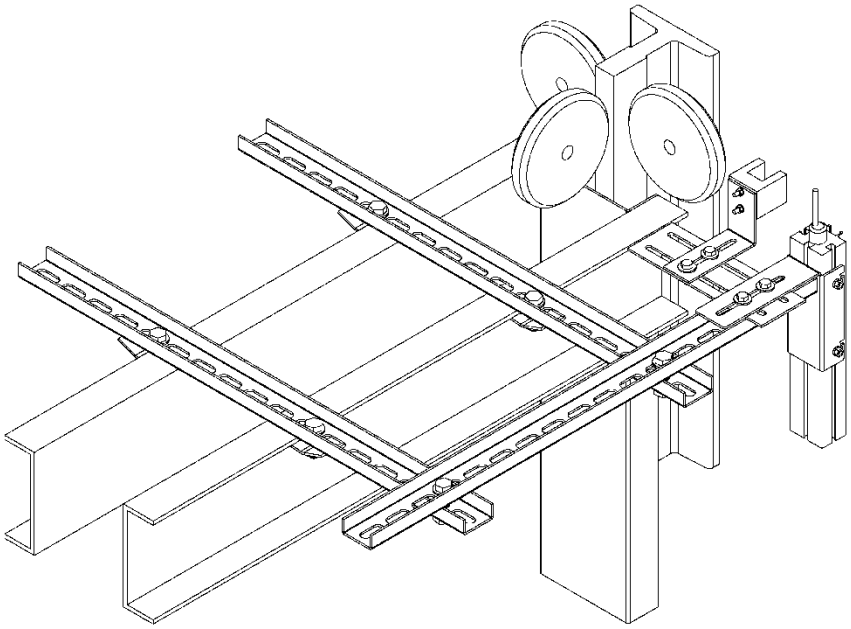
ELGO Programmable Pulsing Selector User Manual



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1. Overview

1.1 Introduction

The legacy IP8300 pulsing selector with discrete signals has been the primary positioning system for Virgina Controls PLC and microprocessor (MH3000) controllers for decades.

In recent years, the ELGO Limax Absolute Positioning System (APS) has provided superior positioning control for the Vision & Vision 2.0 controller platform, featuring virtual, computed, and programmable positioning signals.

As an effort to maintain support for the legacy IP8300 positioning control model, the ELGO APS has been adapted to provide the same discrete positioning signals for direct terminal-match compatibility w/discrete IP8300 equipped systems.

The ELGO sensor reads absolute position data (mm) from a magnetically encoded stainless steel tape.

The ELGO position data of each landing is learned using an independent hardware door zone system.

The Vision 2.0 Simulator CPU computes slowdown, leveling, and hoistway access zone target positions and outputs the signal based on current car position using a Vision I/O board.

The ELGO APS and Vision Simulator CPU is independent from the controller logic, and requires no special controller programming to work. The positioning system does not require data on where the controller is attempting to move. Rather it just provides signals to exactly mimic and directly replace a IP8300 pulsing selector.

Normal Terminal Slowdown & Stopping Devices (NTSD) are not included with this system and should be installed separately, much like a standard IP8300 pulsing selector.

In the event of a positioning system failure, such as board, sensor, power, communication, wiring, the controller will adapt accordingly to ensure safe and reliable operation. If the positioning system fails while the car is running, the controller will rely on the NTS system to bring the car safely to a stop at a terminal landing. While at a landing, the controller will rely on the hardware door zone to safely open doors and avoid an entrapment scenario.

All safety tests and adjustments used with the IP8300 will remain the same. Refer to the controller user manual for detailed instructions.

1.2 Kit Contents

Provided by Virginia Controls:

- ELGO sensor w/CAT5 plug, tape & mounting kit.
  - Tape length based on total travel.
  - N1 or N4X sensor head per spec.
  - RJ45 breakout board 8-pin adapter.
  - Tape alignment switch used in safety string.
- CEDES Door Zone sensor & vane kit.
  - Door Zone vane quantity = number of landings.
  - Fishplate kit provided to span rail joint gap.
  - Car Top Mounting Kit, includes ELGO sensor mounting bracket
- Simulator Enclosure
  - 18 x 18 x 4
  - Vision 2.0 Simulator CPU
  - Vision CPU Test Board
    - 2-CAN channels used for ELGO, channels are cross-checked for redundancy & validity.
    - 1-CAN channel for I/O board.
    - 24VDC power.
  - 24VDC Power Supply
    - Powers ELGO & CPU Test Board, or use existing controller supply.
  - Vision Remote I/O Board
    - 24VDC is standard.
      - Optimal for directly reading 24VDC door zone input.
    - 120VAC can be used if PI are needed for short floor and PI is 120VAC.
      - Rewire DZP relay to provide 120VAC input to simulator board and 20X input for DZ relay.

Traveling Cable Requirements:

- If Simulator Enclosure is mounted in the car top:
  - All discrete positioning signals remain in traveling cable.
  - No twisted pairs are used.
- If Simulator Enclosure is mounted in the machine room or built into the controller:
  - Only 1 discrete positioning signal required in the traveling cable, for door zone.
  - x2 twisted pairs are used, for the two ELGO CANbus serial channels.

1.3 ELGO LIMAX22DUE Absolute Positioning System Overview

LIMAX22 DUE by ELGO is an absolute positioning system (APS), which consists of the LIMAX22 DUE sensor and a magnetic tape containing encoded position information.

The LIMAX22 DUE consists of two independent sensors embedded in an aluminum housing. Both sensors perform the same function and operate independently, offset by 40mm along the tape. The Vision Simulator CPU reads each channel separately, validating the data prior to computing the positioning output signals for the controller.

The LIMAX22 DUE is easy to mount and flexible enough to install anywhere in the shaft. Using a mounting kit, the tape is suspended in the shaft while being fed through the plastic guide in the sensor housing. After proper installation, tape measurement is virtually contactless, since the guide is only used to align the tape a defined distance from the sensor.

The LIMAX22 DUE magnetic measurement system is robust and suitable for environmentally-demanding applications. Dust, dirt, moisture, smoke, and temperature do not affect the contactless measurement.

The maximum encoded tape length is 850 ft (260 m) and operates up to 1000 fpm (50 m/s). The magnetic tape contains encoded position data with a resolution of 1mm. Each sensor measures and computes position and velocity data, which is transmitted to the controller CPU and CT-SIB over separate CANbus channels. The LIMAX22 DUE is designed to meet SIL 3 specifications in the sectors of position and speed detection.

NEMA 4/4X rating is achieved through enhanced gasketing, and is available upon request per the application.

Table 1: Technical Data – LIMAX22 DUE.

Mechanical data	
Measuring principle	Absolute Position Encoded Magnetic Tape
Repeat accuracy	+/- 1 mm
System accuracy in µm at 20°C	+/- (1000 µm + 20 µm x L) L = measuring length in meters
Distance between the sensor and the magnetic tape	4 mm
Distance between two sensors along magnetic tape	40 mm
Sensor housing material	Aluminum
Sensor housing dimensions	L x B x H = 317 x 55 x 55 mm
Necessary magnetic tape	AB20-80-10-1-R-D-15-BK80
Max. measuring length	260 m
Cable connection	RJ45, shielded
Weight	Ca. 550 g without cable Cable: ca. 60 g per meter

Environmental condition	
Storage temperature	-25… +85 °C
Operating temperature	-10… +70 °C (-25… +85 °C by request)
Protection task	IP50
Electrical data	
Supply	10 – 30 VDC
Ripple	10 – 30 V: < 10 %
Current draw	Max. 0.4 A
Interfaces	SSI, CAN, RS422 CANopen (DS406, DS417),
Resolution	1 mm
Travel speed	Max. 50m/s (physical)
Cable length	3 m standard-cable length

1.4 CEDES Door Zone Overview

The Virginia Controls Door Zone Vane System uses an optical sensor to detect 6” door zone targets at each landing.

Purpose: The Door Zone System pairs with the ELGO Absolute Positioning System for learning the position of each floor level, and allows the doors to open independent from an ELGO APS failure.

Mounting Layout: The door zone sensor is mounted on the car top. Vanes are mounted to the rail at each landing.

Car Top Mounting kit: A highly adjustable car top mounting kit is designed to mount directly to the cross-head.

