FOUR-FOLD

ELECTRICAL

INSTALLATION INSTRUCTIONS

DOOR ENGINEERING
A SENNECA BRAND

DoorEngineering.com
800.959.1352

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Important Notice

⚠ WARNING

Before Door Installation:

- **READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.** Review with installation team.
- Verify required documents are correct (E1, Operator Layout, etc.)
- Verify that installation equipment (Telehandler, Forklift, Crane, etc.) is rated to handle the weight of the door.
- Verify that the door is the correct size for the opening. Measure and inspect the openings width and dimensions (reference included as-built drawings).
- Ensure that work area is clear of dirt and debris.

Before Operator Installation:

- **ALL ELECTRICAL WIRING MUST BE DONE BY A CERTIFIED ELECTRICIAN.**
- Read the *CW Automation Door Controller Setup Manual* provided with the control panel.
- Refer to all applicable local electrical codes.
- Always refer to National Electric Code.
- Always disconnect Main Power before doing any electrical work.
- Verify that proper Over-Current and Short-Circuit prevention will be used.
- CW Automation Contact: (507)-665-4186

Operator Install:

- A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs or adjustments to panels and other hardware before installingthe Operator.
- Place and constrain door panels in the closed position **before** connecting Operator.
- Installation of door Operator must be done by a qualified installer.
- Install Door Operator at least 8 feet or more above the floor.
- Do not connect the Door Operator to the source of power until indicated in the instructions.
- Locate the Control Panel:
    - Insight of door system
    - At a minimum height of 5 feet from finished floor to bottom of Control Panel
    - Away from all moving parts of door system

Safety Practices:

- All labels are provided in the “Safety Label Kit”.
- Install the “Entrapment Warning” label next to the Control Station in a prominent location.
- Before operating, always check clearance around the door for any person or object that may be in the door(s)’s path. Never store items in or near the area of door travel.
- If you have any questions about the safety of the door operating system. Contact Door Engineering & Manufacturing at **1-800-959-1352.**

CEDES GridScan/Pro
DE# 10-20-102

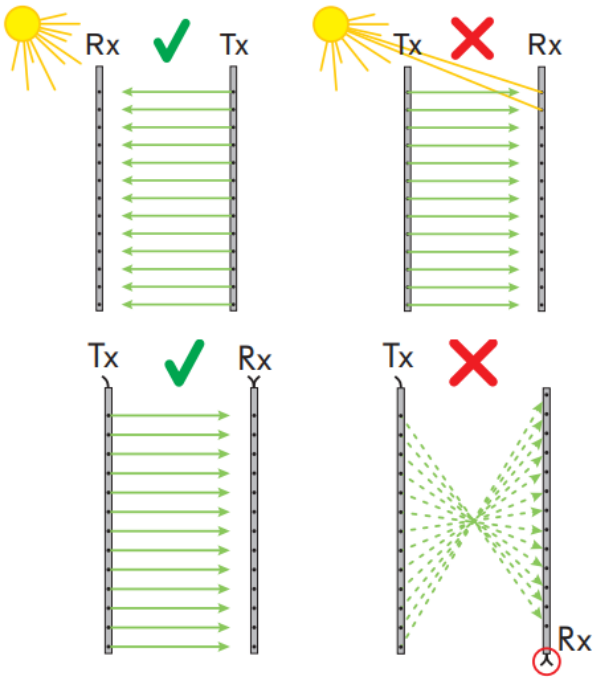
The emitter and receiver edges create a grid of infrared beams offering up to (8.2 ft) in protection height. When the infrared beams are interrupted, the output sends a signal to the connected door control unit. As soon as the detection area is clear again, the output switches to indicate that the area is "clear".

1.1 Package Contents

- 1 × GridScan/Pro emitter edge (Tx)
- 1 × GridScan/Pro receiver edge (Rx)
- 1 × Synchronization cable 10 m (33 ft)
- 1 × Connection cable 5 m (16.5 ft)
- 1 × Installation guide
- 1 × Hardware kit #10-05-019
- 1 × Extra Sync Extension #10-20-103 (For doors 14x14 or larger).

1.2 General Instructions and Precautions

- Never scratch or paint the optical lenses because they form the light path! Do not drill additional holes into the profile. Unpack the profiles just before installation in order to avoid damage.
- Do not bend or twist the edges!
- Oil can damage the cables. Contamination must be avoided at all times!
- Chemicals can damage the profile and optical characteristics. Contact must be avoided at all times!



- Although the GridScan/Pro is insensitive to direct sunlight, avoid all unnecessary exposure if possible, most especially to the receiver.
- Avoid interference from blinking lights or infrared light sources such as photo cells or other light curtains.
- Do not install the GridScan/Pro in places where the emitter and receiver edges are directly exposed to light sources such as FL tubes or energy saving lamps.
- Make sure to place the connection plugs for both the emitter and receiver at the same end.

1.3 Installation/Alignment

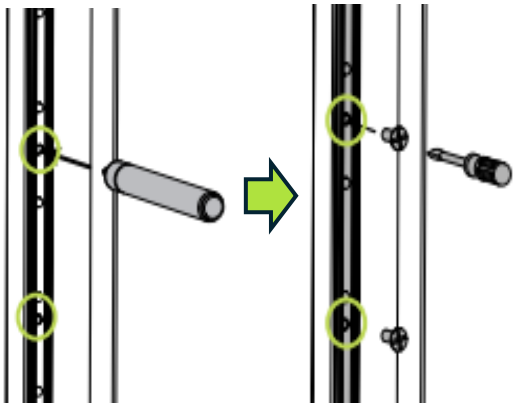
- The optical axis of the emitter (Tx) and the receiver edge (Rx) need to be aligned towards each other to ensure the light curtain functions reliably.
- A self-calibration on each optical beam is implemented. At the power- up the ideal emitting strength will be detected and used. To reduce interruption caused by dust the system checks the emitting power and adapts a new higher or lower strength if necessary.

WARNING
Electrical and mechanical hazards

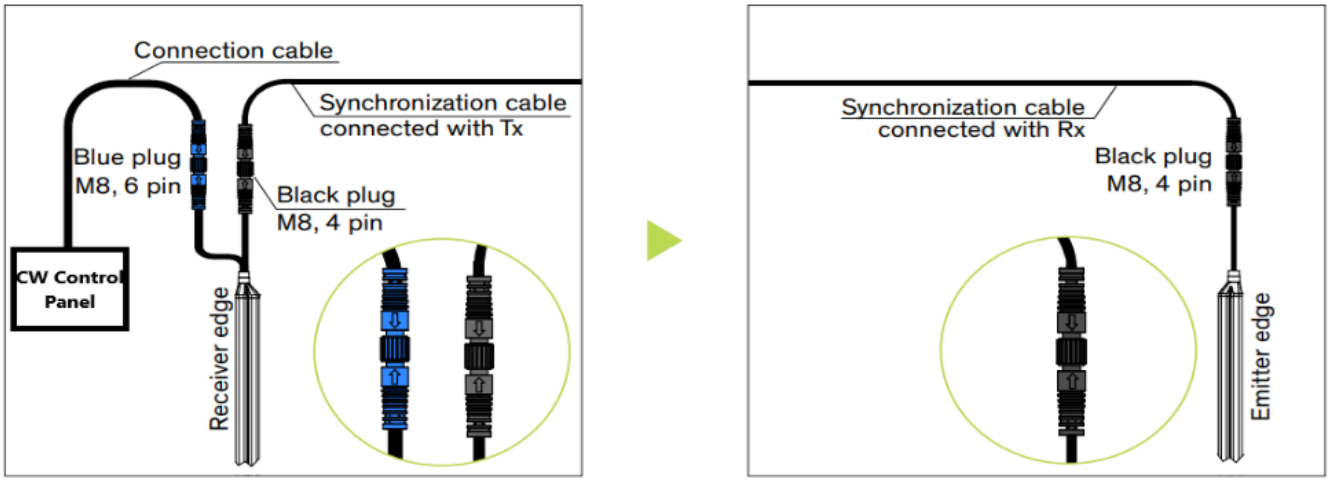
Electrical shock and unexpected door movement can cause serious injury or death.
- Follow all applicable safety measures.
- Use only specific and approved tools.
- If the GridScan/Pro has to be adjusted, the main power supply must be switched off and marked as out of service.

NOTICE
Mechanical damage to the GridScan/Pro

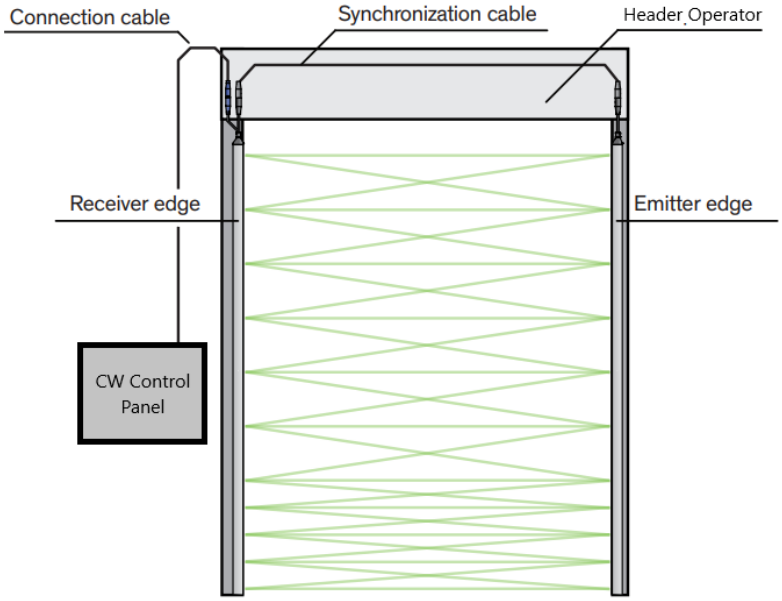
- Do not drill additional holes into the light curtain.
- Do not overtighten the mounting screws.
- Mount the edges on a flat surface.



1. **Mount the receiver and emitter at the same height.**
2. **Position the GridScan/Pro at least 3 inches from the door face and 12 inches from the bottom**, ensuring door hinges or protruding objects are not detected.
3. **Check alignment of the light curtain edges. Ensure the receiver is mounted close to 180° opposite the emitter and that the optical elements face each other.**
4. **Position the light curtain edges and mark the mounting hole locations.**
5. **Drill mounting holes (Ø4.3 mm) at the marked positions** for the mounting brackets (Part# 10-05-019). **DO NOT DRILL THROUGH THE LIGHT CURTAIN EDGES**
6. **Attach mounting clips to surface** you will be mounting the GridScan/Pro onto
7. **Clip in light curtains to the brackets.**
8. **Drill an access hole through the door jamb to route wiring to the control panel.**
9. **Repeat the process for the opposite side** with the remaining curtain

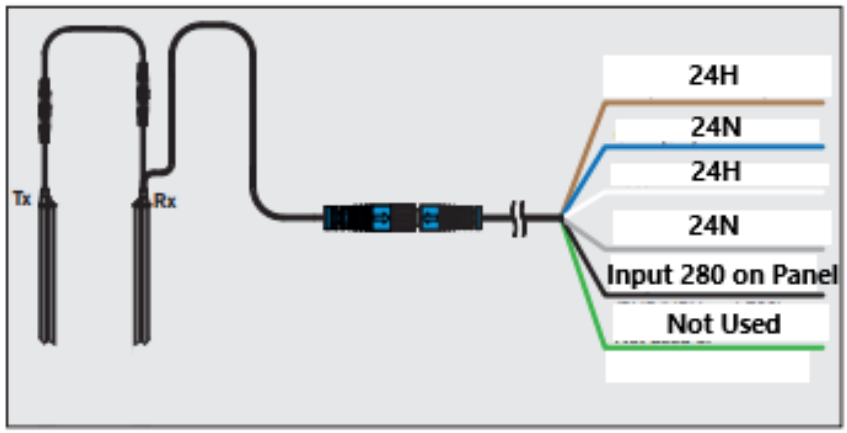


7. Connect the synchronization cable (**black plug**) to the receiver edge and run the cable up and over the header or in pre-installed conduit to the emitter side. Connect the synchronization cable (**black plug**) to the emitter edge.
8. Connect the connection cable (**blue plug**) to the receiver edge and guide the cable to the CW Control Panel.



1.4 Electrical Connection:

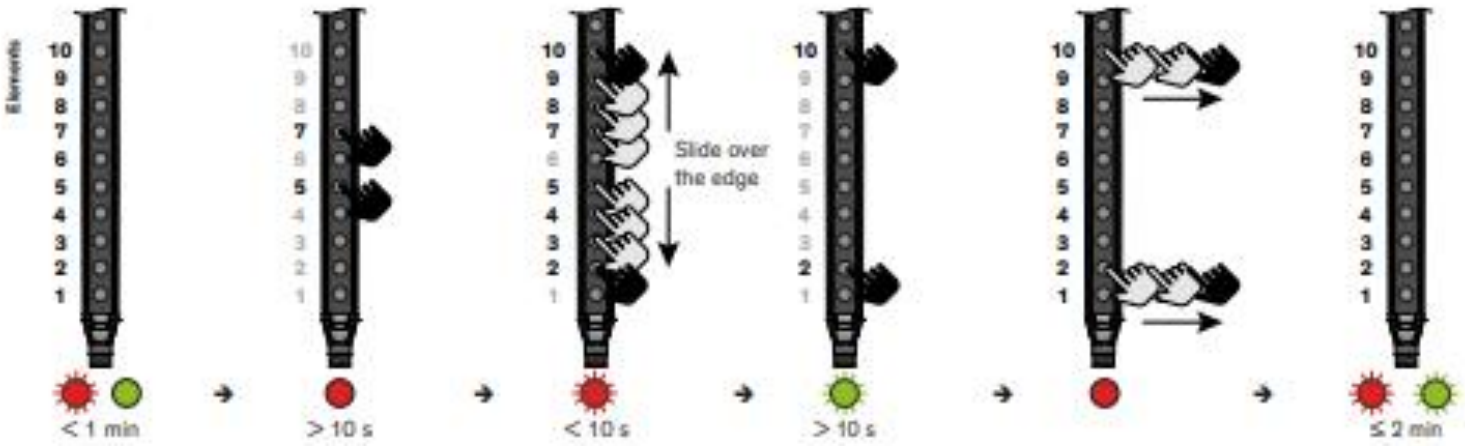
- White and Brown: 24H
- Grey and Blue: 24N
- Black: Signal Input 280 on Panel
- Green: Not used



1.5 Changing from Dynamic to Static

- Before the curtains are ready to use, you must change the mode from **dynamic to static**
- In dynamic (blanking) mode, the system is designed to ignore certain interruptions (like door movement or temporary obstructions). However, Door Engineering Four-Fold doors set up in dynamic mode can cause inconsistent readings or intermittent faults, especially if alignment isn't perfect or environmental factors (dust, vibration, reflections) change.
- Switching to static mode ensures the detection field remains fixed and predictable, there is less tolerance for shifting or intermittent signals, and the system becomes more reliable for stationary applications

1. **Power up** system.
2. **Interrupt elements 5 and 7** from the bottom:
    - **Hold** interruption for at **least 10 seconds**.
    - **Must begin within first minute after power-up.**
    - After 10 seconds, light curtain starts blinking red.
3. **Move from elements 5 to 2** and interrupt for **10 seconds**:
    - Blinking changes from red → green.
4. **Interrupt element 2 and 10** for **10+ seconds**:
    - Light turns constant red.
    - System restarts automatically.
5. Mode change is complete.
6. Static mode is indicated at power-up with a **green/off blinking sequence**.



