



Commercial Door Operators

Accessories

PART # 180C0139

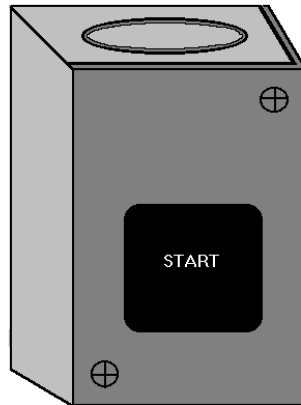
1 Button Pushbutton Station

(NEMA 1)

Start; may be used to Open on all operators. May be used to Open & Close on all **LINK operators** with types B2, R2, and S2 control wiring.

WARNING: This control will not stop the door. Use another control that has a Stop button in conjunction with this control.

Steel Enclosure.



ALL COMMERCIAL ACCESSORIES SHOULD BE PRICED AND ORDERED BY CORPORATE OFFICE

PUSH BUTTON STATIONS:

*** PART #180C0141**

*** 1 BUTTON HEAVY DUTY (NEMA4)**

*** Die Cast Metal**

Start; may be used to Open on all operators. May be used to Open & Close on all **LINK operators** with types B2, R2, and S2 control wiring.

WARNING: This control will not stop the door. Use another control that has a Stop button in conjunction with this control.

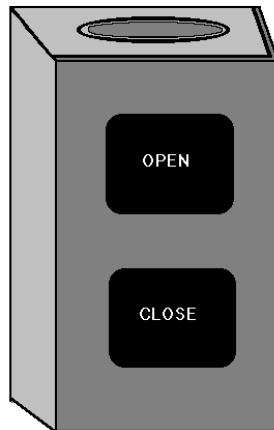
NOTE: All Commercial Accessories should be priced and ordered by our Corporate Office.

PART # 180C0142

2 Button Pushbutton Station
(NEMA 1)

Open/Close; should only be used on operators wired for constant pressure to open and close (all industrial operators with type D control wiring).

WARNING: When used on most industrial operators, this control will not stop the door. Use another control that has a STOP button in conjunction with this control.
Steel Enclosure



PUSH BUTTON STATIONS:

*** PART #180C0144**

*** 2 BUTTON (NEMA-4)**

***Die Cast Metal**

* Open/Close; should only be used on operators wired for constant pressure to open and close (all industrial operators with type D control wiring).

WARNING: When used on most industrial operators, this control will not stop the door. Use another control that has a STOP button in conjunction with this control.

NOTE: *All Commercial Accessories should be priced and ordered by our Corporate Office.*

COMMERCIAL OPERATOR ACCESSORIES

PUSH BUTTON STATIONS:

*** PART #180C144**

*** 2 BUTTON HEAVY DUTY (NEMA-4)**

*** Die Cast Metal Enclosure**

*** Open and Close; Should only be used on operators**

wired

for constant pressure to open and close (all industrial operators with type D control wiring .

WARNING: *When used on most industrial operators, this control will not stop the door. Use another control that has a STOP button in

conjunction

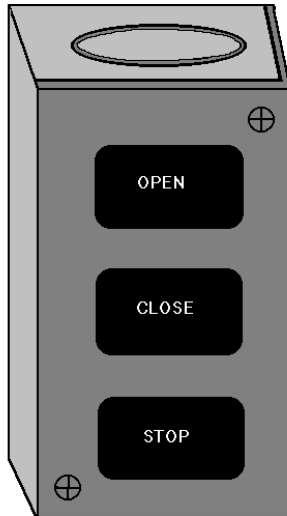
with this control.

NOTE: *All Commercial Accessories should be priced and ordered by our Corporate Office.*

PART # 180C0145
3 Button Pushbutton Station
(NEMA 1)

Open/Close/Stop; allows complete control of door. May be used on all industrial operators.

Steel Enclosure



***ALL COMMERCIAL ACCESSORIES SHOULD BE PRICED AND ORDERED BY
CORPORATE OFFICE***

PUSH BUTTON STATIONS:

- * PART #180C0150**
- * 3 BUTTON W/ KEY LOCKOUT HEAVY
(NEMA-4, 12, 13)**
- * Die Cast Metal Enclosure**
- * OPEN/CLOSE/STOP buttons and ON/OFF key control with maintained key positions, key removable in either position. Allows complete control of door with the additional feature that the OPEN and CLOSE buttons can be locked out of operation with the key control. May be used on all Link and LiftMaster industrial operators.**

NOTE: All Commercial Accessories should be priced and ordered by our Corporate Office.

PUSH BUTTON STATIONS:

*** PART 180C0151**

*** 3 BUTTON HAZARDOUS AREA
(NEMA-7/9)**

*** Diecast hazardous area enclosure meets NEC requirements for Class 1, Divisions I and II, Group D, and Class 2, Divisions I and II, Groups F and G.**

*** OPEN/CLOSE/STOP; allows complete control of door. May be used on all Link and Lift-Master operators.**

NOTE: All Commercial Accessories should be priced and ordered by our Corporate Office.

Key Switches:

PART #180C0154

**** Key Switch Security (Open-Close, Weathertight)***

**** Die Cast Metal Enclosure***

**** Outdoor Surface Mt.***

**** Tamperproof***

NOTE: All Commercial Accessories should be priced and ordered by our Corporate Office.

Key Switches:

PART #180C152

**** KEY SWITCH SINGLE KEYED
(NON-RATED WEATHERTIGHT)***

****Die Cast Metal Enclosure***

**** Outdoor Surface Mt.***

**** Non-Tamperproof***

***NOTE: All Commercial Accessories should be priced and
ordered by our Corporate Office.***

KEY SWITCHES

**** PART #180C153***

**** Key Switch 3 Position, spring to Center
(Non-Rated Weathertight)***

****Die Cast Metal Enclosure***

****Outdoor Surface Mt.***

****Non-Tamperproof***

***NOTE: All Commercial Accessories should be priced and
ordered by our Corporate Office.***

Key Switches:

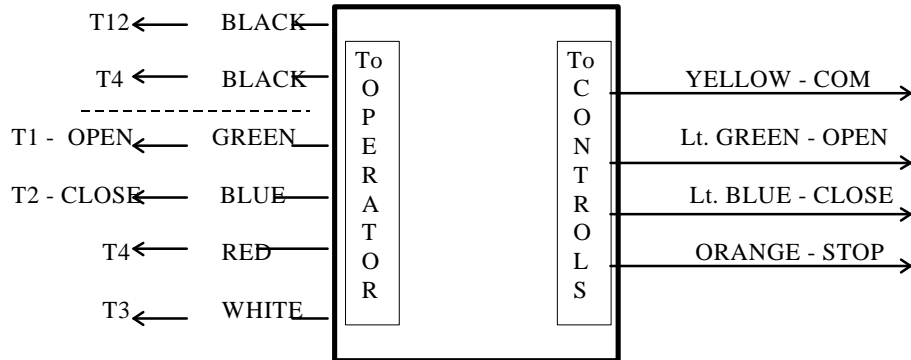
PART # 180C0155

**** Key Switch Flush Mounted, Security
(3 Position Spring to Center, NEMA-1)***

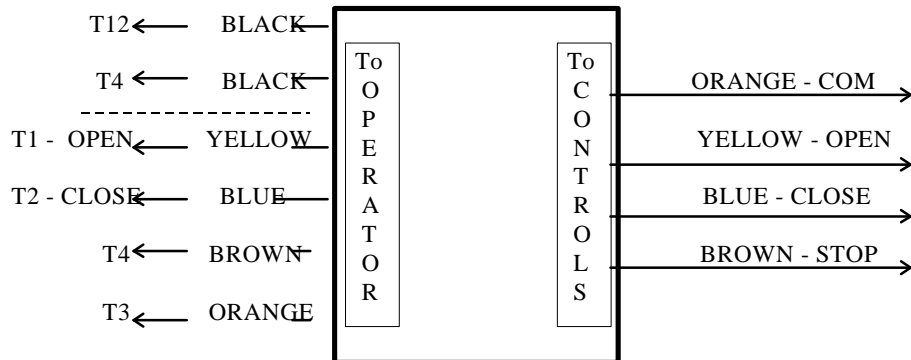
***NOTE: All Commercial Accessories should be priced and
ordered by our Corporate Office.***

Instructions for Long Distance Modules 2B0422

Type 1



Type 2



1A3929 & 1A3930 Installation Instructions Pneumatic Sensing Edge

1. Determine on which side of door air switch is to be mounted. See Figure 1.
2. Cut an opening through the astragal large enough for air hose to fit through. See Figure 1.
3. Insert rubber stopper all the way into one end of air hose to create a seal. See Figure 2.
4. Feed air hose through entire length of astragal, stopper end first. See Figure 3 for typical sectional door installation and Figure 4 for typical rolling steel. Excess open end of hose will be trimmed in Step 13.
5. Locate and fasten air switch junction box on bottom door section or bottom bar. Figure 1.
6. Screw cable clamp into top of air switch box.
7. Install take-up reel approximately one foot higher than door opening, or install make-up box at 1/2 height of door opening. See Figure 5.
8. Feed lead end of take-up reel, or coil cord from make-up box, through cable clamp on top of air switch box and tighten clamp. See Figure 1 & 6.
9. Connect lead end to air switch red wire (common) and air switch yellow wire (normally open). Insulate blue wire.
10. Fasten air switch to junction box. Do not tighten screws until installation and adjustments are completed.
11. Connect take-up reel or coil cord make-up box to operator electrical box terminals for sensing to reverse. See operator owner's manual.

FIGURE 1
Right Hand Shown,
Left Hand Opposite

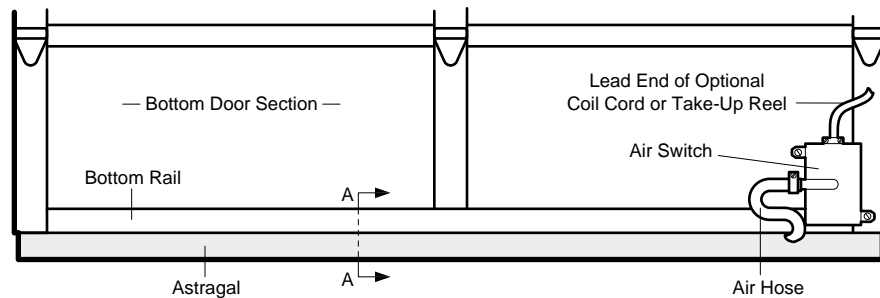


FIGURE 2



FIGURE 3

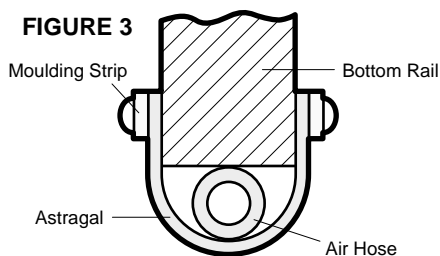


FIGURE 4

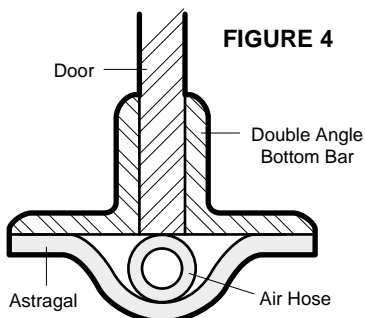
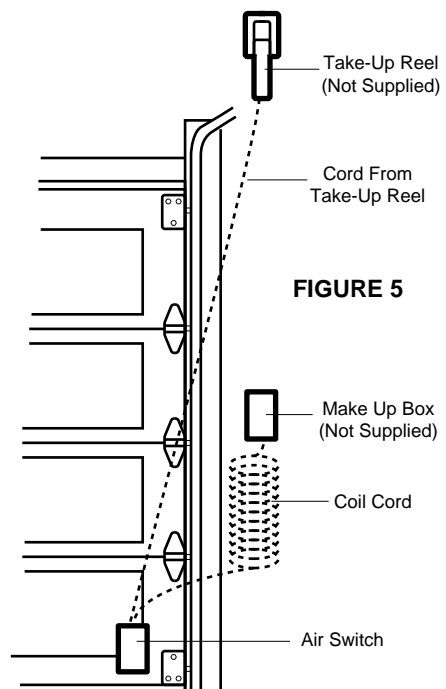
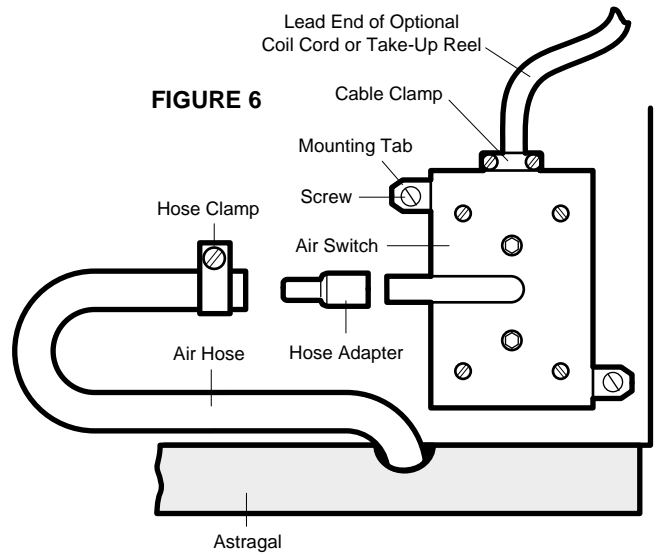


FIGURE 5

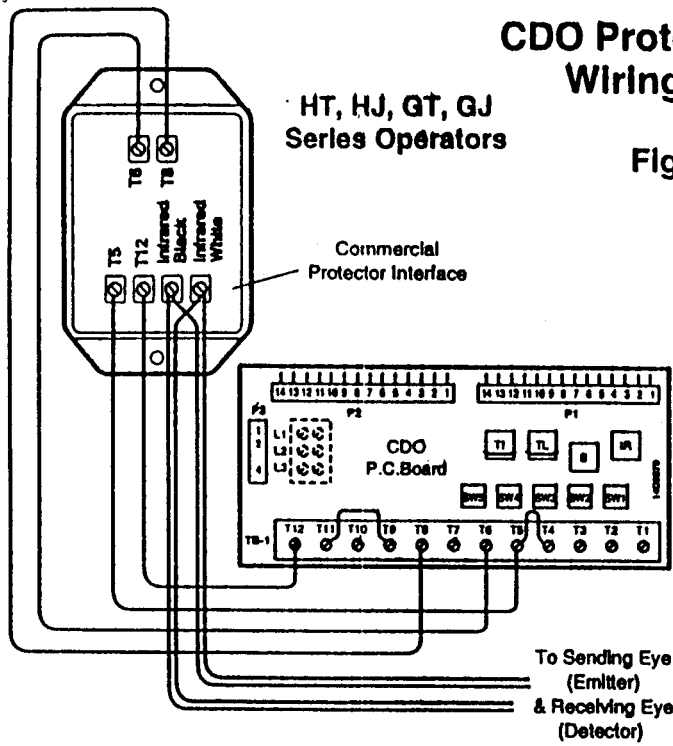


12. Install hose adaptor on air switch. See Figure 6.
13. Trim off excess air hose and plug onto air switch. Make sure there are no kinks in hose.
14. Remove air hose from air switch and place hose clamp over end of hose.
15. Reinstall air hose onto air switch.
16. Slide hose clamp into position over large diameter of hose adaptor and tighten.
17. Test air switch to ensure that all wiring has been done correctly, and adjust air switch if necessary.
18. If adjustment is necessary, remove air switch and locate yellow adjustment screw. Turn screw clockwise to increase sensitivity, counter clockwise to decrease sensitivity. When sensing edge is operating properly, tighten air switch screws securely.



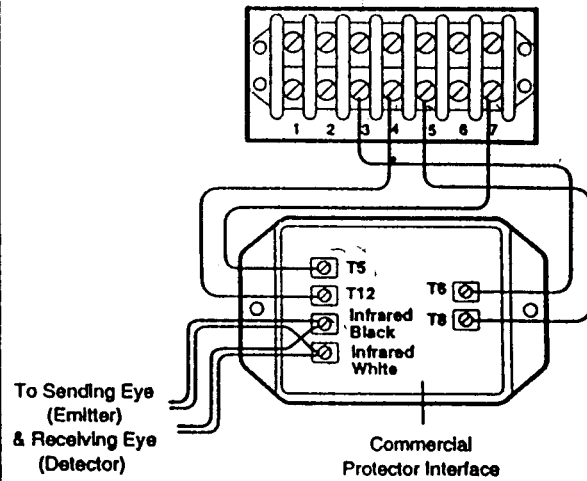
CDO Protector System Wiring Diagram

Figure 11



HT, HJ, GT, GJ
Series Operators

MT, MJ
Series Operators



To Sending Eye
(Emitter)
& Receiving Eye
(Detector)

Commercial
Protector Interface

Test the CDO Protector System:

- Press the OPEN button to fully open the door.
- Press the CLOSE button to close the door.
- Obstruct the light beam while the door is closing. *The door should reverse.*

The garage door opener will not close if the indicator light in either sensor is *not glowing steadily*, alerting you to the fact that the sensor is misaligned, or obstructed.

! WARNING

Without a properly working CDO Protector System, persons (particularly children) could be seriously injured or killed by a closing garage door. Repeat this test once a month. Professional service is required if the opener closes the door when the CDO Protector System is obstructed.

Trouble Shooting

1. If the *sending eye* and *receiving eye* indicator lights do not glow steadily after installation, check for:
 - Electric power to the opener.
 - A short in the white or white/black wires. These can occur under staples or at screw terminal connections.
 - Incorrect wiring between sensors and Interface
 - An open wire, (wire break).
2. If only the *receiving eye* indicator light is off (and the invisible light beam path is *not* obstructed), check for an open wire to the receiving eye.

Replacement Parts

TOLL FREE NUMBER • 1-800-528-6563

Commercial Protector Interface	41C4489	Safety sensor hardware bag	41A4116
2-conductor wire (white and white/black with connector)	41B4115	C-wrap bracket	12B483
Sensor kit (receiving and sending eyes only)	41K4587	Square hole bracket	12B484
		Slotted bracket	12B485

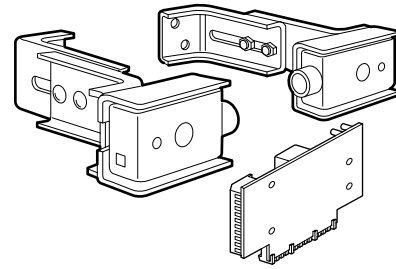
1A4811 – The CPSII Protector System



WARNING

This device is for use only with Lift-Master Commercial Door Operators. *Use on other than recommended equipment voids warranty, and may cause property damage or serious personal injury.* Read and follow all instructions.

Have door in full open or closed position and disconnect power to the garage door opener before installing the CPSII Protector System.



Installation procedures are the same for all door types.

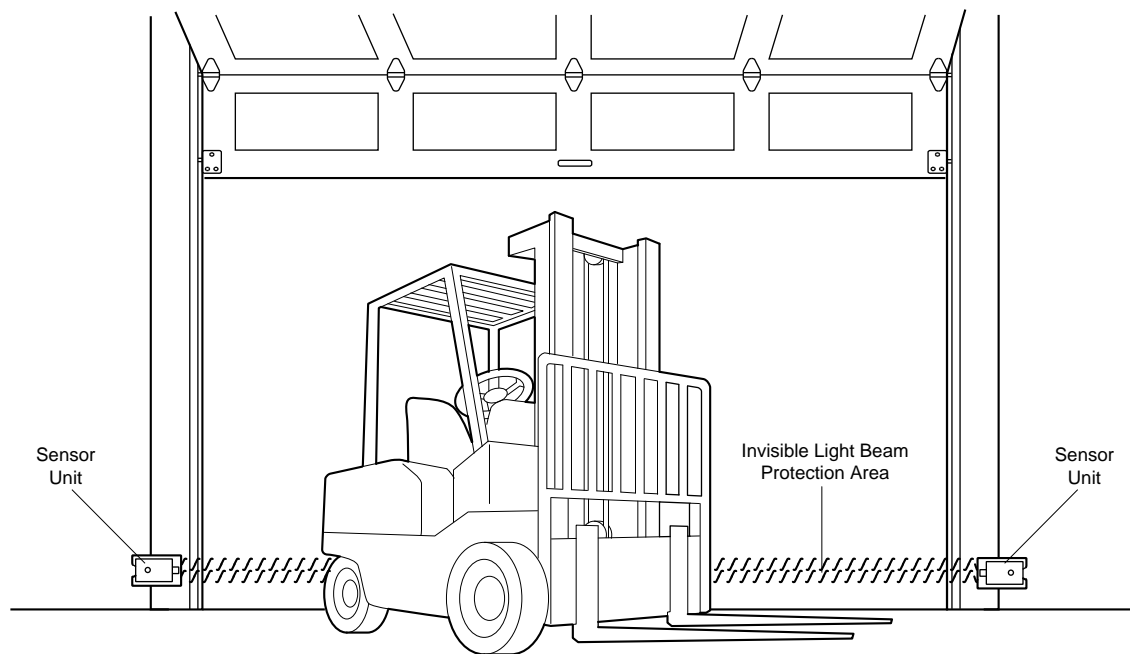


FIGURE 1 Facing the door from inside the garage

Be sure power to the opener is disconnected.

The sending eye transmits an invisible light beam to the receiving eye. The units can be installed on either side of the garage door as long as the sun never shines directly into the receiving eye lens.

Look at the label on the connector end of each case to identify the sensors.

The brackets must be connected and fastened so that the sending and receiving eyes face each other as shown in Figure 1.

If an obstruction breaks the light beam while the garage door is closing, the door will stop and reverse to full open position.

The brackets *must* be securely fastened to a solid surface such as the studs on either side of the door, or add a piece of wood at each location if installing in masonry construction.

The invisible light beam path must be unobstructed. No part of the garage door (or door tracks, springs, hinges, rollers or other hardware) can interrupt the beam while the door is closing. If it does, use a piece of wood to build out each sensor mounting location to the minimum depth required for light beam clearance.

Figures 2, 3 and 4 show recommended assembly of bracket(s) and "C" wrap based on the wall installation of the sensors on each side of the garage door as shown on page 1, or on the garage door tracks themselves.

Figures 5 and 6 are variations which may fit your installation requirements better. **Make sure the wraps and brackets are aligned so the sensors will face each other across the garage door.**

Garage Wall or Door Track Installation Procedure

- Fasten the "C" wraps to the mounting brackets having square holes, using hardware shown in Fig. 2.

Garage Wall Installation Procedure

- Connect each assembly to a slotted bracket, using the hardware shown in Fig. 3. **Note alignment of brackets for left and right sides of the door.**
- Finger tighten the lock nuts.
- Use bracket mounting holes as a template to locate and drill (2) 3/16" diameter pilot holes on both sides of the garage door, 4"-6" above the floor (but not exceeding 6").
- Attach bracket assemblies with 1/4"x1-1/2" lag screws as shown in Fig. 3.
- Adjust right and left side bracket assemblies to the same distance out from mounting surface. Make sure all door hardware obstructions are cleared. Tighten the nuts securely.

Garage Door Track Installation Procedure

Discard slotted bracket. Drill 3/8" holes in each track and fasten securely with hardware as shown in Fig. 4.

Garage WALL or DOOR TRACK Installation

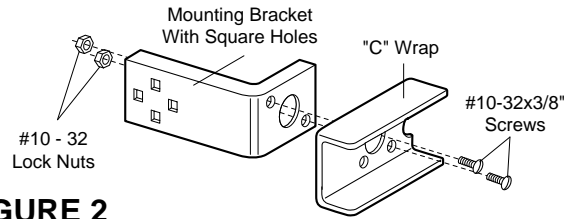


FIGURE 2

Garage WALL Installation

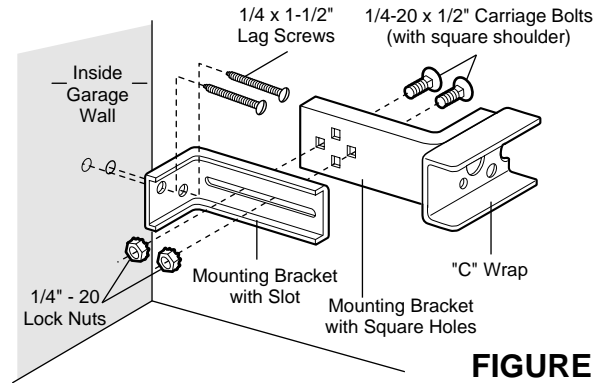


FIGURE 3

Garage DOOR Track Installation

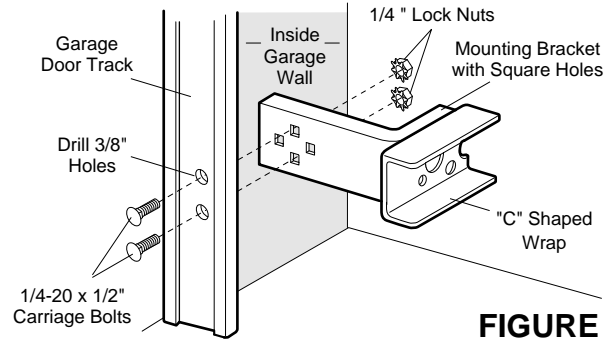
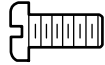

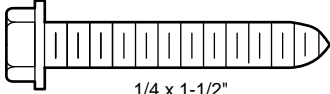

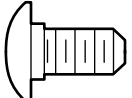



FIGURE 4

Hardware Shown Actual Size

					
#10 - 32 x 3/8" Screw	#10 x 32 Lock Nut	1/4 x 1-1/2" Lag Screw	Staples	1/4" - 20 x 1/2" Carriage Bolts	1/4" - 20 Lock Nut

Alternate Wall Mount

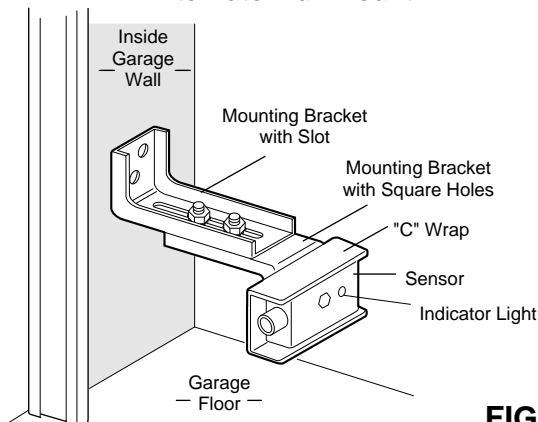


FIGURE 5

Alternate Floor Mount

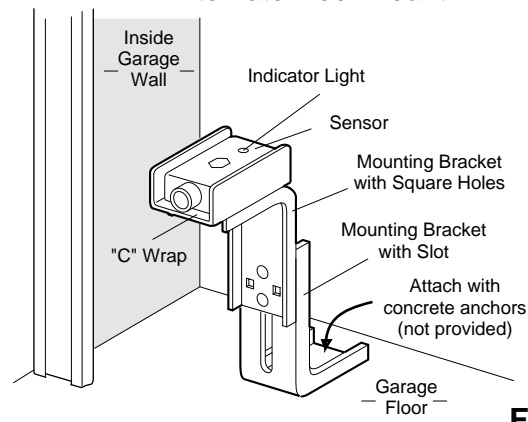
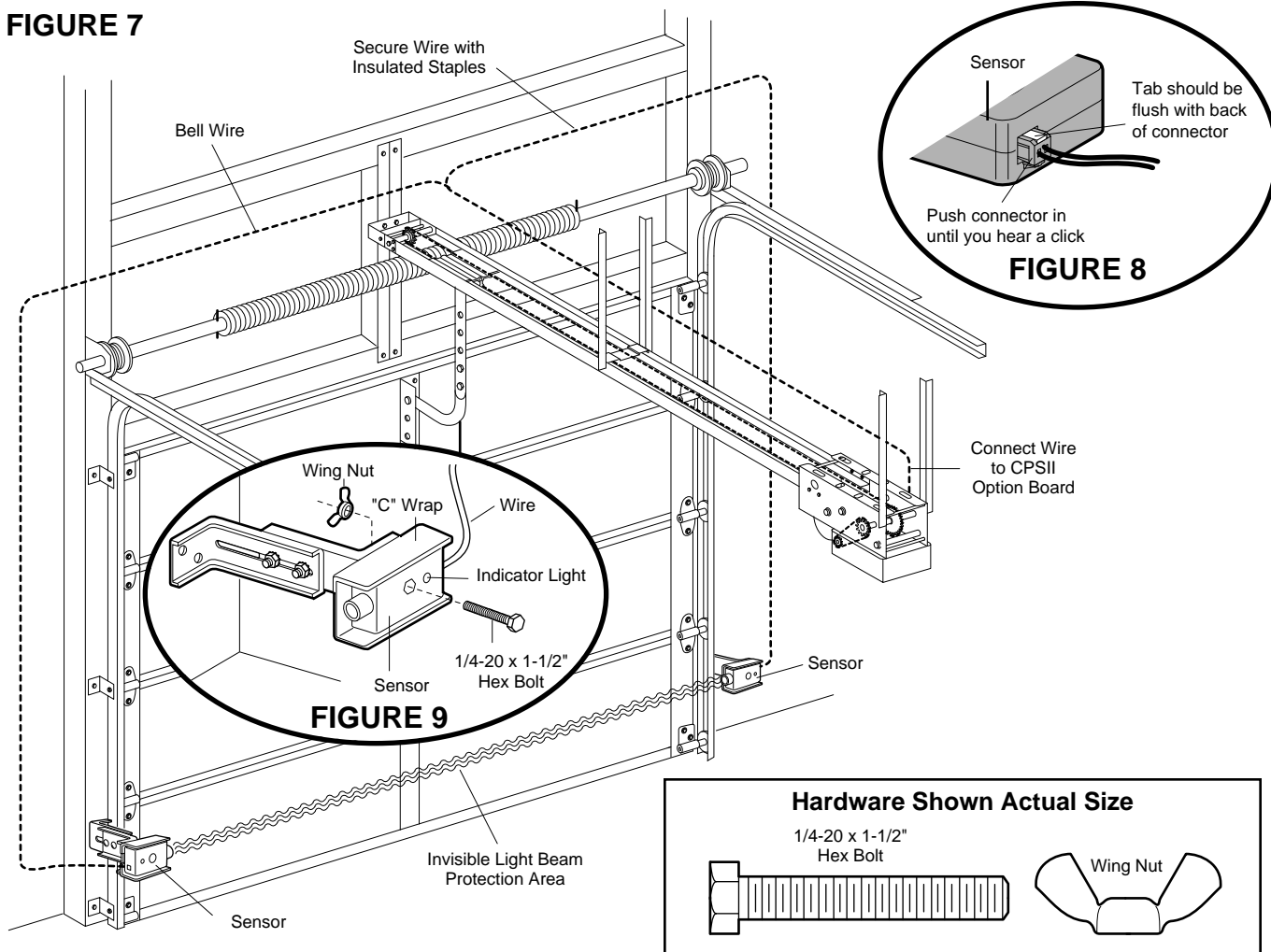


FIGURE 6

FIGURE 7



Insert the wire connector into each sensor and push until you hear a click. The white tab on the sensor should be flush with the back of connector, Figure 8.

- Center each sensor unit in a "C" wrap with lenses pointing toward each other across the door.
- Secure sensors with hardware shown in Figure 9. Finger tighten the wing nut on the *receiving eye* to allow for final adjustment. Securely tighten the *sending eye* wing nut.
- Run paired wires from both sensors to the opener as shown in Figure 7. Use insulated staples to secure the wire to the wall and ceiling.
- Connect both sets of wires to the CPSII option board as shown in Figures 10, 11 and 12.

- Power up the opener. Green indicator lights in both the sending and receiving eyes will *glow steadily* if wiring connections and alignment are correct.

If the receiving eye indicator light is not glowing steadily (and the invisible light beam path is not obstructed), alignment is required.

- Loosen the receiving eye wing nut to allow slight rotation of unit. Adjust sensor vertically and/or horizontally until the green indicator light *glows steadily*.
- When indicator lights are *glowing steadily* in both units, tighten the wing nut in the receiving eye unit.

FIGURE 10 I.R. Protector Only

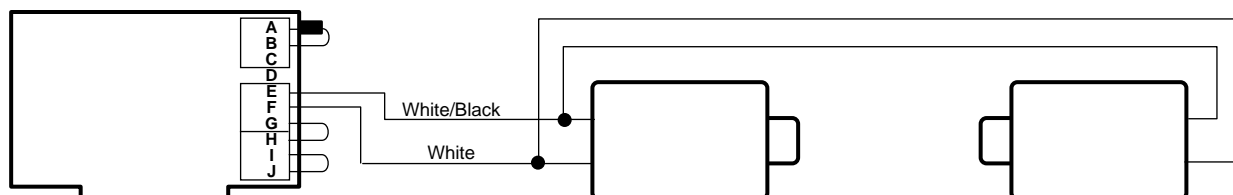


FIGURE 11 I.R. Protector and 2-Wire Fail Safe Door Edge

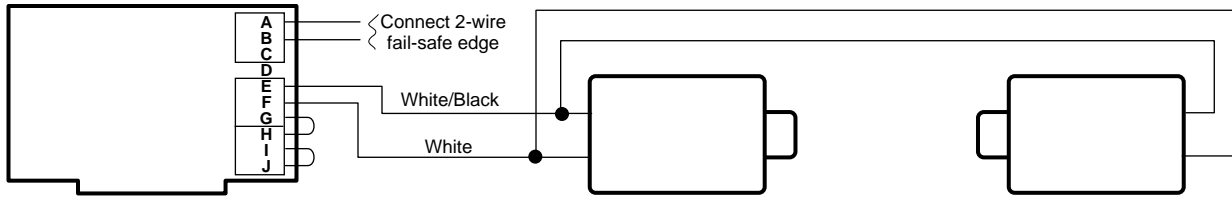
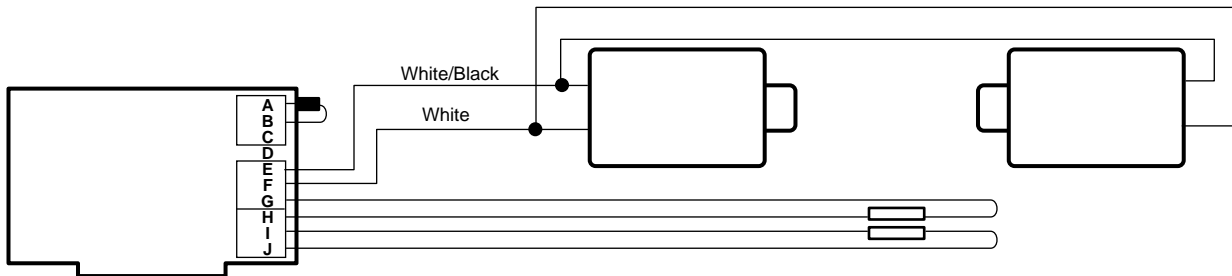


FIGURE 12 I.R. Protector and 4-Wire Fail Safe Door Edge



WARNING

Without a properly working CPSII Protector System, persons (particularly children) could be seriously injured or killed by a closing garage door. Repeat this test once a month.

Professional service is required if the opener closes the door when the CPSII Protector System is obstructed.

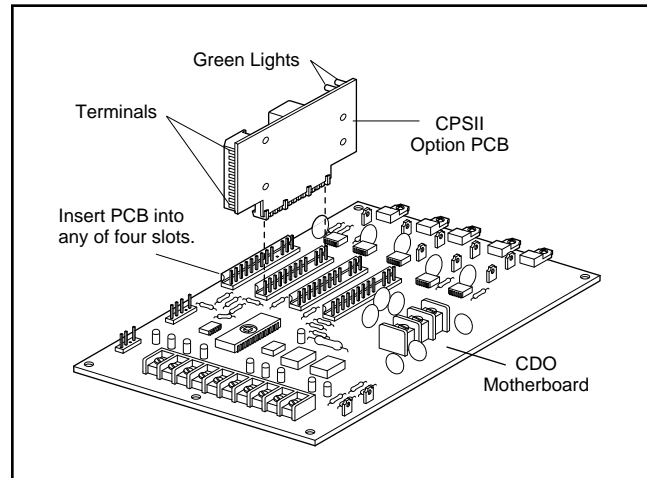
Test the CPSII Protector System:

- Press the OPEN button to fully open the door.
- Press the CLOSE button to close the door.
- Obstruct the light beam while the door is closing.
The door should reverse.

The garage door opener will not close if the indicator light in either sensor is *not glowing steadily*, alerting you to the fact that the sensor is misaligned, or obstructed.

Trouble Shooting

1. If the *sending eye* and *receiving eye* indicator lights do not glow steadily after installation, check for:
 - Electric power to the opener.
 - A short in the white or white/black wires. These can occur under staples or at screw terminal connections.
 - Incorrect wiring between sensors and Interface
 - An open wire (wire break).
2. If only the *receiving eye* indicator light is *off* (and the invisible light beam path is *not* obstructed), check for an open wire to the receiving eye.



Replacement Parts

TOLL FREE NUMBER - 1-800-528-6563

CPSII PC Board.....	1C4654
2-conductor wire (white and white/black with connector)	41B4115
Sensor kit (receiving and sending eyes only)	41K4587
Safety sensor hardware bag	41A4116
C-wrap bracket.....	12B483
Square hole bracket.....	12B484
Slotted bracket	12B485

INFRARED MODULATED PHOTOCELL IRB-4X™

PHOTOGRAPH
NOT
AVAILABLE

The IRB-4™ transmitter and receiver in a water-tight NEMA 4X housing with optional protective hood.

The IRB-4X™ works without lenses so it is easy to align. It is less sensitive to fog, dust, snow and sunlight.

HOW IT WORKS

The IRB-4X™ transmitter and receiver are mounted in line of sight at a distance of up to 75 feet.

When the infrared beam is interrupted, the relay common and normally open contacts in the receiver are closed. The relay is normally energized. The relay de-energizes and produces detect signal on beam or power interruption.

The LED indicator is lit when the IRB-4X™ receiver is not aligned or when the beam is interrupted.

BENEFITS

- √ LED alignment indicator simplifies installation.
- √ Supervised relay output provides an "open" signal in case of power failure.
- √ Non-reflective through-beam system is not affected by shiny surfaces.
- √ Modulated infrared beam is not affected by sunlight, rain, dust or dirt.
- √ Wide detection angle of 24° simplifies installation and increases the reliability of operation.

TECHNICAL DATA

RANGE: Low-25 Feet, Medium-50-Feet, High-75 Feet, refer to the Excess Gain chart on the back page.

POWER: 12V to 24V AC OR DC +25%, 30-60mA

RELAY CONTACTS: 5A 30VDC or 250VAC

DIMENSIONS: 3.7" x 2.56" x 2.24"

HOUSING: Polystyrene NEMA 4X box with optional anodized aluminum hood.

TEMPERATURE: -40F° TO +170F°

APPLICATIONS

The IRB-4X™ photocell is used as a safety or open device in conjunction with the automatic opener.

The IRB-4X™ will work with any control board that accepts dry contact in the input.

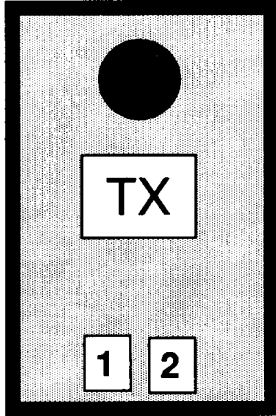
This easy-to-install reliable photocell is used with garage doors, rolling doors, sliding gates, swinging gates, parking barriers and car wash equipment.

EMX Industries Inc. 5325 Naiman Parkway Unit F, Solon Ohio 44139

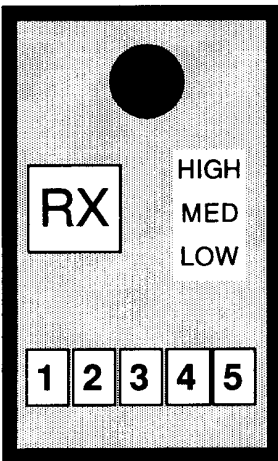
TEL: 1-216-349-0909 FAX: 1-216-349-5011

PLEASE CALL TOLL FREE 1-800-426-9912

INSTALLATION INSTRUCTIONS



1. Open the front cover.
2. Attach the transmitter to the location with 4 screws.
3. Connect terminals 4 and 5 to 12V to 24V AC or DC using the ready-make knock-out.
4. Replace the cover and tighten it with the 4 plastic screws to ensure proper sealing of the box.



1. Open the front cover.
2. Attach the receiver to the location with 4 screws.
3. Connect terminals 4 and 5 to 12V to 24V AC or DC using the ready-made knock-out.
4. Terminal 1 is connected to normally closed, 2 to common and 3 to normally open contact. (If required)
5. Replace the cover and tighten it with the 4 plastic screws to ensure proper sealing of the box.

IMPORTANT !!!

ð Align the transmitter and receiver, so they are in line of sight. At a distance of 30 feet, maximum 1 foot deviation is allowed from the center of the line of sight.

ð Test the photocell by interrupting the beam with an object measuring approximately 8" x 8". The relay must be actuated and the red LED lit.

ð If the beam is not interrupted, it means the infrared beam is reflected from the floor or other surfaces. Try to change the receiver position slightly or decrease the detection range by moving the jumper.

ð Should you experience false detection check the power supply for voltage and noise. Sudden and large voltage changes may cause false detection. These voltage changes may occur when the motor is switched on.

ð **Excess gain** is a measurement of the amount of infrared light collected by the receiver over and above the required minimum for normal operation. In a clean environment **excess gain** of 1.5 is sufficient. For slightly dirty environment with light dust buildup **excess gain** of 5 is required. For dirty environment with obvious dust, fog or mist buildup **excess gain** of 10 is required. The transparent covers must be cleaned occasionally or when necessary to prevent the blocking of the infrared beam.

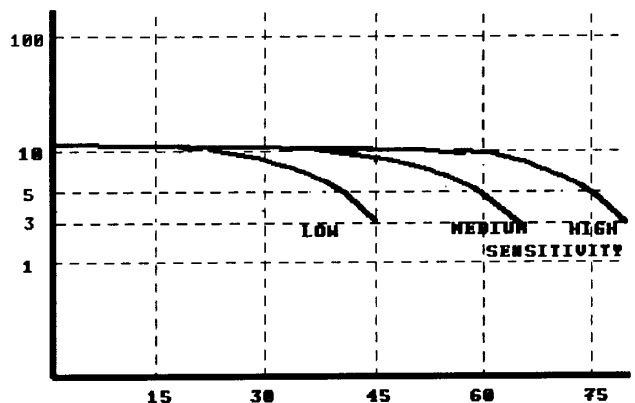
WARRANTY

EMX Inc. warrants the product described herein for period of 1 year under normal use and service from the date of sale to our customer. The product will be free of defects in materials and workmanship. This warranty does not cover ordinary wear and tear, abuse, misuse, overloading, altered products, or damage caused by the purchaser connecting the unit wrong, or lightning damage.

