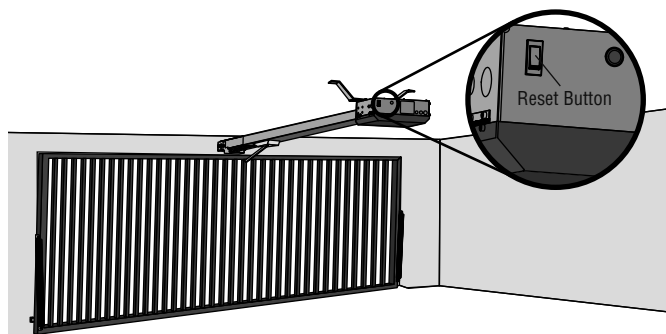


OPERATION

RESET BUTTON

The reset button is located on the side of the control box and serves several functions:

- Press the reset button to stop a moving gate/door during a normal open/close cycle, like a stop button.
- Press the reset button once while the gate/door is in open position to disable the Timer-to-Close. The gate/door will stay in the open position. To restart the Timer-to-Close either press the reset button or activate the gate/door with a programmed remote control.
- Press the reset button to shut off the alarm and reset the operator.



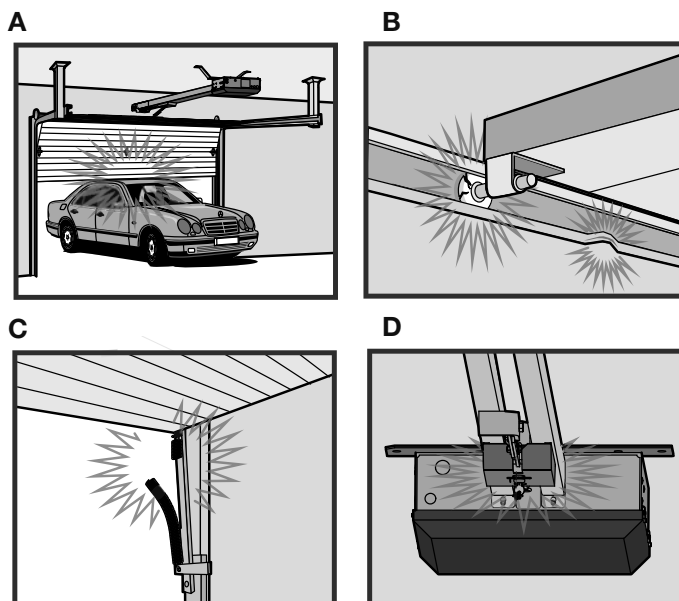
OPERATOR ALARM

If a contact sensor detects an obstruction twice consecutively the alarm will sound (up to 5 minutes) and the operator will need to be reset. If a command is given after the initial 5 minutes the operator will beep. The operator alarm will beep 3 times with a command if the battery is low.

When the inherent force of the operator (RPM/current sensor) detects the following (twice consecutively) the alarm will sound (up to 5 minutes) and the operator will need to be reset:

- A. The gate/door hits an obstruction.
- B. The gate/door has a broken wheel(s) or damaged track.
- C. The gate/door has broken springs or hardware.
- D. Trolley is hitting the chassis or an unwanted object.

Remove any obstructions. Toggle the reset switch to shut off the alarm and reset the operator. After the operator is reset, normal functions will resume.



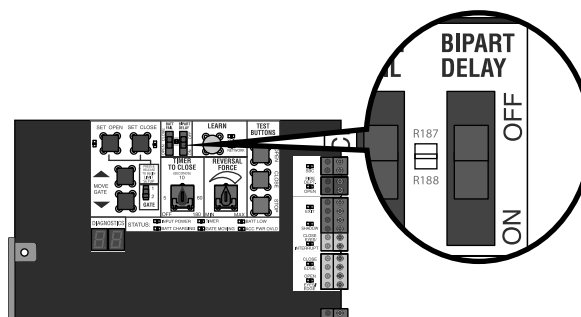
ADJUSTABLE OPEN SPEED

The HCTDCU provides a high speed open option to help flow in high traffic areas. Select the open speed using the BIPART DELAY switch.

BIPART DELAY OFF (default) = 8 in./sec. open speed

BIPART DELAY ON (fast) = 11 in./sec. open speed

NOTE: After changing the open speed, the force will need to be reset to account for the change of power used, see page 17.



REMOTE CONTROL

SINGLE BUTTON CONTROL (SBC) FUNCTIONALITY

Once the remote control has been programmed the operator will operate as follows:

When gate/door is in the closed position, activation of the remote control button will open the gate/door. During the open cycle another activation of the remote control will stop the gate/door and the next activation of the remote control will close the gate/door.

When the gate/door is in the open position, activation of the remote control button will close the gate/door. If the remote control is activated while the gate/door is closing, the gate/door will stop and the next activation will open the gate/door.

OPERATION

MANUAL DISCONNECT

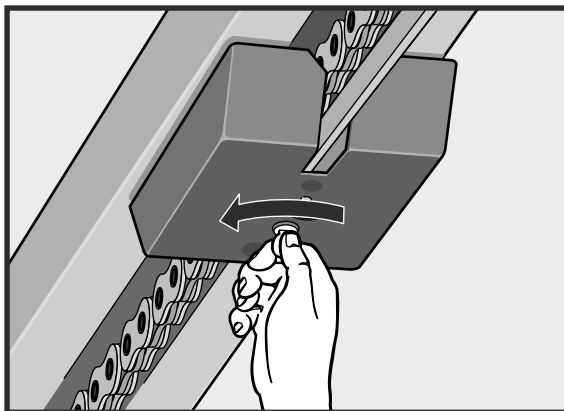
WARNING

To reduce the risk of **SERIOUS INJURY** or **DEATH** from a falling gate/door:

- If possible, use manual release to disengage trolley **ONLY** when gate/door is **CLOSED**. Weak or broken springs or unbalanced gate/door could result in an open gate/door falling rapidly and/or unexpectedly.
- **NEVER** use emergency release unless gate/door is clear of persons and obstructions.

