

INSTALLATION INSTRUCTIONS

AND

OPERATION MANUAL

FSN79 Series

NEMA 7/9 HAZARDOUS AREA

Commercial and Industrial Fire Door Operator

UL325 Compliant

Restricted Duty Operators

IMPORTANT INSTALLATION INSTRUCTIONS

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

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.

WARNING! – Components under **extreme spring tension** can cause death or serious injury.

CAUTION – To reduce the risk of ignition of hazardous atmospheres, disconnect the equipment from the supply circuit before opening. Keep assembly tightly closed when in operation.

WARNING – To reduce the risk of ignition of hazardous atmospheres, conduit seals must be installed within 18 inches of this enclosure.

WARNING – Substitution of components may impair intrinsic safety.

2. Install only on a properly operating and balanced door. A door that is operating improperly could cause death or serious injury. Trained door systems technicians make all necessary adjustments and repairs to the door before installing the operator.

Note: Fire door spring tension must be adjusted per the manufacturer's installation instructions to allow for automatic closing during a drop test, fusible link/alarm activation and/or power failure (Power failure condition only applies to operators capable of fail-safe closing).

3. Remove all pull ropes.

4. Remove or make all door locks inoperative, or secure locks in the unlocked position to prevent operation with the locks engaged.

5. 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.

6. Do not connect the door operator to the source of power until instructed to do so.

7. Locate the control station (open-close-stop push button, key station, or the like): a) within sight of the door 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.

8. Install the Entrapment Warning Placard next to the control station in a prominent location.

9. 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.

10. Read and understand the wiring diagram of the operator and the control station and any other equipment to be connected to the operator.
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. For products having a manual release, instruct the end user on the operation of the manual release.
15. The control box cover joints must be cleaned before replacing cover. Disconnect the equipment from the supply circuit before opening. Before opening or unfastening the screws, use a dry clean cloth to wipe off the dust to clean the cover joints. Alternatively, the cover joints can be blown clean with compressed air.

SPECIFICATIONS

CLASSIFICATION	
[Ex ia] Class I, Division 1, Group C & D; [Ex ia] Class II, Division 1, Group E, F & G; T3C	
MOTOR	
Type:	Restricted cycle duty (30 cycles per hour)
Horsepower:	1/2 hp, 3/4 hp, 1-1/2 hp
Speed:	1700 RPM
Voltage:	115, 230 – 1 phase 208/230, 460, 575 – 3 phase 230 volt 3 phase motor is suitable for use with 208 volts (see <i>Wiring Diagrams and Appendix 5 for wiring change instructions</i>)
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:	Linear driven, fully adjustable screw type cams.
MECHANICAL	
Drive Reduction:	57:1 (1/2 hp & 3/4 hp), 82:1 (1-1/2 hp)
Output Shaft Speed:	30 RPM (1/2 hp & 3/4 hp), 21 RPM (1-1/2 hp)
Door Speed:	6 - 8" per sec. average (typical)
Brake:	Solenoid actuated brake
ENTRAPMENT PROTECTION	
Sensing Edge*:	(Optional) Sensing device, which has compatibility to the intrinsic safe circuit specifications as shown in the paragraph G, attached to the bottom edge of the door.
Non-Contact Device*:	(Optional) Explosion proof photo eye device with proper explosion proof type conduit and fittings connection.
<p>* 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.</p>	

***Note:**

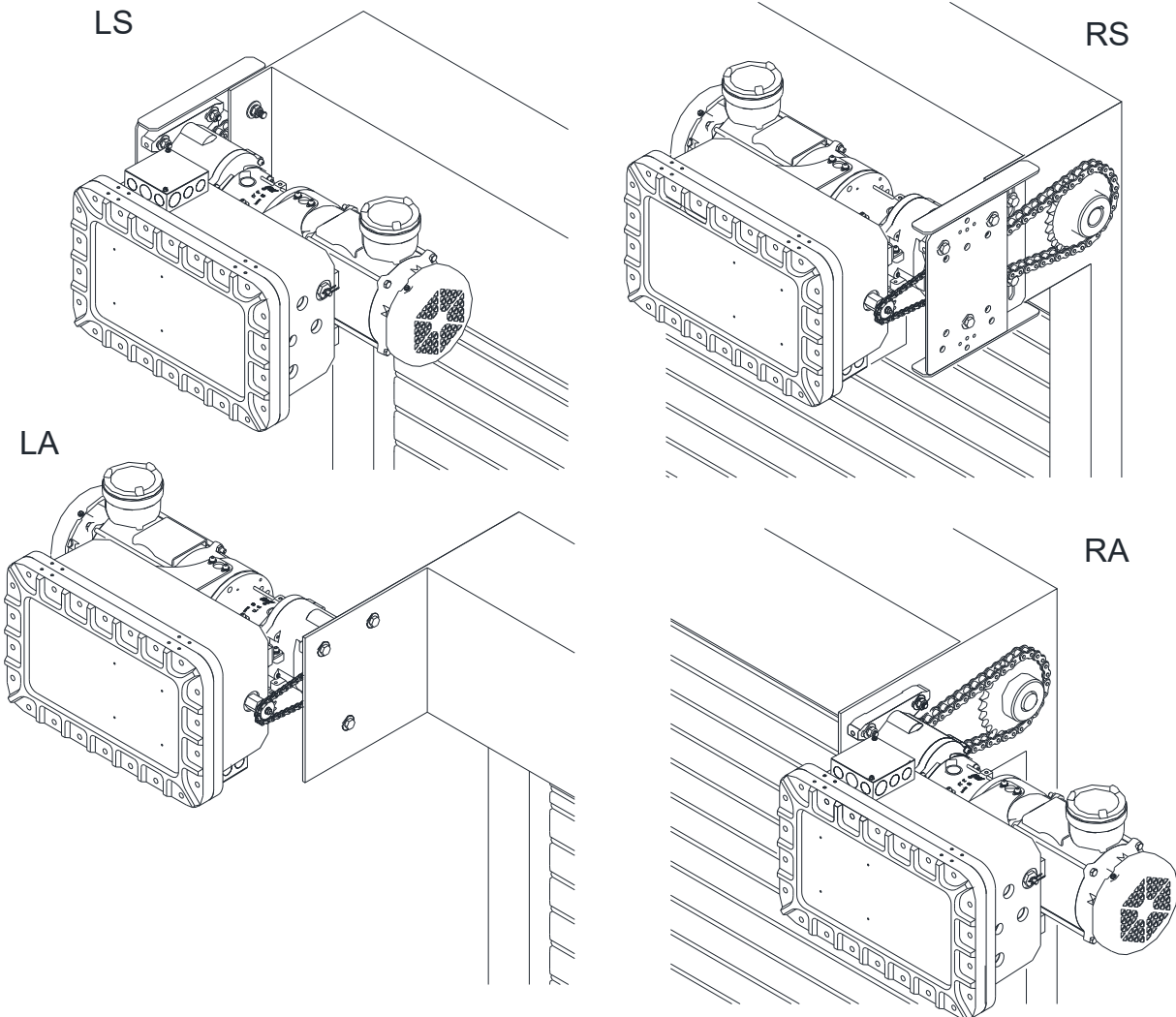
1. Non-contact device (photo eye) can be used on doors up to 35 ft. wide (or maximum rated range of device if less than 35 ft.). Use a sensing edge to provide entrapment protection on doors over 35 ft. wide.
2. Sensing edge can be used on all doors.

TYPES AND SIZES OF DOORS

Consult factory for details.

INSTALLATION INSTRUCTIONS

INSTALLATION POSITIONS (for 1/2hp and 3/4hp)



Installation positions for larger horsepower units are similar to as shown above.

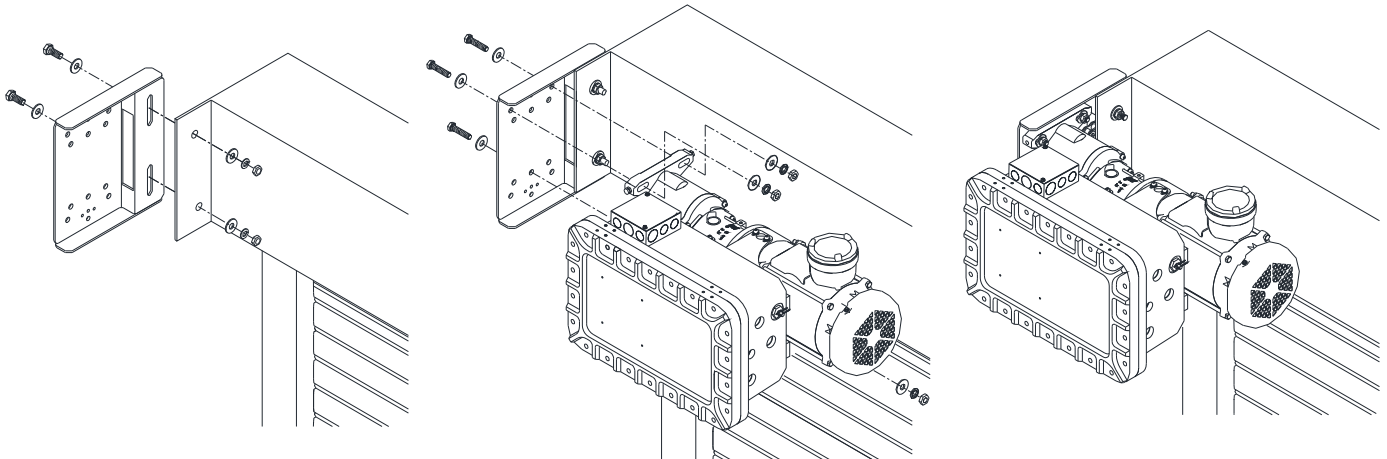
Consult factory for changes in installation positions.

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 and RA mounting positions are LH operators, RS and LA positions are RH operators)

Operators mounted in alternate positions (LA, RA) require a straight mounting plate in lieu of the standard bent plate.

OPERATOR MOUNTING

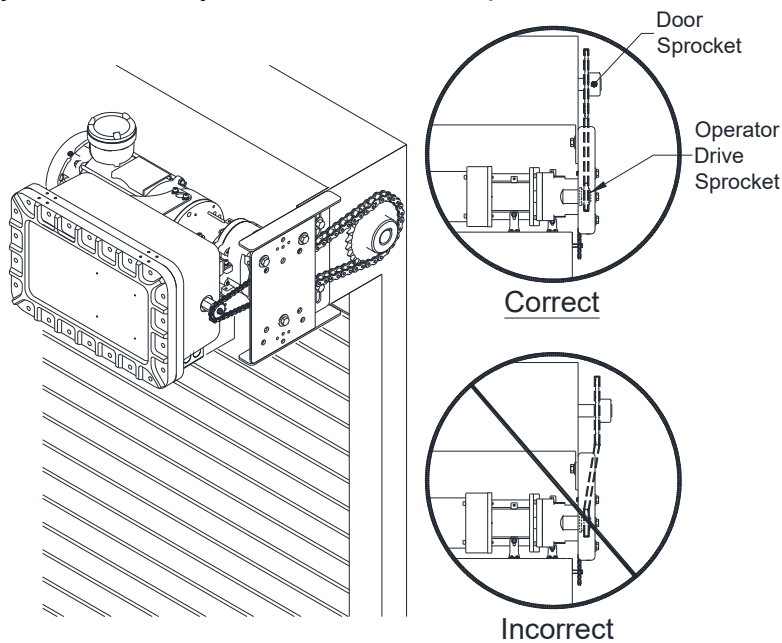
1. Before the operator is installed, verify that the door is properly operating and balanced.
2. Make sure the layout of the mounting holes on the bracket is correct.
3. Bolt the operator mounting plate to the door bracket plate.
4. Mount the operator base to the mounting plate.



(Figure for 1/2 hp and 3/4 hp)

Mounting for larger horsepower units is similar to as shown above.

5. When the operator assembly is attached to the door bracket, be sure the door driven sprocket is properly aligned with the operator drive sprocket before securing the driven sprocket to the shaft.
6. The shelf or bracket must provide adequate support for the operator. Prevent play between the operator and the door shaft. The operator must be securely attached with the drive shaft parallel to the door shaft. It may be necessary to field brace the operator/bracket.



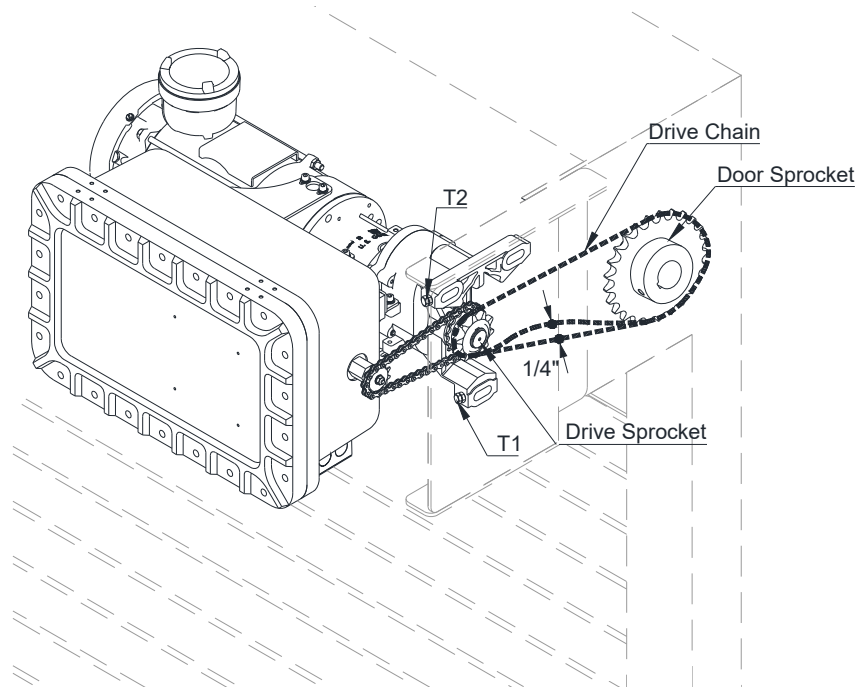
DRIVE CHAIN ADJUSTMENT

NOTE: Use correct type, size and proper length of roller chain.

1. Adjust the drive chain by tilting or move the operator so that there is about 1/4" of slack when the chain is depressed.

Note: The set screw included in the operator may be used for adjustment. (See figure - T1, T2 location).