There is no warranty of merchantability. There are no warranties which extend beyond the description herein. There are no warranties expressed or implied or any affirmation of fact or representation except as set forth herein.

EMX Inc. sole responsibility and liability, and purchaser's exclusive remedy shall be limited to the repair or replacement at EMX's option of a part or parts not so conforming to the warranty. In no event shall EMX Inc. be liable for damages of any nature, including incidental or consequential damages, including but not limited to any damages resulting from non-conformity, defect in material or workmanship.

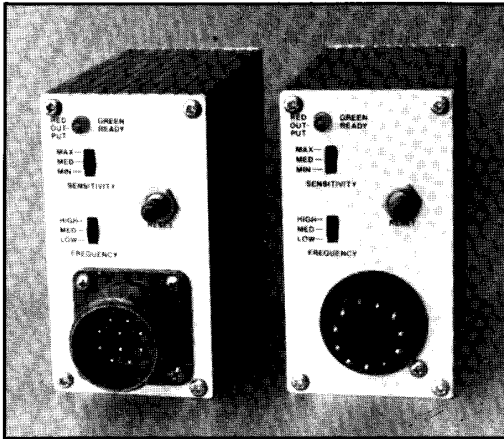
EXCESS GAIN



Manufacturers of Vehicle Detectors, Card Readers, Automatic Vehicle Identification and Sensors.

EMX Industries Inc. Tel: 1-800-426-9912, 1-216-349-0909, FAX: 1-216-349-5011

SENTINEL D VEHICLE DETECTOR --- TYPE SMD



FEATURES

- Ø SELF TUNING
- Ø AUTOMATIC SENSITIVITY BOOST - ON BOARD SELECTABLE
- Ø AUTOMATIC ENVIRONMENTAL TRACKING
- Ø FAIL SAFE PRESENCE OUTPUT
- Ø PULSE OUTPUT ON VEHICLE ENTRY OR EXIT - ON BOARD SELECTABLE
- Ø RESET SWITCH
- Ø NO OUTPUT ON POWER UP - ON BOARD SELECTABLE
- Ø LONG PRESENCE TIME

SENTINEL MODEL SMD - LOOP DETECTORS

The Sentinel D Detectors utilize digital and surface mount technology. The use of these technologies allowed us to design a reliable and compact loop detector.

SPECIFICATIONS

Self Tuning: The detector is tuning automatically on power up to loop inductance range of 20 to 1000 uH with a Q factor of five or greater. No manual tuning or maintenance is required.

Automatic Environmental Tracking (AET): The detector is designed to track automatically environmental changes which influence the loop inductance. The detector will track up to 1% drift per hour. No manual tuning or maintenance is required.

Automatic Sensitivity Boost (ASB): The sensitivity is optimized for vehicle access control. As soon as detection occurs, the sensitivity is automatically boosted. This holds detection of a high bed vehicle or truck-trailer combination. This feature is on board selectable with ASB jumper.

Sensitivity: Sensitivity is selectable with a three external switch (maximum, normal, minimum). For standard application use normal setting.

Frequency Selection: Frequency is selectable with a three way external switch to provide frequency separation between adjacent loop detectors and to eliminate crosstalk.

Presence Output: Presence time is designed for access control applications with minimum 1 hour hold time for 3% inductance change. The presence relay operates in fail-safe mode so its coil is normally energized for the "no call" state. When detector has two presence relays the second relay is operating in the "non fail-safe mode" with the coil deenergized for the "no call" state.

Pulse Output: Momentary closure of relay contact for 125 milliseconds per vehicle. Pulse is normally generated on vehicle entry. The detector has an on board selector to provide for pulse on vehicle exit or entry, or pulse off selection.

Reset: Reset of the detector is achieved during power up or via the external momentary switch. No output is generated during reset via the external switch.

Power Up: The "No False Output" (NFO) feature ensures that no output is generated on the fail-safe relay during power up. This feature is on board selectable via the (PWR) jumper.

Loop Monitor: If the loop and/or lead in exceed the induction range the detector will generate a continuous fail-safe output for the presence relay; the pulse relay will remain open.

Indicator: Two color LED, green designating power on and red designating detect call or loop failure.

Power: 110v AC or 24v AC +/- 10% (24vDC optional.)

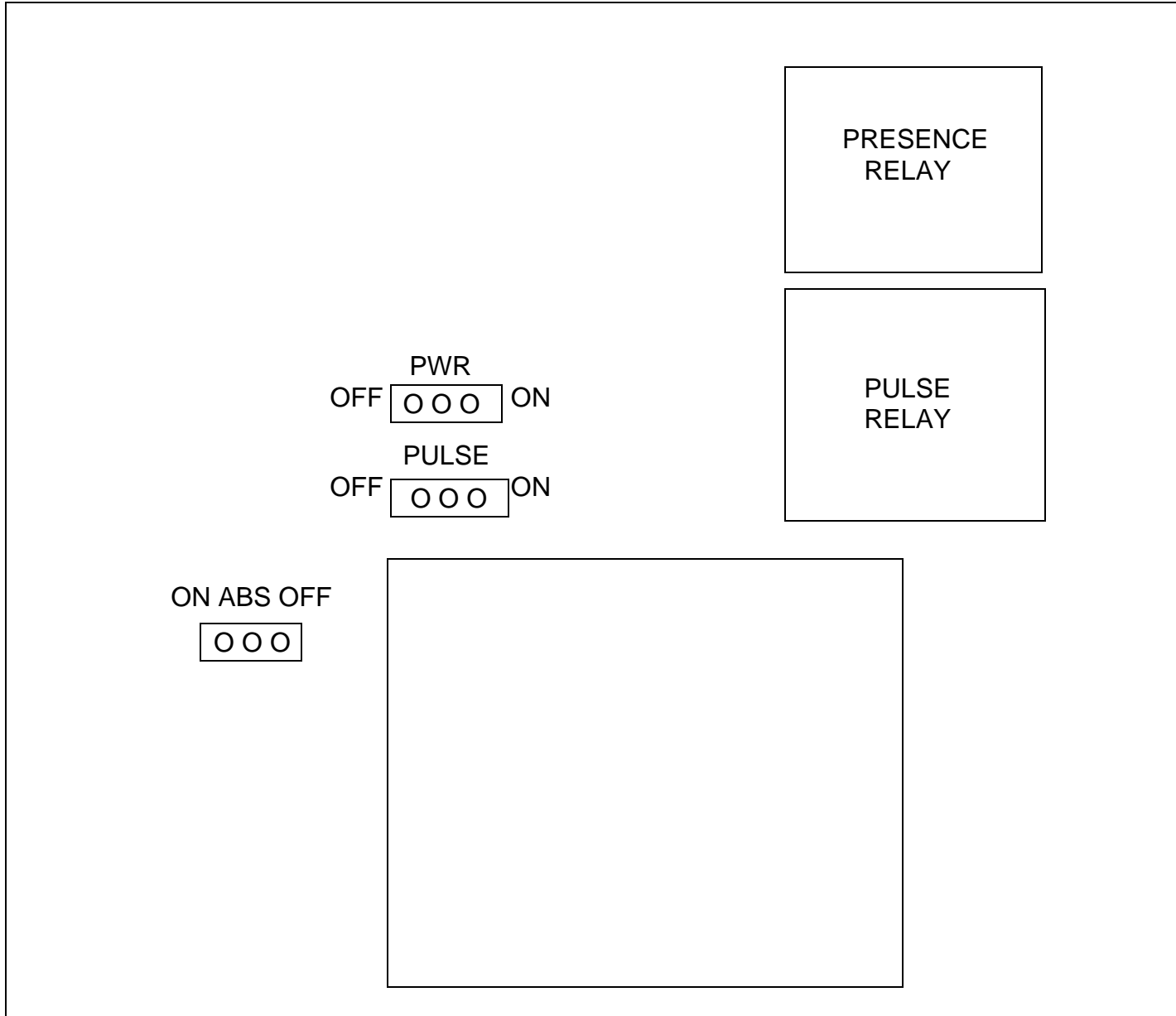
Temperature: -40F° to +170F°

Output Relay Contact Rating: 3 amp 120v AC or 28v DC

Enclosure: The enclosure is made out of non-corrosive extruded aluminum. The dimensions are width - 1.9", height - 3.6", depth - 3.9".

Surface Mount Technology: All digital circuitry is utilizing the advanced SMD technology to achieve compact size and high quality by using automatic pick and place manufacturing process.

ON BOARD JUMPER CONFIGURATIONS



ASB - ON
AUTOMATIC SENSITIVITY
ON

ASB - OFF
AUTOMATIC SENSITIVITY
OFF

PULSE - OUT
PULSE IS GENERATED
ON EXIT FROM THE LOOP

PWR - OFF
OUTPUT IS GENERATED
DURING TUNING PERIOD
ON POWER UP

PWR - ON
OUTPUT IS NOT GENERATED
DURING TUNING PERIOD
ON POWER UP

NOTE - POSITION THE JUMPERS IN THE DESIRED COMBINATION. FOR EXAMPLE SWITCH THE ASB ON, MOVE THE ASB JUMPER TO THE LEFT POSITION ON THE HEADER.

ORDERING INFORMATION

SENTINEL D MODEL SMD 10 MS 3102A-18-1P CONNECTOR

SENTINEL D MODEL SMD 11 MS 3102A-18-1P CONNECTOR

PIN	SMD10A	SMD10B	PIN	SMD11G	SMD11F	SMD11Q	SMD11P	SMD11H	SMD11T
A	A.C. (-) 120V	A.C. (-) 120V	1	A.C. (+) 120V	A.C. (+) 24V	A.C. (+) 120V	A.C. (+) 24V	A.C. (+) 120V	SPARE
B	PRESENCE RELAY N.O.	PRESENCE RELAY COMMON	2	A.C. (-) 120V	A.C. (-) 24V	A.C. (-) 120V	A.C. (-) 24V	A.C. (-) 120V	SPARE
C	A.C. (+)	A.C. (+)	3	PULSE RELAY N.O.	PULSE RELAY N.O.	LOOP	SPARE	*PRESENCE(II) RELAY N.O.	PULSE RELAY N.O.
D	LOOP	LOOP	4	CHASSIS	CHASSIS	LOOP	CHASSIS	CHASSIS	CHASSIS
E	LOOP	LOOP	5	PRESENCE RELAY COMMON	PRESENCE RELAY COMMON	PRESENCE RELAY N.C.	PRESENCE RELAY COMMON	PRESENCE (II) RELAY COMMON	PRESENCE RELAY COMMON
F	PRESENCE RELAY COMMON	PRESENCE RELAY N.O.	6	PRESENCE RELAY N.O.	PRESENCE RELAY N.O.	PRESENCE RELAY COMMON	PRESENCE RELAY N.O.	PRESENCE (II) RELAY N.O.	PRESENCE RELAY N.O.
G	PRESENCE RELAY N.C.	PRESENCE RELAY N.C.	7	LOOP	LOOP	PRESENCE RELAY N.O.	LOOP	LOOP	LOOP
H	CHASSIS	CHASSIS	8	LOOP	LOOP	PULSE RELAY N.O.	LOOP	LOOP	LOOP
I	PULSE RELAY COMMON	PULSE RELAY COMMON	9	PULSE RELAY COMMON	PULSE RELAY COMMON	PULSE RELAY COMMON	PRESENCE RELAY N.C.	*PRESENCE(II) RELAY COMMON	PULSE RELAY COMMON
J	PULSE RELAY N.O.	PULSE RELAY N.O.	10	PRESENCE RELAY N.C.	PRESENCE RELAY N.C.	SPARE	SPARE	PRESENCE (II) RELAY N.C.	PRESENCE RELAY N.C.
			11	SPARE	SPARE	CHASSIS	SPARE	*PRESENCE(II) RELAY N.C.	SPARE

SMD11H - * PRESENCE RELAY (II) IS "NON FAIL SAFE"
ALL DETECTORS HAVE 24vDC OPTION - SPECIFY WHEN ORDERING

SENTINEL - D VEHICLE DETECTOR INSTALLATION GUIDE

FOREWORD

Optimum functioning of the detector module is largely dependent on factors associated with the inductive sensor loop connected to it. These factors include choice of material, loop configuration and correct installation practice. A successful inductive loop vehicle detection system can be achieved by bearing the following operational constraints in mind, and strictly following the installation instructions.

1. OPERATIONAL CONSTRAINTS

1.1 Crosstalk

When two loop configurations are in close proximity, the magnetic field of one can overlap and disturb the field of the other. This phenomena, known as crosstalk, can cause false detects and detector lock-up. Crosstalk can be eliminated by:

1. Careful choice of operating frequency. The closer together the two loops, the further apart the frequencies of operation must be.
2. Separation between adjacent loops. Where possible a minimum spacing of 6 feet between loops should be adhered to.
3. Careful screening of lead-in cables if they are routed together with other electrical cables. The screen must be earthed at the detector end only.

1.2 Reinforcing

The existence of reinforced steel below the road surface has the effect of reducing the inductance, and therefore the sensitivity, of the loop detection system.

The ideal spacing between the loop cable and steel reinforcing is 6 inches, although this is not always practically possible. The slot depth should be kept as shallow as possible, taking care that no part of the loop or lead-in remains exposed together to after the sealing compound has been applied.

2. INSTALLATION INFORMATION

2.1 Loop and Feeder Specification

The loop and feeder should preferably constitute a single unjoined length of insulated copper conductor, with a minimum rating of 15 Ampere.

Joints in the loop or feeder are not recommended. Where this is not possible, joints are to be soldered and terminated in a waterproof junction box. This is extremely important for reliable detector performance.

2.2 Sensing Loop Geometry

Sensing loops should, unless site conditions prohibit, be rectangular in shape and should normally be installed with the longest sides at right angles to the direction of traffic movement. These sides should be ideally be 3 feet apart.

The length of the loop will be determined by the width of the roadway to be monitored. The loop should reach to within 1 foot of each edge of the roadway.

In general, loops having a circumference measurement in excess of 30 feet should be installed using two turns of wire, while loops of less than 30 feet in circumference, but greater than 18 feet, should have three turns. Loops having a circumference measurement less than 18 feet should have four turns. It is good practice at time of installation to construct adjacent loops with alternate three and four turn windings.

2.3 Loop Installation

All permanent loop installations should be installed in the roadway by cutting slots with a masonry cutting disc or similar device. A 45° crosscut should be made across the loop corners to reduce the chance of damage that can be caused to the loop cable at right angle corners.

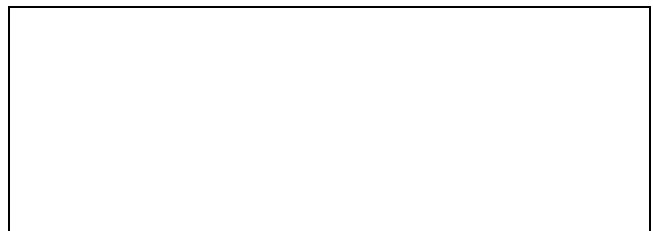
A slot must also be cut from the loop circumference at one corner of the loop to the roadway edge to accommodate the feeder.

A continuous loop and feeder is obtained by leaving a tail long enough to reach the detector before inserting the cable into the loop slot. Once the required number of turns of wire are wound into the slot around the loop circumference, the wire is routed again via the feeder slot to the roadway edge. A similar length is allowed to reach the detector and these two free ends are twisted

ensure they remain in close proximity to one another. (Minimum 7 turns per foot.) Maximum recommended loop feeder length is 300 feet. It should be noted that the loop sensitivity decreases as the feeder length increases, so ideally the feeder cable should be kept as short as possible.

The loops are sealed using a "quick-set" black epoxy compound or hot bitumen mastic to blend with the roadway surface.

EMX Incorporated
20600 Chagrin Boulevard, Suite 503
Shaker Heights, Ohio 44122
Tel: 1-216-349-0909
1-800-426-9912
Fax: 1-216-349-5011



New

EMX Lite Preformed Loops™

PICTURE
NOT
AVAILABLE

PICTURE
NOT
AVAILABLE

EMX Lite Preformed Loops™

1. Rugged and flexible TPE tubing with overall diameter of **0.26 inches suitable for Saw Cut**, tar and concrete installation.
2. **Lighting Protection!!!** The EMX Lite Preformed Loop™ includes electronic lightning protection of vehicle detectors.
3. The EMX Lite Preformed Loop™ comes with 50 feet of twisted and jacketed lead-in-wire.
4. The loops can be shipped by regular UPS.

ARCHITECTURAL Specifications

Supply the EMX Lite Preformed Loop™. The vehicle detection loop will be constructed of stranded wire conductors with thermoplastic elastomer insulation jacketing. The outer shell is to consist flexible nonmetallic 0.26" tubing. The vehicle detection loop will include electronic lightning protection. The lead in wire will be twisted jacketed and minimum 50 feet long.

To Order Call 1-800-426-9912
Fax: 1-216-349-5011

Technical Specification:

Operation Temperature: -60F° to +260F°

Overall Diameter: 0.26 inches

Loop Dimensions: 4' x 6', 4' x 8', 4' x 10' custom sizes available.

Lead-in-wire: 50 feet long twisted wire in PVC jacket

Loop Wire Approvals: UL subject 13, type PLTC 300V,

90C Passes IEEE-328 210,000
BTU flame test Pennsylvania
Bureau of Deep Mine Safety
Approval P-MWMS-1-85

Call for special sizes and custom quote.
We accept MasterCard and VISA credit cards.

WARRANTY

EMX Inc. warrants the product described herein for a period of 1 year under normal use and service from the date of sale to our customer. The product will be free of defects in materials and workmanship. This warranty does not cover ordinary wear and tear, abuse, misuse, overloading, altered products, or damage caused by the purchaser connecting the unit wrong, or lightning damage.

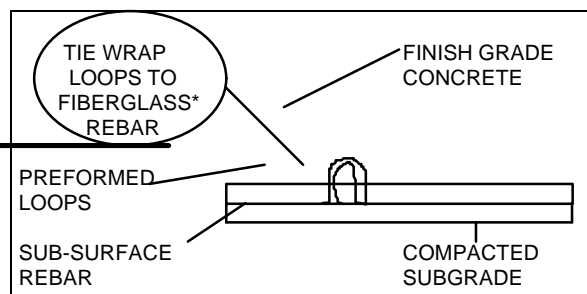
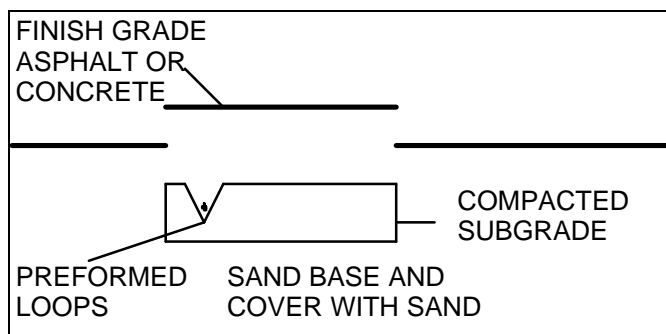
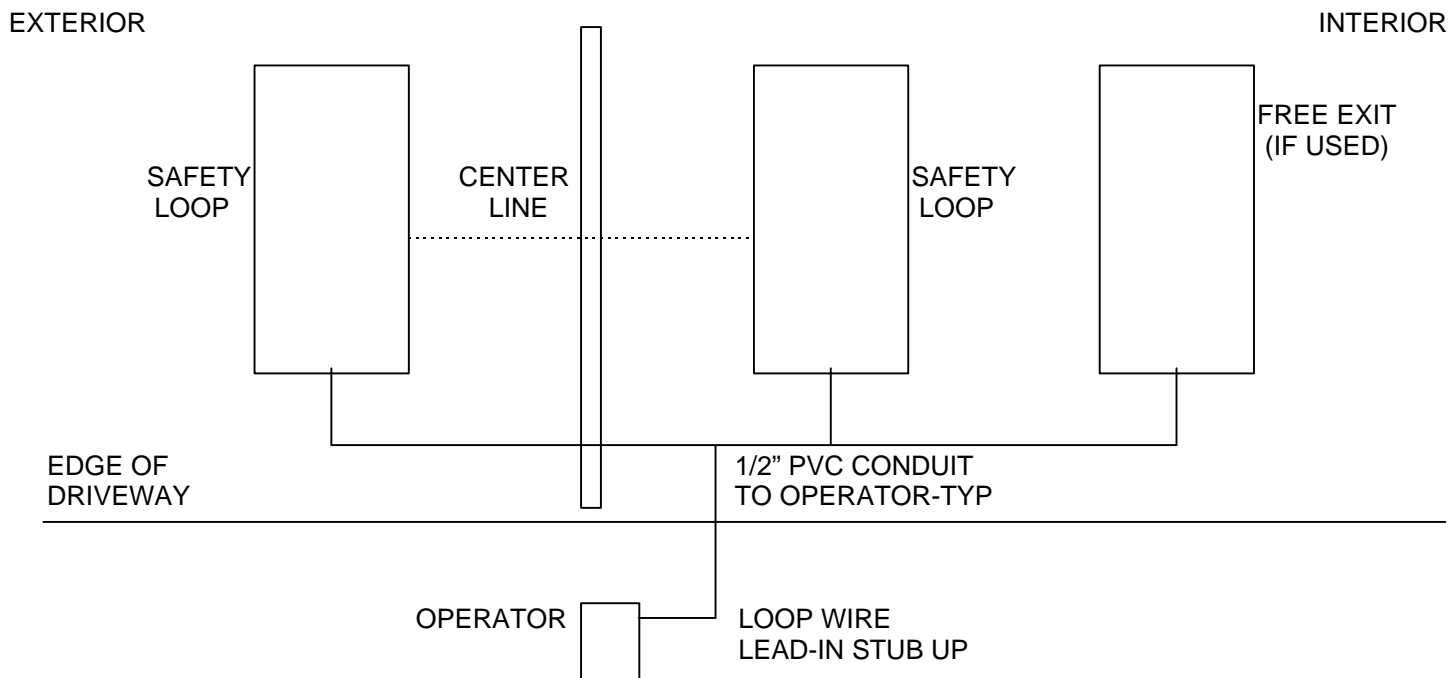
There is no warranty of merchantability. There are no warranties which extend beyond the description herein. There are no warranties expressed or implied or any affirmation of fact or representation except as set forth herein.

EMX Inc. sole responsibility and liability, and purchaser's exclusive remedy shall be limited to the repair or replacement at EMX's option of a part or parts not so conforming to the warranty. In no event shall EMX Inc. be liable for damages of any nature, including incidental or consequential damages, including but not limited to any damages resulting from non-conformity, defect in material or workmanship.

EMX

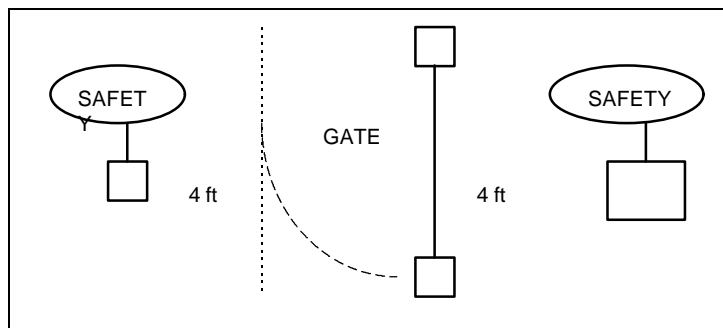
EMX Industries Inc. 5325 Naiman Pkwy #F Solon, OH 44139 • (216) 349-0909

Loop Configurations

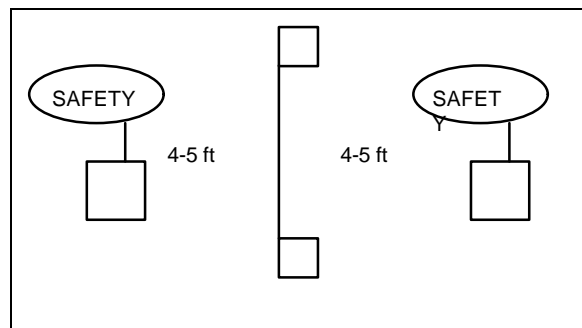


* IF THE REBAR IS MADE OF STEEL USE 2 x 4 WOODEN PLANKS TO SEPARATE BETWEEN THE THE LOOP AND THE STEEL

Loop System Swing Gate Safety Loops



Loop Slide Gate Safety System



EMX

1-800-426-9912

EMX Industries Inc. 5325 Naiman Pkwy #F Solon, OH 44139

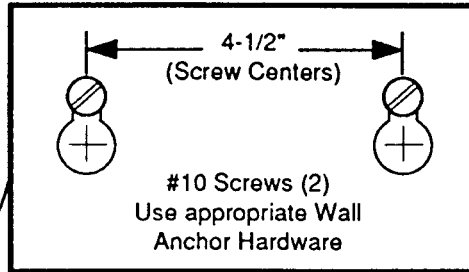
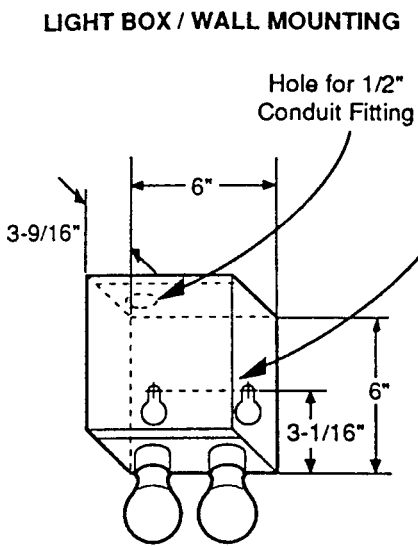
(216) 349-0909 • Fax: 1-216-349-5011

1A4105

Red/Green Light Control Module with Timer to Close

Installation Instructions

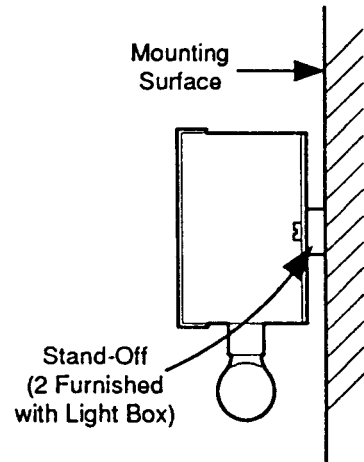
LIGHT BOX / WALL MOUNTING



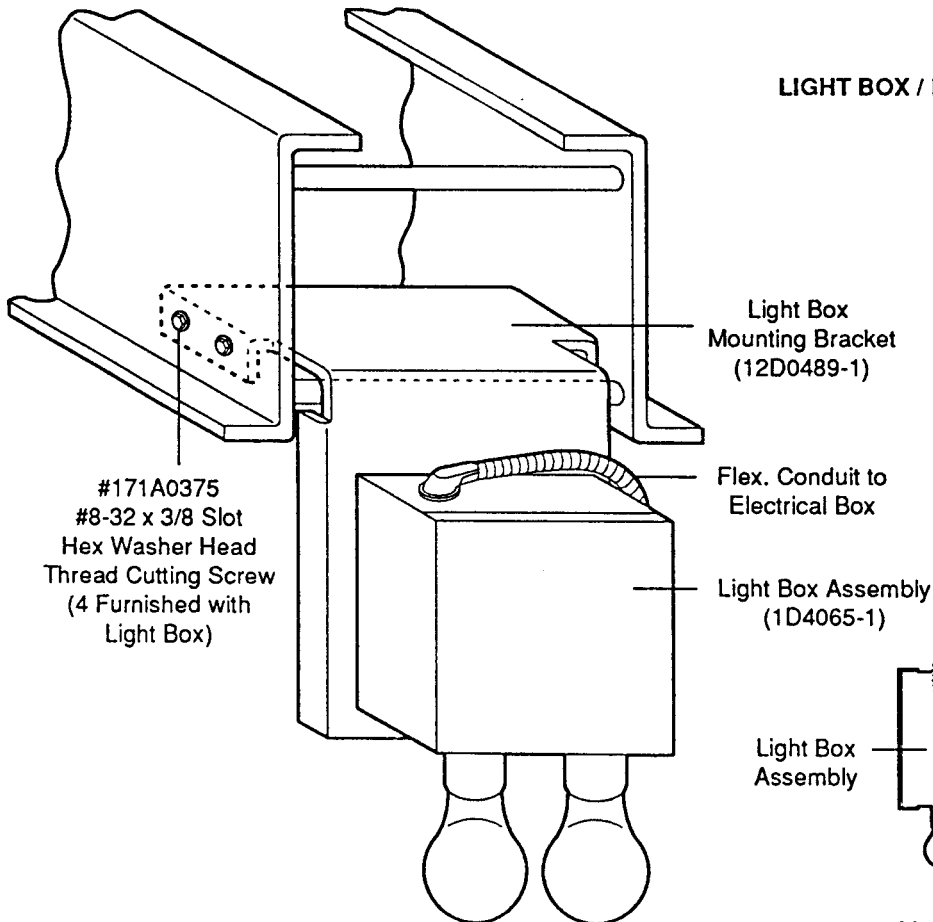
WALL MOUNTING HARDWARE TO BE FURNISHED BY CUSTOMER

NOTES:

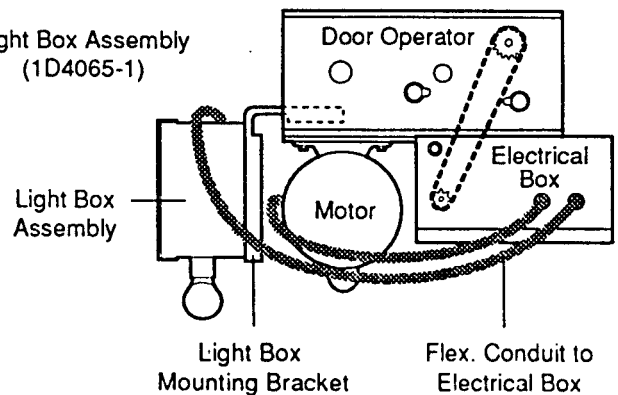
- 1.) Discard light box mounting bracket. (12D0489-1)
- 2.) Retain 2 stand-offs.



LIGHT BOX / DOOR OPERATOR MOUNTING



SIDE VIEW



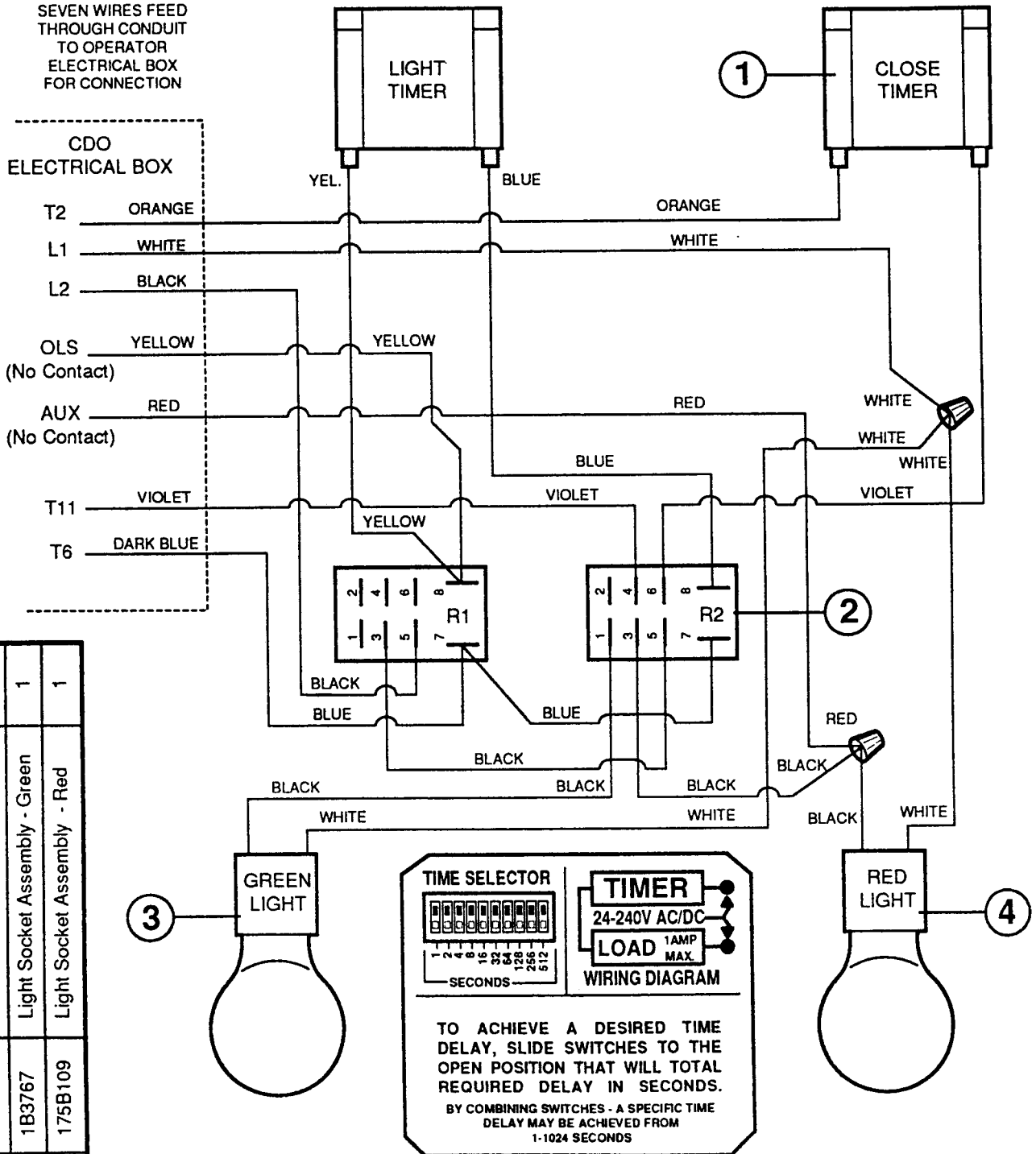
Wiring Diagram for Light Control Module (1A4105)

NOTE: THE CLOSE TIMER HAS BEEN PRESET BY THE FACTORY WITH A 30-SECOND DELAY TO CLOSE CIRCUIT. TO READJUST THE TIME DELAY, SEE INSTRUCTIONS.

EXAMPLE: TOTAL 30-SECOND DELAY TO CLOSE CIRCUIT

Light timer (green light):	20 seconds
Close timer (red light):	<u>10 seconds</u>
Total	30 seconds

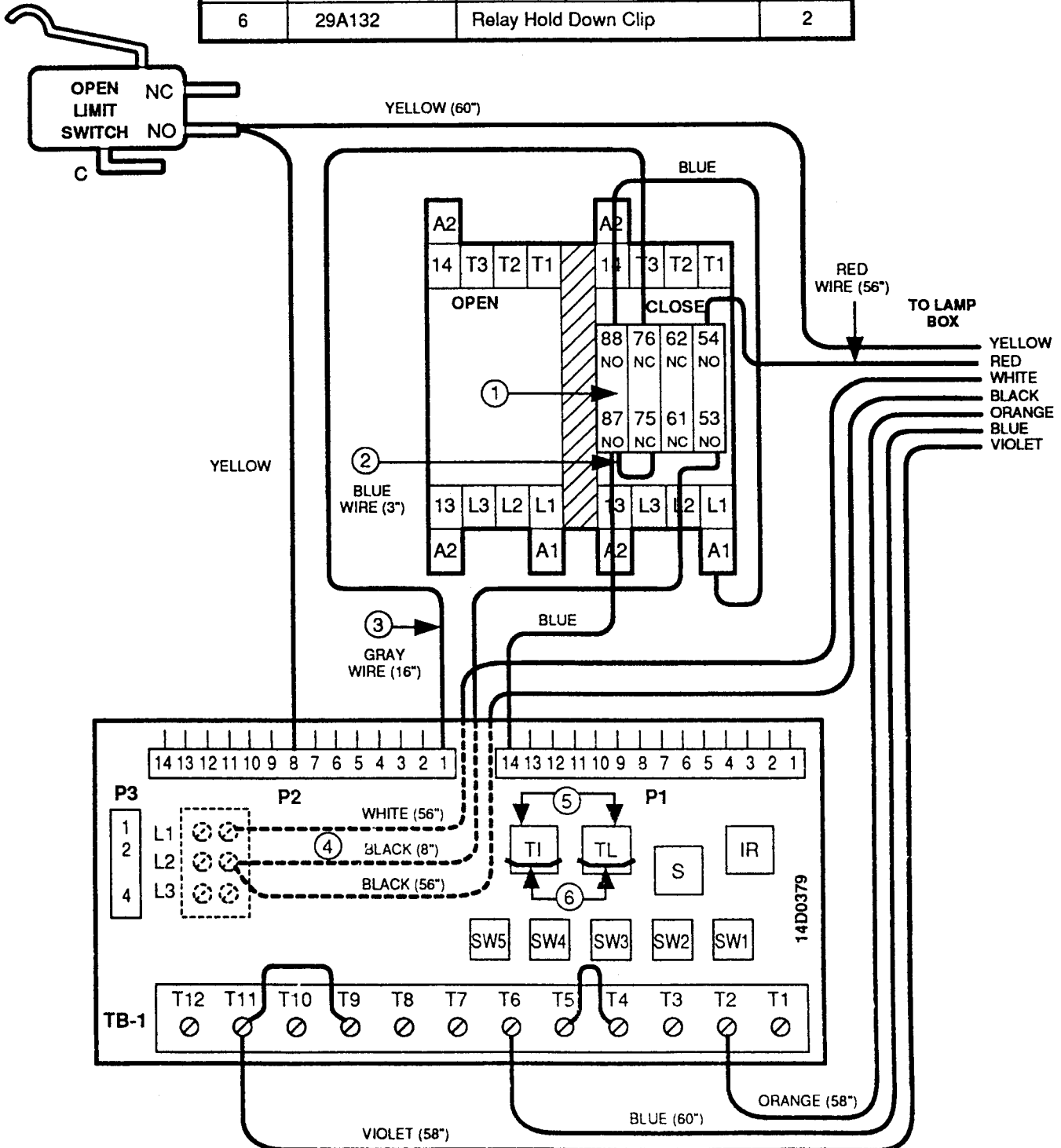
Light Time + Close Time = Total Time Delay to Close Circuit



ITEM	PART NO.	DESCRIPTION	QTY.
1	160B90	Timer	2
2	160B71-1	D.P.D.T. 24Vac Relay	2
3	1B3767	Light Socket Assembly - Green	1
4	175B109	Light Socket Assembly - Red	1

Electrical Box Wiring Diagram for Light Control Module (For PC Board #14D0379)

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	160A91	Auxiliary Contact, Front Mount	1
2	839NN0300Z	Blue Wire, 3"	1
3	880NU1601Z	Gray Wire, 16"	1
4	827NN0800Z	Black Wire, 8"	1
5	160B81	24Vac Relay	2
6	29A132	Relay Hold Down Clip	2



Electrical Box Modification



Close door and disconnect electric power before installing this kit.

1. Install auxiliary contact (item 1) on top of close side of contactor.
2. Connect yellow wire from light control module to NO contact on Open Limit Switch.
3. Connect red wire from light control module to 54 on Auxiliary contact.
4. Connect white wire from light control module to L1 of power strip.
5. Connect black wire from light control module to L2 of power strip.
6. Connect orange wire from light control module to T2 on circuit board.
7. Connect blue wire from light control module to T6 on circuit board.
8. Connect violet wire from light control module to T11 on circuit board.
9. Connect blue wire (item 2) between 87 and 75 of auxiliary contact.
10. Connect gray wire (item 3) between P2-1 of circuit board and 76 of the auxiliary contact.
11. Connect black wire (item 4) between L2 of power strip and 53 of the auxiliary contact.
12. Move the blue wire connected to pin 13 of the CLOSE side of the contactor to 87 of the auxiliary contact.
13. Move the blue wire connected to pin 14 of the CLOSE side of the contactor to 88 of the auxiliary contact.
14. Install relays (item 5) into sockets TI and TL on PCB.
15. Install relay hold down clips (item 6) on these relays.

Light Module/Brake Installation


If installing both a light control module and a brake, Light Module/Brake Adapter kit (1A4385) is required.

OUR LARGE SERVICE ORGANIZATION SPANS AMERICA
INSTALLATION AND SERVICE INFORMATION ARE AVAILABLE 6 DAYS A WEEK
CALL OUR TOLL FREE NUMBER 1-800-528-6563
HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)
MONDAY Through SATURDAY

1A3981

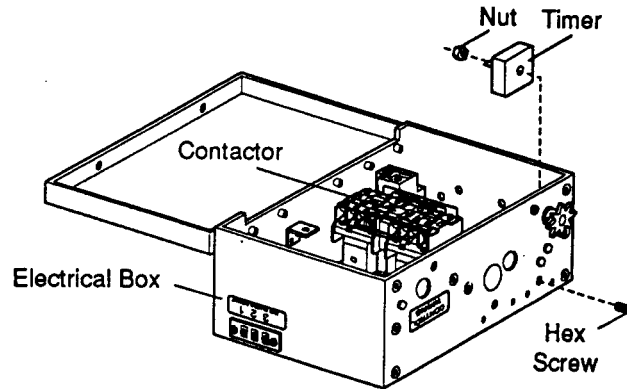
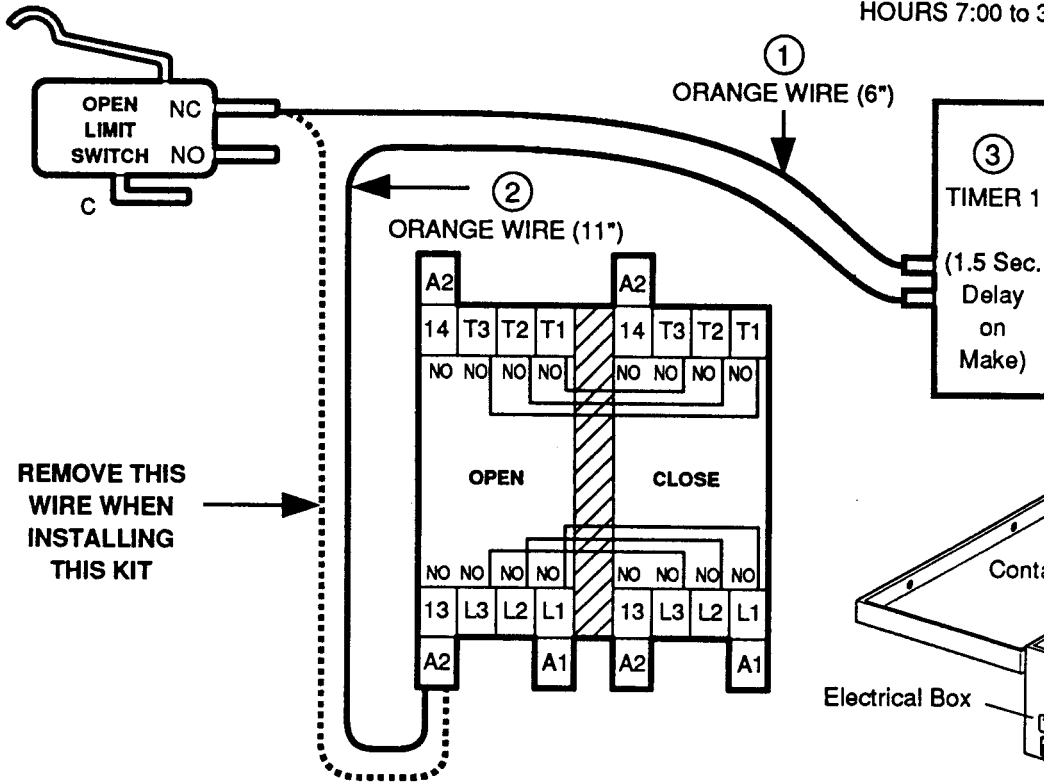
1.5 SECOND DELAY TO REVERSE

(Standard on All Units > 1 HP - Optional on Others)
(For PC Board #14D0379)

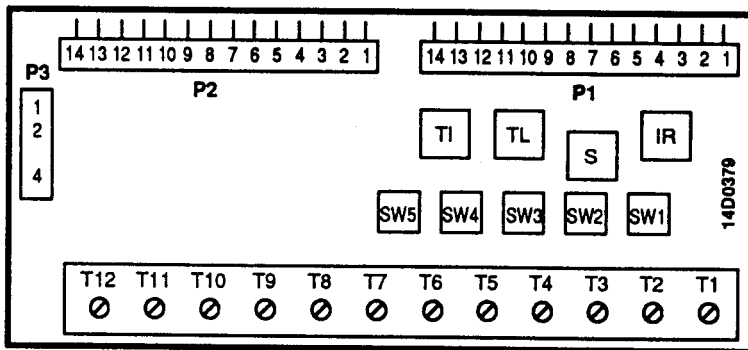


CLOSE DOOR AND DISCONNECT
ELECTRIC POWER BEFORE
INSTALLING THIS KIT!