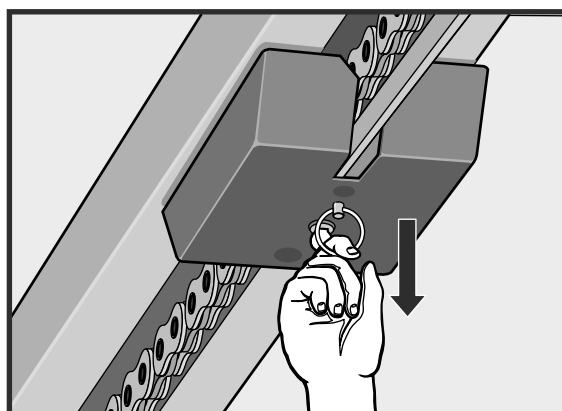
STEP 1

Insert key and turn to unlock position.



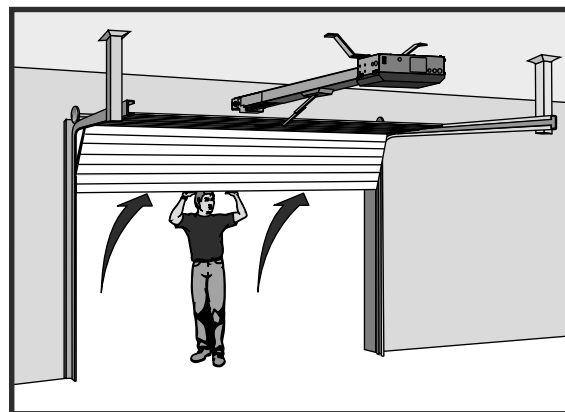
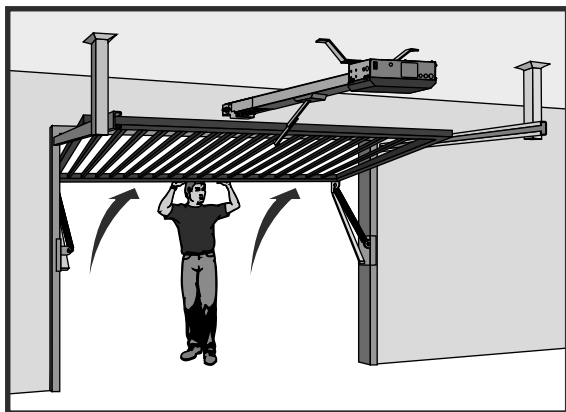
STEP 2

Pull down the release ring.



STEP 3

Lift the gate/door up until fully open.



The trolley will automatically re-engage when power is restored and run command is given. When the cylinder lock is in the locked position, the release ring will not disengage. If the cylinder lock is in the unlocked position, the release ring will always be accessible to disengage.

ACCESSORY WIRING

EXTERNAL CONTROL DEVICES

EXIT (2 Terminals)

This input is a soft open command (maintained switch does not override external safeties and does not reset alarm condition). Used for exit probe, telephone entry, external exit loop detector, or any device that would command the gate/door to open.

- Opens a closing gate/door and holds open an open gate/door, if maintained, pauses Timer-to-Close at OPEN limit.

SHADOW (2 Terminals)

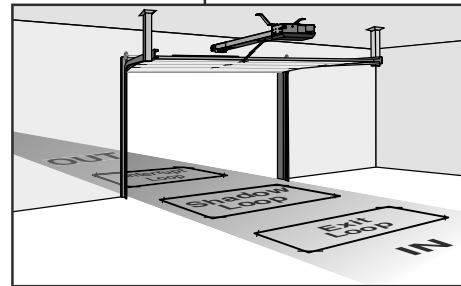
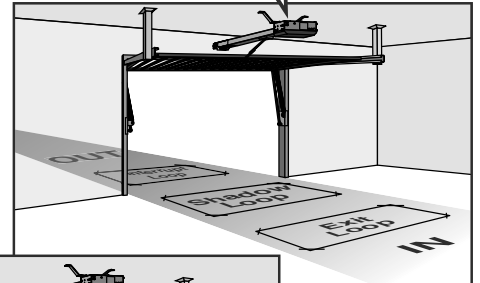
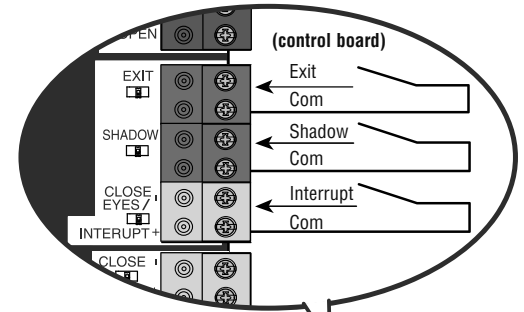
This input is used for external shadow loop detector when loop is positioned under the swing of the gate/door.

- Holds open gate/door at open limit
- Only active when the gate/door is at the OPEN limit, disregarded at all other times
- Pauses Timer-to-Close at OPEN limit

INTERRUPT (2 Terminals)

This input is used for photoelectric sensors and external interrupt loop detector when loop is on the outside of the gate/door.