Vane Rail Kit: Each vane rail kit assembly offers ±3” of vertical adjustment.

Fishplate Spanning Kit: A fishplate spanning assembly allows further vertical adjustment when a vane spans a rail joint.

Door Zone Sensor Specs:

- Make: CEDES
- Model: GLS 126 NT, NO
- IR optical switch, 24VDC, 120ma, 1ms, 1” gap.
- LED indicates presence of vane: OFF = vane detected.

Figure 1 - Door Zone Sensor

Features:

- Optical Switch is Non-Contact with no moving parts.
- 1” x 1” Gap provides ample tolerance for car shifting.
- No magnets are required.

Door Zone Kit Contents:

- CEDES Door Zone Sensor
- Car Top Assembly (see Figure 2) – one per kit.
- Standard Vane Assembly (see Figure 3) – one per landing.
- Fishplate Spanning Vane Assembly (see Figure 4) – one for every 5 landings.

NOTE: The ELGO APS sensor mounting bracket is part of the Car Top Assembly. Refer to the ELGO APS Installation Section 2.5.2 for specific ELGO tape and sensor installation instructions.

2. Installation Procedure

2.1 Prerequisite Requirements & Roadmap

It is recommended to install the Normal Terminal Slowdown/Stopping Devices prior to installing the ELGO Pulsing Selector Positioning system to establish up/down normal limits while running on inspection, but it's optional.

The installation overview is as follows:

1. Install Simulator Enclosure in car top (or machine room if desired).
2. Install Door Zone sensor & vane system using provided mounting kit.
3. Install the ELGO sensor & tape using provided mounting kit.
4. Connect the DZ & ELGO wiring to the car top enclosure as shown on sheets "CPS" & "CPU".
5. Connect the positioning signals from the car top enclosure to the corresponding controller terminals, as shown on sheet "FS".
6. Configure the Vision Simulator CPU for the job specifications.
7. Learn the door zone positions to establish floor heights and positioning signal layout.
8. Adjust positioning parameters as needed.

2.2 Simulator Enclosure Installation

The Simulator Enclosure may be mounted in the car top or machine room, depending on installer preference.

Option 1: Mount in Car Top

- This resembles a typical car top selector, with all connections and adjustment made on car top.
- All positioning signals are connected from the car top to the controller via traveling cable.
- ELGO sensor connections terminate in car top enclosure.

Option 2: Mount in Machine Room

- More convenient for adjusting positioning signals made through the Vision Simulator CPU.
- Reduces traveling cable conductor count for discrete positioning signal terminals, now routed in machine room only.
- Only ELGO sensor power, communication, and door zone signal required in traveling cable (2-twisted pairs).

2.2.1 Simulator Enclosure Connection Summary

Refer to the controller schematics sheets “SIM” & “CPU” for full connection details of sensor connections and positioning signals.

Connections to controller:

- CEDES Door Zone sensor input, 120VAC to controller terminal 20X.
- Positioning output signals & commons (leveling, slowdowns, access zones, floor resets)

Connections to car top devices:

- 24VDC power for ELGO sensor and CEDES Door Zone sensor.
- CEDES Door Zone sensor input, 24VDC to simulator I/O board input.
- 2-communication channels for ELGO sensor, via RJ45 8-pin breakout board.

Note: CANbus termination jumpers for the ELGO CANbus channels are installed on the Vision CPU Test Board by the factory. Take care when connecting the ELGO communication twisted pairs in the same terminals as the termination resistors.

2.3 Configuring the Simulator

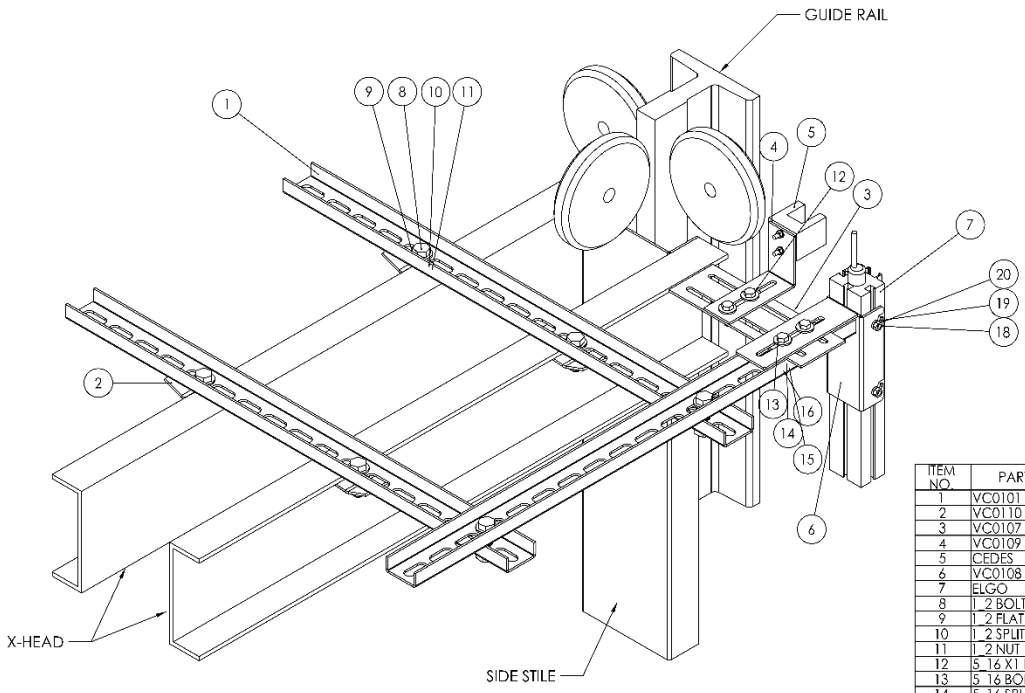
The Vision 2.0 Simulator CPU parameters are updated and preset by the VC factory per the application.

But in the event the Simulator CPU is replaced or “**Reset Settings**” has been performed, the following settings should be reviewed and updated:

1. Update **NUMBER OF LDGS** to the number of landings served.
2. Update **CNTRCT SPEED FPM** to the contract speed of the application.
3. If Absolute Floor Encoding is not required by code (earlier than ASME 17.1 2010) and there are less than 4 landings, turn OFF the setting **BINARY FLR RESET**. Review the controller schematic sheets to see if binary floor reset targets (1FP, 2FP, 4FP, …) are used before turning off the setting.
4. For traction applications, if an intermediate 1FR speed and positioning signals (USS, DSS) are used, turn ON the setting **2FLOOR RUN SPEED**.
5. If floor switches are used instead of pulsing selector signals (UHS, DHS), turn OFF the setting **PULSING SELECTOR**.
6. Navigate to the Begin Setup -> Edit ELGO APS menu and perform a “**RESET ELGO SET**” command. This will refresh the UHS/DHS Slowdown distance presets based on the setting **CNTRCT SPEED FPM**.

Refer to Section 3.2.9 for the full list and description of adjustable Simulator CPU parameters.

2.4 Door Zone Vane System Installation



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	VC0101	30" MOUNTING STRUT	3
2	VC0110	STRUT MOUNTING CLIP	4
3	VC0107	3' X 9' ADJUSTMENT PLATE	1
4	VC0109	CEDES DZ SENSOR BRACKET	1
5	CEDES	CEDES UNIT	1
6	VC0108	ELGO APS MOUNTING BRACKET	1
7	ELGO	ELGO UNIT	1
8	1_2 BOLT	1/2-13 X 1 5/8 BOLT	6
9	1_2 FLAT WASHER	1/2 FLAT WASHER	8
10	1_2 SPLIT WASHER	1/2 SPLIT WASHER	6
11	1_2 NUT	1/2-13 NUT	6
12	5_16 X1 BOLT	5/16-18 X 1 BOLT	2
13	5_16 BOLT	5/16-18 X 1 3/4 BOLT	2
14	5_16 SPLIT WASHER	5/16 SPLIT WASHER	4
15	5_16 FENDER WASHER	5/16 FENDER WASHER	2
16	5_16 NUT	5/16-18 NUT	4
17	5_16 FLAT WASHER	5/16 FLAT WASHER	6
18	M6 BOLT	M6-1X14 BOLT	4
19	M6 SPLIT WASHER	M6 SPLIT WASHER	4
20	M6 NUT	M6-1.0 NUT	4