OUR LARGE SERVICE ORGANIZATION
SPANS AMERICA
INSTALLATION AND SERVICE INFORMATION
ARE AVAILABLE 6 DAYS A WEEK
CALL OUR TOLL FREE NUMBER
1-800-528-6563
HOURS 7:00 to 3:30 (Mountain Standard Time)



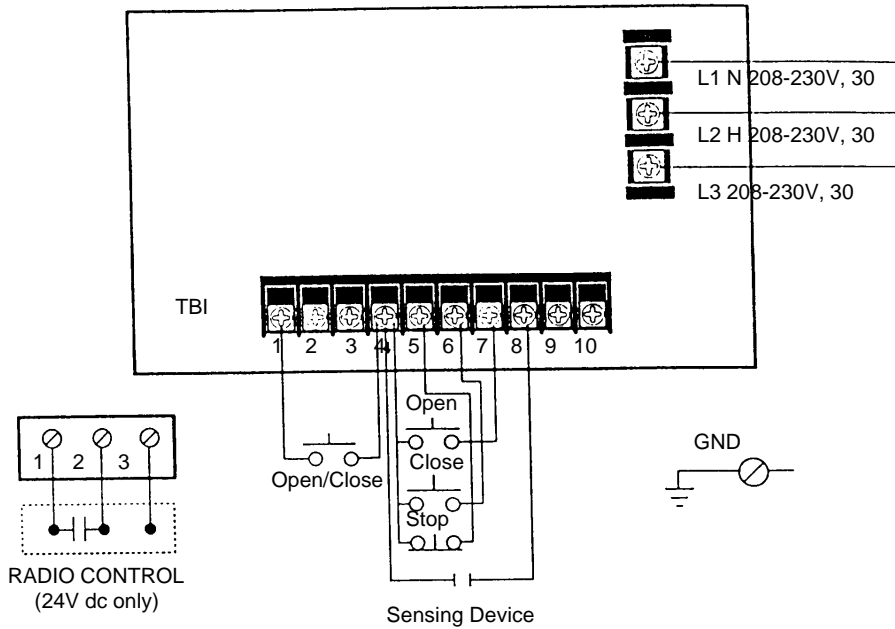
Mounting the Timer



*** NOTE:**
Items 1 and 2
Part Numbers
For Manufacturing
Reference Only.

ITEM	PART NUMBER	DESCRIPTION
1*	824DS0600Z	#22 ORANGE WIRE (.5 Ft.)
2*	824NS1100Z	#22 ORANGE WIRE (0.917 Ft.)
3	160B88	1.5 SEC. ON MAKE TIMER

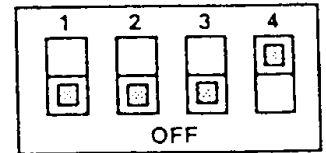
STANDARD POWER AND CONTROL CONNECTION DIAGRAM (Solid State Board CDO - 208-230V, 3 Ø)



Set Maximum Run Timer

Begin with door in closed position. Set dip switch to max. run timer mode. Press control station open button door from closed to full open position without stopping. Set dip switch to desired operating mode (B2, C2, D1, E2, T, TS).

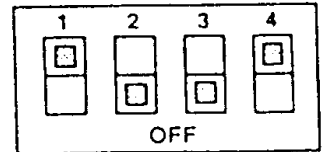
**Set
max.
run
timer**



Set Adjustable Mid Stop

Begin with door in closed position. Set dip switch to adj. mid stop mode. Press control station open button to operate door from closed to mid stop position and stop with control station stop button. Set dip switch to desired operating mode (B2, C2, D1, E2, T, TS).

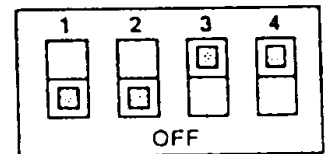
**Set
adj.
mid
stop**



Set Timer to Close (NOTE: Requires P/N 1A4811 CPSII Option Board with Timer to Close Function)

Set dip switch to timer to close mode. Momentarily press control station open button to set timer to set timer duration in 5 second increments. (Red diagnostic L.E.D. will flash to indicate the entry of each 5 second increment into memory). To re-set timer memory to zero, press control station close button. Set dip switch to (T or TS) operating mode after timer is programmed.

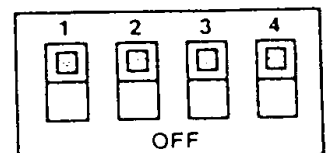
**Set
timer
to close**



Diagnostic Mode

Set dip switch to diagnostic mode. Flashing red diagnostic L.E.D. indicates proper microprocessor function. If the diagnostic L.E.D. does not light, the control logic board requires replacement.

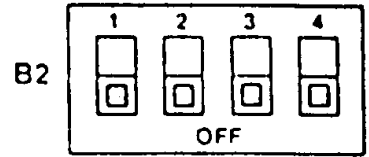
**Diagnostic
mode**



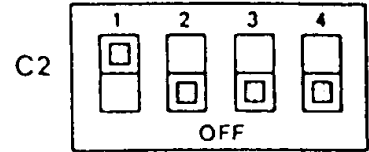
OPERATING MODE

TYPE STATION

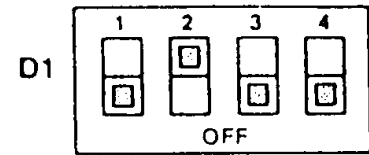
B2 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close and stop, plus wiring for sensing device to reverse and auxiliary devices to open and close with open override.



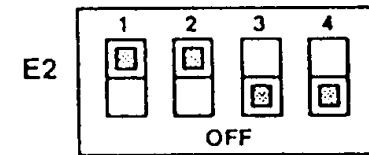
C2 3 Button, 3 Button Radio Control
Function: Momentary contact to open and stop with constant pressure to close, open override plus wiring for sensing device to reverse.



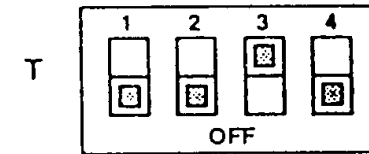
D1 2 Button, 3 Button Radio Control
Function: Constant pressure to open and close with wiring for sensing device to stop.



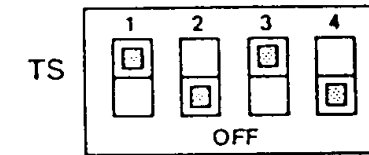
E2 2 Button, 3 Button Radio Control
Function: Momentary contact to open with override and constant pressure to close. Release of close button will cause door to reverse (roll-back feature) plus wiring for sensing device to release.



T* 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close, and stop with open override and timer to close. Every device that causes door to open, excepting a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the timer to close. If the timer has been activated, the open button and radio control can recycle the timer. The stop button will deactivate the timer until the close button is used to close the door. **(NOTE: Requires P/N 1A4811 CPSII Option Board with Timer to Close Function.)**



TS* 3 Button, 1 Button, 1 & 3 Button Radio Control
Function: Momentary contact to open, close, and stop with open override and timer to close. Every device that causes door to open, including a reversing device, activates timer to close. Auxiliary controls can be connected to open input to activate the timer to close. If the timer has been activated, the open button and radio control can recycle the timer. The stop button will deactivate the timer until the close button is used to close the door. **(NOTE: Requires P/N 1A4811 CPSII Option Board with Timer to Close Function.)**



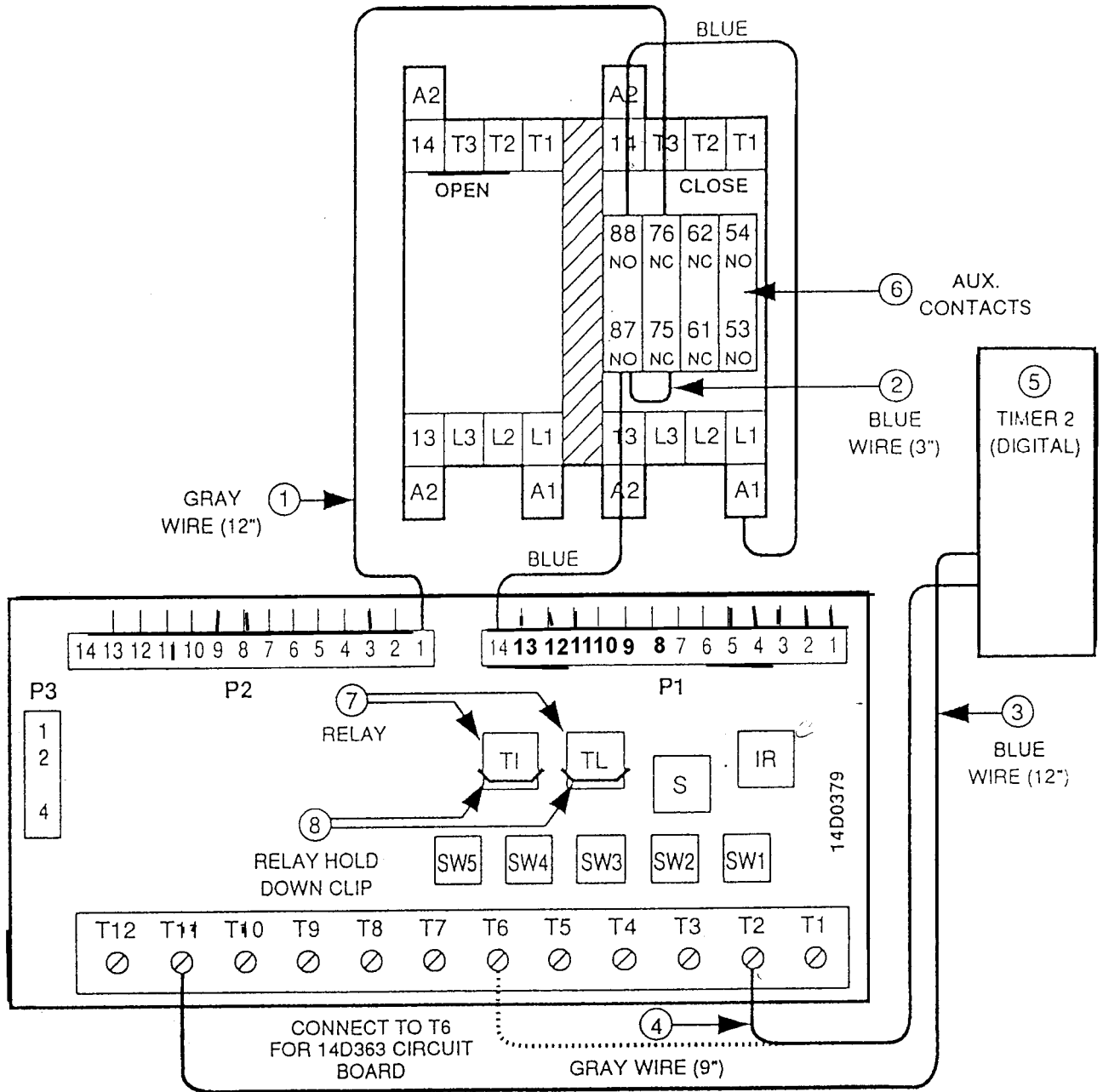
NOTE:

1. External interlocks may be used with all functional modes.
2. Auxiliary devices are any devices that have only one set of contacts. Examples are: photocell, loop detector, pneumatic or electrical treadles, residential radio controls, one button stations, pull cords, etc.
3. Open override means that the door may be reversed while closing by activating an opening device without the need to use the stop button first.

1A4041

TIMER TO CLOSE OPTION

(For PC Board #14D0379)



*** NOTE:**
 Items 1, 2, 3 & 4
 Part Numbers for
 Manufacturing
 Reference Only

ITEM	PART NUMBER	DESCRIPTION
1*	880NU1201Z	#22 GRAY WIRE (1 Ft.)
2*	839NN0300Z	#22 BLUE WIRE (.25 Ft.)
3*	839NS1200Z	#22 BLUE WIRE (1 Ft.)
4*	880NS0901Z	#22 GRAY WIRE (.75 Ft.)
5	160B90	DIGITAL TIMER
6	160A91	FRONT MOUNT AUX. CONTACT
7	160B81	24VAC RELAY
8	29A132	RELAY HOLD DOWN CLIP

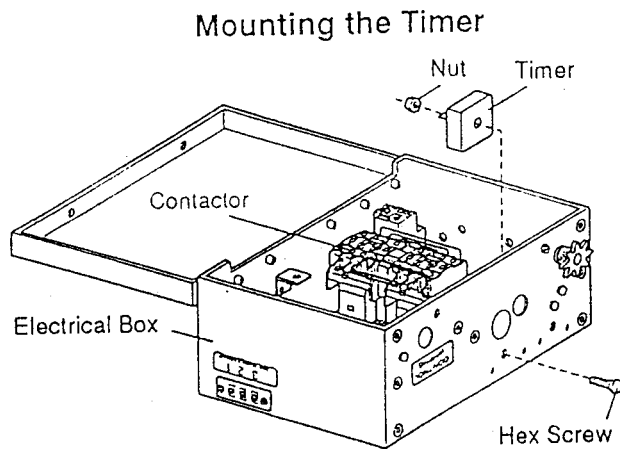
TIMER TO CLOSE OPTION

Electrical Box Modification

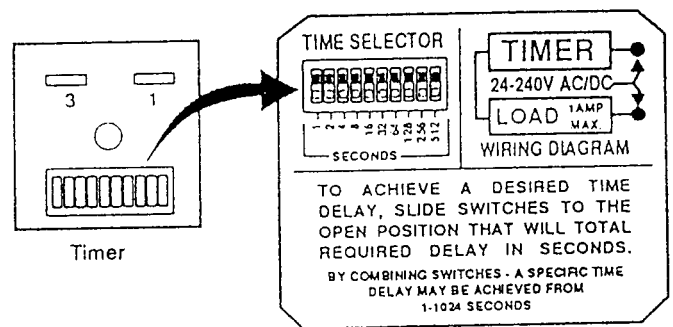


Close door and disconnect electric power before installing this kit.

1. Install auxiliary contact (item 6) on top of close side of contactor
2. Connect blue wire (item 2) between 87 and 75 of auxiliary contact.
3. Connect gray wire (item 1) between P2-1 of circuit board and 76 of the auxiliary contact
4. Move the blue wire connected to pin 13 of the CLOSE side of the contactor to 87 of the auxiliary contact.
5. Move the blue wire connected to pin 14 of the CLOSE side of the contactor to 88 of the auxiliary contact.
6. Install relays (item 7) into sockets T1 and TL on PCB.
7. Install relay hold down clips (item 8) on these relays.
8. Mount timer adjacent to contactor with enclosed hardware. (See figure below Mounting Timer)
9. Connect blue wire (item 3) from timer to T11 on circuit board.
10. Connect gray wire (item 4) from timer to T2 for 14D379 circuit board, connect to T6 on 14D363 circuit board.
11. Set switches on circuit board to either T or TS wiring.



Setting the Timer



Timer Wiring Types

T* 3 Button

Function: Momentary contact to open, close and stop, with open override and timer to close. Open button can be connected to activate timer if desired. Auxiliary controls can be connected to open and activate timer to close or to open and close without activating timer. If timer has been activated, reinitiation of the timer to close circuit will recycle the timer. Includes wiring for sensing devices to reverse which will NOT activate time.

TS* 3 Button

Function: Momentary contact to open, close and stop with open override and timer to close. EVERY device that causes door to open will activate timer to close including sensing device to reverse. Timer may be deactivated until next opening signal is received by depressing stop button after door has reached open position or permanently by use of optional timer defeat switch. If timer has been activated, reinitiation of open circuit will recycle the timer.

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1A4730 RED/GREEN LIGHT CONTROL MODULE

Use with 1A4811 CPSII Option Board for Timer to Close Function



Commercial door operator accessory for use only with Liftmaster solid state commercial door operators.



WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRICAL POWER TO OPERATOR BEFORE PROCEEDING.



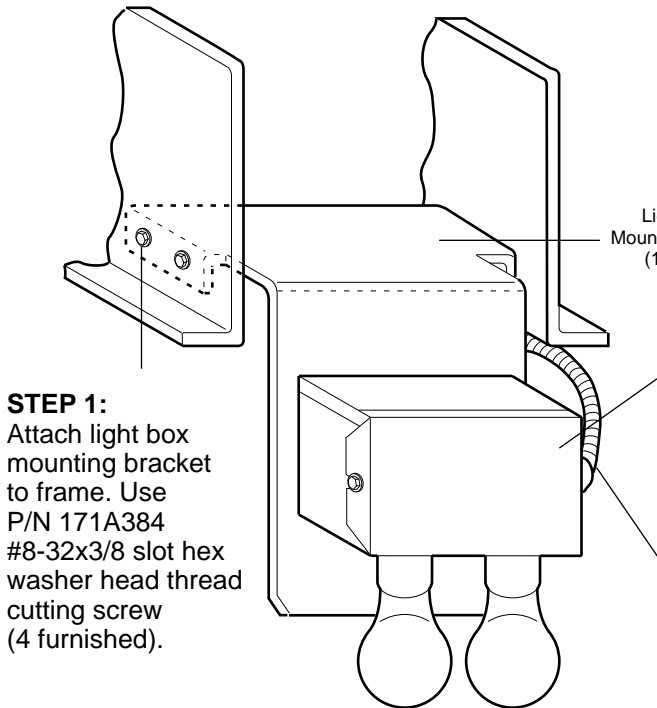
CAUTION

TO AVOID DAMAGE TO RELAYS, DO NOT EXCEED THE FOLLOWING:

Red light output – 75W, 120V incandescent bulb or 3A, 250VAC (Resistive load)

Green light output – 75W, 120V incandescent bulb or 3A, 250VAC (Resistive load)

Light Box/Door Operator Mounting



STEP 2: Attach light box assembly to light box mounting bracket. Use P/N 171A297 #10-32x1/2 screw (2 furnished).

STEP 3: Flex conduit to electrical box (use hole shown in Figure 1).

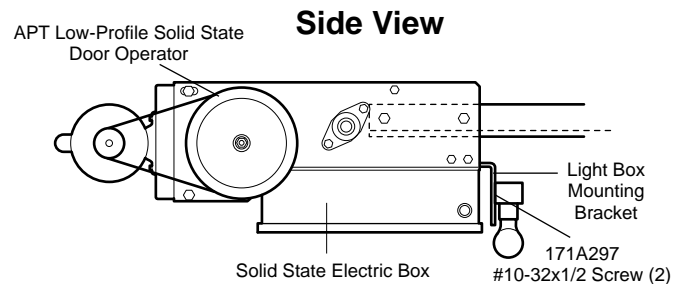
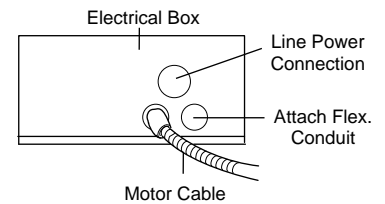


Figure 1

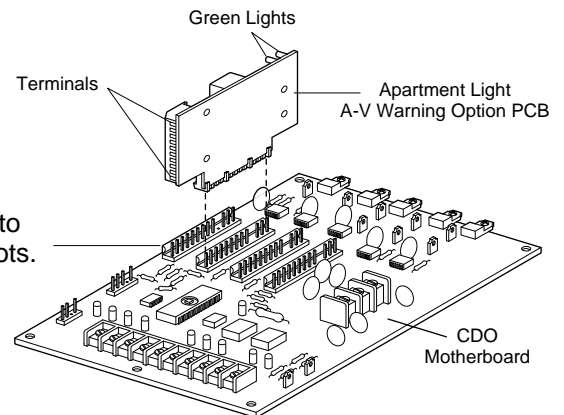
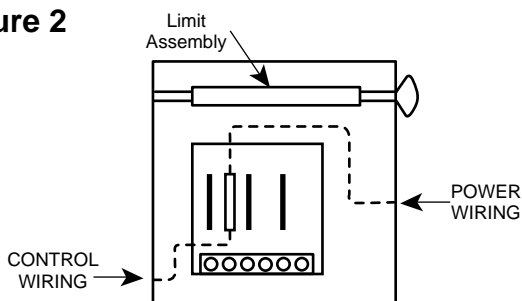


CAUTION

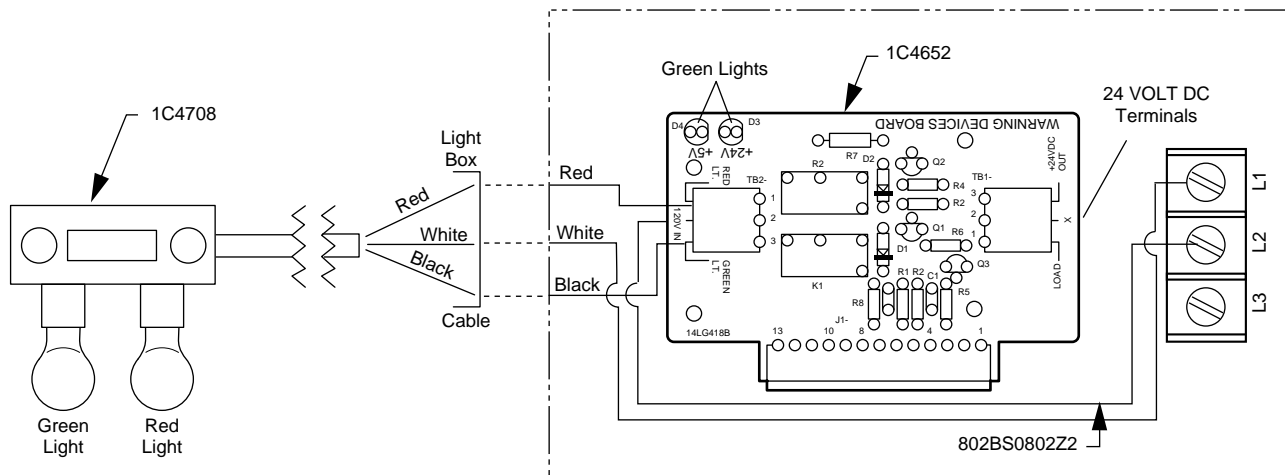
CONDUIT, WIRING, AND CONNECTORS SHOULD BE SIZED AND INSTALLED PER THE NATIONAL ELECTRICAL CODE.

Route wiring as shown in Figure 2.

Figure 2



Electric Box



STEP 5:

Refer to Figures 1 and 2 and complete wiring connections as follows:

- Connect red wire to red light terminal on the PCB connector.
- Connect black wire to green light terminal on the PCB connector.
- Connect white wire to L1 (NEUTRAL) on the power terminal strip.
- Connect jumper from L2 (HOT) on the power terminal strip to (120V IN) terminal on the PCB connector.

STEP 6:

- Install red and green lights. (Not provided)
Use 75 watt maximum.

STEP 7:

- Refer to your Owner's Manual Optional Settings Section for Timer to Close programming procedure.

Light Control Module Operation:

The green lights on the Option Board will turn on if the board is seated properly and the power is on. When the door reaches the full open position, the timer circuit will be activated. The green lampholder will receive power. If the timer has not been set, the red lampholder will receive power when the door starts to close and until close limit is activated. If the timer has been set, the red lampholder will receive power as follows:

TIMER SETTING	RED LAMPHOLDER RECEIVES POWER
Greater than 10 seconds	10 seconds before door starts to close and until close limit is activated.
Equal to 10 seconds	5 seconds before door starts to close and until close limit is activated.
Less than 10 seconds	Approximately 1/2 of timer setting in seconds before door starts to close and until close limit is activated.

Light Module/Brake Installation

If installing both a light control module and a brake, Light Module/Brake Adapter Kit (1A4385) is required.

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PART NUMBER DESCRIPTION MODEL NUMBER

ADDRESS ORDER TO:

THE CHAMBERLAIN GROUP, INC.
Electronic Parts & Service Dept.
2301 N. Forbes Blvd., Suite 104
Tucson, AZ 85745

1A4746

Apartment Light/Audio-Visual Warning Option Board



WARNING

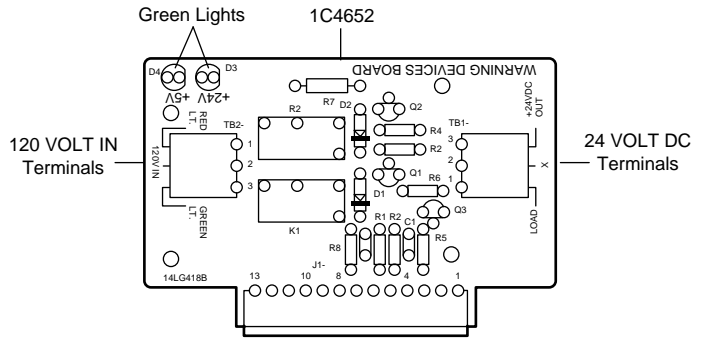
TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRICAL POWER TO OPERATOR BEFORE PROCEEDING.

Commercial door operator accessory for use only with Liftmaster solid state commercial door operators.



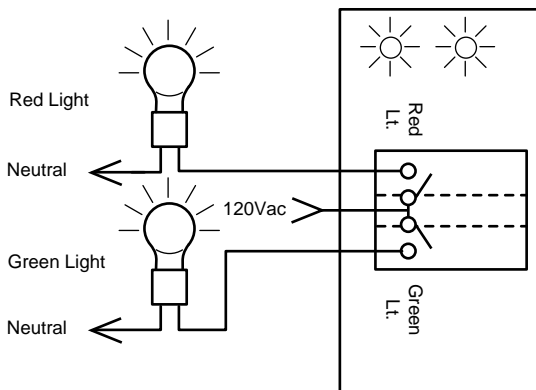
The Apartment Light/Audio-Visual Warning Option PCB has contact outputs to control the red and green lights for Apartment Operators. The red light output can also be used in a Timer to Close application to control an audio/visual warning preceding door closure. See owner's manual Optional Settings section for Timer to Close programming procedure.

See side two for installation.

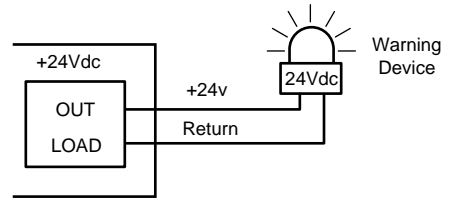


Apartment Light / Audio-Visual Warning Option PCB

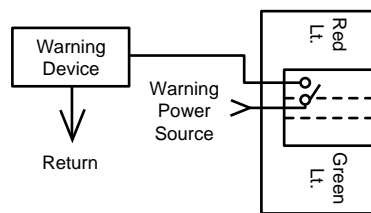
Apartment Application



Timer to Close Audio Visual Warning (24Vdc only)



Timer to Close Audio Visual Warning





CAUTION

TO AVOID DAMAGE TO RELAYS, DO NOT EXCEED THE FOLLOWING:

Red light output – 75W, 120V incandescent bulb or 3A, 250VAC (Resistive load)

Green light output – 75W, 120V incandescent bulb or 3A, 250VAC (Resistive load)

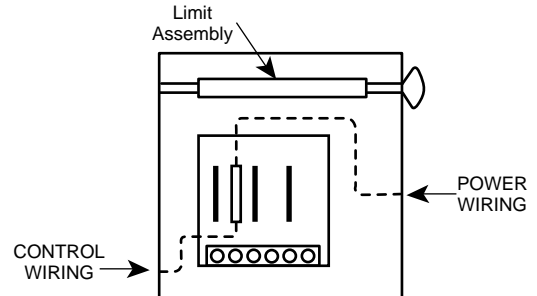
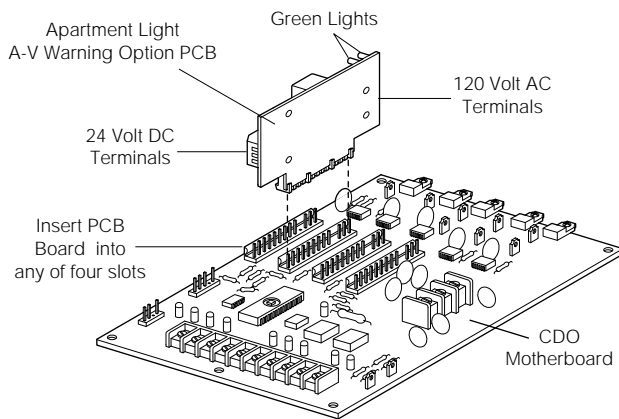


CAUTION

CONDUIT, WIRING, AND CONNECTORS SHOULD BE SIZED AND INSTALLED PER THE NATIONAL ELECTRICAL CODE.

Route wiring as shown below.

INSTALLATION: Connect wires to terminals as shown below. Use copper wire only #14 AWG maximum. Plug option board into a slot on the motherboard. Reconnect power to operator. The green light(s) on the option board will turn on if the board is seated properly and the power is on.





1A4747 Auxiliary Contacts Option Board

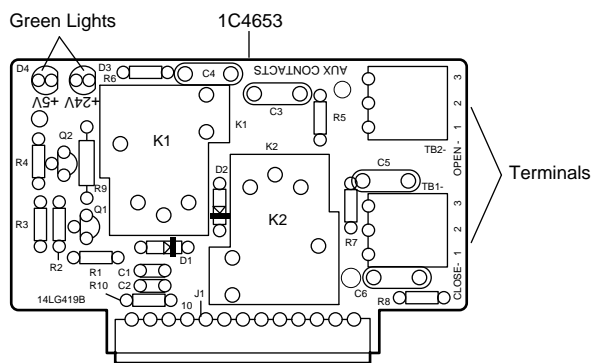
Commercial door operator accessory for use only with Liftmaster solid state commercial door operators.



WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRICAL POWER TO OPERATOR BEFORE PROCEEDING.

NOTE: Power for devices controlled by the auxiliary contacts to be supplied from an external source.



Auxiliary Contacts Option Board

The Auxiliary Contacts Option Board has both normally-open and normally-closed contacts that actuate when the door is opening, closing and when the unit is powered down.

When the CDO is powered up, the following contacts outputs are available:

While opening:
open 2 - 1 opened (Open Aux. Contact)
open 2 - 3 closed

While Closing:
close 2 - 1 closed (Closed Aux. Contact)
close 2 - 3 opened

CDO powered down:
open 2 - 1 opened
open 2 - 3 closed
close 2 - 1 closed
close 2 - 3 opened

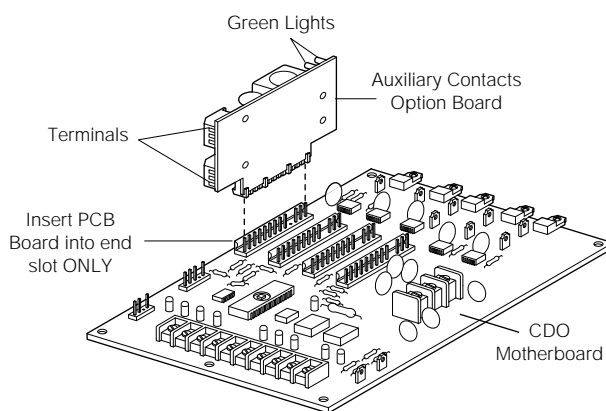
CDO powered on & door not in motion:
open 2 - 1 closed
open 2 - 3 opened
close 2 - 1 opened
close 2 - 3 closed



CAUTION

TO AVOID DAMAGE TO RELAYS, DO NOT EXCEED MAXIMUM CONTACT RATING OF 10A @ 240VAC. NOT APPLICABLE FOR INCANDESCENT LOADS.

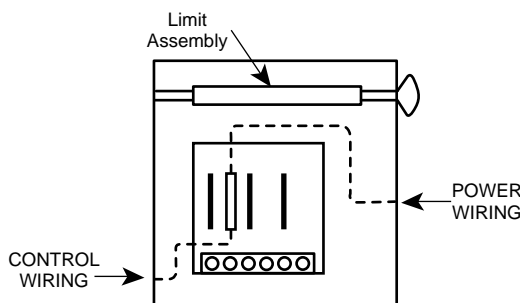
INSTALLATION: Connect wires to terminals as needed. Use copper wire only #14 AWG maximum. Plug option board into the slot on the end of the motherboard. Reconnect power to operator. The green light(s) on the option board will turn on if the board is seated properly and the power is on.



CAUTION

CONDUIT, WIRING, AND CONNECTORS SHOULD BE SIZED AND INSTALLED PER THE NATIONAL ELECTRICAL CODE.

Route wiring as shown below.



Link Part No. 02101

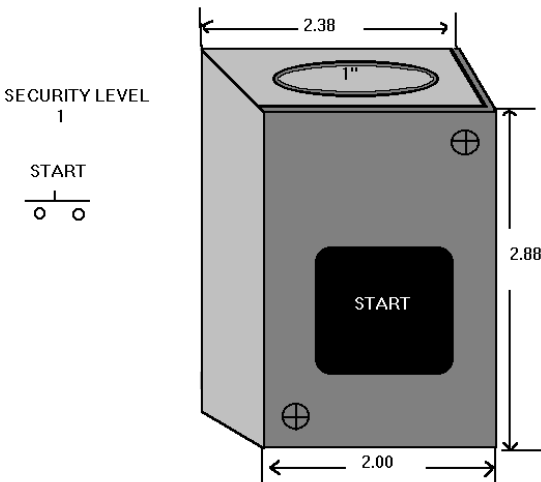
Description: 1 BUTTON STATION

Function: START, one (1) pushbutton control station, in general purpose indoor enclosure (NEMA 1).

Rating: One form A (N.O.) contact, 6 amps, 250VAC

User Info: May be used “to Open” on most industrial operators. Use on all Link operators for this function. May be used “to Open & Close” if operator is wired for single device to open and close. Use on all Link operators with types B2 and R2 control wiring for this function.

***Caution:** When used on most industrial operators, this control will not stop the door or gate. Use another control that has a STOP button in conjunction with this control.



Link Part No. 02106

**Description: 1 BUTTON STATION
INDOOR FLUSH MT.
NEMA 1**

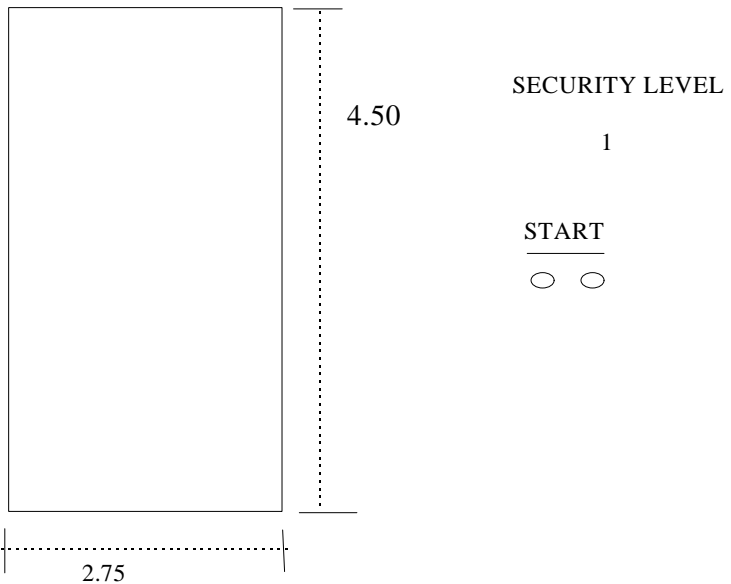
Function: START, one (1) pushbutton control station, in standard 2 x 4 electrical junction box with stainless steel faceplate.

Rating: one form A (N.O.) contact, 15 amps, 600VAC.

User Info: May be used “to Open” on most industrial operators. Use on all Link operators for this function. May be used “to Open & Close” if operator is wired for single device to open and close. Use on all Link operators with types B2 and R2 control wiring for this function.

***Caution:** When used on most industrial operators, this control will not stop the door or gate. Use another control that has a STOP button in conjunction with this control.

Dimensions:



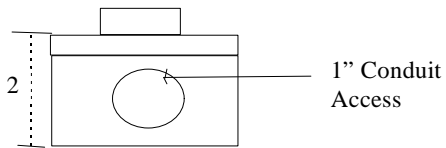
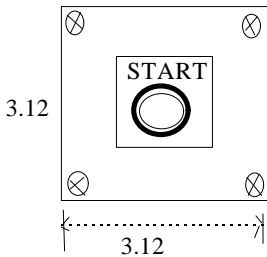
Link Part No. 02401

**Description: 1 BUTTON STATION
OUTDOOR SURFACE MT.
NEMA 4/12**

Function: START, one (1) pushbutton control station. Die cast metal enclosure. In weather-proof outdoor enclosure (NEMA 4/12).

Rating: One form A (N.O.) contact, 10 amps, 600VAC.

User Info: May be used “to Open” on most industrial operators. Use on all Link operators for this function. May be used “to Open & Close” if operator is wired for single device to open and close. Use on all Link operators with types B2 and R2 control wiring for this function.



Link Part No. 02401S

**Description: 1 BUTTON STATION
OUTDOOR SURFACE MT.
NEMA 4/12**

Function: STOP, one (1) pushbutton control station. In weather-proof outdoor enclosure (NEMA 4/12).

Rating: Two form B (N.C.) contacts, 10 amps, 600VAC.

User Info: May be used “to Stop” the door or gate when in motion.
Use on all Link operators.

Link Part No. 02102

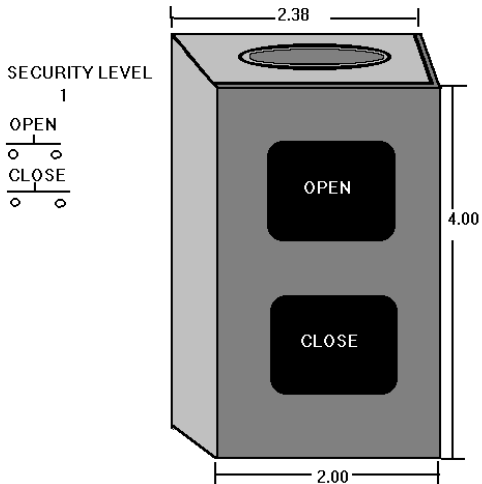
Description:

Function: OPEN/CLOSE, two (2) pushbutton control station, in general purpose indoor enclosure (NEMA 1).

Rating: One form A (N.O.) contact, 6 amps, 250VAC.

User Info: Should only be used on operators wired for constant pressure to open and to close. Use on all Link operators with type D control wiring.

Caution: If used on operators wired for momentary contact in either in either direction, use another control that has a STOP button or there may be no means of stopping the door or gate.



Link Part No. 02107

Description: 2 BUTTON CONTROL

INDOOR FLUSH MOUNT NEMA 1

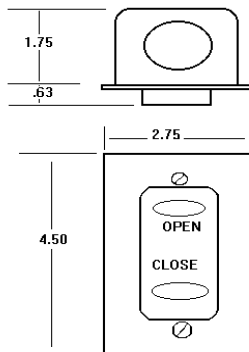
Function: OPEN/CLOSE, two (2) pushbutton control station, in standard 2 x 4 electrical junction box, with stainless steel faceplate.

Rating: Two form A (N.O.) contacts, 15 amps, 600VAC.

User Info: Should only be used on operators wired for constant pressure to open and to close. Use on all Link operators with type D control wiring.

***Caution:** If used on operators wired for momentary contact in either direction, use another control that has a STOP button or there may be no means of stopping the door or gate.

1"Conduit access
Typical 11 places



Link Part No. 02402

**Description: 2 BUTTON STATION
OUTDOOR SURFACE MOUNT NEMA 4/12**

Function: OPEN/CLOSE, two (2) pushbutton control station, in weatherproof outdoor enclosure (NEMA4/12).

Rating: Two form A (N.O.) contacts, 10 amps, 600VAC.

User Info: Should only be used on operators wired for constant pressure to open and to close. Use on all Link operators with type D control wiring.

***Caution:** If used on operators wired for momentary contact in either direction, use another control that has a STOP button or there may be no means of stopping the door or gate.

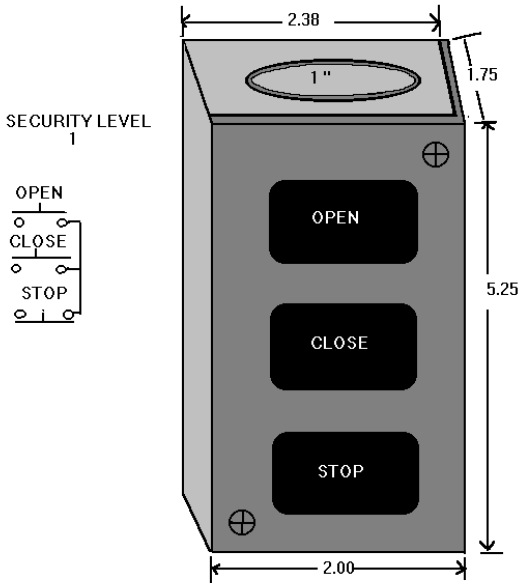
Link Part No. 02103

Decription: 3 BUTTON STATION

Function: OPEN/CLOSE/STOP, three (3) pushbutton control station, in general purpose indoor enclosure (NEMA 1).