- Holds open gate/door at OPEN limit
- Stops and reverses a closing gate/door to OPEN limit
- Pauses Timer-to-Close at OPEN limit, activates quick close and anti-tailgate features when enabled on the expansion board



EXTERNAL RESET BUTTON

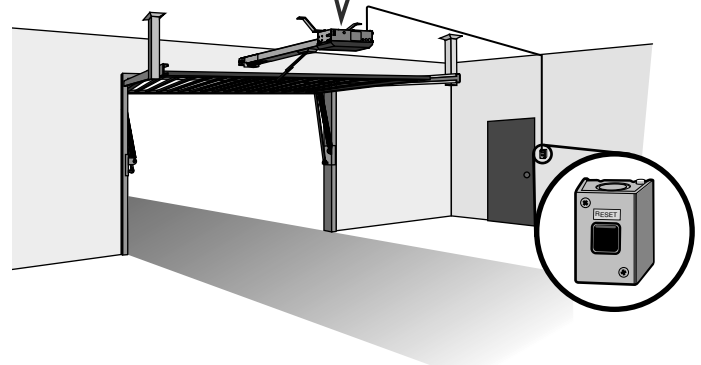
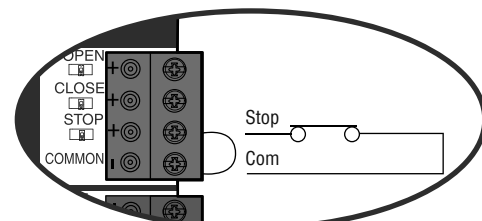
The externally located reset button serves several functions:

- Press the reset button to stop a moving gate/door during a normal open/close cycle, like a stop button.
- Press the reset button once while the gate/door is in open position to disable the Timer-to-Close. The gate/door will stay in the open position. To restart the Timer-to-Close either press the reset button or activate the gate/door with a programmed remote control.
- Press the reset button to shut off the alarm and reset the operator.

WIRING

- **STOP and COM:** Stops a moving gate/door. Hard stop (maintained switch overrides Open and Close commands and resets alarm condition). Cancels/resets Timer-to-Close at OPEN limit. Overrides Open and Close commands (within line-of-sight).

(main control board)

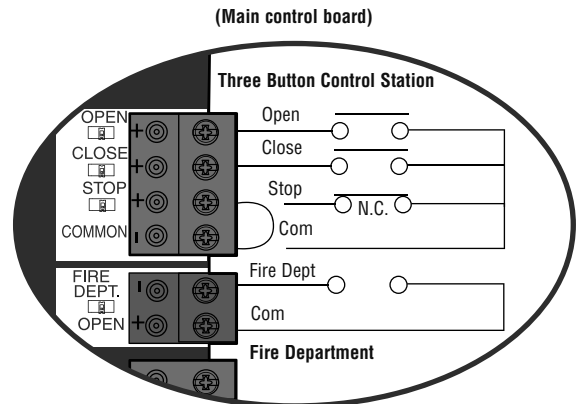


ACCESSORY WIRING

MISCELLANEOUS WIRING

THREE BUTTON CONTROL STATION (4 Terminals)

- **OPEN and COM:** Opens a closed gate/door.
Hard open (maintained switch overrides external safeties and resets alarm condition). If maintained, pauses Timer-to-Close at OPEN limit. Opens a closing gate/door and holds open an open gate/door (within line-of-sight).
- **CLOSE and COM:** Closes an open gate/door.
Hard close (maintained switch overrides external safeties and resets alarm condition within line-of-sight)
- **STOP and COM:** Stops a moving gate/door.
Hard stop (maintained switch overrides Open and Close commands and resets alarm condition). Cancels/resets Timer-to-Close at OPEN limit. Overrides Open and Close commands (within line-of-sight).

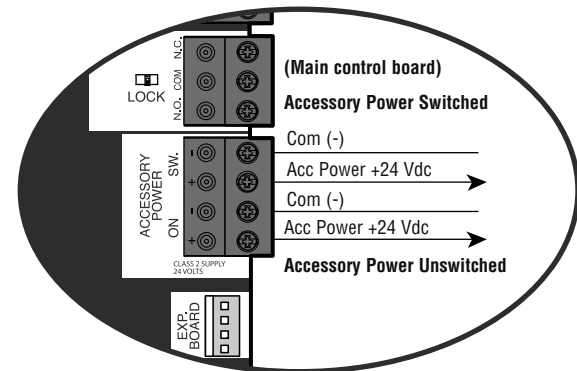


FIRE DEPARTMENT OPEN INPUT (2 Terminals)

Acts as hard open.

Hard open (maintained switch overrides external safeties and resets alarm condition). If maintained, pauses Timer-to-Close at OPEN limit.

Opens a closing gate/door and holds open an open gate/door (within line-of-sight). Bypasses any pre-warning delay.



ACCESSORY POWER 24 VDC, MAX 500 MA (4 Terminals)

- **SWITCHED:** Switched ON when the gate/door is in motion. Turns off after a 5 second delay when the gate/door stops. The power will remain ON at the open limit when Timer-to-Close is enabled and when the Timer-to-Close is counting down.
- **UNSWITCHED:** 24 Vdc voltage out to power accessories, always ON.

EXPANSION BOARD

CAUTION

To AVOID damaging the circuit board, relays or accessories, DO NOT connect more than 42 Vdc (32 Vac) to the AUX relay contact terminal blocks.

EXPANSION BOARD OVERVIEW

1 QUICK CLOSE Switch:

OFF: No change to the gate/door's normal operation.
ON: When CLOSE EYES/Interrupt loop is deactivated it causes an opening or a stopped gate/door to close (ignores the Timer-to-Close).

2 AC FAIL Switch:

OPEN: Loss of AC power will cause the gate/door to open approximately 15 seconds after AC power fail and remain OPEN until AC power is restored (enabling the Timer-to-Close).
BATT: With loss of AC power, gate/door will remain in present position and operator is powered from batteries.

3 EXIT LOOP FAIL Switch:

When set to OPEN, if the EXIT plug-in loop detector (Model LOOPDETLTM) detects a fault, then the gate/door will open and remain open until fault is cleared. When set to CLOSE, then plug-in EXIT loop detector faults are ignored (EXIT loop is faulted and inoperative).

