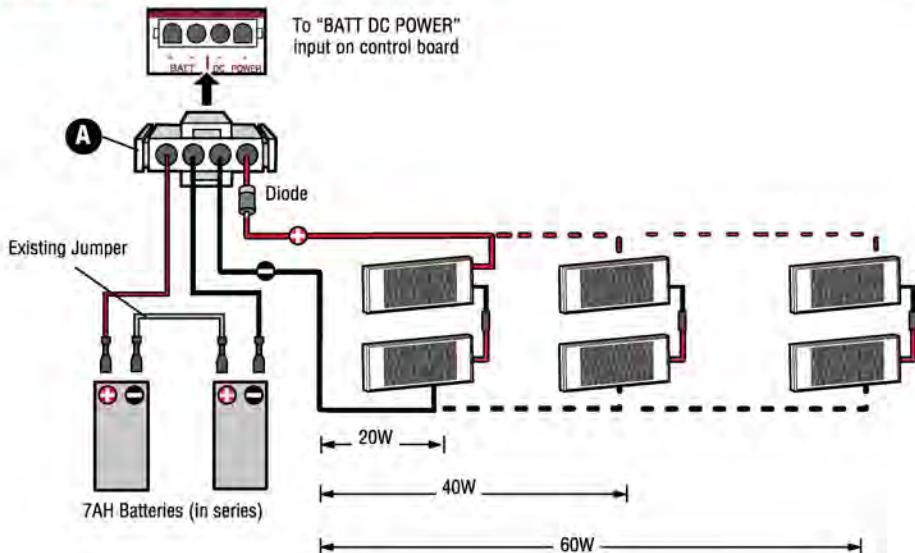
**NOTE:** 10W 12V solar panels are illustrated in the image below.

**In normal operation, the voltage across the diode should measure 0.7 VDC.**

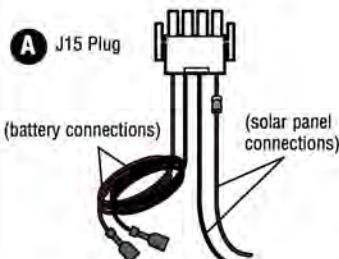
### 33AH BATTERIES



## 7AH BATTERIES



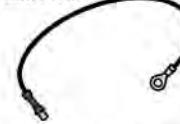
## ITEMS NEEDED FOR 24V APPLICATIONS



**B** Red wire for 33AH battery connections



**C** Black wire for 33AH battery connections



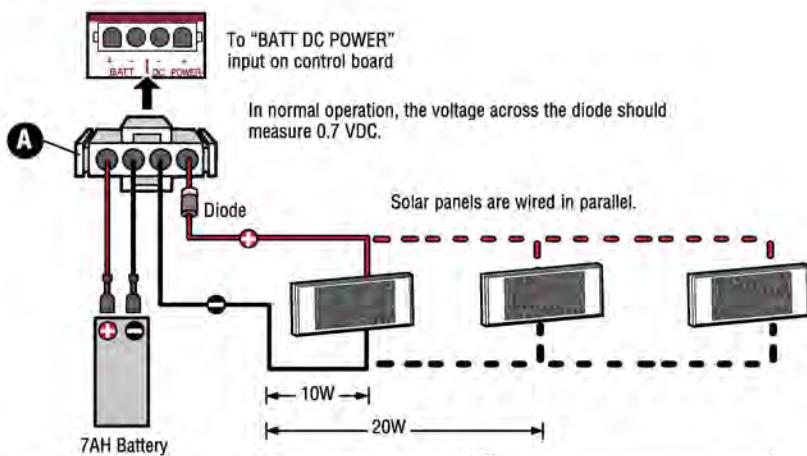
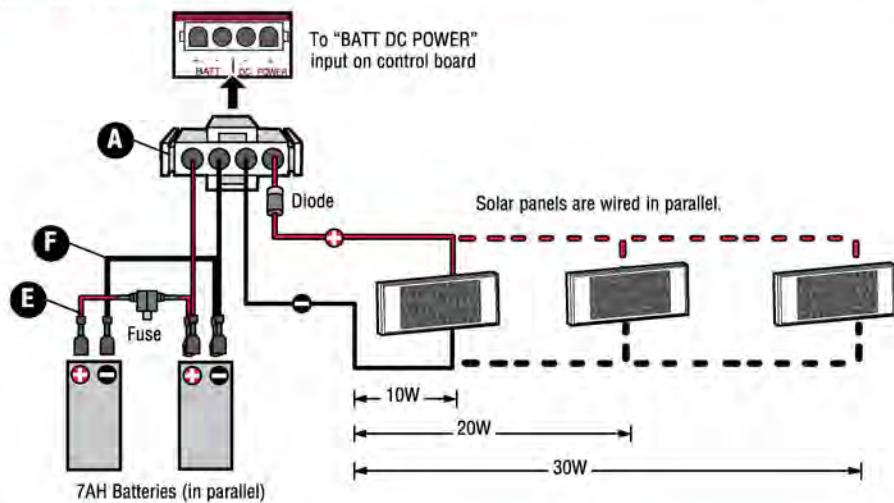
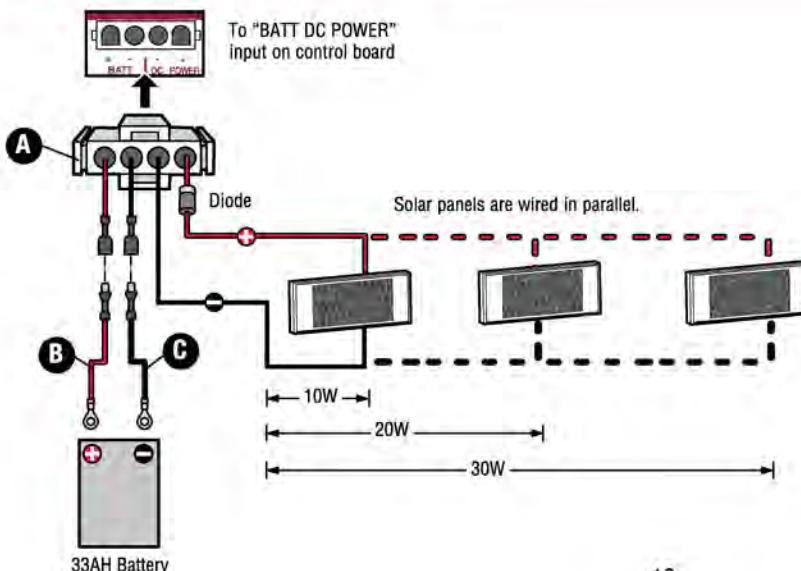
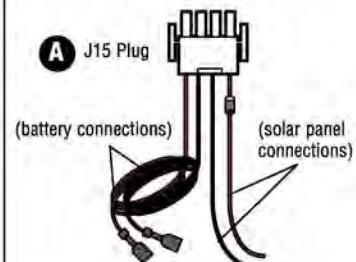
**D** White jumper wire for 33AH battery connections



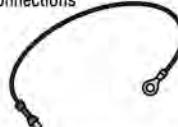
The remaining wires in the kit are not needed for 24V applications.