Rating: Two form A (N.O.) & one form B (N.C.) contacts, 6 amps, 250VAC.

User Info: Allows complete control of door or gate. Industry standard for most industrial door operators and many industrial gate operators. supplied as standard with all Link industrial operators.



02 103L: 3-Button station with Maintenance Alert System

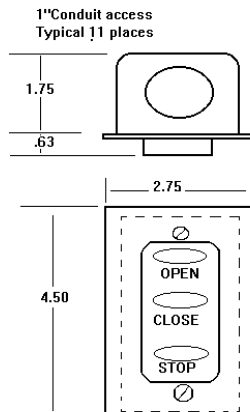
Link Part No. 02108

**Description: 3 BUTTON STATION
INDOOR FLUSH MT.
NEMA 1**

Function: OPEN/CLOSE/STOP, three (3) pushbutton control station, in standard 2 x 4 electrical junction box with stainless steel faceplate.

Rating: Two form A (N.O.) and on Form B (N.C.) contacts, 15 amps, 600 VAC.

User Info: Allows complete control of door or gate. Use on all Link operators.



Link Part No. 02403

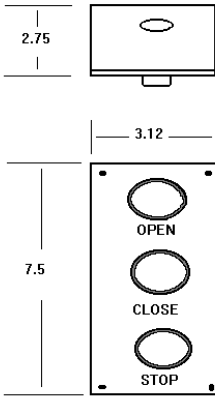
**Description: 3 BUTTON STATION
OUTDOOR SURFACE MT.
NEMA 4/12**

Function: OPEN/CLOSE/STOP, three (3) pushbutton control station, in weatherproof outdoor enclosure (NEMA 4/12).

Rating: Two form A (N.O.) & one form B (N.C.) contacts, 6 amps, 600VAC.

User Info: Allows complete control of door or gate. Use on all Link operators.

3/4" CONDUIT ACCESS



02 403 P: NEMA 4/4X/12/13 Polycarbonate enclosure.

Link Part No. 02703

**Description: 3 BUTTON CONTROL
HAZARDOUS AREA NEMA 7/9**

Function: OPEN/CLOSE/STOP, three (3) pushbutton control station, in enclosure rated for hazardous areas (NEMA 7/9).

Rating: Two form A (N.O.) & one form B (N.C.) contacts, 10 amps, 600VAC.

User Info: Allows complete control of door or gate. Use on all Link operators.

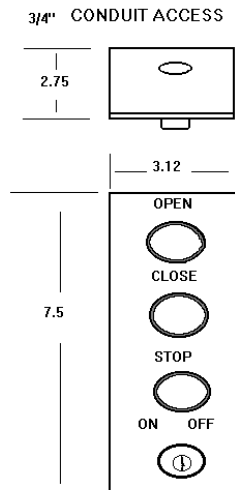
Link Part No. 02406

Description: 3 BUTTON STATION W/ SINGLE KEY CONTROL- OUTDOOR SURFACE MT. NEMA 4/12

Function: OPEN/CLOSE/STOP, three (3) pushbutton control station with ON/OFF single key control, maintained key positions, key removable in either position. In weatherproof outdoor enclosure.

Rating: Two form A (N.O.) & one form B (N.C.) pushbutton contacts, one form A (N.O.) key control contact 6 amps, 600VAC.

User Info: Allows complete control of door or gate with the additional feature that OPEN and CLOSE buttons can be locked out of operation with the key control. Use on all Link operators.



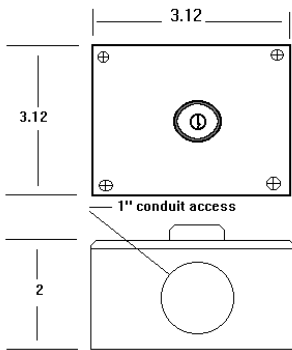
Link Part No. 02407

**Description: 2 POSITION KEYSWITCH
OUTDOOR SURFACE MT.NEMA 4/12
NON-TAMPERPROOF**

Function: ON/OFF, key control station, maintained key positions, key removable in either position. In weatherproof outdoor enclosure (NEMA 4/12).

Rating: One form A (N.O.) contact, 10 amps, 600VAC.

User Info: May be used to turn on or turn off other control equipment by key control only. Does not operate door or gate. Use on all Link operators.



Link Part No. 02109

**Description: 2 POSITION KEY CONTROL INDOOR FLUSH MOUNT
NEMA 1**

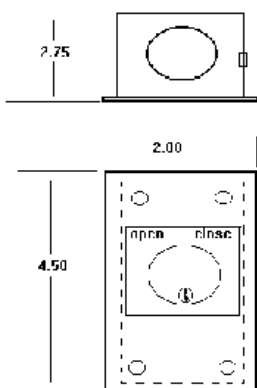
Function: OPEN/CLOSE, two (2) position key control station, spring return to center, key removable in center position only. In TAMPERPROOF enclosure with architectural grade aluminum faceplate.

Rating: Two form A (N.O.) contacts, 10 amps, 250VAC.

User Info: Should only be used on operators wired for constant pressure to open and close. Use on all Link operators with type D control wiring.

Caution: If used on operators wired for momentary contact in either direction, use another control that has a STOP button or there may be no means of stopping the door or gate.

1" Conduit access
typical top & bottom



02109B Same as 02109 but std. key cylinder is replaced with BEST cylinder (construction core included).

02109U Same as 02109 but std. key cylinder is replaced with U-CHANGE-IT cylinder allowing user to change keying of lock.

02109C Same as 02109 but customer must supply key cylinder to Lift-Master or Link for factory installation.

Link Part No. 02404

**Description: 2 POSITION KEY CONTROL OUTDOOR SURFACE
MOUNT. NEMA 4/12 NON-TAMPERPROOF**

Die cast metal enclosure.

Link Part No. 180C0152

Description: Die cast metal enclosure

Link Part No. 02 406 1T

Description: Key for all non-tamperproof models (marked #455 on key).

Link Part No. 02409

**Description: 2 POSITION KEY CONTROL
OUTDOOR SURFACE MOUNT. NEMA 4/12
TAMPERPROOF***

Function: OPEN/CLOSE, two (2) position key control station, spring return to center, key removable in center position only. **†**
TAMPERPROOF, weatherproof outdoor enclosure (NEMA 4/12).

Rating: Two form A (N.O.) contacts, 15 amps, 250VAC.

User Info: Should only be used on operators wired for constant pressure to open and close. Use on all Link operators with type D control wiring.

Caution: If used on operators wired for momentary contact in either direction, use another control that has a STOP button or there may be no means of stopping the door or gate.

02409B Same as 02409 but std. key cylinder is replaced with BEST cylinder (construction core included).

02409U Same as 02409 but std. key cylinder is replaced with U-CHANGE-IT cylinder allowing user to change keying of lock.

02409C Same as 02409 but customer must supply key cylinder to Lift-Mater or Link for factory installation.

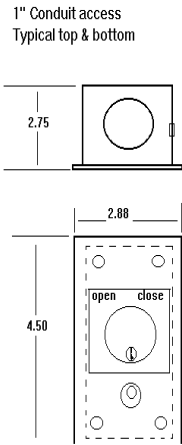
Link Part No. 02110

**Description: 2 POSITION KEY CONTROL W/ STOP BUTTON
INDOOR FLUSH MT. NEMA 1**

Function: OPEN/CLOSE, two (2) position key control station with STOP pushbutton. Spring return to center, key removable in center position only. In TAMPERPROOF enclosure with architectural grade aluminum faceplate.

Rating: Two form A (N.O.) and one Form B (N.C.) contacts, 10 amps, 250VAC.

User Info: Allows complete control of door or gate. Use on all Link operators.



02110B Same as 02110 but std. key cylinder is replaced with BEST cylinder (construction core included).

02110U Same as 02110 but std. key cylinder is replaced with U-CHANGE-IT cylinder allowing user to change keying of lock.

02110C Same as 02110 but customer must supply key cylinder to Lift-Mater or Link for factory installation.

Link Part No. 02405

**Description: 2 POSITION KEY CONTROLS W/ STOP BUTTON
OUTDOOR SURFACE MOUNT NEMA 4/12
NON- TAMPERPROOF**

Die cast metal enclosure.

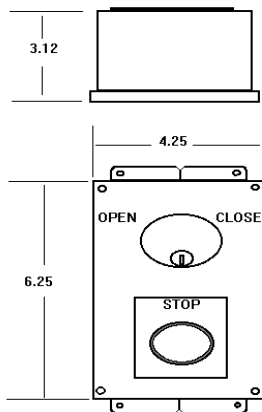
Link Part No. 02410

**Description: 2 POSITION KEY CONTROLS W/ STOP BUTTON
OUTDOOR SURFACE MOUNT NEMA 4/12
TAMPERPROOF***

Function: OPEN/CLOSE, two (2) position key control station, with STOP pushbutton. Spring return to center, key removable in center position only. In TAMPERPROOF, weatherproof outdoor enclosure.

Rating: Two form A (N.O.) and one form B (N.C.) contacts, 15 amps, 250VAC.

User Info: Allows complete control of door or gate. Use on all Link operators.



02410B Same as 02410 but std. key cylinder is replaced with BEST cylinder (construction core included).

02410U Same as 02410 but std. key cylinder is replaced with U-CHANGE-IT cylinder allowing user to change keying of lock.

02410C Same as 02410 but customer must supply key cylinder to Lift-Mater or Link for factory installation.

CDO

LNK PRO

Keyless Entries

466LM Commercial Wireless Keyless Entry

Era Mfg 98-Cur

Discontinued? No

Compatible W

Instruction Sheet 114A2079

Price \$0.00

Description

Features

Individual Codes: Each user can choose from one of 100,000 four or five digit codes.

Operation: Opener activates when a valid 4 or 5 digit code is entered and either * or # is pressed.

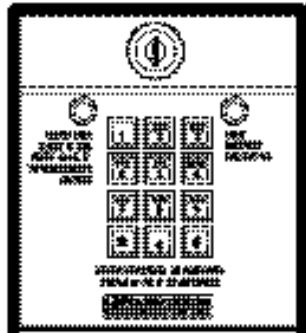
If wrong numbers are pressed, correction can be made immediately. Only the last five numbers entered are transmitted when the * or # key is pressed.

Safety: While keypad lights are on, opener can be stopped or reversed by pressing the * or # key. No need to re-enter your code.

Compatibility: Can be used with any "smart" receiver.

Code Format: Can operate either as a "billion" code (green test light) transmitter or a keyless entry transmitter.

Power: Alkaline 6V lantern battery



Installation

All installations must be performed by qualified personnel.

Select a mounting location within reach of drivers or other users of the system.

- Open keypad using key latch and remove battery.
- Hold keypad firmly against mounting location and mark hole locations as shown in *Figure 2*. Use only those four holes. Make sure that mounting surface covers all holes in back of box.
- Secure keypad to mounting location using the (4) 1/4" carriage bolts, (4) 1/4" nuts and (4) sealing washers. Be sure that steel side of sealing washer is facing the nut, see *Figure 2*.
- Reinstall battery and attach wires to battery terminals: black to (-) and red to (+).

Code Formats

The keypad can transmit in either "billion code" (green test light) or keypad (compatible with a 66LM) mode. Most Lift-Master radio controls will store only one keypad code. It is shipped in "billion code" mode.

To switch to keypad mode:

- Open the box using the key latch.
- Locate the option jumper as shown in *Figure 4*.
- Move it to the "KEY" position.

Setting the Codes

You will need someone to help at this point.

Ask each user to choose a four or five digit password. **Note:** With the keypad code format, only four digit codes may be used.

Press the selected code digits and press and hold the * or # key. Then press the Smart button on the receiver. The adjacent indicator light will flash. Now the receiver has learned the selected code.

Battery

The 6V battery should power the unit for at least 2 years. As long as there is adequate power, the keypad will illuminate and the receiver will operate. When the red Low Battery Indicator light blinks or if the keypad doesn't illuminate, replace the battery with an ALKALINE 6V lantern battery.

To comply with FCC/IC rules, adjustment or modification of this receiver and/or transmitter is prohibited, except for changing the code setting or replacing the battery. THERE ARE NO OTHER USER SERVICEABLE PARTS.



WARNING

Children operating or playing with a garage door opener can injure themselves or others. *The garage door could close and cause serious injury or death. Do not allow children to operate the wall push button(s) or remote control(s).*

A moving garage door could injure or kill someone under it. Activate the opener only when you can see the door clearly, it is free of obstructions, and is properly adjusted.

Figure 1

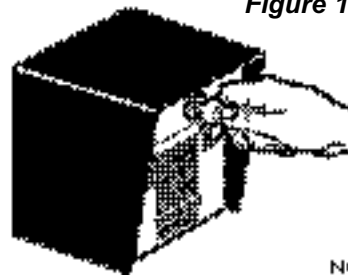


Figure 2

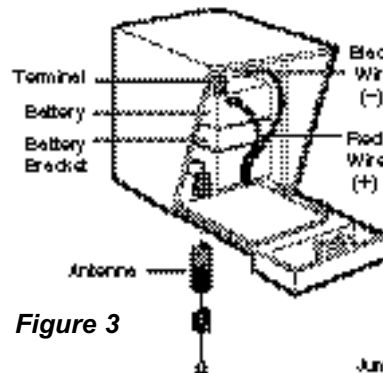
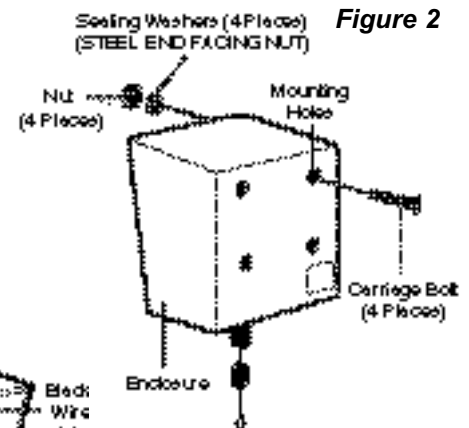
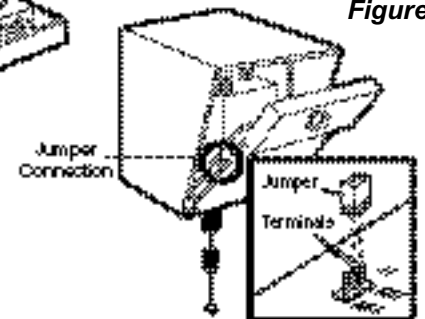


Figure 3

Figure 4



Replacement Parts

Antenna161A0021 6V Battery . . .010A0021

**FOR SERVICE DIAL OUR TOLL-FREE NUMBER:
1-800-528-2817**

MISCELLANEOUS CONTROL ACCESSORIES

PASS DOOR SWITCH

50 400 - Plunger type switch to disable operator control circuit whenever pass door (man-door) is not fully closed. Requires coil cord or take-up reel. May be used with all Lift-Master and Link industrial operators.

ROLLING DOOR INTERLOCK SWITCH

50 401 - NEMA 1 switch is engaged by rolling door lock mechanism and disables operator control circuit when door is locked, thereby preventing electrical operation of door when locked. Mounts at bottom of door guide, requires 2-wire connection to operator. May be used with all Lift-Master and Link industrial operators on rolling doors.

SECTIONAL DOOR INTERLOCK SWITCH

50 450 - NEMA 4 switch is engaged by sectional door lock mechanism and disables operator control circuit when door is locked, thereby preventing electrical operation of door when locked. Mounts next to door lock, requires 2-wire connection to operator. May be used with all Lift-Master and Link industrial operators on sectional doors.

TIMER DEFEAT SWITCH

50 402 - Toggle switch to allow automatic close timer to be manually disabled. May be used with all Lift-Master and Link industrial operators with type T, T1, or T2 control wiring. *Not for use with the Solid State Logic Control Board (L).* On logic board units, the time can be defeated by pressing the STOP button.

7-DAY TIMER

26 DGI 16 - Used to automatically open or close a door at pre-programmed times. Includes manual override and battery back-up. *Not for use with the Solid State Logic Control Board (L).*

WARNING: *Automatic door operation can cause serious injury or death. Do not use this device without entrapment protection equipment, audible\visible warning devices, clearly posted warning signs, and an emergency STOP button near the door.*

TWO-CONDUCTOR CONTROL WIRE

96 54023 - 22-gauge, white, 500 ft. roll.

APPLICATIONS:

Plunger type switch to disable operator control circuit whenever a pass door (man-door) is not fully closed. Requires a coil cord or take-up reel. May be used with all Lift-Master industrial operators.


INSTALLATION INSTRUCTIONS

1. Locate safety switch box at a convenient height on the inside of the garage door at the hinged side of the pass door and mount to the door.

NOTE: The switch box is mounted on the main body of the door, not on the pass door (man door).

2. Mount the angle bracket (supplied) to the pass door so that the micro switch plunger is depressed fully when the pass door is shut.

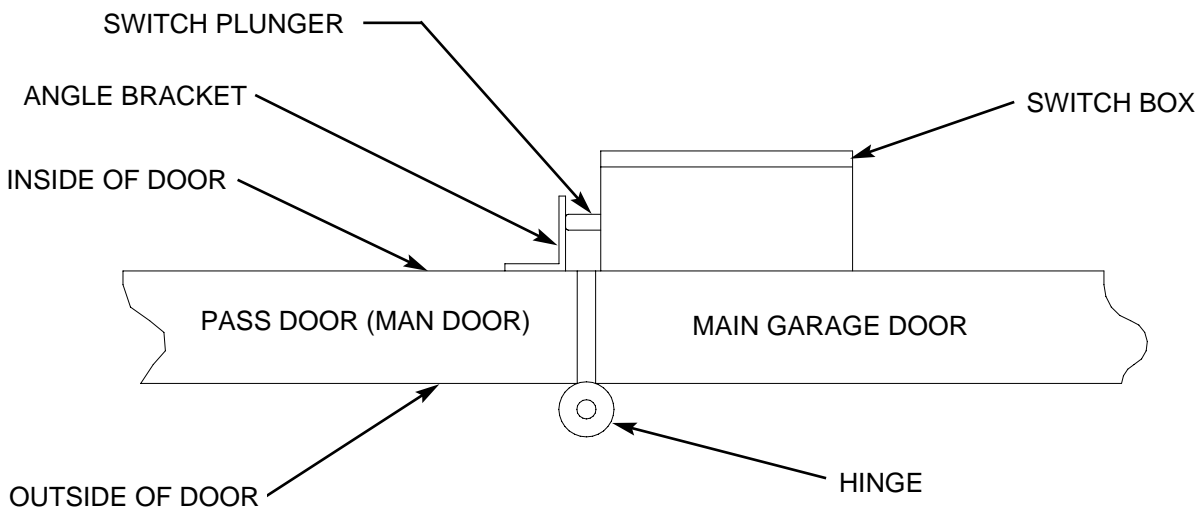
3. The micro-switch is wired normally open so that when the pass door is shut the switch is held closed, allowing the operator to run.

 **WARNING**

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.

4. Connect the pass door switch into the operator control circuit at the terminals marked “external interlock”. Be sure to remove any jumpers that normally bypass an external interlock.

5. A coiled cord or take up reel will be necessary to complete the installation.



APPLICATIONS:

Switch is engaged by rolling door lock mechanism and disables operator control circuit when door is locked, thereby preventing electrical operation of the door when locked. May be left or right side mounted at the bottom of door guide. Switch contact (SPDT, 15 amp, 120V rating) requires 2-wire connection to operator. Models 50-4001L and 50-4001R include 20 feet of 3 conductor, 16 gauge wire for connection to operator, specify desired hand at time of order. May be used on all LiftMaster industrial rolling door operators.

INSTALLATION INSTRUCTIONS

NOTE: Although each installation will vary due to particular door and door guide characteristics, refer to the following general procedures and illustrations on page 2 to install the interlock switch.

Models: 50-4001L, 50-4001R

The models above are pre-assembled with a 3 conductor wire and may only be used for the handling designated. If it is necessary to convert the switch to the opposite hand, disconnect and remove the 3 conductor wire from the switch. Using the conduit entry on the opposite end, reconnect and secure the 3 conductor wire to their original positions.

MOUNTING

1. Locate and project the center line of the door locking bar onto the door guide (shown as dimension "A" in figure 1 and 2). Use this line as the horizontal centerline for your cutout.
2. By referring to figure 2, determine the location of your mounting screws and door guide cutout.
3. Cutout door guide per figure 2.
4. Align mounting screws (not supplied) in channel per figure 2. If door guide does not have a mounting channel, it will be necessary to drill the mounting holes.
5. Using suitable hardware, secure interlock switch to door guide, and adjust height of switch lever to ensure proper actuation of switch.



WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.

WIRING

For the connections from the interlock switch to the operator, refer to the wiring diagram supplied with the operator. Make connections indicated in the field wiring for external interlock switch. It may be necessary to remove an existing jumper from the terminals of the operator.

Model: 50-12949

Using 16 gauge, 2 conductor wire, connect the wire leads from the normally closed (WH) and common (GN) wires in the switch enclosure to the terminals located in the operator control box. Refer to figure 3.

Models: 50-4001L, 50-4001R

Connect the wire leads from the normally closed (WH) and common (GN) wires to the terminals located in the operator control box. Wire nut the unused normally open (BK) wire lead. Refer to figure 4.

FIGURE 1 (LEFT HAND ASSEMBLY SHOWN)

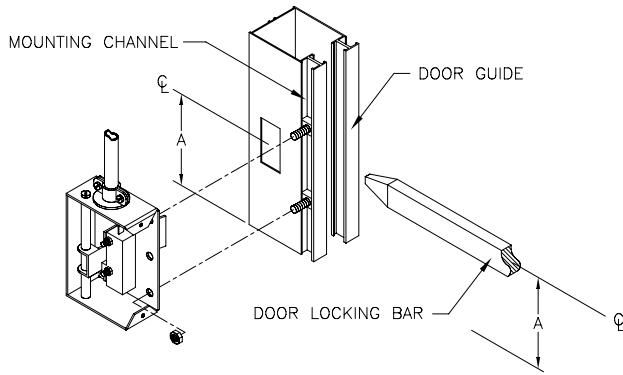


FIGURE 2 (LEFT HAND ASSEMBLY SHOWN)

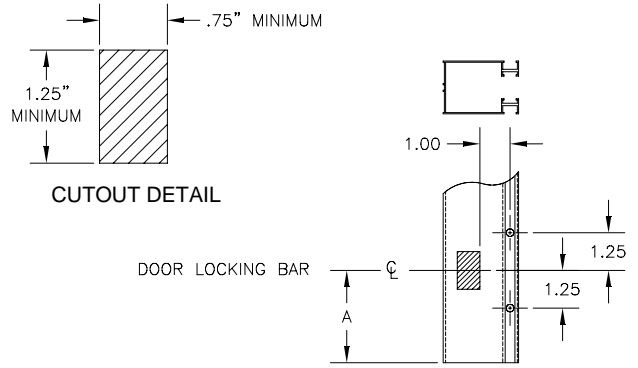


FIGURE 3 (LEFT HAND ASSEMBLY SHOWN)

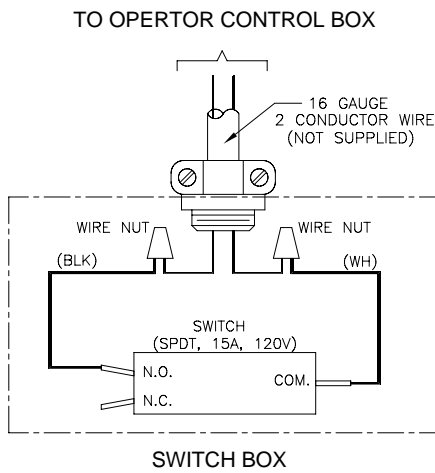


FIGURE 4 (LEFT HAND ASSEMBLY SHOWN)

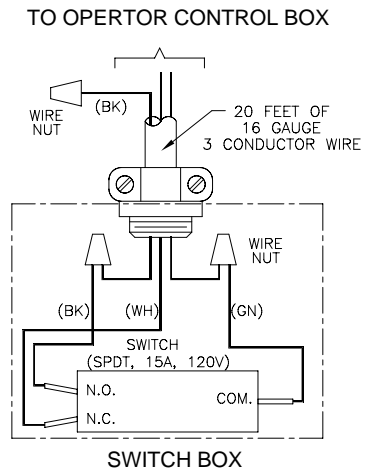
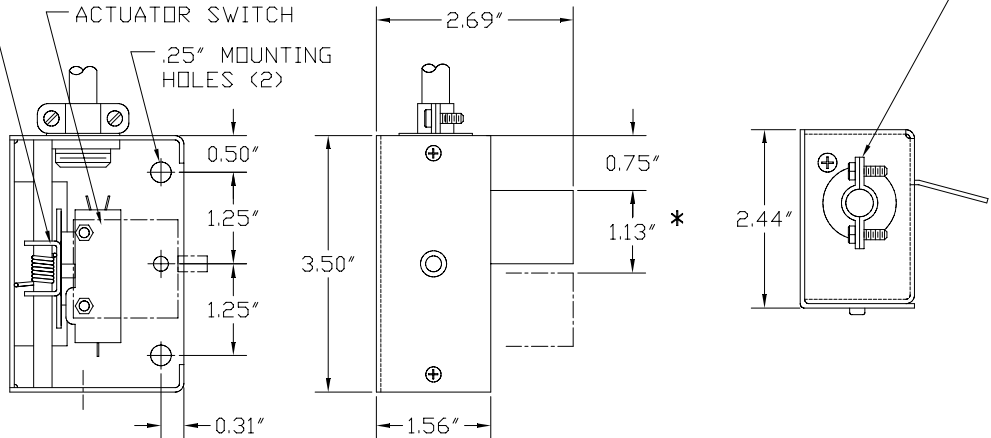


FIGURE 5

ADJUSTABLE LEVER

ACTUATOR SWITCH
.25" MOUNTING HOLES (2)



* (LEFT HAND ASSEMBLY SHOWN)

MOUNTING ACCESSORIES

ANGLE MOUNTING BRACKET

08 9098 - Heavy 1/2 inch thick cast iron angle bracket used for mounting side-mount operators on the end bracket of a rolling door or grille. May be used for vertical or horizontal mount and either front of coil or top of coil mount. Curved slots in bracket allow for tensioning of chain drive. Right/left interchangeable. Operator mounting holes match up with mounting dimensions of models J, MGJ, H, and GH Lift-Master and Link operators.

NOTE: Cannot be used with model GH 300.

10 9095 - Heavy-gauge steel bracket may be used for vertical or horizontal mount and either front of coil or top of coil mount. May be welded. For use with Models MJ and MH operators.

10 9095 1 - Heavy-gauge steel bracket. May be welded. For use with Model LGJ.

1A4324 - Heavy-gauge steel bracket may be used for vertical or horizontal mount and either front of coil or top of coil mount. May be welded. For use with Lift-Master and Link models MGJ, GH, J, and H operators.

NOTE: Cannot be used with model GH 300.

10 12360 - Heavy-gage steel bracket. Used for vertical or horiuzontal mount on either front or top of coil. Has door mounting pattern c ompatible with many OEM manufacturers. May be welded. For use with Model MJ, MH, j and H operators only.

WALL MOUNTING BRACKET

10 9099 - Heavy 1/4 inch steel plate bracket used for wall mounting of side-mount operators. Slots in bracket allows for tensioning of drive chain. Mounting studs match up with mounting holes of models J, MGJ, H, and GH Lift-Master and Link operators.

CHAIN TENSIONER

71 6023 - Adjustable steel bracket with bearings on each end. One end is placed on the operator output shaft and the other end on the door shaft. The bracket is spread apart until the drive chain is tensioned properly and then locked in place with bolts and locknuts. Both bearings are one inch diameter (for 1" shafts).

NOTE: May be used with all sidemount operators.

71 6125 - Same as 71 6023 but with 1-1/4" bearing for door shaft.

MOUNTING POSTS AND PRINTERS

MOUNTING POSTS

For use with card readers, digital keys, and telephone systems. Includes baseplate at bottom of post (pad mount models) and mounting flange for control device at top. Wiring can be fed through the post.

AMERICAN ACCESS SYSTEMS

55 9 - Gooseneck post for pad mount.

55 9 1 - Diagonal post.

55 9 2 - Dual height post (not shown). Accepts two control devices, one at passenger car height (3 ft.) and one at truck cab height (6 ft.)

DOOR KING

55 1801 - Model 1200 045 gooseneck post for pad mount.

55 1800 - Model 1200 046 gooseneck post for in-ground mount.

SENTEX

55 7000 4 - Gooseneck post for pad mount.

MOUNTING PLATES

Required for post mounting all telephone systems except single residence models.

DOOR KING

55 1802 - Model 1200 031 mounting plate.

SENTEX

55 7000 5 - Mounting plate.

PRINTERS

The access control device (digital key or card reader) must be designed for use with these optional plain paper printers (*see control device description above*).

AMERICAN ACCESS SYSTEMS

55 3044 - Model 11 044 for use with multi-code card reader. Model 55 3042 (11 042).

DOOR KING

55 1508 - Model 1508 043 for use with Model 1507 digital keys and Models 1510 and 1512 card readers.

SENTEX

55 3160 - Printer for use with PROKEY digital keys and PROCARD card readers.

55 9000 11 - Printer for use with Infinity systems.

Link Part No. 02111

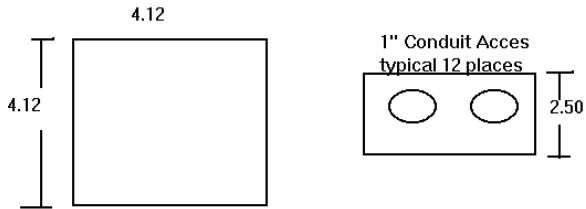
**Description: SINGLE PULLSWITCH
INDOOR OVERHEAD MOUNT NEMA1**

Function: PULL SWITCH, single control station, in general purpose indoor enclosure (NEMA 1).

Rating: One form A (N.O.) contact, 10 amps, 600VAC.

User Info: May be used for "Pull to Open" on most industrial operators. Use on all Link operators for this function. May be used for "Pull to Open or Close" if operator is wired for single device to open and close. Use on all Link operators with types B2 and R2 control wiring for this function.

***Caution:** When used on most industrial operators this control will not stop the door of gate. Use another control that has a STOP button in conjunction with this control.



Link Part No. 02111 1

**Description: DUAL PULLSWITCH INDOOR OVERHEAD
MOUNT NEMA1**

Same as 02111 except two N.O. (normally open) contacts
are provided instead on one.

Link Part No. 02411 1

**Description: DUAL PULLSWITCH OUTDOOR OVERHEAD
MOUNT NEMA4/12**

Same as 02411 except two N.O. (normally open) contacts
are provided instead on one.

Link Part No. 02411

**Description: SINGLE PULLSWITCH
OUTDOOR OVERHEAD MOUNT NEMA 4/12**

Function: PULL SWITCH, single control station, in weatherproof outdoor enclosure (NEMA 4/12).

Rating: One form A (N.O.) contact, 10 amps, 600VAC.

User Info: May be used for “Pull to Open” on most industrial operators. Use on all Link operators for this function. May be used for “Pull to Open or Close” if operator is wired for single device to open and close. Use on all Link operators with types B2 and R2 control wiring for this for this function.

Caution: When used on most industrial operators, this control will not stop the door or gate. Use another control that has a STOP button in conjunction with this control.

Link Part No. 02711

**Description: SINGLE PULLSWITCH HAZARDOUS OVERHEAD
MOUNT NEMA7/9**

Die cast hazardous are enclosure.

AUDIBLE/VISIBLE WARNING DEVICES

Auxiliary Limit switches or auxiliary contact blocks to control warning devices may be added to the operator at the time of order (see door operator modifications) to allow for connection of warning devices. For further information, contact your Lift-Master or Link sales representative.

WARNING: *It is strongly recommended that audible\visible warning devices be included in every operator installation.*

COLORED LIGHTS

50505R..... Vaportight light with red colored lens. Use up to 100 watt, 115VAC (bulb not included).

50505G..... Same as 50505R but with green lens.

50505A..... Same as 50505R but with amber lens.

AUDIBLE/VISIBLE WARNING DEVICES

Auxiliary Limit switches or auxiliary contact blocks to control warning devices may be added to the operator at the time of order (see door operator modifications) to allow for connection of warning devices. For further information, contact your Lift-Master or Link sales representative.

WARNING: *It is strongly recommended that audible\visible warning devices be included in every operator installation.*

WARNING LIGHT

50 500..... Wall mount warning light (bulb not included). 115V power required.

AUDIBLE/VISIBLE WARNING DEVICES

Auxiliary Limit switches or auxiliary contact blocks to control warning devices may be added to the operator at the time of order (see door operator modifications) to allow for connection of warning devices. For further information, contact your Lift-Master or Link sales representative.

WARNING: It is strongly recommended that audible\visible warning devices be included in every operator installation.

WARNING BELL

50 510..... 4 inch alarm bell, wall mount. 115V power required.

COMMON CODE READERS

OPEN only after reading single coded card. Code may be changed, but all cards must then be replaced. Does not require power to function; only 2-wire connection to operator. Reader is housed in locked, weatherproof enclosure. May be used with all Lift-Master and Link industrial operators.

AMERICAN ACCESS SYSTEMS

55 3010 S.....Model 11 024 post or surface mount requires separate code cartridge.

CODE CARTRIDGE

55 3010..... Model 40 002 cartridge with different codes are available for future changes. Mounts in card reader and contains the code to which all cards must be codes. Code identification is marked both on the cartridge and embossed on the cards.

CARDS

55 003..... All cards are coded to a single code which matches the code cartridge. Minimum order - 50 cards.

MULTI-CODE CARD READERS

OPEN only after reading valid coded card. Codes may be added and deleted as necessary. Programmable features include anti-passback (true or timed), facility codes, and output relay activation time. Readers may be post (order separately) or surface mounted and are housed in locked, weatherproof, lighted enclosures. Requires 115VAC power for transformer (included on some models) and 2-wire connection to operator. May be used with all industrial operators.

OPEN only, same as above, but with 2000 transaction memory for optional printer (not included). Will print date, time, card number, access granted or denied.

AMERICAN ACCESS SYSTEMS

55 3040L..... Model 11 040 touchplate style reader with 3500 code capacity.
Requires program deck. Transformer included.

55 3042L Model 11 042, same as above, but with 8000 code capacity. Requires program deck.

PROGRAMMING DECK

55 3043 PCD... Model 40 005. Required to program certain model card readers.

CARDS

55 300 TP..... Minimum order - 50 cards. Cards are coded differently and consecutively numbered.

MULTI-CODE CARD READERS

OPEN only after reading valid coded card. Codes may be added and deleted as necessary. Programmable features include anti-passback (true or timed), facility codes, and output relay activation time. Readers may be post (order separately) or surface mounted and are housed in locked, weatherproof, lighted enclosures. Requires 115VAC power for transformer (included on some models) and 2-wire connection to operator. May be used with all industrial operators.

OPEN only, same as above, but with 2000 transaction memory for optional printer (not included). Will print date, time, card number, access granted or denied.

DOOR KING

551510..... Model 1510 touchplate style reader with 3500 code capacity.
Requires program deck. Transformer included.

551512 Model 1512, same as above. Requires program deck.

PROGRAMMING DECK

551510PCD... Model 1510041. Required to program certain model card readers.

CARDS

553200..... Minimum order - 50 cards. Cards are coded differently and consecutively numbered.

MULTI-CODE CARD READERS

OPEN only after reading valid coded card. Codes may be added and deleted as necessary. Programmable features include anti-passback (true or timed), facility codes, and output relay activation time. Readers may be post (order separately) or surface mounted and are housed in locked, weatherproof, lighted enclosures. Requires 115VAC power for transformer (included on some models) and 2-wire connection to operator. May be used with all industrial operators.

OPEN only, same as above, but with 2000 transaction memory for optional printer (not included). Will print date, time, card number, access granted or denied.

SENTEX

55 3100 1..... Model PROCARD swipe style reader with 100 code capacity. Includes 7 time zones for programming different cards. Transformer included. Programming deck not required.

55 3100 1K Model PROCARD, same as above, but with 1000 code capacity.

CARDS

553100.....Minimum order - 50 cards. Cards are coded differently and consecutively numbered.

DIGITAL KEYS
MULTI-CODE DIGITAL KEY

OPEN only after valid code is entered at keypad. Codes may be entered and deleted as necessary. Units may be post (order separately) or surface mounted and are housed in lockable, weatherproof, lighted enclosures. Requires 115VAC power for transformer (included on some models) and 2-wire connection to operator. May be used with all Lift-Master and Link industrial operators.

LCK 10.....Supports 10 unique access codes.

LCK 100..... Supports 100 unique access codes.

LCK 1000....Supports 1000 unique access codes, serial printer interface, internal clock and much more.

INTERCOM SYSTEMS

OUTSIDE STATION WITH KEY SWITCH

OPEN only from key switch. Provides call button and speaker to communicate with inside facility. Units may be post (order separately) or surface mounted and are housed in lockable weatherproof enclosures. Requires wiring to operator and to inside intercom station. Requires separate inside station. May be used with all Lift-Master and Link industrial operators.

559050..... American Access Systems Model 11021.

OUTSIDE STATION WITH COMMON CODE CARD READER

Same as above but with common code card reader instead of key switch. Requires separate inside station.

559070.....American Access Systems Model 11027.

OUTSIDE STATION WITH DIGITAL KEY

Same as above but with 5 code digital key instead of key switch and unit is lighted. Requires separate inside station.

556005IPL....American Access Systems Model ADV05I.

INSIDE STATION

Required with all outside stations above. Includes power supply and OPEN button to open door operator from inside building 115VAC power required.

WARNING: THE PERSON(S) USING THIS CONTROL MAY NOT BE ABLE TO SEE THE DOOR OR GATE AND WILL NOT BE ABLE TO STOP IT EVEN IF THEY CAN SEE IT. DO NOT USE WITHOUT ENTRAPMENT PROTECTION EQUIPMENT, AUDIBLE/VISIBLE WARNING DEVICES, CLEARLY POSTED WARNING SIGNS, AND AN EMERGENCY stop BUTTON NEAR THE GATE.

559001F.....Wall Mount.

559000P.....Power supply.

55900A.....Amplifier.

559003.....Desk mount base. Convert wall mount to desk mount unit.

TELEPHONE ENTRY SYSTEMS

SINGLE RESIDENCE SYSTEM

OPEN only after valid code is entered at keypad or OPEN signal is sent from an inside telephone. Provides communication with inside facility over existing telephone line (dedicated line is NOT required). May be post (order separately) or surface mounted and is housed in a locked, weatherproof, lighted enclosure. Requires wiring to operator, extension phone line, and 115VAC power. May be used with all industrial operators.

WARNING: *The person(s) using this control may not be able to see the door and will not be able to stop it even if they can see it. Do not use without entrapment protection equipment, audible\visible warning devices, clearly posted warning signs, and an emergency STOP button near the door.*

AMERICAN ACCESS SYSTEMS

55 4055C - Model 11 055 and C 100A phone system that includes controller.

DOOR KING

55 1812 - Model 1812 with 50 entry code capacity.

SENTEX

55 4201 - Model LANDMARK with 50 entry code capacity.

COMMERCIAL SYSTEM, NO DIRECTORY

OPEN only after valid code is entered at keypad or OPEN signal is sent from an inside telephone. Provides communication with multi-phone line facility over a dedicated phone line (installed near the door). May be post (order separately) or surface mounted. Flush mount kit is available (not shown). Housing is keyed, lighted, vandal-resistant, and weatherproof. A separate directory for tenant listing is required (see below). Memory capacities from 20 to 1000 phone numbers are available (only the 20 and 115 are listed here). Requires wiring to operator, separate dedicated phone line, and 115VAC power. May be used with all industrial operators.

WARNING: The person(s) using this control may not be able to see the door and will not be able to stop it even if they can see it. Do not use without entrapment protection equipment, audible/visible warning devices, clearly posted warning signs, and an emergency STOP button near the door.

DOOR KING

55 1803 20 - Model 1803 080 with up to 20 phone numbers and 32 entry codes. No programming display.

55 1803 116 - Model 1803 082 same as above but with up to 116 phone numbers and 128 entry codes. Includes programming display.

SENTEX

55 7020 - Model SPECTRUM with up to 20 phone numbers and 30 entry codes. Includes programming display.

55 7115 - Model SPECTRUM same as above but with up to 115 phone numbers and 125 entry codes. Includes programming display.

SEPARATE DIRECTORY

Weatherproof, lighted housing, requires 115VAC power. Names can be typed or printed on sheet paper. Other sizes are available.

DOOR KING

55 1710 - Model 1710 080, 200 name capacity.

SENTEX

55 7000 6 - Separate directory, 125 name capacity.

COMMERCIAL SYSTEM WITH DIRECTORY

OPEN only identical to commercial system with no directory above, except an integral lighted directory is housed in the same cabinet. If additional directory space is needed order a separate directory above. Only 20 and 116 phone number memory capacities are listed here but others are available. May be used with all Lift-Master and Link industrial operators.

WARNING: The person(s) using this control may not be able to see the door and will not be able to stop it even if they can see it. Do not use without entrapment protection equipment, audible\visible warning devices, clearly posted warning signs, and an emergency STOP button near the door.

DOOR KING

55 1820 20 - Model 1810 080 with up to 20 phone numbers and 32 entry codes. No programming display and 100 name directory. (Not shown)

55 1810 116 - Model 1810 082 same as above but with up to 116 phone numbers and 128 entry codes. Includes programming display. (Shown)

SENTEX

55 8020 - Model VISTA with up to 20 phone numbers and 30 entry codes. Includes programming display and 100 name directory.

55 8115 - Model VISTA same as above but with up to 115 phone numbers and 125 entry codes. Includes programming display.

COMBINATION PHONE AND ACCESS CONTROL SYSTEM

OPEN only after valid code is entered at keypad, after reading valid coded card, or after OPEN signal is sent from an inside telephone. Serves as both a commercial phone entry system and access control system for use with remote card readers or digital keys. Codes may be added and deleted as necessary. Programmable features include anti-passback, time zones, and output relay activation time. Housing is keyed, lighted, vandal-resistant, and weatherproof. Directory is electronic and programmable. Memory capacities from 20 to 1000 phone numbers are available (only the 20 and 115 are listed here). Requires wiring to operator, separate dedicated phone line, and 115VAC power. Remote card reader and digital key pads may also be connected. May be used with all Lift-Master and Link industrial operator.