4 ANTI-TAIL Switch:

OFF: When CLOSE EYES/Interrupt loop is activated it causes a closing gate/door to stop and reverse.
ON: When CLOSE EYES/Interrupt loop is activated it causes a closing gate/door to pause. Once the vehicle is clear the gate/door will continue to close.

5 AUX RELAY Switches: Set the AUX RELAY switches as needed to obtain the desired function as shown on the following page.

6 EYE/EDGE Switches: Set the EYE/EDGE switches as needed to obtain the desired OPEN or CLOSE functionality.

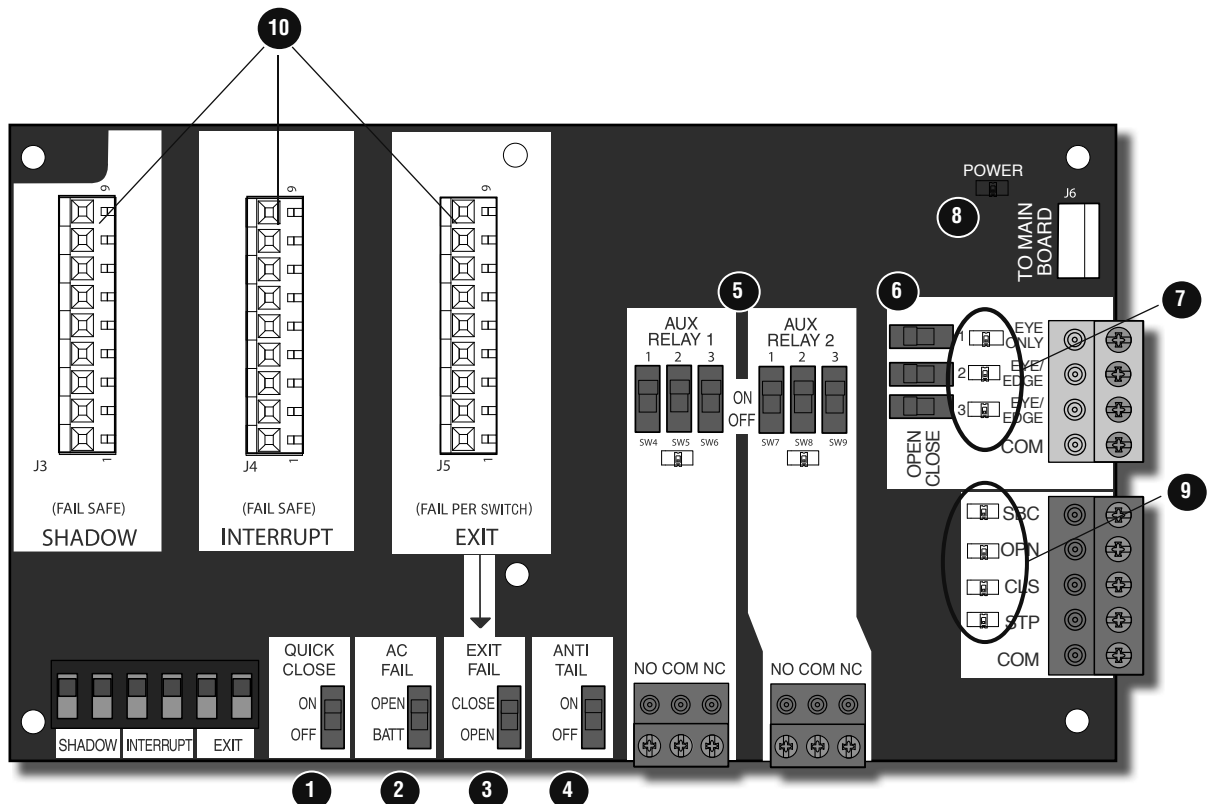
7 1, 2, and 3 LEDs: LEDs indicating the status of the EYE/EDGE inputs. Also used to check the firmware version of the expansion board:

1. Locate the 1, 2, and 3 LEDs on the expansion board.
2. Disconnect AC/DC power to the main control board for 15 seconds.
3. Connect power. The 1, 2, and 3 LEDs will flash in sequence until the main control board firmware revision is displayed. When the green POWER LED glows solid the LED 1 will flash the version number, then stop, then the LED 2 will flash the revision number (for example: For version 5.1 when the green POWER LED is solid the LED 1 will flash 5 times, then stop, then the LED 2 will flash once).

8 MAIN BOARD Input: Input Connection for the main board connector.

9 Input LEDs: LEDs indicating the status of the SBC, OPN, CLS, and STP inputs.

10 Loop Detector Inputs: Inputs for the Plug-In Loop Detectors (Model LOOPDETLTM)



EXPANSION BOARD

AUXILIARY RELAYS

AUX RELAY 1 AND 2

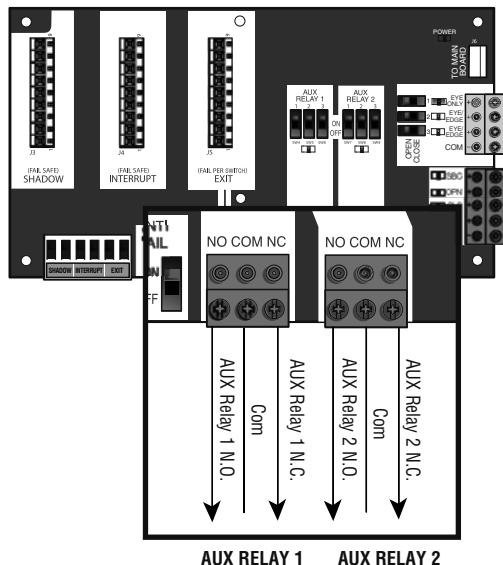
Normally Open (N.O.) and Normally Closed (N.C.) relay contacts to control external devices, for connection of Class 2, low voltage (42 Vdc [34 Vac] max 5 Amps) power sources only. Function of relay contact activation determined by switch settings.