2.4.1 Car Top Mounting Kit Installation Procedure

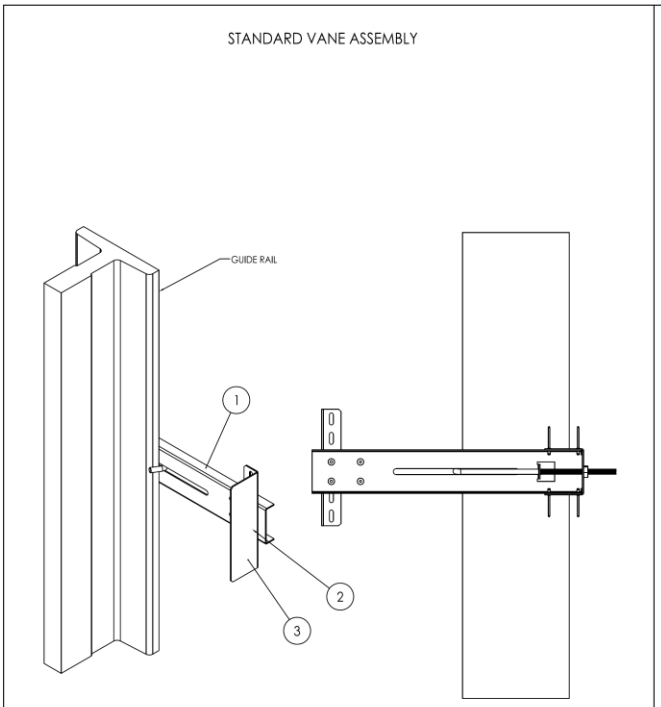
Figure 2 – Car Top Assembly

1. Refer to Figure 2 for illustration of the completed car top assembly.

NOTE: Do not tighten down all of the joints until after the sensor is fully aligned with the vane kit assembly on the rail.

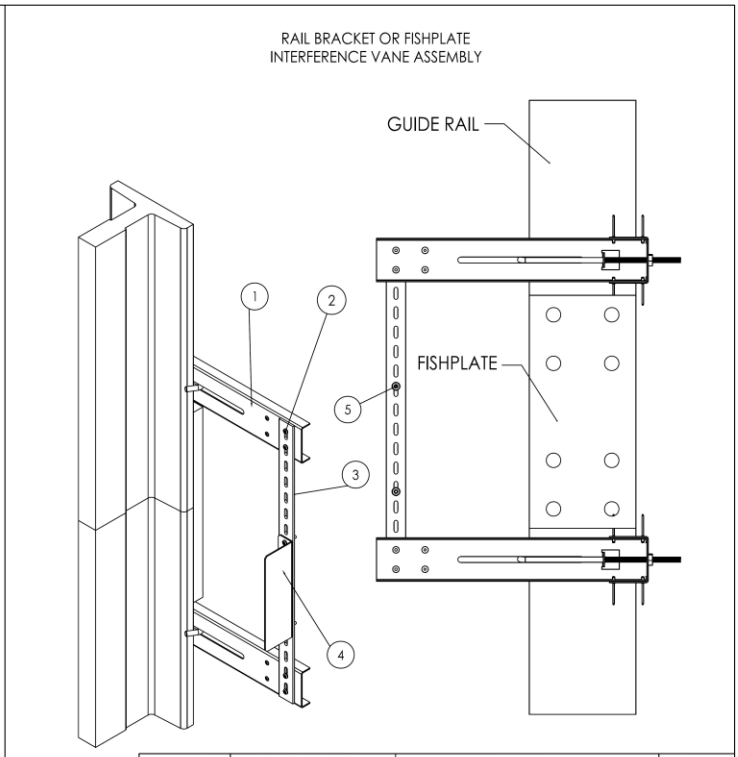
2. Fasten two of the 30” Mounting Struts (#1) to the cross-head using the mounting clip (#2) and bolt kit parts (#8, 9, 10, 11).
3. Fasten the CEDES DZ Sensor Bracket (#4) to the 3’ X 9’ Adjustment Plate (#3) using 5/16” bolt kit parts (#12, 13, 14, 15, 16, 17).
4. Attach the Adjustment Plate (#3) to the third 30” Mounting Strut (#1) and the ELGO APS Mounting Bracket (#6) using 5/16” bolt kit parts (#12, 13, 14, 15, 16).
5. Fasten the mounting strut w/adjustment plate (#1, 3) to the cross-head struts using ½” bolt kit parts (#8, 9, 10, 11).
6. Mount the CEDES Door Zone Sensor (#5) to the CEDES Sensor Bracket (#4) using M6 nuts.
7. Mount the ELGO APS Sensor (#7) to the ELGO Mounting Bracket (#6) using the M6 bolt kit parts (#18, 19, 20). Note, the sensor arrow must be pointing down the hoistway, and the cable must be pointing up.
8. Adjust the car top brackets so that the CEDES and ELGO sensors are aligned with the rail. Further adjustment should be revisited after mounting the vane rail kits.

2.4.2 Vane Rail Kit Installation Procedure



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BRACKET ASSEM1	DOOR ZONE VANE BRACKET	1
2	10_32 SCREW	SCREW, #10-32 X 0.750"	2
3	VANE	VANE	1

Figure 3 – Vane Assembly



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BRACKET ASSEM1	DOOR ZONE VANE BRACKET	2
2	10_32 SCREW	SCREW, #10-32 X 0.750"	6
3	17_5 VANE BRACKET	17.5" VANE BRACKET	1
4	VANE	VANE	1
5	53090011	NUT, KEP, #10-32 X 3/8"	2

Figure 4 – Fishplate Spanning Vane Assembly

1. Refer to Figure 3 for an illustration of the completed vane rail kit assembly.
2. Fasten a vane (#3) to each Door Zone Vane Bracket using 10-32 bolts (#2) Note: the bracket is tapped.
3. Run the car on inspection to floor level at a particular landing, and mark where the vane should be centered vertically relative to the IR beam spot on the CEDES DZ sensor.
4. Run the car on inspection to a convenient position, and mount the vane bracket (#1) to the rail by tightening the spring clamp. Keep the vane (#3) loose, as to allow vertical adjustment in step 7.
5. Return the car to floor level, and align the car top bracket assembly and vane so they are centered horizontally within the CEDES sensor. The depth of the vane should also be centered in the U-channel.
6. Adjust the 6” vane vertically such that it is centered (±3”) to the IR beam, which is 0.4” below the top edge of the U-channel.

NOTE: The IR beam is not vertically centered within the U-channel. Consider the orientation of the CEDES DZ sensor (i.e. upside down) when centering each door zone vane around the IR beam.

NOTE: Incorrect vane alignment may lead to excessive floor height adjustment during the ELGO learn procedure. Any vane that is more than 1” off-center will require adjustment and a relearn at all applicable landings.

7. Tighten the car top brackets to lock down the horizontal and depth alignment.
8. Repeat Steps 3-6 to install door zone vanes at all landings.
9. For any landings where the vane rail bracket is obstructed by a fish plate at a rail joint, an additional vane rail bracket and 17.5” Extension Plate may be used to span the gap and provide a mounting location for the vane. Refer to the following steps 10-13 where applicable.

2.4.3 Fish Plate Spanning Installation Procedure:

10. Refer to Figure 4 for illustration of the completed fish plate spanning vane rail kit assembly.
11. Mount two rail brackets (#1) to the rail, one above and one below the fish plate at the rail joint.
12. Fasten the 17.5" Extension Plate (#3) to each of the two rail brackets (#1) using 10-32 bolts (#2).
13. Align the Door Zone Vane (#4) to be vertically centered to the CEDES DZ IR Beam while at floor level, and mount using 10-32 bolt kit (#2, 5).

2.4.4 Test the CEDES Door Zone Sensor

14. Route the CEDES Door Zone Sensor cable to the car top box, and wire as follows:
    - Brown – +V, 24VDC power.
    - Black – DZP, signal.
    - Blue – -V, common.