WARNING: The person(s) using this control may not be able to see the door and will not be able to stop it even if they can see it. Do not use without entrapment protection equipment, audible\visible warning devices, clearly posted warning signs, and an emergency STOP button near the door.

DOOR KING

55 1815 20 - Model 1815 090 with up to 20 phone numbers and 32 entry codes and scrolling directory.

55 1815 116 - Model 1815 092 with up to 116 phone numbers and 128 entry codes and scrolling directory.

SENTEX

55 9020 S - Model INFINITY S with up to 20 phone numbers and 30 entry codes and scrolling directory.

55 9115 L - Model INFINITY-L with up to 115 phone numbers and 125 entry codes. 24 name display at one time. (Shown with optional programming keypad.)

SENSING EDGES

A sensing edge should be used on every door for the protection of pedestrians and vehicles. Depending on the type of edge and type of control wiring of the operator with which it is used, the function of the edge will vary.

STANDARD EDGE:

A standard 2-wire edge will cause a door to reverse when it meets an obstruction while closing if the operator has type B2, C2, S2, T, T1, OR TS control wiring.

FAIL-SAFE EDGE:

A fail-safe edge (or self monitoring edge) requires either a 3- or 4-wire connection and not only will cause a door to reverse while closing but will also render the door inoperable if the edge is not installed or if it becomes damaged after installation. A fail-safe electric edge requires a operator with type F2 wiring or the use of a CPSII option board. The infrared link-edge is inherently fail-safe and requires only type B, C2, S2, T, T1, or TS control wiring.

IMPORTANT NOTES:

- 1. SPECIFY LENGTH OF EDGE WHEN ORDERING.*
- 2. FOR ELECTRIC EDGES, LENGTH EQUALS DAYLIGHT OPENING MINUS 2 INCHES. MINIMUM LENGTH - 5 FT.*
- 3. A COIL CORD OR TAKE-UP REEL IS REQUIRED WITH ALL EDGES (see Sensing Edge Connections). SOME FAIL-SAFE APPLICATIONS MAY REQUIRE A 3- OR 4-WIRE CORD. Consult your Lift-Master or Link sales representative.*
- 4. TAKE-UP REELS ARE NOT RECOMMENDED FOR USE WITH ANY FAIL-SAFE TYPE EDGE. USE COIL CORDS ONLY.*

PNEUMATIC KITS

- 658201** - Pneumatic edge kit with interior air switch. Includes 2-wire coil cord and 14 ft. of air hose.
- 658202** - Pneumatic edge kit with exterior air switch. Includes 2-wire coil cord and 14 ft. of air hose.
- 658302** - Pneumatic edge kit with exterior air switch. Includes 2-wire coil cord and 22 ft. of air hose.
- 655202** - Pneumatic edge kit with exterior air switch. Includes 2-wire coil cord and 14 ft. of air hose.
- 655302** - Pneumatic edge kit with exterior air switch. Includes 2-wire coil cord and 22 ft. of air hose.

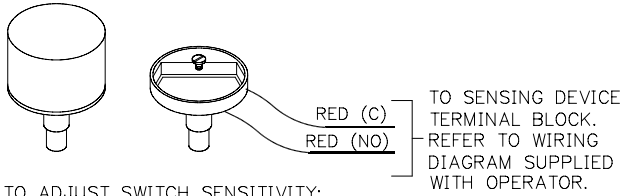
PNEUMATIC MOUNTING CHANNEL

65ME123C.....Mounting channel for all ME123 type edges.

65ME113C.....Mounting channel for all ME113 type edges.

65ME120C.....Mounting channel for all ME1203 type edges

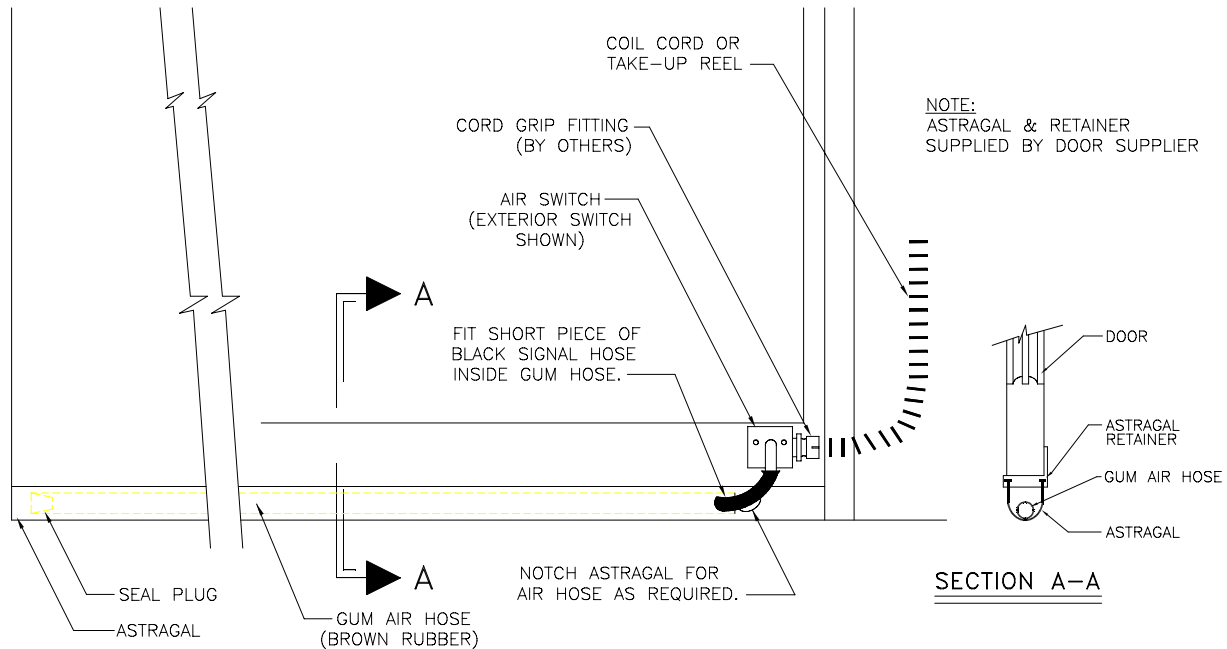
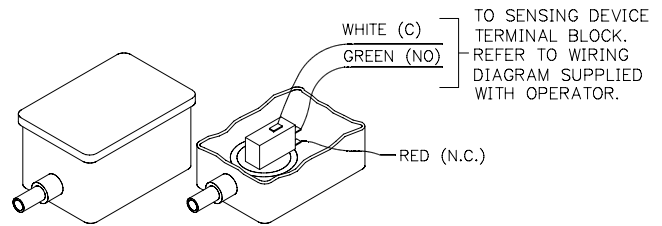
INTERIOR SWITCH P/N 50-100



TO ADJUST SWITCH SENSITIVITY;

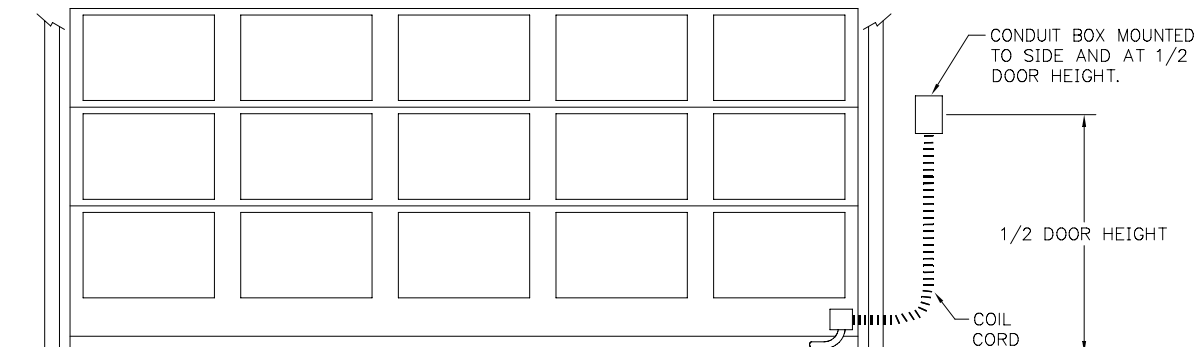
1. DISCONNECT POWER TO OPERATOR.
2. TURN THE SCREW CLOCKWISE UNTIL CONTACT MAKES, THEN BACK SCREW OFF 1/8 OF A TURN.

EXTERIOR SWITCH P/N 50-101-2



IMPORTANT NOTE:

BROWN GUM AIR HOSE DETERIORATES IN LIGHT,
IT MUST BE COMPLETELY CONTAINED WITHIN ASTRGAL.
ONLY BLACK SIGNAL HOSE CAN BE IN LIGHT.



IMPORTANT NOTES:

1. SPECIFY LENGTH OF EDGE WHEN ORDERING.
2. FOR ELECTRIC EDGES, LENGTH EQUALS DAYLIGHT OPENING MINUS 2 INCHES. MINIMUM LENGTH - 5 FT.
3. A COIL CORD OR TAKE-UP REEL IS REQUIRED WITH ALL EDGES (see Sensing Edge Connections). SOME FAIL-SAFE APPLICATIONS MAY REQUIRE A 3- OR 4-WIRE CORD. Consult your Lift-Master or Link sales representative.
4. TAKE-UP REELS ARE NOT RECOMMENDED FOR USE WITH ANY FAIL-SAFE TYPE EDGE. USE COIL CORDS ONLY.

PNEUMATIC INDIVIDUAL COMPONENTS

- 50100..... Interior air switch, (N. O. contact).**
- 50101..... Exterior air switch with metal case, (N. O. contact).**
- 501012..... Exterior 3-wire air switch, (SPDT, plastic housing).**
- 50103..... Air hose, soft rubber.**
- 501031..... Air hose plug.**

SENSING EDGES

IMPORTANT NOTES:

- 1. SPECIFY LENGTH OF EDGE WHEN ORDERING.*
- 2. FOR ELECTRIC EDGES, LENGTH EQUALS DAYLIGHT OPENING MINUS 2 INCHES.
MINIMUM LENGTH - 5 FT.*
- 3. A COIL CORD OR TAKE-UP REEL IS REQUIRED WITH ALL EDGES (see Sensing Edge Connections). SOME FAIL-SAFE APPLICATIONS MAY REQUIRE A 3- OR 4-WIRE CORD. Consult your Lift-Master or Link sales representative.*
- 4. TAKE-UP REELS ARE NOT RECOMMENDED FOR USE WITH ANY FAIL-SAFE TYPE EDGE.
USE COIL CORDS ONLY.*

ELECTRIC EDGES-by the foot

658203 - Miller MU 22 U type, 2-wire electric edge for sectional, sliding, and bi-fold doors. Specify right or left hand wire connections

6582034 - Same as 658203 except 4-wire type for fail-safe use.

658204 - Miller MT 22 T type, 2-wire electric edge for rolling doors with double angle bottom bars. Specify right or left hand wire connections.

6582044 - Same as 658204 except 4-wire type for fail-safe use.

65ME120 - Miller ME120, 2-wire electric edge for sliding doors. Requires mounting channel(65ME120C).

65ME1204 - Same as 65ME120 except 4-wire type for fail-safe or the use of a CPSII option board.

SENSING EDGES

IMPORTANT NOTES:

- 1. SPECIFY LENGTH OF EDGE WHEN ORDERING.*
- 2. FOR ELECTRIC EDGES, LENGTH EQUALS DAYLIGHT OPENING MINUS 2 INCHES. MINIMUM LENGTH - 5 FT.*
- 3. A COIL CORD OR TAKE-UP REEL IS REQUIRED WITH ALL EDGES (see Sensing Edge Connections). SOME FAIL-SAFE APPLICATIONS MAY REQUIRE A 3- OR 4-WIRE CORD. Consult your Lift-Master or Link sales representative.*
- 4. TAKE-UP REELS ARE NOT RECOMMENDED FOR USE WITH ANY FAIL-SAFE TYPE EDGE. USE COIL CORDS ONLY.*

ELECTRIC EDGES-by the foot (Cont.)

65ME123 - Miller ME123 2-wire electric edge for sectional doors. Specify right or left hand wire connections. Requires mounting channel (65ME123C).

65ME1234 - Same as 65ME123 except 4-wire type for fail-safe use.

65ME113 - Miller ME113 2-wire electric edge for sectional doors. Specify right or left hand wire connections. Requires mounting channel (65ME113C).

65ME1134 - Same as 65ME113 except 4-wire type for fail-safe use.

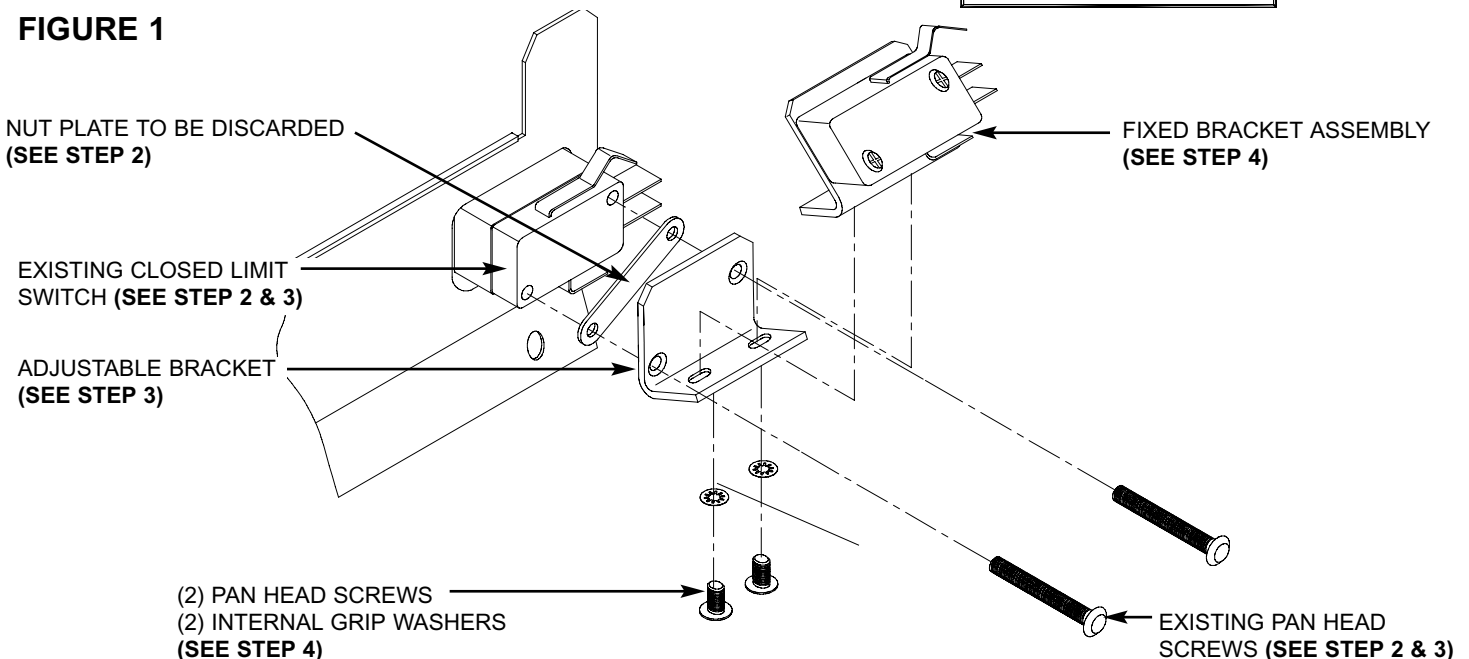
INSTALLING NEW SENSING EDGE SWITCH

NOTE: All the parts needed for the following steps are included in the Sensing Edge Connection Kit. For additional help refer to figures 1 and 2.

1. Open the access panel on the bottom of the operator by loosening the 2 screws.
2. Remove two screws and the nut plate holding the close limit switch to the operator, this is the switch with the brown and gray wires. Discard the nut plate.
3. Using the two screws you removed in step 2, assemble the adjustable bracket to the existing close limit switch.
4. Using the (2) 1/4" long pan head screws and internal grip washers, assemble the fixed bracket assembly with the new sensing edge switch to the adjustable bracket on the close limit switch. Do not fully tighten the screws at this time.
5. Refer to figure 2 and wire accordingly.
6. Be sure that all wiring is secured away from all moving parts with the cable ties supplied.
7. Re-connect power and adjust the edge limit switch so that it activates just before the close limit. Tighten the two adjusting screws from step 4.

NOTE: Failure to adjust the edge limit switch will cause false reversals.

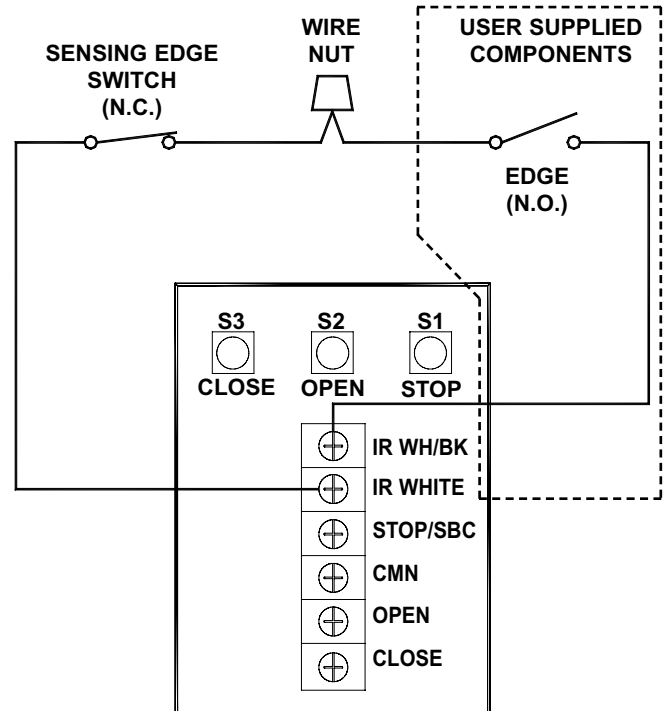
FIGURE 1



WARNING

DISCONNECT POWER AT THE FUSE BOX BEFORE PROCEEDING. ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED INDIVIDUAL.

FIGURE 2



SENSING EDGE CONNECTIONS

Each sensing edge requires a means to connect it to the door operator. The means must be able to extend and retract as the door moves. Coil Cords and take-up reels fulfill this function. A wireless connection may also be used.

IMPORTANT NOTE:

TAKE-UP REELS ARE NOT RECOMMENDED FOR USE WITH ANY FAIL-SAFE TYPE EDGE. USE COIL CORDS ONLY.

TAKE -UP REELS

50106.....Take-up reel, 2-wire, 18 ga., 20 ft. extended.

50107.....Take-up reel, 3-wire, 18 ga., 20 ft. extended.

5010730.....Take-up reel, 3-wire, 18 ga., 30 ft. extended.

50107S0.....Take-up reel, 3-wire, type S0, 18 ga., 30 ft. extended.

SENSING EDGE CONNECTIONS

Each sensing edge requires a means to connect it to the door operator. The means must be able to extend and retract as the door moves. Coil Cords and take-up reels fulfill this function. A wireless connection may also be used.

IMPORTANT NOTE:

TAKE-UP REELS ARE NOT RECOMMENDED FOR USE WITH ANY FAIL-SAFE TYPE EDGE. USE COIL CORDS ONLY.

COIL CORDS

501041.....Coil cord, 2-wire, 18 ga., 20 ft. extended.

501042.....Coil cord, 3-wire, 18 ga., 20 ft. extended(*orange*).

50105.....Coil cord, 4-wire, 18 ga., 20 ft. extended.

SENSING EDGE CONNECTIONS

Each sensing edge requires a means to connect it to the door operator. The means must be able to extend and retract as the door moves. Coil Cords and take-up reels fulfill this function. A wireless connection may also be used.

IMPORTANT NOTE:

TAKE-UP REELS ARE NOT RECOMMENDED FOR USE WITH ANY FAIL-SAFE TYPE EDGE. USE COIL CORDS ONLY.

EDGE CONNECTION KIT

658200.....Complete kit may be used with most sensing edges; kit includes two junction boxes- one for the door and one for the wall - a 3-wire coil (P/N 50107).

VEHICLE DETECTION SYSTEMS
MOTION DETECTORS-Microwave type

OPEN only after sensing an approaching vehicle. Sensor monitor a wide area in front of the door and sends an open signal whenever a vehicle approaches. Only motion towards the sensor at less than 90° is detected. Requires a 2-wire connection to the operator. May be used with all Lift-Master and Link industrial operators.

NOTE: Requires separate 4V XFMR for power supply separate from operator.

50DI5LN.....Indoor/outdoor enclosure.

VEHICLE DETECTION SYSTEMS

PHOTO-ELECTRIC CONTROLS

OPEN only (all Lift-Master and Link operators) after vehicle passes through infrared beam. Signal beam is projected across vehicle path and, when broken, sends a signal to open the door.

EMITTER-RECEIVER TYPE

- CPS**.....Commercial Protector System provides protection on doors up to 30 ft. wide. Contains emitter, receiver, mounting brackets, and operator interface, 24VAC, use CPSII if Solid State Logic Control Board unit.
- CPSII**.....Provides a UL and CSA approved self-monitoring industrial operator when installed with the infrared reversing device included. Supports 2- or 4-wire fail-safe edge. T or TS Timer-to-Close functions. Provides protection for doors up to 30 ft. wide. For use with the Solid State Logic Control Board only.
- 50210ER**.....115VAC superior to reflective type because shiny car surfaces cannot send false reading to the receiver unit.

VEHICLE DETECTION SYSTEMS

PHOTO-ELECTRIC CONTROLS

OPEN only (all Lift-Master and Link operators) after vehicle passes through infrared beam. Signal beam is projected across vehicle path and, when broken, sends a signal to open the door.

RETRO-REFLECTIVE TYPE

50210A.....115VAC single unit sends beam to reflector (included) and back to detector.

50211T.....Replacement reflector.

2C0419..... 115VAC single unit sends beam to reflector (included) and back to detector.

2A0386..... 115VAC single unit sends beam to reflector (included and back to detector.

VEHICLE DETECTION SYSTEMS

PRE-FORMED LOOP OUTDOOR ENCLOSURE (NEMA 4/12)

50PFL4x8.....4'X8' size, other sizes available.

50XNL1218..... 4'X8' size, convenient "saw cut" style.

50XNL1818..... 4'X10' size, convenient "saw cut" style.

50ENL1218..... 4'X8' size, pave over style.

50ENL1818..... 4'X10' size, pave over style.

Pre-formed flexible vehicle sensing loop with 50 ft. of lead-in wire. For use with all vehicle loop detectors.

VEHICLE DETECTION SYSTEMS

TREADLE , ELECTRIC OUTDOOR ENCLOSURE (NEMA 4/12)

50800.....Model RBMA 5 ft. long.

55800P.....Protection plate to cover electrical connection.

OPEN only (all Lift-Master and Link operators), or SAFETY only, (Lift-Master and Link operators with type B2, S2, L2, T, T1, or TS control wiring) after vehicle passes over treadle. The weight of the vehicle compresses an electric switch which sends an open signal to the door. Requires a 2-wire connection to the operator but does not require power to function.

VEHICLE DETECTION SYSTEMS

TREADLE KITS, PNEUMATIC INDOOR ENCLOSURE (NEMA 1)

658205.....Includes 10 ft. of signal hose, indoor air switch, and hose plug.

OPEN only (all Lift-Master and Link operators), or SAFETY only (Lift-Master and Link operators with type B2, S2, L2, T, T1, or TS control wiring) after vehicle passes over treadle hose. The weight of the vehicle on the treadle hose activates a pneumatic switch which sends an open signal to the door. Requires a 2-wire connection to the operator but does not require power to function.

VEHICLE DETECTION SYSTEMS

TREADLE KITS, PNEUMATIC OUTDOOR ENCLOSURE (NEMA 4/12)

658206.....Includes 10 ft. of signal hose, outdoor air switch, and hose plug.

OPEN only (all Lift-Master and Link operators), or SAFETY only (Lift-Master and Link operators with type B2, S2, L2, T, T1, or TS control wiring) after vehicle passes over treadle hose. The weight of the vehicle on the treadle hose activates a pneumatic switch which sends an open signal to the door. Requires a 2-wire connection to the operator but does not require power to function.

VEHICLE DETECTION SYSTEMS

TREADLE SIGNAL HOSE

50102..... Treadle signal hose. Sold by the foot.

5014.....Treadle hose anchor with clamp.

*For additional hose above the 10 ft. that is packaged with kits, or as replacement;
good for indoor or outdoor use.*

WARNING SIGNS AND LABELS

- 40 65** - CAUTION label for high-lift and vertical lift sectional doors.
- 40 6009** - CAUTION label for electrical box cover.
- 40 55** - CAUTION Label for standard-lift sectional, slide, and rolling doors.
- 40 6009** - CAUTION label for electrical box cover.
- 40 2701** - CAUTION label regarding moving parts.
- 40 6010** - WARNING to disconnect power.
- 40 8001** - CAUTION label regarding overload reset.
- 40 9102** - CAUTION label for reversing switch.
- 40 6000** - WARNING placard for placement near pushbutton.

**VEHICLE DETECTION SYSTEMS
VEHICLE LOOP DETECTORS**

OPEN only (all Lift-Master and Link operators) or SAFETY/HOLD OPEN only(operators with type B2, T, TS, or T1 control wiring) when vehicle passes over loop wire. Requires a loop of wire embedded in the ground to connect to the detector. Requires 2-wire output connection to door operator and either 24VAC or 115VAC power(see individual descriptions).

503267.....Indoor enclosure (NEMA 1). Enclosed, requires separate 24VAC power. Wiring harness with plug for detector included.

503263.....Same as 503267 but requires 115VAC power.

302416241.....Outdoor enclosure (NEMA 4/12). Watertight, oiltight enclosure with single 24VAC detector, wired to terminal block for field connection.

3024161151.... Same as 302416241 but requires 115VAC power.

WIRING INSTRUCTIONS FOR THE 4 WIRE EDGE INTERFACE BOARD TO A LITETOUGH SENSING EDGE SYSTEM

1. Make certain power is shut off to the operator prior to installing the 4 Wire Edge Interface Board.
2. Remove the jumper wire from terminals G, H, I and J on the 4-wire Edge Interface Board.
3. Insert 4 Wire Edge Interface Board into one of the two slots on the Operator's Main Logic Board. (Refer to figure 1)
4. Run the 6 wire cable supplied with the LiteTouch edge control unit and make the following connections.
 - a) Connect the BROWN lead between 3 on the edge control and J on the 4-wire interface board.
 - b) Connect the WHITE lead between 4 on the edge control and I on the 4-wire interface board.
 - c) Connect the GREEN lead between 5 on the edge control and H on the 4-wire interface board.
 - d) Connect the BLUE lead between 6 on the edge control and G on the 4-wire interface board.
5. To power the sensing edge control unit run the remaining leads of the cable as follows:
 - a) Connect the BLACK lead between 1 on the edge control and terminal 12 on the motor operator terminal strip.
 - b) Connect the RED lead between 2 on the edge control and terminal 13 on the motor operator terminal strip.

6. Restore power to the operator and verify the functionality of the edge.

NOTE: Be sure to leave the 270k Ohm resistor between terminals A and B on the 4-wire edge interface card. This configuration is a continuous self monitoring system.

WIRING INSTRUCTIONS FOR THE 4 WIRE EDGE INTERFACE BOARD TO A 4 WIRE SAFETY EDGE

1. See step number 1 above.
2. Remove the jumper wire from terminals G and H on the 4 Wire Edge Interface Board.
3. Remove the jumper wire from terminals I and J on the 4 Wire Edge Interface Board.
4. Run wire pairs from the sensing edge to terminals G, H and I, J respectively.
5. See number 6 above.

NOTE: Be sure to leave the 270k Ohm resistor between terminals A and B attached.



WARNING

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.



WARNING

This device is for use only with Lift-Master Commercial Door Operators. Use on other than recommended equipment voids warranty, and may cause property damage or serious personal injury. Read and follow all instructions.

Have door in full open or closed position and disconnect power to the operator before installing the 4 Wire Edge Interface Card.

FIGURE 1

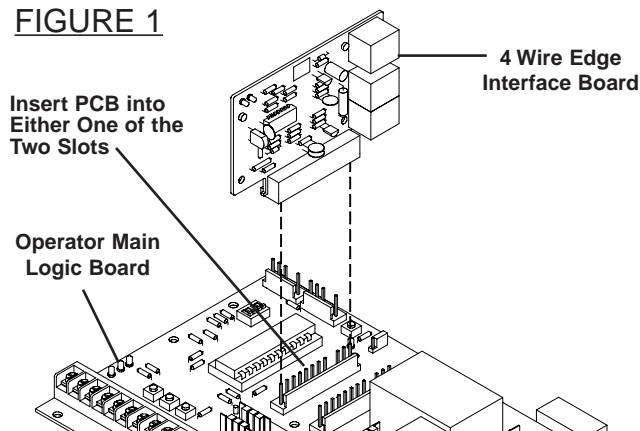
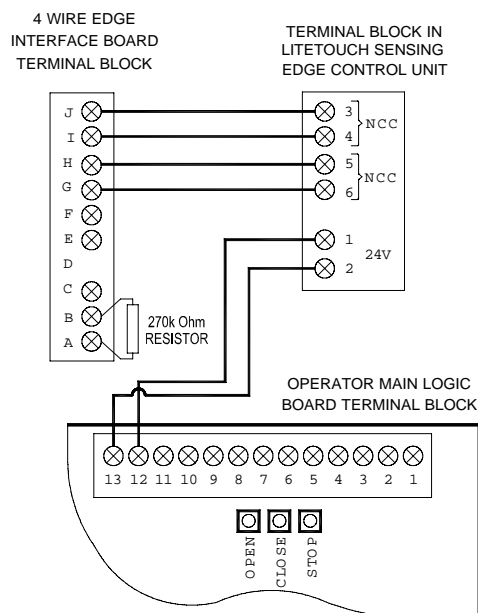
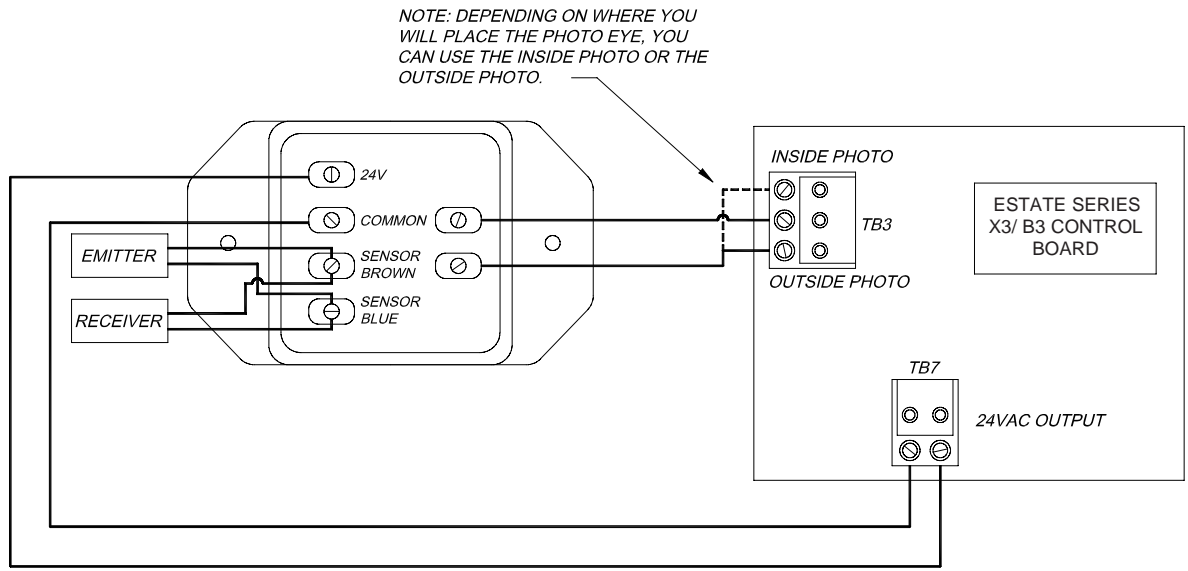


FIGURE 2

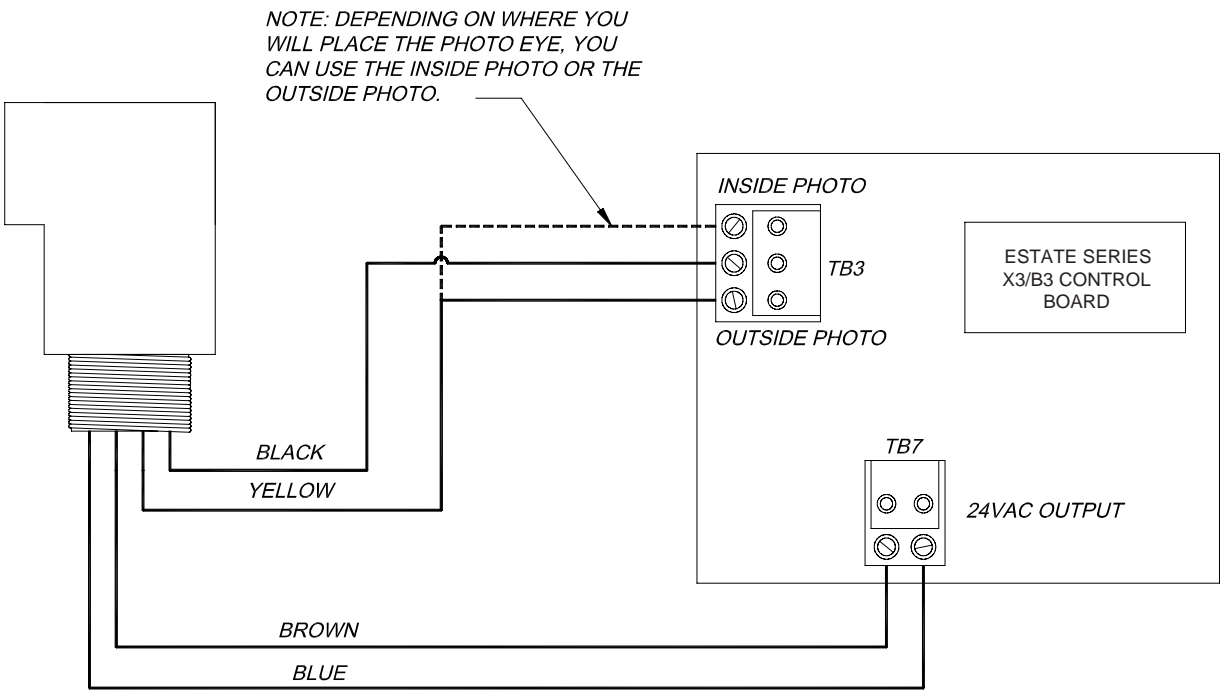


This addendum is to be used in conjunction with the instructions included with this Photo Eye kit. Refer to the instructions shipped with kit for all mounting and wiring instructions for Commercial Door operators. Refer to the instructions shipped with this kit for all mounting instructions for Commercial Gate operators use addendum for all wiring instructions.

**CPS-LN4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING
 ESTATE SERIES X3 OR B3 CONTROL BOARD**



**CPS-RN4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING
 ESTATE SERIES X3 OR B3 CONTROL BOARD**

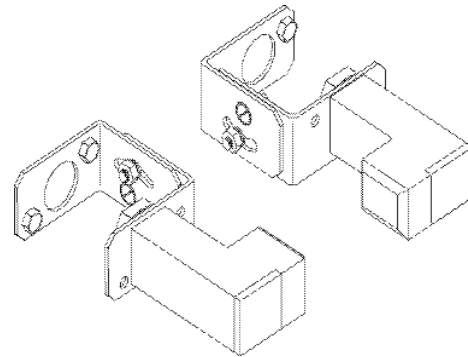




WARNING

This device is for use only with Lift-Master and Link Commercial Door Operators. *Use on other than recommended equipment voids warranty, and may cause property damage or serious personal injury.* Read and follow all instructions.

Have door in full open or closed position and disconnect power to the garage door opener before installing the CDO Protector System.



Installation procedures are the same for all door types.

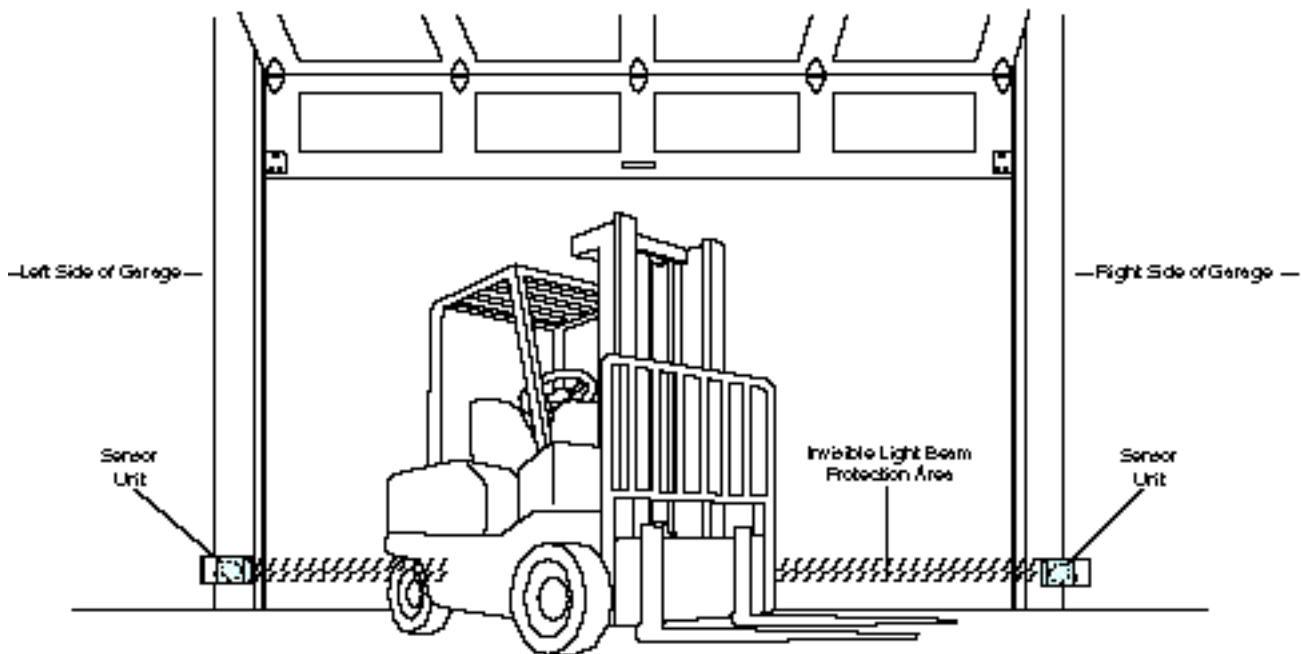


FIGURE 1 Facing the door from inside the garage

Be sure power to the opener is disconnected.

The sending eye transmits an invisible light beam to the receiving eye. The units can be installed on either side of the garage door as long as the sun never shines directly into the receiving eye lens.

Look at the marking on each case to identify the sensors.

Note: Emitter has amber LED
Receiver has green LED

The brackets must be connected and fastened so that the sending and receiving eyes face each other as shown in Figure 1.

If an obstruction breaks the light beam while the garage door is closing, the door will stop and reverse to full open position.

The brackets *must* be securely fastened to a solid surface such as the studs on either side of the door, or add a piece of wood at each location if installing in masonry construction.

The invisible light beam path must be unobstructed. No part of the garage door (or door tracks, springs, hinges, rollers or other hardware) can interrupt the beam while the door is closing. If it does, use a piece of wood to build out each sensor mounting location to the minimum depth required for light beam clearance.

INSTALLATION INSTRUCTIONS

IMPORTANT: MOUNT SENSORS 4"-6" ABOVE THE FLOOR. DO NOT EXCEED 6". FOR SENSING ABOVE 6" A SECOND SET OF EYES WOULD BE REQUIRED.

Floor or Wall Mount For typical floor or wall mounting applications see Figure 2. If necessary, see Figure 3 for various assembly options to fit your application. Always use flat washer next to slot with radius as shown in Figure 2. Insert track bolts through holes as shown. Note: Putting track bolts in slots will prevent brackets from pivoting. Attach assembly to wall with lag screws provided. To attach to concrete use concrete anchors (not provided).

Track Mount To mount to door track use only one bracket per side as shown in Figure 4.

ASSEMBLY VARIATIONS

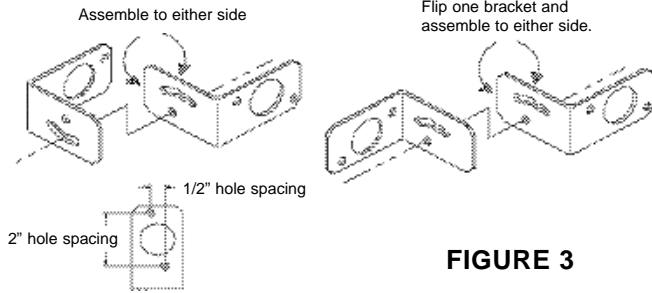


FIGURE 3

To attach vertically to 2" x 4" wall stud and prevent wood from splitting, bracket may also be rotated with leg on top. Shown with leg on bottom.

CONDUIT CONNECTIONS:

Use a liquid tight fitting (1/2" trade size) with sealing washer to connect to sensors. The sensors are supplied with 36" long leads. We recommend the use of a liquid tight junction box near each sensor to make the connection to the sensor leads. (refer to Figure 5). Use rigid or flexible liquid tight conduit (depending on local codes) from junction boxes to operator.

IMPORTANT: Use a minimum size 20 ga. copper wire for connection between the sensors and the operator.