AUX RELAY SETTING	SWITCH SETTINGS			AUX RELAY 1	AUX RELAY 2
	1	2	3		
Off (no feature selected)	OFF	OFF	OFF	Relay always off. Use this Aux Relay setting to conserve battery power.	
Open Limit Switch	OFF	OFF	ON	Energizes at open limit. Use with SAMS (Sequenced Access Management System, jointly with barrier gate).	
Close Limit Switch	OFF	ON	OFF	Energizes when not at close limit. For an additional audible or visual display, connect an external light (low voltage).	
Gate/door Motion	OFF	ON	ON	Energizes when motor is on (gate/door in motion). For an additional audible or visual display, connect an external buzzer or light (low voltage).	
Pre-Motion Delay	ON	OFF	OFF	Energizes 3 seconds before gate/door motion and remains energized during gate/door motion. The onboard alarm will sound. For an additional audible or visual display, connect an external buzzer or light (low voltage).	Energizes 3 seconds before gate/door motion and remains energized during gate/door motion. For an additional audible or visual display, connect an external buzzer or light (low voltage).
Power	ON	ON	OFF	Energizes when AC power or solar power is present. There is approximately a 10-12 second delay before relay cutoff, after AC shutdown.	Energizes when on battery power. There is approximately a 10-12 second delay before relay cutoff, after AC shutdown.
Tamper	ON	OFF	ON	Energizes if gate/door is manually tampered with by being pushed off of close limit. For an additional audible or visual display, connect an external buzzer or light (low voltage).	Energizes if gate/door is manually tampered with by being pushed off of close limit. For an additional audible or visual display, connect an external buzzer or light (low voltage).
Cycle Quantity Feedback*	ON	ON	ON	The 1, 2, and 3 LEDs will blink out the cycle count (cycle count is stored on the control board). See below.	Red/green light functionality, see below.

CYCLE COUNT

* First, note the current Aux Relay switch positions. To determine the actual cycles that the gate/door operator has run (in thousands), set all three Aux Relay switches to the ON setting for Aux Relay 1. The Expansion Board's 1, 2, and 3 LEDs will blink out the cycle count, with 1 LED blinking 1000's, 2 LED blinking 10,000's, 3 LED blinking 100,000's, and simultaneously all three LED's blink 1,000,000's (e.g. 1 LED blinks 3 times, 2 LED blinks 6 times, and 3 LED blinks once. Cycle count is 163,000.). Cycle count displayed is between 1,000 and 9,999,000 cycles. After servicing, set Aux Relay switches back to their appropriate positions. Cycle count cannot be reset or changed. If under 1,000 cycles the 1, 2, and 3 LEDs will turn on for 10 seconds, then turn off.

NOTE: The expansion board will flash the cycle count 3 times then all the LEDs will turn on solid for 10 seconds then turn off.



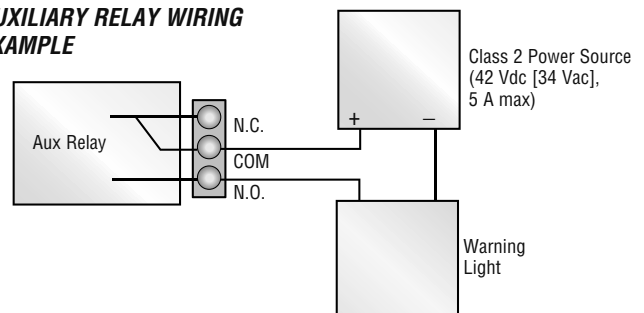
RED/GREEN LIGHT FUNCTIONALITY

Red light wired to AUX RELAY 1. Green light wired to AUX RELAY 2.

Gate/door STATE	AUX RELAY 1 SWITCHES			AUX RELAY 2 SWITCHES		
	1 OFF	2 OFF	3 OFF	1 ON	2 ON	3 ON
Closed	Red light OFF*			Green light OFF		
Opening	Red light ON/Flash			Green light OFF		
Open	Red light OFF			Green light ON		
Closing	Red light ON/Flash			Green light OFF		
Defined Mid Stop	n/a			n/a		
Undefined Mid Stop	Red light ON			Green light OFF		
Timer more than 5 seconds	Red light OFF			Green light ON		
Timer less than 5 seconds	Red light ON/Flash			Green light OFF		