1.6 Start-Up

- Switch on main disconnect located on the front cabinet of the control panel and allow to start up. The LED on the receiver edge blinks during the start-up phase.
- Check the LED on both edges (power, status).
- Check the top corner of the display on the PLC to ensure no errors are displayed. (If light curtains are wired improperly, you will get safety eye error).
- Test if the system is working correctly.
- Interrupt the light curtain and check if the LED status on receiver edge changes.
- Start a door closing cycle and interrupt the light curtain again. The door must stop closing and open again (depending on the controller setting).
- Start a complete door closing cycle and check that the door closes completely without problems.

1.7 LED Status Description

Receiver edge (Rx)

Green LED	Red LED	Sensor status
●	○	Light curtain free
○	●	Safeguarded area interrupted or door closed
○	☼	Start-up (slow blinking)
○	☼	Internal malfunction (fast blinking)
○	○	No power or edge is defective (see Chapter 13)
☼	○	Static mode configured (blinking with 1 Hz / ≤2 min)

● = LED on ○ = LED off ☼ = LED blinking

Emitter edge (Tx)

Green LED	Sensor status
●	Power OK
○	No power or edge is defective (see Chapter 13)

Table 5: LED status description emitter edge

1.8 Troubleshooting

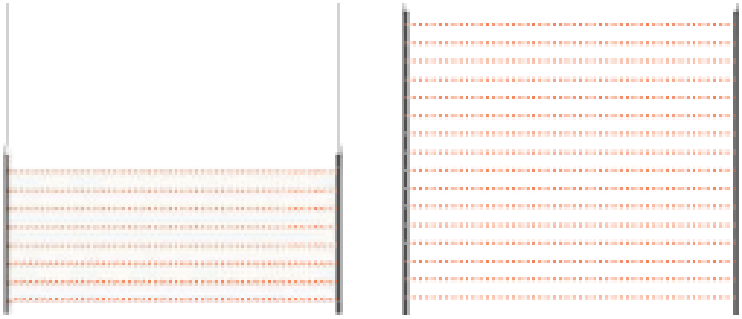
Tx LED Green	Rx LED Green	Rx LED Red	Action
LED off	LED off	LED off	▸ Check electrical connections. ▸ Check supply voltage of the door controller.
LED off	LED off	LED red	▸ Check the connection of the synchronization cable.
LED green	LED green	LED off	▸ Make sure the sensor edges are not mounted close to any shiny or reflective surface. ▸ Restart the system.
LED off/on (flickering green)	LED off	LED off/on (flickering red)	▸ Check power supply. ▸ Check connections.
LED green	LED off	LED off/on (slow blinking red)	▸ Make sure the safeguarded area is clear of interruption. ▸ Check the alignment of the light curtain. ▸ Clean elements.
LED green	LED on/off (flickering green)	LED off/on (flickering red)	▸ Make sure the safeguarded area is clear of interruption. ▸ Clean the elements. ▸ Make sure that the cables and edges are located away from sources of electromagnetic interference. ▸ Ensure that the emitter and receiver are correctly aligned and remain so during door closure (e.g. that vibrations do not cause edges to become misaligned). ▸ Restart the system.
LED green	LED off	LED red	▸ Make sure the safeguarded area is clear of interruption. ▸ Reopen door completely. ▸ Clean the elements. ▸ Check the alignment of the light curtain. ▸ Check that the test input is connected to the test output signal of the door control unit and that the signal level and logic (HIGH/LOW) are correct. If the test input is not used, connect it permanently to U_{SP}. ▸ Measure the U_{SP} voltage. ▸ Restart the system.
LED off	LED off	LED off/on (slow blinking red)	▸ Check the connection of the synchronization cable.
LED green	LED off	LED off/on (red, fast blinking, 5 Hz)	**Internal error occurred** ▸ Restart the system. ▸ Replace Rx edge.
LED green	LED blinking	LED off	▸ Check if the selected configuration is correct (static mode selected)

Miller Edge RLC-K72/36

DE# 10-20-16

The **Relay Light Curtain (RLC-K36 or RLC-K72**) is **a non-monitored, fail-safe photo optic solution** that has both a **normally open (NO**) and **a normally closed (NC) dry contact** output. Depending on the application requirements, customers can receive **either the RLC-K36** or **RLC-K72**

Package Contents



- **RLC-K36**: **3 ft., 8 elements**
  - (1) Emitter
  - (1) Receiver
  - (4) Universal mounting brackets
  - (8) #4 ½ inch zinc plated oval head self-tapping screws
  - Rubber Caps
- **RLC-K72**: **6 ft., 16 elements**
  - (1) Emitter
  - (1) Receiver
  - (6) Universal mounting brackets
  - (12) #4 ½ inch zinc plated oval head self-tapping screws
  - Rubber Caps

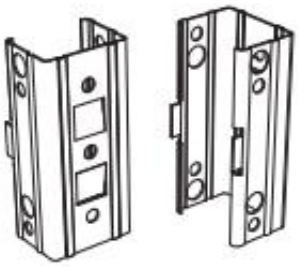
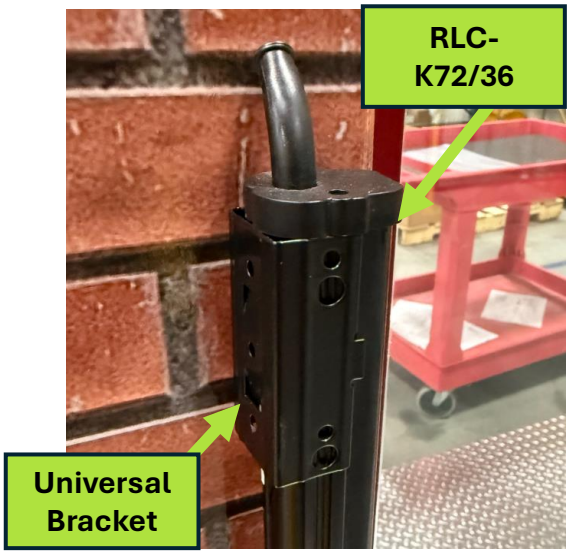


IMAGE 2:
UNIVERSAL MOUNTING BRACKETS

Installation/ Alignment

- Identify the **emitter (2 wires)** and the **receiver (5 wires).**
- Identify the locations you will install the Light Curtains**, usually close to the door tracks on the inside of the door opening**. Be certain no part of the moving door will obstruct the infrared beams.
- Install the mounting brackets using the supplied hardware. Place one bracket approximately 6 inches from the top and one 6 inches from the bottom of the emitter and receiver. For the RLC-K72, install a third bracket centered between the top and bottom brackets. Ensure all brackets are aligned.
- Install the emitter and receiver by clipping them into the mounting brackets. The flat surfaces of the emitter and receiver, where the optics are located, should point at each other, across the door opening
- **Drill an access hole through the door jamb to route wiring to the control panel.**



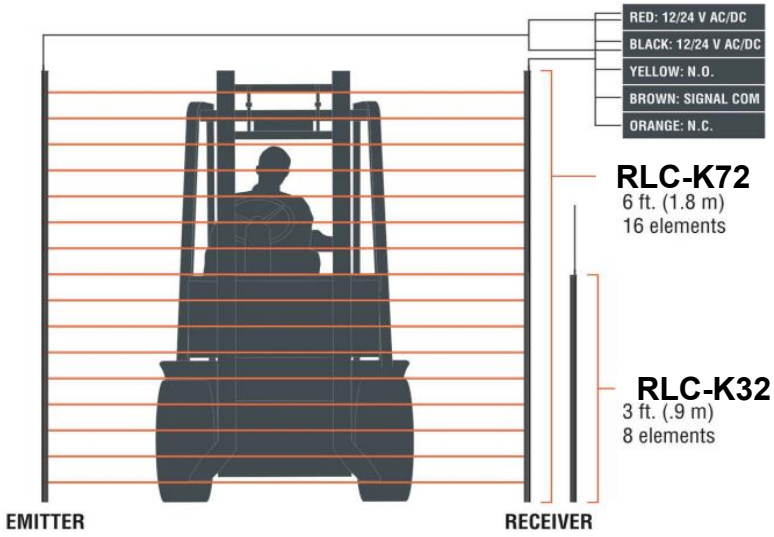
Miller Edge RLC-K72/36
DE# 10-20-16

- **Install one rubber cap per light curtain**, covering the wire outlet. With the Wire exiting the top of the light curtain, fold the wire at the strain relief and slid ethe cap over the top.

The Relay Light Curtain (RLC-K36, RLC-K72) is a non-monitored, fail-safe photo optic solution that has a normally open and a normally closed dry contact output.

Electrical Connection

- **Transmitter**: 2 wires
  - **Red:** 24H
  - **Black:** 24N
- **Receiver**: 4 wires
  - **Red** and **Orange** 24H
  - **Black:** 24N
  - **Brown**: Input 280 on Control Panel
  - **Yellow**: Not Used



Installation/ Alignment

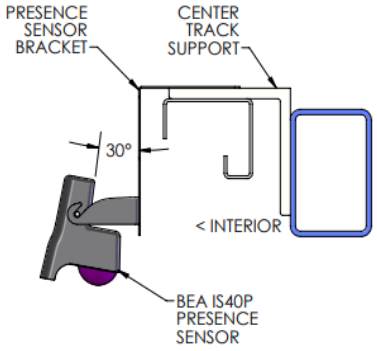
- Confirm the green LEDs at the bottom of both the emitter and receiver are on, indicating power. The light curtains have a wide acceptance angle and should align easily upon powering.
- The red receiver LED indicates either an obstruction or a misalignment. To test proper operation, step in and out of the door opening, observing the red LED turning on and off.

EMITTER LED	RECEIVER LED
Green: Power	Green: Power
	Red: Obstruction or misalignment

- Door Engineering strongly recommends that users check photo optics at least once per month for low batteries alerts (where applicable) and damage to housings and mountings. Also check for signs of damage to cables or connection points.
- To replace your Miller Edge Light Curtain, contact Door Engineering. Attempting to repair your Miller Edge Light Curtain is not recommended and will void the warranty.

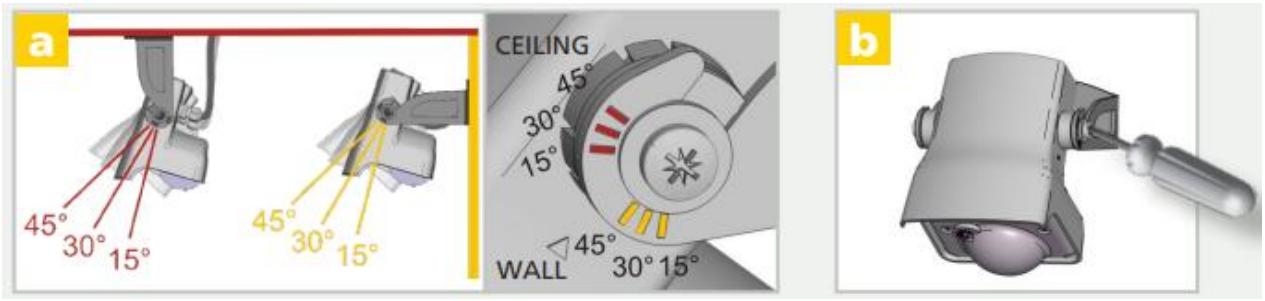
BEA IS40P Presence Sensor
DE# 10-00-273

When the infrared beams are interrupted, the output sends a signal to the connected door control unit, the control unit will say **safety eye**. As soon as the detection area is clear again, the output switches to indicate that the area is "clear".