WIRING CONNECTIONS:

CPS-N4 - See Top of Page 3

CPSII-N4 - See Middle of Page 3

CPS-LN4 - See Bottom of Page 3

GARAGE WALL OR FLOOR MOUNTING

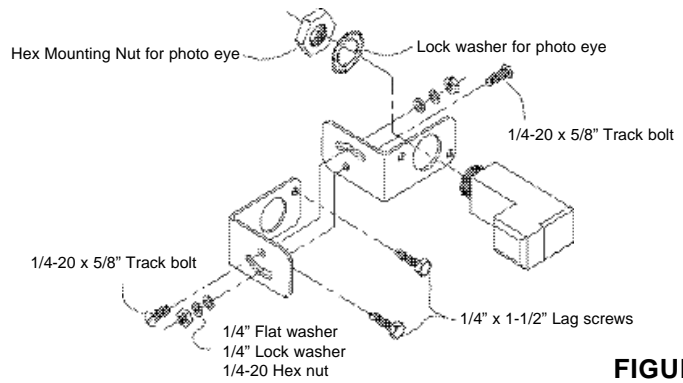


FIGURE 2

GARAGE DOOR TRACK MOUNTING

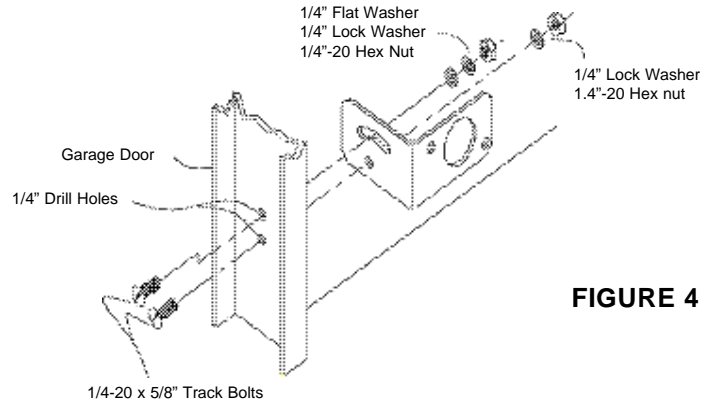
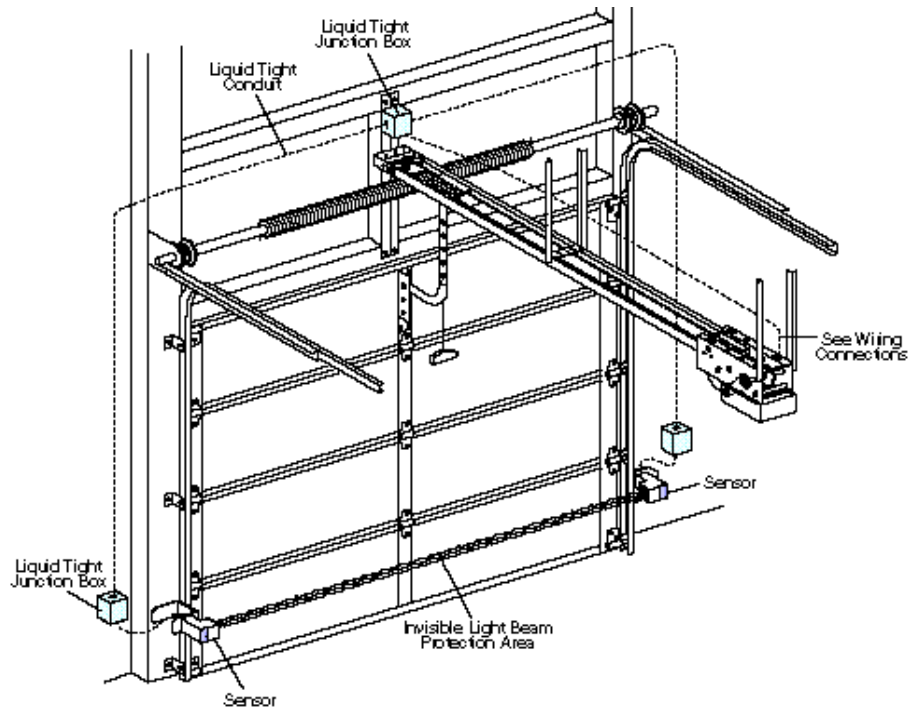
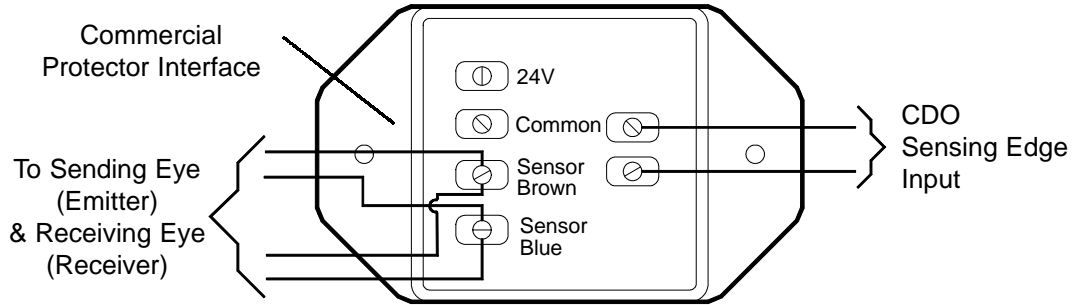


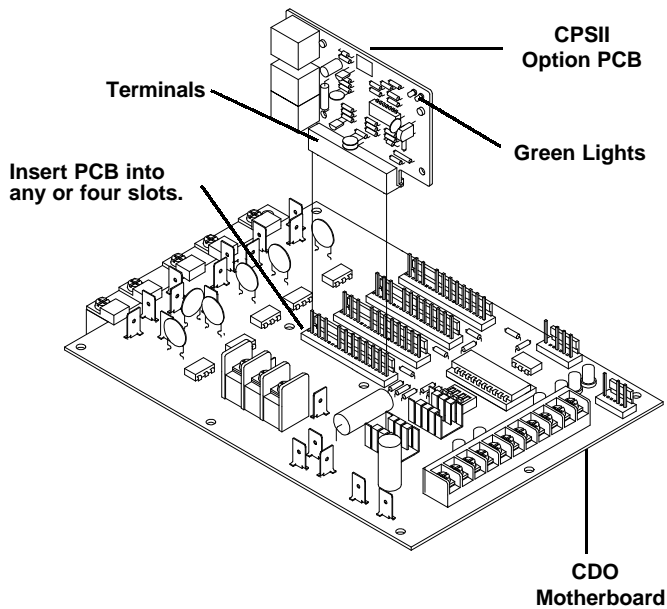
FIGURE 4



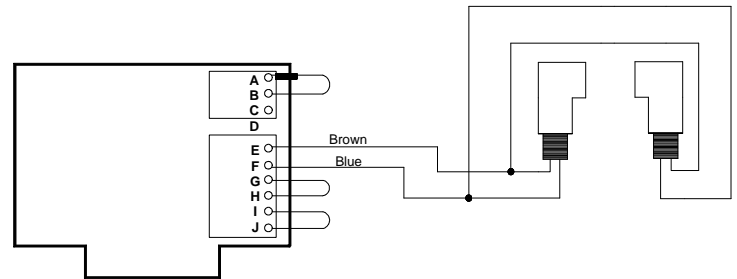
CPS-N4 WIRING CONNECTIONS



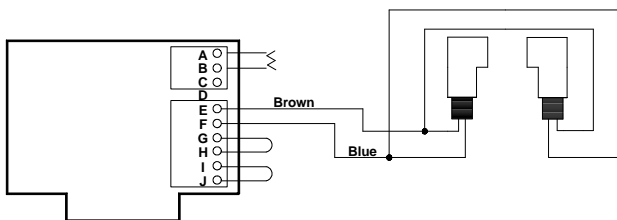
CPSII-N4 Wiring Connections for use with Solid State Logic Control Board



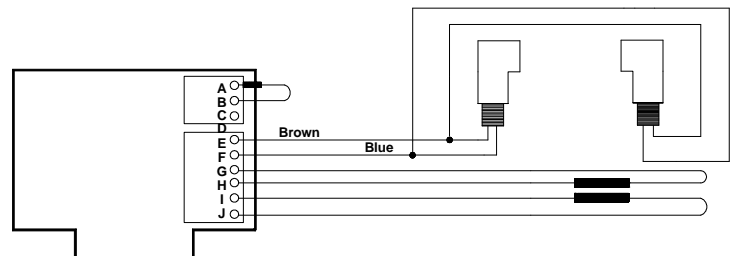
I.R. Protector Only

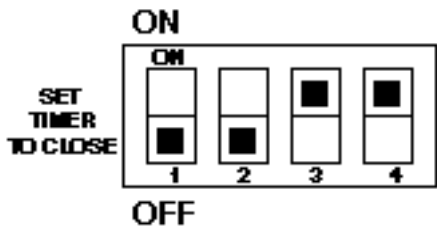
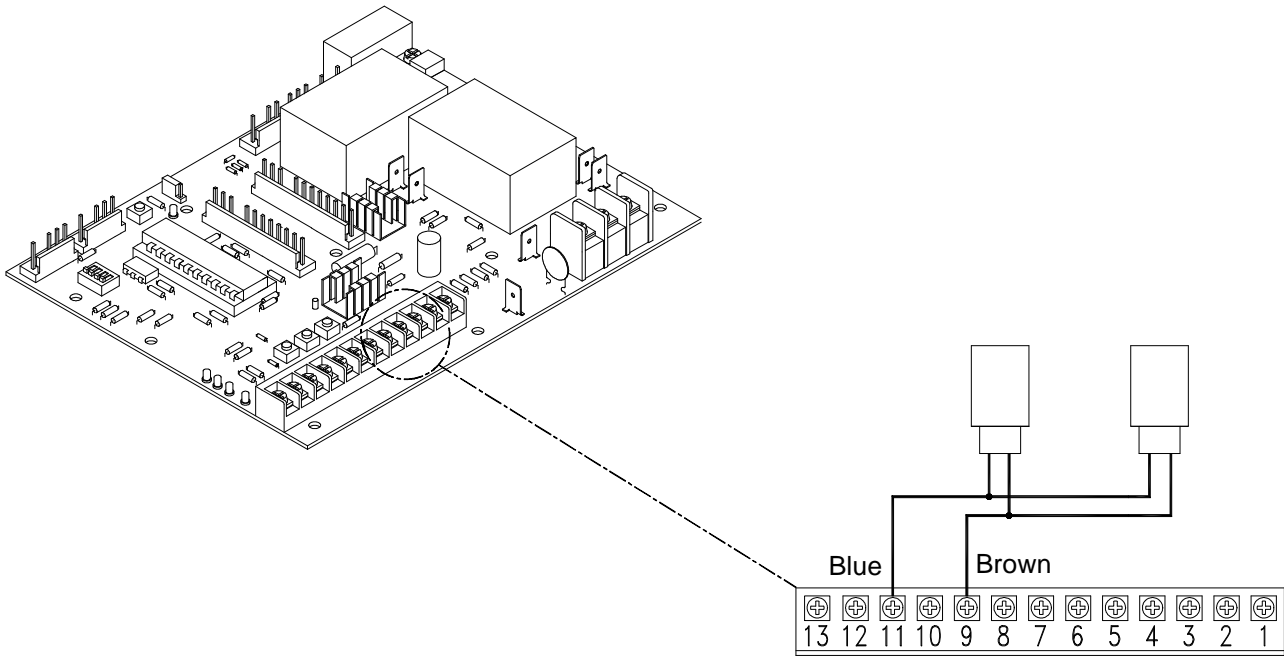


I.R. Protector and 2-Wire Fail Safe Door Edge



I.R. Protector and 4 wire fail safe door edge





To Activate Photo Eyes

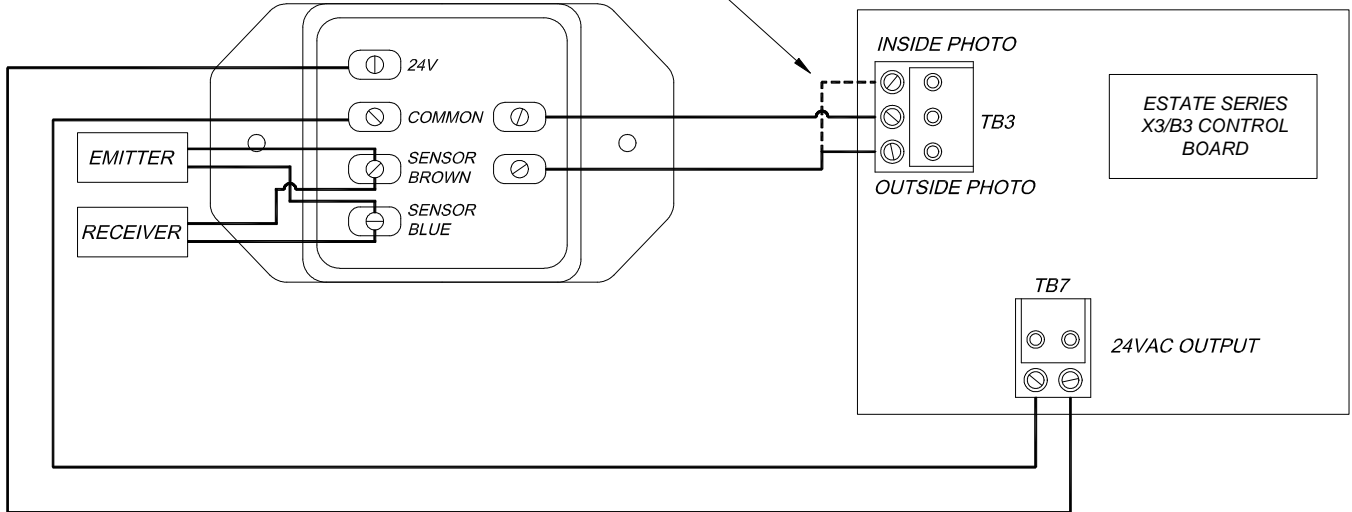
1. Start with door in the "CLOSED" position.
2. Connect the CPS-LN4 eyes as shown in figure to the left. Confirm that the LED's on both eyes are lit.
3. Set DIP switches to desired operating mode. (Refer to owners manual for switch settings).
4. Run the door through one full close-open-close cycle to "Learn" the photo eyes.

NOTE: Test the Photo Eyes operation by interrupting the eyes while closing the door.

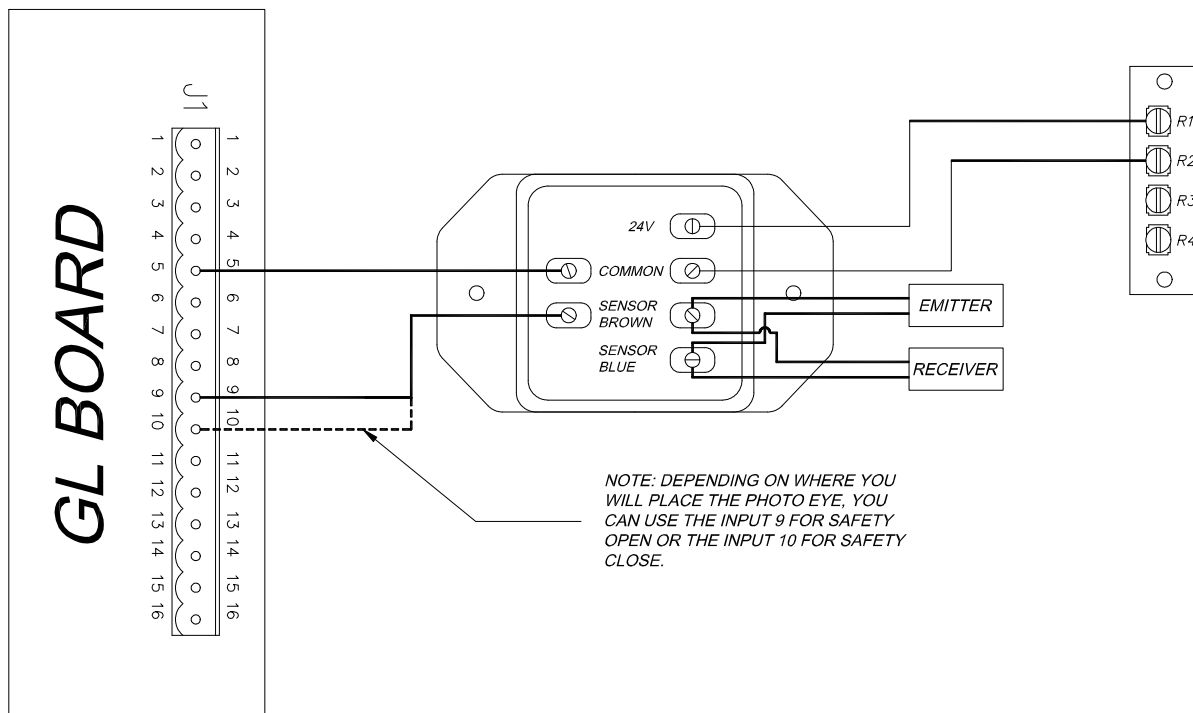
5. Once the eyes are "Learned" and it becomes necessary to remove the eyes, the eyes will need to be "unlearned" by setting DIP switch to Timer to Close mode and pressing the Close button.

CPS-N4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING ESTATE SERIES X3 OR B3 CONTROL BOARD

NOTE: DEPENDING ON WHERE YOU WILL PLACE THE PHOTO EYE, YOU CAN USE THE INSIDE PHOTO OR THE OUTSIDE PHOTO.



CPS-N4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING GL CONTROL BOARD



NOTE: DEPENDING ON WHERE YOU WILL PLACE THE PHOTO EYE, YOU CAN USE THE INPUT 9 FOR SAFETY OPEN OR THE INPUT 10 FOR SAFETY CLOSE.

TESTING THE PROTECTOR SYSTEM



WARNING

Without a properly working CDO Protector System, persons (particularly children) could be seriously injured or killed by a closing garage door. Repeat this test once a month.

Professional service is required if the opener closes the door when the CDO Protector System is obstructed.

Test the CDO Protector System:

- Press the OPEN button to fully open the door.
- Press the CLOSE button to close the door.
- Obstruct the light beam while the door is closing. *The door should reverse.*

The garage door opener will not close if the indicator light in either sensor is *not glowing steadily*, alerting you to the fact that the sensor is misaligned, or obstructed.

TROUBLE SHOOTING

1. If the sending eye and receiving eye indicator lights do not glow steadily after installation, check for:

- Electric power to the opener.
- A short in the Blue or Brown wires.
- Incorrect wiring between sensors and interface.
- An open wire (wire break).

2. If the receiving eye indicator light is off (and the invisible light beam path is not obstructed). check for an open wire to the receiving eye.

Note: For non-solid state operators, if the door is stopped in a mid position, activation of the sensors will cause the door to open. This is similar to activating a sensor edge.

3. If the sending eye and receiving eye indicator lights are both lit but interrupting the photo eyes does not cause the door to reverse when closing, refer to "To Activate Photo Eyes" on page 3.

REPLACEMENT PARTS

CPS-N4	CPSII-N4	CPS-LN4
Commercial Protector Interface 41K4629	CPSII PC BOARD 1C4654	
Sensor Hardware Kit 77-16011	Sensor Hardware Kit 77-16011	Sensor Hardware Kit 77-16011
Mounting Bracket 10-15516	Mounting Bracket 10-15516	Mounting Bracket 10-15516
Emitter 50-15514	Emitter 50-15514	Emitter 50-15514
Receiver 50-15515	Receiver 50-15515	Receiver 50-15515

HOW TO ORDER REPAIR PARTS

OUR LARGE SERVICE ORGANIZATION
SPANS AMERICA
INSTALLATION AND SERVICE INFORMATION
ARE AVAILABLE 6 DAYS A WEEK
CALL OUR TOLL FREE NUMBER - 1-800-528-2806
HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)
MONDAY Through SATURDAY

**WHEN ORDERING REPAIR PARTS
PLEASE SUPPLY THE FOLLOWING INFORMATION:**
PART NUMBER DESCRIPTION MODEL NUMBER

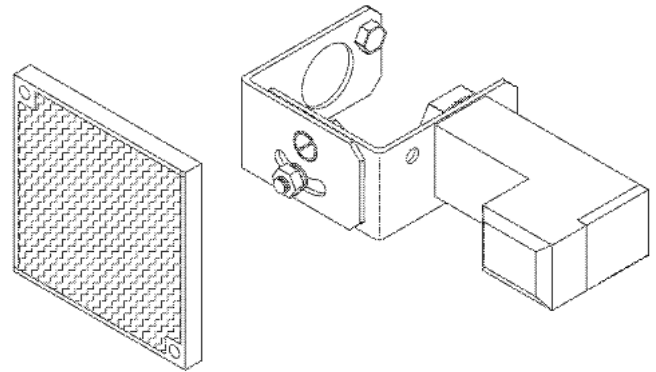
ADDRESS ORDER TO:
THE CHAMBERLAIN GROUP, INC.
Electronic Parts & Service Dept.
2301 N. Forbes Blvd., Suite 104
Tucson, AZ 85745



WARNING

This device is for use only with Lift-Master Commercial Door Operators. *Use on other than recommended equipment voids warranty, and may cause property damage or serious personal injury.* Read and follow all instructions.

Have door in full open or closed position and disconnect power to the garage door opener before installing the CDO Commercial Protector System.



Installation procedures are the same for all door types.

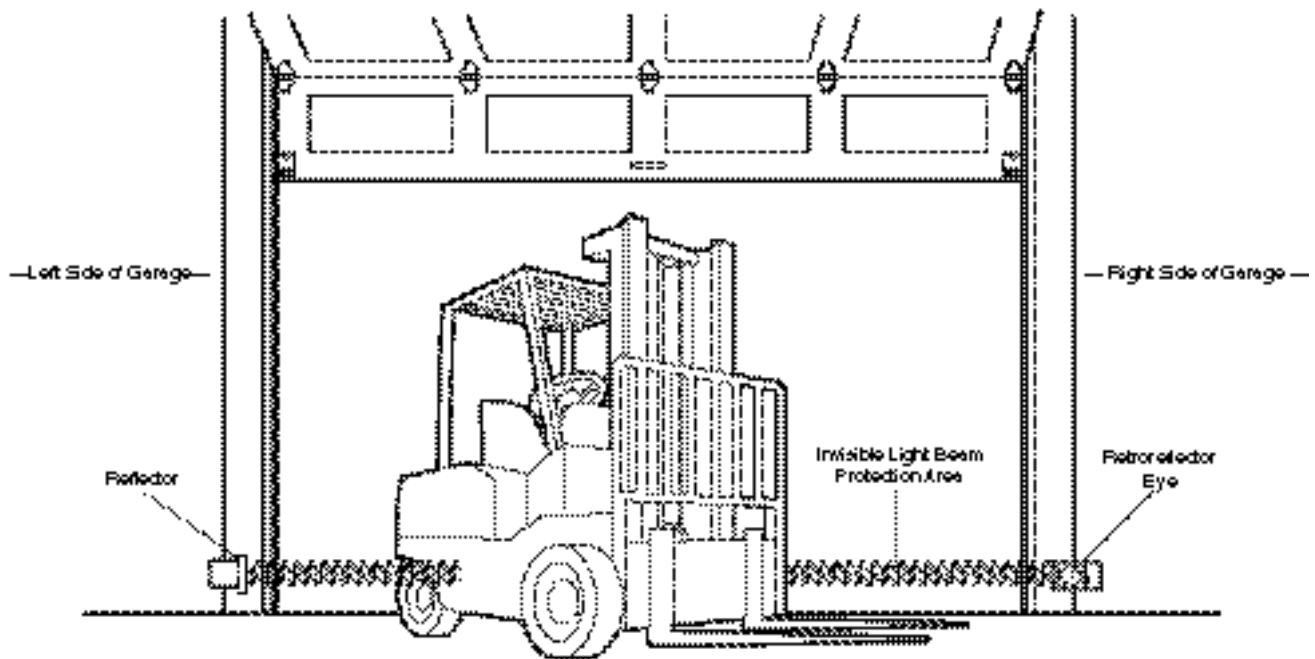


FIGURE 1 Facing the door from inside the garage

Be sure power to the opener is disconnected.

The retroreflector eye transmits an invisible light beam to the reflector and then bounces the beam back to the retroreflector eye. The units can be installed on either side of the garage door as long as the sun never shines directly into the retroreflector eye lens.

The brackets must be connected and fastened so that the reflector and retroreflector eye face each other as shown in Figure 1.

If an obstruction breaks the light beam while the garage door is closing, the door will stop and reverse to full open position.

The brackets *must* be securely fastened to a solid surface such as the studs on either side of the door, or add a piece of wood at each location if installing in masonry construction.

The invisible light beam path must be unobstructed. No part of the garage door (or door tracks, springs, hinges, rollers or other hardware) can interrupt the beam while the door is closing. If it does, use a piece of wood to build out each sensor mounting location to the minimum depth required for light beam clearance.

INSTALLATION INSTRUCTIONS

IMPORTANT: MOUNT RETROREFLECTOR EYE AND REFLECTOR 4"-6" ABOVE THE FLOOR. DO NOT EXCEED 6". FOR SENSING ABOVE 6" A SECOND SET OF RETROREFLECTOR EYES AND REFLECTORS WOULD BE REQUIRED.

Floor or Wall Mount For typical floor or wall mounting applications see Figure 2. If necessary, see Figure 3 for various assembly options to fit your application. Always use flat washer next to slot with radius as shown in Figure 2. Insert track bolts through holes as shown. Note: Putting track bolts in slots will prevent brackets from pivoting. Attach assembly to wall with lag screws provided. To attach to concrete use concrete anchors (not provided).

Track Mount To mount to door track use only one bracket per side as shown in Figure 4.

ASSEMBLY VARIATIONS

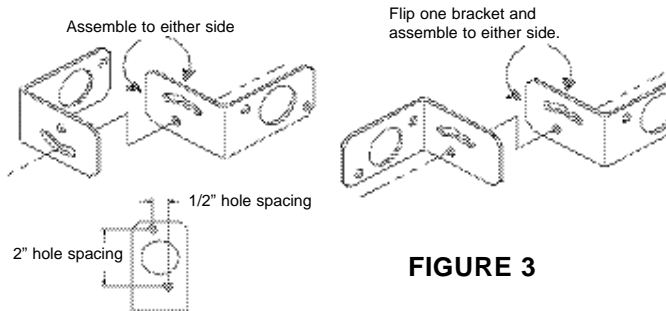


FIGURE 3

To attach vertically to 2" x 4" wall stud and prevent wood from splitting, bracket may also be rotated with leg on top. Shown with leg on bottom.

CONDUIT CONNECTIONS:

Use a liquid tight fitting (1/2" trade size) with sealing washer to connect to sensors. The sensors are supplied with 36" long leads. We recommend the use of a liquid tight junction box near each sensor to make the connection to the sensor leads. (refer to Figure 5). Use rigid or flexible liquid tight conduit (depending on local codes) from junction boxes to operator.

IMPORTANT: Use a minimum size 20 ga. copper wire for connection between the sensor and the operator.

WIRING CONNECTIONS:

See Page 3

GARAGE WALL OR FLOOR MOUNTING

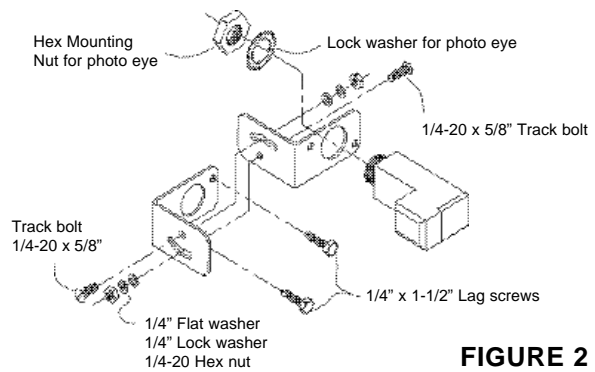


FIGURE 2

GARAGE DOOR TRACK MOUNTING

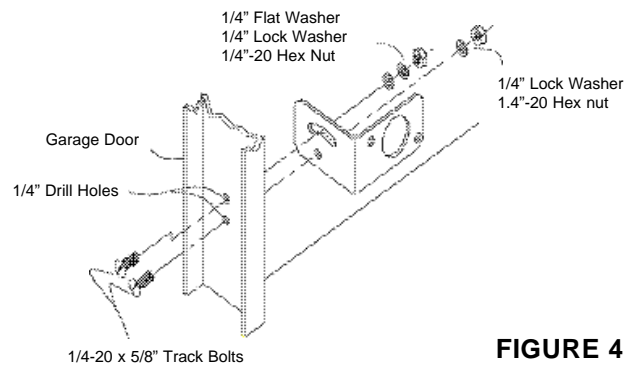
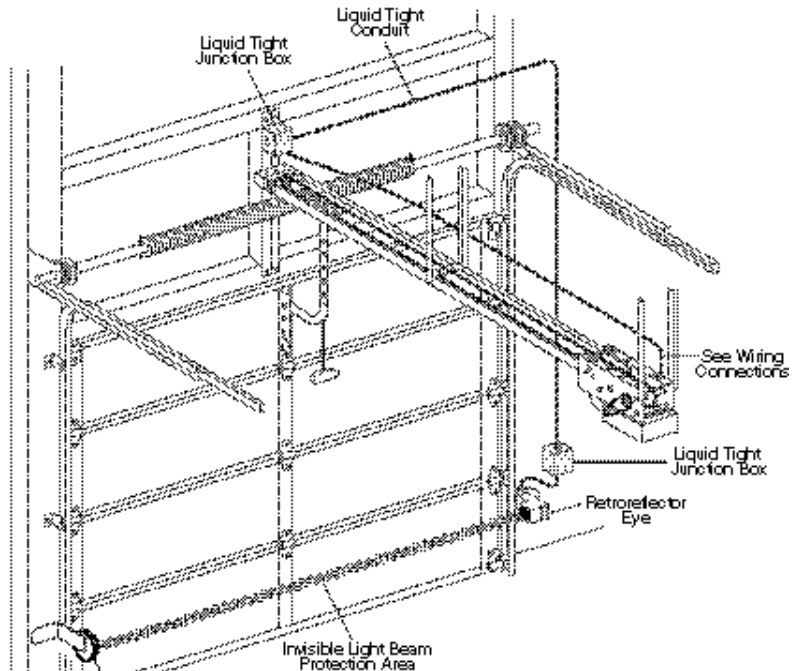
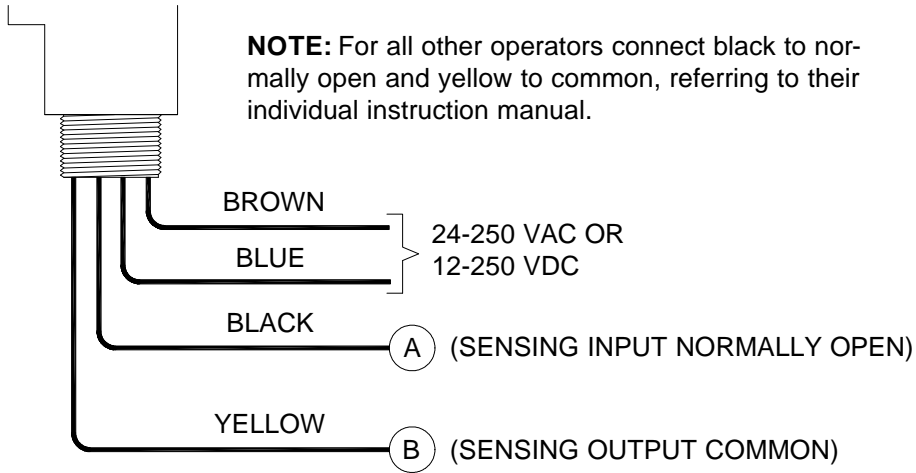


FIGURE 4

FIGURE 5

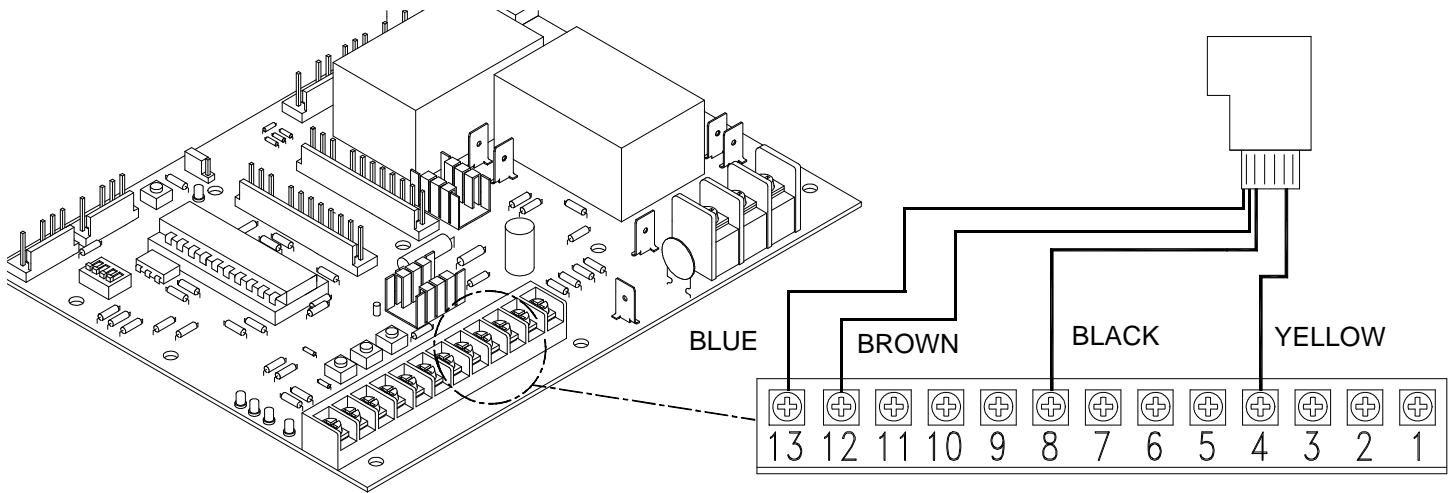


CPS-RN4 WIRING CONNECTIONS FOR ELECTRO MECHANICAL OPERATORS

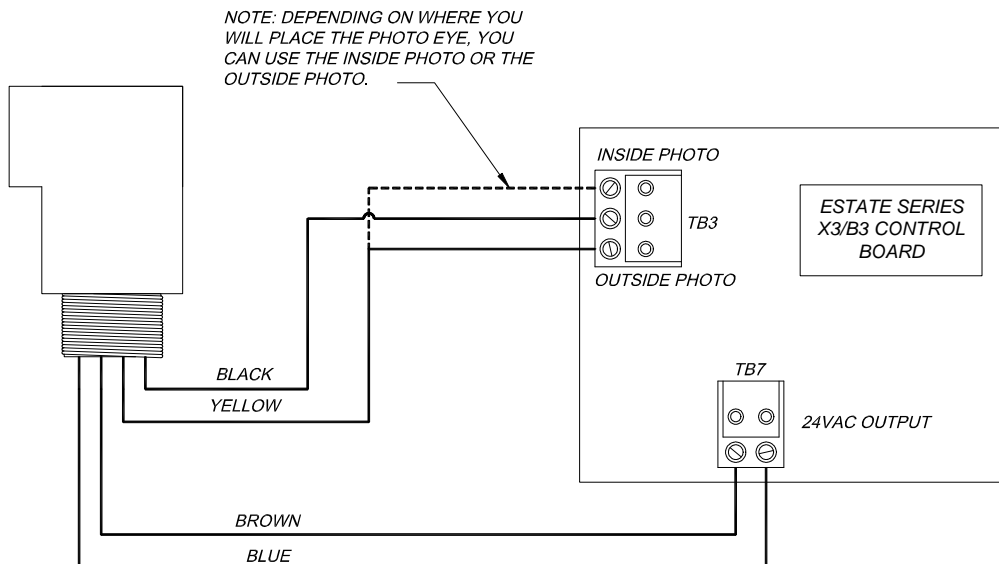


MODEL	TERMINALS	
	A	B
MT	10	3
MH	10	3
MJ	10	3
T	10	3
GT	10	3
GH	10	3
HJ	10	3

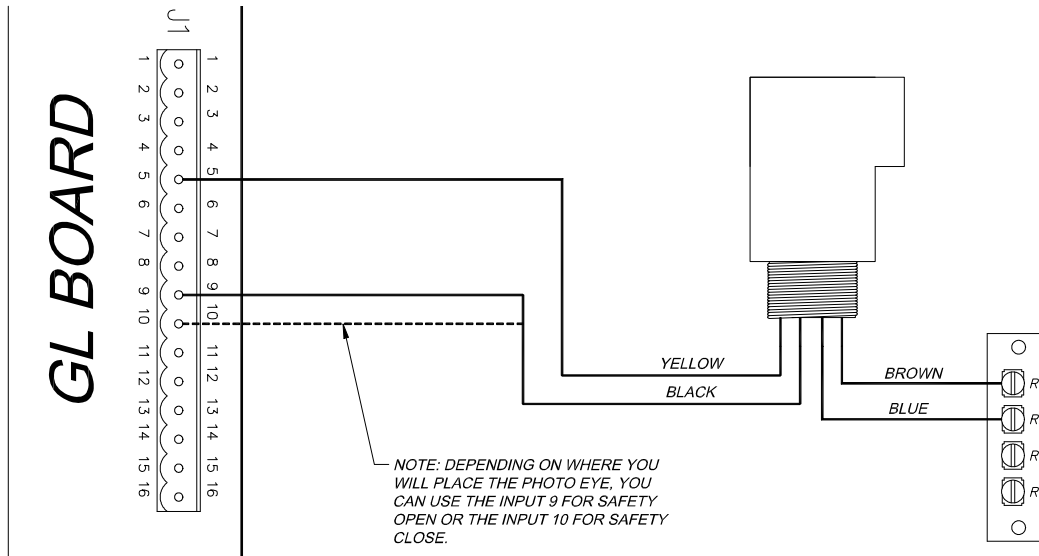
CPS-RN4 WIRING CONNECTIONS FOR LOGIC 2 OPERATORS



CPS-RN4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING ESTATE SERIES X3 OR B3 CONTROL BOARD



CPS-RN4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING GL CONTROL BOARD



TESTING THE PROTECTOR SYSTEM



WARNING

Without a properly working CDO Commercial Protector System™, persons (particularly children) could be seriously injured or killed by a closing garage door. Repeat this test once a month.

Professional service is required if the opener closes the door when the CDO Commercial Protector System™ is obstructed.

Test the Retroreflector Eye Protector System™:

- Press the OPEN button to fully open the door.
- Press the CLOSE button to close the door.
- Obstruct the light beam while the door is closing. *The door should reverse.*

The garage door opener will not close if the indicator light in either sensor is *not glowing steadily*, alerting you to the fact that the sensor is misaligned, or obstructed.

TROUBLE SHOOTING

1. If the retroreflector eye indicator light does not glow steadily after installation, check for:

- Electric power to the opener.
- A short in the Blue or Brown wires.
- Incorrect wiring between sensors and interface.
- An open wire (wire break).

2. If the retroreflector eye indicator light is off (and the invisible light beam path is not obstructed), check for an open wire to the receiving eye.

Note: For non-solid state operators, if the door is stopped in a mid position, activation of the sensors will cause the door to open. This is similar to activating a sensor edge.

3. If the retroreflector eye indicator light is lit but interrupting the photo eyes does not cause the door to reverse when closing, refer to "To Activate Photo Eyes" on page 3.

REPLACEMENT PARTS

HOW TO ORDER REPAIR PARTS

OUR LARGE SERVICE ORGANIZATION
SPANS AMERICA

INSTALLATION AND SERVICE INFORMATION
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HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)
MONDAY Through SATURDAY

CPS-RN4
Sensor Hardware Kit 77-16688
Retroreflector Eye 50-16689
Polarized Reflector 41-16690



WARNING

This device is for use only with Lift-Master Commercial Door Operators. *Use on other than recommended equipment voids warranty, and may cause property damage or serious personal injury.* Read and follow all instructions.

Have door in full open or closed position and disconnect power to the garage door opener before installing the CDO Commercial Protector System.™

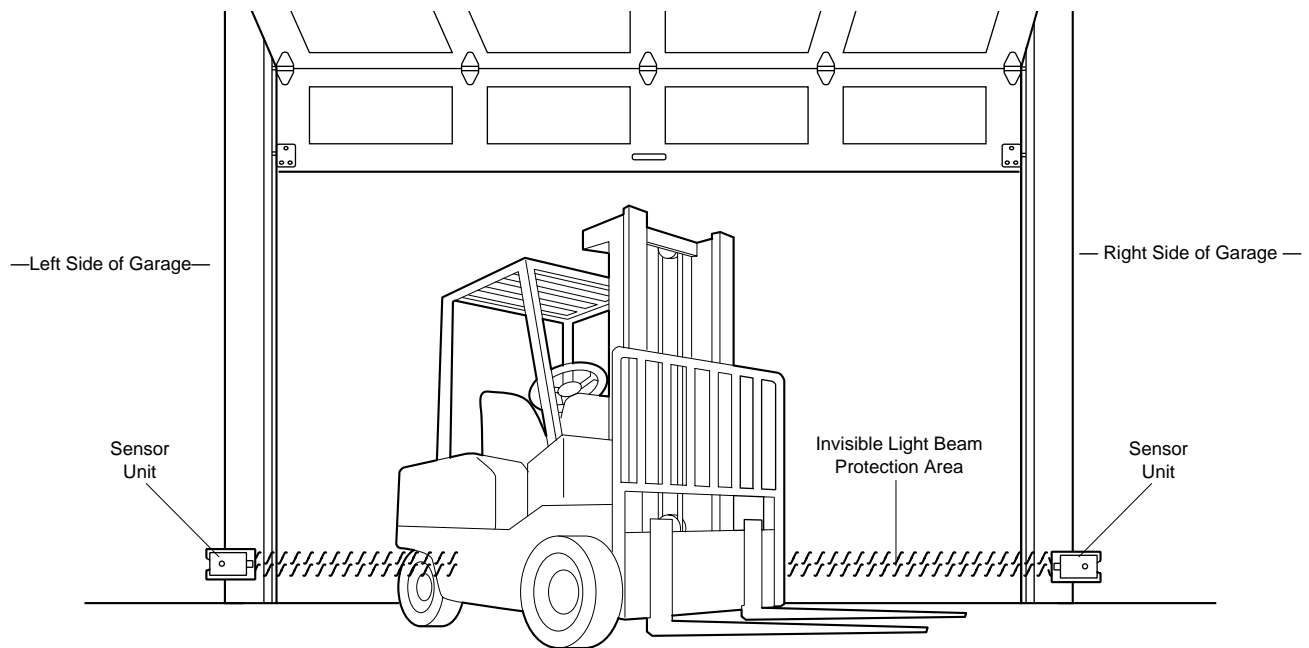
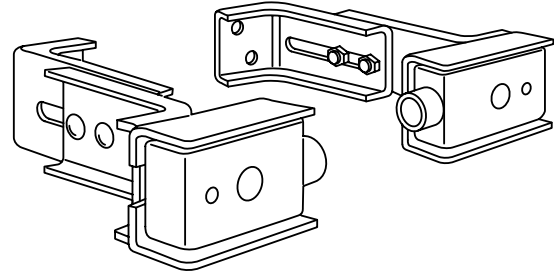


FIGURE 1 Facing the door from inside the garage (Installation Procedures are the same for all door types)

Be sure power to the opener is disconnected.

The sending eye transmits an invisible light beam to the receiving eye. The units can be installed on either side of the garage door as long as the sun never shines directly into the receiving eye lens.

Look at the label on the connector end of each case to identify the sensors.