2. Once the drive chain has been tightened and the base leg screws have been set, and then tighten the operator screws.



TYPICAL INSTALLATION

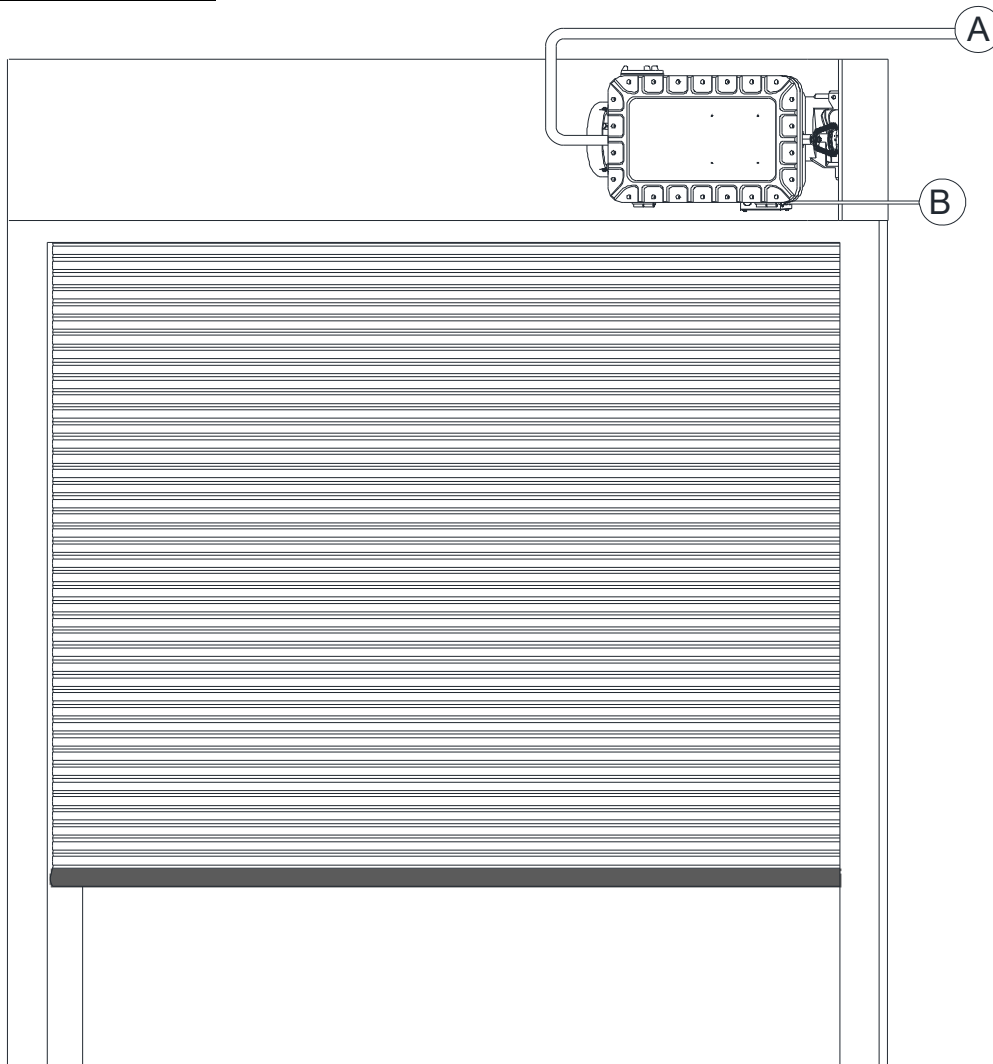


Illustration only, consult factory for details.

A = Input Power Connection (explosion proof conduit or fittings are required)

Using the 3/4"-14 NPT, 5 threads engaged, pitch of thread 1.814 mm conduit and fittings.

Conduit seals must be installed within 18 inches of this enclosure.

B = Intrinsically Safety Connection (explosion proof conduit and fittings are not required)

Refer to control drawing no. 3-V-R-017 as shown in paragraph G.

Note: All conduits and fittings except at the Intrinsically Safe Connection shall be UL Listed (EBNV/7) and follow the specifications of the explosion proof ratings for using in Class I, Division 1, Groups C and D; Class II, Division 1, Group E, F and G Hazardous Location.



WARNING

End User/ Installer MUST follow applicable NEC requirements along with Local requirements for Hazardous Wiring.

LIMIT SWITCH ADJUSTMENT

Make sure the limit cams are positioned between the limit switch actuators before proceeding with adjustments.

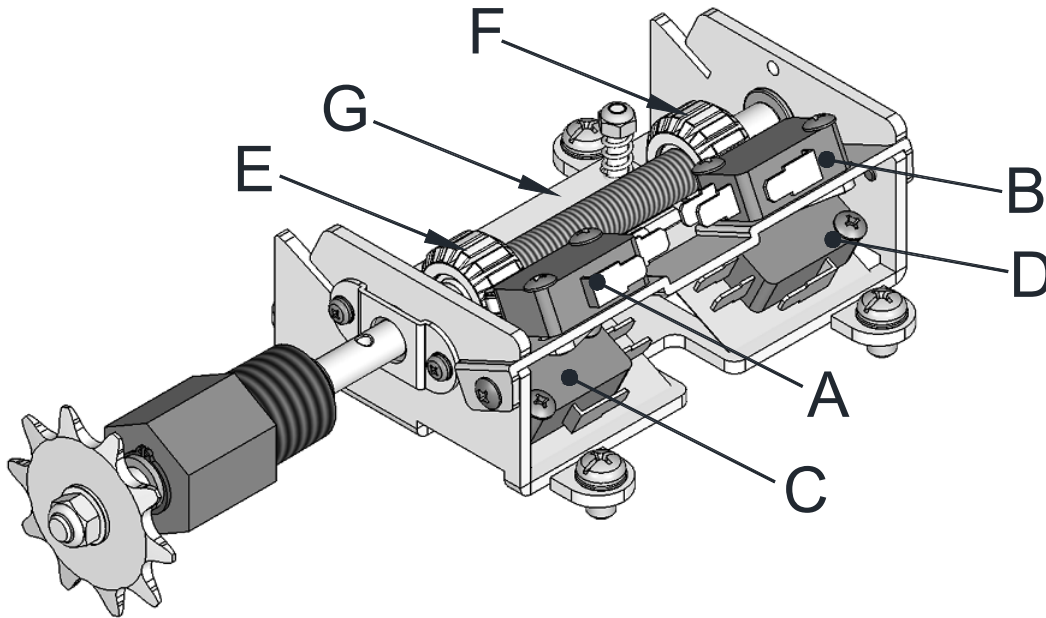
1. Open / remove the control panel cover.
2. Open or close door to determine the moving direction of the limit switch cams.
3. Open or close door to the desired position.



WARNING

Disconnect power before adjusting limit switch cams.

4. While pressing the spring-loaded lever (G), which holds the limit switch cams in place, adjust the limit switch cam (E or F) until the micro switch (C or D) clicking sound is heard.
5. If the limit switch cam cannot be rotated to its desired position, release the lever and move the door away from the desired position, then adjust the limit switch cam to its desired position. It may be necessary to repeat this step until the exact position has been reached.
6. Repeat step 3 and 4 for the opposite direction. Adjust close limit cams so that actuator is engaged as door fully seats at the floor.
7. Micro switch (A or B) can be adjusted to accommodate sensing edge cut-off position.



NOTE: "C" is usually the open limit switch and "D" is usually the close limit switch.

WIRING INSTRUCTIONS



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

WARNING

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 fuse line of adequate capacity is needed for the operator.
7. The operator must be properly grounded. Green colored, hexagonal-head screw, suitable for No. 14 AWG wiring. Secured in base of control box as shown in the paragraph A. Surface of control box under screw head is free of paint or provided with star washer to cut paint.
8. The control box cover joints must be cleaned before replacing cover. Disconnect the equipment from the supply circuit before opening. Before opening or unfastening the screws, use dry clean cloth to wipe out the dust to cleaning the cover joints. Alternatively, the cover joints can be blown clean with compressed air.
9. 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 death or serious injury.



WARNING

Remove or make all door locks inoperative, or secure locks in the unlocked position. Failure to disable the locks could result in damage to the door or operator.

CONTROL 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.



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 far enough from the door, or positioned such that the user is prevented from coming in contact with 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.

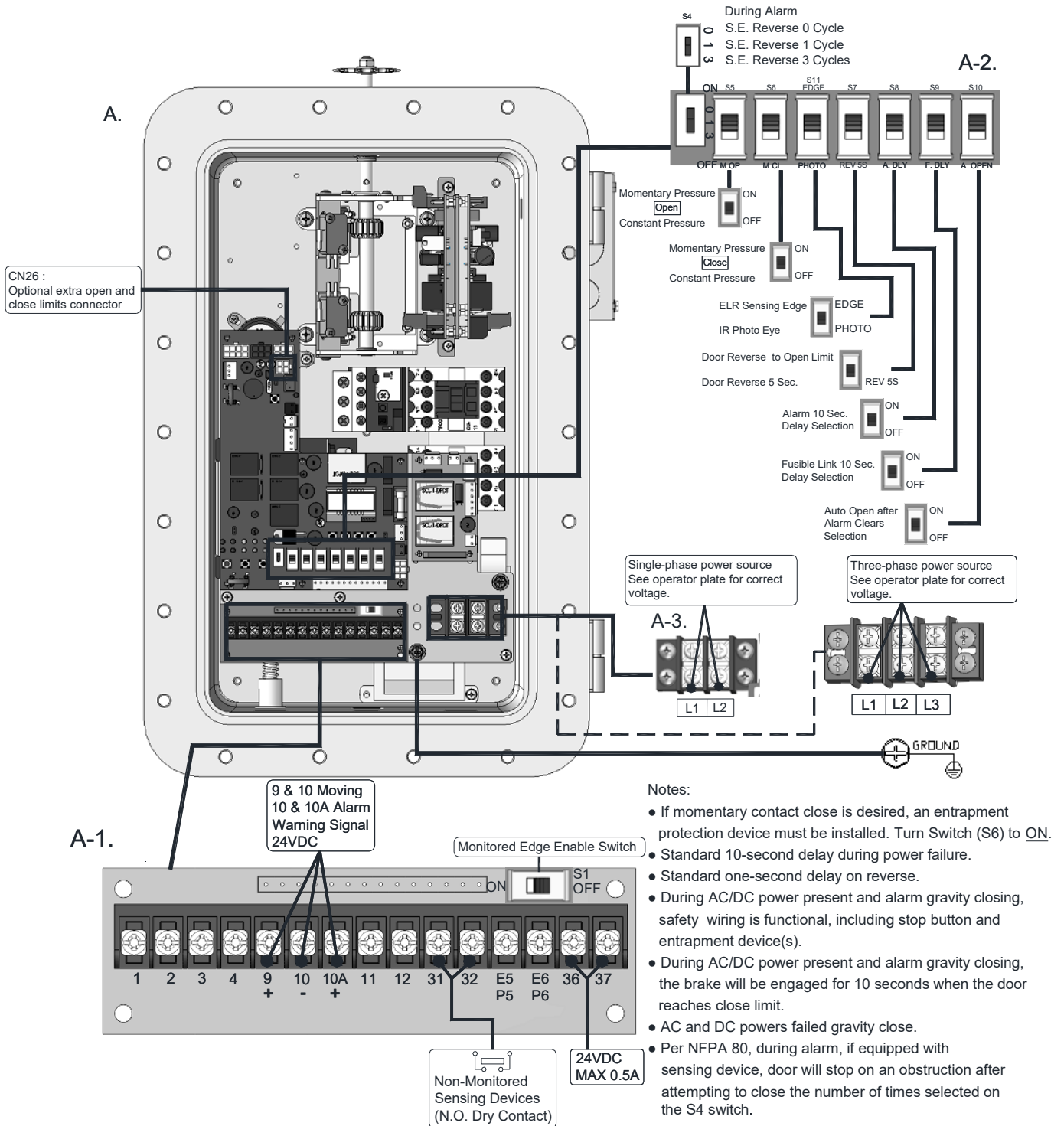


WARNING

Changing from left hand to right hand or vice versa could result in change of control wiring. Consult factory for details.

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

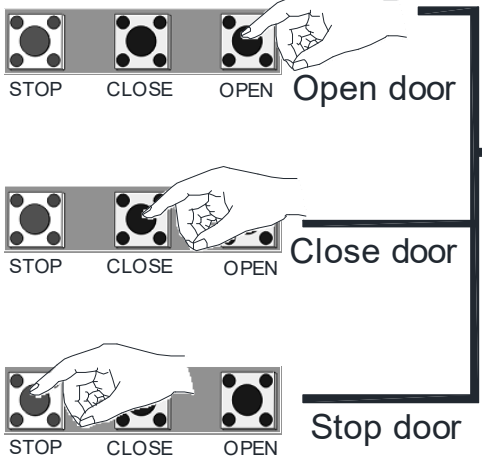
A. Control Function:



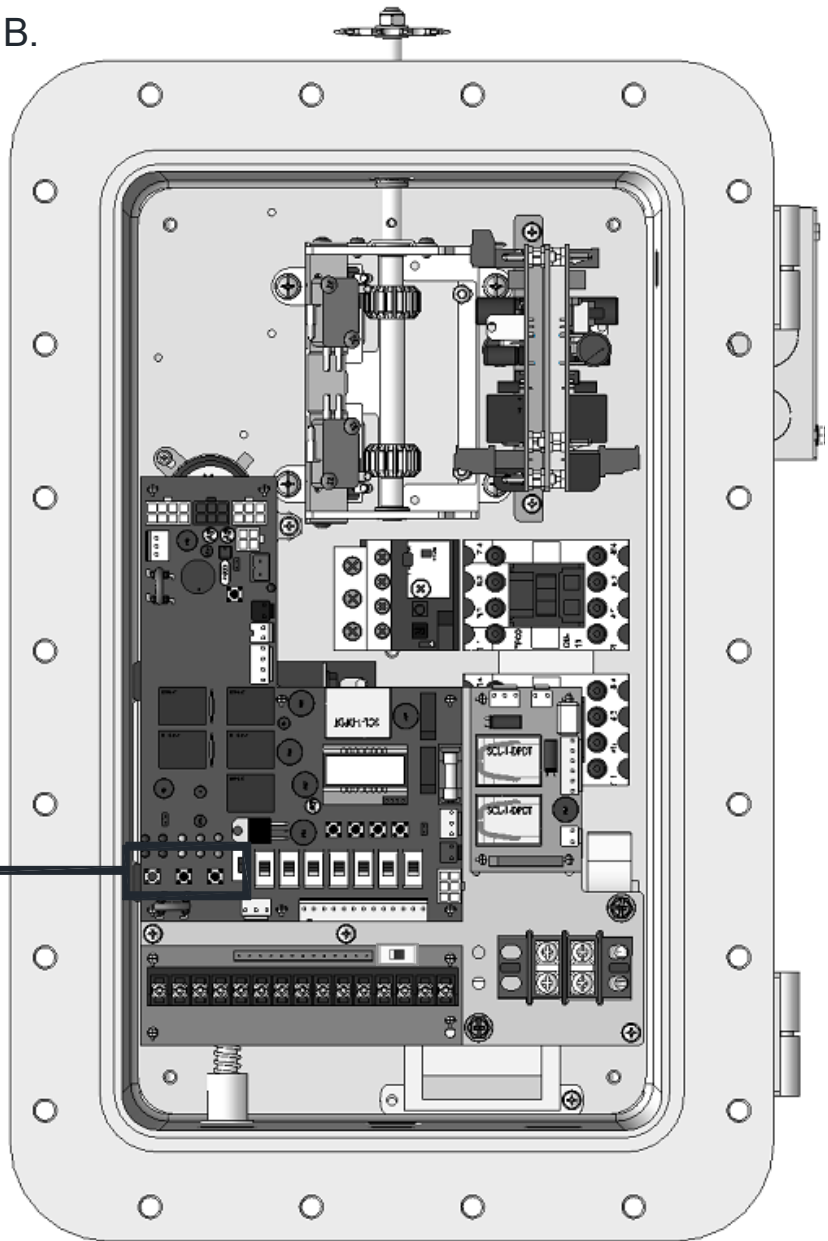
- Notes:
- If momentary contact close is desired, an entrapment protection device must be installed. Turn Switch (S6) to **ON**.
 - Standard 10-second delay during power failure.
 - Standard one-second delay on reverse.
 - During AC/DC power present and alarm gravity closing, safety wiring is functional, including stop button and entrapment device(s).
 - During AC/DC power present and alarm gravity closing, the brake will be engaged for 10 seconds when the door reaches close limit.
 - AC and DC powers failed gravity close.
 - Per NFPA 80, during alarm, if equipped with sensing device, door will stop on an obstruction after attempting to close the number of times selected on the S4 switch.

