



INSTALLATION INSTRUCTIONS
AND
OPERATION MANUAL

STK-1511EP / STK-3311EP / STK-5011EP

STK-EP Series

UL325-2010 Compliant

Commercial and Industrial Door Operator

Logic Control

Duty Cycle – 10 Cycles per Hour

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IMPORTANT INSTALLATION INSTRUCTIONS

WARNING – To reduce the risk of death or serious injury to persons:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Install only on a properly operating and balanced door. A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs to cables, spring assemblies, and other hardware before installing the operator.
3. Remove all pull ropes and remove, or make inoperative, all locks (unless mechanically and/or electrically interlocked to the power unit) that are connected to the door before installing the operator.
4. Install the door operator at least 8 feet or more above the floor if the operator has exposed moving parts. If the operator must be mounted less 8 ft (2.44 m) above the floor, then exposed moving parts must be protected by covers or guarding. Contact the manufacturer.
5. Do not connect the door operator to the source of power until instructed to do so.
6. Locate the control station: (a) within sight of the door, and (b) at a minimum height of 5 feet above floors, landings, steps, or any other adjacent walking surface and (c) away from all moving parts of the door.
7. Install the Entrapment Warning Placard next to the control station in a prominent location.
8. Make sure the available power supply to be connected to the operator is of the same voltage, frequency, phase and wattage as indicated on the nameplate of the operator.
9. Read and understand the wiring diagram of the operator and the control station (open-close-stop push button), and any other equipment to be connected to the operator.
10. To avoid damage to the door and operator, make all door locks inoperative. Secure locks in the unlocked position, or install external electrical interlocks to prevent operation with the locks engaged.
11. Always disconnect power whenever installing or servicing the door operator or door.
12. All wiring must be permanent and comply with National Electrical Code (NEC) and local code requirements.
13. Any change in mounting position may result in a change of operator rotation and consequently in a change of control functions. Consult factory for any changes.
14. If the operator is provided with an auxiliary chain operator, the hand chain must be kept inside the chain bag when operating electrically.
15. For products having a manual release, instruct the end user on the operation of the manual release.

SPECIFICATIONS

| MOTOR | | | | | |
|--|--|------------|------------|------------|------------|
| Duty Cycle: | Restricted cycle duty (10 cycles per hour) | | | | |
| Rating: | STK-1511: 50 ft.lb/sec per motor STK-3311: 100 ft.lb/sec per motor STK-5011: 150 ft.lb/sec per motor | | | | |
| Speed: | 1560 RPM | | | | |
| Voltage: | 115V, 1 phase | | | | |
| Current: | See motor nameplate | | | | |
| ELECTRICAL | | | | | |
| Transformer: | 24VAC | | | | |
| Wiring Type: | Momentary pressure open, stop, constant pressure close (provided standard), with provision for momentary pressure close* | | | | |
| Limit Adjustment: | Electronic limit switch type, limits setting through the 3-button station. | | | | |
| MECHANICAL | | | | | |
| <u>STK-1511 & STK-3311:</u> | STK5-1511 | STK24-1511 | STK24-3311 | | |
| Drive Reduction: | 56:1 | 124:1 | 124:1 | | |
| Output Shaft Speed: | 28 RPM | 13 RPM | 13 RPM | | |
| <u>STK-5011:</u> | STK6-5011 | STK8-5011 | STK13-5011 | STK44-5011 | STK67-5011 |
| Drive Reduction: | 60:1 | 88:1 | 113:1 | 144:1 | 167:1 |
| Output Shaft Speed: | 26 RPM | 18 RPM | 14 RPM | 11 RPM | 9 RPM |
| Door Speed: | 6 - 8" per sec. average (typical) | | | | |
| Brake: | Solenoid actuated brake | | | | |
| Auxiliary Hand Crank: | Standard | | | | |
| ENTRAPMENT PROTECTION | | | | | |
| Sensing Edge*: | (Optional) Sensing device attached to the bottom edge of the door. | | | | |
| Non-Contact Device*: | (Optional) Photo eye device. | | | | |
| * Per the requirements of UL Standard 325, the door operator is setup for constant pressure to close the door. As an alternative, the door may be provided with a monitored entrapment protection device that will reverse the door upon contact with or detection of an obstruction during closing. Adding an entrapment device would enable momentary close operation. | | | | | |

***Note:**

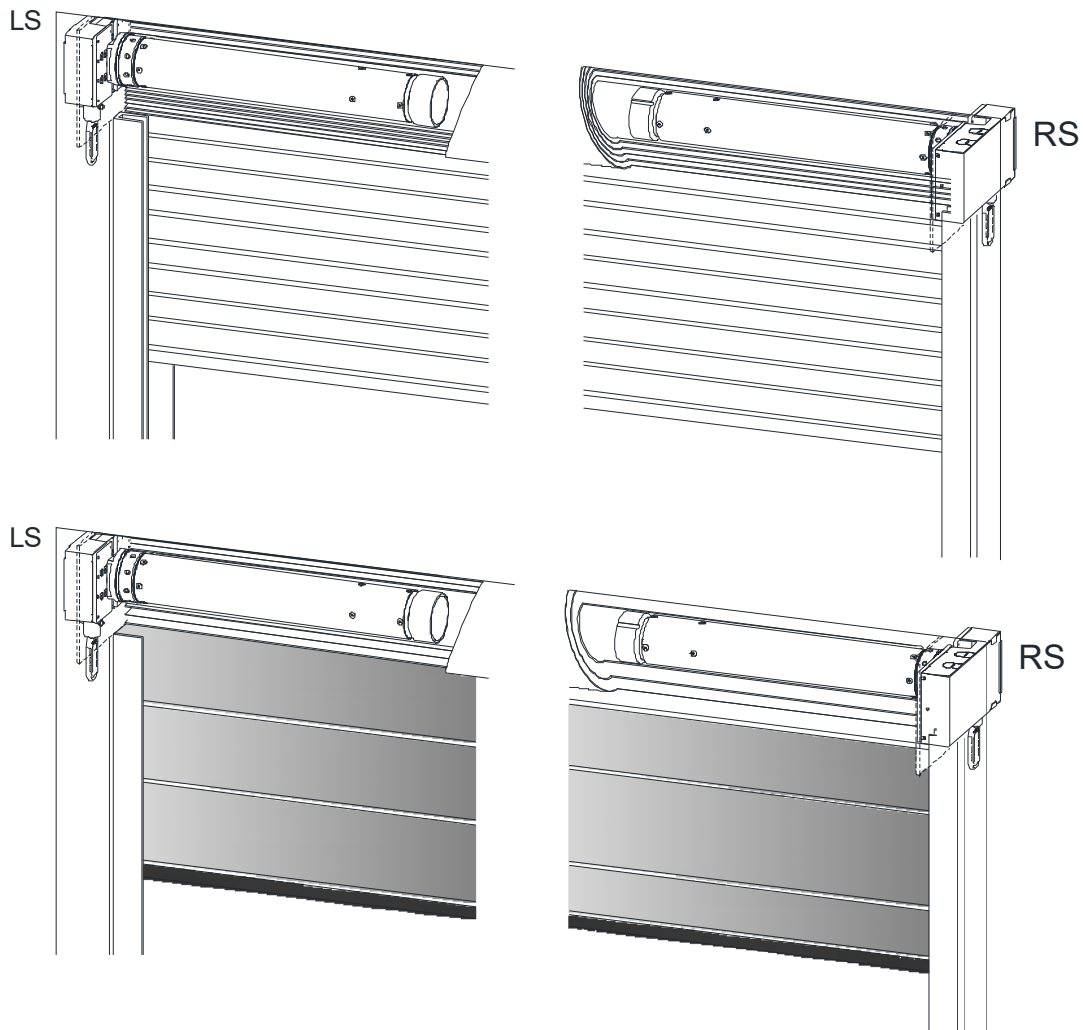
1. Non-contact device (photo eye) can be used on doors up to 45 ft. wide (or maximum rated range of device if less than 45 ft.). Use a sensing edge to provide entrapment protection on doors over 45 ft. wide.
2. Sensing edge can be used on all doors.

TYPES AND SIZES OF DOORS

Consult factory for details.

INSTALLATION INSTRUCTIONS

OPERATOR MOUNTING POSITIONS

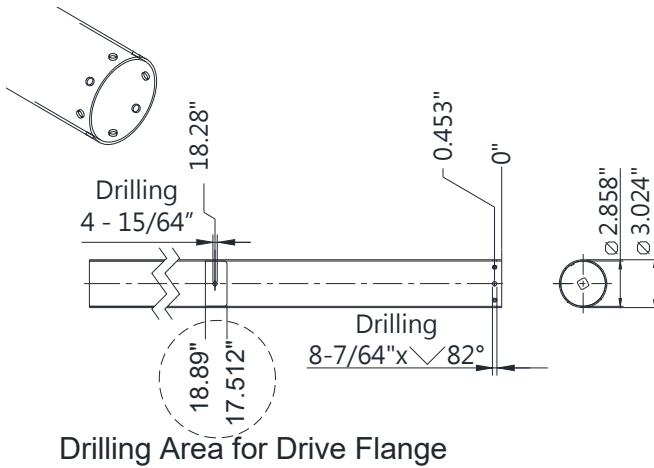


NOTE: Any change in mounting position may result in a change of operator rotation and consequently in a change of control functions. Consult factory for any changes. (LS mounting position is LH operator, RS position is RH operator)