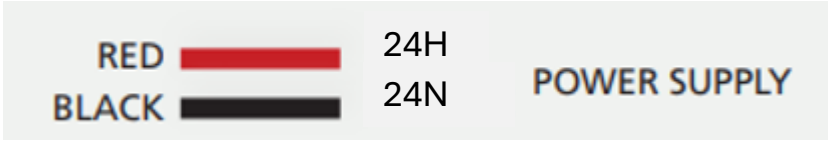


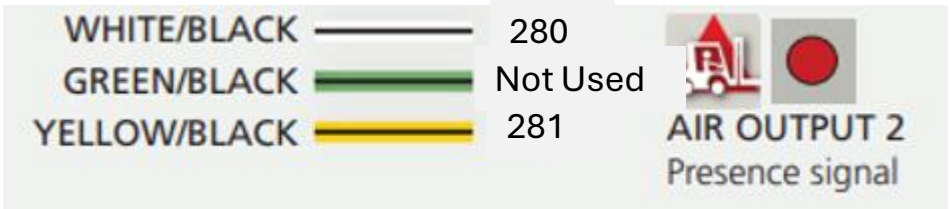
Installation/ Alignment

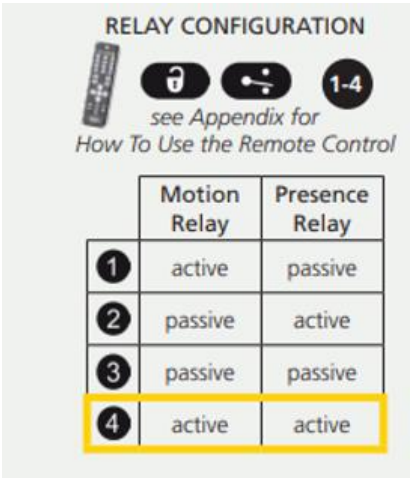
- Unit should be mounted below the operator to the center track bracket utilizing the IS40P mounting bracket.
- Typical units should be installed at a 30-degree angle from the metal sensor bracket.
- Always check placement of all wiring before powering up to ensure that moving door parts will not catch any wires and cause damage to the equipment.



Electrical Connection







BEA IS40P Presence Sensor
DE# 10-00-273

Programming the IS40P

Listed below the recommended factory settings for the IS40P units are noted below:

- **Immunity Settings:**
  - Should be set to #3 (Snow)
- **Automatic Learn Time:**
  - Setting to be set at No Learn #9
- **IR Air Detection Field:**
  - Typical setting would be #3, alternate option would be #8
- **IR Target Size:**
  - Typical setting would be #1, alternate option would be #2 or #5

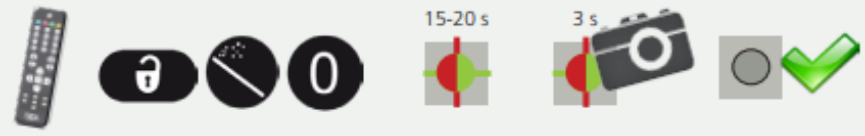
  The sensitivity of the system will diminish the larger the chosen target size so verify what size vehicle is using the door system to ensure the IS40P senses it.

		0	1	2	3	4	5	6	7	8	9
OUTPUT REDIRECTION	R1 F1	presence	air entry pulse	air exit pulse	first or last line air entry pulse	first or last line air exit pulse	presence	presence			
	R2	presence	presence	presence	presence	presence	presence	presence			
FREQUENCY	DD		A	B							
MAX. PRES. DETECTION TIME		30 s	1 min	2 min	5 min	10 min	20 min	1 h	1 h 30	2 h	no learn*
IR CURTAIN IMMUNITY			low	normal	high						
TARGET SIZE**	F2										
AIR DETECTION FIELD	BE										

DOOR EXAMPLE
First Line
Last Line

Once settings have been adjusted Launch a setup to take a reference picture to complete the programming process.

Step out of the detection field and do not leave any tools inside the detection field.



BEA IS40P Presence Sensor
DE# 10-00-273

Troubleshooting

	The door never closes and the LED is ON.	Object in the AIR detection area.	Move objects or reduce automatic learn time.
			Wait for learn time to expire and/or Launch a setup or cycle power.
	The door remains closed and the LED is OFF.	The sensor power is off.	Check the wiring and the power supply.
	The infrared sensor does not react.	The infrared power emission is too low according to the mounting height.	Launch a new setup. Step out of the detection field!
		Improper Target Size.	Ensure the target size is not to large or larger than the pattern size.
	The door opens and closes constantly.	The sensor is disturbed by the door motion or vibrations caused by the door motion.	Make sure the sensor is anchored properly.
			Increase the sensor angle.
			Reduce the AIR detection zone.
	Sporadic presence detections for no reason.	The presence detection is disturbed by rain or lamps.	Set the AIR-curtain immunity to value 3.
		The sensor is not installed properly.	Fasten the sensor firmly.
	The red LED is permanently ON after a setup.	The sensor has failed the AIR-setup.	Launch a new setup and step out of the detection field.
	The setup lasts more than 30 seconds.	The setup is disturbed.	Make sure the detection field is clear and launch a new setup.
		Another sensor causes interference.	Select a different frequency for each sensor.

BEA IS40P Presence Sensor
DE# 10-00-273

Troubleshooting

The sensor does not unlock and the red LED flashes quickly.	The sensor needs an access code to unlock.	Enter the right access code.
		If you do not know the access code, delete an unknown code (see page 7).
The sensor does not respond to the remote control.	The remote control batteries are weak or improperly installed.	Check the batteries and change them if necessary.
	The remote control is poorly aimed.	Point the remote control towards the sensor.
	The sensor is not powered.	Check the power supply of the sensor.

Only trained and qualified personnel are recommended to install and set up the sensor.

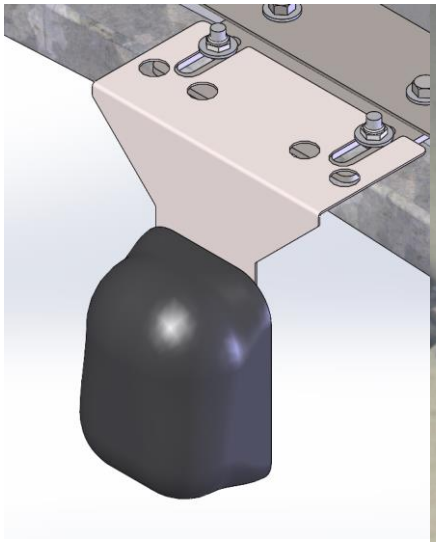
After installation, save an access code to lock the sensor.

Always test the proper operation of the installation before leaving the premises.

The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.

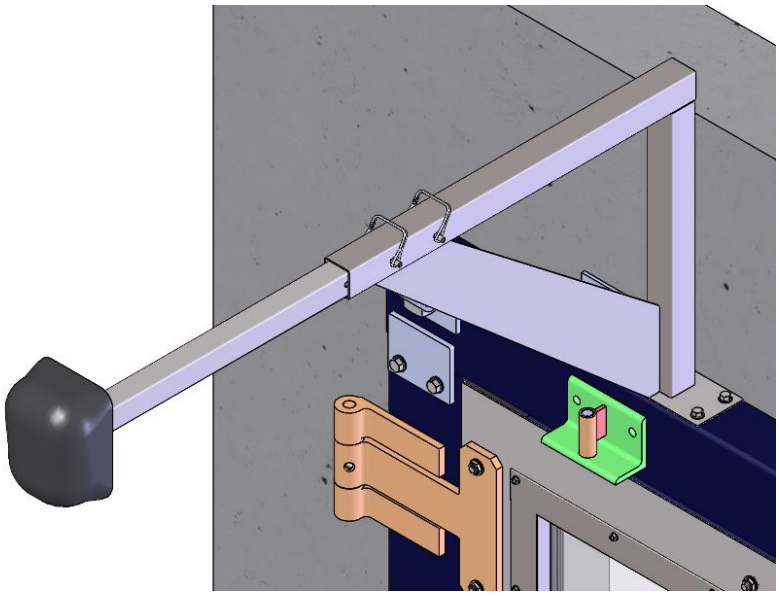
BEA LZR Widescan
DE# 10-00-732

BEA's LZR-WIDESCAN is a LASER-based, Time-of-Flight sensor used for motion, safety and presence detection.

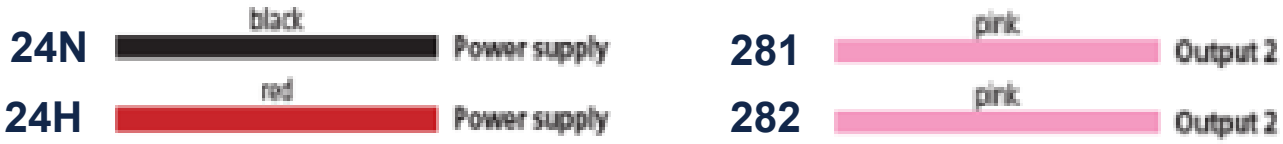


Mounting the BEA LZR Widescan

- The **BEA LZR Widescan can be mounted either center or arm-mounted** depending on the application, so **always reference the drawing to confirm the correct setup.**
- For center-mounted applications, install the sensor on the **IS40P bracket at the center of the doors**, This setup **requires drilling additional holes,** and the unit will stick out slightly from the bracket.
- The sensor must be **mounted low enough to prevent the drive arm from contacting the unit** during operation.
- For side-mounted applications**, mount the extended bracket on the header** and **follow the reference drawing to ensure proper positioning and safe coverage.**



Electrical Connection



BEA LZR Widescan
DE# 10-00-732

BEA's LZR-WIDESCAN is a LASER-based, Time-of-Flight sensor used for motion, safety and presence detection.

Positioning the Detection Field

- Activate the 2 visible laser spots by pressing **"OK"** twice on the LCD or pressing **"UNLOCK, WAND, WAND"** on the remote control.
- Make sure the curtain is parallel to the door by adjusting one or both screws on the side of the sensor.
- Position the curtain closer to or farther away from the door by turning the screw at the top.
- When the safety function is required, the red spots should be as close to the door as possible.
- Launch the **"POSITION WIZARD"** to position the detection field correctly in front of the door.
- Push and hold **"OK"** on the LCD to launch the **"POSITION WIZARD"**.
- Rotate the sensor to align the center of the red spots with the center of the door. Push **"OK"** on the LCD.
- Rotate the sensor until the LCD screen validates the position. Push **"OK"** to exit.

Programming

- Make sure the blue protection film and cover are removed from the sensor.
- The teach-in zone (the square in front of the 2 visible spots) must be completely clear.
- **A teach-in must be launched each time a sensor angle has been changed**.
- Use the VIEWER feature on the mobile app to verify the field size each time a field is changed.
- Check your profile settings on the mobile app before beginning installation. The "First Installation" profile has a simplified list of settings. The "Fine tuning" profile has the full list of settings. This should be used for installations requiring more customization.

BEA LZR Widescan
DE# 10-00-732

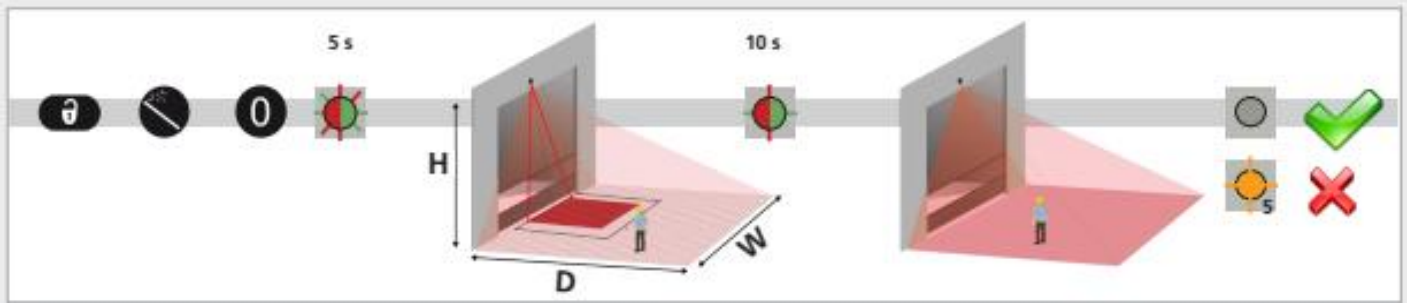
Teach-In: Install

MOBILE APP

- Verify settings from the physical installation and then follow the prompt for the teach-in process to begin.
- Clear the area and press "Start teach-in process" at the bottom of the screen.
- The app will notify when the Teach-In is complete. Press "OK" to move forward to Outputs.

REMOTE CONTROL

- Launch a teach-in by remote control. The Teach-In process will start after 5 seconds.
- Wait while the position, angle, and height are learned and the background is analyzed.
- The Teach-In will end automatically.



LZR Settings

- Out1 Funct. → set to “Safety”
- Out2 Funct. → set to “Presence”
- Relay Funct. → set to “Motion
- More → OK.
- **Out 2 Logic → “NC”**

Motion (for 14’-0” x 14’-0” doors) - THIS WILL DISABLE THE MOTION FIELD, WHICH IS NOT BEING USED

Width → **0"** b. Depth/"Field Stop" → **0””**

Presence (for 14’-0” x 14’-0” doors) - ONLY THE PRESENCE FIELD IS BEING USED

Width → **96”** b. Depth/"Field Stop" → **84”**

Field Start (Door Zone Off)→ **48”**

Safety (for 14’-0” x 14’-0” doors) - THIS WILL DISABLE THE MOTION FIELD, WHICH IS NOT BEING USED

Width → **0”**b.Depth/"Field Stop" → **0”**

- Launch a **Teach In** using the remote control or Mobile app to save all settings.
- Test Field Size a solid red light should appear when objects are in the field.

NOTE: THE ABOVE SETTINGS ARE approximations for 14’x14’ doors. Field Adjustment is required to optimize to field conditions.

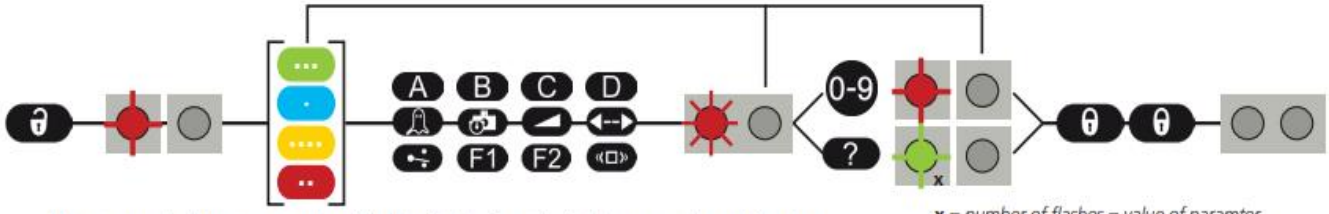
BEA LZR Widescan
DE# 10-00-732

Remote Control Sequences

After unlocking, the red LED flashes and the sensor can be adjusted by remote control.