B. Auxiliary Function:

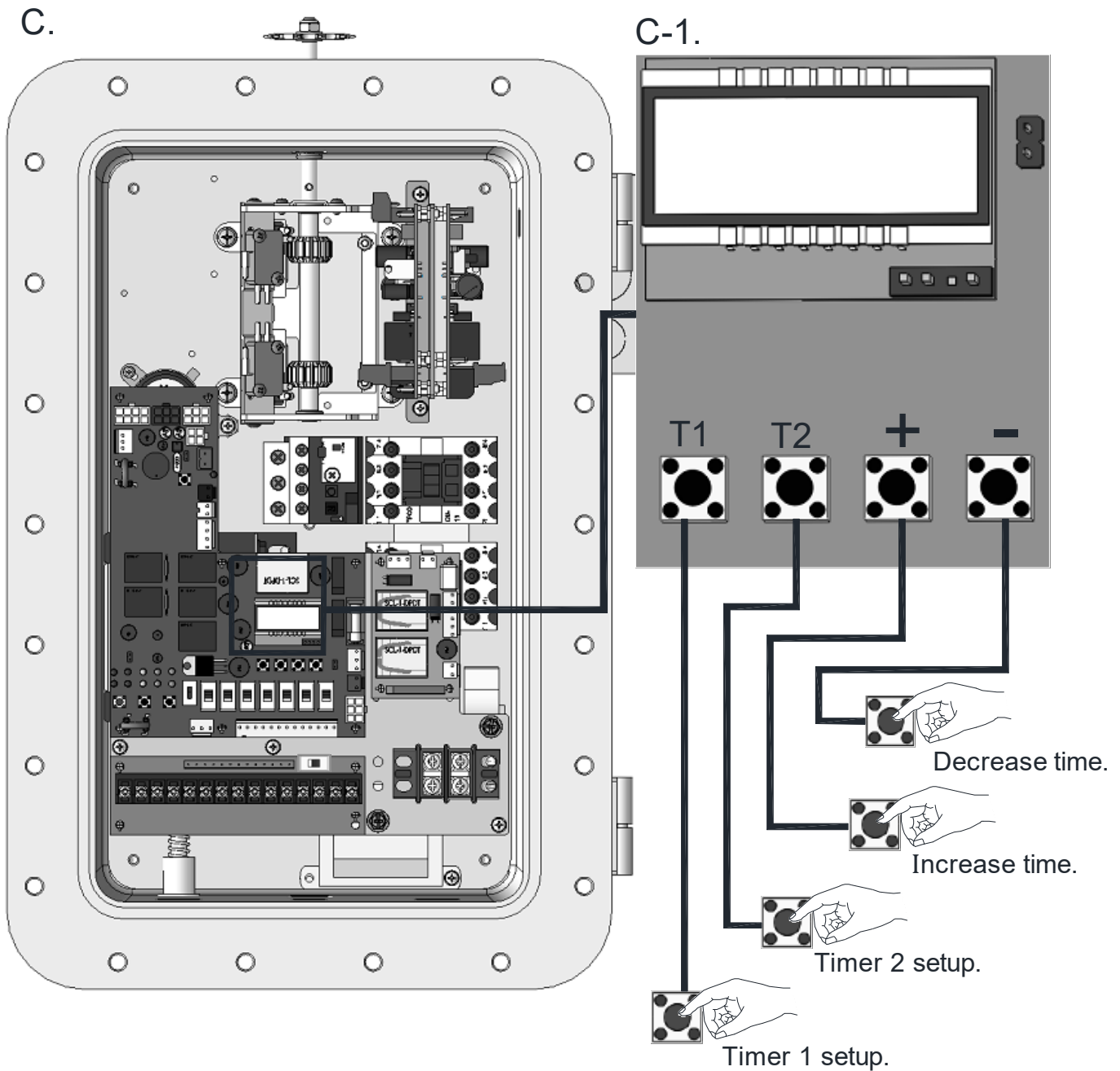
B-1.



B.



C. Timer Instruction:







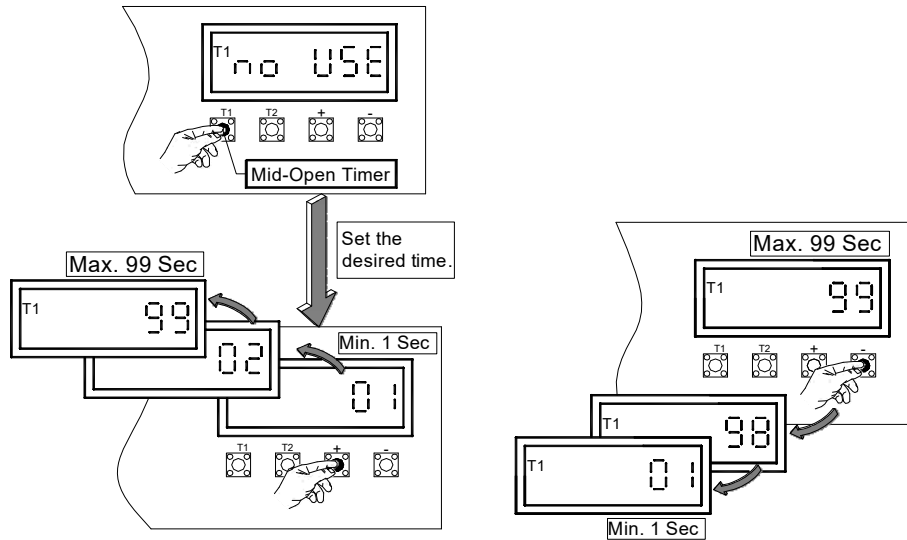
(1) Timer 1 – Mid-open timer: Timer starts counting when door leaves close limit. Door stops after opening for set time. Pressing open again at mid-open position will cause door to open limit.

Timer 2 – Close timer: Timer is active when door stops and is not at close limit.





(2) Standard Mode: Cycle counter

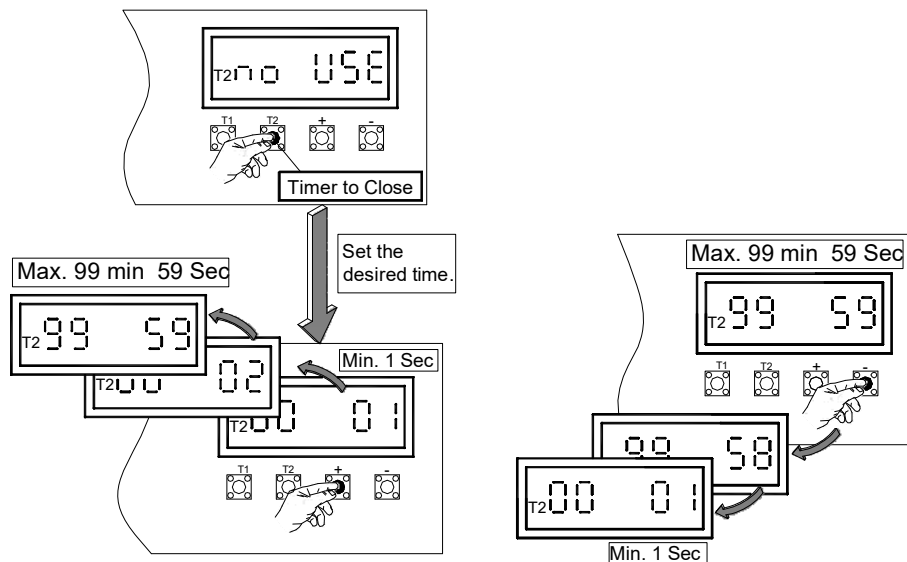
(3) To Set Timer 1 (Mid-open Timer):

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



(4) To Set Timer 2 (Reclose Timer):

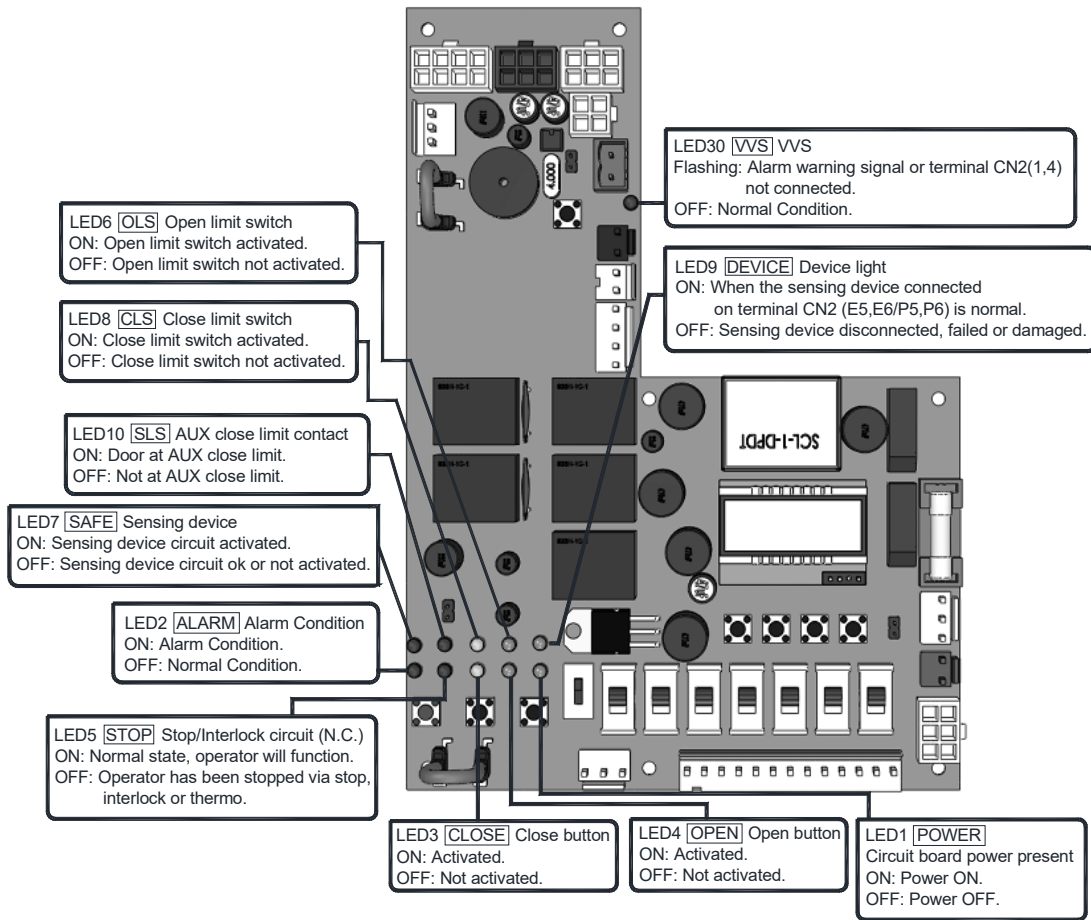
- Press  and hold for 5 seconds. Display will flash.
- Use  or  to increase or to decrease time.
- Press  to save setting. Without pressing, no adjustment is saved.



D. LCD Display Instruction:

Display	Status	Display	Status
	T1 setting		Door closing
	T2 setting		Door opening
	T1 or T2 setting completed		Alarm condition

E. Light Indication:



F. Sound Warnings:

Item	Description	Sound
A	Alarm warning signal	B____ B____ B____ B____
B	Terminal CN2 (1,4) not connected	B.B.B.B. B.B.B.B. B.B.B.B.