      (Refer to controller schematics sheet "CPS" for specific details).
15. Power up the controller and verify the +V & -V terminals have 24VDC power.
16. Verify the LED on the CEDES DZ Sensor is ON while there is nothing in the IR beam.
17. Run the car to a floor such that the Door Zone Vane breaks the IR beam, and verify:
    - The sensor LED turns OFF.
    - The DZ relay turns ON.
    - The Car Top Safety Interface Board (CT-SIB) input LED T08 turns ON.
    - The Machine Room Interface Board (MR-SIB) input LED M08 turns ON.

NOTE: If any signal fails to read, verify wiring or contact VC for technical support.

18. Run to each floor and verify the door zone signals. Adjust where needed.

2.5 ELGO Absolute Positioning System Installation

2.5.1 ELGO LIMAX22 DUE Installation

The ELGO LIMAX22 DUE magnetic tape can be mounted vertically in any quadrant in the shaft, and the sensor head can be mounted onto the car body or car frame. The following installation instructions are provided for mounting and alignment guidelines. Refer to the ELGO LIMAX22 DUE User Manual for further details.

The upper fixation of the magnetic tape is via a rail crossbeam on the top guide rail. The required tensioning of the tape is provided by a tape spring (see Figure 5 below) at the bottom crossbeam and guide rail. A broken tape switch (see Figure 5 below) is mounted above the spring. The switch will stop the car and alert the controller of a broken tape.

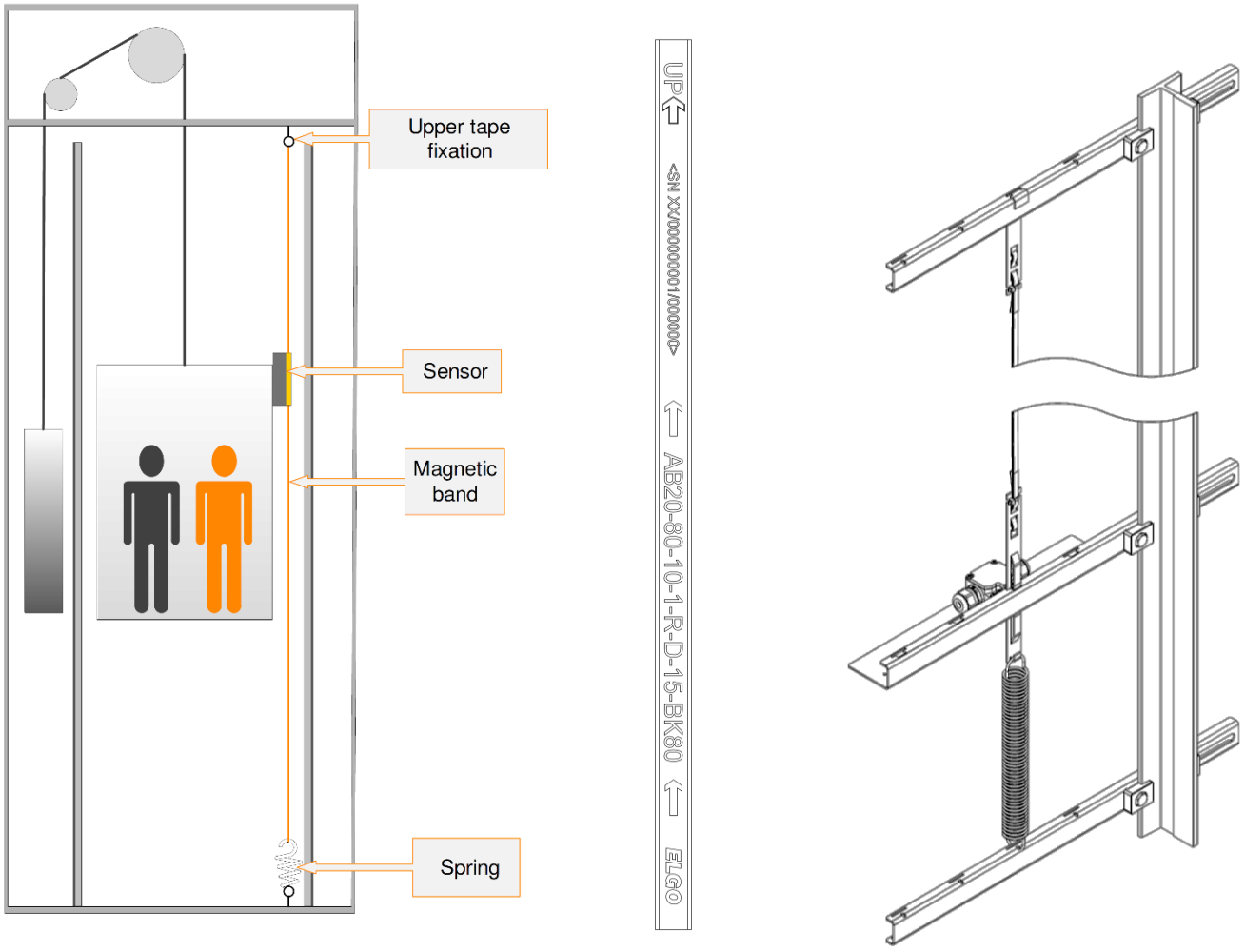


Figure 5: Tape installation with tension spring (left). The "UP" arrow notation on magnetic tape (center) and "TOP" designation on sensor head indicates the direction towards the top of the shaft. The tape mounting assembly includes a broken tape switch (right).

During placement of the magnetic tape in the sensor head, pay attention to the markings on tape & head that point to the top of the shaft. "UP" arrows printed on the magnetic tape and proper sensor head orientation provide positive APS counting during upward travel in the shaft.

WARNING: Wrong orientation of tape vs. sensor head will yield incorrect position readings!

2.5.2 ELGO Tape Mounting & Broken Tape Switch Installation

Figure 6: Mounting Upper Crossbeam

Install a crossbeam in the top of the shaft by using rail clips. Make sure the clips' screws are securely tightened to at least 15 ft-lb, so crossbeam does not move. Drop the top tape clamp into a slot of the crossbeam as shown. Use any slot provided depending on the installation, however the tape positions closest to the guide rail are preferred.

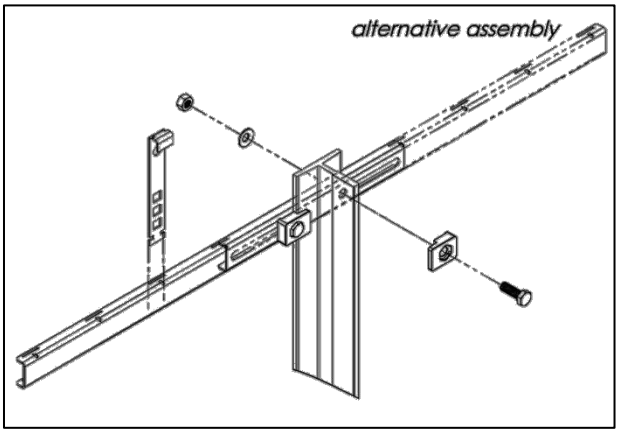


Figure 6: Mounting Upper Crossbeam

Figure 7: Attaching Upper End of Tape

This step is done with the top tape clamp mounted to the crossbeam. Thread the tape through the clamp and back down, as shown. Mind the orientation of the tape – the magnet side must face the sensor body later on. Basically, the fixture works like a self-locking belt. Leave at least 8" of tape at the top end. Press the loops flat in the clamp. There should be a bend in the upper loop. At the end, secure the tape with a cable tie at the bottom of the clamp (see Figure 9).

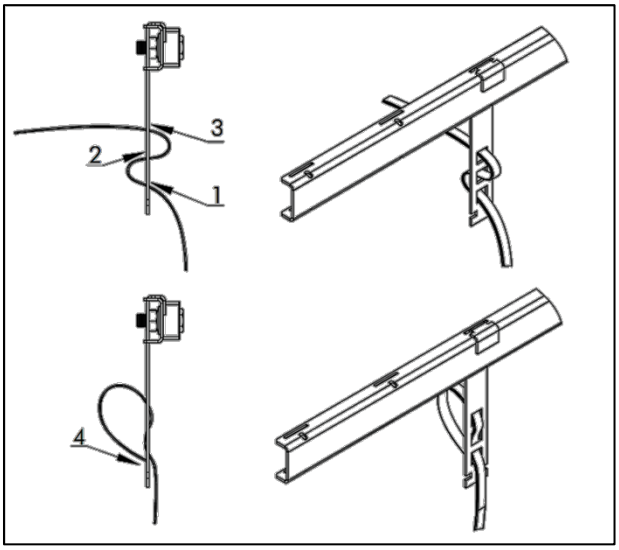


Figure 7: Attaching Upper End of Tape

Figure 8: Attaching Lower End of Tape

After tape is hung from top cross-beam, unroll the tape while running the car down the hoistway on inspection speed. Attach the lower tape clamp for the broken tape switch to the lower end of tape. Leave at least 8" at the lower end and press the loop flat in the clamp. There should be a break in the lower loop. At the end, secure the tape with a cable tie at the top of the clamp. (See Figure 9).