If the red LED flashes quickly after unlocking, enter an access code from 1 to 4 digits. If you do not know the access code, **cycle power**.

To end an adjustment session, always lock the sensor.



If necessary, select the corresponding detection field before selecting the parameter and changing the value. The second LED indicates the detection field.

x = *number of flashes = value of paramter*

= field width 2.35m

Troubleshooting

	N	EEPROM / Watchdog test	Cycle power. If error returns, replace sensor.
E1 1	E1: CPU-XXX	The sensor encounters an internal problem	Cycle power. If error returns, replace sensor.
E2 2	E2: XXX PWR	The ADP supply is faulty	Cycle power. If error returns, replace sensor.
		The LZR supply is faulty	1. Check power supply (Diagnostics menu in LCD) to ensure it is within specified range. 2. Cycle power. If error returns, replace sensor.
		The 5V supply is faulty	1. Check power supply (Diagnostics menu in LCD) to ensure it is within specified range. 2. Cycle power. If error returns, replace sensor.
	E2: IN SUPPLY	The power supply is too low or too high	1. Check power supply (Diagnostics menu in LCD) to ensure it is within specified range. 2. Cycle power. If error returns, replace sensor.
	E2: TEMP	The internal temperature is too low or too high	Check the sensor temperature (Diagnostics menu in LCD) to ensure it is within specified range.
			1. Check power supply (Diagnostics menu in LCD) to ensure it is within specified range. 2. Cycle power. If error returns, replace sensor.
			Set Heating mode to "auto."
			Protect the sensor from direct exposure to heat or cold.
	E3: RXTX PWM	DCA Communication error	Contact BEA Technical Support.
	E4: FRONTFACE	Front face masking	Remove blue protection film.
			Ensure the cover is either completely removed or latched in the closed position.
			Clean the sensor lens with appropriate material.
			Check for frost/ice on te lens. Use Heating function, if necessary.
			Ensure no object (goal post, low ceiling, etc.) is obstructing the sensor view.

BEA LZR Widescan
DE# 10-00-732

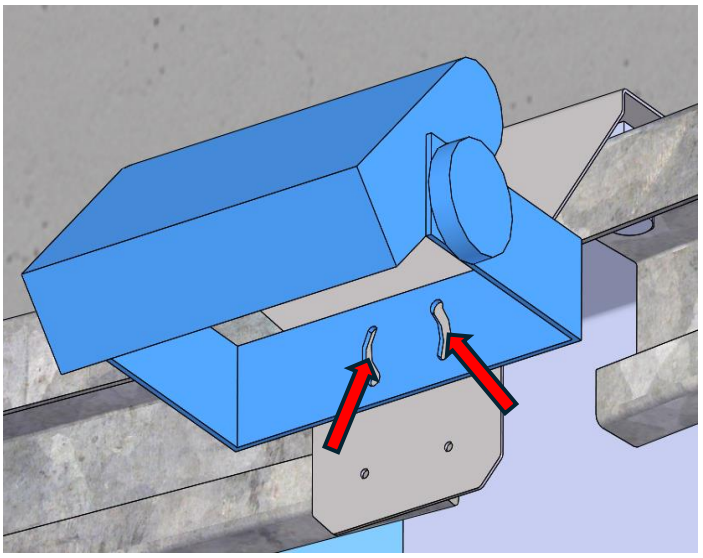
E5 5		The sensor requires a teach-in	Launch teach-in after angle adjustment. All presence/safety outputs are activated.
	E5: INSTALL	Install teach-in is required after power-on, curtain disabling, or factory reset	Launch a teach-in.
	E5: FLATNESS	Faulty teach-in because the sample area is not flat	1. Make sure that the teach-in zone is clear of objects. 2. Make sure that any drains/washouts (i.e. holes) are covered with cardboard. 3. Launch an install teach-in. Or launch an Install Right or Install Left teach-in if objects are permanent and unmovable, yet still obstructing a successful teach-in.
	E5: MASKING	A portion of the sensor's view is blocked during the Install Teach-in	1. Determine if the masked area will affect sensor performance (think "If I can't see it, it can't see me"). 2. Walk-test the patterns to ensure good detection and operation.
	E5: TILT	Faulty teach-in due to tilt angle (i.e. tilted too far away from or too close to the door)	1. Adjust tilt angle (Diagostics menu in LCD). Note: max. 15° 2. Launch an install teach-in.
			Change Force Tilt from "auto" to "manual."
	E5: AZIMUTH	Faulty teach-in due to lateral angle (i.e. rotated too far clockwise or counter-clockwise on the bracket)	1. Adjust lateral angle (Diagostics menu in LCD). Note: max. 45° Launch an install teach-in.
			Change Force Azimuth from "auto" to "manual."
	E5: HEIGHT	Faulty teach-in due to mounting height	Adjust mounting height (max. 32', min. 6'6").
			Launch install teach-in.
E5 5	E5: TIME-OUT	Fault teach-in	Relaunch install teach-in. Make sure that there is no motion detection during at least 5 seconds when LED starts flashing red/green.
			Slightly change your position and relaunch an install teach-in.
	E5: FORCED	Tilt angle, azimuth angle, or height has been manipulated	Nothing; this is a notification that the tilt angle, azimuth angle, or height has not been automatically calculated by the sensor.
E6 6	E6: FQ OUT	Faulty sensor output 1	Replace sensor.
E8 8	E8: ...	Faulty detection engine	Cycle power. If error returns, replace sensor.
	Solid ORANGE LED remains on	The sensor encounters a memory problem	Replace sensor.
3 sec	ORANGE LED is on for 3 sec. (masking)	Sensor placed in a corner and perpendicular to a wall	Tilt sensor to shift detection field. Ignore warning:
		Masking: obstacle high up in front of door	Reduce number of curtains (QUICK START > MORE > Nb curtains). Ignore warning:
	Door does not react	Service mode is activated	Exit service mode (see page 9).
		Incorrect outputs (if occuring in Motion field, it is likely that Motion+Height is selected)	Check output functions and adjust accordingly.
		Incorrect wiring	Verify wiring.
		Incorrect door control programming	Contact door manufacturer.
	Sensor does not react to remote control	Sensor is password-protected	Enter correct password. If you forgot the code, cut and restore power supply in order to access the sensor without entering a password during 1 minute.
	Motion detection starts too late	Negative angle is too large	Reduce angle of the sensor.

Optex Presence Sensor
DE# 10-20-101

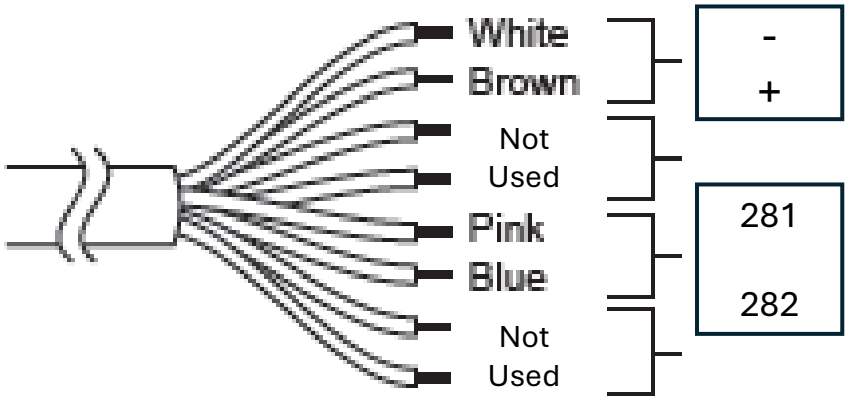
When the infrared beams are interrupted, the output sends a signal to the connected door control unit. As soon as the detection area is clear again, the output switches to indicate that the area is "clear".

Installation/ Alignment

- Unit should be mounted below the operator to the center track bracket utilizing the presence sensor mounting bracket.
- Typical units should be installed at **a 30-degree angle** from the metal sensor bracket.
- Always check placement of all wiring before powering up to ensure that moving door parts will not catch any wires and cause damage to the equipment.



Electrical Connection



Optex Presence Sensor
DE# 10-20-101

Check the operation in the relevant operation mode according to the chart below. The following are representative images.

Entry	Power OFF	Warm-up (Approx.10 sec.)	Outside of detection area	Entry into Microwave area (pre-notification)	Entry into Microwave area	Entry into 2nd row	Entry into 1st row
(Image)							
Operation indicator	None	Green glimmering	Green	Orange blinking	Orange	Red	Red blinking

Microwave area (pre-notification) (Motion detection)

Microwave area (Motion detection)

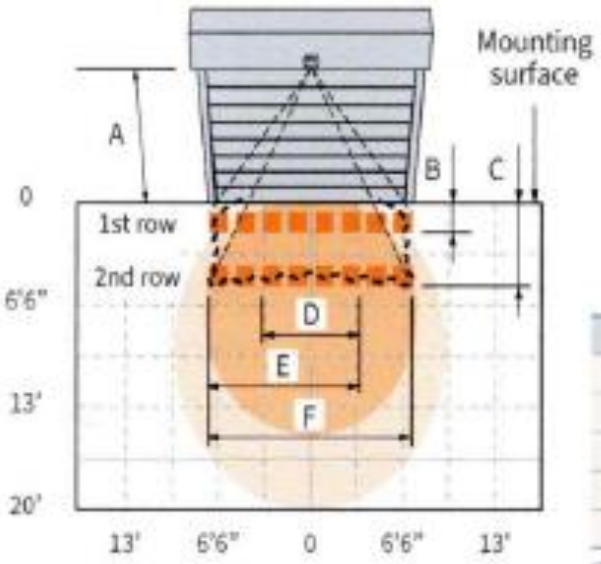
AIR area (Motion/Presence detection)

Other indicators

Status	Operation indicator color
Stand-by (Installation mode)	Yellow
Connecting to the app	Slow Green & Blue blinking
Signal saturation	Slow Green blinking
Link error	Once Green blinking
Device error	Fast Green blinking

If the sensor is not functioning well, see the **Troubleshooting** section in the web manual.

Web manual



■ : AIR emitting spots — Motion/Presence detection

□ : Detection area

: Microwave area — Motion detection

: Microwave area (pre-notification) — Motion detection

The chart shows the values at
Microwave : Depth angle 30°, Sensitivity Lv5, Sensitivity (Pre-notification) Lv3
AIR : Depth angle 0°, Sensitivity Lv3
Target : Vehicle

AIR emitting area

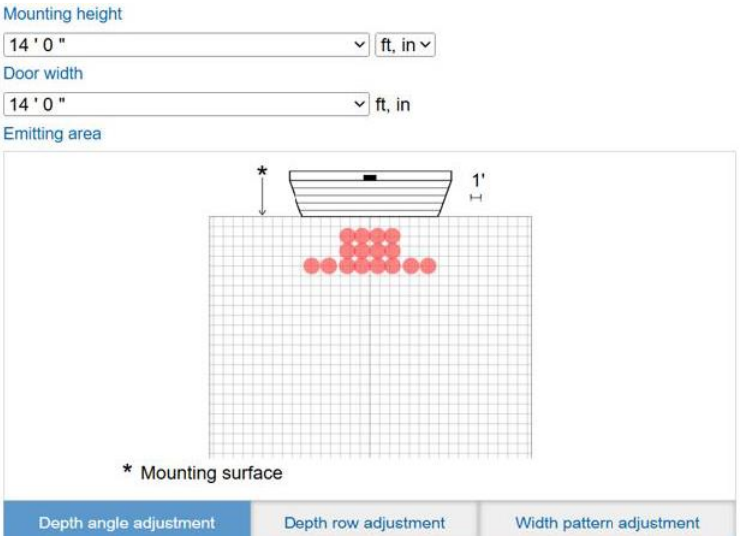
A	6'6"	10'	13'	16'5"	20'
B	10"	15"	20"	25"	31"
C	27"	3'4"	4'6"	5'8"	6'9"
D	35"	4'5"	5'10"	7'4"	8'10"
E	4'7"	6'11"	9'3"	11'7"	13'10"
F	6'4"	9'5"	12'7"	15'8"	18'10"

*The actual detection area may vary depending on the ambient light, color/material of the object or floor as well as the entry speed of the object.

Optex Presence Sensor
DE# 10-20-101

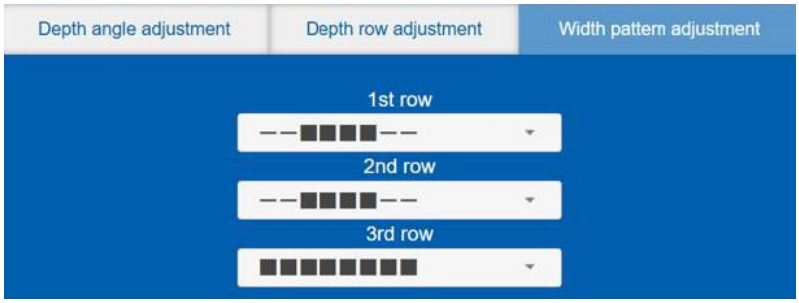
Physical Sensor Adjustment

- Adjust the large detection window to the left between **+4° and +10°.**
- This setting improves vehicle detection accuracy and helps prevent sensor malfunctions caused by improper detection zones.



AIR Area Settings

- Navigate to **Area Tab → AIR Area**.
- Configure the following:
  - **Sensitivity:** LVL2 to LVL5
  - **Presence Timer:** 60 Seconds
  - **Auto Infinite: ON** (when door is configured for automatic closing)
  - **Auto Infinite: OFF** (when door is operated by push button control)
  - **Immunity:** LVL3



Depth Adjustment

- Adjust Rows 1 and 2 as shown in the configuration graphic.
- Proper adjustment prevents the sensor from reactivating due to the swing path of moving door leaves.