The brackets must be connected and fastened so that the sending and receiving eyes face each other as shown in Figure 1.

If an obstruction breaks the light beam while the garage door is closing, the door will stop and reverse to full open position.

The brackets *must* be securely fastened to a solid surface such as the studs on either side of the door, or add a piece of wood at each location if installing in masonry construction.

The invisible light beam path must be unobstructed. No part of the garage door (or door tracks, springs, hinges, rollers or other hardware) can interrupt the beam while the door is closing. If it does, use a piece of wood to build out each sensor mounting location to the minimum depth required for light beam clearance.

Figures 2, 3 and 4 show recommended assembly of bracket(s) and "C" wrap based on the wall installation of the sensors on each side of the garage door as shown on page 1, or on the garage door tracks themselves.

Figures 5 and 6 are variations which may fit your installation requirements better. **Make sure the wraps and brackets are aligned so the sensors will face each other across the garage door.**

Garage Wall or Door Track Installation Procedure

- Fasten the "C" wraps to the mounting brackets having square holes, using hardware shown in Fig. 2.

Garage Wall Installation Procedure

- Connect each assembly to a slotted bracket, using the hardware shown in Fig. 3. **Note alignment of brackets for left and right sides of the door.**
- Finger tighten the lock nuts.
- Use bracket mounting holes as a template to locate and drill (2) 3/16" diameter pilot holes on both sides of the garage door, 4"-6" above the floor (but not exceeding 6").
- Attach bracket assemblies with 1/4"x1-1/2" lag screws as shown in Fig. 3.
- Adjust right and left side bracket assemblies to the same distance out from mounting surface. Make sure all door hardware obstructions are cleared. Tighten the nuts securely.

Garage Door Track Installation Procedure

Discard slotted bracket. Drill 3/8" holes in each track and fasten securely with hardware as shown in Fig. 4.

Garage WALL or DOOR TRACK Installation

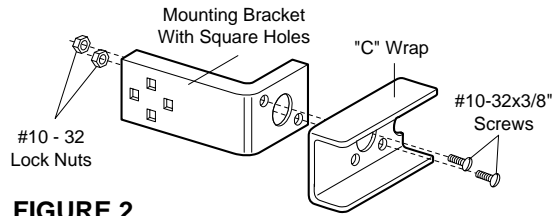


FIGURE 2

Garage WALL Installation

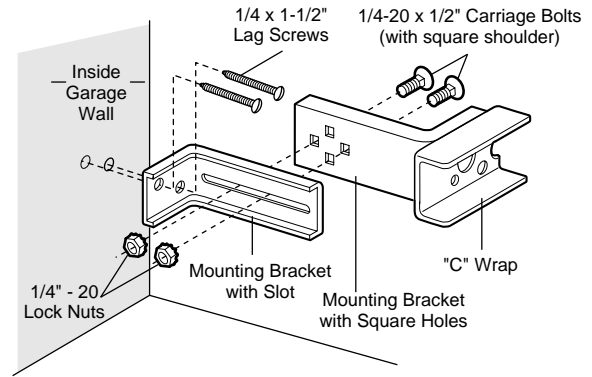


FIGURE 3

Garage DOOR Track Installation

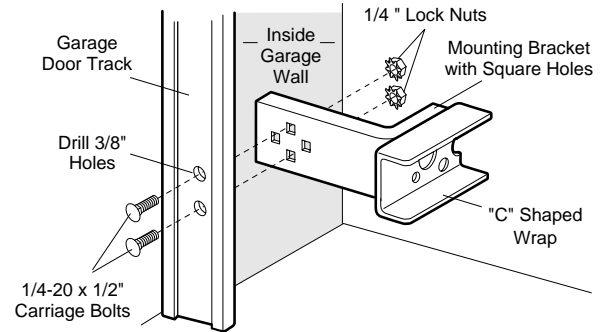


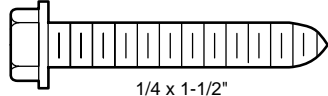

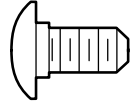
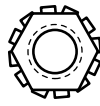


FIGURE 4

Hardware Shown Actual Size

					
#10 - 32 x 3/8" Screw	#10 x 32 Lock Nut	1/4 x 1-1/2" Lag Screw	Staples	1/4" - 20 x 1/2" Carriage Bolts	1/4" - 20 Lock Nut

Alternate Wall Mount

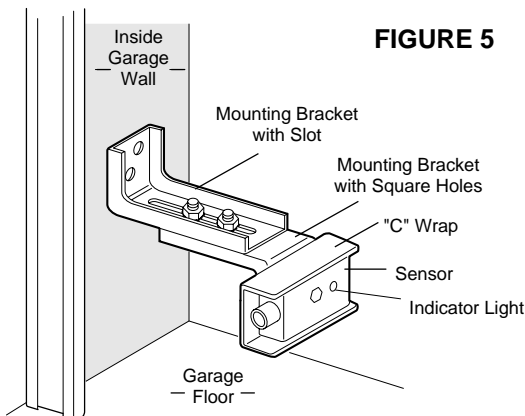


FIGURE 5

Alternate Floor Mount

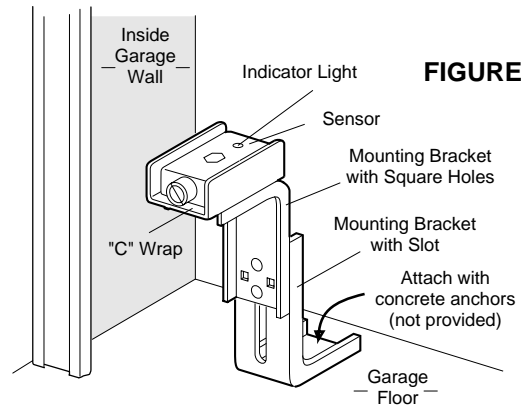
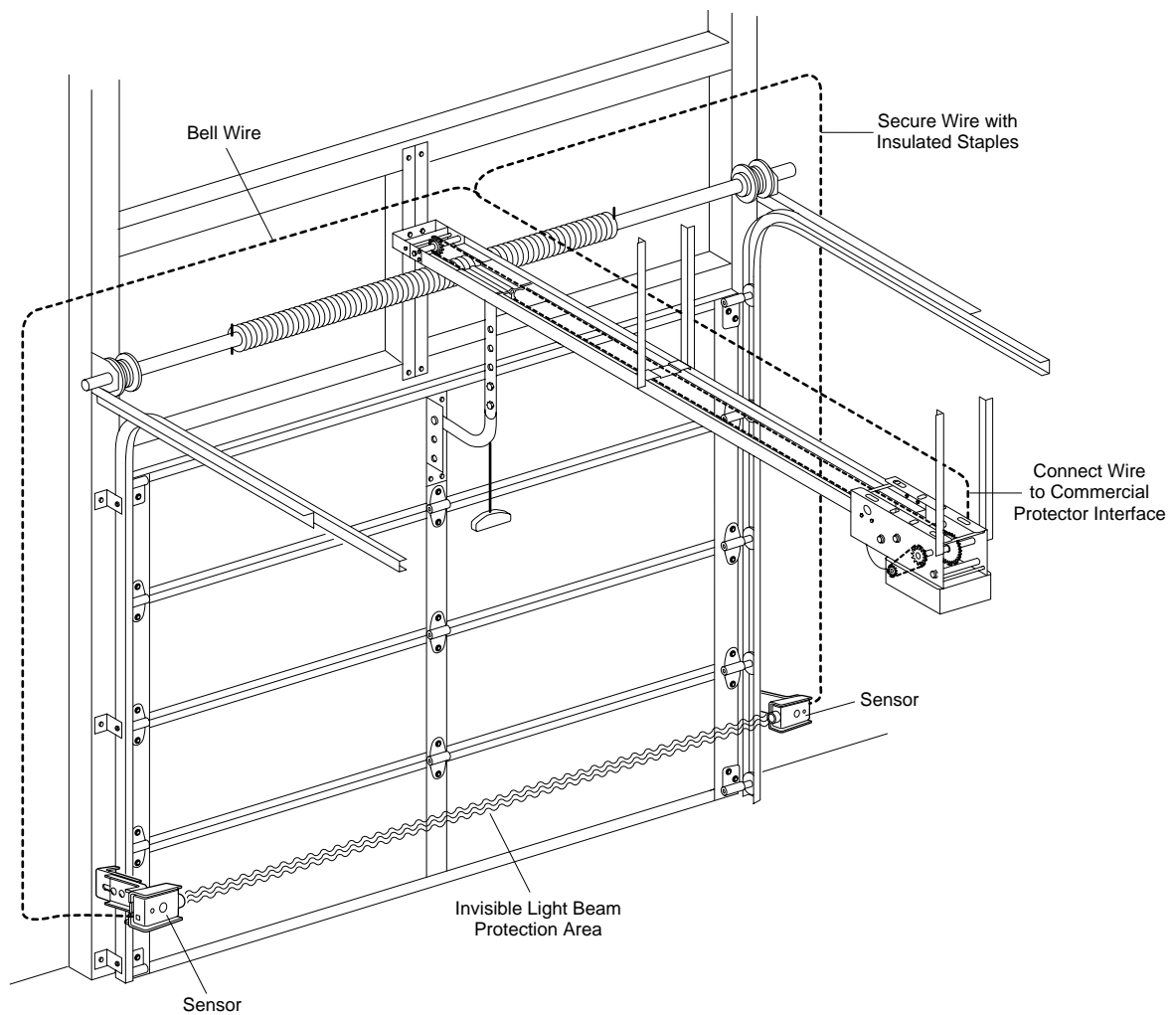
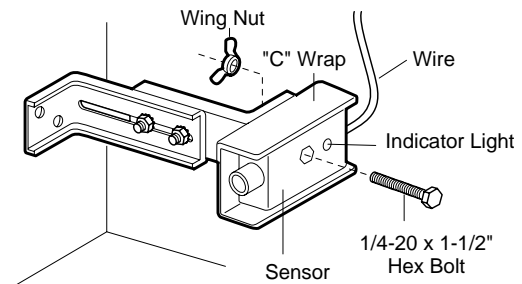


FIGURE 6



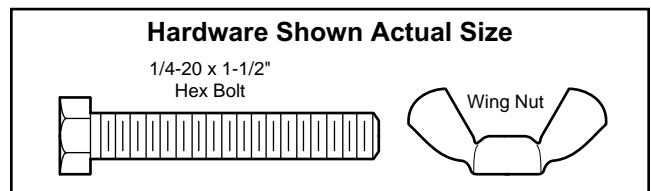
- Insert the wire connector into each sensor and push until you hear a click. The white tab on the sensor should be flush with the back of connector.
- Center each sensor unit in a "C" wrap with lenses pointing toward each other across the door.
- Secure sensors with hardware shown in Figure 8. Finger tighten the wing nut on the *receiving eye* to allow for final adjustment. Securely tighten the *sending eye* wing nut.
- Run paired wires from both sensors to the opener as shown in Figure 7. Use insulated staples to secure the wire to the wall and ceiling.
- For wiring connections see following pages:
 - CPS Page 4
 - CPS-L Page 4
 - CPSII Page 5



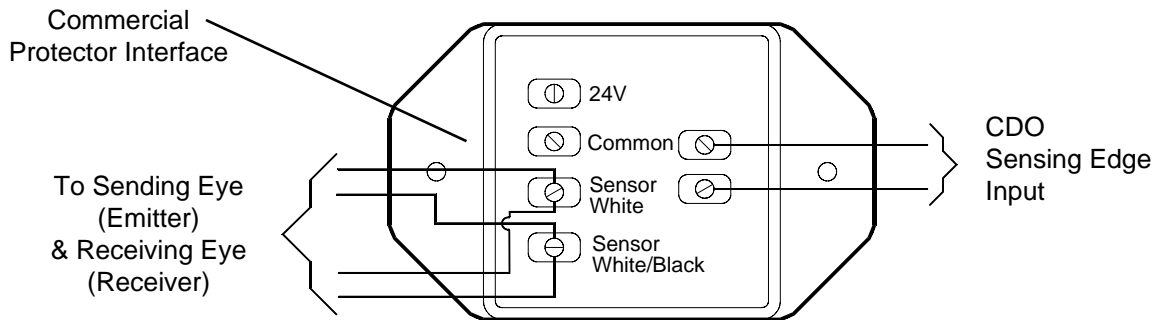
- Power up the opener. Green indicator lights in both the sending and receiving eyes will *glow steadily* if wiring connections and alignment are correct.

If the receiving eye indicator light is not glowing steadily (and the invisible light beam path is not obstructed), alignment is required.

- Loosen the receiving eye wing nut to allow slight rotation of unit. Adjust sensor vertically and/or horizontally until the green indicator light *glows steadily*.
- When indicator lights are *glowing steadily* in both units, tighten the wing nut in the receiving eye unit.



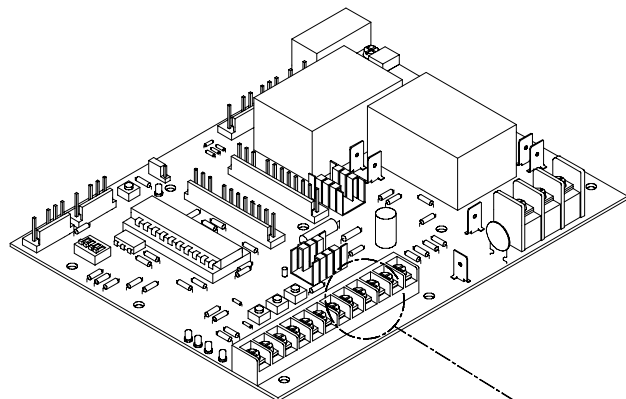
CPS Wiring Connections



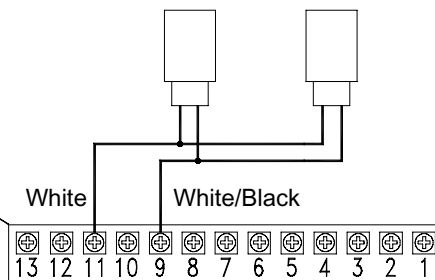
CPS-L Wiring Connections for use with Solid State II (Logic Control Board Ver 2)

NOTICE

Once eyes are connected it will be necessary to set DIP switch to Timer to Close mode (Refer to "Activate Photo Eyes" instructions below).



Logic 2 Show n

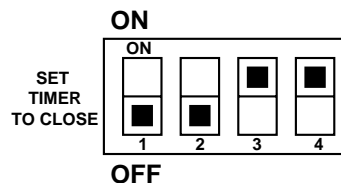


To Activate Photo Eyes

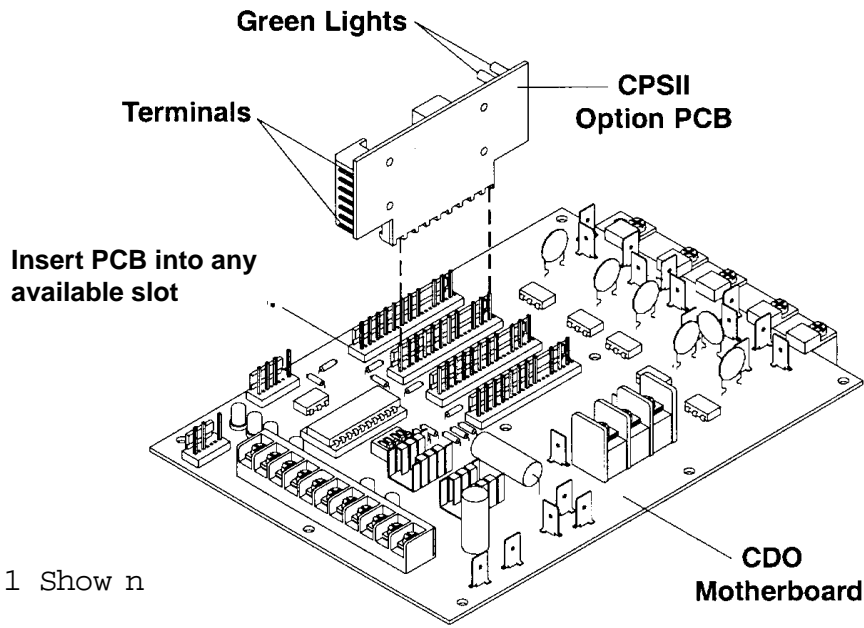
1. Start with door in the "CLOSED" position.
2. Connect the CPS-LN4 eyes as shown in figure to the left. Confirm that the LED's on both eyes are lit.
3. Set DIP switches to desired operating mode. (Refer to owners manual for switch settings).
4. Run the door through one full close-open-close cycle to "Learn" the photo eyes.

NOTE: Test the Photo Eyes operation by interrupting the eyes while closing the door.

5. Once the eyes are "Learned" and it becomes necessary to remove the eyes, the eyes will need to be "unlearned" by setting DIP switch to Timer to Close mode and pressing the Close button.

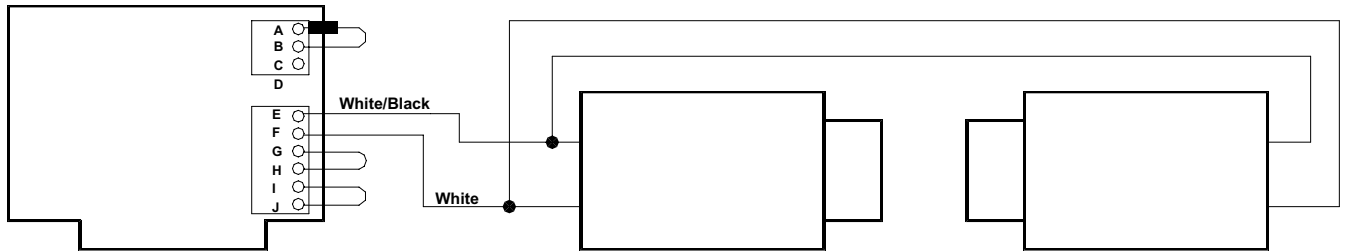


CPSII Wiring Connections for use with Solid State Logic Control Board

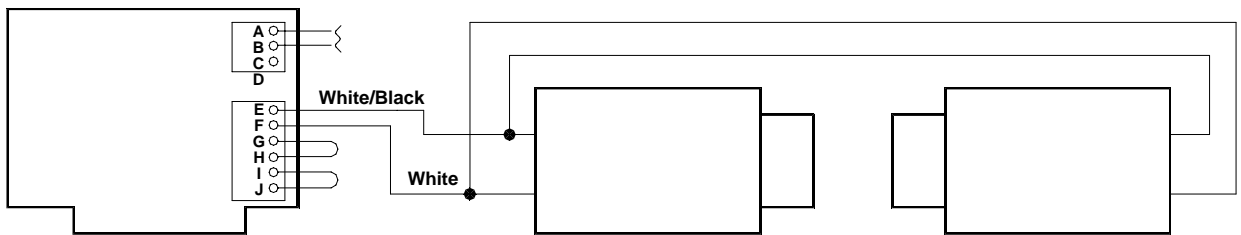


Logic 1 Show n

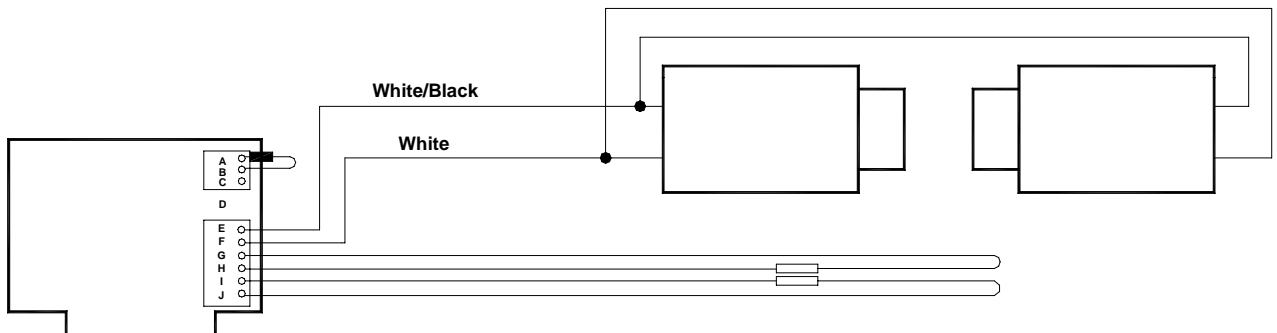
CPSII Protector Only



CPSII Protector and 2-Wire Fail Safe Door Edge



CPSII Protector and 4-Wire Fail Safe Door Edge



Testing the Protector System



WARNING

Without a properly working CDO Commercial Protector System™, persons (particularly children) could be seriously injured or killed by a closing garage door. Repeat this test once a month.

Professional service is required if the opener closes the door when the CDO Protector System is obstructed.

Test the CDO Commercial Protector System™:

- Press the OPEN button to fully open the door.
- Press the CLOSE button to close the door.
- Obstruct the light beam while the door is closing. *The door should stop and reverse.*

The garage door opener will not close if the indicator light in either sensor is ***not glowing steadily***, alerting you to the fact that the sensor is misaligned, or obstructed.

Trouble Shooting

1. If the sending eye and receiving eye indicator lights do not glow steadily after installation, check for:
 - Electric power to the opener.
 - A short in the White or White/Black wires.
 - Incorrect wiring between sensors and interface.
 - An open wire (wire break).

2. If the receiving eye indicator light is off (and the invisible light beam path is not obstructed). check for an open wire to the receiving eye.

Note: For non-solid state operators, if the door is stopped in a mid position, activation of the sensors will cause the door to open. This is similar to activating a sensor edge.

3. **CPS-L ONLY:** If the sending eye and receiving eye indicator lights are both lit but interrupting the photo eyes does not cause the door to reverse when closing, refer to "To Activate Photo Eyes" on page 4.

Replacement Parts

CPS	CPSII	CPS-L
Commercial Protector Interface 041K4629	CPSII PC BOARD 001C4654	
Sensor Hardware Kit 77-16694	Sensor HardwareKit 77-16694	Sensor Hardware Kit 77-16694
Receiver 001A5053-9	Receiver 001A5053-9	Receiver 001A5053-9
Emitter 001A5053-10	Emitter 001A5053-10	Emitter 001A5053-10

HOW TO ORDER REPAIR PARTS

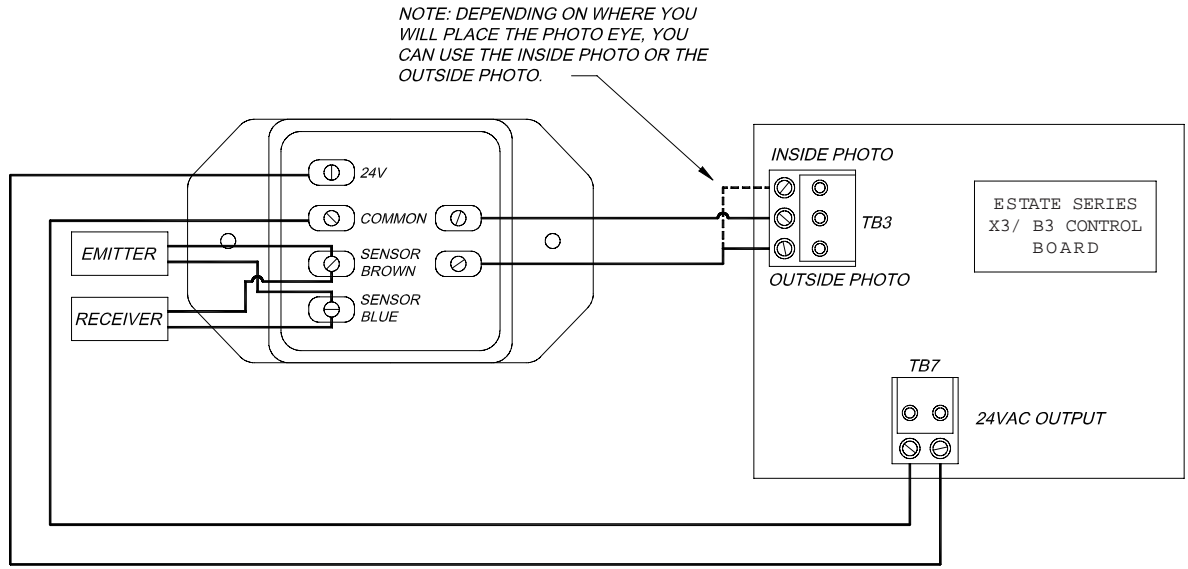
OUR LARGE SERVICE ORGANIZATION
SPANS AMERICA
INSTALLATION AND SERVICE INFORMATION
ARE AVAILABLE 6 DAYS A WEEK
CALL OUR TOLL FREE NUMBER - 1-800-528-2806
HOURS 7:00 TO 3:30 p.m. (Mountain Std. Time)
MONDAY Through SATURDAY

**WHEN ORDERING REPAIR PARTS
PLEASE SUPPLY THE FOLLOWING INFORMATION:
*PART NUMBER DESCRIPTION MODEL NUMBER***

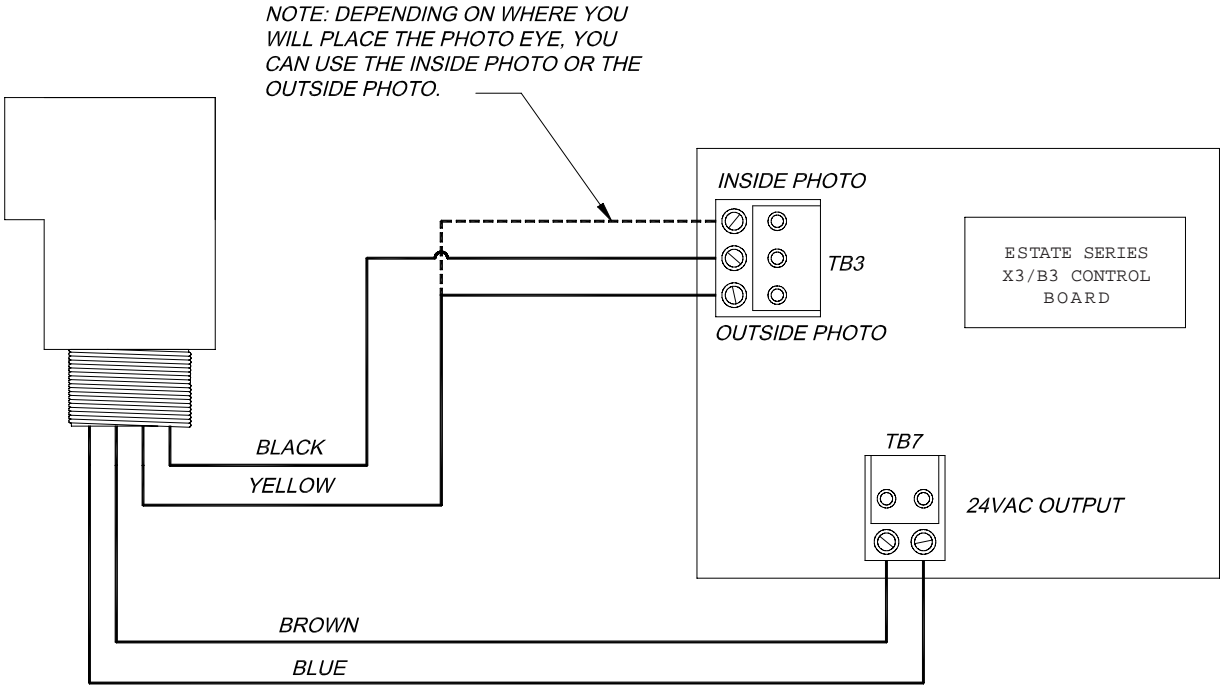
ADDRESS ORDER TO:
THE CHAMBERLAIN GROUP, INC.
Electronic Parts & Service Dept.
2301 N. Forbes Blvd., Suite 104
Tucson, AZ 85745

This addendum is to be used in conjunction with the instructions included with this Photo Eye kit. Refer to the instructions shipped with kit for all mounting and wiring instructions for Commercial Door operators. Refer to the instructions shipped with this kit for all mounting instructions for Commercial Gate operators use addendum for all wiring instructions.

**CPS-N4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING
 ESTATE SERIES X3 OR B3 CONTROL BOARD**



**CPS-RN4 WIRING CONNECTIONS FOR USE WITH LIFTMASTER OPERATORS FEATURING
 ESTATE SERIES X3 OR B3 CONTROL BOARD**

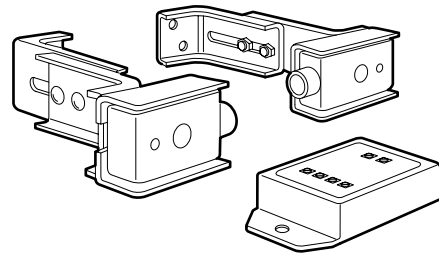




WARNING

This device is for use only with Lift-Master and Link Commercial Door Operators. Use on other than recommended equipment voids warranty, and may cause property damage or serious personal injury. Read and follow all instructions.

Have door in full open or closed position and disconnect power to the garage door opener before installing the CDO Protector System.



Installation procedures are the same for all door types.

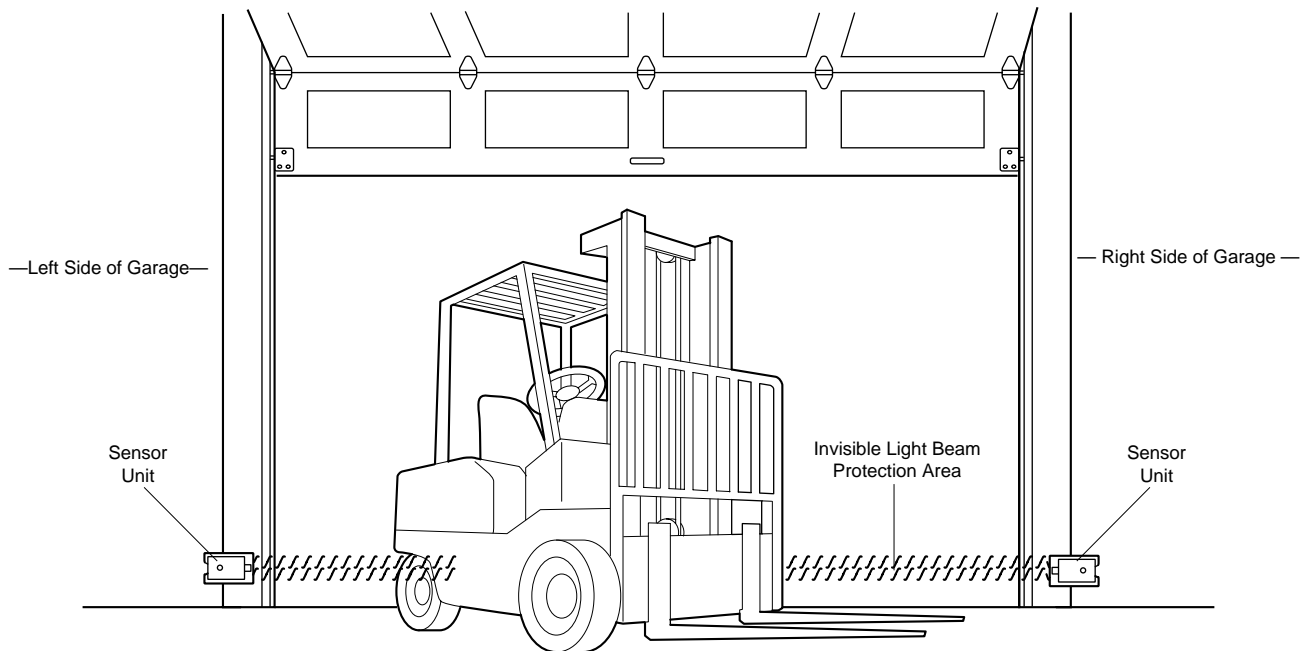


FIGURE 1 Facing the door from inside the garage

Be sure power to the opener is disconnected.

The sending eye transmits an invisible light beam to the receiving eye. The units can be installed on either side of the garage door as long as the sun never shines directly into the receiving eye lens.

Look at the label on the connector end of each case to identify the sensors.

The brackets must be connected and fastened so that the sending and receiving eyes face each other as shown in Figure 1.

If an obstruction breaks the light beam while the garage door is closing, the door will stop and reverse to full open position.

The brackets *must* be securely fastened to a solid surface such as the studs on either side of the door, or add a piece of wood at each location if installing in masonry construction.

The invisible light beam path must be unobstructed. No part of the garage door (or door tracks, springs, hinges, rollers or other hardware) can interrupt the beam while the door is closing. If it does, use a piece of wood to build out each sensor mounting location to the minimum depth required for light beam clearance.

Figures 2, 3 and 4 show recommended assembly of bracket(s) and "C" wrap based on the wall installation of the sensors on each side of the garage door as shown on page 1, or on the garage door tracks themselves.

Figures 5 and 6 are variations which may fit your installation requirements better. **Make sure the wraps and brackets are aligned so the sensors will face each other across the garage door.**

Garage Wall or Door Track Installation Procedure

- Fasten the "C" wraps to the mounting brackets having square holes, using hardware shown in Fig. 2.

Garage Wall Installation Procedure

- Connect each assembly to a slotted bracket, using the hardware shown in Fig. 3. **Note alignment of brackets for left and right sides of the door.**
- Finger tighten the lock nuts.
- Use bracket mounting holes as a template to locate and drill (2) 3/16" diameter pilot holes on both sides of the garage door, 4"-6" above the floor (but not exceeding 6").
- Attach bracket assemblies with 1/4"x1-1/2" lag screws as shown in Fig. 3.
- Adjust right and left side bracket assemblies to the same distance out from mounting surface. Make sure all door hardware obstructions are cleared. Tighten the nuts securely.

Garage Door Track Installation Procedure

Discard slotted bracket. Drill 3/8" holes in each track and fasten securely with hardware as shown in Fig. 4.

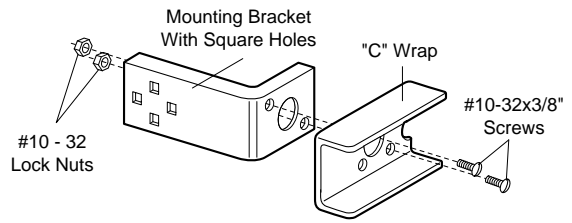


FIGURE 2

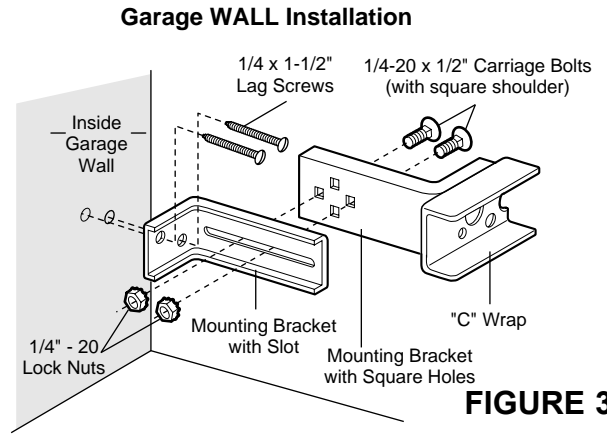


FIGURE 3

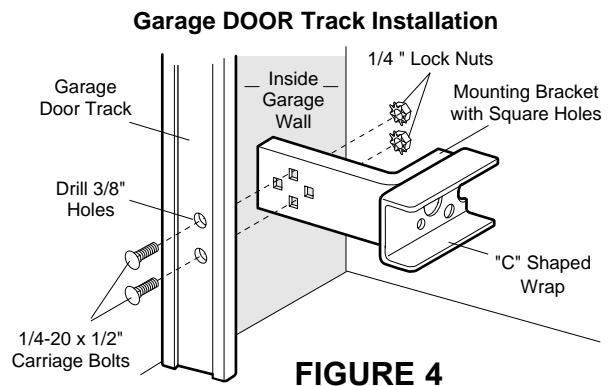


FIGURE 4

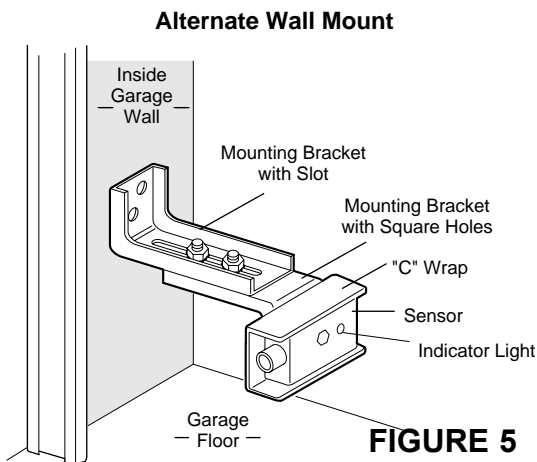
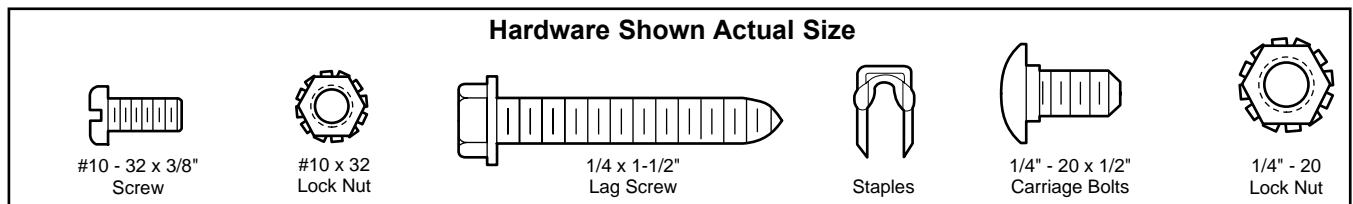


FIGURE 5

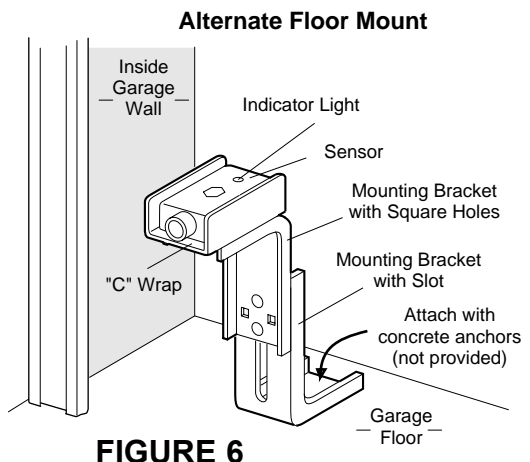


FIGURE 6

FIGURE 7

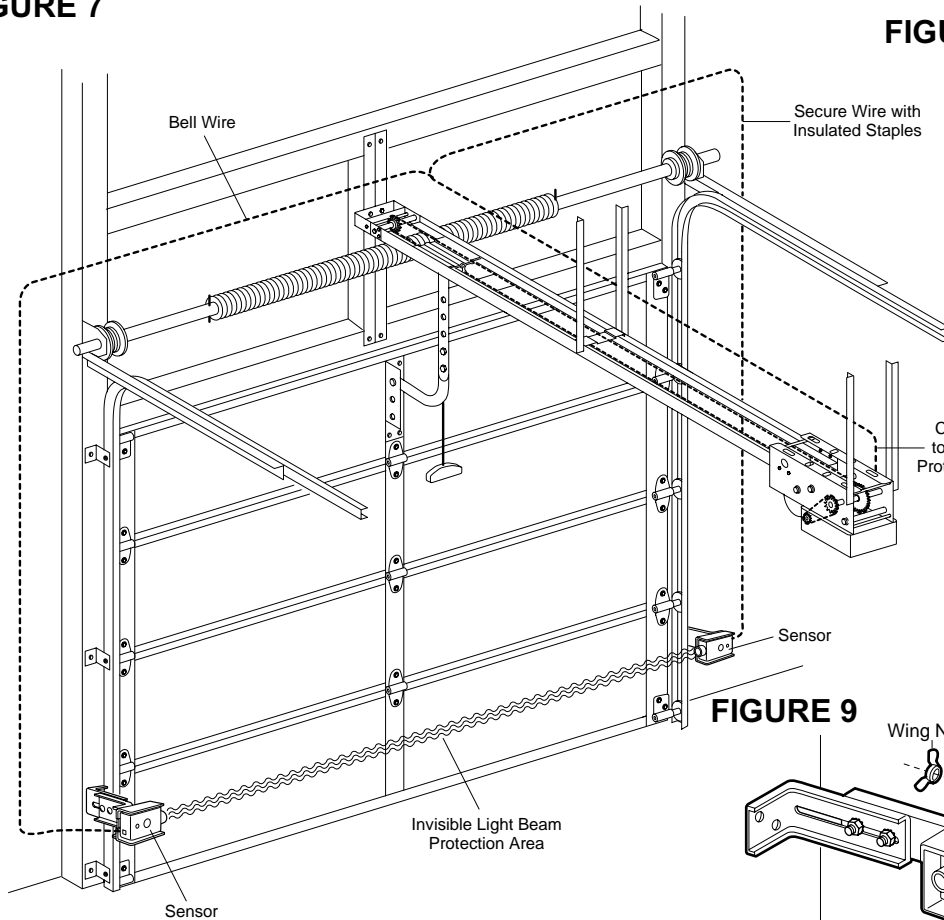


FIGURE 8

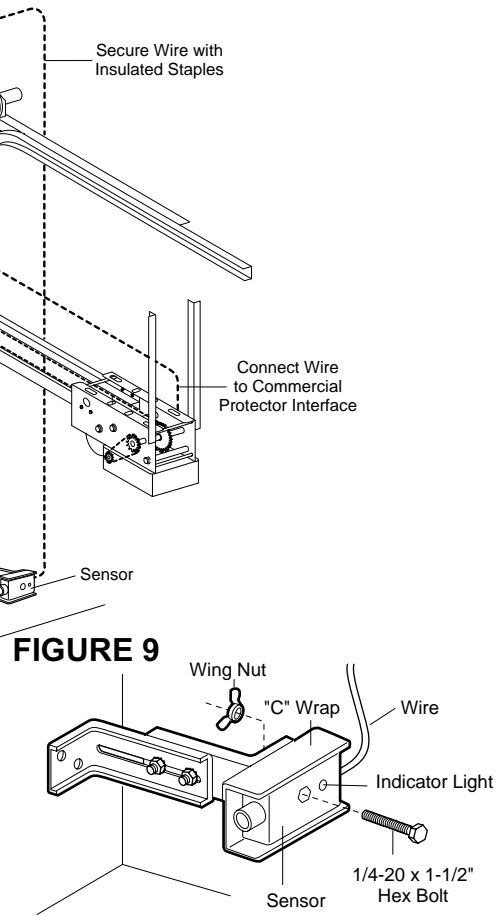
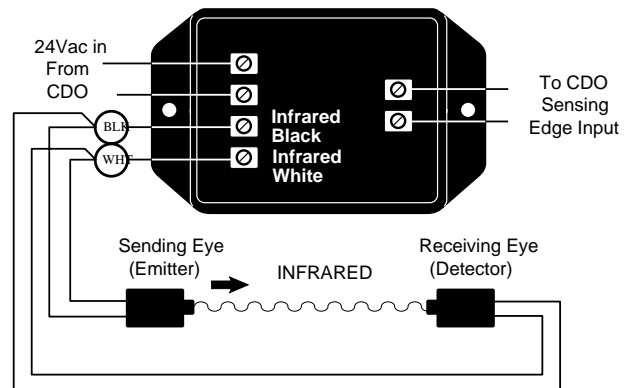
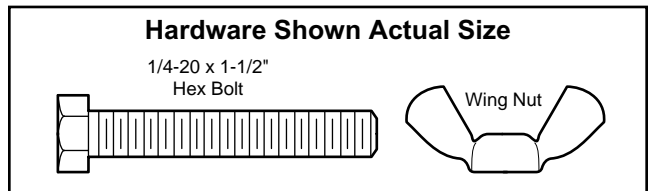


FIGURE 9

FIGURE 10

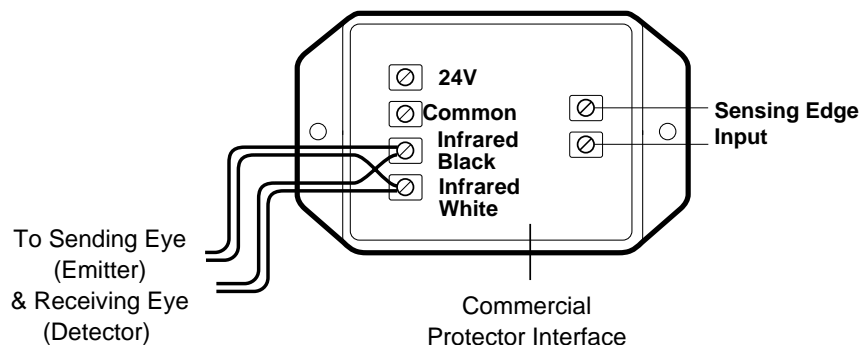


- Insert the wire connector into each sensor and push until you hear a click. The white tab on the sensor should be flush with the back of the connector, see figure 8.
- Center each sensor unit in a "C" wrap with lenses pointing toward each other across the door.
- Secure sensors with hardware shown in Figure 9. Finger tighten the wing nut on the *receiving eye* to allow for final adjustment. Securely tighten the *sending eye* wing nut.
- Run paired wires from both sensors to the opener as shown in Figure 7. Use insulated staples to secure the wire to the wall and ceiling.
- Connect both sets of wires to the Commercial Protector Interface as shown in Figures 10 and 11.
- Power up the opener. Green indicator lights in both the sending and receiving eyes will *glow steadily* if wiring connections and alignment are correct. If the receiving eye indicator light is not glowing steadily (and the invisible light beam path is not obstructed), alignment is required.