**SOLAR****12V APPLICATIONS**

Disconnect all power (AC, solar, battery) to the operator before servicing. **NOTE:** 10W 12V solar panels are illustrated in the image below.

**ONE 7AH BATTERY****TWO 7AH BATTERIES****ONE 33AH BATTERY****ITEMS NEEDED FOR 12V APPLICATIONS**

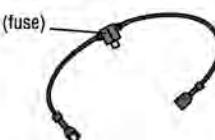
B Red wire for 33AH battery connections



C Black wire for 33AH battery connections



E Red jumper wire for two 7AH battery connections



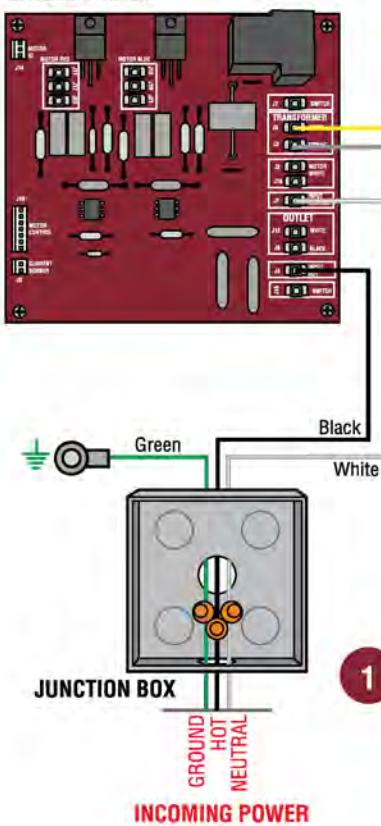
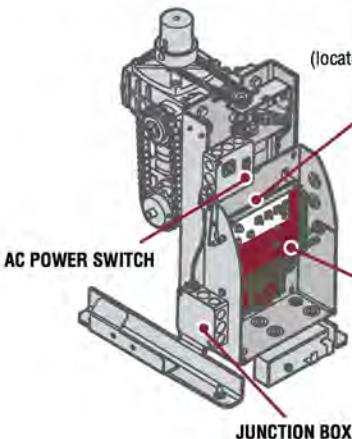
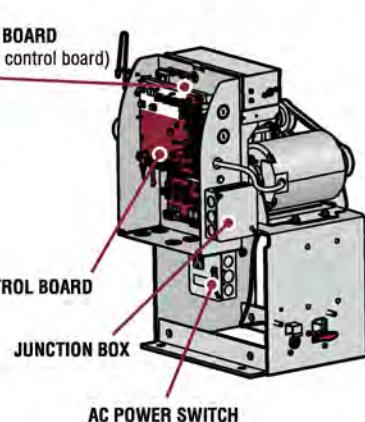
F Black jumper wire for two 7AH battery connections



The remaining wires in the kit are not needed for 12V applications.

**POWER****MODELS CSW200UL AND SL3000UL**

Follow the steps in order, from the bottom up.

**CONTROL BOARD****POWER BOARD  
SINGLE PHASE****MODEL CSW200U****MODEL SL3000U****4****Check the transformer and control board.\***

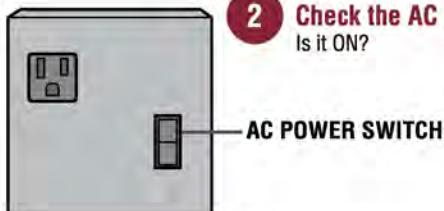
Check the orange 24 VAC IN wires at the control board. The voltage should be about 21-28 Vac. If the voltage is NOT 21-28 Vac, replace the transformer. If the voltage is 21-28 Vac, replace the control board.

**TRANSFORMER****3****Check the power board.\***

Check the gray and yellow transformer wires on the power board. The voltage should be 120 Vac. If not, replace the power board.

**2****Check the AC power switch.**

Is it ON?

**1****Check the incoming power.\***

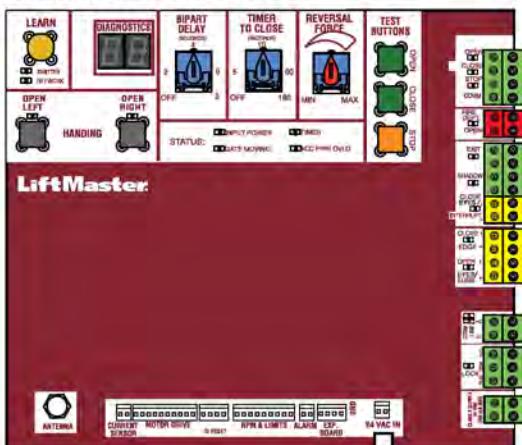
Check breaker first, then check wiring coming into operator. The voltage should be 120 Vac.

## POWER

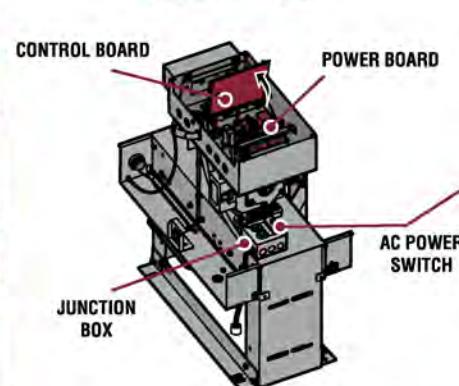
## MODELS SL585UL AND SL595UL (SINGLE PHASE)

Follow the steps in order, from the bottom up.

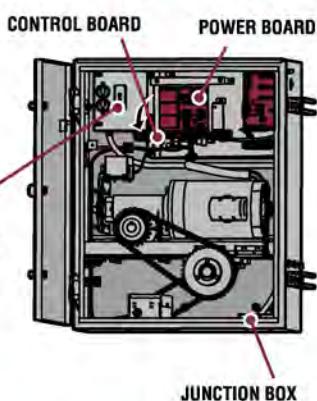
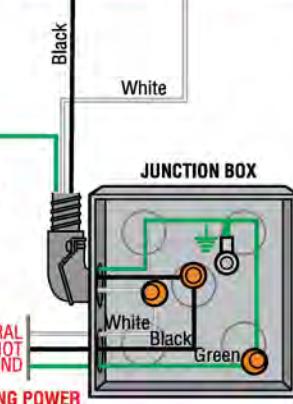
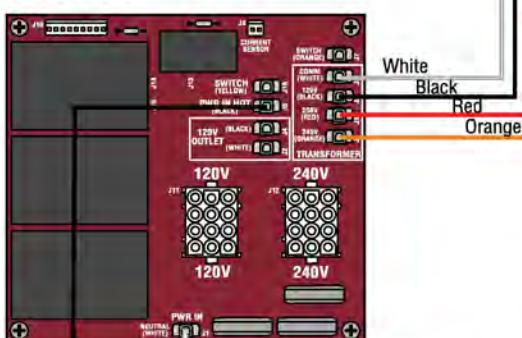
## CONTROL BOARD



## MODEL SL585UL

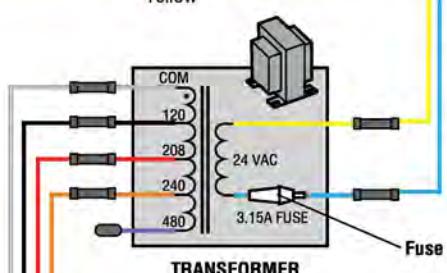


## MODEL SL595UL

POWER BOARD  
SINGLE PHASE

## Blue

## Yellow



## 4

## Check the transformer and control board.\*

Check the blue and yellow 24 VAC IN wires at the control board.