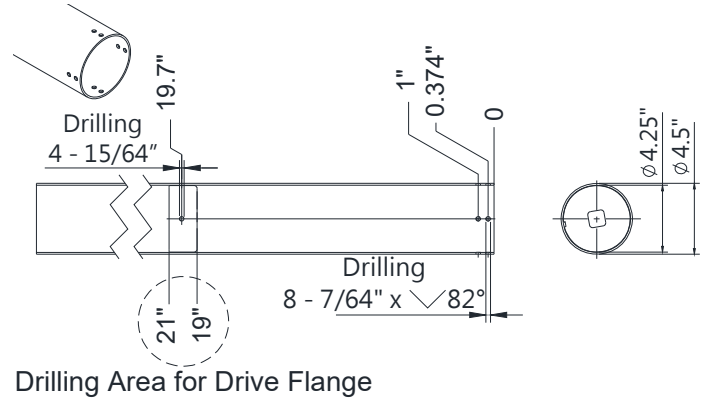
OPERATOR MOUNTING

1. MOTOR MOUNTING TO DOOR PIPE

1.1 Door pipe and mounting holes preparation. (Pipe is not provided with the operator.)

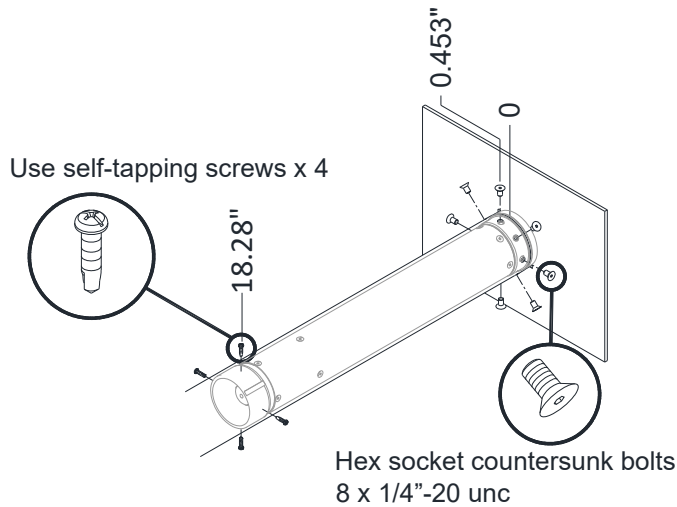


(Figure 1 for STK-1511, STK-3311)

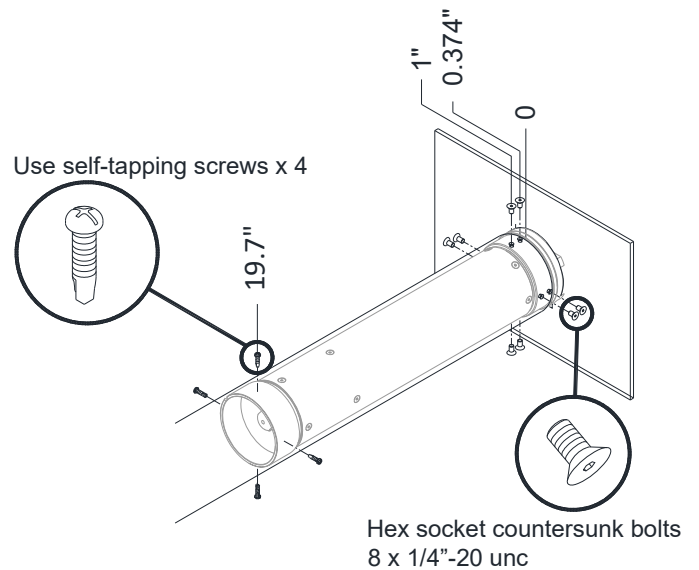


(Figure 2 for STK-5011)

1.2 Pipe end mounting and drive flange mounting illustrations.



(Figure 3 for STK-1511, STK-3311)



(Figure 4 for STK-5011)

2. MOTOR MOUNTING TO BRACKET

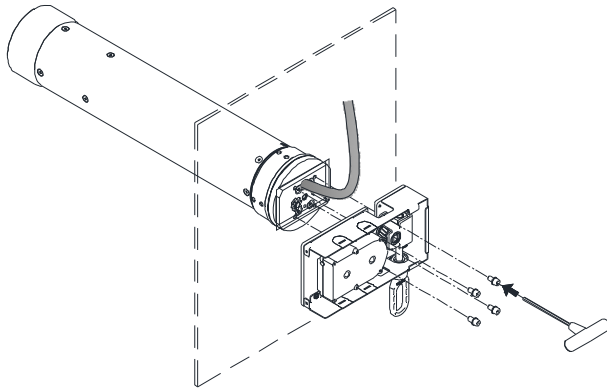
2.1 Dismantle the limit switch mechanism before mounting on the bracket if required.

2.2 Make sure the layout of the mounting holes on the bracket is correct.

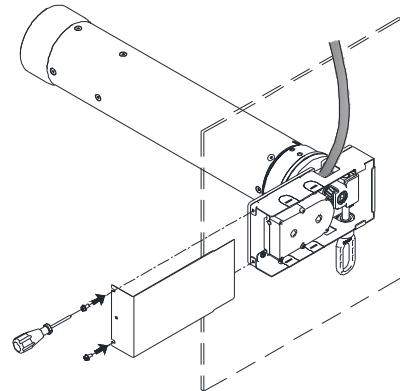
2.3 Mount the operator to the mounting plate.

2.4 Mounting the limit switch mechanism on operator by fastening screws x 4.

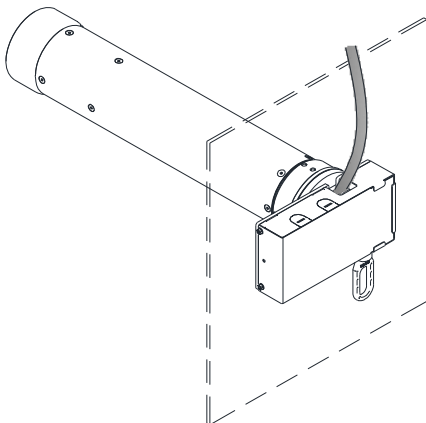
Step 1



Step 2



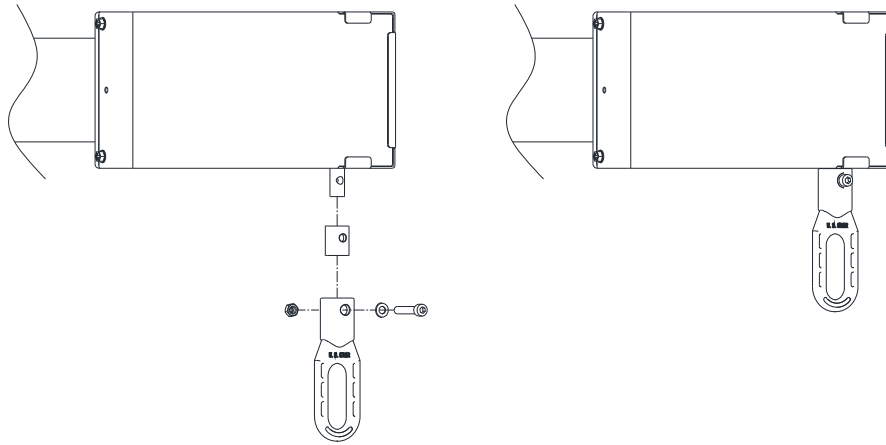
Step 3 (Complete)



**Illustration only, consult door
manufacturer for install details.**

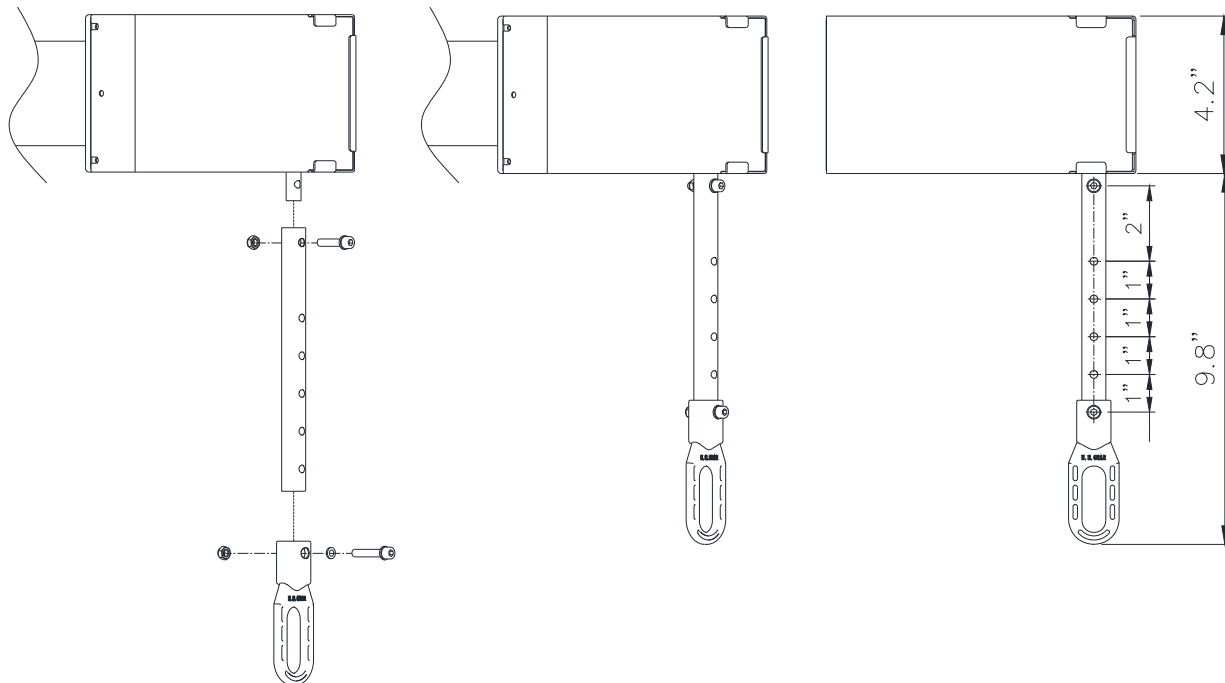
HAND CRANK INSTALLATION

1. BOLT THE HAND CRANK TO THE CRANKSHAFT



2. EXTENSION SHAFT FOR CRANK OPERATION

Four (4) holes on the 6" extension shaft with 1" distance apart. When the site requires to cut short, the holes are prepared for the crank eye mounting.