G. Intrinsically Safe Connections:

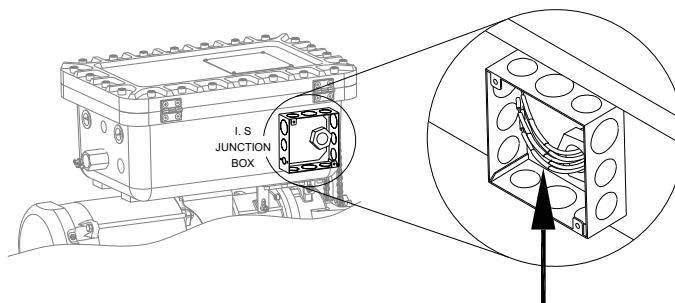
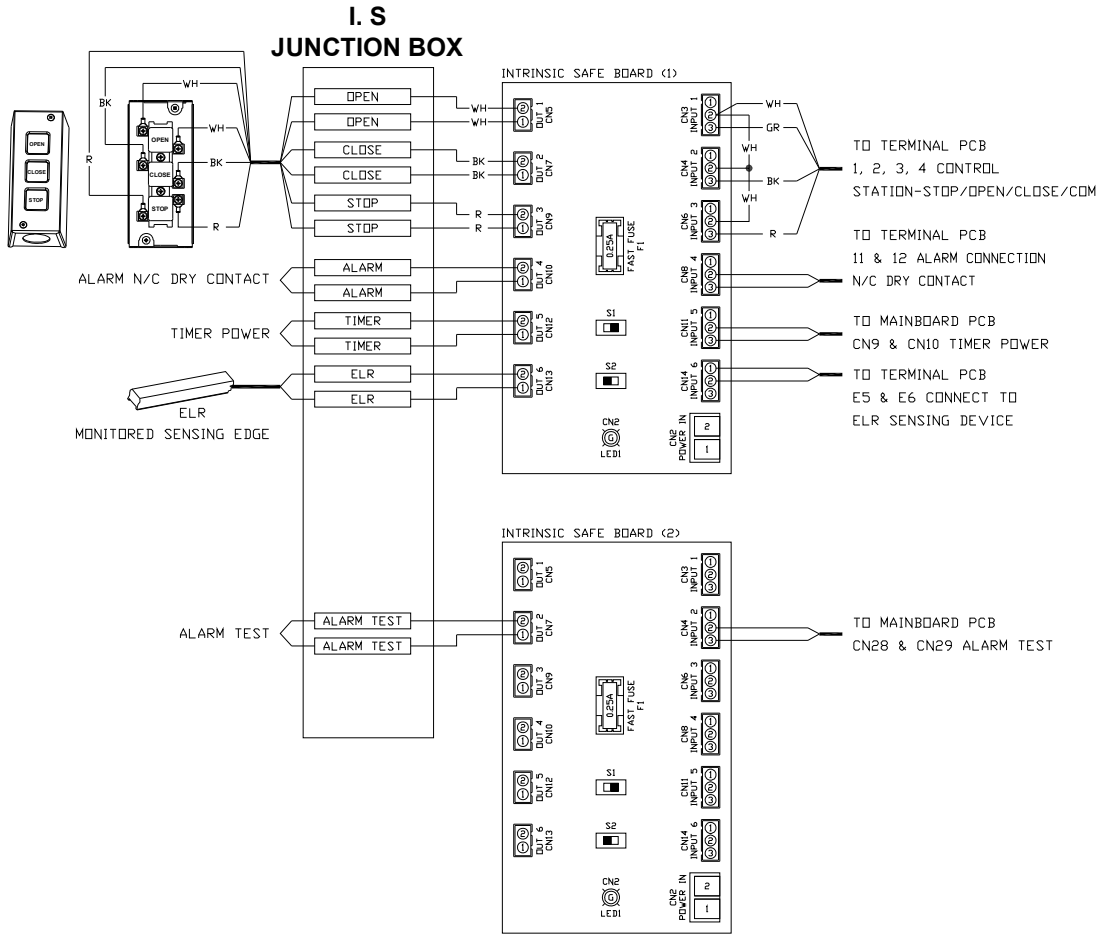
Note:

- I.S Box for connection of NEMA 1 devices only.
- All the input signals must be in the form of dry contact.

INTEGRATED CONTROL BOX

FS

THE NUMBER OF USED INPUT CHANNELS ARE SUBJECT TO FUNCTIONS BEEN SELECTED FOR I.S OUTPUT IN THE FIELD WIRING. INPUT/OUTPUT CHANNELS ARRANGEMENT CAN BE DETERMINED BY THE MANUFACTURER PER FUNCTION ORIENTATION



3-V-R-017

Follow the instructions of the wire sleeves for external devices connections.

1. Associated Apparatus Entity Parameters :

$$V_{oc} \text{ (or } U_o) = 30 \text{ V dc}$$

$$I_{sc} \text{ (or } I_o) = 5.48 \text{ mA}$$

$$P_o = 41.14 \text{ W}$$

$$C_a \text{ (or } C_o) = 0.066 \text{ } \mu\text{F}$$

$$L_a \text{ (or } L_o) = 149 \text{ mH}$$

2. Selected intrinsically safe equipment must be third party listed as intrinsically safe for the application, and have intrinsically safe entity parameters conforming with Table 1 below.

TABLE 1 :

<u>I.S. Equipment</u>	<u>Associated Apparatus</u>
$V_{\max} \text{ (or } U_i)$	$\geq 30 \text{ V dc}$
$I_{\max} \text{ (or } I_i)$	$\geq 5.5 \text{ mA}$
P_{\max}, P_i	$\geq 32 \text{ mW}$
$C_i + C_{\text{cable}}$	$\leq 0.066 \text{ } \mu\text{F}$
$L_i + L_{\text{cable}}$	$\leq 149 \text{ mH}$

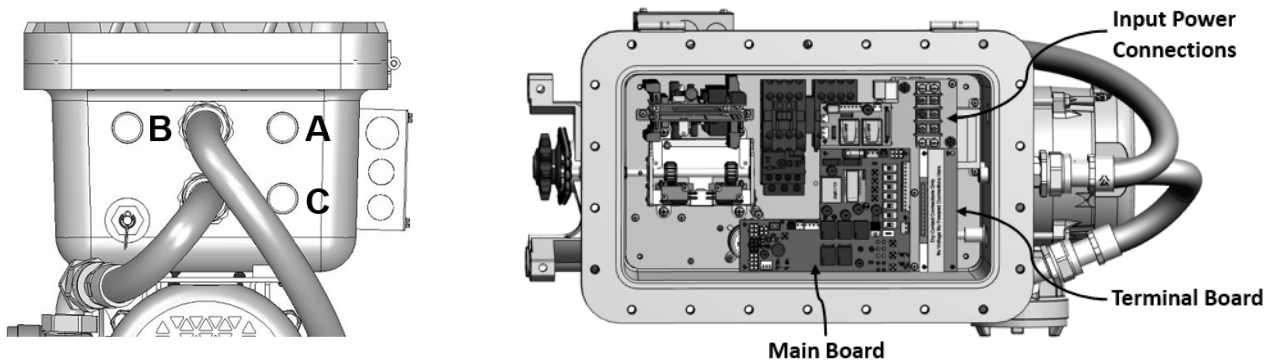
3. External earthing connection must use minimum wire size of 14AWG.
4. Installation of intrinsically safe electrical equipment and wiring must in accordance with the National Electrical Code (NFPA 70, Article 504 and CSA C22.1, Section 18).
5. Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations as shown in Table 1. Cable capacitance, C_{cable} , plus intrinsically safe equipment capacitance, C_i must be less than the marked capacitance, C_a (or C_o), shown on any associated apparatus used. The same applies for inductance (L_{cable} , L_i and L_a or L_o , respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used : $C_{\text{cable}} = 60 \text{ pF/ft.}$, $L_{\text{cable}} = 0.2 \text{ } \mu\text{H/ft.}$
6. This associated apparatus has not been evaluated for use in combination with another associated apparatus.
7. For installations in which both the C_i and L_i of the intrinsically safe apparatus exceeds 1% of the C_a (or C_o) and L_a (or L_o) parameters of the associated apparatus (excluding the cable), then 50% of C_a (or C_o) and L_a (or L_o) parameters are applicable and shall not be exceeded. The reduced capacitance shall not be greater than $1 \text{ } \mu\text{F}$ for Groups C and/or D.

The values of C_a (or C_o) and L_a (or L_o) determined by this method shall not be exceeded by the sum of all of C_i plus cable capacitances and the sum of all of the L_i plus cable inductances in the circuit respectively.

3-V-R-017

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H. Non-intrinsically Safe Connections:

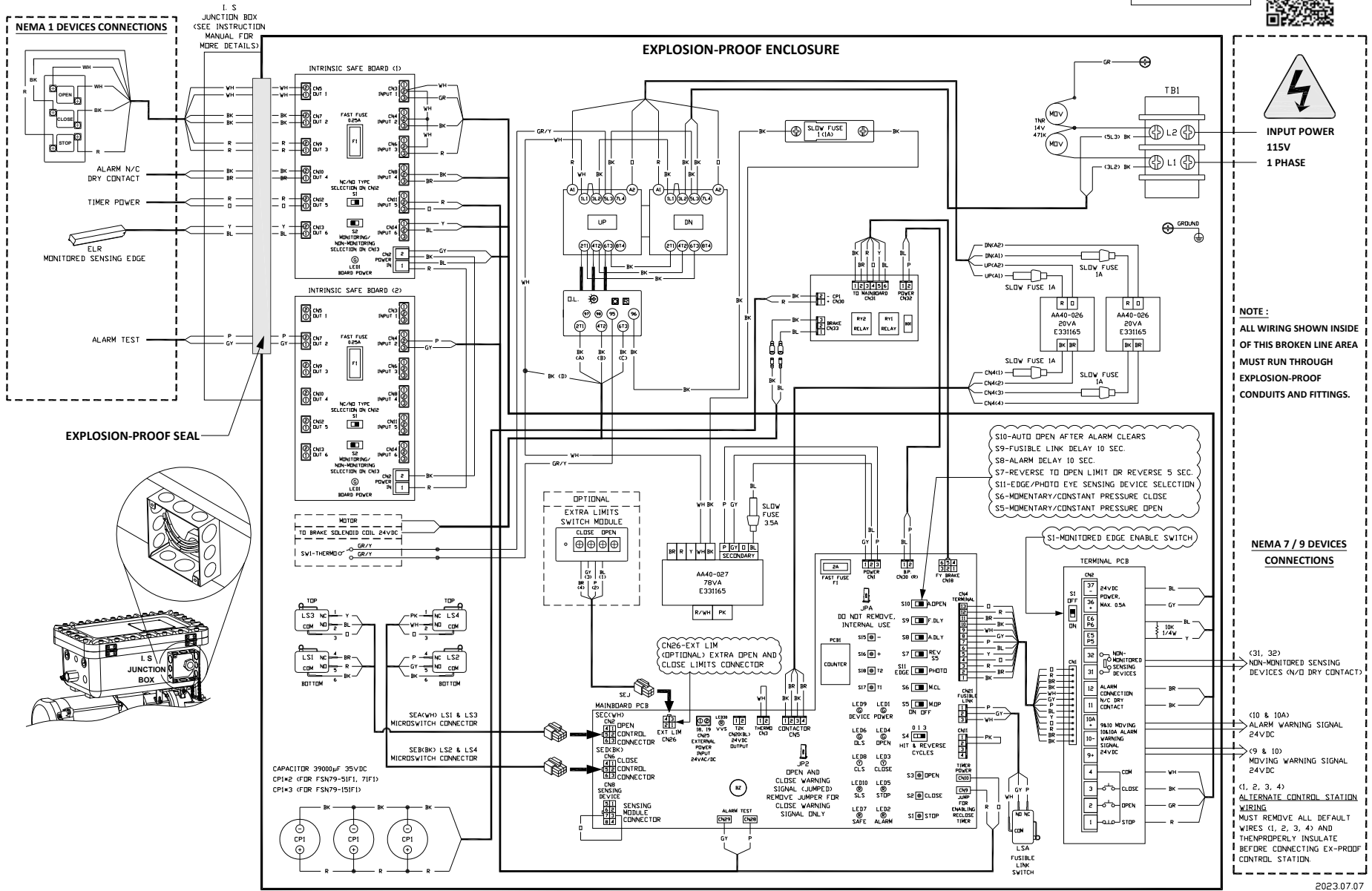


Wiring through the holes:

No.	Size	Connections	Remark
A	3/4" NPT	Input power connections (TB1)	Wired by explosion proof conduit. Using the 3/4"-14 NPT, 5 threads engaged, pitch of thread 1.814 mm conduit and fittings. (Conduit seals must be installed within 18 inches of this enclosure.)
B & C	3/4" NPT	<p>Terminal board (CN2): (1, 2, 3, 4)* : Control station push button (Stop, open, close, com) <i>*Must remove all default wires (1, 2, 3, 4) and then properly insulated before connecting ex-proof control station.</i> (9, 10) : Moving warning signal 24VDC (10, 10A) : Alarm warning signal 24VDC (31, 32) : Non-monitored sensing devices (36, 37) : Power supply 24VDC 0.5A</p> <p>Main board: CN25(18, 19): External power input 24VAC/VDC</p> <p>Sensing module (optional): (P5, P6) : Monitored photo eyes</p> <p>Extra limit module (optional): (Open, Close): Open & Close dry contact</p>	<p><u>All devices must be explosion proof.</u></p> <p>Wired by explosion proof conduit.</p> <p>* Two (2) 3/4"-14 NPT, 5 threads engaged, pitch of thread 1.814 mm holes are from default. (Conduit seals must be installed within 18 inches of this enclosure.)</p> <p>*Seal the unused hole with the provided screw plug, which requires tightening torque of 57 ft-lbs (800 kg-cm).</p>

FSN79 115V 1 PHASE 50/60HZ LH
 (FOR FSN79-51F1, 71F1, 151F1)

EBN79 1A02F1 L



NOTE:
 ALL WIRING SHOWN INSIDE
 OF THIS BROKEN LINE AREA
 MUST RUN THROUGH
 EXPLOSION-PROOF
 CONDUITS AND FITTINGS.