Quality of Life Settings

- **Activation Output**
  - Navigate **to Output Tab → Activation Output**
  - Turn **Microwave Detection OFF**
- **AUX Output**
  - Navigate to **Output Tab → AUX Output**
  - Turn **Microwave Detection OFF**
  - Turn **Microwave Detection (Pre-Notification) OFF**
- **Supplemental Safety Output**
  - Leave **AIR Detection ON**
  - All other outputs should remain OFF

Red and Green LED Light Strips
DE# 10-00-993/994/995

Required Parts for Installation Per Opening

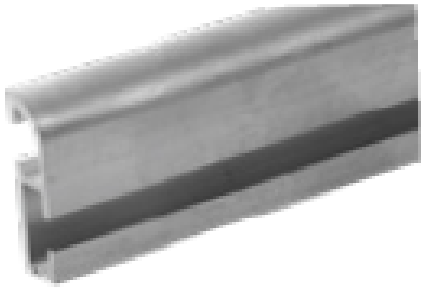
- QTY (2) **10-00-993** LED 5FT Light Kit Retainer Track
- QTY (1) **10-00-994** LED 5FT Light Kit LED Strip
- QTY (2) **10-00-995** LED 5FT Light Kit 20FT Cable Harness

Mounting the LED Retainer Track

Peel off the adhesive backing on the LED Retainer Track.

Mount one 5-foot section on each leading edge of the door, directly onto the safety edge standoff.

Note: Mounting height is based on installer preference; Door Engineering's standard is **4 feet from the ground**.



Preparing for Wiring

Drill a small hole in the aluminum mounting channel of the safety edge to allow the LED wiring to pass through, just above the LED Retainer Track.

DOOR ENGINEERING IS NOT RESPONSIBLE FOR INSTALLING OR MOUNTING LED LIGHT STRIPS OUTSIDE THE DOOR. IF YOU CHOOSE TO PLACE LIGHTING BEYOND THE DOOR, INSTALLATION ARE THE CUSTOMER'S RESPONSIBILITY

Red and Green LED Light Strips
DE# 10-00-993/994/995

Installing the LED Strip

Mount the retainer track on the centerline of the door, positioning the track so its center is approximately at eye level.

Insert the LED strip into the retainer track, ensuring the wire lead is oriented toward the top of the door.

Drill a 1/4 in. hole at the upper inside end of the retainer track for routing the LED wiring through the hole into the control panel area. This provides a cleaner appearance while protecting the wiring path.

Routing the LED Cable Harness

Run the 20-foot LED cable harness through the aluminum safety edge standoff and connect it to the LED strip.

Pull the excess cable to the top of the door and route it through the D-Line raceway, alongside the safety edge wiring.

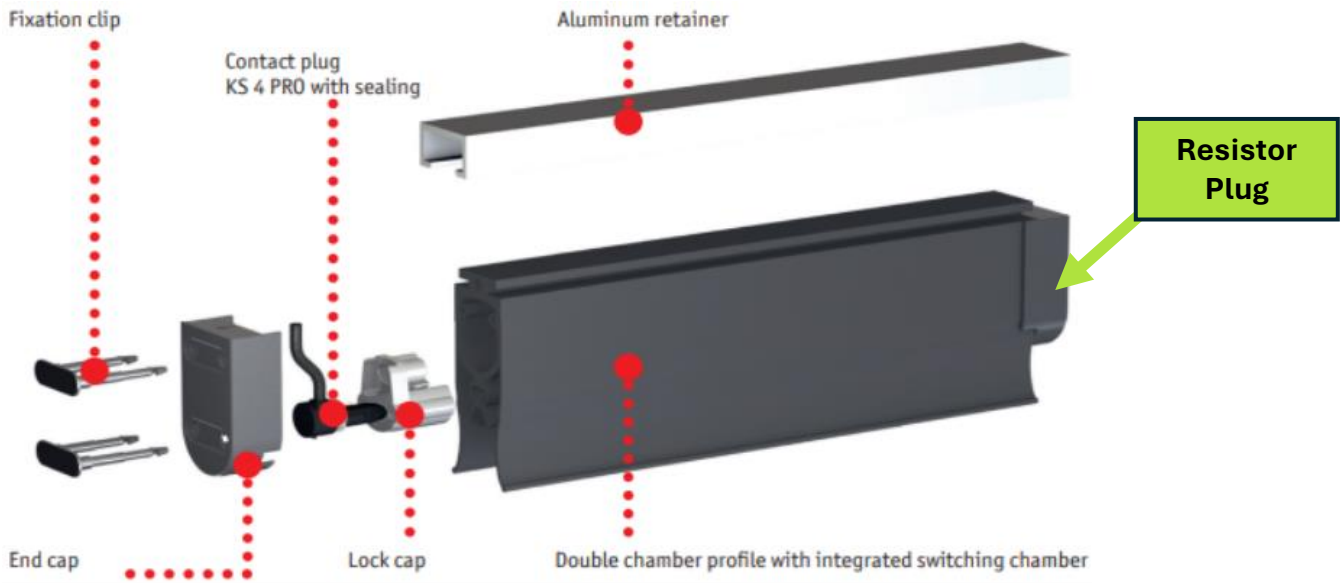
Wiring the LED Lights to the Control Panel

LED Light Wire	Connect To
Black	24H
Green	Control Panel Terminal 242
Red	Control Panel Terminal 285 265
	Control Panel Terminals Jumper 241 to 24N & 284 to 24N & 264 to 24N

PLC Programming Settings

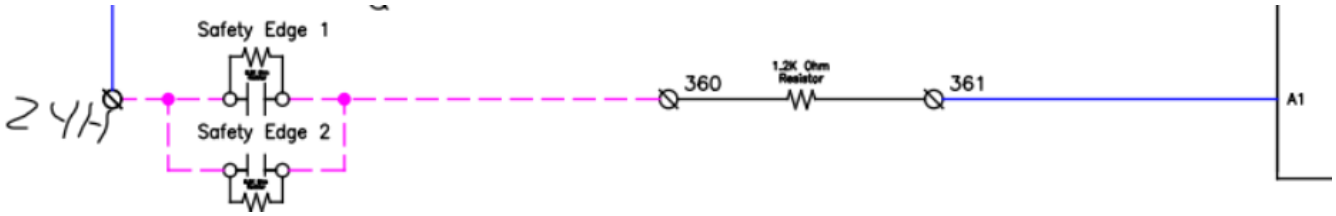
Output 5 Configuration Options:
- **Program 0** (Factory Default): Constant signal during door closing – Close Warning.
- **Program 1**: Flashing signal during both opening and closing – Open/Close Warning.

ASO Safety Edge
DE# 10-00-784



Disclaimer

- **Every Safety Edge requires two distinct types of plugs. A resistor and cabled plug.**



Wiring

- **Wire the ASO Safety Edge from 24H (+DC) to Terminal 360.**
- **Some door configurations may use Terminal 270, 370, or another designated terminal. Refer to the door electrical schematic for the correct terminal assignment before wiring the Safety Edge to the control panel.**

ASO Safety Edge
DE# 10-00-784

Plugs

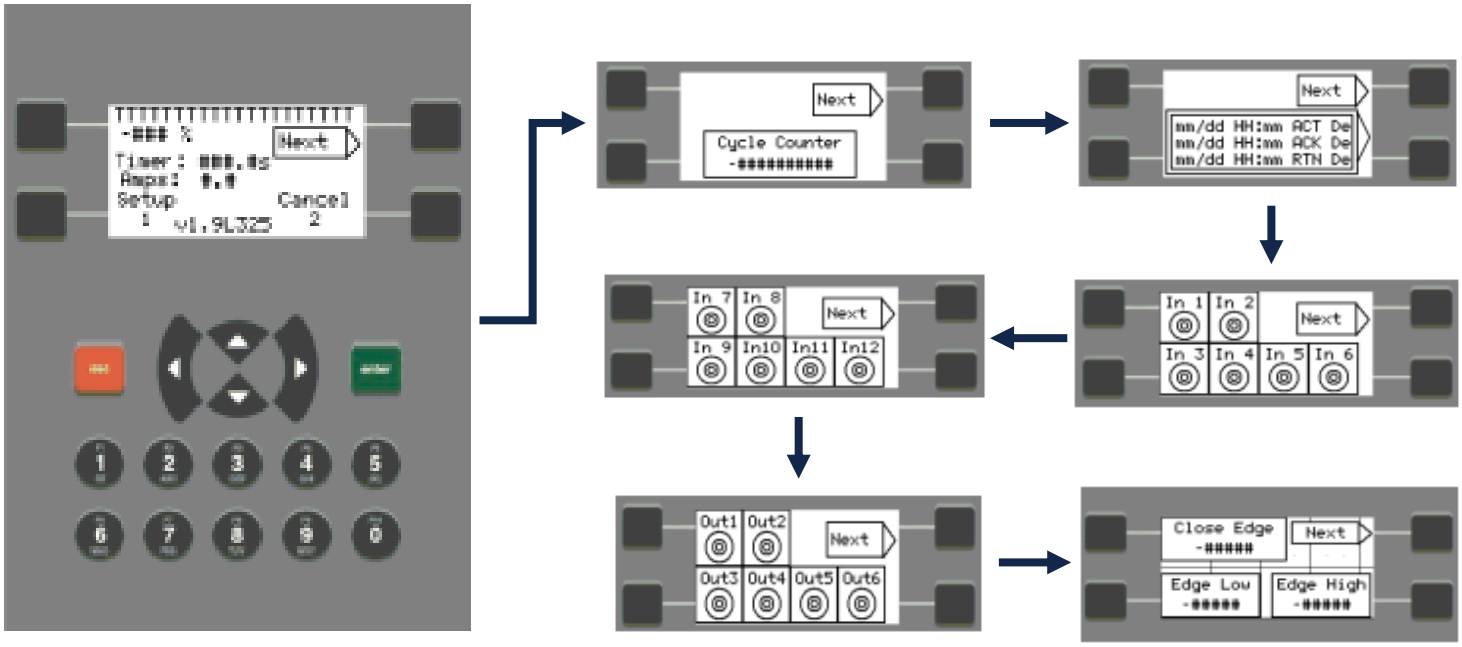
- Insert the **resistor plug** straight into the **Safety Edge**. Ensure the **self-adhesive sealant** does not contact the **lock cap**. Position the **plug** as close to the **lock cap** as possible, then press it in a second time to fully seat the **plug**.
- Push the **end cap** onto the **Safety Edge** and secure it with the **clip** until it locks into the **lock cap**. Press the **fixation clip** a **second** time to ensure it is fully seated.

REMOVE CAP ONLY IF REQUIRED

Troubleshooting

- Check the **Safety Edge** for **damage** or a **warped rubber housing**. The **Safety Edge** can be triggered with very little pressure.
- Verify the **plugs** have not shifted over time and that the **resistor plug** remains flush with the **Safety Edge**.
- Remove the **bottom resistor cap** from either side and observe whether the **Safety Edge number** changes on the **PLC**. This can help determine if the issue is related to **bottom cap** and which side is affected.
- Test the **ohms** of the **Safety Edge** by measuring the **power and input wires** at the **top** of the **Safety Edge.** If the ohms are lower than **8k**, there is a **short** happening in the **field wire**

PLC Rundown



NAVIGATING SCREENS

- **Press the Next button to cycle through the available screens.**
- **Screens appear in the following order:**
    1. **Main Menu:** Displays basic system information
    2. **Cycle Counter:** Shows the total number of door cycles
    3. **Alarm Screen:** Displays active and historical faults with a timestamp of occurrence
    4. **Digital Input Status 1:** Displays the status of Inputs 1 through 6
    5. **Digital Input Status 2:** Displays the status of Inputs 7 through 12
    6. **Digital Output Status:** Displays the status of all outputs
    7. **Close Edge:** Displays safety edge information. The value shown on the **close edge box should read a value between Edge Low and Edge High to confirm that the safety edge is operating correctly.**
        1. If value is **below Edge Low**, there is a **connection issue**
        2. If value Is **above Edge High**, there is **safety edge damage**

PLC Rundown

BASIC CONTROLS

- **Input 1: Open Push Button (Normally Opened)**
  - Opens or reopens the door.
  - Auto Mode: Press once to fully open.
  - Hand Mode: Press and hold to move the door.
- **Input 2: Close Push Button (Normally Opened)**
  - Closes the door.
  - Auto Mode: Press once to fully close.
  - Hand Mode: Press and hold to move the door.
- **Input 3: Stop Push Button (Normally Closed)**
  - Immediately stops door movement.
  - A new Open or Close command is required to resume operation.

SAFETY SENSORS

- **Input 4: External Sensor (Normally Closed)**
  - Stops door during opening if activated.
  - Reverses (reopens) door if activated while closing.
  - Prevents door from closing while sensor is active.
- **Input 5: Internal Sensor (Normally Closed)**
  - Stops and reopens door if triggered during closing.
  - Prevents door from closing while sensor is active.
- **Input 6: Loop Detector (Normally Opened)**
  - Detects vehicles or objects in the loop zone.
  - Reopens door if activated while closing.
  - Prevents closing if the loop is active.
  - May assist with auto-close timing depending on setup.

ADDITIONAL CONTROLS

- **Input 7: Auxiliary Open (Normally Opened)**
  - Functions like an Open button but only in Auto Mode.
  - May interact with auto-close timer depending on configuration.
- **Input 8: Radio Control (Normally Opened)**
  - Operates like a garage door remote.
  - Cycles through commands:
  - 1st press → Open 2nd press → Stop 3rd press → Close
  - Sequence repeats
- **Input 9: Hand / Auto Input**
  - **Closed Input = Auto Mode**
    - Momentary button operation
  - **Open Input = Hand Mode**
    - Hold-to-run operation
    - ignores most automatic and safety inputs

PLC Rundown

SYSTEM STATUS & LIMITS

- **Input 10: VFD Fault (Normally Opened)**
  - Activates when a motor or drive fault occurs.
  - Displays “Motor Overload” or similar error on the system**.**
- **Input 11: Open Limit Switch (Normally Closed)**
  - Stops the motor when the door reaches the fully open position.
- **Input 12: Close Limit Switch (Normally Closed)**
  - Stops the motor when the door reaches the fully closed position..