WIRING INSTRUCTIONS

WARNING

Disconnect power at the fuse box before proceeding with any wiring.

1. Do not install any wiring or attempt to run this operator without checking the wiring diagram located on the inside of the control box cover.
2. Do not turn on power until you have finished making all power and control wiring connections.
3. Do not run power and control wiring in the same conduit.
4. Any wire connected to the control panel must be protected by conduit or other means to ensure the safety and permanency of the wiring.
5. Use copper wire inside the control panel.
6. A separate circuit of adequate capacity is needed for the operator.
7. The operator must be properly grounded. The ground screw, painted green, is located inside the control panel.
8. For an operator, system, or external device requiring field installed wiring between a Class 2 output of an operator and an external device, the type of wiring shall be R/C (AVLV2/8), AWM, min. 22 AWG, rated 60°C, with VW-1/FT2.

WARNING

- **Failure to properly ground the operator could result in electric shock and serious injury or death.**
- **To avoid damage to door and operator, make all door locks inoperative. Secure lock(s) in the unlocked position, or install electrical interlocks to prevent operation with the lock engaged.**

CONTROL WIRING

⚠ WARNING

Disconnect power at the fuse box before proceeding with any wiring.

1. Locate the control station where the user can clearly see the operation of the door. Mount the enclosed placard adjacent or near the door.



⚠ WARNING

Controls shall be located far enough away from the door, or positioned such that the user is prevented from coming in contact with the door, while operating the controls.

2. Do not run control wiring in the same conduit as power wiring.
3. Any wire connected to the control panel must be protected by conduit or other means to ensure the safety and permanency of the wiring.

⚠ WARNING

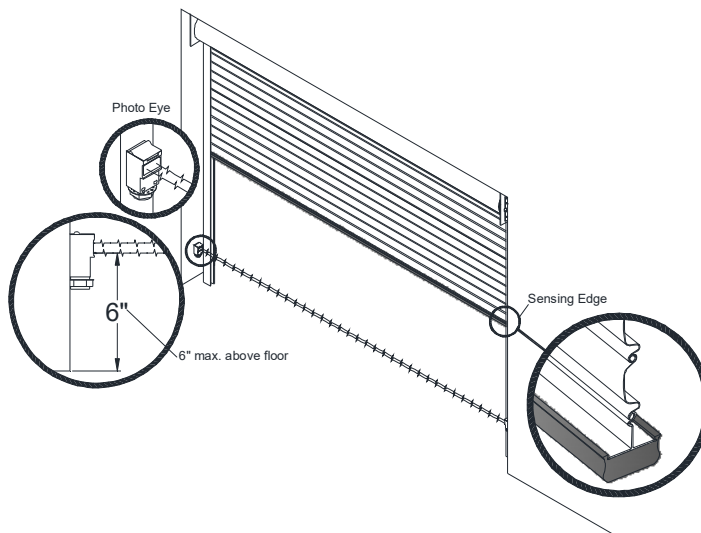
- Do not use radio controls with your operator unless some type of entrapment protection device has been installed. Failure to do so may result in serious injury or death to person(s) trapped beneath the door.
- Changing from left hand to right hand or vice versa could result in change of control wiring. Consult factory for details.

ENTRAPMENT DEVICES WIRING

⚠ WARNING

If the door is not visible from the control station, or if any device other than the control station is used to activate the door, an entrapment protection device must be installed on the door. Failure to install an entrapment protection device may result in serious injury or death to person(s) trapped beneath the door.

1. Complete limit switch adjustments before making any sensing edge/non-contact device wiring connections to the operator.



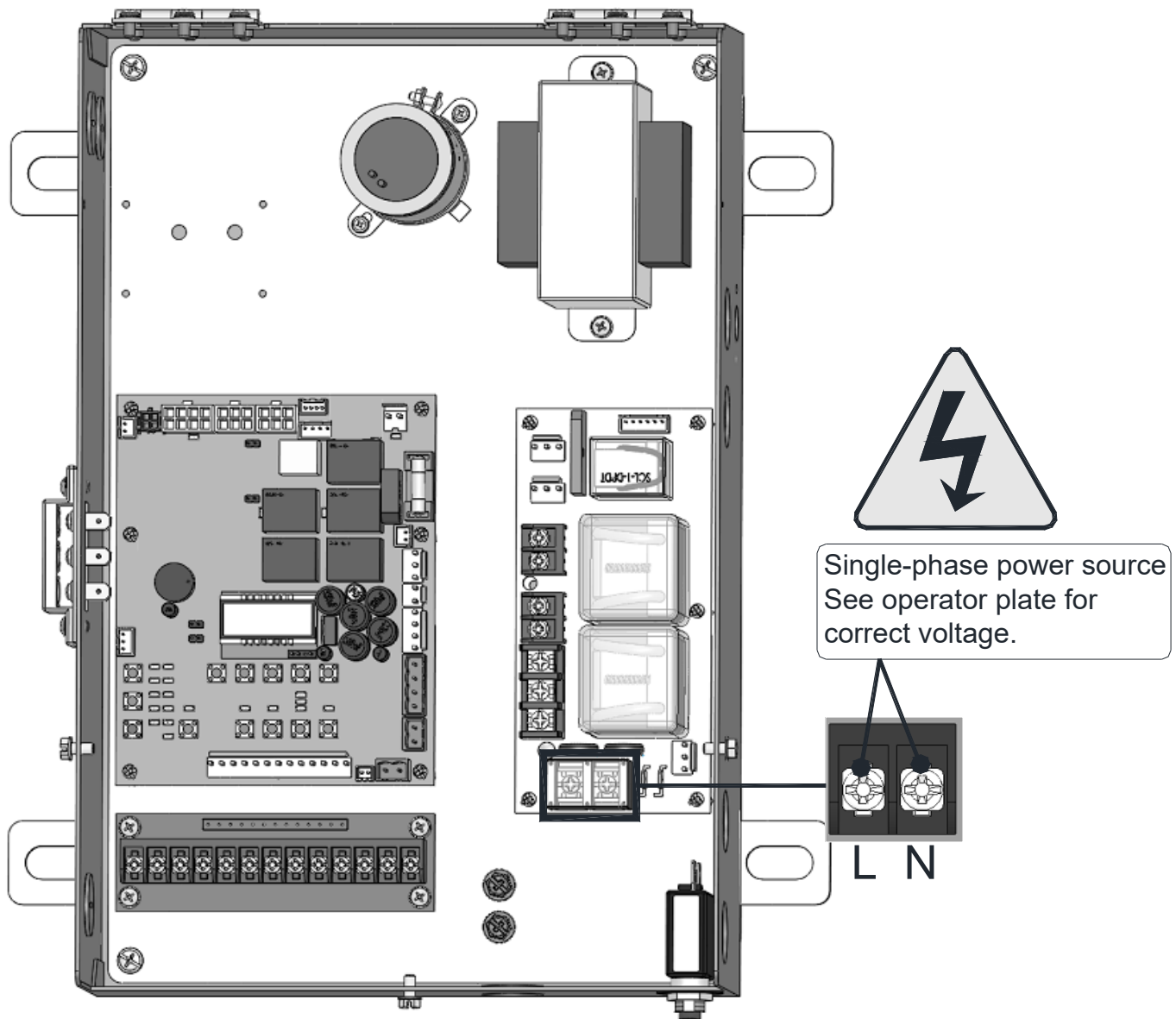
Entrapment Device Options:

| Sensing Module | Device Manufacturer | Model |
|---|---|---|
| ELR 2-wire resistive sensing edge | Miller Edge Inc. * End of Line resistor type edge must have model number with Suffix T2. | ME110*, ME111*, ME120*, ME123*, ME112*, ME113*, ME116*, ME117* |
| | | MT21*, MU21*, MT22*, MU22*, MC22*, MU33*, MC271*, CPT223* |
| | | MEL-TXYY, MEL-RXYY |
| | ASO | RB-G-K10 |
| IR Monitored photo eye | FRABA Inc. | GE225, GE125, GE245, GE F45, GE F50, GE F56, GE F65, GE F85, GE F115 |
| | | Optical Edge Sensors and Photo Eyes, Models OPTOEDGE, OPTOEYE, OSE, OPE, OSE-P, OSE-R, OSE-T, RAY-N |
| | Martec Access Products Inc. | Reflective Photo Eye, Models Ray/RT -1004, -2004 |
| | Miller Edge Inc. | 1266 |
| | | IG2, MIRM |
| | | RB-D-K10 |

Note: Please refer to sensing device manufacturer for specific installation and maintenance requirements.

2. After installation, be sure that the operator, controls, and sensing edge or other entrapment protection devices have been tested and function properly.

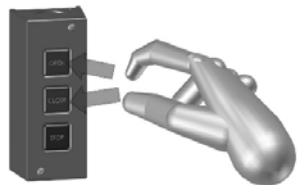
INPUT POWER CONNECTIONS



DOOR LIMIT POSITIONS SETTING

NOTE: The motor is operable in constant pressure open/close mode with audible warning prior to the limits set.

1. Set Up Mode

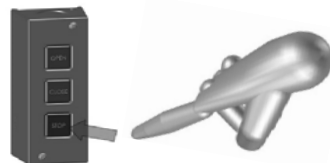


Enter the Set Up Mode

- 1-1 Press & hold both "Open" & "Close" buttons for 5 secs.
- 1-2 A beeping sound means entering the setup mode.

★Note:

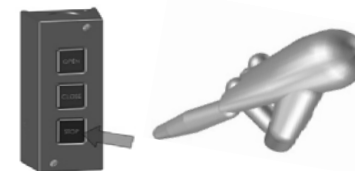
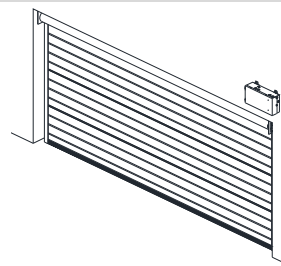
When a warning sound (B.B.B.B.B) be heard after entering the set up mode, **MUST** move the door through OPEN /CLOSE button to clear this warning sound.