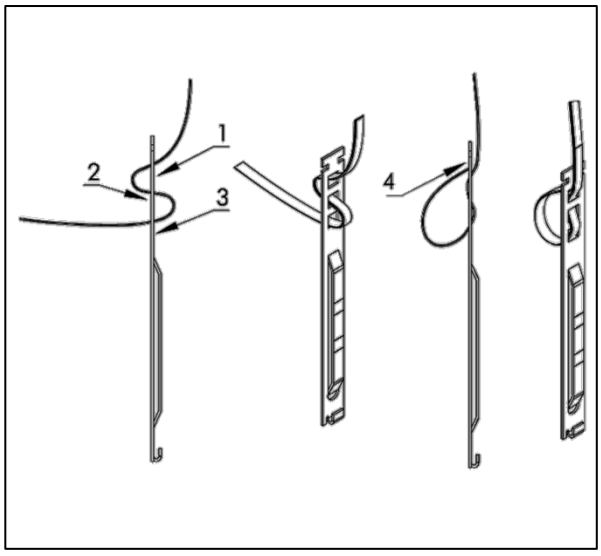


Figure 8: Attaching Lower End of Tape

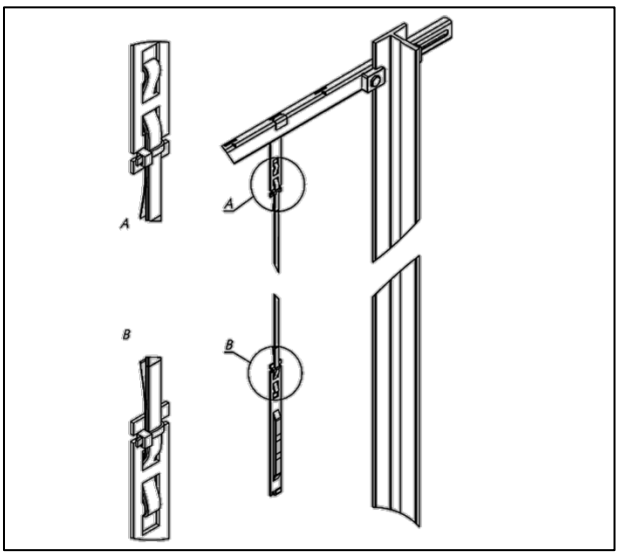


Figure 9: Securing Tape with Cable Ties

Figure 10: Mounting Lower Crossbeam

Install a second crossbeam in the shaft pit with a spring tensioning distance A = 12” ±0.5” below the bottom tape clamp. Make sure that the screws are well tightened to at least 15 ft-lb, so that the crossbeam does not move.

Figure 11: Mounting Broken Tape Switch

The broken tape switch should be (pre-)mounted to third (middle) crossbeam prior to attachment to the guide rail. Mount cable screw-clamp connections (1 or 2 pieces) to the broken tape switch. Align back of switch with the back edge of the metal crossbeam (see arrow). Then, fasten/tighten with screws at 25in-lbs. The broken tape switch may be wired before mounting if desired.

Figure 12: Mounting Tape Switch Crossbeam

Mount the third (middle) crossbeam with the pre-mounted broken tape switch to the guide rail. Vertically align the tape switch to be centered on the lower tape clamp. Fasten the rail clip screws only so tight so that the crossbeam can be moved later for adjustment.

Figure 13: Mounting Tape Tension Spring

Insert lower tape clamp through corresponding slot of tape switch crossbeam, then clip onto tensioning spring of lower crossbeam. (Spring will elongate by 3.5” for 17-22Lbs tension.) Verify spring is correctly placed in the lower crossbeam hole (detail A).

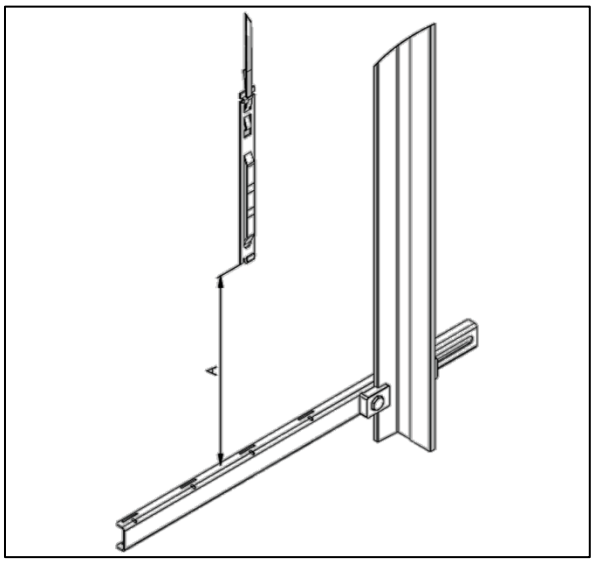


Figure 10: Mounting Lower Crossbeam

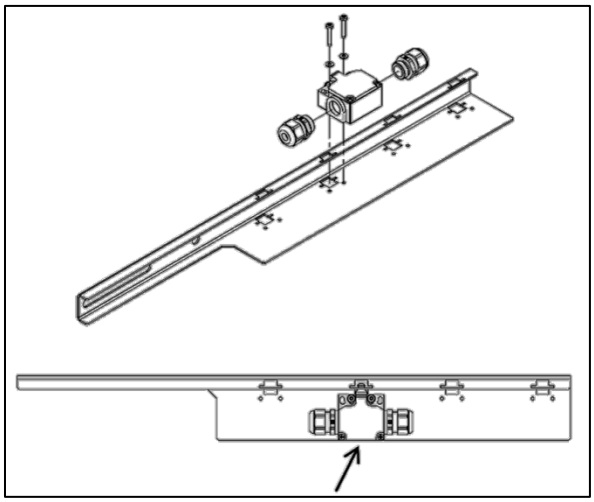


Figure 11: Mounting Broken Tape Switch

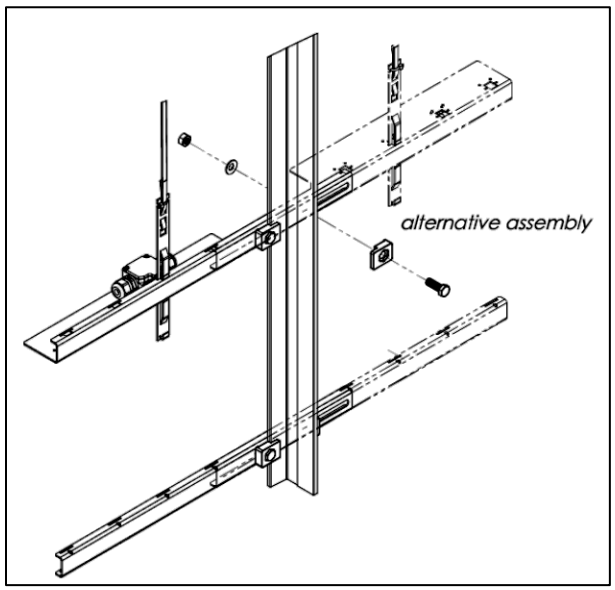


Figure 12: Mounting Tape Switch Crossbeam

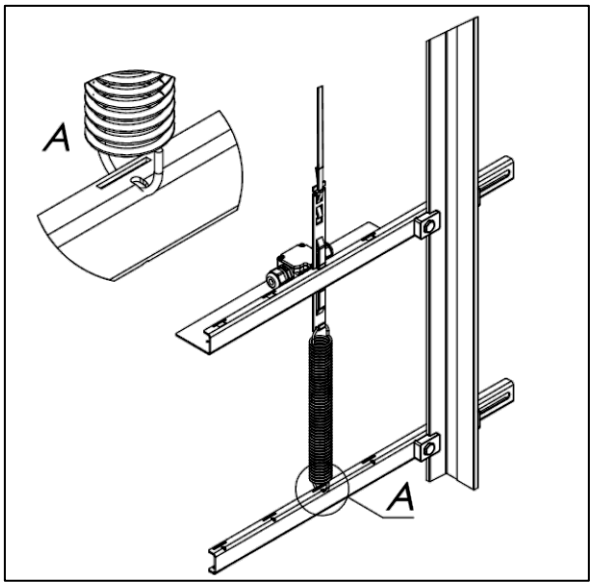


Figure 13: Mounting Tape Tension Spring

Figure 14: Vertical Alignment of Broken Tape Switch

Adjust the height of the tape switch (middle) crossbeam in such a way that only one marking, top & bottom, can be seen on the actuator cam of the lower tape clamp (see detail A). The crossbeam must be mounted perpendicular (90° angle) to the guide rail. When this crossbeam has been correctly positioned, tighten its rail clip screws to 15 ft-lb ensuring the crossbeam does not move.