The voltage should be about 21-28 Vac. If the voltage is NOT 21-28 Vac, replace the transformer.

If the voltage is 21-28 Vac, replace the fuse. If the fuse is good, replace the control board.

## 3 Check the power board.\*

Check the following transformer wires on the power board:

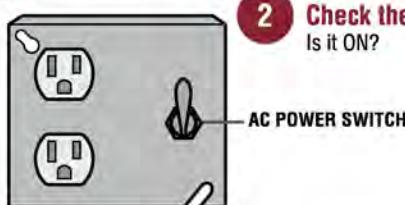
**120V Applications:** Check the white and black wires, voltage should be 120 Vac

**208V Applications:** Check the white and red wires, voltage should be 208 Vac

**240V Applications:** Check the white and orange wires, voltage should be 240 Vac. If the voltage is not correct, replace the power board.

## 2 Check the AC power switch.

Is it ON?



## 1 Check the incoming power.\*

Check breaker first, then check wiring coming into operator. The voltage should be 120, 208, or 240 Vac depending on the application.

## POWER

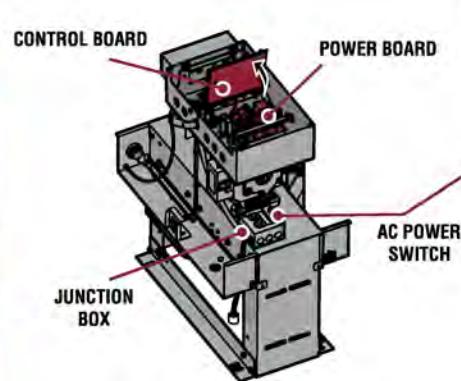
## MODELS SL585UL AND SL595UL (THREE PHASE)

Follow the steps in order, from the bottom up.

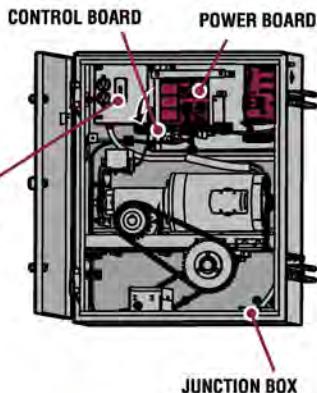
## CONTROL BOARD



## MODEL SL585U

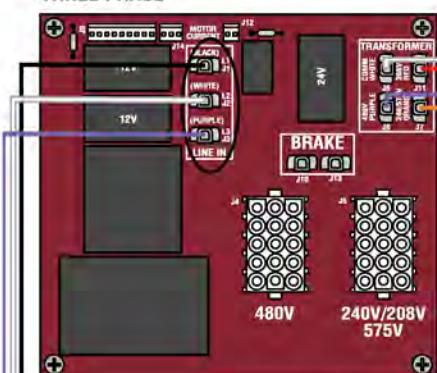


## MODEL SL595U



## POWER BOARD

THREE PHASE



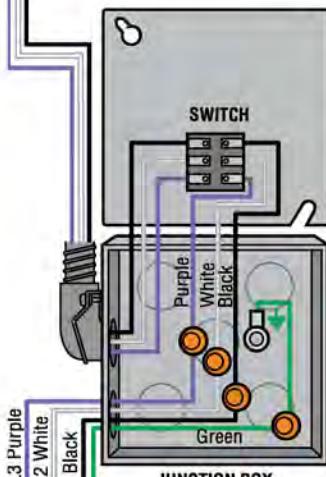
3

## Check the power board.\*

Check the following transformer wires on the power board:

**208V Applications:** Check the white and red wires, voltage should be 208 Vac**240V Applications:** Check the white and orange wires, voltage should be 240 Vac**480V Applications:** Check the white and purple wires, voltage should be 480 Vac

If the voltage is not correct, replace the power board.



1

## Check the incoming power.\*

Check breaker first, then check wiring coming into operator. The voltage should be 208, 240, or 480 Vac depending on the application.



2

## Check the AC power switch.

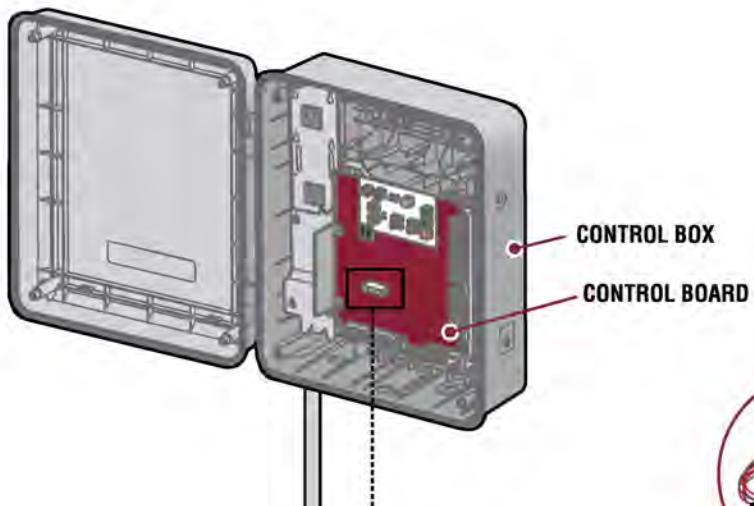
Is it ON?



## POWER

## MODEL LA412UL

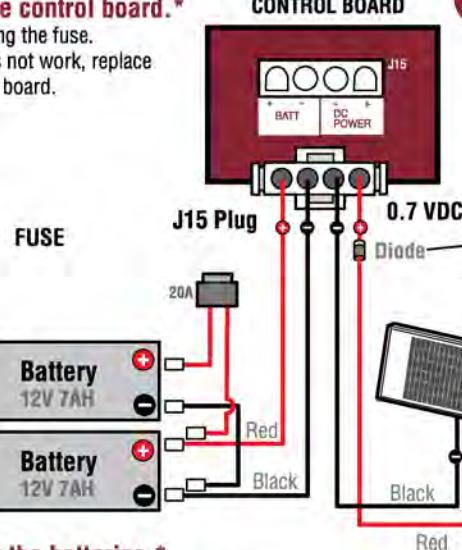
SYMPTOM: Operator does not have power.