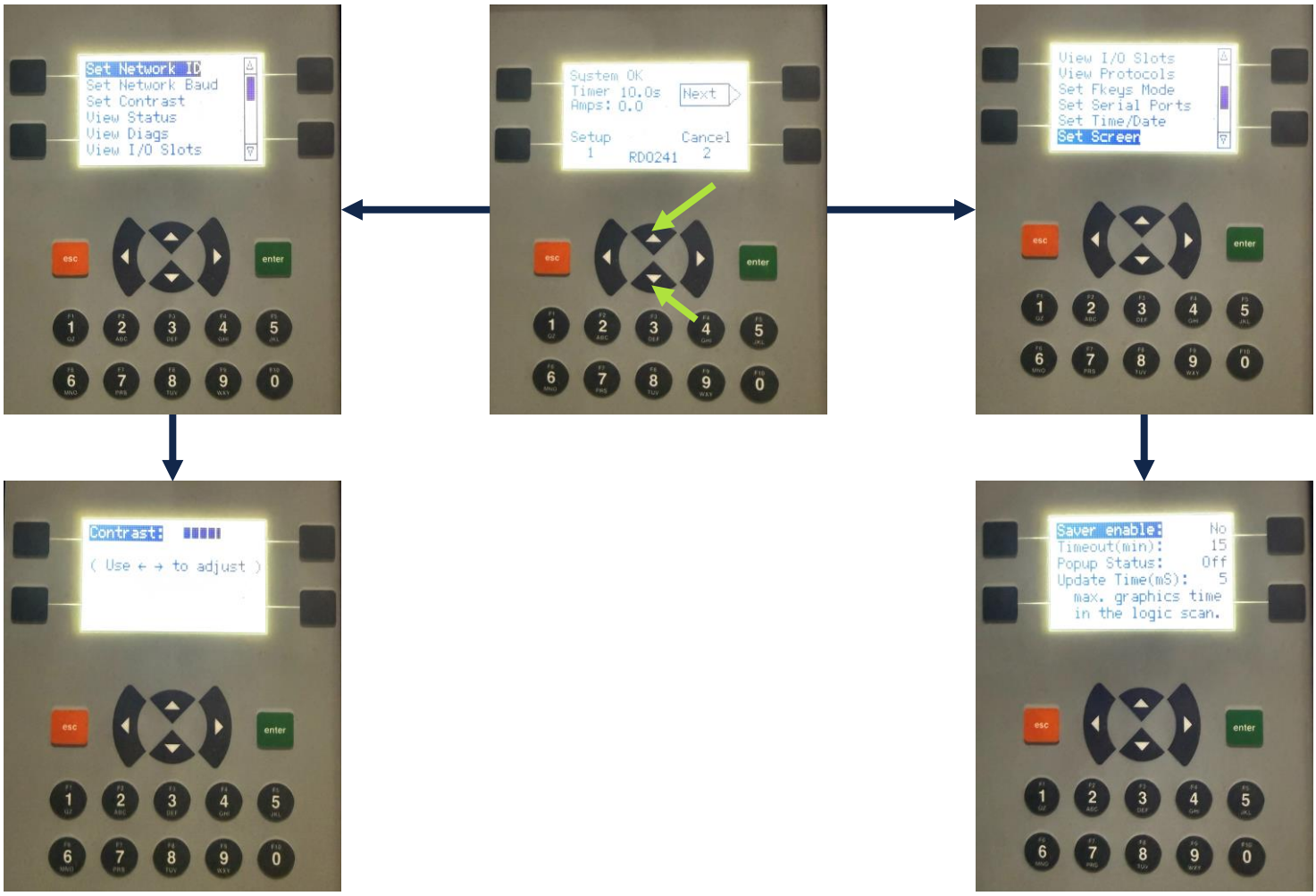
PRIMARY DRIVE OUTPUTS

- **Output 1: Open to Drive (Normally Opened)**
  - Energizes the drive to move the door in the open direction.
  - When active, the VFD runs and the door travels upward or to the open position.
- **Output 2 Close to Drive (Normally Opened)**
  - Energizes the drive to move the door in the close direction.
  - When active, the VFD runs and the door travels downward or to the closed position.

OPTIONAL STATUS OUTPUTS

- **Output 3 Door Open Signal (Normally Opened)**
  - Energized when the door reaches the fully open position.
  - Used for external indicators, automation systems, or interlocks.
- **Output 4 Door Closed Signal (Normally Opened)**
  - Energized when the door reaches the fully closed position.
  - Confirms the door is secure and can be used for safety or process control.
- **Output 5 Close Warning (Normally Opened)**
  - Energized during the close warning timer period.
  - Remains active while the door is moving, typically used for alarms, lights, or audible warnings before and during closing.
- **Output 6 Door in Motion (Normally Opened)**
  - Energized whenever the door is opening or closing.
  - Indicates active movement and can be used for status indication or system coordination.

PLC Rundown



DISPLAY SETTING

- To adjust the **contrast** or **screen saver** settings, press the **Up and Down arrow buttons simultaneously** to access the System Menu.
- To return to **Main Screen**, press **Esc**.

ADJUSTING SCREEN CONTRAST

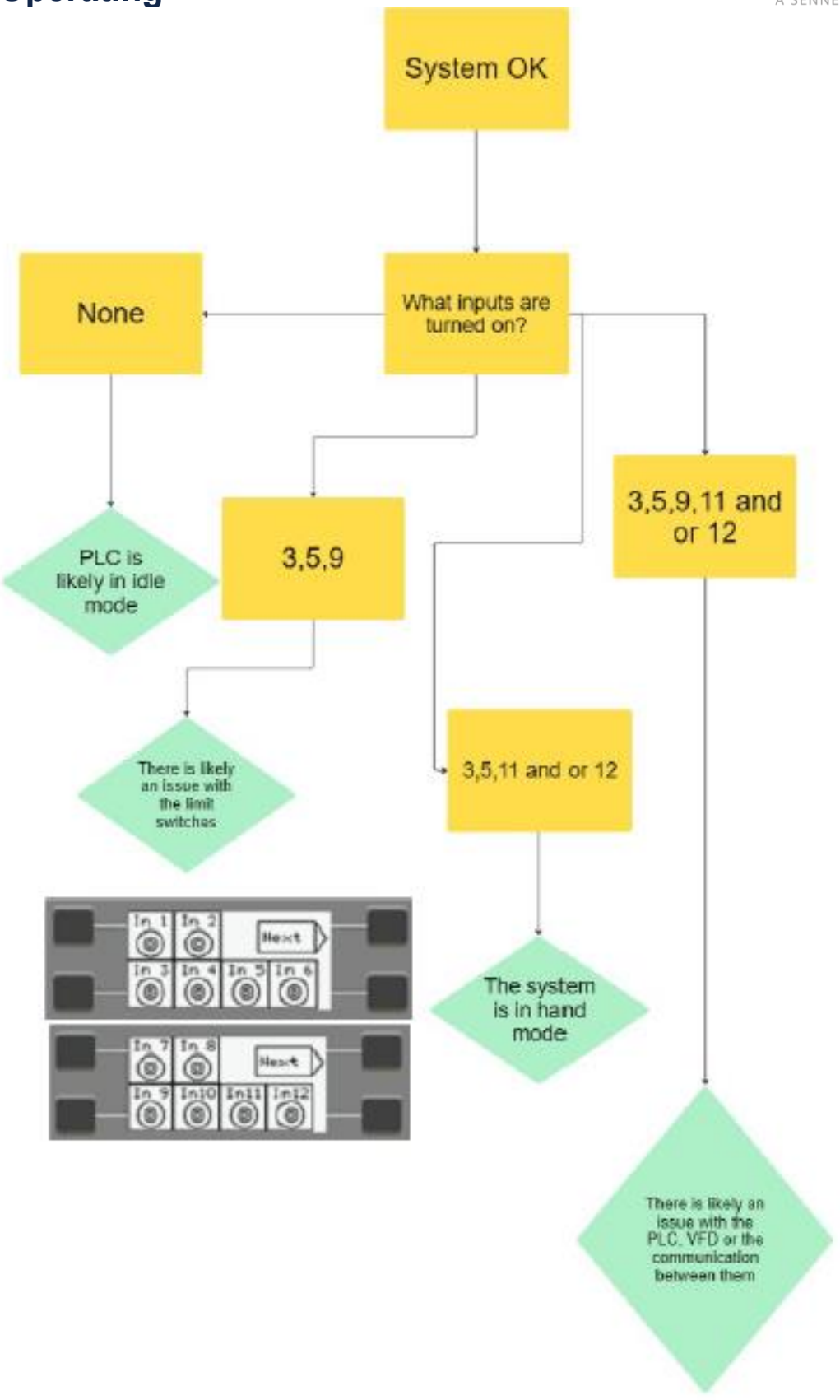
1. Scroll to **Set Contrast** and press **Enter**
2. The contrast adjustment screen will appear.
3. Press **Enter**, then use the **Left** and **Right** arrow buttons to decrease or increase the contrast.
4. Once the desired contrast level is reached, press **Enter** to save the setting.

SETTING SCREEN SAVER

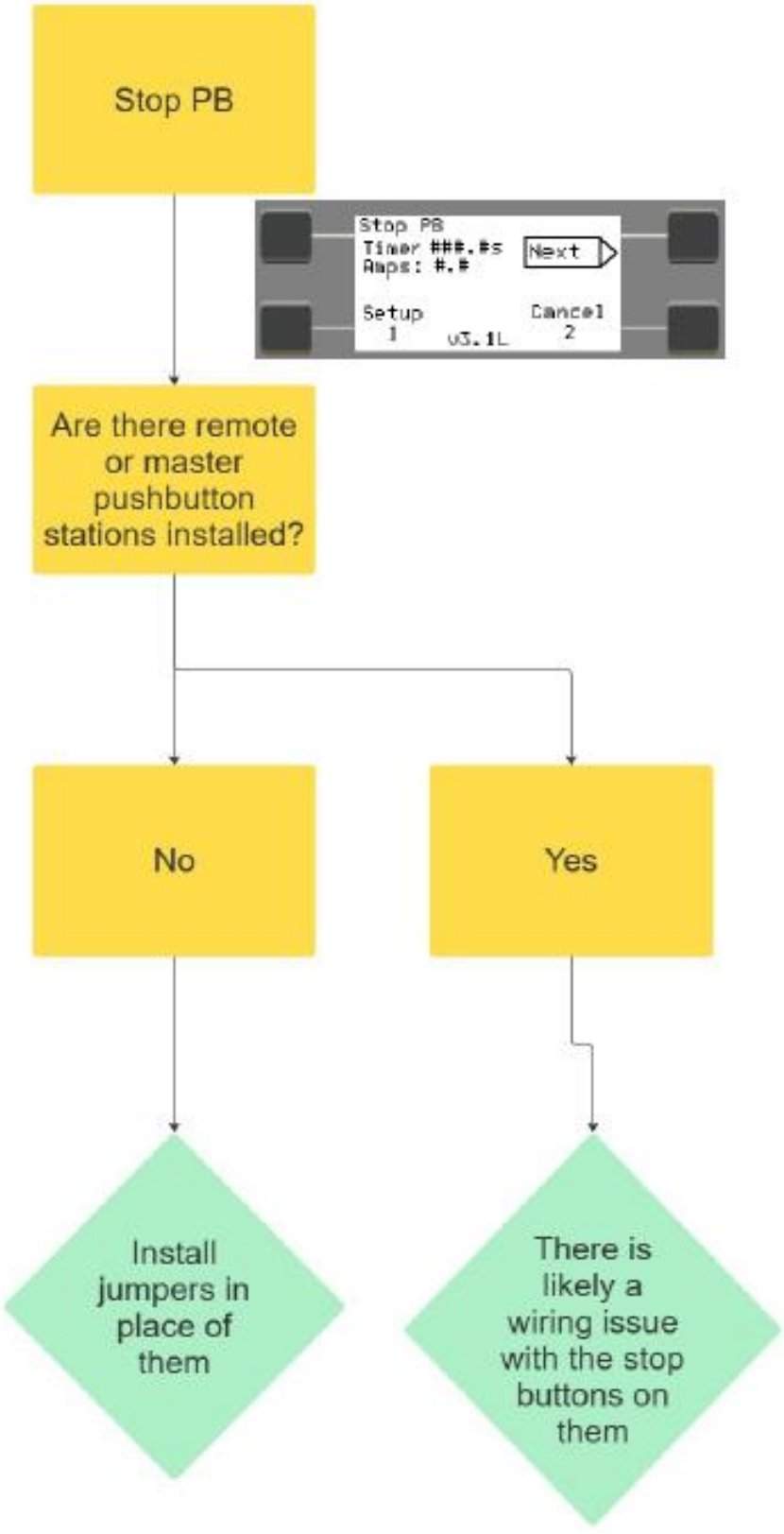
1. Press **Up** and **Down** at the same time to open the **System Menu**.
2. Select **Set Screen** and press **Enter**.
3. Highlight **Screen Saver Enabled** and change the setting to **Yes**.
4. Press **Enter** to save.
5. Set the **Timeout** to **5 minutes**.
6. Press **Enter** to save.