Active the Set Up Mode

- 1-3 Press "Stop" button for 5 secs as a confirmation and a beeping sound shall be heard.

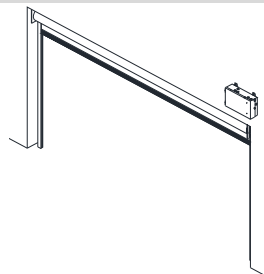
2. Close Limit Position Setting



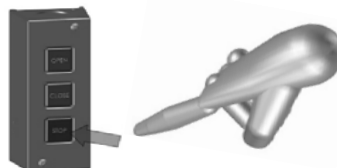
- 2-1 Pressing either "Open" or "Close" button to bring door to close limit position.

- 2-2 Press "Stop" button for 5 secs as a confirmation and a beeping sound shall be heard.
- 2-3 Close limit position is saved.

3. Open Limit Position Setting



- 3-1 Pressing either "Open" or "Close" button to bring door to open limit position.



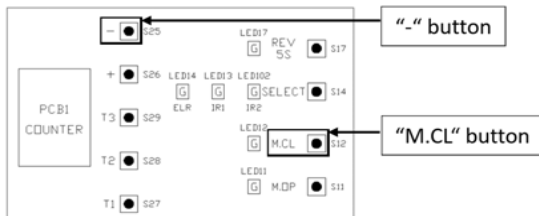
- 3-2 Press "Stop" button for 5 secs as a confirmation and a beeping sound shall be heard.
- 3-3 Open limit position is saved.

4. Confirmed Open/Close Limit Position



- 4-1 After the limit positions been set, system will change itself to have "Open" button to open door, and vice versa to "Close" button.
- 4-2 Run the door to open & close limit positions 2 times to have better self-turning performance.

5. Limit Positions Reset to Factory Default



- 5-1 Disconnect **ALL** powers (both AC and Battery).
- 5-2 Press & hold both "-" & "M.CL" buttons and then power ON the operator. After system booting up completed, the limit positions will be reset to factory default automatically.

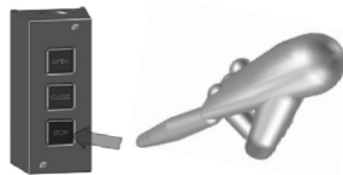
★Note: Constant pressure during limit setting mode. Short pressing Stop button will end the setting.

★Note: When open & close limits setting are not completed and the sensing edge is continuously engaged, the door travels max. 3 seconds in both open and close directions.

FINE TUNING THE OPEN & CLOSE LIMITS POSITIONS AFTER SETTINGS

(The fine tuning range should be within 50% of the door height)

1. Enter Open Limit Position Fine Tuning Set Up Mode



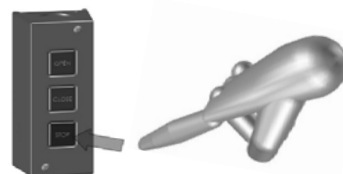
Enter the Fine Tuning Set Up Mode

- 1-1 After door reaching the Open Limit position, press “Open” button for 5 secs.
- 1-2 A beeping sound means entering the fine tuning set up mode.

Active the Fine Tuning Set Up Mode

- 1-3 Press “Stop” button for 5 secs as a confirmation and a beeping sound shall be heard.

3. Enter Close Limit Position Fine Tuning Set Up Mode



Enter the Fine Tuning Set Up Mode

- 3-1 After door reaching the Close Limit position, press “Close” button for 5 secs.
- 3-2 A beeping sound means entering the fine tuning set up mode.

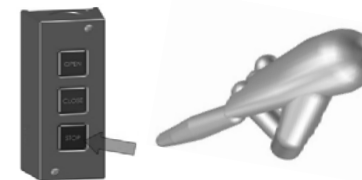
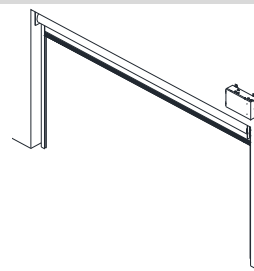
Active the Fine Tuning Set Up Mode

- 3-3 Press “Stop” button for 5 secs as a confirmation and a beeping sound shall be heard.

Remarks:

- ★ Press Stop button once in any step to end the setting.
- ★ Setting will be ended after three minutes of inactivity.

2. Open Limit Position Fine Tuning Setting



- 2-1 Pressing either “Open” or “Close” button for fine tuning the Open Limit position.

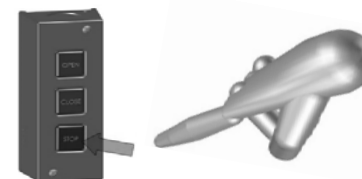
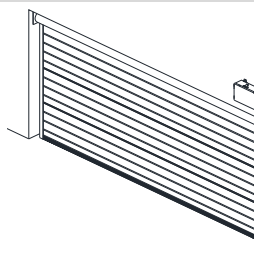
- 2-2 Bi Bi----Bi Bi----Bi Bi----Bi Bi continuous sound means in the fine tuning set up mode.

★**Note: Constant pressure during limit setting mode. Short pressing Stop button will end the setting.**

- 2-4 Press “Stop” button for 5 secs as a confirmation and a beeping sound shall be heard.

- 2-5 Open Limit position fine tuning is saved.

4. Close Limit Position Fine Tuning Setting



- 4-1 Pressing either “Open” or “Close” button for fine tuning the Close Limit position.

- 4-2 Bi Bi----Bi Bi----Bi Bi----Bi Bi continuous sound means in the fine tuning set up mode.

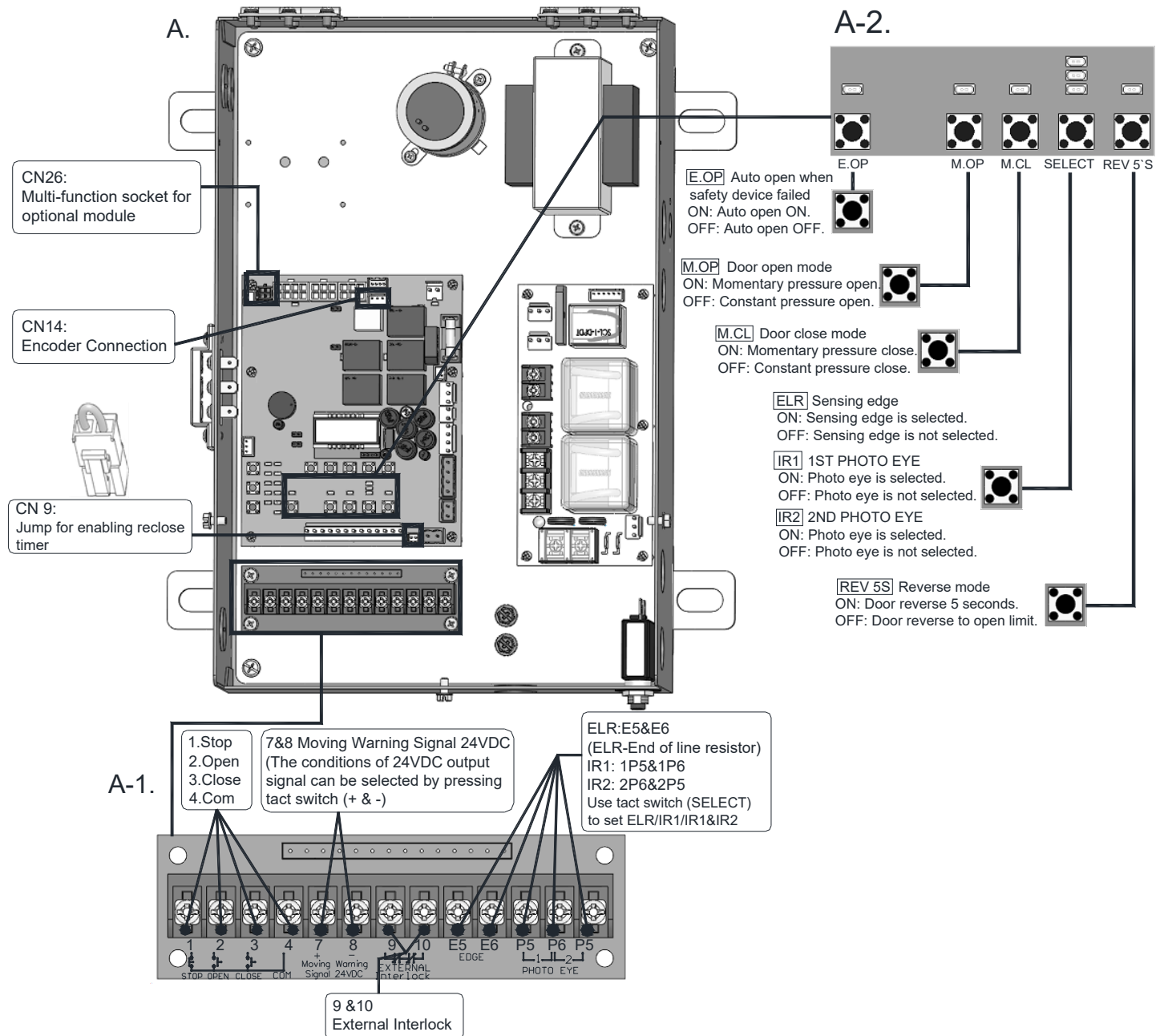
★**Note: Constant pressure during limit setting mode. Short pressing Stop button will end the setting.**

- 4-3 Press “Stop” button for 5 secs as a confirmation and a beeping sound shall be heard.