## 3 Check the control board.\*

Try replacing the fuse.  
If that does not work, replace the control board.

## CONTROL BOARD



## 1

## Check the solar panels.\*

Check the voltage coming from the solar panels with the harness connected to the board. Make sure that the panels are in full sun. The voltage should be between 12VDC and 20VDC, and it must not be lower than the battery voltage.

Voltage across this diode should be approximately 0.7VDC while the harness is connected to J15. If it is higher than a volt, or is zero volts, replace the solar harn

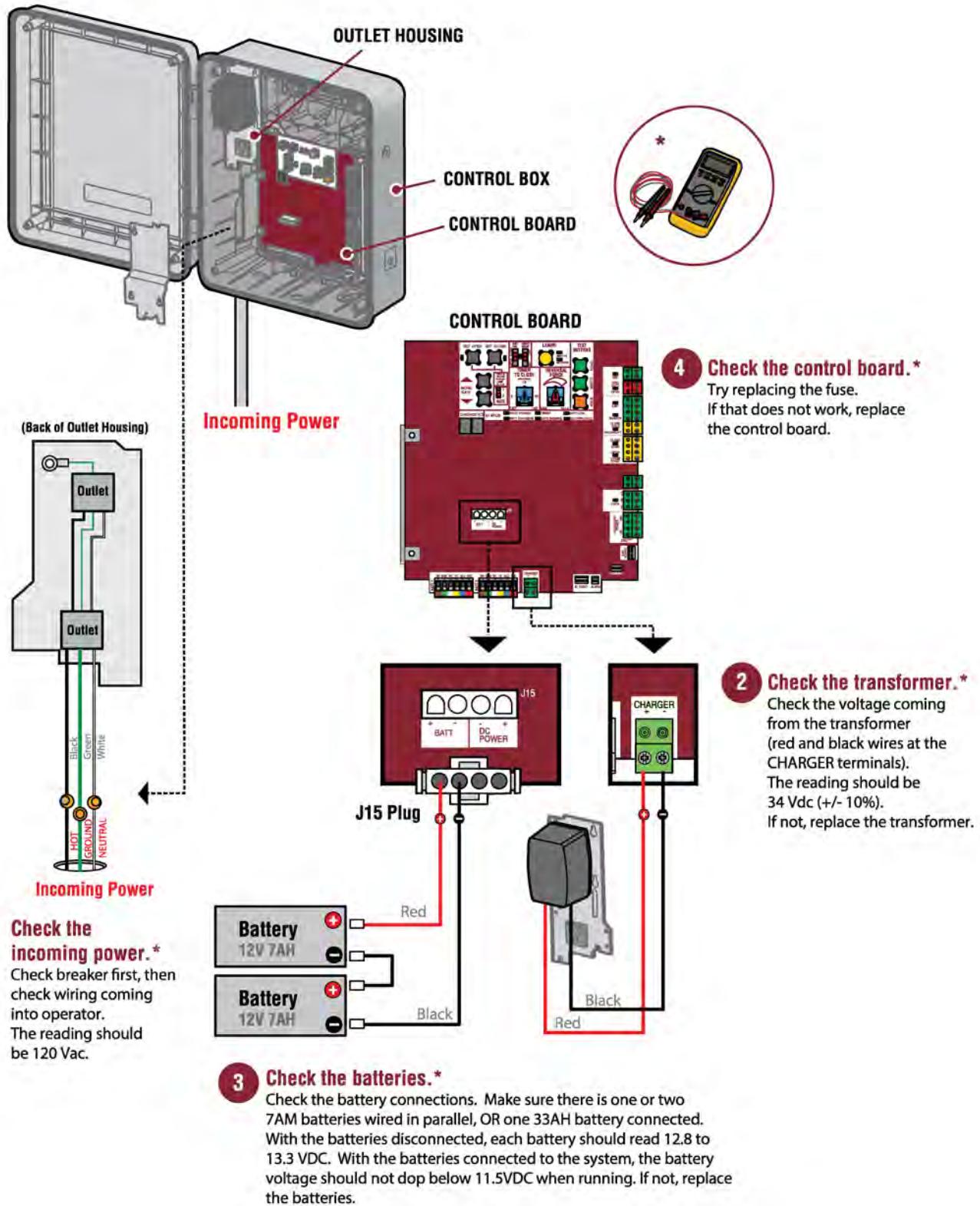
## 2 Check the batteries.\*

Check the battery connections. Make sure there is one or two 7AH batteries wired in parallel, OR one 33AH battery connected. With the batteries disconnected, each battery should read 12.8 to 13.3 VDC. With the batteries connected to the system, the battery voltage should not drop below 11.5VDC when running.

In normal operation, the diode should measure 0.7 VDC. If it measures 0.0 VDC or higher than 1 VDC, replace the :

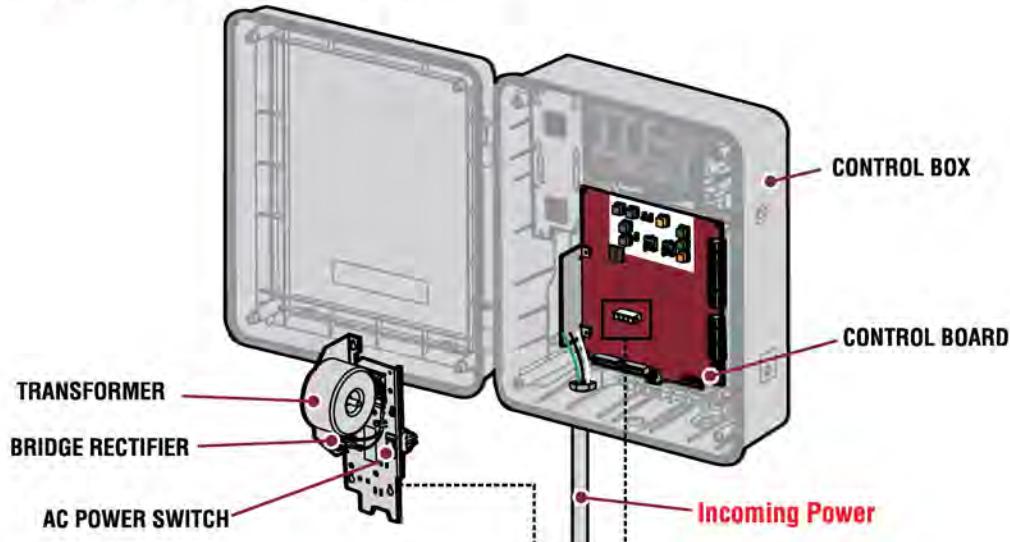
## MODEL LA400UL

SYMPTOM: Operator does not have power.