- Loosen the receiving eye wing nut to allow slight rotation of unit. Adjust sensor vertically and/or horizontally until the green indicator light *glows steadily*.
- When indicator lights are *glowing steadily* in both units, tighten the wing nut in the receiving eye unit.

Figure 11



Test the CDO Protector System:

- Press the OPEN button to fully open the door.
- Press the CLOSE button to close the door.
- Obstruct the light beam while the door is closing. *The door should reverse.*

The garage door opener will not close if the indicator light in either sensor is *not glowing steadily*, alerting you to the fact that the sensor is misaligned, or obstructed.



WARNING

Without a properly working CDO Protector System, persons (particularly children) could be seriously injured or killed by a closing garage door. Repeat this test once a month. Professional service is required if the opener closes the door when the CDO Protector System is obstructed.

Trouble Shooting

1. If the *sending eye* and *receiving eye* indicator lights do not glow steadily after installation, check for:
 - Electric power to the opener.
 - A short in the white or white/black wires. These can occur under staples or at screw terminal connections.
 - Incorrect wiring between sensors and Interface
 - An open wire, (wire break).

2. If only the *receiving eye* indicator light is *off* (and the invisible light beam path is *not* obstructed), check for an open wire to the receiving eye.

NOTE: If the door is stopped in a mid position, activation of the sensors will cause the door to open. This is similar to activating a sensor edge.

Replacement Parts

TOLL FREE NUMBER - 1-800-528-2806

Commercial Protector Interface	41K4629	Safety sensor hardware bag	41A4116
2-conductor wire (white and white/black)	41B4115	C-wrap bracket	12B483
Sensor kit (receiving and sending eyes only)	41K4587	Square hole bracket	12B484
		Slotted bracket	12B485

Wireless Edge System

Electric: 50-WSE-14 or 50-WSE-22

Pneumatic: 50-WSP-14 or 50-WSP-22

Patents Pending



WARNING

Manual should be read completely before installation is attempted. System shall be tested before door is placed into service. Installation and testing shall be performed by factory authorized personnel for proper operation in accordance with all of the latest National Electrical Code (NEC), Underwriters Laboratories (UL), state, county, district and/or other applicable building and fire standards, guidelines, regulations and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).



FEATURES:

- **(ELECTRIC ONLY)** Supervised system monitors 2 wire safety edge.
- Supervised system monitors infrared transmission path between receiver and transmitter, power to receiver, power to transmitter and integrity and operation of safety edge.
- Receiver: Draws power from the operator.
- Transmitter: Low current battery powered device designed for 1 year minimum battery life
- Low battery / audible notification
- Dead battery / visible and audible notification
- Multiple encoded channel selections for adjacent door installations
- 20' minimum operation distance from receiver to transmitter devices on standard device. Contact Parts and Service for extended range availability.
- **(ELECTRIC ONLY)** Cut to length supervised safety edge.

SUPERVISION:

- **(ELECTRIC ONLY)** Transmitter: Monitors safety edge trigger (short), dead short and normally open embedded safety edge. Supervisory signal sent at constant intervals for signal path and battery condition.
- **(PNEUMATIC ONLY)** Transmitter: Monitors pneumatic pressure switch.
- Receiver: Supervised fault occurs if normal supervisory conditions are not received. Provides lock out on critical failure with Electro-Mechanical operator and requires constant pressure to close with Solid State operator. Diagnostic L.E.D's and sounder for system status and troubleshooting.

REQUIREMENTS:

- Designed for rolling service doors and shutters. (Not for use on Rolling Fire Doors or Fire Shutters)
- Power source of +20 VDC to +35 VDC or 18 VAC to 28 VAC required.
- Temperature range of 0° to 158° F.
- Designed for use indoors, dry locations.

HOW TO ORDER REPAIR PARTS

OUR LARGE SERVICE ORGANIZATION
SPANS AMERICA
INSTALLATION AND SERVICE INFORMATION
ARE AVAILABLE 6 DAYS A WEEK
CALL OUR TOLL FREE NUMBER - **1-800-528-2806**
MONDAY Through FRIDAY 5:00 a.m. TO 6:00 p.m. (MST)
SATURDAY 7:00 a.m. TO 3:30 p.m. (MST)
WWW.LIFTMASTER.COM

REPLACEMENT KITS

ITEM #	DESCRIPTION
K74-WSE	Transmitter and Receiver (Electric)
K74-WSP	Transmitter and Receiver (Pneumatic)
K74-WSE-14	Electric Edge, 14'
K74-WSE-22	Electric Edge, 22'
K74-WSP-14	Pneumatic Edge, 14'
K74-WSP-22	Pneumatic Edge, 22'
K77-WSE	Hardware Kit, Electric Edge
K77-WSP	Hardware Kit, Pneumatic Edge

SELECTING MOUNTING LOCATION

The supervised edge system consists of two distinct components, the transmitter and the receiver. The receiver, which is connected to the operator, behaves like a normally open safety edge. The receiver requires a power and ground connection (DC) or an AC connection. The transmitter is connected to the safety edge and uses an internal 3V lithium battery for power. Battery life is estimated at one year, however, conditions may vary. For convenience, a low battery warning tone will sound to indicate that replacement is required. (See diagnostics) The system requires several considerations when deciding upon where to locate the units on the door.

NOTE: Refer to Door System Illustration on page 3 for basic door setup. Location and configuration may differ from illustration.

1. Both units must be located on the same side of the door. There must be a clear line of sight between the units throughout door/grill range of travel. (Refer to page 3, figure 4)
2. The transmitter must always remain below the receiver throughout the door's range of travel.
3. The receiver placement must be within 2' of transmitter centerline. (Refer to page 3, figure 5)

RECEIVER AND TRANSMITTER INSTALLATION



WARNING

**DOOR/GRILL SHOULD BE IN CLOSED POSITION.
TURN OFF ALL POWER BEFORE BEGINNING.**

RECEIVER UNIT

1. Attach Receiver Unit near motor operator by pre-drilling guide holes and using #8 or #10 fasteners (Refer to page 3 figures 4 & 5).
2. Wire receiver to operator (Refer to page 2 figure 1).
3. Attach the Receiver unit with nuts and lockwashers, making sure the reception window and LED's are facing downward. (Refer to page 3 figure 5).

TRANSMITTER UNIT

1. Install Transmitter Unit housing to the door edge by pre-drilling guide holes and using #8 or #10 fasteners (Refer to page 3 figure 6).
2. Open front cover by removing 2 screws (Refer to page 3 figure 3).
 - a. **(ELECTRIC ONLY)** Wire transmitter to safety edge. (Refer to page 5)
3. Insert the 3V lithium battery in the battery clips noting correct polarity.
4. Replace front cover.
5. **(PNEUMATIC ONLY)** connect hose. (Refer to page 3 figure 3)
6. Attach Transmitter Unit with nuts and lockwashers (Refer to page 3 figure 6). Route cable or hose through channel on front of cover. (Refer to page 2, figure 2)

NOTE: Do not kink or crush pneumatic tubing.

FIGURE 1: Receiver Wire Connections

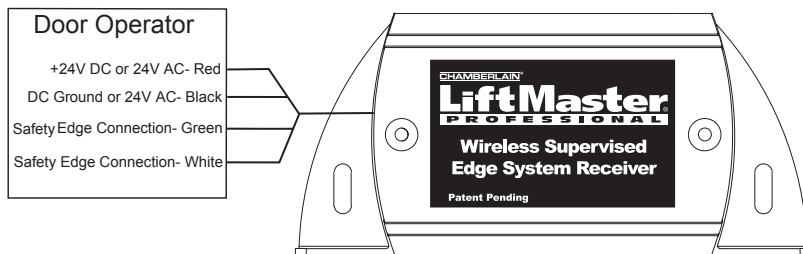


FIGURE 2: Cable & Hose Support

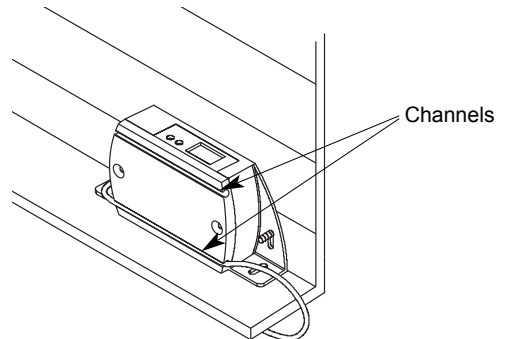
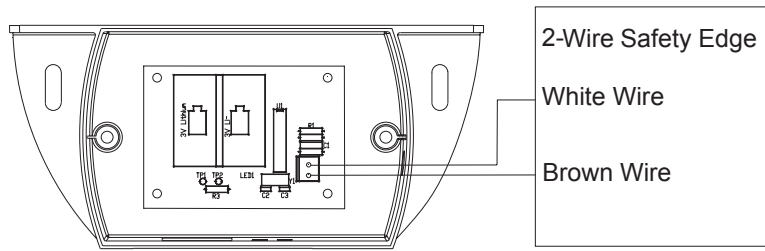
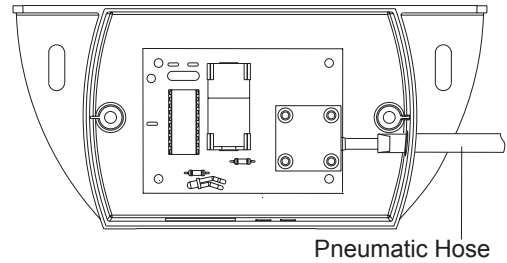


FIGURE 3: Transmitter Wire Connections

ELECTRIC TRANSMITTER



PNEUMATIC TRANSMITTER



DOOR SYSTEM ILLUSTRATION

PLACEMENT RECOMMENDATION:
Contact Parts & Services for extended range capability.

NOTE:

The Receiver may be mounted to the lip of the Door Hood, either outside or inside, depending on Door design and clearance within the Hood when the Door is in the fully open position. The Receiver also may be mounted on the Door's end bracket. Optimal mounting position for the Receiver will vary depending on the door.

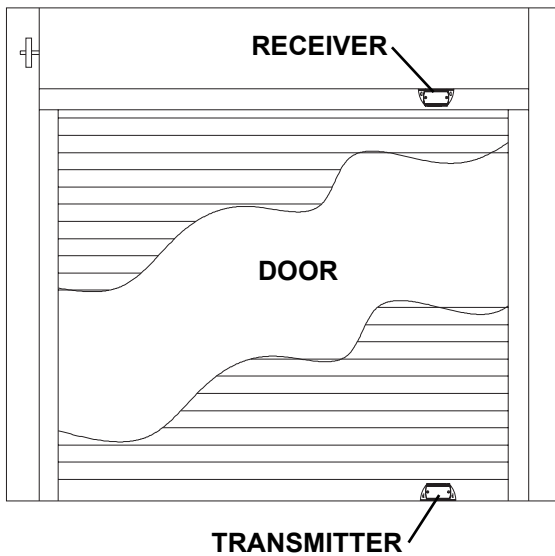
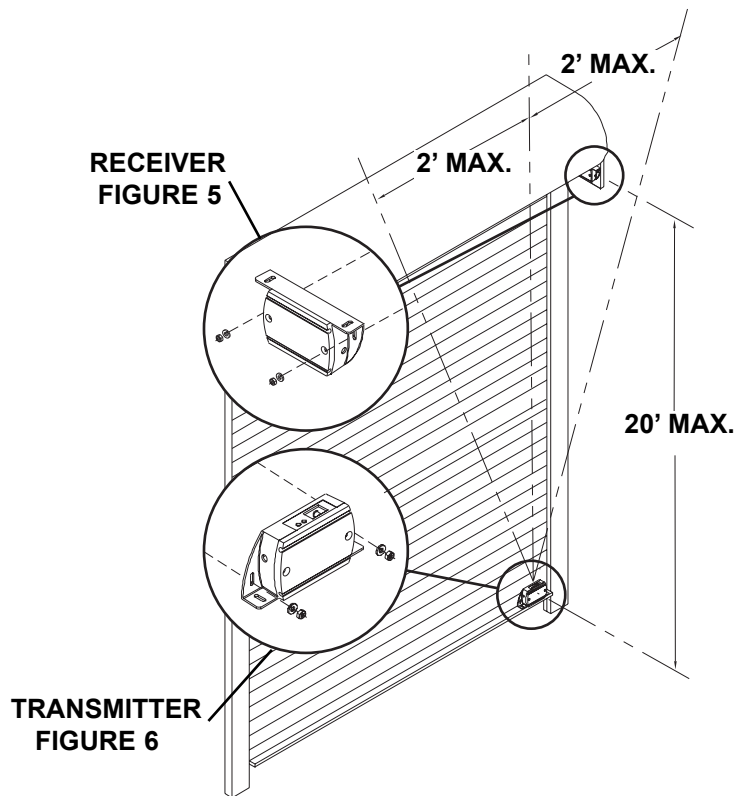
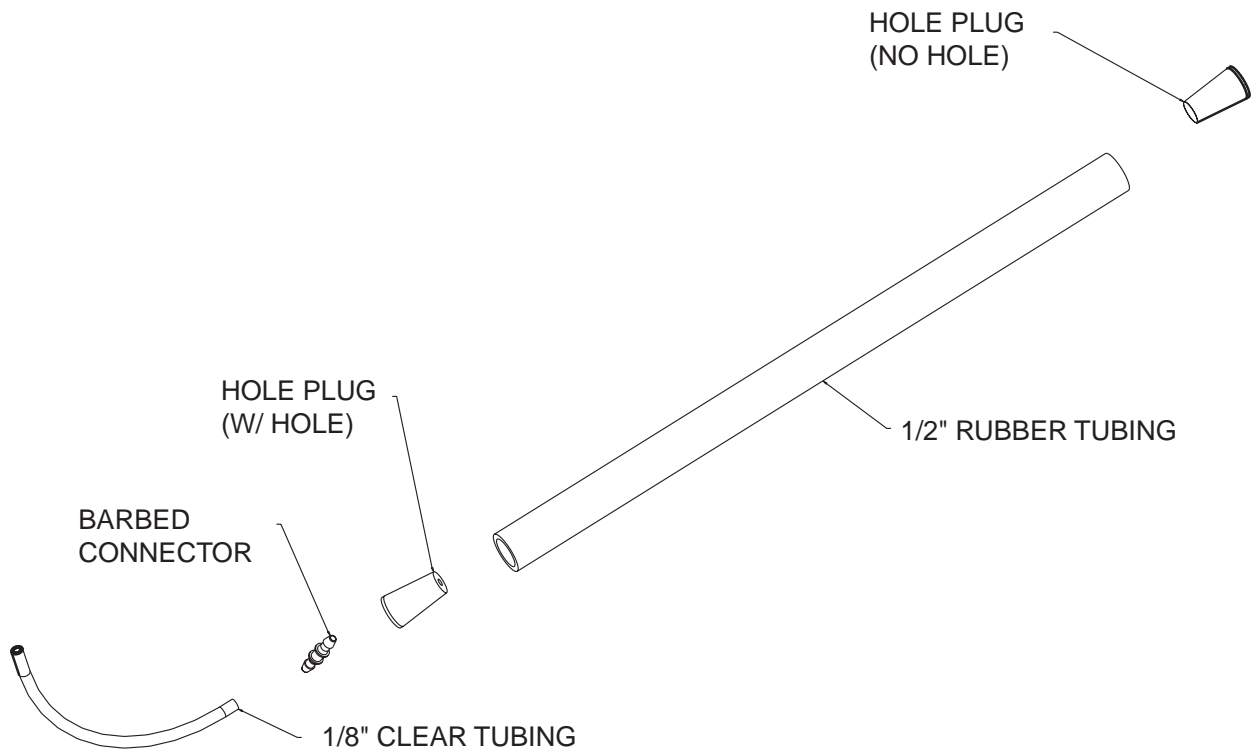


FIGURE 4



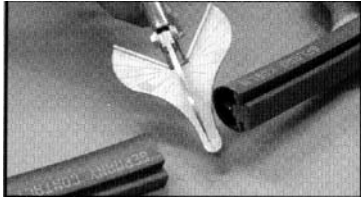
SAFETY EDGE MOUNTING (PNEUMATIC)

1. Remove any existing safety edge.
2. Insert rubber plug without hole into 1/2" tubing, farthest from transmitter.
3. Cut 1/2" tubing to correct door length.
4. Insert rubber end plug with hole into 1/2" tubing, nearest transmitter.
5. Slide 1/2" tubing into door astragal.
6. Press 1/8" clear tubing onto barbed connector.
7. Insert other end of barbed connector into hole of end plug from step 4.
8. Cut 1/8" clear tubing to length and connect to barbed connector inside the transmitter

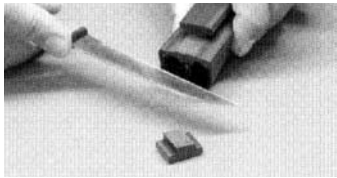


SAFETY EDGE INSTRUCTIONS (ELECTRIC)

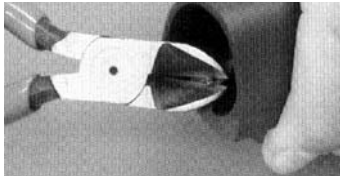
1. Using scissors or a sharp razor to cut edge to length adding a total of 1" for end caps.



2. Carefully trim foot by 1/2" on each end of the edge. Make certain no damage is done to the profile when making the vertical cut. Any remains of the foot will be removed later with sand paper.



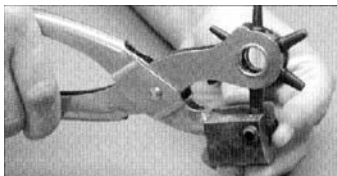
3. Before sanding surface, cut protruding copper wire.



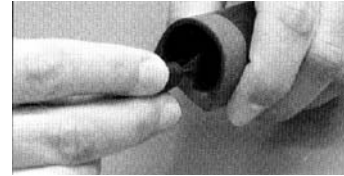
4. Using sand paper, smooth all cut surfaces even and mat, making sure you do not round edges, on each end of edge, including the area where footing was removed.



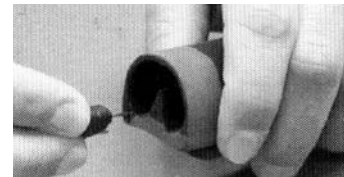
5. Open one of the end caps using a hole punch or any other sharp object, remove any remaining material. Feed connecting cable through the hole.



6. Insert wire connector pins into the middle of the copper strands to ensure a good connection. Insert one pin into the upper copper strand and one pin into the lower copper strand.



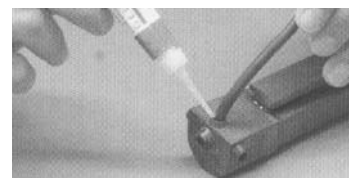
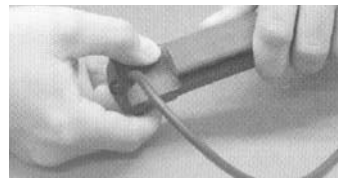
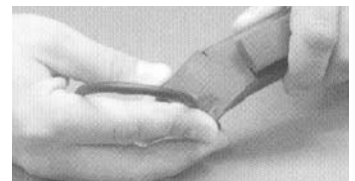
7. Insert resistor assembly into other end of edge. Insert wire connector pins into the middle of the copper strands to ensure a good connection. Insert one pin into the upper copper strand and one pin into the lower copper strand.



8. Carefully apply a thin, even layer of adhesive to the ridge inside the end cap. Do not get any adhesive on the sealing lip or on the cable. Attach end cap to the profile from the foot side. Line up the corners so the end cap is straight. Immediately press firmly on the cap for approx. 10 seconds.

9. Roll back the sealing lip on the end cap and apply a thin, even layer of adhesive to the surface. Unroll sealing lip and press firmly on the entire adhesive joint for approx. 10 seconds.

10. Carefully pull cable to one side and apply adhesive to bushing allowing the adhesive to run inside the sleeve around the cable. Apply a thin layer of adhesive to the edge of the cable bushing to seal.

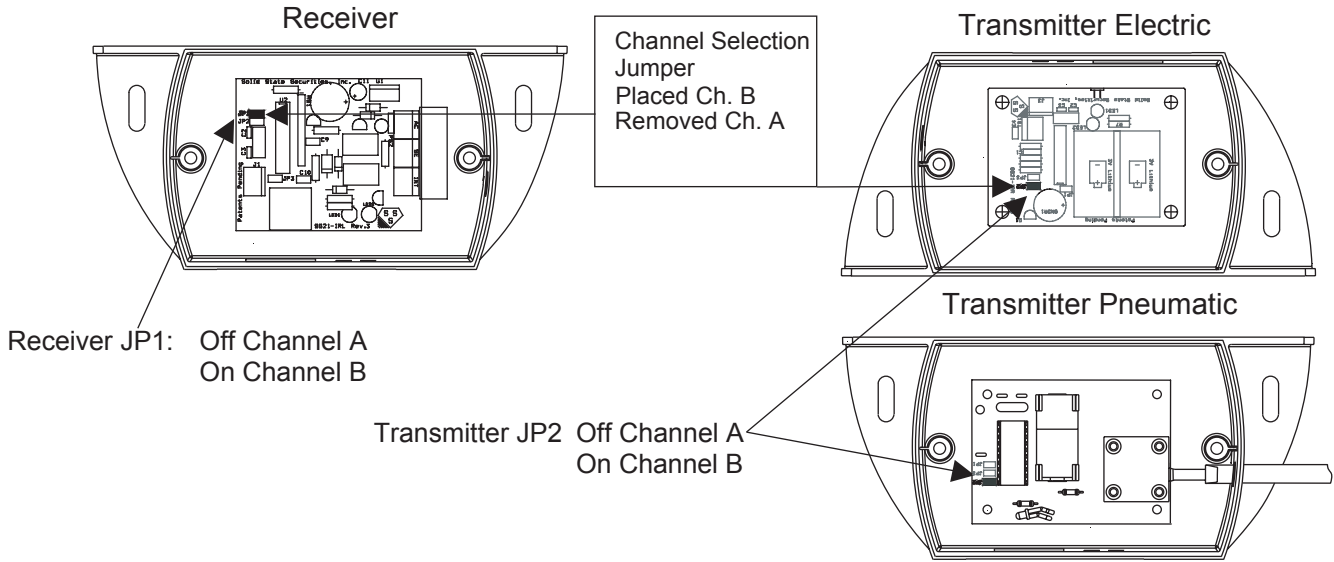


11. Slide edge into door astragal.

CHANNEL SELECTION

The supervised edge system is capable of communicating in either of two channels, A or B. Each unit is set to the default communication channel A from the factory. Under most conditions the factory setting will not have to be changed. When two systems are used in close proximity (less than 6 feet), one system should be set to channel B.

To select Channel B the rear covers of both units must be removed and the Jumpers marked in the following illustration must be placed over both pins. To select Channel A the jumper should be placed over one of the pins securing it for storage.



SPECIFICATIONS

Receiver Unit

Parameter	Rating			Unit
	Min.	Typ	Max	
Operating Voltage	18	24	28	V AC
	20	24	35	V DC
Current	5	20	50	mA
Relay Contacts	-	-	1.0 .5 .3	A for 30 VDC A for 125VAC A for 60 VDC
Temperature change	0	-	158	0 F
Humidity	10%	-	95%	Relative
Size	3.5" x 2.5" x 1.5"			Inches

Transmitter Unit

Parameter	Rating			Unit
	Min.	Typ	Max	
Operating Voltage	2.5	3	6	V DC
Current	.1	20	10000	Micro Amp
Safety Edge Resistance	7.5k	10k	15k	Ohms
Temperature Change	0	-	158	0 F
Humidity	10%	-	95%	Relative
Size	3.5" x 2.5" x 1.5"			Inches

TESTING

Important - Test system thoroughly before the door is put into normal operation. Stand clear of the door until it is fully tested. If any failure occurs during the test procedure, turn all power to the operator off and follow the suggestions in the Diagnostics section of this guide.

1. Turn power on to the operator.
2. The system should remain quiet and the green LED should flash briefly once a second.
3. Cover the protruding LED on the Transmitter Unit. The red LED on the Receiver Unit should come on and be accompanied by a 3-beep warning from the trouble sounder every 2 seconds. Uncover the LED.

4. Partially open the door. Squeeze the safety edge. The red LED on the Receiver Unit should come on and be accompanied by a 3-second continuous warning from the trouble sounder. Release the safety edge.

5. Begin closing the door. Being careful to stand clear of the door, squeeze the safety edge. The door should stop its downward motion and begin to open.

6. Allow door to open completely. The system should remain quiet and the green LED should flash briefly once a second. Both units should have an unimpeded path throughout the range of motion of the door. Strain relief should be used on both cables as well as additional cable ties as necessary.

DIAGNOSTICS

Diagnostics

The supervised edge system is designed to provide status information to the installer or maintenance personnel in order to assist in troubleshooting. There are three indicators in the receiver unit to observe: the green "heartbeat" LED, the red "fault" LED, and an integral trouble sounder.

Condition	Solution
<ul style="list-style-type: none"> ● Red LED on ● 3 beeps repeated every 2 seconds ● Green LED does not flash 	<ul style="list-style-type: none"> ● Transmission path failure. Make sure there is a direct line of sight between transmitter and receiver. Transmit LED or Receive lens may be dirty. <li style="text-align: center;">or ● The battery was not properly inserted into the transmitter unit. Open the transmitter unit and make sure the battery is inserted with the correct polarity.
<ul style="list-style-type: none"> ● Red LED on ● 3 beeps repeated every 2 seconds ● Green LED flashes about every second 	<ul style="list-style-type: none"> ● One unit is set to channel A while the other is set to channel B. Open one of the units and change the channel jumper as described in Channel Selection section.
(ELECTRIC EDGE ONLY) <ul style="list-style-type: none"> ● Red LED on ● 1 beep repeated every 2 seconds ● Green LED flashes about every second 	<ul style="list-style-type: none"> ● Safety edge open fault. Open the transmitter unit and make sure connections are tight. ● The safety edge is open or does not have a 8.2k Ohm resistor embedded. Use a multimeter to check the resistance on the edge, it should be between 7.5k Ohms and 15k Ohms.
<ul style="list-style-type: none"> ● Red LED on ● Sounder sounds for 3 seconds and remains quiet. ● Green LED flashes about every second 	<ul style="list-style-type: none"> ● The door/grill is closed on an uneven surface. This is a normal condition if continuously depressed. (ELECTRIC EDGE ONLY) <ul style="list-style-type: none"> ● Safety edge is shorted or partially shorted. Check the edge connections in transmitter, and then measure the safety edge resistance. Correct tolerance is 7.5k ohms to 15k Ohms. Replace edge if out of tolerance.
<ul style="list-style-type: none"> ● Red LED off ● Sounder sounds 2 beeps every ten seconds ● Green LED flashes about every second 	<ul style="list-style-type: none"> ● Low battery indication. Replace the battery in the transmitter unit with a Duracull DL123 3V Lithium battery or equivalent.

FUNCTIONS:

The adaptor plate creates stationary bolts on the hood mounting bracket, which in return helps in the mounting of the operator without having to feed bolts through the bracket while holding up the operator.

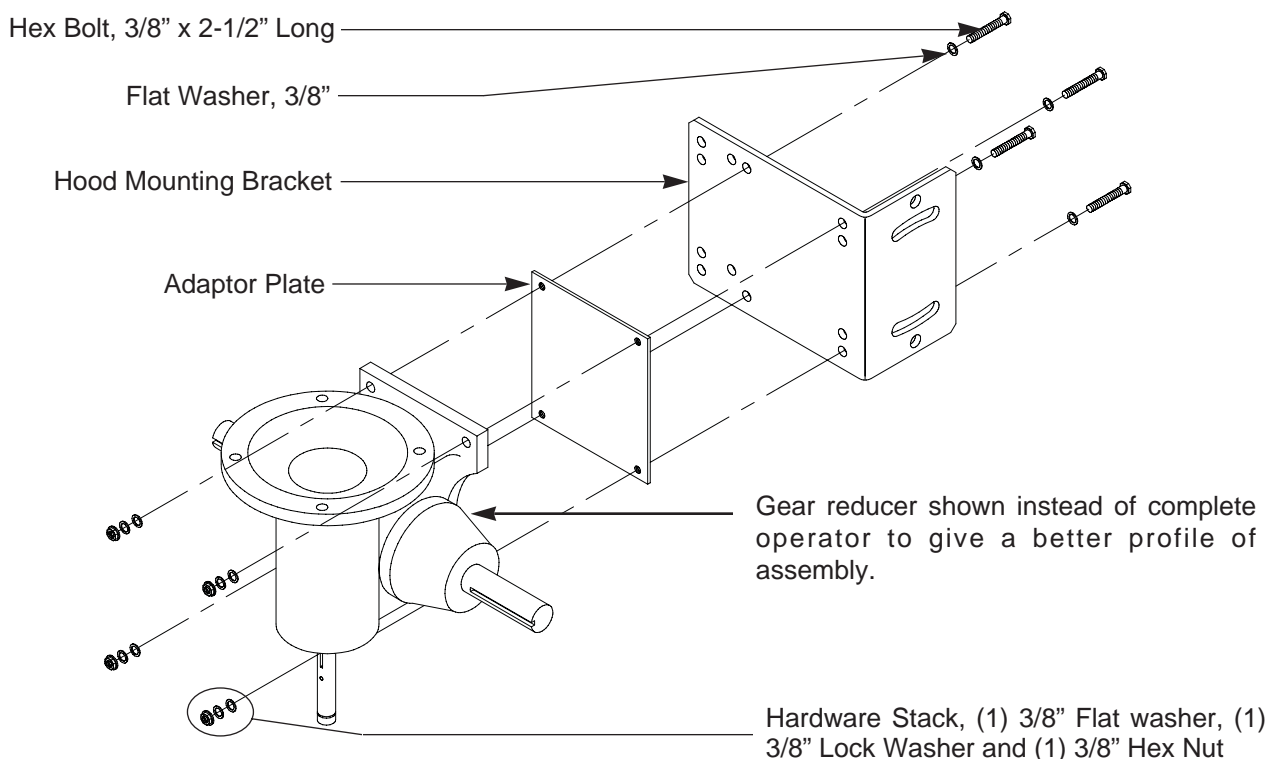
INSTALLATION INSTRUCTIONS

NOTE: ADAPTOR PLATE CAN BE USED IN CONJUNCTION WITH HOOD BRACKET 08-9098 AND 14A4324.

1. Align the (4) holes on the adaptor plate to the desired (4) holes on the hood mounting bracket.
2. Secure the hood mounting bracket to the adaptor plate with (4) 3/8" flat washers and (4) 3/8" x 2-1/2" hex bolts supplied. Be sure to send the bolts through the bracket first.
3. Install the operator on the four bolts just installed in step 2 and secure in place with (4) 3/8" flat washers, (4) 3/8" lock washers and (4) 3/8" hex nuts supplied.

For additional Help with any of the following steps refer to assembly drawing below.

ADAPTOR PLATE ASSEMBLY



INSTALLATION INSTRUCTIONS

REMOVE OLD DOOR ARM:

1. Remove the (2) 3/8" hex bolts and flange nuts securing door arm and curved arm, set off to side for reinstallation.
2. Disconnect door arm from trolley slider and discard old door arm.

INSTALL NEW DOOR ARM:

1. Connect new door arm to trolley slider.
2. Secure new door arm to curved arm with hardware removed above.

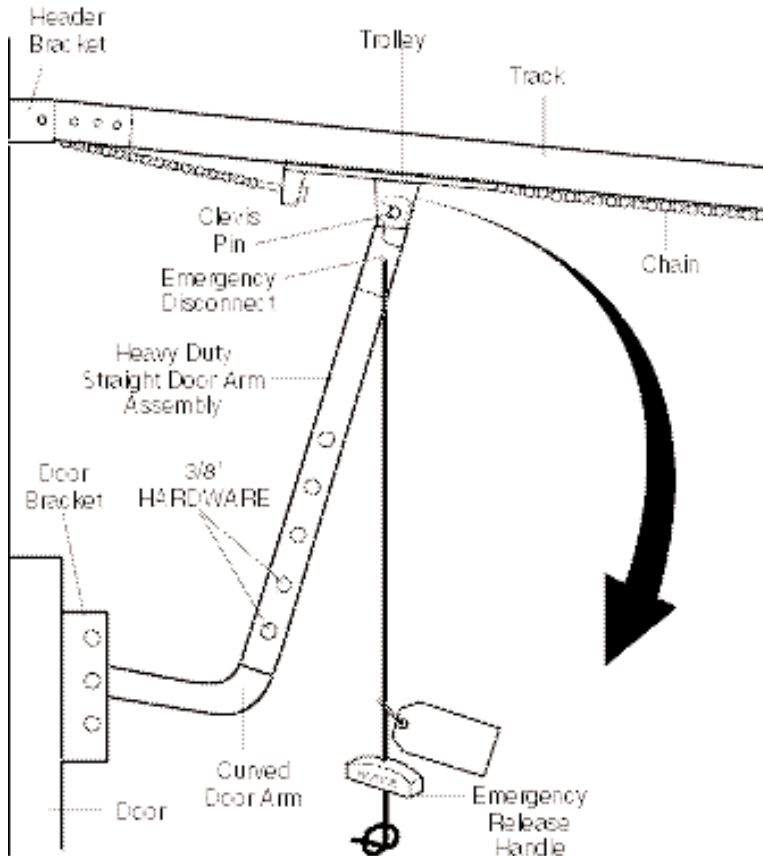
NOTE: For additional help refer to illustration below.

WARNING

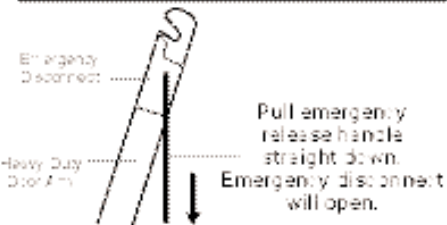
TO AVOID SERIOUS PERSONAL INJURY OR DEATH, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING DOOR ARM.

WARNING

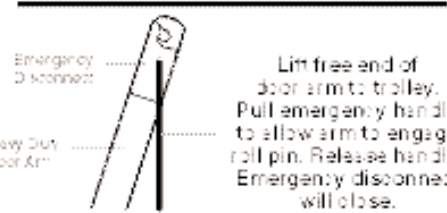
DOOR ARM IS RELEASED FROM TROLLEY WHEN EMERGENCY DISCONNECT OPENS. TO AVOID BEING STRUCK BY DOOR ARM, DO NOT STAND UNDER THE ROPE OR DOOR ARM WHEN PULLING THE EMERGENCY RELEASE.



TO DISCONNECT DOOR FROM OPENER



TO RECONNECT DOOR ARM TO TROLLEY



APPLICATION REQUIREMENTS:

These instructions are applicable for H, J and HJ operators.

INSTALLATION INSTRUCTIONS

Installation of Chain Tensioner Kit:

1. Safely secure the door per the door manufacturer's maintenance instructions, disconnect the drive chain running from the operator drive sprocket to the door sprocket.

2. Unscrew set screws from sprocket on output shaft and slide off sprocket.

3. Slide on the shaft collar then chain tensioner to output shaft.

4. Attach the other end of chain tensioner to door shaft and slide shaft collar on door shaft to hold tensioner in place.

5. Put the sprocket back on output shaft and tighten.

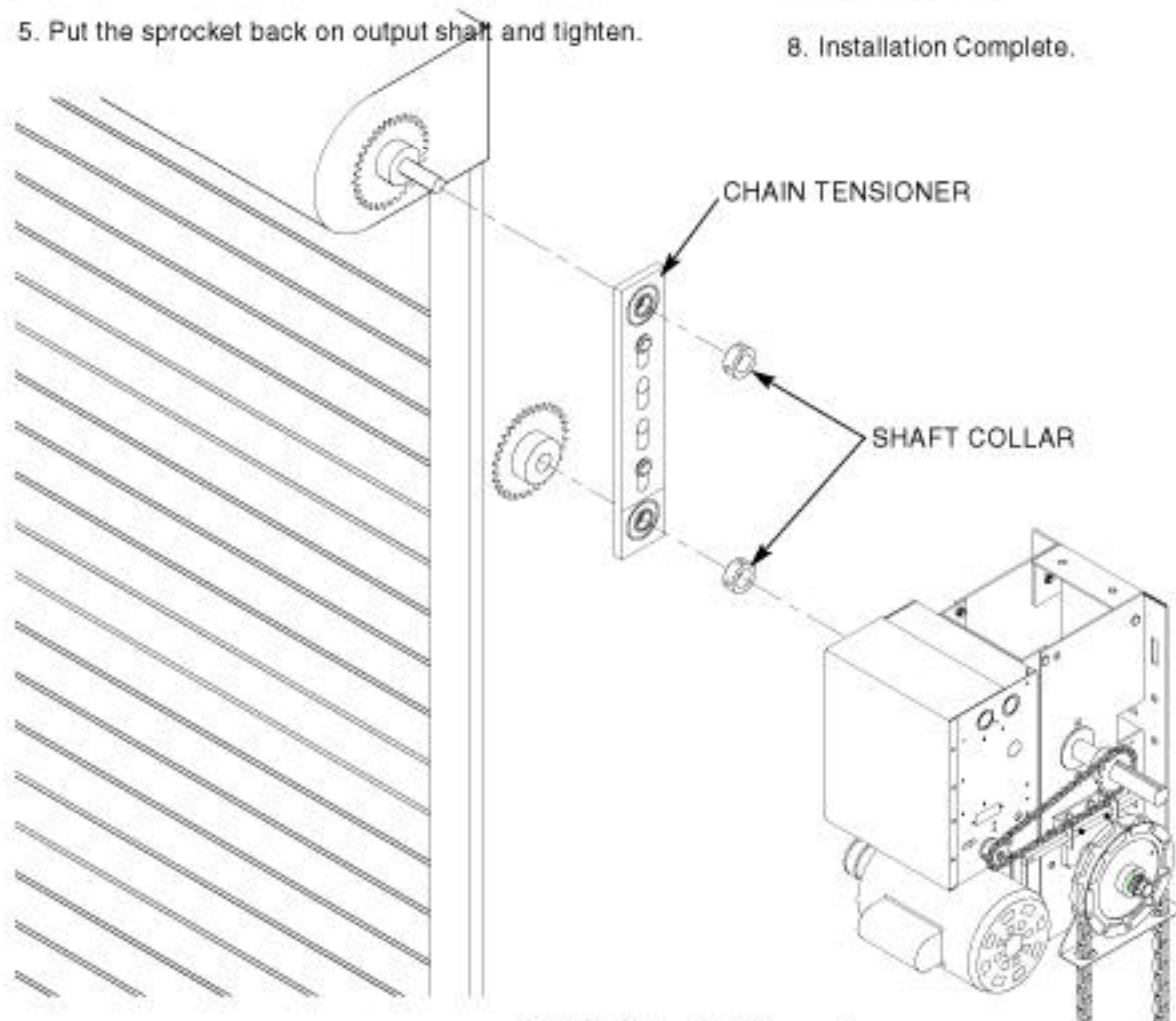
 **WARNING**

TO AVOID SERIOUS PERSONAL INJURY OR DEATH FROM ELECTROCUTION, DISCONNECT ELECTRIC POWER TO OPERATOR BEFORE INSTALLING.

6. Connect chain back around the sprocket you removed it from.

7. Once the chain tensioner is in place, tighten the adjustment screws located on the chain tensioner. This will lock the tensioner in place and maintain desired chain tension between the operator drive sprocket and the door sprocket.

8. Installation Complete.



1A3982 - Cover for wall mounted operators 31" L x 19" W x 18" D, assembly required. Will cover Lift-Master Models MH, H and GH operators.

Custom Control Panels - A variety of control panels can be designed and manufactured by Lift-Master to meet your needs. Master controls for 2 or more doors or gates, indicating lights, keyed lockout switches, and master emergency operating buttons, among others, can be included. Consult your sales representative for a quote on your specific requirements.