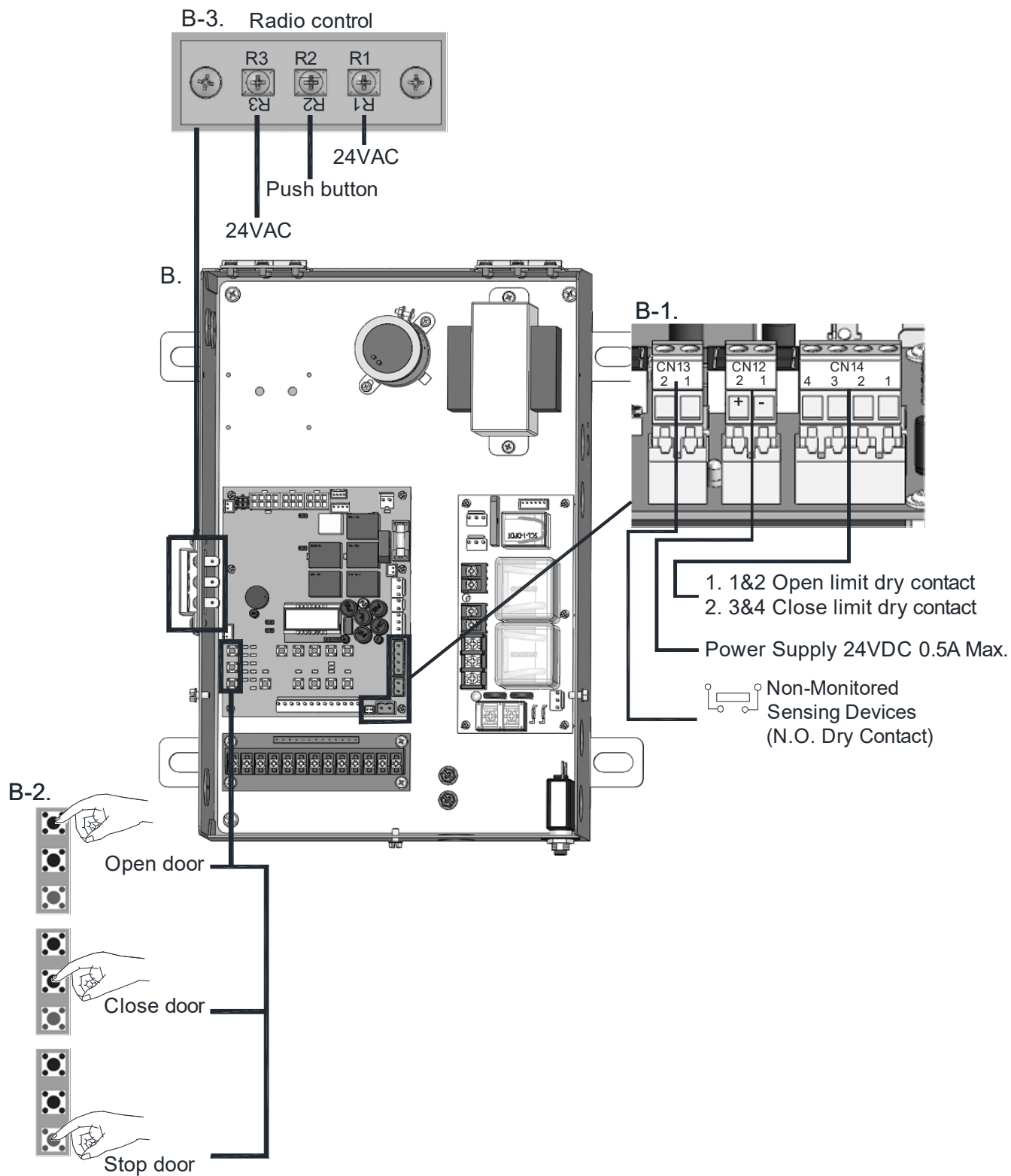
- 4-4 Close Limit position fine tuning is saved.

CONTROL SETTINGS

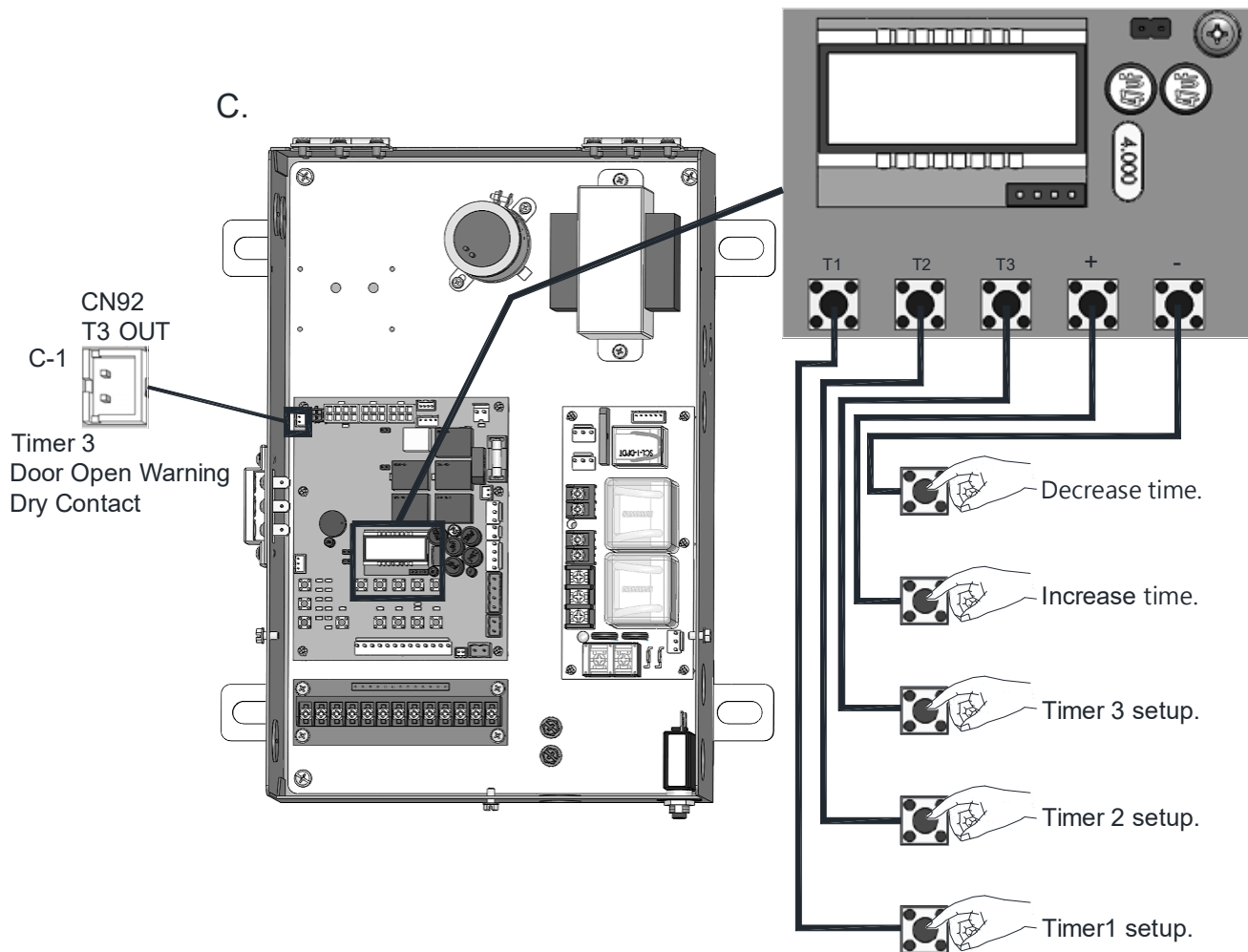
CONTROL FUNCTION



AUXILIARY FUNCTION







TIMER INSTRUCTION

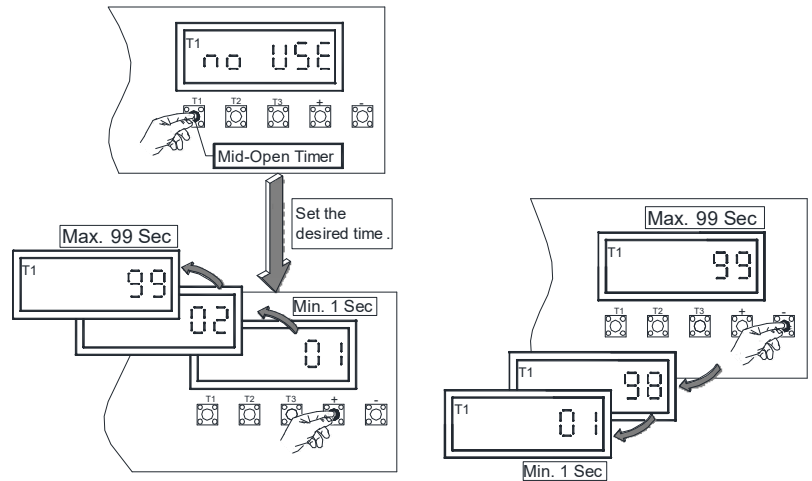


1. T1 – Mid-open timer: Timer starts counting when door leaves close limit. Door stops after opening for set time. Pressing open again at mid-open position will cause door to open to open limit.
- T2 – Timer to close : Timer is active when door stops and is not at close limit.
- T3 – Door Open Warning Timer : Timer is active when door leaves close limit.
When time is up, contact will close. See figure C-1.