## MODEL LA500UL

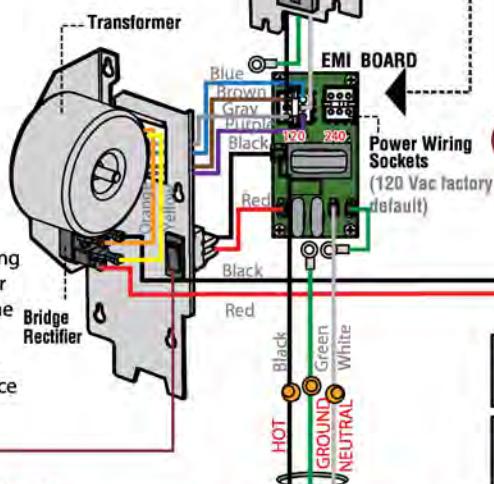
## SYMPTOM: Operator does not have power.



4

## Check the transformer.\*

Check the transformer voltage going into the bridge rectifier (orange and yellow wires). The reading should be 24 Vac (+/- 10%). If not, replace the transformer.



2

## Check the AC power switch.

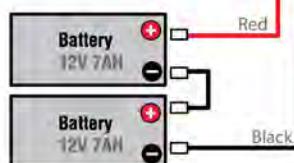
Is it ON?

## 1 Check the incoming power.\*

Check breaker first, then check wiring coming into operator.

The voltage should be 120 Vac or 240 Vac depending on the application.

## 3 Check the power wiring connector. Is it plugged into the correct socket?



7

## Check the control board.

Try replacing the fuse on the control board. If that does not work, replace the control board.



6

## Check the batteries.\*

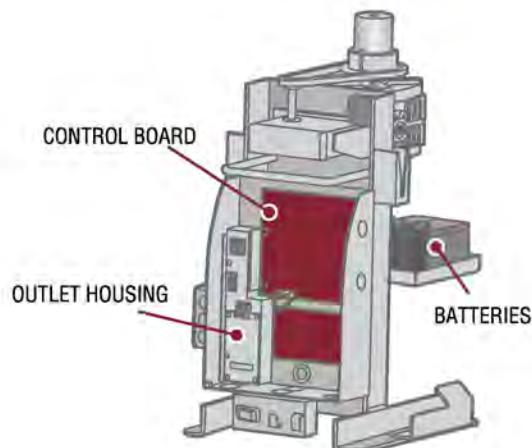
Check the battery connections. Make sure there is one or two 7AH batteries wired in parallel, OR one 33AH battery connected. With the batteries disconnected, each battery should read 12.8 to 13.3 VDC. With the batteries connected to the system, the battery voltage should not drop below 11.5VDC when running. If not, replace the batteries.

## POWER

## MODELS CSL24UL AND CSW24UL

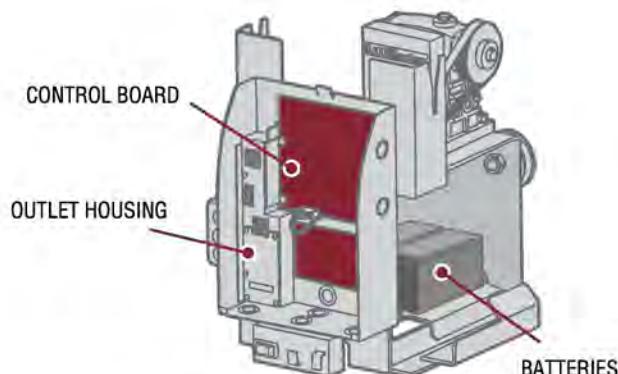
## SYMPTOM: Operator does not have power.

## MODEL CSW24U



TRANSFORMER and BRIDGE RECTIFIER located on chassis, behind the electrical box.

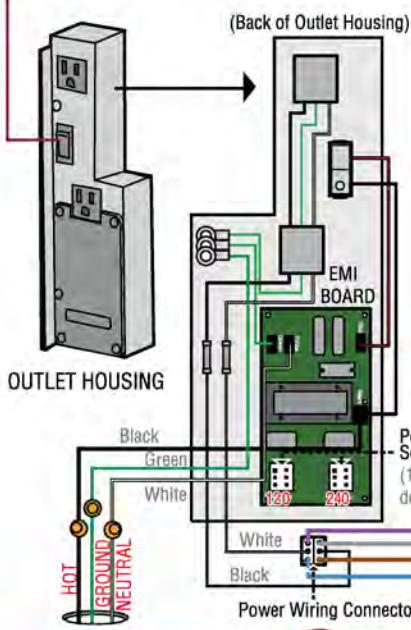
## MODEL CSL24U



TRANSFORMER and BRIDGE RECTIFIER located on chassis, behind the electrical box.

2

Check the AC power switch.  
Is it ON?



Input Power Connection

1

Check the incoming power.\*

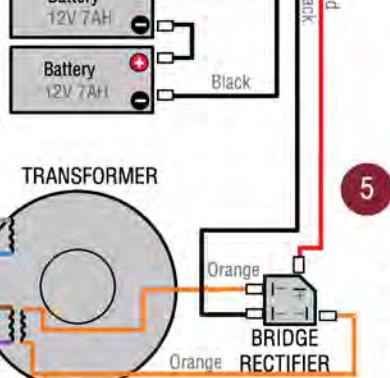
Check breaker first, then check wiring coming into operator.

The voltage should be 120 Vac or 240 Vac depending on the application.

6

Check the batteries.\*

Check the battery connections. Make sure there is one or two 7AH batteries wired in parallel, OR one 33AH battery connected. With the batteries disconnected, each battery should read 12.8 to 13.3 VDC. With the batteries connected to the system, the battery voltage should not drop below 11.5VDC when running. If not, replace the batteries.



7

Check the control board.

Try replacing the fuse on the control board. If that does not work, replace the control board.



5

Check the bridge rectifier.\*

Check the voltage coming out of the bridge rectifier (red and black wires). The reading should be approximately 35VDC with the J15 plug connected to the main board. If not, replace the bridge rectifier.