Warning: incorrect positioning of middle crossbeam can compromise the effectiveness of the broken tape switch.

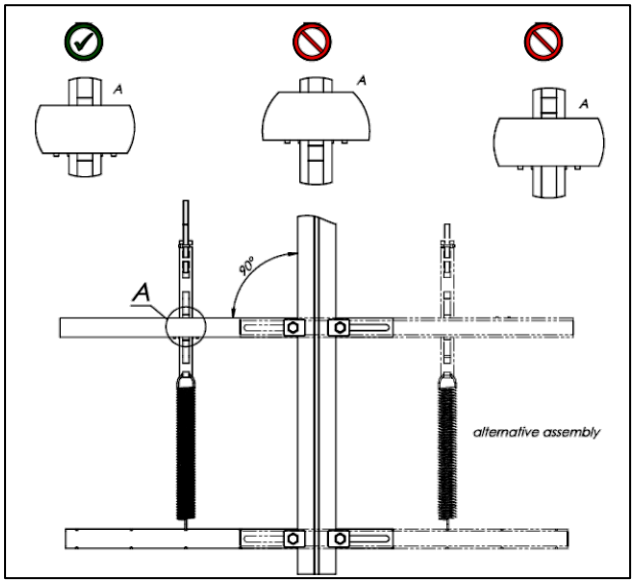


Figure 14: Vertical Alignment of Broken Tape Switch

Figure 15: Activating Broken Tape Switch

Next, the broken tape switch must be activated. To do this, use a screwdriver to pull out the actuator. Take care not to damage the rubber sleeve on the actuator.

Refer to the controller schematics for wiring of the broken tape switch in series with the pit switch.

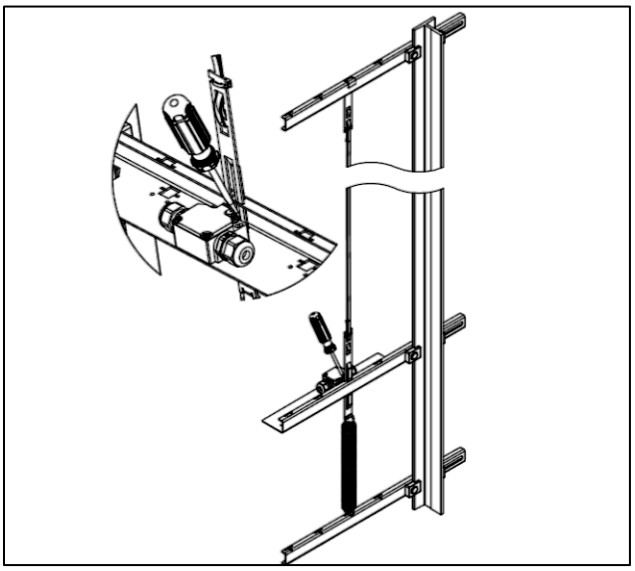


Figure 15: Activating Broken Tape Switch

2.5.3 ELGO Hardware Installation Considerations

The magnetic band on the steel tape is not designed to withstand excessive mechanical wear. It is important therefore to install the system so that mechanical contact between tape and head is between the steel side of the tape and the polymer sensor head guide. These two materials are specifically paired for this application.

Avoiding contact between the magnetic band of the tape and the sensor head can be achieved with a perfectly vertical/parallel installation of the tape, yet in reality this is not practicable. It is preferable therefore to install the tape with a horizontal offset from the sensor head. This arrangement causes slight contact between the steel side of the tape and the polymer guide of the sensor head during operation, and provides for optimal performance of the system.

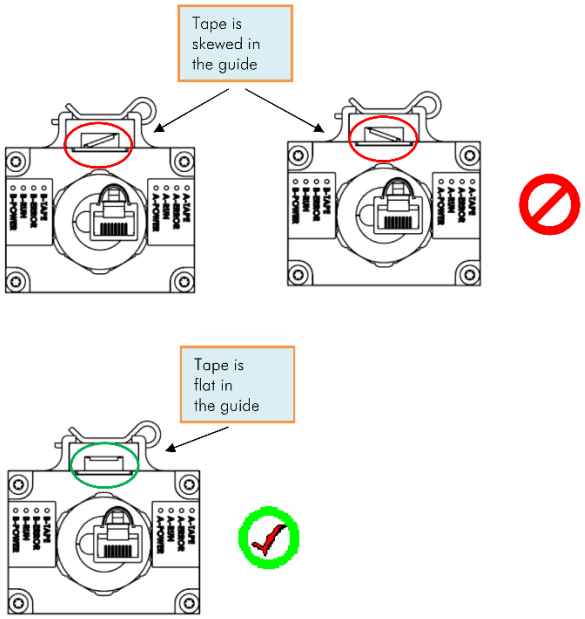


Figure 16: Angular Alignment Guideline

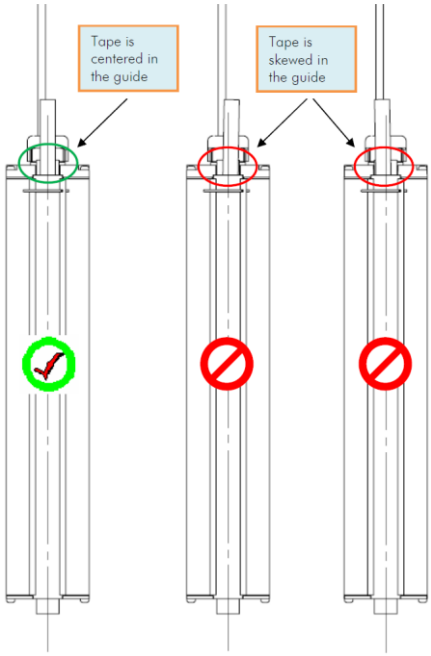


Figure 17: Perpendicular Alignment Guideline

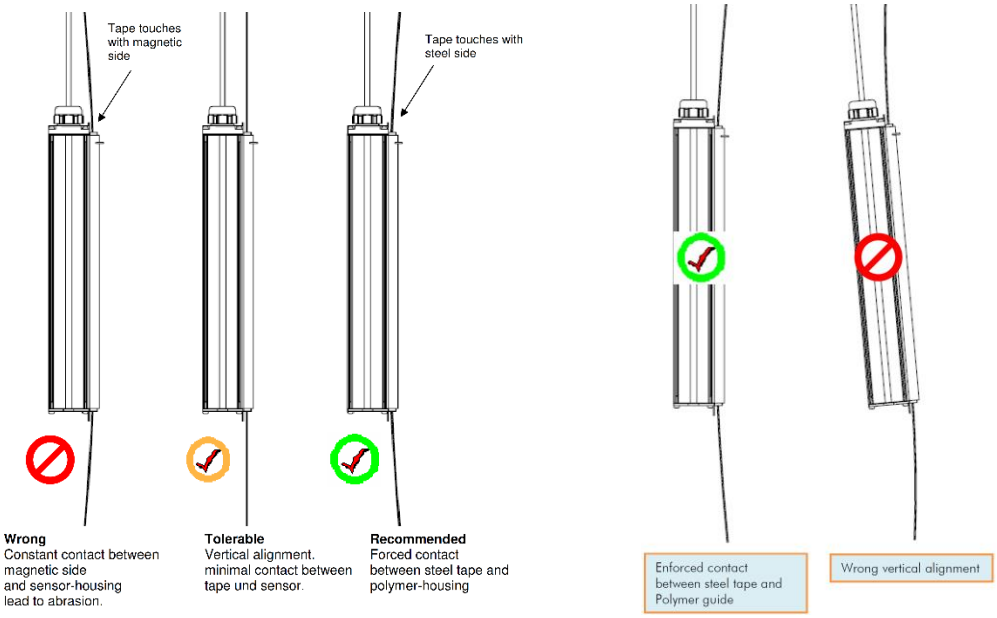


Figure 18: Horizontal Offset Alignment Guideline.