2. Standard Mode: Cycle counter

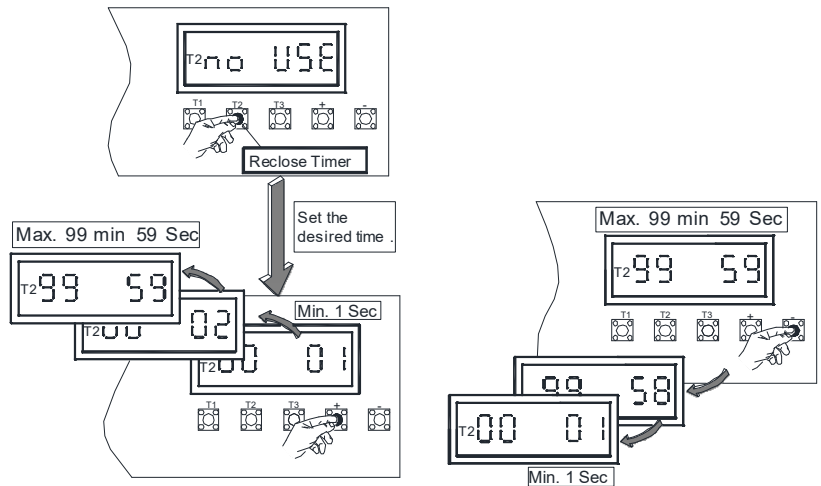
3. To Set T1 (Mid-open Timer)

- Press  and hold for 5 seconds. Display will flash.
- Use  and  to increase or to decrease time.
- Press  to save setting. Without pressing, no adjustment is saved.







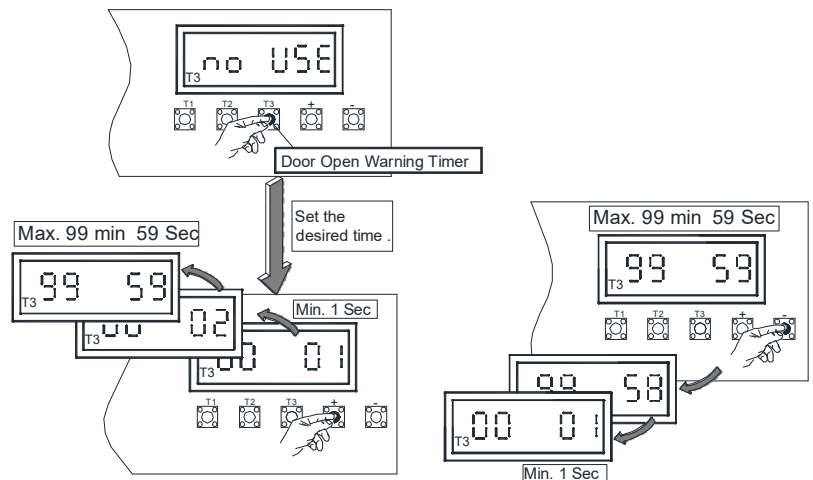
4. To Set Timer 2 (Timer to close)

- Press  and hold for 5 seconds. Display will flash.
- Use  and  to increase or to decrease time.
- Press  to save setting. Without pressing, no adjustment is saved.





5. To Set Timer 3 (Buzzer Timer)

- Press  and hold for 5 seconds. Display will flash.
- Use  and  to increase or to decrease time.
- Press  to save setting. Without pressing, no adjustment is saved.



WARNING OUTPUT SIGNAL SELECTION

The conditions of 24VDC output signal at terminal CN2 (7, 8) can be selected by pressing

 and , and hold for 5 seconds.

- **- OPCL -** (Default setting)

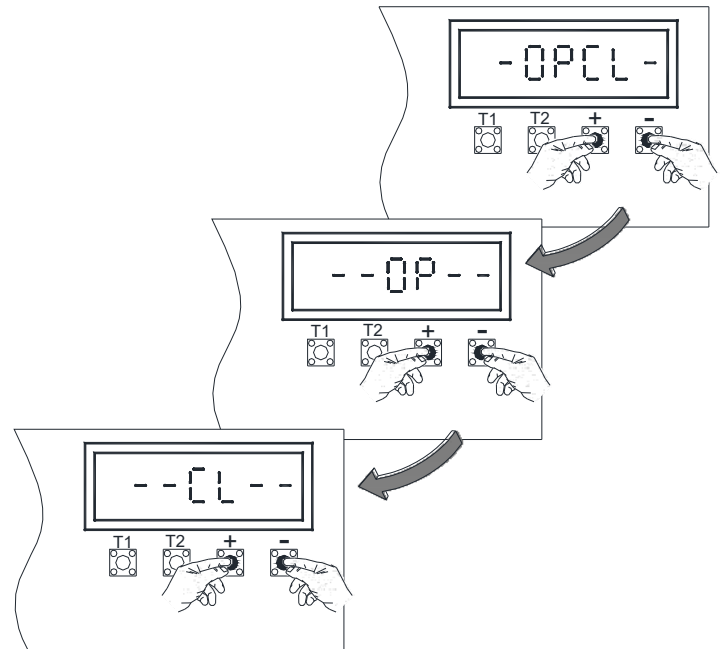
Moving (opening, closing) warning output signal

- **-- OP --**

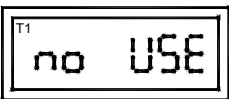
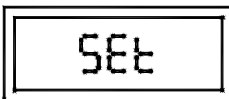
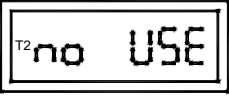






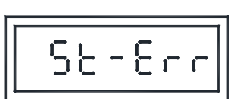

Opening warning output signal

- **-- CL --**

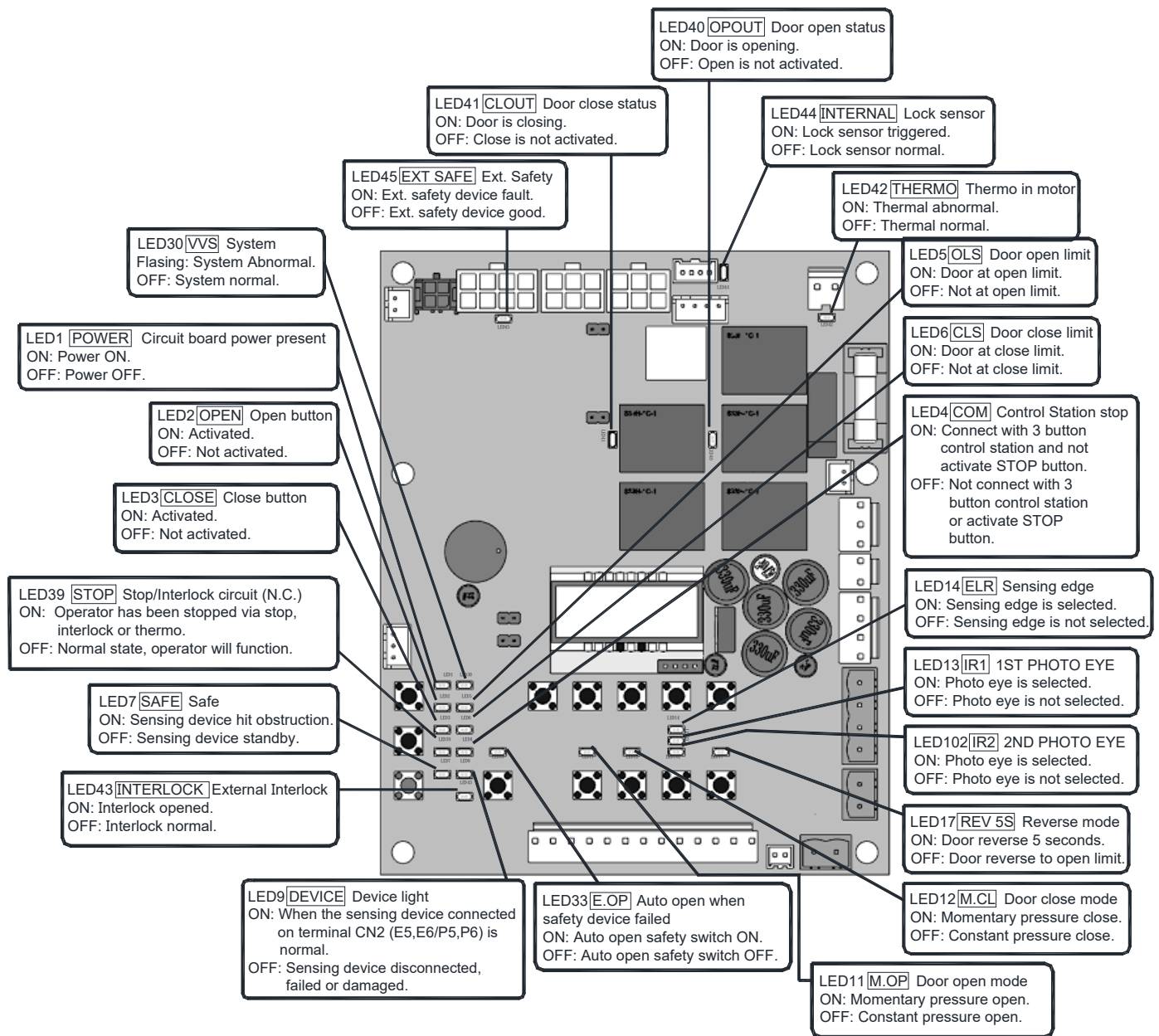
Closing warning output signal



LCD DISPLAY INSTRUCTION

| Display | Status | Display | Status |
|---|--|--|---|
|  | T1 setting |  | T1 or T2 or T3 setting completed |
|  | T2 setting |  | Door closing |
|  | T3 setting |  | Door opening |
|  | Limit switches don't response or respond both limits reached in standby or running period. |  | No community at CN3 thermal circuit. |
|  | Motor running in the reverse direction. |  | No community at CN2 (1,4) circuit or stop button depressed on main board. |
|  | Motor doesn't run during opening or closing. | | |