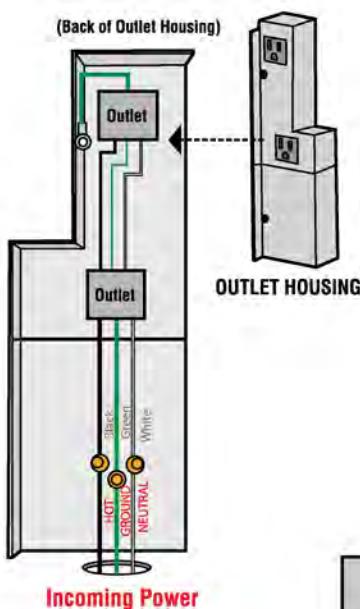
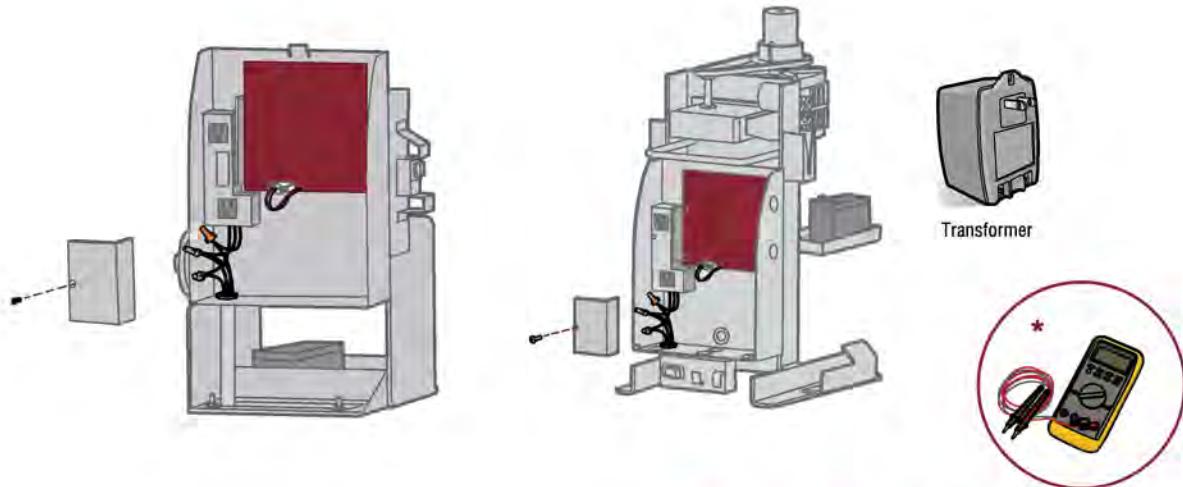
4

Check the transformer.\*

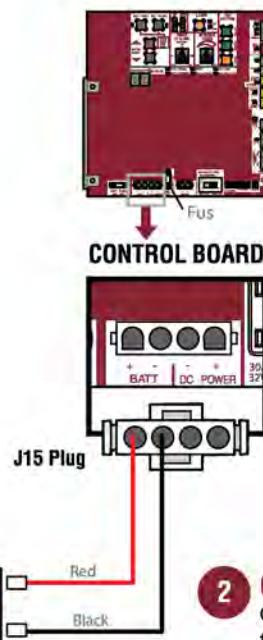
Check the transformer voltage going into the bridge rectifier (orange wires). The reading should be 24 Vac (+/- 15%). If not, replace the transformer.

## MODELS RSL12UL AND RSW12UL

SYMPTOM: Operator does not have power.



**1 Check the incoming power.\***  
Check breaker first, then check voltage coming into operator. The voltage should be 120 Vac.



**2 Check the batteries.\***  
Check the battery connections. Make sure there is one or two 7AH batteries wired in parallel, OR one 33AH battery connected. With the batteries disconnected, each battery should read 12.8 to 13.3 VDC. With the batteries connected to the system, the battery voltage should not drop below 11.5VDC when running. If not, replace the batteries.

**3 Check the control board.\***  
Try replacing the fuse on the control board. If that does not work, replace the control board.

## FREQUENTLY ASKED QUESTIONS

### What do I need to activate the gate operator using MyQ®?

- a. Router
- b. Internet connection
- c. Internet Gateway
- d. Internet Gateway serial number (located on the bottom of the Internet Gateway)
- e. MyQ-Enabled Gate Operator

### What is an Internet Gateway?

The Internet Gateway (828LM), is a 900 MHz Internet Protocol device for monitoring and controlling MyQ devices (e.g. gate operator or light control).

### Does an Internet Protocol Address or Dynamic Host Configuration Protocol need to be established for the Internet Gateway?

Yes, the Internet Gateway (828LM) requires a Dynamic Host Configuration Protocol (DHCP).

### What is the required speed of the Ethernet port for the Internet Gateway?

The Internet Gateway has a minimum speed of 10 Mb/s.

### How does the Internet Gateway connect to an existing residential or commercial network?

The Internet Gateway needs to be connected to a Local Area Network port on a network router or network switch, establishing connection to the Internet. When the Internet Gateway connects to the Internet, a secure session is established with the MyQ server.

### Can the Internet Gateway be pinged to verify connection to a network?

The Internet Gateway does not support a ping response.

### Can a static IP address be established on the Internet Gateway?

A static IP address cannot be established on this device. The Internet Gateway requires the router/Dynamic Host Configuration Protocol (DHCP) to provide a Local Area Network (LAN) Internet Protocol (IP) address.

### How can the Internet Gateway be tested from the Internet?

To test the Internet Gateway from the Internet, do either of the following:

- a. Add the Internet Gateway to a MyQ account. If the Internet Gateway is already on a MyQ account, add a MyQ-Enabled device (e.g. gate operator or light control) to the MyQ account.
- b. If a MyQ-Enabled device is already on the MyQ account, provide a command (open/close, on/off) using the MyQ app.

## FREQUENTLY ASKED QUESTIONS

### Can the Internet Gateway be connected from a remote location using the Wide Area Network (WAN) to our corporate offices and access the Internet from the corporate location?

If the Internet Gateway is successfully connected to the MyQ® server (green LED on MyQ Gateway is illuminated and solid), the MyQ app can monitor and control a MyQ device from any location. All MyQ-Enabled devices must be on the MyQ account and be within transmitting capability of the Internet Gateway.

**Are communications to/from the Internet Gateway encrypted?**

The Internet Gateway uses AES-128 encryption for all communications through the Internet. The Internet Gateway uses proprietary data encryption over 900 MHz to/from MyQ devices.

**How can the MAC address of the Internet Gateway be obtained?**

To obtain the MAC address, connect the Internet Gateway to a network router and use a computer to login into the router and locate the MAC address within the connected devices list. A MAC address for an Internet Gateway should be in the following format: 64:52:99: XX: XX: XX.

**How to put a MyQ Gate Operator into programming/learn mode:**

Press the learn button twice on the primary operator (the operator will beep as it enters learn mode). The Internet Gateway will pair to the gate operator if it is within range, and the gate operator will beep again if programming is successful.

**How to use the RESET button to put a MyQ Gate Operator into programming / learn mode when the gate is closed:**

1. Ensure the gate is closed.
2. Give the gate operator an OPEN command.
3. Within 30 seconds, when the gate is at the open limit, press and release the RESET button 3 times (on the primary gate) to put the primary operator into high band learn mode (the gate operator will beep as it enters learn mode).
4. The Internet Gateway will pair to the gate operator if it is within range and the gate operator will beep again if programming is successful.
5. The status as shown by the Internet Gateway app will be either "open" or "closed". The gate operator can then be controlled through the Internet Gateway app.

## TROUBLESHOOTING MyQ®

If issues are experienced when adding an Internet Gateway, a LiftMaster Gate Operator or light control to a MyQ® account, please review the troubleshooting topics below.

### CONNECTION ISSUES

#### PROBLEM

If the green LED on the Internet Gateway is not illuminated or blinking, the Internet Gateway is not connected to the Internet.