**NEMA 7 / 9 DEVICES
 CONNECTIONS**

- (31, 32) NON-MONITORED SENSING DEVICES (N/D) DRY CONTACT
- (10 & 10A) ALARM WARNING SIGNAL 24VDC
- (9 & 10) MOVING WARNING SIGNAL 24VDC
- (1, 2, 3, 4) ALTERNATE CONTROL STATION WIRING
 MUST REMOVE ALL DEFAULT WIRES (1, 2, 3, 4) AND THEN PROPERLY INSULATE BEFORE CONNECTING EX-PROOF CONTROL STATION

2023.07.07

FSN79 115V 1 PHASE 50/60HZ RH
(FOR FSN79-51F1, 71F1, 151F1)



EBN79 1A02F1 R

NEMA 7 / 9 DEVICES CONNECTIONS

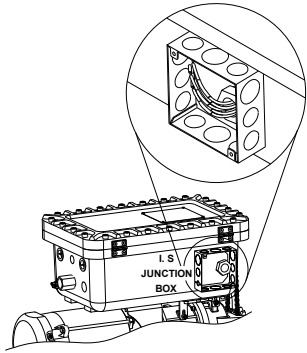
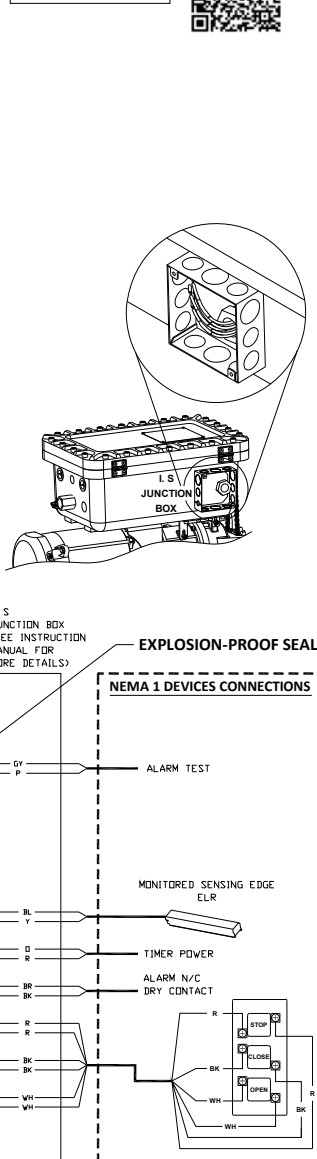
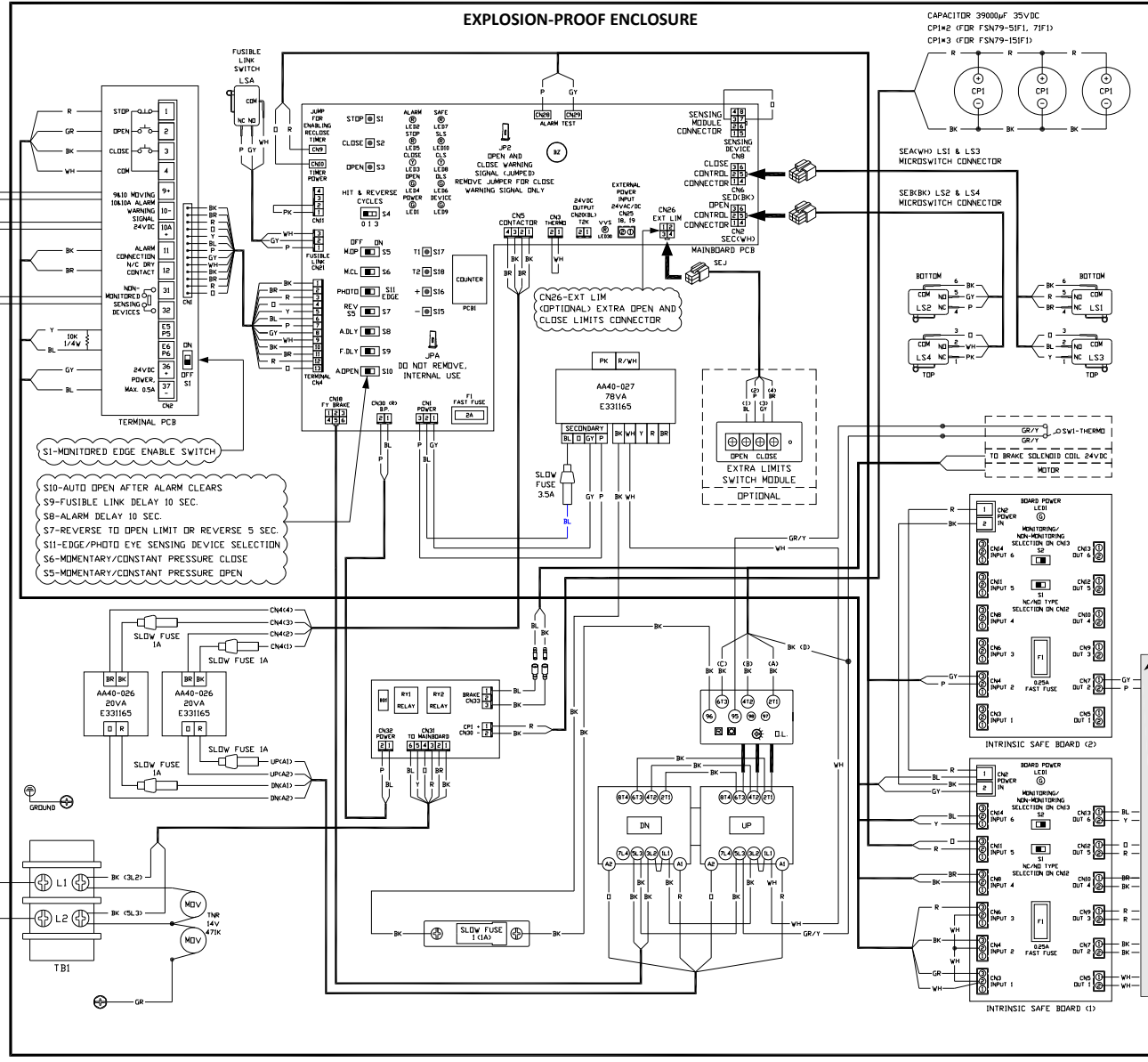
(1, 2, 3, 4)
ALTERNATE CONTROL STATION WIRING
MUST REMOVE ALL DEFAULT WIRES (1, 2, 3, 4) AND THEN PROPERLY INSULATE BEFORE CONNECTING EX-PROOF CONTROL STATION.

(9 & 10)
MOVING WARNING SIGNAL 24VDC
(10 & 10A)
ALARM WARNING SIGNAL 24VDC

(31, 32)
NON-MONITORED SENSING DEVICES (N/D DRY CONTACT)

NOTE:
ALL WIRING SHOWN INSIDE OF THIS BROKEN LINE AREA MUST RUN THROUGH EXPLOSION-PROOF CONDUITS AND FITTINGS.

INPUT POWER
115V
1 PHASE

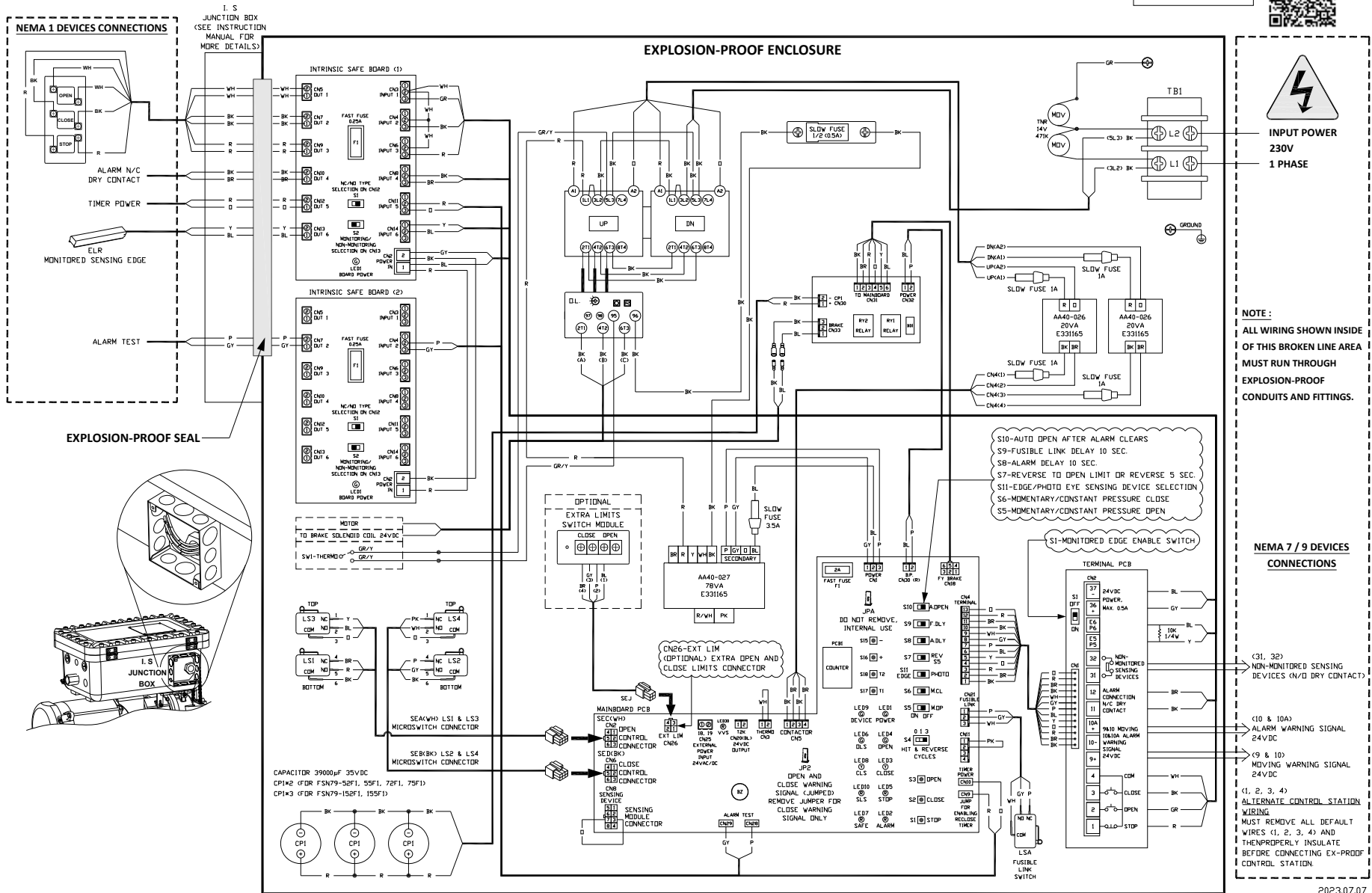


2023.07.07

FSN79 230V 1 PHASE 50/60HZ LH
 (60HZ FDR FSN79-52F1, 72F1, 152F1)
 (50HZ FDR FSN79-55F1, 75F1, 155F1)

EBN79 2A02F1 L

SCAN FOR
 COLOR VERSION



INPUT POWER 230V 1 PHASE

NOTE:
 ALL WIRING SHOWN INSIDE OF THIS BROKEN LINE AREA MUST RUN THROUGH EXPLOSION-PROOF CONDUITS AND FITTINGS.

NEMA 7 / 9 DEVICES CONNECTIONS

- (31, 32) NON-MONITORED SENSING DEVICES (N/D DRY CONTACT)
- (10 & 10A) ALARM WARNING SIGNAL 24VDC
- (9 & 10) MOVING WARNING SIGNAL 24VDC
- (1, 2, 3, 4) ALTERNATE CONTROL STATION WIRING
 MUST REMOVE ALL DEFAULT WIRES (1, 2, 3, 4) AND THEN PROPERLY INSULATE BEFORE CONNECTING EX-PROOF CONTROL STATION.

2023.07.07

FSN79 230V 1 PHASE 50/60HZ RH
 (60HZ FOR FSN79-52F1, 72F1, 152F1)
 (50HZ FOR FSN79-55F1, 75F1, 155F1)

SCAN FOR COLOR VERSION



EBN79 2A02F1 R

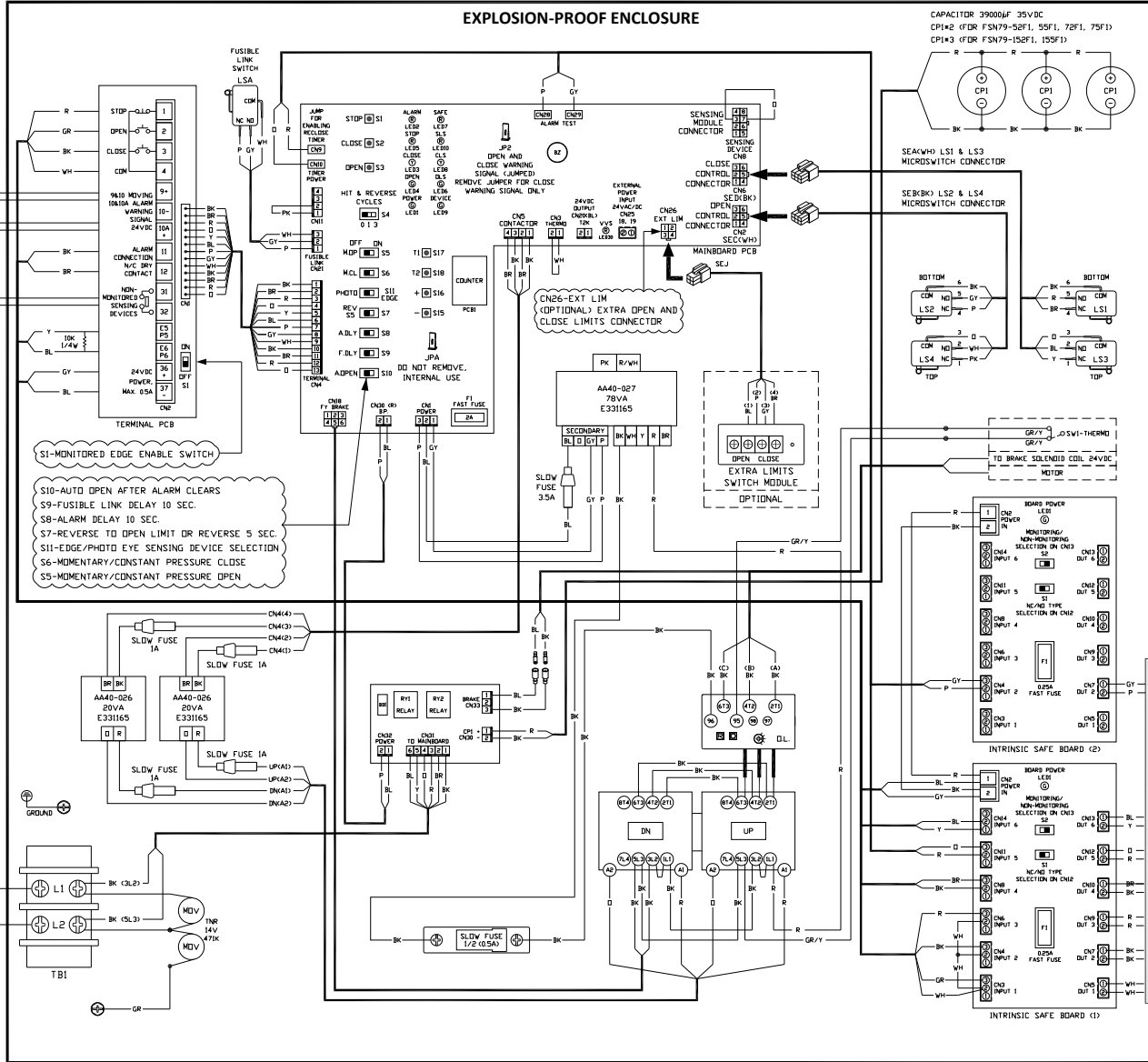
NEMA 7/9 DEVICES CONNECTIONS

(1, 2, 3, 4) ALTERNATE CONTROL STATION WIRING
 MUST REMOVE ALL DEFAULT WIRES (1, 2, 3, 4) AND THEN PROPERLY INSULATE BEFORE CONNECTING EX-PROOF CONTROL STATION.
 (9 & 10) MOVING WARNING SIGNAL 24VDC
 (10 & 10A) ALARM WARNING SIGNAL 24VDC
 (31, 32) NON-MONITORED SENSING DEVICES (N/D) DRY CONTACT

NOTE:
 ALL WIRING SHOWN INSIDE OF THIS BROKEN LINE AREA MUST RUN THROUGH EXPLOSION-PROOF CONDUITS AND FITTINGS.