LIGHT INDICATION



WIRING DIAGRAMS

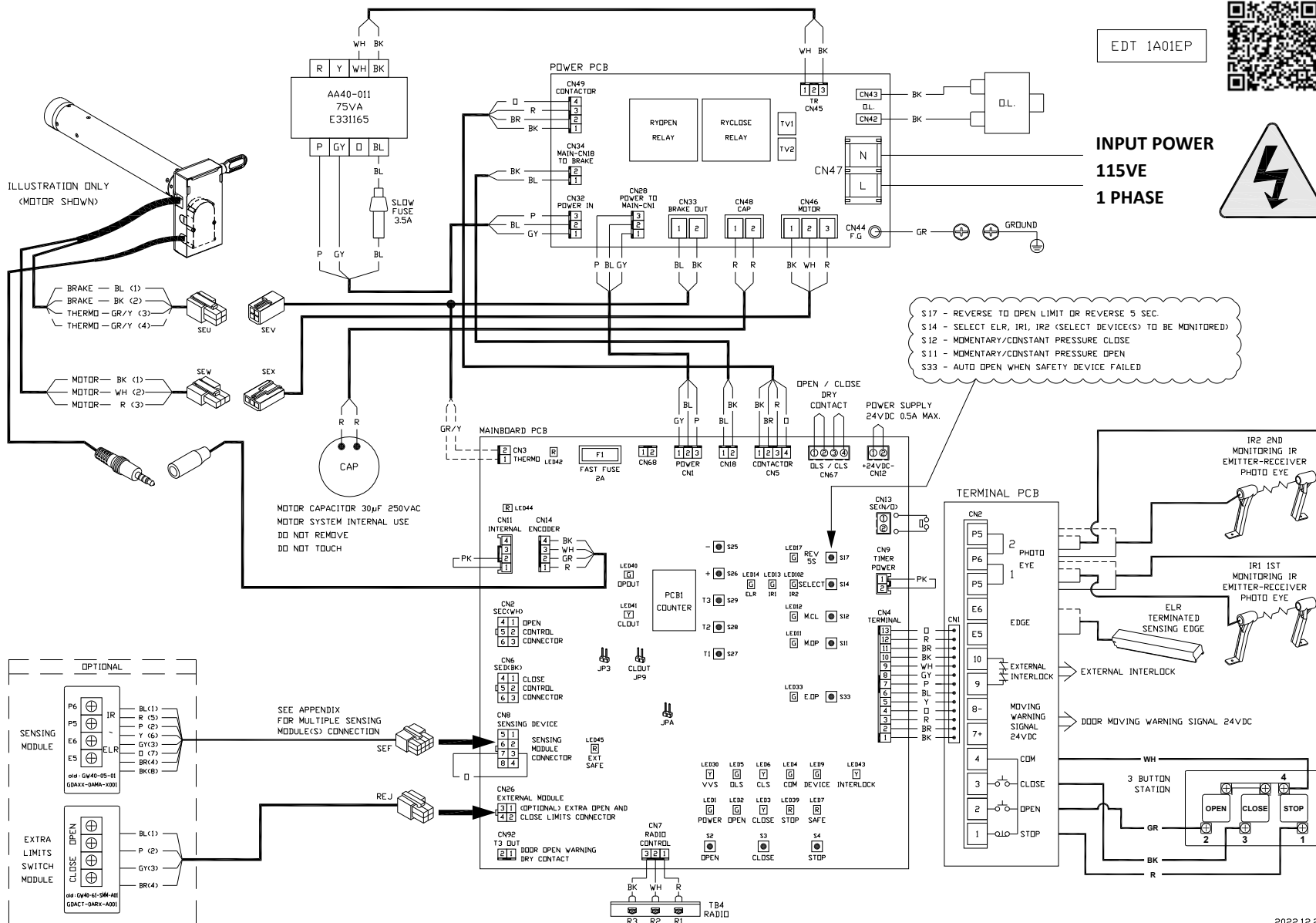
STK 115V 1 PHASE 50/60HZ
(FOR STK-1511EP)

SCAN FOR
COLOR VERSION



EDT 1A01EP

INPUT POWER
115VE
1 PHASE

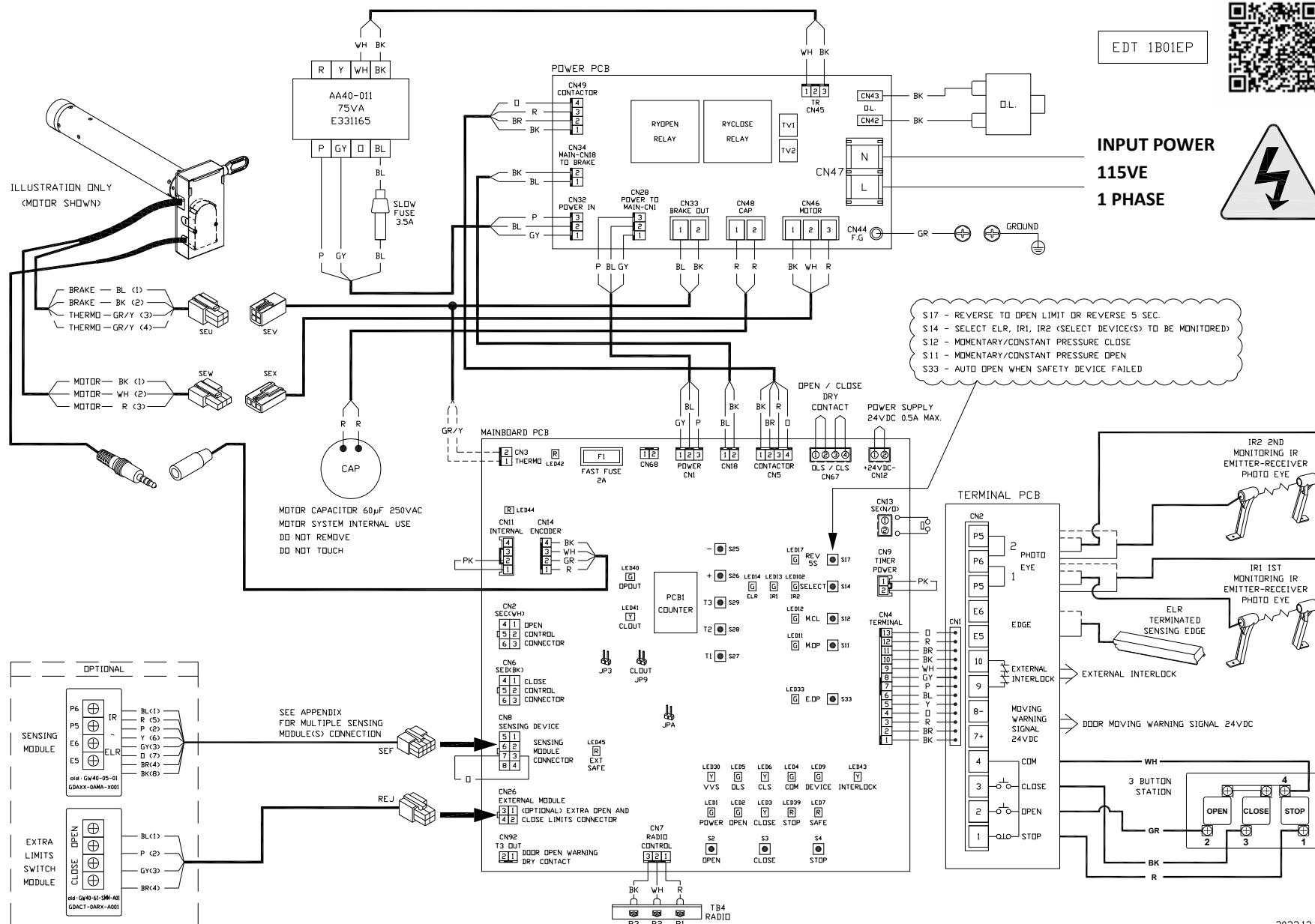
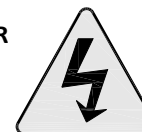


2022.12.22

SCAN FOR
COLOR VERSION



INPUT POWER
115VE
1 PHASE



21

STK Series
REVISION # 0000
DATE: 12/26/2022

SCAN FOR
COLOR VERSION



TERMINAL CONNECTIONS

| CN2 | | | | | | | | | | | | |
|--------------------------------|------|-------|-----|--|---|---|----|---------------------|----|---|---|----|
| 1 | 2 | 3 | 4 | 7 | 8 | 9 | 10 | E5 | E6 | P5 | P6 | P5 |
| Control Station Push Button | | | | + | - | External Interlock | | ELR sensing edge | | IR1 1 st Photo eyes or IR sensing device | IR2 2 nd Photo eyes or IR sensing device | |
| Stop | Open | Close | Com | Door moving warning signal 24VDC | | Jump when no external interlock is connected. | | | | | | |

- ❖ Control panel is wired with momentary pressure open and constant pressure close.
- ❖ A one-second delay on reverse is standard.
- ❖ When the door is closing, pushing the “Open” or “Stop” button will stop the door from moving.
- ❖ When the door is closing, the radio control transmitter can stop and reverse the door at anytime.

IMPORTANT SAFETY INSTRUCTIONS

WARNING –To reduce the risk of severe injury or death:

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. Never let children operate or play with door controls. Keep the remote control (where provided) away from children.
3. Personnel should keep away from a door in motion and keep the moving door in sight until it is completely closed or opened. NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.
4. Test the door's safety features at least once a month. After adjusting either the force or the limit of travel, retest the door operator's safety features. Failure to adjust the operator properly may cause severe injury or death.
5. For products having a manual release, if possible, use the manual release only when the door is closed. Use caution when using this release when the door is open. Weak or broken springs may cause the door to fall rapidly, causing severe injury or death.
6. KEEP DOORS PROPERLY OPERATING AND BALANCED. See Door Manufacturer's Owner's Manual. An improperly operating or balanced door could cause severe injury or death. Have trained door systems technician make repairs to cables, spring assemblies, and other hardware.
7. **SAVE THESE INSTRUCTIONS.**

TESTING

PUSH BUTTON STATION TESTING

1. If a 3-button control station is used to operate the door, push the “OPEN” button to open the door, push the “CLOSE” button to close the door, push the “STOP” button to stop movement of the door while opening or closing. Removing pressure from the “CLOSE” button will cause the door to stop.
2. If a key switch control station is used to operate the door, turn the key to the “OPEN” position to open the door, turn the key to the “CLOSE” position to close the door, push the “STOP” button to stop movement of the door while opening or closing. Removing pressure from the “CLOSE” key position will cause the door to stop.
3. Door may also be operated by remote devices.