2.5.4 ELGO Sensor Head Installation

Locate the optimal installation space for tape and sensor. Placement is possible at any position in the hoistway.

1. Check for correct orientation of the tape – “UP” arrows on magnetic side must point upward. The magnetic side of the tape must face the sensor head. Refer to Section 2.5.2 for tape assembly mounting instructions.
2. Run the car to the middle of the hoistway on inspection speed.
3. Attach the sensor head to the top of the car using the angle mounting bracket provided. The end of the head with the cable outlet and LEDs must face upward.
4. Adjust the sensor head using the magnetic tape as a reference. First, align the centerline of the head to the centerline of the tape.
5. Adjust now the distance between sensor head and tape. Up to a travel height of 165ft, we recommend an offset of at least 0.6” (15mm). This will ensure steady contact between the steel side of the tape and the polymer guide of the sensor. In higher installations this distance may be increased. (See Figure 18.)

   Pay attention to the perpendicular alignment of the sensor head. Misalignment will cause wear. (See Figure 17.)
6. To attach the tape to the sensor, carefully loosen the cotter key and release/hold the polymer guide. Insert the tape and re-attach the guide with cotter key with the tape in position.
7. Check for proper alignment of tape vs. sensor. Any angular offset should be corrected. (See Figure 16-Figure 18 above.)
8. INSTALLATION CHECK: Values for tape tension and offset between tape and sensor head are guidelines based on experience. In any case, a proper check after installation is mandatory. Contact between the magnetic side of the tape and the sensor head anywhere throughout the hoistway must absolutely be avoided.

   Run an inspection trip the entire length of the hoistway. Observe the system paying attention to the respective positions of tape and sensor. You have achieved an optimal installation if the steel side of the tape is constantly but slightly pressed against the polymer guide of the sensor. At several points in the hoistway, double-check the bottom side of the sensor head. If the sensor is tilted it may look good on top but the tape can still grind along the bottom edge of the sensor. (See Figure 18.)

   After completion of the installation, clean the magnetic tape. Starting at the top of the hoistway, run down on inspection the complete travel distance pulling the magnet band through a dry cloth. Repeat the cleaning process before putting the elevator into service near the completion of the installation.

Be specifically alert if steel construction work is taking place in the hoistway. Steel particles released by grinding, welding, or such work will adhere to the magnetic band. Clean this debris off instantly as it may have an effect similar to sand paper.

2.5.5 ELGO APS Maintenance

The LIMAX22 DUE sensor and positioning system requires little maintenance. On the occasion of regular elevator inspection and maintenance, do the following:

- Perform an optical inspection of proper alignment between sensor and band. Worn tape guides indicate possible alignment error. Check for proper band alignment along the complete travel distance. Correct, if necessary, as described in the installation procedure.
- Perform an optical inspection of the magnetic band. Check for abrasions or other mechanical damages. Small mechanical damages (scratches, dents, or even small chips) do not interfere with the measuring performance. However, a damaged band is more exposed to mechanical stress and prone to further wear.
- Check for proper tension of the magnetic band, as the tension can decrease over time. Readjust if necessary.

- Inspect the polymer guide for wear. Clean if dust and dirt have accumulated between the polymer guide and sensor case. The polymer guide is a wearable part. Replace as necessary.
- Clean the magnetic band. With a dry, clean cloth, begin at the head of the hoistway and ride down the complete travel distance, pulling the magnetic band through the cloth.

2.5.6 ELGO APS Wiring Configuration & RJ45 Breakout Board

The ELGO sensor is equipped with a CAT6 STP cable with RJ45 connector, per wiring standard TIA/EIA-568-B. The cable includes 24VDC power and CANBus pairs for two channels. CANbus termination is provided internally at each LIMAX22 DUE sensor, while termination jumpers are required on the Vision Simulator CPU.

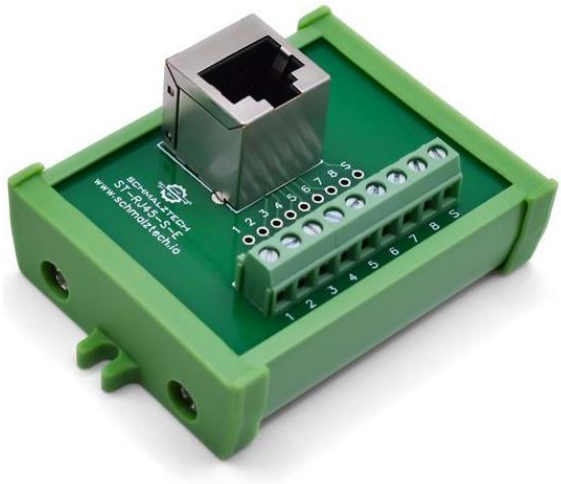
For traveling cable connection convenience in the car top, a RJ45 Breakout board is provided to connect using screw terminals. See Table 2 for the ELGO Sensor CAT6 Cable Pin Layout description.

See schematics sheet “CPS” for car top connection details for CANbus and 24VDC. Note that 24VDC is shared between both ELGO sensor channels and the CEDES Door Zone sensor.

See schematics sheet “CPU” for connection details to the Vision Simulator CPU, in car top or machine room enclosure. CANbus termination is provided internally at each LIMAX22 DUE sensor, while termination jumpers are required for each channel on the Vision Simulator CPU.

Table 2 - ELGO Sensor CAT6 Cable Pin Layout

Signal Description	Wire Color	PIN #
CAN LOW - Sensor A	White/orange stripe	1
CAN HIGH - Sensor A	Orange solid	2
0V GND Sensor A	White/green stripe	3
+24VDC Sensor A	Blue solid	4
0V GND Sensor B	White/blue stripe	5
+24VDC Sensor B	Green solid	6
CAN LOW Sensor B	White/brown stripe	7
CAN HIGH Sensor B	Brown solid	8



2.5.7 ELGO APS Status LEDs

Each sensor has a bank of status LEDs located on the upper edge of the housing, as shown in Figure 19.

During normal operation, the status LEDs for both sensors should be in the following states:

- TAPE: OFF = Tape media sensed
- ERROR: OFF = System Operational
- RUN: Flashing = Communication Active
- POWER: ON = Power Supply OK

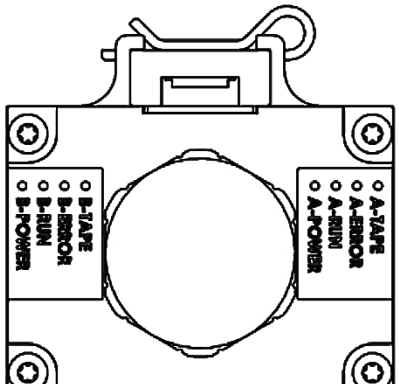


Figure 19: Status LEDs on housing.

See Table 3 for specific status LED information.

Table 3: ELGO LIMAX22 DUE Status LED Descriptions.

LABEL	COLOR	DESCRIPTION	LED STATE
TAPE	YELLOW	Magnetic Tape Status	ON = Magnet tape is missing OFF = Magnet tape available
ERROR	RED	Interface Status	ON = State error, system not operational OFF = State OK, system ready for operation
RUN	GREEN	Device Status	ON = device status OK OFF = device status NOT OK
PWR	YELLOW	Supply Voltage	ON = Supply voltage OK OFF = Supply voltage not provided

2.6 ELGO Absolute Positioning System Software Set-Up

After ELGO APS and Door Zone hardware installation is complete, the controller will need to learn the absolute position of the hoistway. Before following this learn run procedure, become familiar with the ELGO Menu screens for viewing CANbus 1 data '**I/O Status – CAN BUS 1 ELGO APS**' (Section 3.2.5), setting ELGO parameters '**Edit ELGO APS**' (Section 3.2.8), and viewing floor position learn data '**Display ELGO Floor Height Data**' (Section 3.2.4).