* For red light ON when gate/door is closed, set switch 1 on AUX RELAY 1 to ON

AUXILIARY RELAY WIRING EXAMPLE

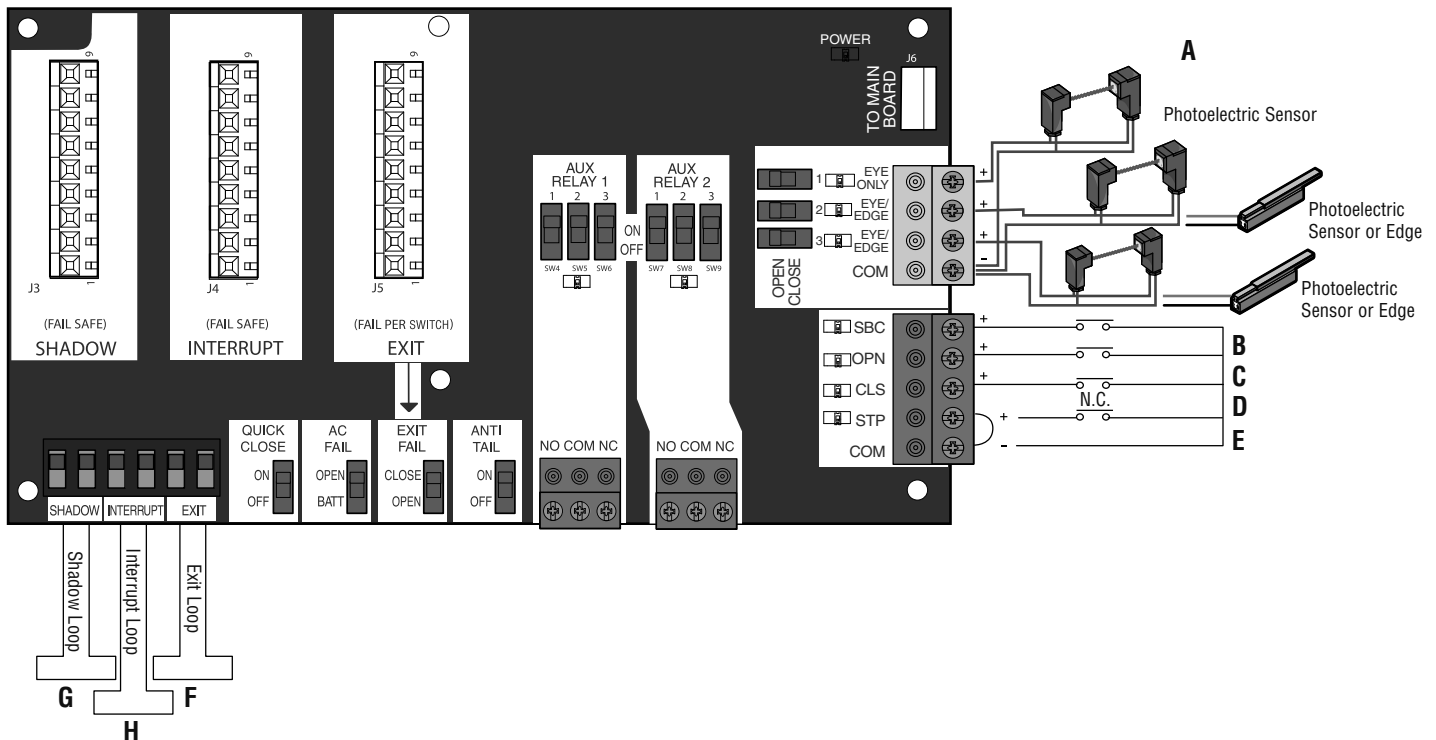


EXPANSION BOARD

WIRING ACCESSORIES TO THE EXPANSION BOARD

Refer to the chart below and the corresponding image for a description of the expansion board inputs.

A	Entrapment Protection Device Inputs (4 terminals total), Open or Close Direction based on switch setting next to inputs	EYES ONLY Input: Open or Close Direction Photoelectric Sensors, Close: reverses fully, Open: stops gate/door EYES/EDGE Input(s): Open or Close Direction Photoelectric Sensors, Infra-red detector wired or Edge Sensor, Close: reverses fully, Open: stops gate/door
B	Single Button Control, SBC (2 terminals)	Gate/door command sequence - Open, Stop, Close, Stop, ... Soft Open ,Soft Close, Soft Stop (maintained switch does not override external safeties and does not reset alarm condition)
C	Open Input (& common) (3-Button Control Station, 4 terminals total)	Open command - opens a closed gate/door. Soft open (maintained switch does not override external safeties and does not reset alarm condition) If maintained, pauses Timer-to-Close at OPEN limit. Opens a closing gate/door and holds open an open gate/door.
D	Close Input (& common) (3-Button Control Station, 4 terminals total)	Close command - closes an open gate/door. Soft close (maintained switch does not override external safeties and does not reset alarm condition)
E	Stop Input (& common) (3-PB station, 4 terminals total)	Stop command - stops a moving gate/door. Hard stop (maintained switch overrides Open and Close commands and resets alarm condition) If maintained, pauses Timer-to-Close at OPEN limit. Overrides an Open or Close command.
F	Exit Loop Input (2 terminals)	Loop wire connection for plug-in loop detector when loop is inside secured area near gate/door. Open command - opens a closed gate/door. Soft open (maintained switch does not override external safeties and does not reset alarm condition) If maintained, pauses Timer-to-Close at OPEN limit. Opens a closing gate/door and holds open an open gate/door.
G	Shadow Loop Input (2 terminals)	Loop wire connection for plug-in loop detector when loop is positioned under the gate/door. - Holds open gate/door at open limit - Disregarded during gate/door motion - Pauses Timer-to-Close at Open Limit
H	Interrupt Loop Input (2 terminals)	Loop wire connection for plug-in loop detector when loop is along the side of the gate/door. - Holds open gate/door at open limit - Stops and reverses a closing gate/door - Pauses Timer-to-Close at Open Limit - Activates quick close and anti-tail features if enabled



MAINTENANCE

IMPORTANT SAFETY INFORMATION

WARNING

To reduce the risk of SEVERE INJURY or DEATH:

- READ AND FOLLOW ALL INSTRUCTIONS.
- ALL maintenance MUST be performed by a LiftMaster professional.
- ANY maintenance to the operator or in the area near the operator MUST NOT be performed until disconnecting the electrical power (AC or solar and battery) and locking-out the power via the operator power switch. Upon completion of maintenance the area MUST be cleared and secured, at that time the unit may be returned to service.
- NEVER let children operate or play with gate/door controls. Keep the remote control away from children.
- ALWAYS keep people and objects away from the gate/door. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE/DOOR.
- The entrance is for vehicles ONLY. Pedestrians MUST use separate entrance.
- Test the gate/door operator monthly. The gate/door MUST reverse on contact with a rigid object or reverse when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate/door operator. Failure to adjust and retest the gate/door operator properly can increase the risk of INJURY or DEATH.
- Use the manual disconnect release ONLY when the gate/door is not moving.
- KEEP GATES/DOORS PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to gate/door hardware.
- Activate gate/door ONLY when it can be seen clearly, is properly adjusted and there are no obstructions to gate/door travel.
- To reduce the risk of FIRE or INJURY to persons use ONLY LiftMaster part 29-NP712 for replacement batteries.
- SAVE THESE INSTRUCTIONS.