#### SOLUTION

There are a few different reasons an Internet Gateway will not successfully connect to the Internet:

- An incompatible router
- A router configuration setting (e.g. MAC address filtering)
- A network security appliance (firewall)

#### PROBLEM

Green LED on the Internet Gateway is off. The router or network switch is not providing an IP address to the Internet Gateway.

#### SOLUTION

- Verify power to the Internet Gateway. Disconnect and reconnect power to the Internet Gateway. The blue and green LEDs should blink on and off a few times when the Internet Gateway is initially powered.
- Check the Ethernet cable connections between the Internet Gateway, router, or network switch.
- Confirm the router or network switch is providing a connection to the Internet.
- Check if the router or switch is incompatible with the Internet Gateway. Go to LiftMaster.com/MyQ-PAS and look for the Incompatible Router and Switch section.
- Connect the Internet Gateway to a different LAN port on the router or network switch.

Determine if a router setting is preventing the Internet Gateway from obtaining an IP address (e.g. MAC address filtering, firewall settings).

- Review the router's settings and manual.
- Router must be set to DHCP to provide an IP address to the Internet Gateway.
- The Internet Gateway requires TCP Port 8883. Verify that it is open on external or internal firewalls.

Reset the router. Disconnect power to the router for 30 seconds. Reconnect power to the router. Wait up to 5 minutes after the router is active to determine if the green LED on the Internet Gateway is illuminated solid or blinking.

#### PROBLEM

Green LED on the Internet Gateway is blinking. If the green LED on the Internet Gateway is blinking, the Internet Gateway has obtained an IP address from the router, but the Internet Gateway is not connecting to the MyQ® server.

#### SOLUTION

Determine if a router setting (e.g. firewall setting) is preventing the Internet Gateway from communicating with the Internet.

- Review the router's settings and manual.
- The Internet Gateway requires UDP port 80 to have a UDP timeout of 180 seconds or greater.

Determine if a network security appliance (firewall, e.g. SonicWALL®, ZyWall) is installed.

- Determine if the network security settings are preventing connection of the Internet Gateway to the Internet.
- The Internet Gateway requires UDP port 80 to have a UDP timeout of 180 seconds or greater. SonicWALL's UDP timeout must be adjusted to be 180 seconds or longer for both inbound and outbound data traffic.

See SonicWALL Fire Wall section for more information.

## MyQ® ACCOUNT ISSUES

### Unable to add more than one MyQ device to a MyQ account:

- Prior to adding MyQ devices, an account must be established. An account can be created by downloading the MyQ app from a smartphone or tablet app store.
- Up to sixteen MyQ devices may be added to one Internet Gateway (828LM). If more than sixteen MyQ devices are required, additional Internet Gateways can be installed and added to the same MyQ account. For optimal performance of MyQ, the maximum number of devices added per account should not exceed 32.
- MyQ provides the ability to monitor and control MyQ-Enabled Gate Operators at more than one location from the same account. To monitor and control MyQ-Enabled Gate Operators at more than one location, additional Internet Gateways will be required at each location.
- An illuminated blue LED will be solid on an Internet Gateway when one or more MyQ devices (gate operator or light control) are paired to an Internet Gateway. The blue LED will not illuminate if no MyQ devices are paired to the Internet Gateway

**NOTE:** A MyQ device can only be associated (added) to one MyQ account.

### If a MyQ device fails to add to a MyQ account, please review the troubleshooting steps below:

If a pop-up error message appears on the MyQ app when attempting to add a device, verify the MyQ device is not already associated with another MyQ account. If the "add device" process times out after three minutes, the MyQ device may not be in the programming/learn mode or may be out of range of the Internet Gateway.

Sample error message that may be encountered: No response, gate operator is not responding. Please try again later.

### PROBLEM

Unable to add a MyQ-Enabled Gate Operator to a MyQ account.

### SOLUTION

- Confirm the Internet Gateway is powered and the green LED illuminated and solid.
- Confirm the Internet Gateway is added to the MyQ account.
- Confirm the MyQ-Enabled Gate Operator is in the programming/learn mode.
- Confirm the signal from the Internet Gateway can reach the MyQ-Enabled Gate Operator. Depending upon obstructions, the average range from the Internet Gateway is between 300 to 600 feet. Are there too many walls between the Internet Gateway and the gate operator?

To test a MyQ-Enabled Gate Operator, program a remote control to the operator and stand near the Internet Gateway. Test if a remote control can operate the MyQ-Enabled Gate Operator. If necessary, relocate the Internet Gateway closer to the MyQ-Enabled Gate Operator using a longer CAT5 cable or higher quality Ethernet cable (up to 100 feet).

- Confirm the antenna is installed on the gate operator. The antenna is included inside a poly bag on the gate operator cover along with the installation manual, user guide and quick start guide.
- MyQ-Enabled devices communicate using a 900 MHz radio signal. Electronic devices in the same area of the Internet Gateway or MyQ devices may create a range issue. Some troubleshooting options include powering down or relocating other 900 MHz products (900 MHz cordless phone, etc.) in the area of the MyQ device causing the interference.

## MyQ® ACCOUNT ISSUES

### PROBLEM

The MyQ-Enabled Gate Operator will not respond to the app.

### SOLUTION

- Confirm the green LED on the Internet Gateway is illuminated and solid. If the green LED is not illuminated or blinking, see Connection Issues section.
- For a MyQ-Enabled Gate Operator, confirm that the operator is powered up and fully operational. Control the MyQ-Enabled Gate Operator from a remote control.
- Confirm the MyQ-Enabled Gate Operator has been added to the MyQ account (a gate operator image should be present on the Places screen of the app).
- Confirm the signal from the Internet Gateway can reach the MyQ-Enabled Gate Operator. Depending upon obstructions, the average range from the Internet Gateway is between 300 to 600 feet. Are there too many walls between the Internet Gateway and the gate operator?

To test a MyQ-Enabled Gate Operator, program a remote control to the operator and stand near the Internet Gateway. Test if a remote control can operate the MyQ-Enabled Gate Operator. If necessary, relocate the Internet Gateway closer to the MyQ-Enabled Gate Operator using a longer CAT5 cable or higher quality Ethernet cable (up to 100 feet).

- MyQ devices communicate using a 900 MHz radio signal. Electronic devices in the same area of the Internet Gateway or MyQ-Enabled Gate Operator may create a range issue. Some troubleshooting options include powering down or relocating other 900 MHz products (900 MHz cordless phone, etc.) in the area of the MyQ-Enabled Gate Operator causing the interference.

**MyQ® ERROR CODES**

Below are potential error codes that may be encountered when working with the Internet Gateway, MyQ® app, MyQ website, or your PC or smartphone.