PLC Troubleshooting

Doors not Operating

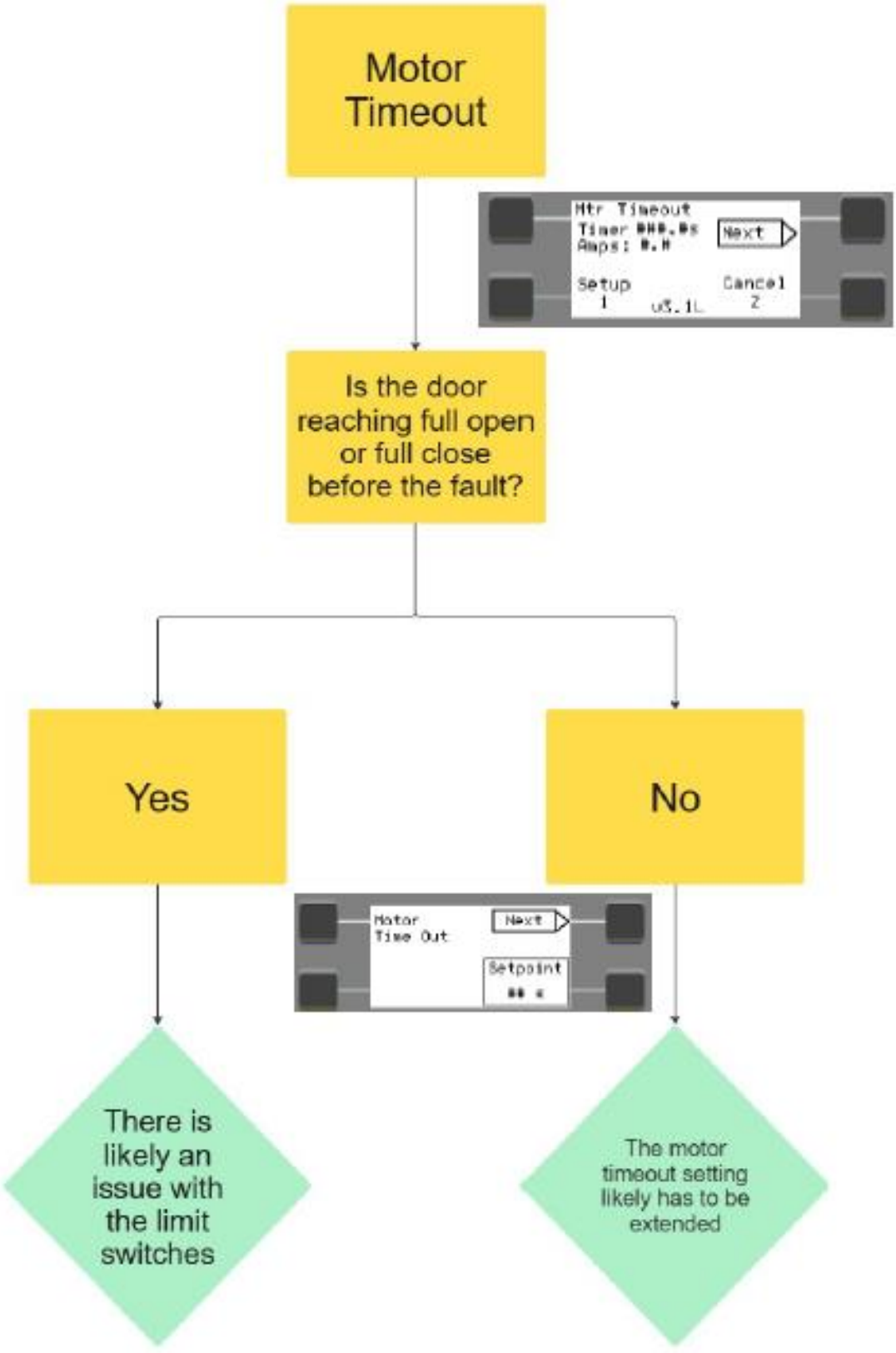


PLC Troubleshooting
Stop PB



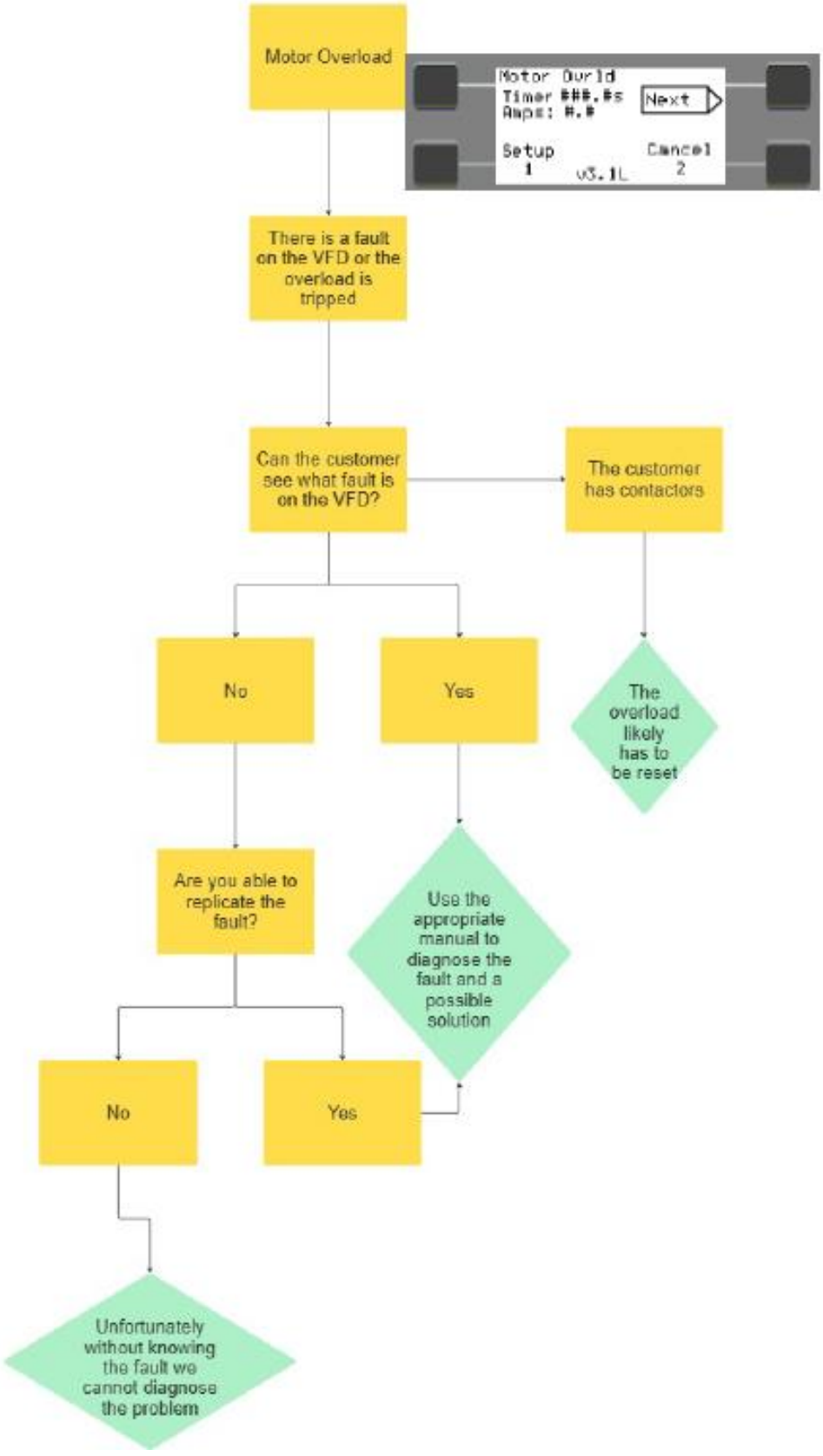
PLC Troubleshooting

Motor Timeout



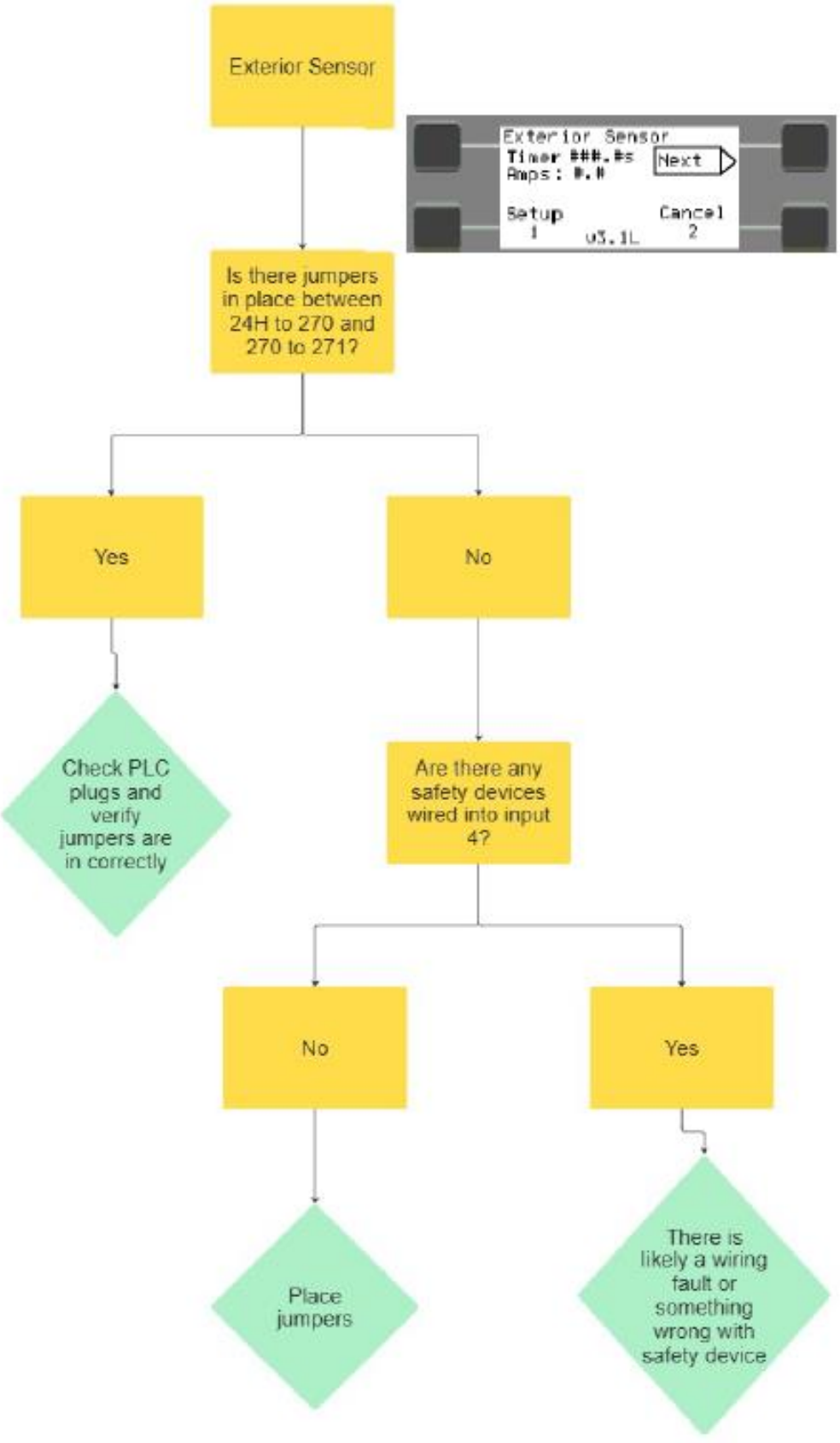
PLC Troubleshooting

Motor Overload

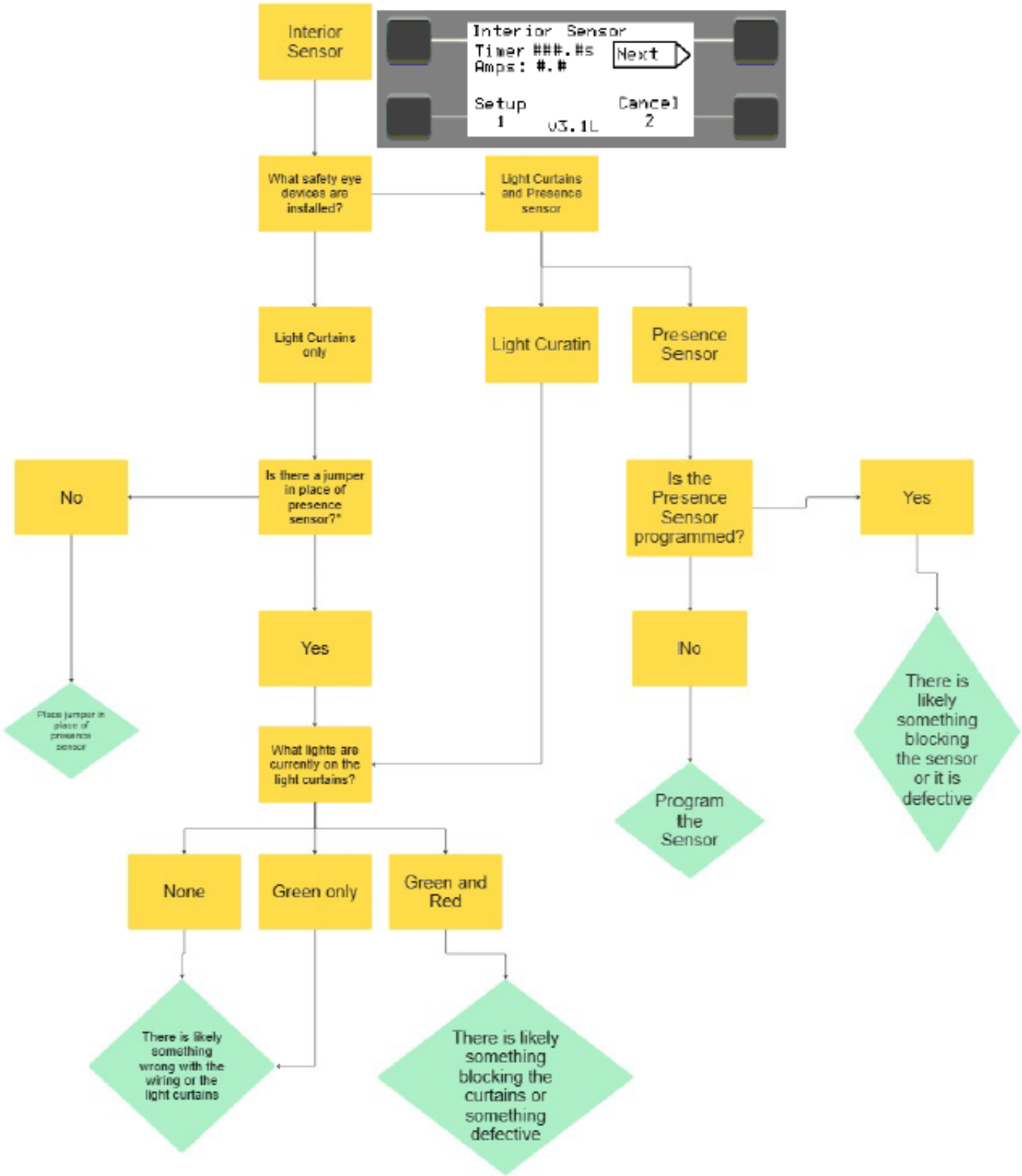


PLC Troubleshooting

Exterior Sensor

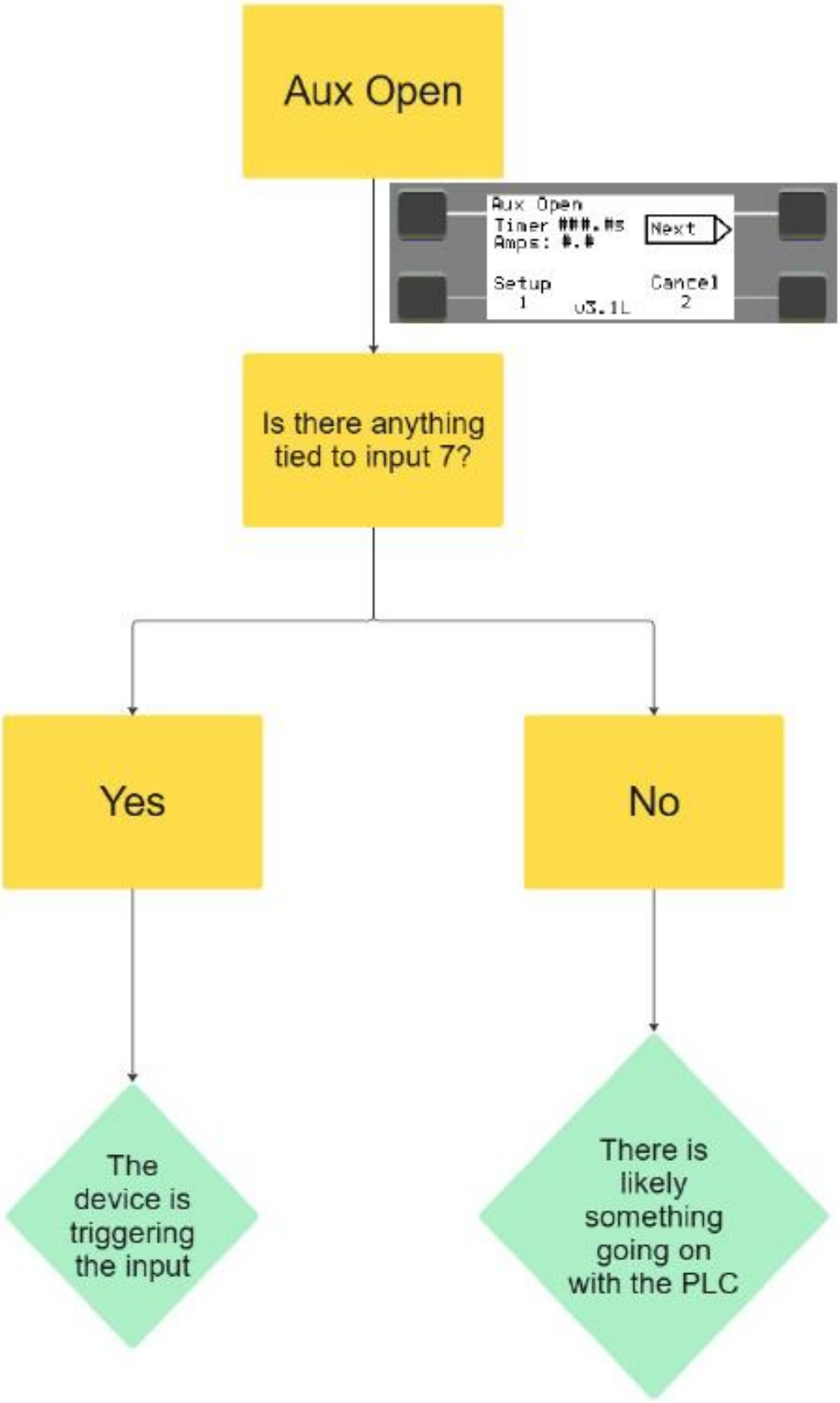


PLC Troubleshooting
Interior Sensor



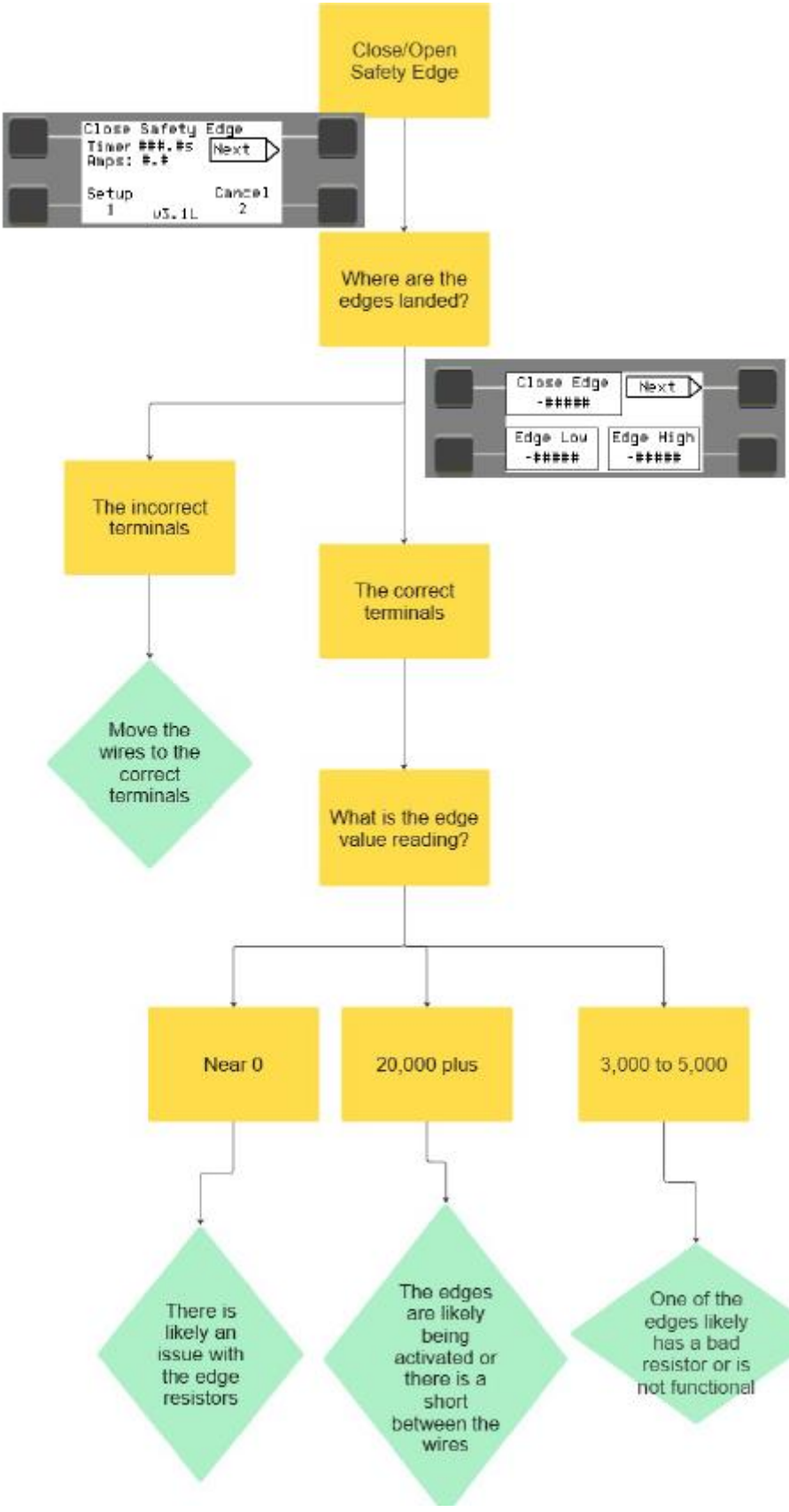
PLC Troubleshooting

Aux Open



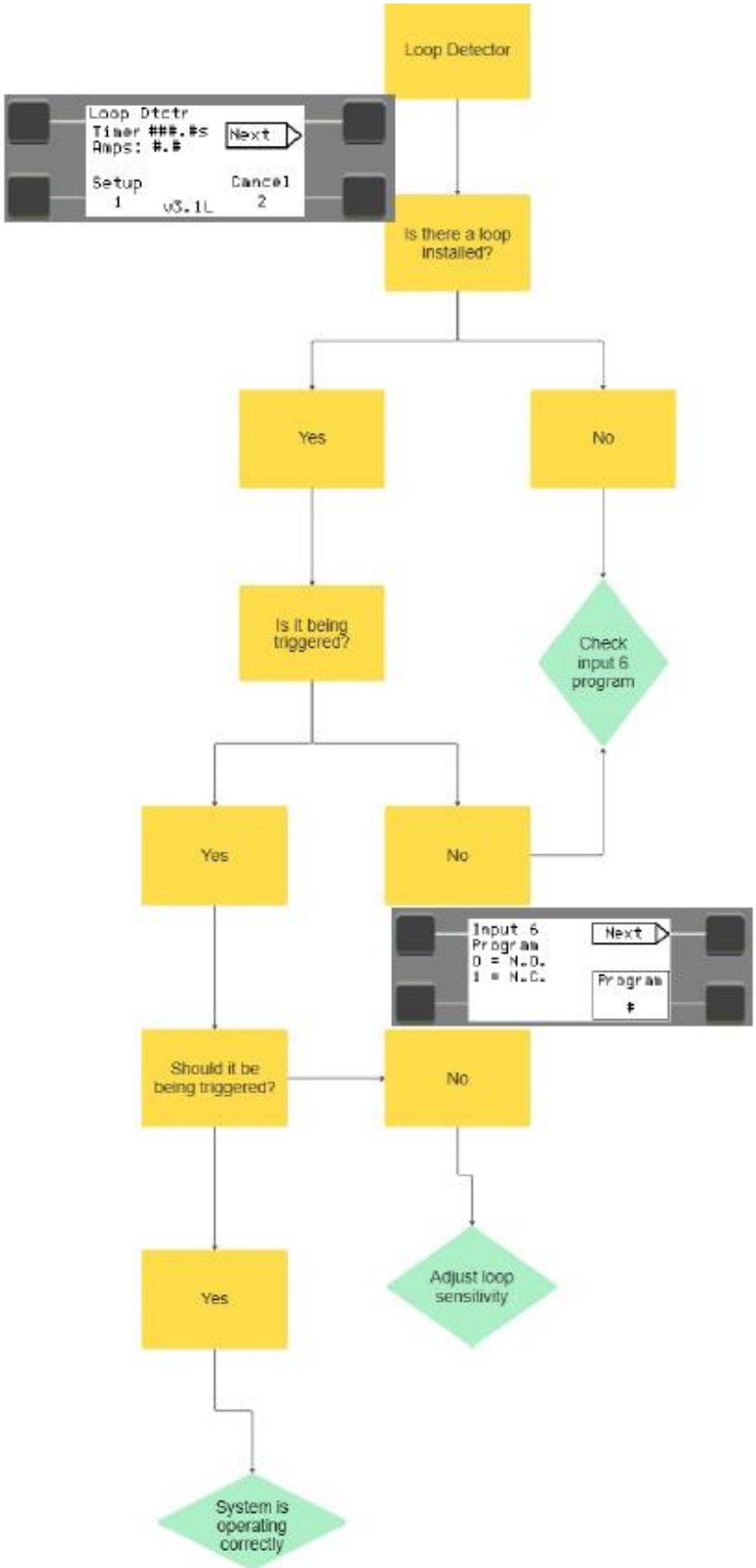
PLC Troubleshooting

Safety Edge



PLC Troubleshooting

Loop Detector



⚠ WARNING

To reduce the risk of SEVERE INJURY or DEATH to persons or damage to the door system

- Safety precautions should be followed at all times.
- All electrical wiring must be done by a certified professional and performed according to regional electrical codes.
- When servicing, always disconnect Operator from main power supply.
- When servicing, always ensure proper use of “Lockout/Tagout” procedures.
- Ensure use of proper wire gauge being used for incoming power line as well as for all device connections.
- Install operator main circuit breaker next to control panel for easy power shut-off.
- The cord fitting for main power cable coming into control panel shall be separate from the motor or any other device.
- Always separate low and high voltage wires in separate conduits. High voltage frequencies may interfere with low voltage wires.
- The Operator should be properly grounded to the building ground and to the main power supply ground lug.
- Always use the appropriate rating circuit breakers for Operator protection.
- Before electrical connection, compare the incoming power supply voltage to the voltage on the Control Panel name plate. Failure to connect appropriate power supply voltage may cause serious damage to the Operator.
- Inspections, service, and repairs should be performed anytime a malfunction is observed or suspected.
- Only qualified persons should perform maintenance on a Door Operator and all safety precautions should be taken into consideration.
- Do not manually disconnect Connecting Rods unless power has been electrically disconnected.
- Do not attempt to disconnect Connecting Rods with the door in the open position.
- Do not attempt to make Limit Switch adjustments unless power has been electrically disconnected.
- Always test the door travel after adjustment with the controls in “Constant Pressure” mode to verify desired travel. Failure to do so may result in damage to the door or injury to persons.

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Opening to Your Standards