CAUTION

- ALWAYS wear protective gloves and eye protection when changing the battery or working around the battery compartment.

MAINTENANCE CHART

Disconnect all power (AC, solar, battery) to the operator before servicing. The operator's AC Power switch ONLY turns off AC power to the control board and DOES NOT turn off battery power. ALWAYS disconnect the batteries to service the operator.

DESCRIPTION	TASK	CHECK AT LEAST ONCE EVERY		
		MONTH	6 MONTHS	3 YEARS
Entrapment Protection Devices	Check and test for proper operation	X		
Warning Signs	Make sure they are present	X		
Manual Disconnect	Check and test for proper operation		X	
Gate/door	Make sure the gate/door operates smoothly without the operator.	X		
Gate/door Track	Make sure the gate/door track runs smoothly.	X		
Accessories	Check all for proper operation		X	
Electrical	Inspect all wire connections		X	
Operator	Inspect for wear or damage		X	
Chain	For chain maintenance, adjust the turnbuckle.		X	
Batteries	Replace			X

BATTERIES

Batteries will degrade over time depending on temperature and usage. The operator alarm will beep 3 times with a command if the battery is low. Batteries do not perform well in extremely cold temperatures. For best performance, the batteries should be replaced every 3 years. Use only LiftMaster part 29-NP712 for replacement batteries. The operator comes with two 7AH batteries. The batteries contain lead and need to be disposed of properly.

TROUBLESHOOTING

WARNING

To protect against fire and electrocution:

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

For continued protection against fire:

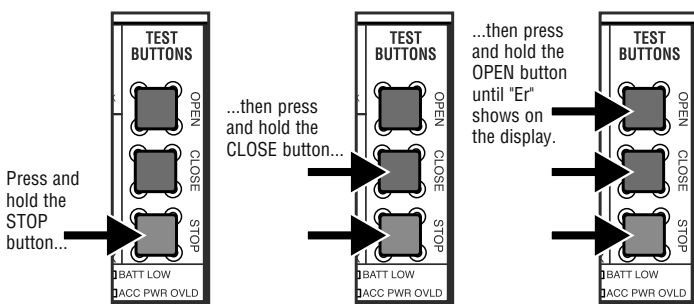
- Replace ONLY with fuse of same type and rating.

DIAGNOSTIC CODES

NOTE: When cycling or disconnecting power (ac/dc) to the control board, it is recommended that you unplug the J15 plug.

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:

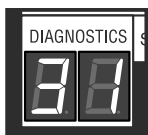
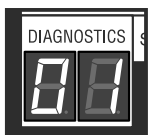
CODE SEQUENCE NUMBER

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".

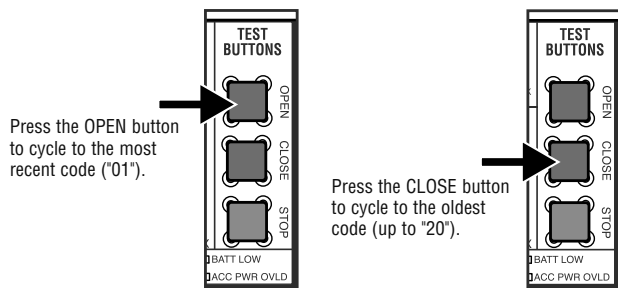
**A SECOND
LATER....**

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.

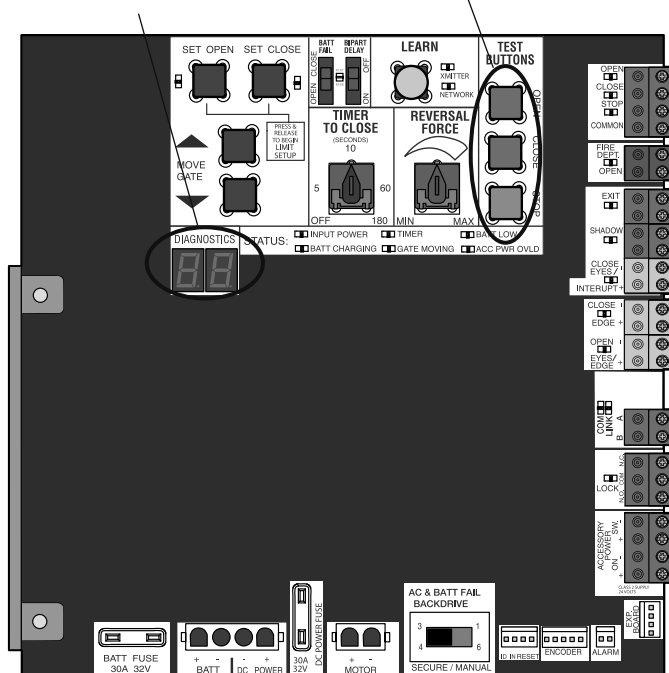


TO SCROLL THROUGH THE SAVED CODES



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

DIAGNOSTICS DISPLAY OPEN, CLOSE, & STOP BUTTONS



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.

TROUBLESHOOTING

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.