**GENERAL ERROR CODES**

ERROR CODE	MESSAGE	ISSUE AND RESOLUTION
209	Unable to remove device.	<ul style="list-style-type: none"> <li>Server was not able to confirm the deletion or removal of a device.</li> <li>If you continue to experience a problem, contact the LiftMaster Technical Service Center at 800.528.2806.</li> </ul>
223	Gateway is offline.	<ul style="list-style-type: none"> <li>Check the power outlet and identify if the blue and green LED's on Internet Gateway are illuminated.</li> <li>If the Internet Gateway appears to have no Internet connection, verify a computer in the facility attached to the network has an Internet connection by loading a web page.</li> <li>Log out of account. Restart the Internet Gateway by powering off and then back on. The Internet Gateway will need to be unplugged to power off. Log back into the account.</li> <li>If you continue to experience a problem, contact the LiftMaster Technical Service Center at 800.528.2806.</li> </ul>
224	Gateway is in learn mode.	<ul style="list-style-type: none"> <li>The app or website may not have connected to the myQ server, please try again.</li> <li>Log out of the account. Restart the Internet Gateway by powering off and back on. The Internet Gateway will need to be unplugged to power off.</li> <li>Log into the account and attempt to reprogram devices.</li> <li>If you continue to experience a problem, contact the LiftMaster Technical Service Center at 800.528.2806.</li> </ul>
301	The Gateway or hub serial number was invalid.	<ul style="list-style-type: none"> <li>Identify the serial number located on the bottom of the Internet Gateway.</li> <li>Verify the serial number. Ensure a 0 is a number.</li> <li>Try again to register the device with the correct serial number.</li> <li>If you continue to experience a problem, contact the LiftMaster Technical Service Center at 800.528.2806.</li> </ul>
303	Gateway serial number is not recognized after several attempts.	<ul style="list-style-type: none"> <li>Identify the serial number on the bottom of the Internet Gateway.</li> <li>Verify the serial number. Ensure a 0 is a number.</li> <li>Try again to register the device with the correct serial number.</li> <li>Delete the account and create a new account.</li> <li>If you continue to experience a problem, contact the LiftMaster Technical Service Center at 800.528.2806.</li> </ul>
304	Please make sure the device* is connected and the green LED is solid ON.	<ul style="list-style-type: none"> <li>Check the power outlet and identify if the green LED on the Internet Gateway device is illuminated.</li> <li>Log out of the account. If the Internet Gateway appears to not have an Internet connection, verify a computer in the facility attached to the network has an Internet connection by loading a web page. Restart the Internet Gateway by powering off and back on. The Internet Gateway will need to be unplugged to power off.</li> <li>If you continue to experience a problem, contact the LiftMaster Technical Service Center at 800.528.2806.</li> </ul>

\* A myQ-Enabled Gate Operator is considered a device.

**MyQ® ERROR CODES**

Below are potential error codes that may be encountered when working with the Internet Gateway, MyQ® app, MyQ website, or your PC or smartphone.

**GENERAL ERROR CODES**

ERROR CODE	MESSAGE	ISSUE AND RESOLUTION
305	The device* is currently in Learn Mode.	<ul style="list-style-type: none"> <li>The application or website may not have connected with the MyQ® server, please try again.</li> <li>Log out of the account. Restart the Internet Gateway by powering off and back on. The Internet Gateway will need to be unplugged to power off. Log back into the account and attempt to reprogram the device.</li> <li>If you continue to experience a problem, contact the LiftMaster Technical Service Center at 800.528.2806.</li> </ul>
308	A device* is not responding.	<ul style="list-style-type: none"> <li>Ensure the MyQ device* is powered and within range of the Internet Gateway.</li> <li>A MyQ device* is not responding. Verify the device is plugged into an outlet with power.</li> <li>Operate device manually.</li> <li>If the device responds, remove the device from the account. Add the device back to the account. If the device does not respond, the device may need to be replaced or serviced.</li> <li>Contact a local dealer or LiftMaster Technical Service Center at 800.528.2806.</li> </ul>
309	The Gateway is offline.	<ul style="list-style-type: none"> <li>The Internet Gateway has no power. Check the power outlet and identify if the green and blue LED's on the Internet Gateway device are illuminated.</li> <li>If the Internet Gateway appears to not have an Internet connection, verify a computer in the facility attached to the network has an Internet connection by loading a web page. Log out of the account. Restart the Internet Gateway by powering off and back on. The Internet Gateway will need to be unplugged to power off. Log back into the account.</li> </ul>
310	Device is on another user's account and unable to register.	<ul style="list-style-type: none"> <li>The Internet Gateway or device is already registered to another account.</li> <li>The device must be removed from the account before it can be added to a new account. If you have access to the other account, log into the account and remove the device. If you do not have access to the other account, you will not be able to add it to a new account.</li> </ul>

\* A MyQ-Enabled Gate Operator is considered a device.

## INCOMPATIBLE ROUTER AND SWITCH

### INCOMPATIBLE ROUTER

When installing an Internet Gateway, issues have been identified with the following routers/modems:

MANUFACTURER	MODEL
Belkin®	F5D8236-4 (Only works on LAN ports 1 & 3)
D-Link®	DIR-665
Huawei® Router/Modem	Echolife HG520C
Linksys®/Cisco®	WRT610N version 1
Netgear®	CGD24G Cable Modem
SMC Networks®	SMC8014WN
TRENDnet®	5-Port-10/100mbps Switch TE100-S5
Ubee®	DDW3610
Verizon®	Actiontec M1424-WRREV (Rev E) Modem Router
Westell® Modems	A90-7500 DSL Modem

The above routers use non-standard internal port wiring incompatible with the Internet Gateway. A hub or switch may resolve this situation, but is not a verified fix.

### INCOMPATIBLE NETWORK SWITCH

When installing an Internet Gateway, an identified issue has been associated with the following network switch:

MANUFACTURER	MODEL
TRENDnet	5-Port-10/100Mbps TE100-S5

### SONICWALL® FIRE WALL

#### PROBLEM

The performance issues listed below are caused by SonicWALL's factory default UDP connection timer being set to 30 seconds, which closes the Internet Gateway connection to the server after the Internet Gateway enters its sleep state and reduces its communication to the server to once every 60 seconds. When this occurs, the Internet Gateway will take up to 2 minutes to recognize connection to the server is lost before having to re-establish connection. This process will continue to repeat.

When a MyQ® device is behind a SonicWALL Network Appliance, the following MyQ app performance issues may occur:

- Difficulty controlling a MyQ device through the MyQ app.
- Manual operation by a MyQ device may not change status on the MyQ app (gate operator is closed by pressing the remote control, but app shows gate open).
- Upon power cycling of an Internet Gateway, the app will work for a brief period of time and then enter a non-working state.

#### SOLUTION

The SonicWALL UDP Connection timer should be changed to 120 seconds or greater. LiftMaster® recommends a minimum value of 180 seconds. The timer must be changed in multiple locations.

- The default UDP timer should be changed, which will change the UDP connection timer for any new rule made to the SonicWALL.
- Any current LAN -> WAN rules must have the UDP connection timeout updated manually. Set "Default UDP Connection Timeout (seconds):" to "360" and set "UDP Connection Inactivity Timeout (seconds):" to "360".







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