INPUT POWER
 230V
 1 PHASE

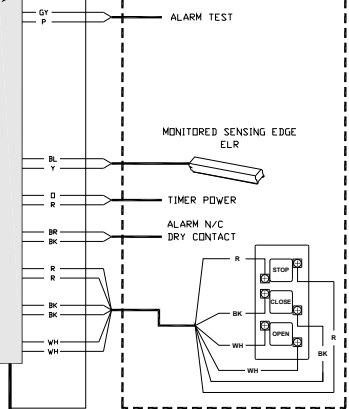


- S1-MONITORED EDGE ENABLE SWITCH
- S10-AUTO OPEN AFTER ALARM CLEARS
- S9-FUSIBLE LINK DELAY 10 SEC.
- S8-ALARM DELAY 10 SEC.
- S7-REVERSE TO OPEN LIMIT OR REVERSE 5 SEC.
- S11-EDGE/PHOTO EYE SENSING DEVICE SELECTION
- S6-MOMENTARY/CONSTANT PRESSURE CLOSE
- S5-MOMENTARY/CONSTANT PRESSURE OPEN

1. S JUNCTION BOX (SEE INSTRUCTION MANUAL FOR MORE DETAILS)

EXPLOSION-PROOF SEAL

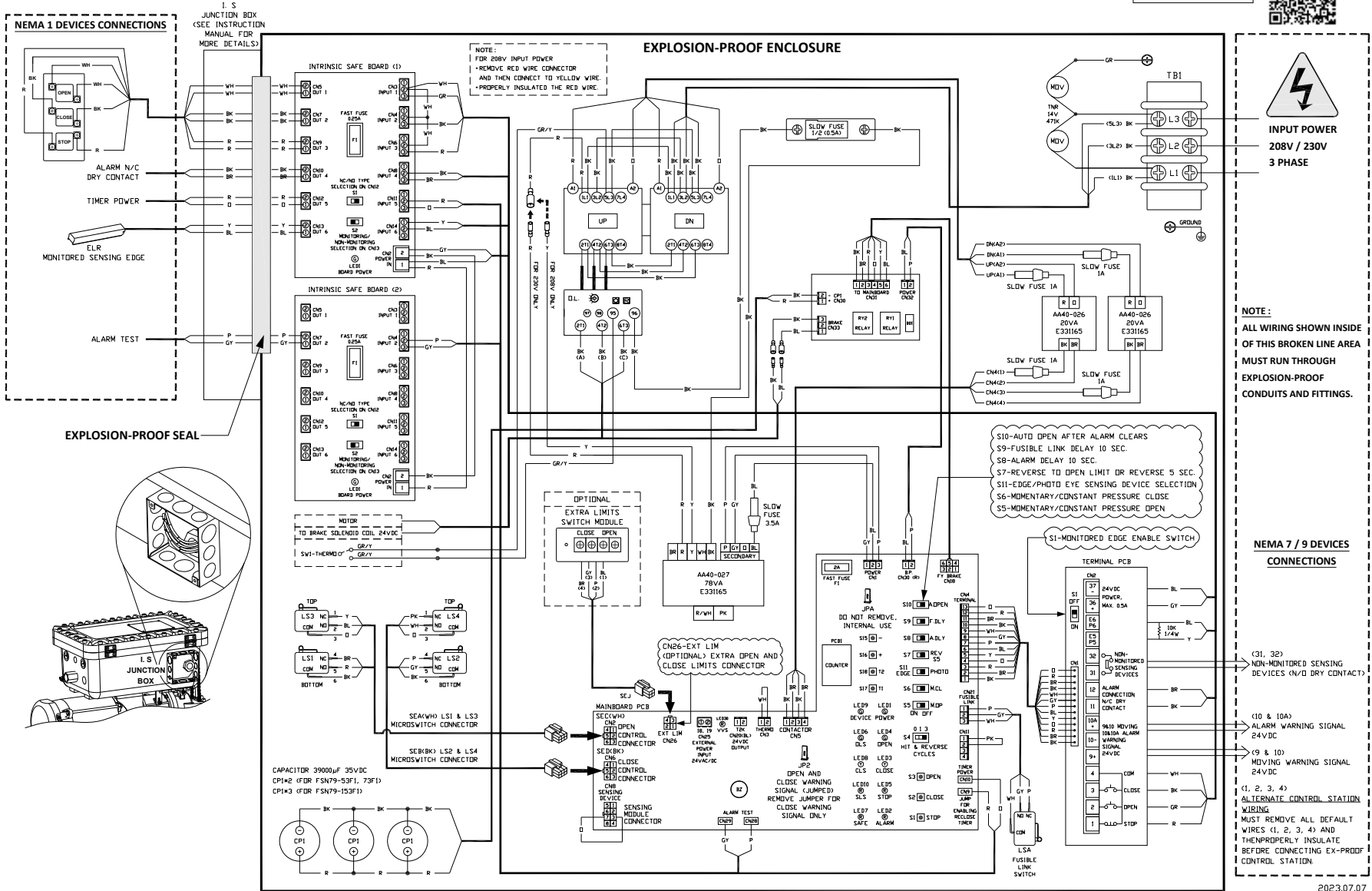
NEMA 1 DEVICES CONNECTIONS



2023.07.07



EBN79 3A02F1 L



2023.07.07

FSN79 208V/230V 3 PHASE 50/60HZ RH
(FOR FSN79-53F1, 73F1, 153F1)



EBN79 3A02F1 R

NEMA 7 / 9 DEVICES CONNECTIONS

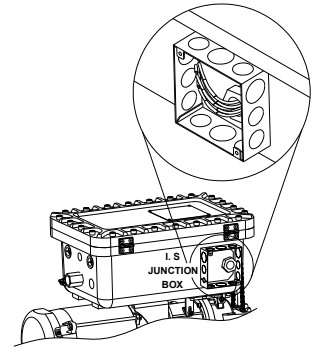
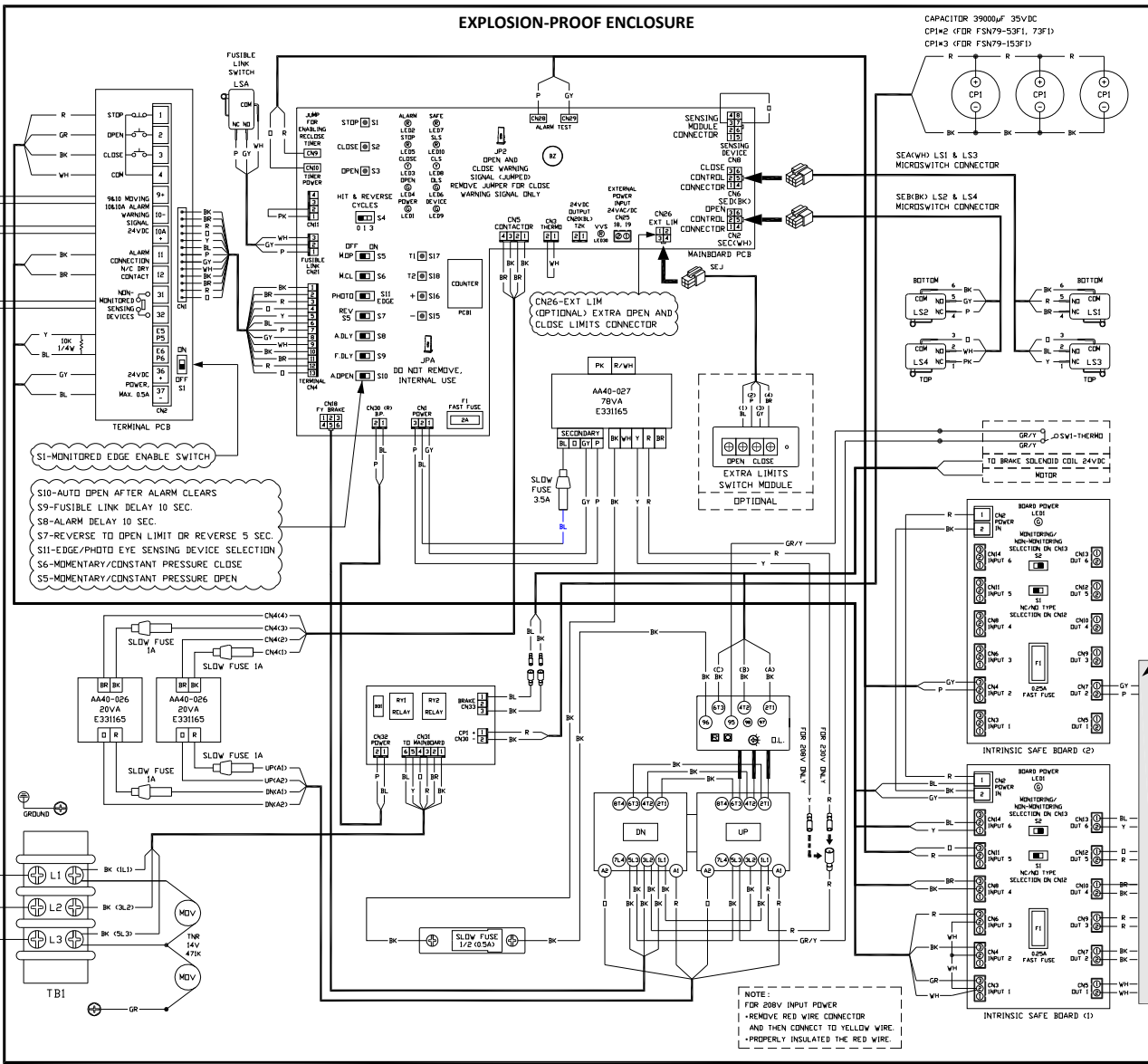
(1, 2, 3, 4)
ALTERNATE CONTROL STATION WIRING
MUST REMOVE ALL DEFAULT WIRES (1, 2, 3, 4) AND THEN PROPERLY INSULATE BEFORE CONNECTING EX-PROOF CONTROL STATION.

(9 & 10)
MOVING WARNING SIGNAL 24VDC
(10 & 10A)
ALARM WARNING SIGNAL 24VDC

(31, 32)
NON-MONITORED SENSING DEVICES (N/D DRY CONTACT)

NOTE:
ALL WIRING SHOWN INSIDE OF THIS BROKEN LINE AREA MUST RUN THROUGH EXPLOSION-PROOF CONDUITS AND FITTINGS.

INPUT POWER
208V / 230V
3 PHASE



I-S JUNCTION BOX (SEE INSTRUCTION MANUAL FOR MORE DETAILS)

NEMA 1 DEVICES CONNECTIONS

Diagram showing the connections for NEMA 1 devices:

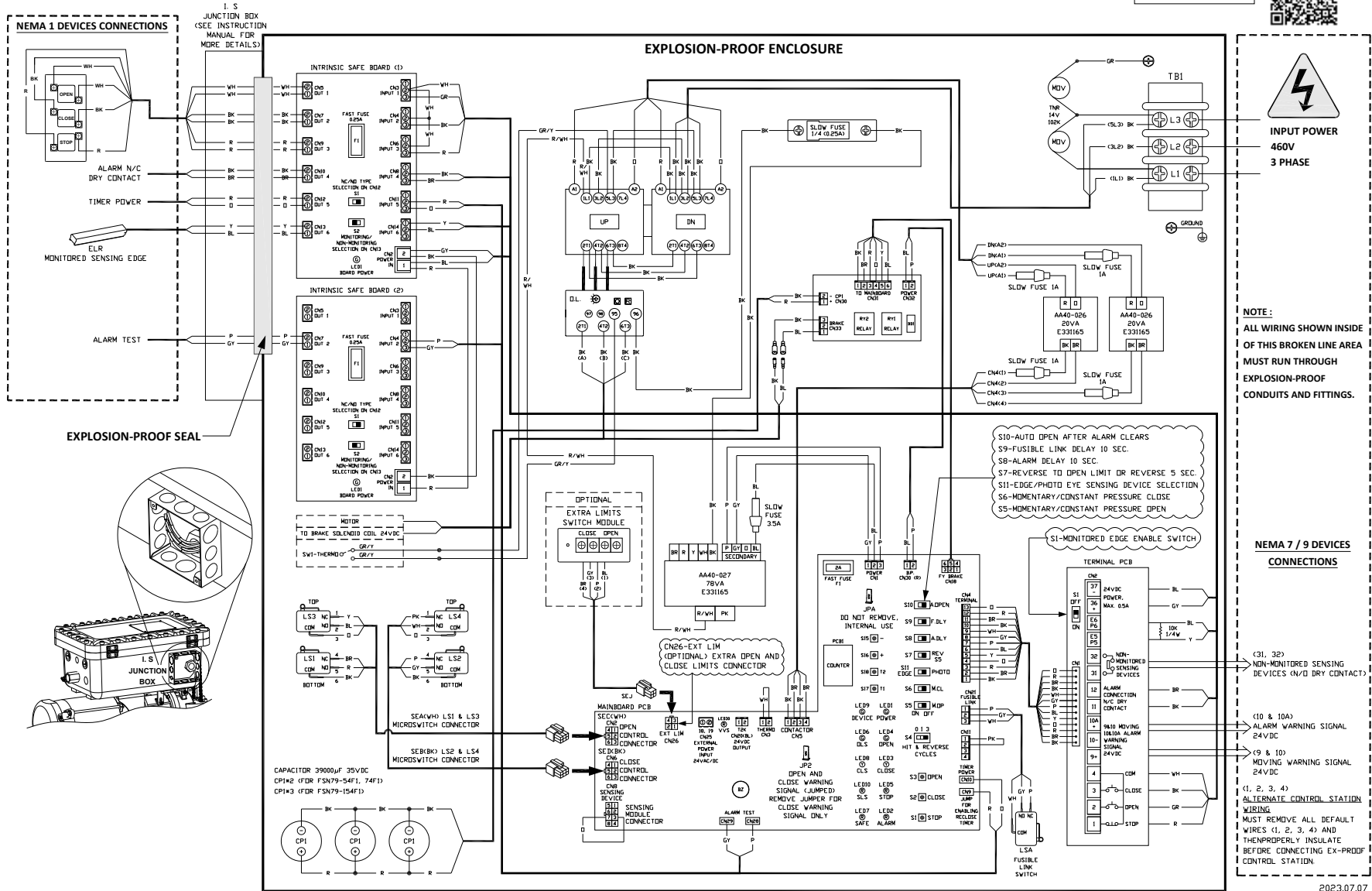
- ALARM TEST
- MONITORED SENSING EDGE ELR
- TIMER POWER
- ALARM N/C DRY CONTACT

NOTE:
FOR 208V INPUT POWER
- REMOVE RED WIRE CONNECTOR
AND THEN CONNECT TO YELLOW WIRE.
- PROPERLY INSULATE THE RED WIRE.