 LiftMaster System	 Installed System	 Informational	 External Entrapment Protection	 Inherent Entrapment Protection
--	--	---	--	--

Code	Meaning	Solution	Saved
31	Main control board has experienced an internal failure.	Disconnect all power, wait 15 seconds, then reconnect power (reboot). If issue continues, replace main control board.	NO
34	Absolute Position Encoder Error, not getting position information from encoder	Check APE assembly and wiring connections. Replace the APE assembly if necessary.	YES
35	Max-Run-Time Exceeded Error	Check for an obstruction, then reprogram the limits.	YES
36	Product ID Error	Was the control board just replaced? If so, erase limits, enter limit setup mode and set limits. If not, disconnect all power, wait 15 seconds, then reconnect power before changing product ID harness.	YES
37	Product ID Failure	Unplug product ID harness then plug back in. Disconnect all power, wait 15 seconds, then reconnect power before replacing product ID harness.	YES
38	Hard Stop Limit	Limit may be set too tightly against a non-resilient hard stop (re-adjust limit). Operator may be at end of travel (re-adjust mounting).	NO
40	Battery overvoltage	Too much voltage on the battery. Check harness. Make sure there is NOT a 24V battery on a 12V system.	YES
41	Battery overcurrent	Possible short of the battery charge harness. Check harness. Make sure you do NOT have a 12V battery on a 24V system.	YES
42	No battery at boot up	Check battery connections and installation. 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.	YES
43	Exit Loop Error	Failure or missing loop (SHORT or OPEN - LiftMaster Plug-in Loop Detector only) Check loop wiring throughout connection. May be a short in the loop, or an open connection in the loop.	YES
44	Shadow Loop Error		
45	Interrupt Loop Error		
46	Wireless edge battery low	Replace batteries in wireless edge.	YES
50	Door out of balance detected	Check counterbalance spring condition and setting.	YES
53	Brownout occurred	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

TROUBLESHOOTING

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.

	LiftMaster System		Installed System		Informational		External Entrapment Protection		Inherent Entrapment Protection
--	-------------------	---	------------------	---	---------------	---	--------------------------------	---	--------------------------------

Code	Meaning	Solution	Saved
60	Minimum number of monitored entrapment protection devices (one) not installed.	Review monitored entrapment protection device connections. A minimum of one monitored entrapment protection device protecting the close direction must be installed to allow operation.	NO
61	CLOSE EYE/INTERRUPT held more than 3 minutes	Check wired input on main control board; check for alignment or obstruction.	YES
62	CLOSE EDGE held more than 3 minutes		
63	OPEN EYE/EDGE held more than 3 minutes		
64	CLOSE EYE/INTERRUPT held more than 3 minutes	Check wired input on expansion board; check for alignment or obstruction.	YES
65	CLOSE EYE/EDGE held more than 3 minutes		
66	OPEN EYE/EDGE held more than 3 minutes		
67	Wireless edge triggered more than 3 minutes	Check wired input for wiring issue or obstruction.	YES
68	Wireless edge loss of monitoring	Check wireless edge inputs.	YES
69	Wireless edge triggered	IF an obstruction occurred, no action required. If an obstruction did NOT occur, check inputs and wiring.	NO
70	CLOSE EYE/INTERRUPT triggered, causing reversal, preventing close, or resetting TTC	IF an obstruction occurred, no action required. If an obstruction did NOT occur, check alignment, inputs, and wiring on main control board.	NO
71	CLOSE EDGE triggered, causing reversal, preventing close, or canceling TTC		
72	OPEN EYE/EDGE triggered, causing reversal or preventing opening		
73	CLOSE EYE/INTERRUPT triggered, causing reversal, preventing close, or resetting TTC	IF an obstruction occurred, no action required. If an obstruction did NOT occur, check alignment, inputs, and wiring on expansion board.	NO
74	CLOSE EYE/EDGE triggered, causing reversal and preventing close or canceling TTC		
75	OPEN EYE/EDGE triggered, causing reversal or preventing opening		
82	Close input (EYE/EDGE) communication fault (expansion board)	Check the connections between the main board and the expansion board.	YES
83	Open input (EYE/EDGE) communication fault (expansion board)		
91	Force Reversal	Check for obstruction. If no obstruction, check that the mechanical assembly is engaged and free to move. See section on Limit and Force Adjustment, and Obstruction Test.	YES
93	RPM / STALL Reversal	Check for obstruction. If no obstruction, check the operator wiring and that the mechanical assembly is engaged and free to move. Replace APE assembly.	YES
99	Normal Operation	No action required	YES

TROUBLESHOOTING

CONTROL BOARD LEDS

STATUS LEDS		
INPUT POWER	OFF	OFF state
	ON	AC charger or Solar power available
BATT CHARGING	OFF	Not charging
	ON	Three stage battery charging
TIMER	OFF	The timer is disabled
	ON	The timer is enabled
	MEDIUM BLINK (1 blink per second)	The timer is running
	FAST BLINK (2 blinks per second)	The timer is paused
GATE/DOOR MOVING	OFF	The gate/door is stopped
	ON	The gate/door is opening or closing
	MEDIUM BLINK (1 blink per second)	Operator is in E1 (single entrapment)
	FASTEST BLINK (8 blinks per second)	The operator is in E2 (double entrapment)
BATT LOW	OFF	No battery error
	ON	Battery low
	BLINK (1 blink per second)	Battery critically low
ACC PWR OVLD	OFF	OFF state
	ON	Accessory overload protector opened

INPUT LEDS		
OPEN, CLOSE, & STOP INPUT	OFF	Input inactive
	ON	Input active
	BLINK	Input active on other operator
FIRE DEPT INPUT	OFF	Input inactive
	ON	Input active
	BLINK	Input active on other operator
EXIT	OFF	Input inactive
	ON	Input active
	BLINK	Input active on other operator
SHADOW	OFF	Input inactive
	ON	Input active
	BLINK	Input active on other operator
CLOSE EYES/ INTERRUPT	OFF	Input inactive
	ON	Input active
	BLINK	Input active on other operator
CLOSE EDGE	OFF	Input inactive
	ON	Input active
	BLINK	Input active on other operator
OPEN EYES/ EDGE	OFF	Input inactive
	ON	Input active
	BLINK	Input active on other operator
LOCK	OFF	Maglock relay inactive
	ON	Maglock relay active