EMERGENCY MANUAL OPERATION

This operator has provisions for manually operating the door in case of emergency or power failure. This operator is equipped with an auxiliary hand crank.

WARNING

Turn off power to the operator before manually operating the door.

MAINTENANCE INSTRUCTIONS

The brake is a self-adjusting brake. It is maintenance free. The brake assembly requires no additional adjustments for its lifetime.

If an entrapment protection device is used, i.e. sensing edge or photoelectric sensors, please consult the manufacturer for maintenance instruction.

WARNING

Disconnect power supply to the operator before servicing.

Check the following items at the intervals listed:

| CHECK LIST | DESCRIPTION | EVERY 3 MONTHS | EVERY 6 MONTHS | EVERY 12 MONTHS |
|-------------------|--|-------------------|-------------------|--------------------|
| Drive Chain | Check for excessive slack. Check & adjust as required Lubricate. | ● | | |
| Sprockets | Check set screw tightness | ● | | |
| Fasteners | Check & tighten as required | | ● | |
| Bearings & Shafts | Check for wear & lubricate | ● | | |

- ❖ Do not lubricate motor. Lubrication could cause damage.
- ❖ Inspect and service whenever a malfunction either door or operator is observed or suspected.
- ❖ Before servicing, always disconnect power supply to the operator.
- ❖ Replace fuses only with those of the same type and rating.
- ❖ All replacement parts must be compatible with those originally provided. Consult manufacturer for replacement parts.

WARNING

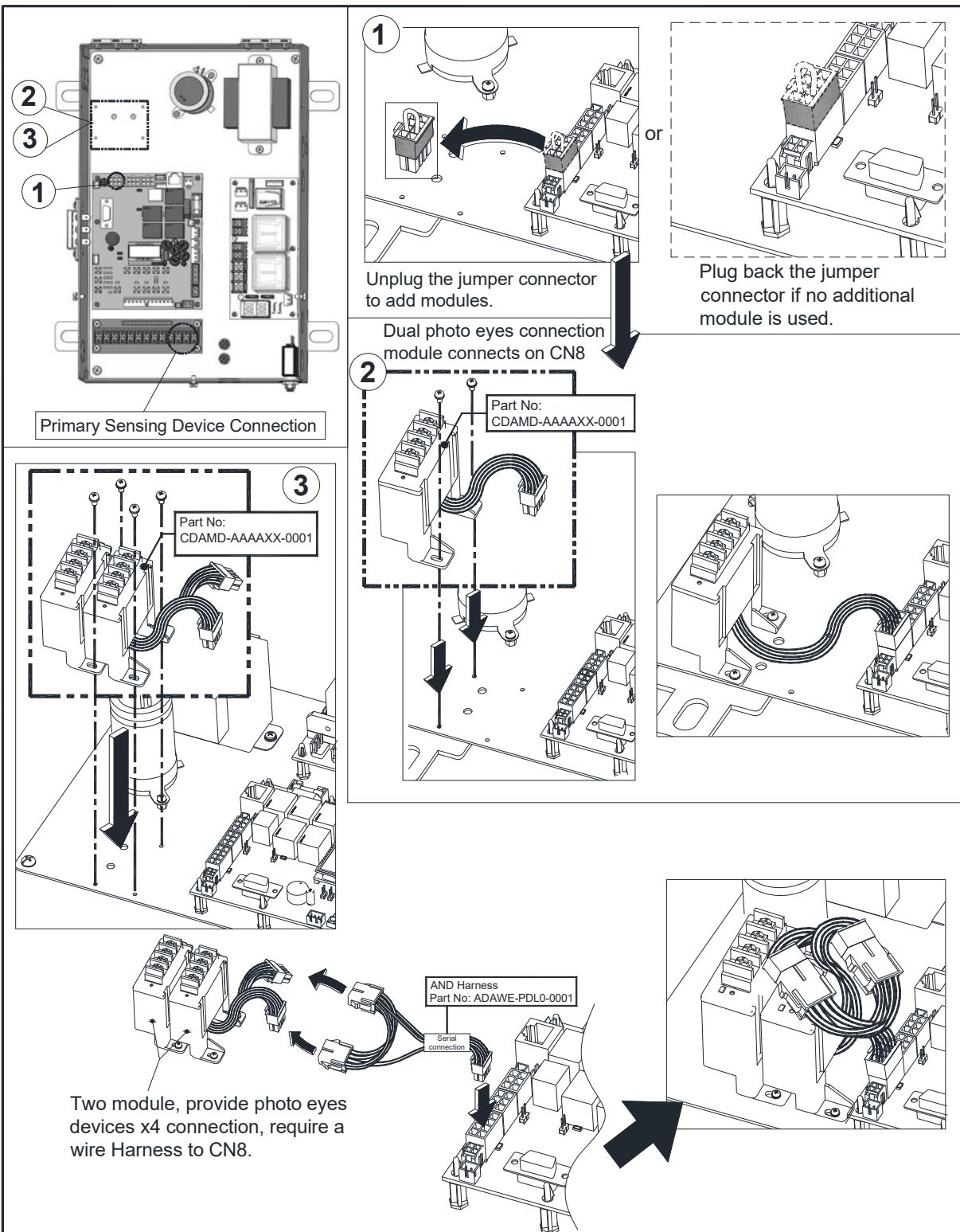
Do not place hands or tools in or near the operator when the power is connected or when testing control or sensing devices. Always disconnect power before servicing or adjusting the operator.

APPENDIX 1: Multiple Sensing Devices Connection Instruction

Multiple Sensing Devices Connection Instruction Dual Photo eyes Connection Module

Warning: Power OFF When Connecting.

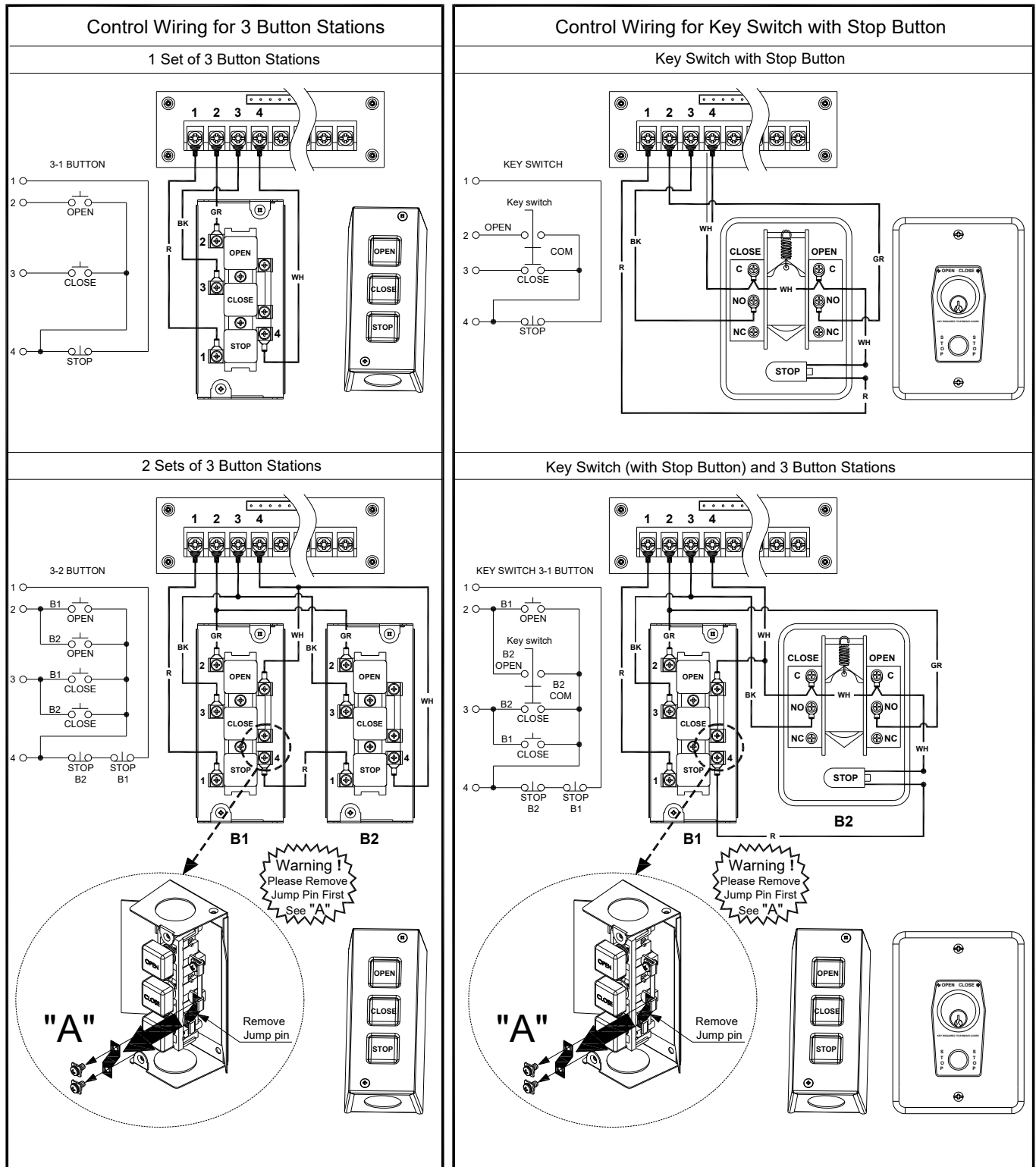
QST-STK-ADAPTER-1



APPENDIX 2: Control Connections Diagrams

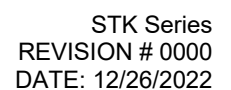
Control Connections Diagrams

CCD-PCB-A01



Control Connections Diagrams

Wiring 3 Button Stations With Key Lockout



APPENDIX 4: External Timer Defeat Switch Connection

EXTERNAL TIMER DEFEAT SWITCH CONNECTION-EP BOARD