2023.07.07

FSN79 460V 3 PHASE 50/60HZ LH
(FOR FSN79-54F1, 74F1, 154F1)

EBN79 4A02F1 L



FSN79 575V 3 PHASE 60HZ RH
(FOR FSN79-58F1, 78F1, 158F1)

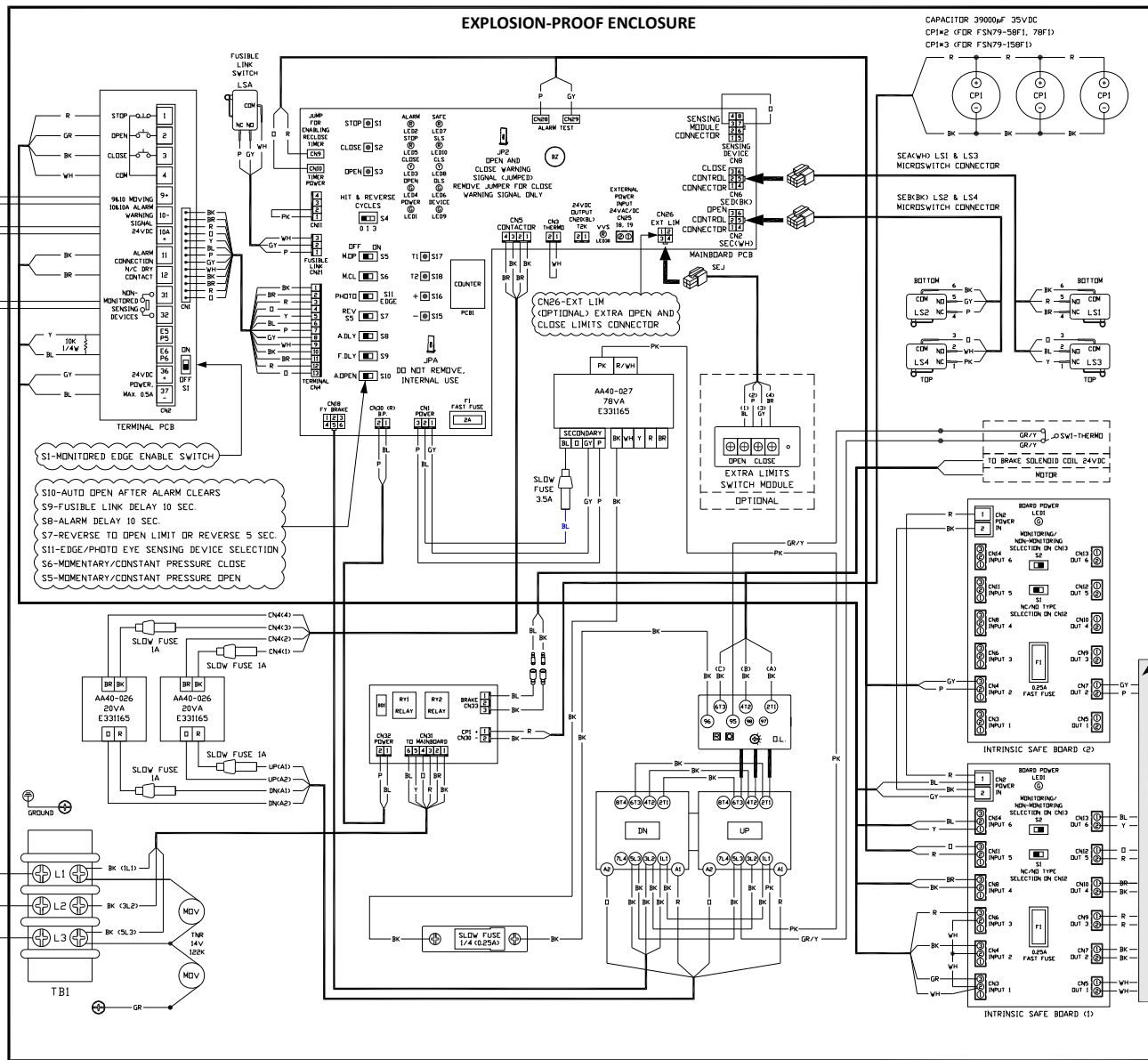


EBN79 6A02F1 R

NEMA 7 / 9 DEVICES CONNECTIONS

- (1, 2, 3, 4) ALTERNATE CONTROL STATION WIRING
- MUST REMOVE ALL DEFAULT WIRES (1, 2, 3, 4) AND THEN PROPERLY INSULATE BEFORE CONNECTING EX-PROOF CONTROL STATION.
- (9 & 10) MOVING WARNING SIGNAL 24VDC
- (10 & 10A) ALARM WARNING SIGNAL 24VDC
- (31, 32) NON-MONITORED SENSING DEVICES (N/D DRY CONTACT)

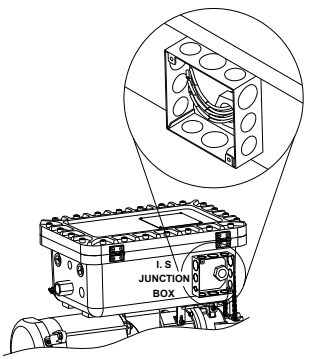
NOTE:
ALL WIRING SHOWN INSIDE OF THIS BROKEN LINE AREA MUST RUN THROUGH EXPLOSION-PROOF CONDUITS AND FITTINGS.



S1-MONITORED EDGE ENABLE SWITCH
S10-AUTO OPEN AFTER ALARM CLEARS
S9-FUSIBLE LINK DELAY 10 SEC.
S8-ALARM DELAY 10 SEC.
S7-REVERSE TO OPEN LIMIT OR REVERSE 5 SEC.
S11-EDGE/PHOTO EYE SENSING DEVICE SELECTION
S6-MOMENTARY/CONSTANT PRESSURE CLOSE
S5-MOMENTARY/CONSTANT PRESSURE OPEN



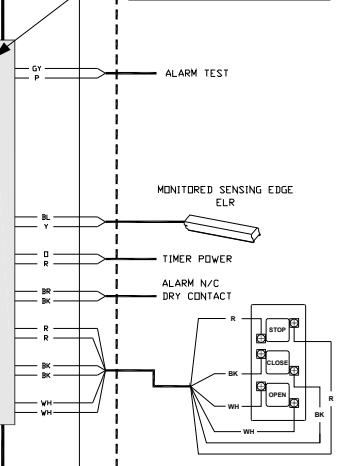
INPUT POWER
575V
3 PHASE



I.S. JUNCTION BOX (SEE INSTRUCTION MANUAL FOR MORE DETAILS)

EXPLOSION-PROOF SEAL

NEMA 1 DEVICES CONNECTIONS



2023.07.07

IMPORTANT SAFETY INSTRUCTIONS

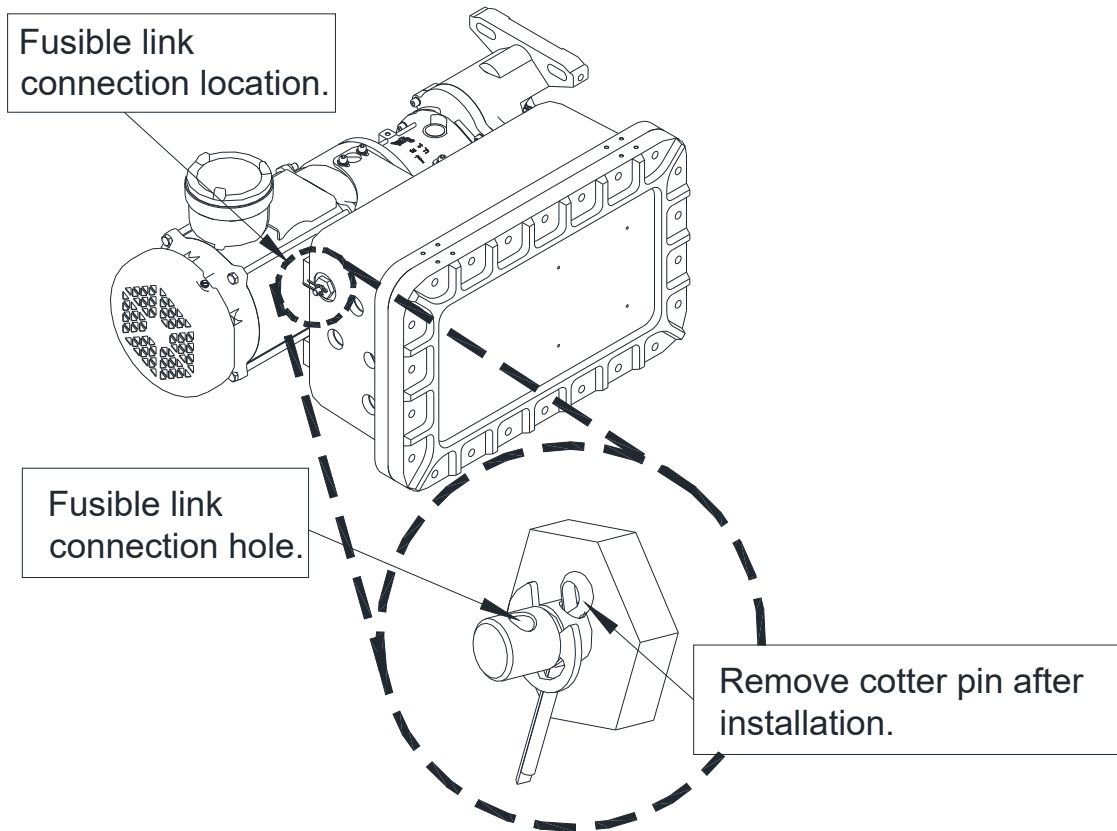
WARNING –To reduce the risk of severe injury or death:

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.**

FUSIBLE LINK CONNECTIONS

- ❖ **REMOVE COTTER PIN FROM RELEASE ASSEMBLY AFTER INSTALLATION IS COMPLETE.**

Refer to the fire door installation instructions for connection of the release assembly or consult NFPA-80 and the authority having jurisdiction for fusible link location(s) and method.



* Illustration only, not drawn to scale. See product for actual details.

OPERATING INSTRUCTIONS

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.



WARNING

If a sensing edge is not installed on the bottom of the door, and removing pressure from the “CLOSE” button or key switch position does not cause the door to stop, this condition must be corrected immediately. Improper operation could result in serious injury or death to person(s) trapped beneath 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	●		
Drop-test	Inspect door, drop-test for proper operation and full closure per NFPA-80			●

- ❖ Do not lubricate motor. Motor bearings are rated for continuous operation.
- ❖ 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 obtained from the door manufacturer per NFPA-80.



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.

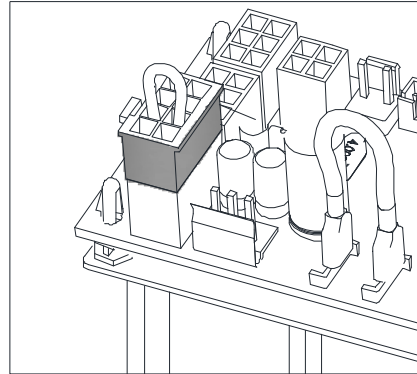
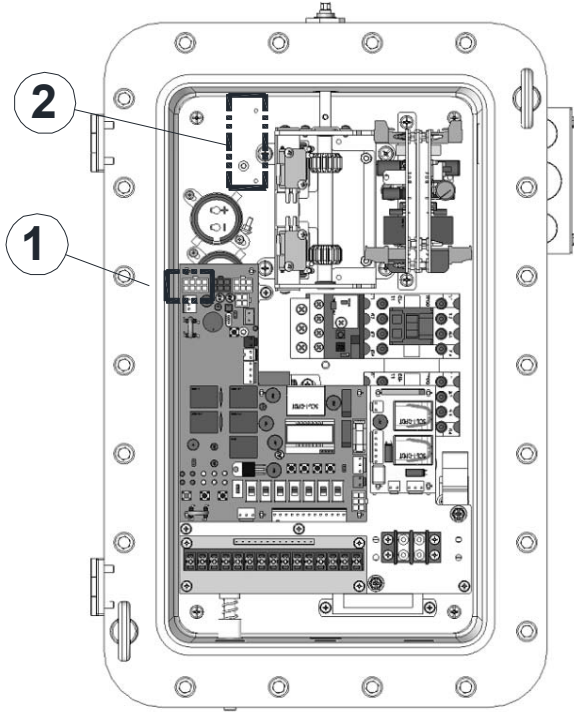
APPENDIX 1

Multiple Sensing Devices Connection Instruction

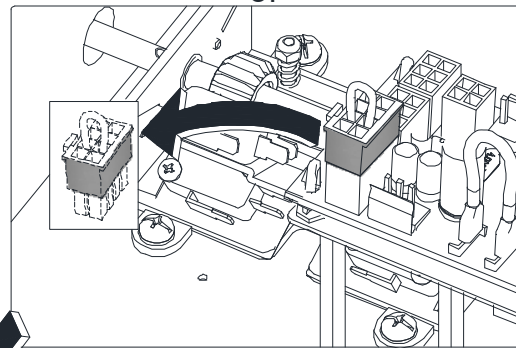
QST-FSN79-EP-ADAPTER-1

Warning: Power OFF When Connecting.

1 Plug back in the jumper connector if no additional modules is used.

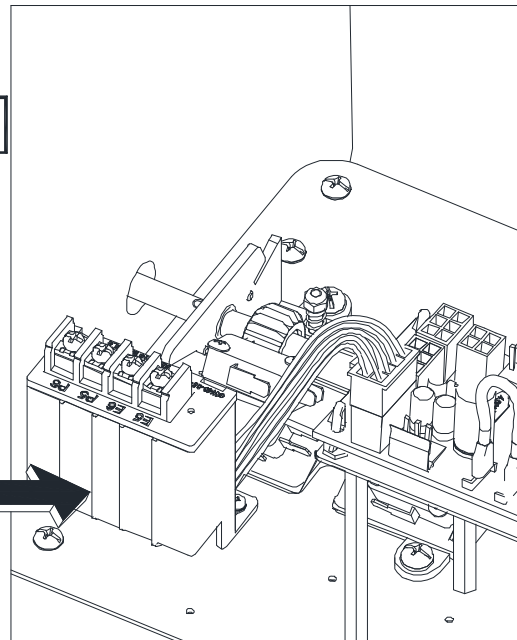
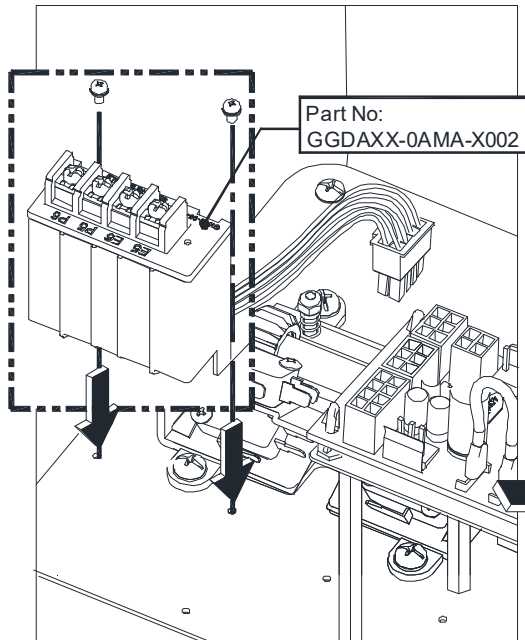


or



2 Secondary sensing device connects on 1st sensing module.

Unplug the jumper connector to add modules.

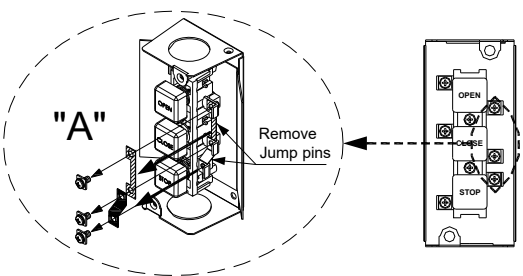


APPENDIX 2

Control Connections Diagrams for NEMA 1 Devices

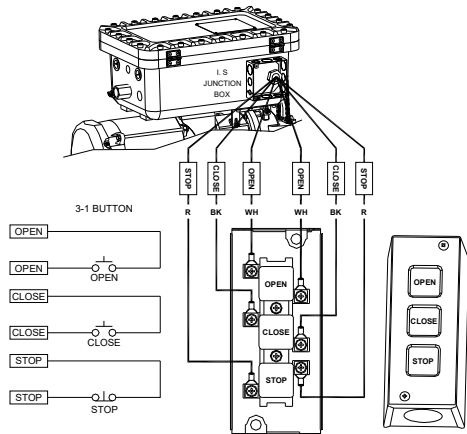
CCD-N79-V001

Warning !
Remove Jump Pins First - See "A"



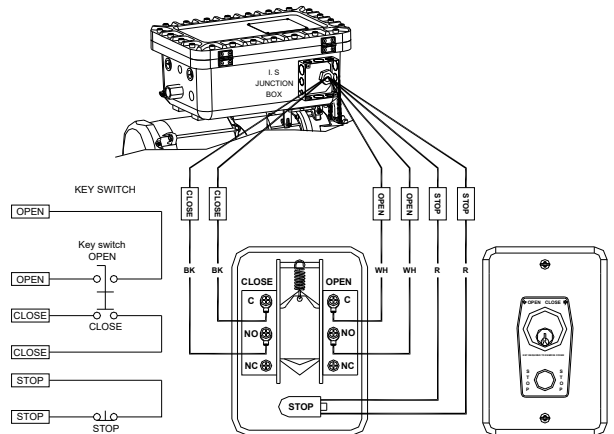
Control Wiring for 3 Button Stations

1 Set of 3 Button Stations

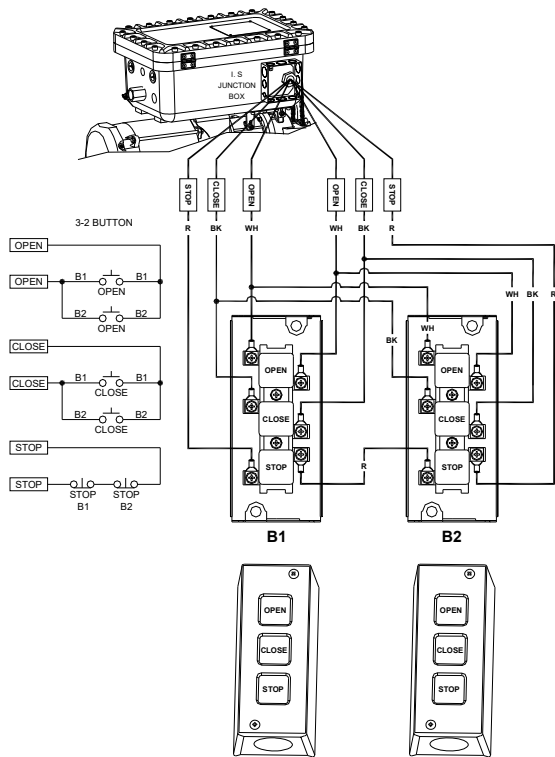


Control Wiring for Key Switch with Stop Button

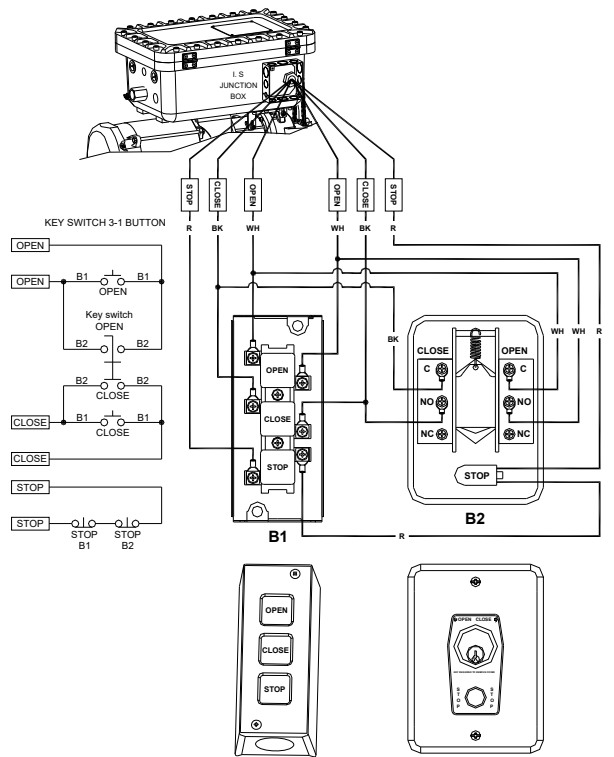
Key Switch with Stop Button



2 Sets of 3 Button Stations

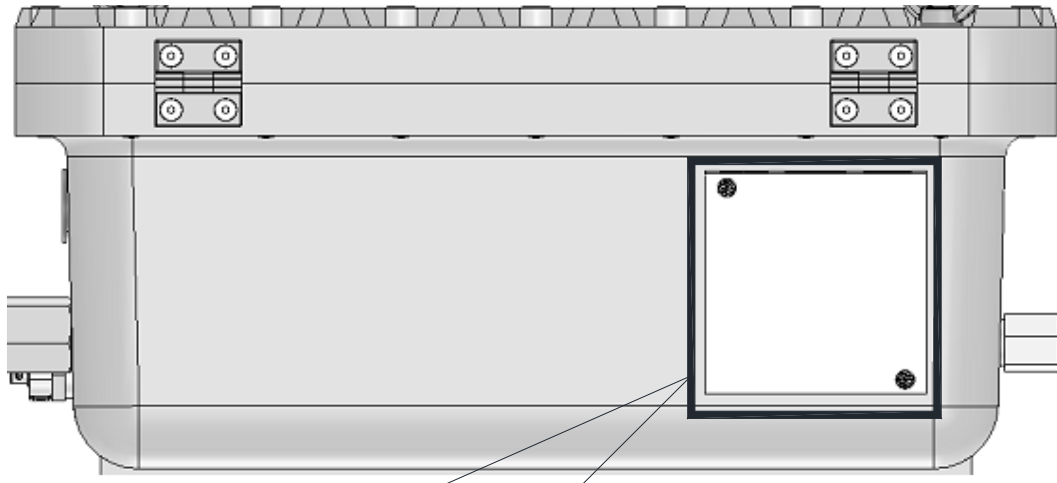


Key Switch (with Stop Button) and 3 Button Stations

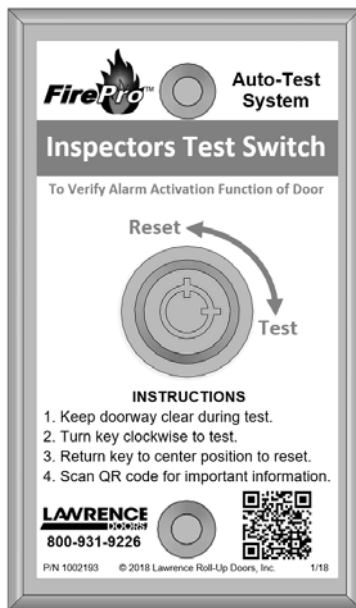


APPENDIX 3

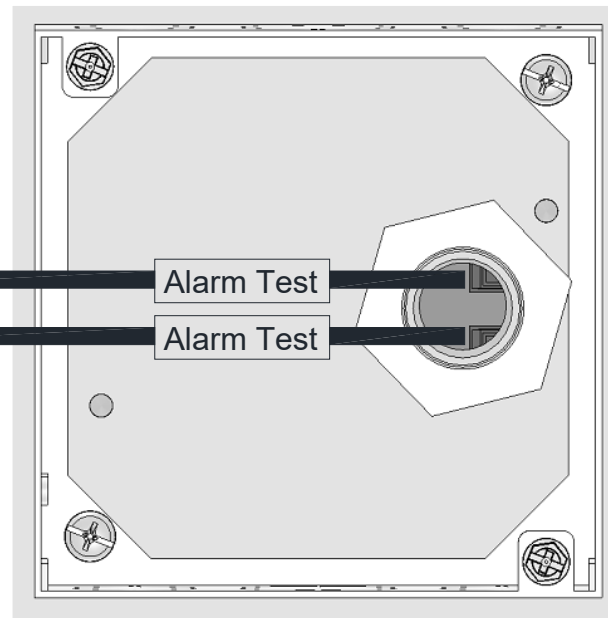
Alarm Test Keyswitch Connection – FS EP Board



Alarm Test Keyswitch



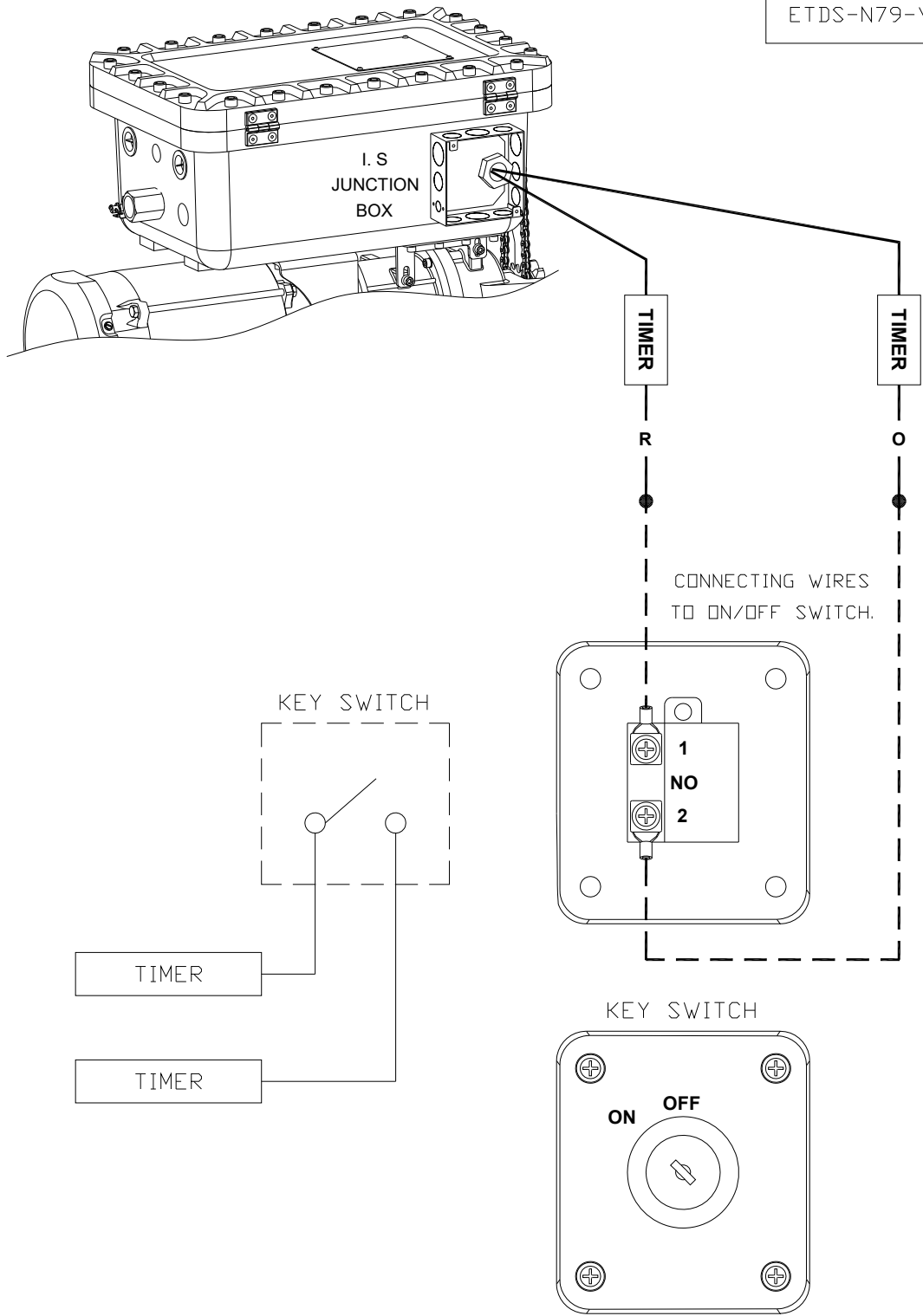
I. S JUNCTION BOX



APPENDIX 4

EXTERNAL NEMA 1 TIMER DEFEAT SWITCH CONNECTION

ETDS-N79-V001



APPENDIX 5

Wiring Change Instruction from 230V to 208V 3 Phase Operator FSN79 Series

FSN79-3P-V02