The ELGO APS reads position data using two sensors within the ELGO Limax unit (channels A & B). These sensors are offset by a distance of 40mm. Position data for both channel A & B sensors is recorded simultaneously during a learn run. The Vision 2.0 Simulator CPU evaluates data from each channel to ensure the ELGO APS is functioning properly.

2.6.1 ELGO APS Virtual Input Signals

The controller CPU processes position data from the ELGO sensor and computes various positioning states, replacing the need for hardware terminal limit switch inputs as shown in Table 4.

Table 4: ELGO APS Virtually Generated Selector Signals.

ELGO Virtual Input Signals	Controller Terminals
Up/Down Level	21, 22
Up/Down Slowdowns	UHS, DHS
Up/Down Top/Bottom Access Zones	TU, TD, BU, BD
Floor Reset Switches	1FP, 2FP, 3FP,…
Door Zone	20X

The position of each virtual input signal is computed relative to the center of a learned door zone signal at each landing. The computed door zone must be learned from a physical door zone input provided externally by a hardware door zone switch.

If data or communication from the ELGO sensor experiences a malfunction, or if learn data is not calibrated properly, the Vision 2.0 Simulator CPU will display an error on the **Show ELGO APS Status** screen (see Section 3.2.3) and disable the ELGO virtual input signals shown in Table 4, setting them to OFF.

2.6.2 ELGO APS Learn Procedure

Verify ELGO Communication Status

1. Ensure that the ELGO sensor is connected to the CAN0 & CAN1 Vision 2.0 Simulator CPU and 24VDC Power Supply terminals per the schematic page CPU. Verify that the ELGO hardware status LEDs are in the correct operational state (see Section 2.5.7). Verify the CEDES Door Zone sensor is properly responding to vane obstruction (See Section 2.4.4).

```
CAN BUS 1 ELGO APS A
Position     Velocity
 12345mm      123mm/s
100' 10.0"  123.4fpm
```

2. Using the Vision 2.0 Simulator CPU screen and keypad, navigate to the **Show I/O Status** Menu, and press **1** to view the **CAN BUS 1 ELGO APS** screen. Verify that position and velocity data is being read on line 3 (in mm). The position data should read anywhere from 0mm to 260000mm depending on the section of tape being used. The data on the screen is blank if CANbus communication is not established or wired properly.
3. While on the **Show I/O Status** screen, verify that the channel "B" position data is 40mm greater than the channel "A" position data. Use the **Nxt** and **Prv** keys to switch between channel "A" and "B".
4. Run the controller on inspection and verify that the position data on line 3 increases smoothly and that velocity is positive while moving up, and vice versa while moving down.

NOTE: If the controller does not move on inspection or is unable to move in one direction, troubleshoot using the controller diagnostics. The positioning signals should have no effect while running on inspection.

Begin Learn Procedure

5. Ensure that all physical hardware door zone targets are installed and centered such that the door zone sensor is in the middle of each target while at floor level. Fine tuning adjustments of up to 1.0" are allowed. If any door zone target is misaligned outside of 1.0", that target will need to be re-aligned and relearned. Refer to Section 0 to relearn a single landing as needed, or redo the full hoistway scan learn procedure.
6. Move the car on inspection to floor level of the bottom terminal landing. This will establish the 0' 0" position height, relative to the other floor positions.
7. Navigate to the **Edit ELGO APS** screen in the **Setup Menu** and press **Ent**. Type the default password 911. Press **Ent** to continue.

```
ELGO APS Learn    Off
Dead Zone Rng   0.2"
Floor To Edit     1
Trim Offset    ±0.1"
```

8. With the cursor selected on **ELGO APS Learn**, press **Ent** to enter edit mode, and press **1** to set this value to "On". Press **Ent** to confirm, which will initiate the learn operation. At any time, the learn may be cancelled by editing and setting this parameter to "Off" by pressing **0** and **Ent** to confirm.

During Learn Run

9. Run the car up on inspection at slow speed until reaching the bottom edge of the top landing door zone.
10. The system actively monitors the ELGO position data while stopped or running up, but the learn mode will be invalidated and cancelled if the system is commanded to run down on inspection. Feel free to stop running the car during the learn run, but resume running up so that the learn mode is not cancelled. Additionally, no timeout will cancel the learn run while the car is stopped.

11. As the car passes each landing, the system will measure and record the bottom edge of each door zone target. The system will automatically increment the floor position each time the door zone input signal is toggled high then low. The bottom landing floor level is computed as 3" below the top edge of the bottom door zone. The floor level at intermediate and top landings are computed as 3" above the bottom edge of each door zone input signal.

WARNING If a door zone signal is skipped or if the signal flickers multiple times while passing a floor, the learn data will not compute the correct floor position, and learn procedure must be redone.

Completing the Learn Run

12. Once the bottom edge of the top terminal landing door zone is registered, the learn operation will automatically end, and the screen will update the display to **ELGO APS Learn Off**. The newly calculated positioning signals become active, and the car may now run floor to floor using car calls and hall calls.
13. Press **Esc** to exit the ELGO APS Setup Menu, and press **1** to save the floor height data.

WARNING: If the screen updated to "Off" before reaching the top terminal landing door zone, there was likely a problem with reading the door zone signal, or the learn was cancelled by the user exiting the setup menu, or by running down.

If the screen still reads "ELGO APS Learn On" after reaching the top terminal landing, then the controller is trying to look for a door zone signal at an additional landing. This implies there was a problem with reading the door zone signal at one (or more) of the landings, or the Learn operation was not started at the bottom terminal landing, so the controller is out of sync.

Fine Adjustment of Floor Level / Dead Zone

14. Navigate to the **Display ELGO Floor Height Data** menu screen. These position values are what the ELGO system has measured as the mid-point of the 6" Door Zone targets, and will use for floor level at each landing. Verify that the floor table shows data that accurately represents the travel length between floors. See example below:

```
Floor  1    0' 0.1"
Floor  2    8' 5.9"
Floor  3   17'11.7"
Floor  4   25' 3.5"
```

NOTE: The displayed values are calibrated such that 0' 0.0" is defined as the controller position at the start of the Learn operation. It is not necessary for floor level for Floor 1 to be exactly 0' 0.0", since the actual floor level is computed as 3" below the top edge of door zone.

15. Run the car to each floor on Normal Operation and observe where the car stops after leveling into each floor in both up and down directions. The car may not stop exactly at floor level, which can be corrected in the following steps. If the car is not stopping consistently in both up and down direction, consider adjusting the valves and Dead Zone Range (see Section 3.2.8) until stopping consistency is achieved.
16. At each floor, measure the stopping position of the car relative to actual floor level (in inches or millimeters) between car & hall sills. If the car stops more than $\pm$ 1.0" above or below the floor, then the door zone target is not properly centered to floor level. After adjusting the door zone target(s), refer to Section 0 to relearn a single landing as needed, or redo the full hoistway scan learn procedure (steps 1-9).

WARNING: The floor heights must be adjusted to ensure the car stops within 1/8" of floor level to eliminate a tripping hazard. Refer to the appropriate safety codes for further guidance.

Even if door zone appears exactly centered, the floor heights must be manually inspected due to potential variation on how the door zone targets are measured during the learn operation.

```
ELGO APS Learn    Off
Dead Zone Rng    0.2"
Floor To Edit      1
Trim Offset     ±0.1"
```

17. To adjust floor heights, navigate to the **Edit ELGO APS** screen in the **Setup Menu**. Scroll down to the **Floor To Edit** item in the menu using **Prv**, and press **Ent** to go into edit mode. Then select the floor number to adjust by pressing the number key of the floor number, and press **Ent** to confirm.
18. Scroll down one line to **Trim Offset**, which represents the currently saved offset for the floor number selected in the **Floor To Edit** line above. To edit different floors, simply change the **Floor To Edit** to the desired floor, and edit the **Trim Offset** value.
19. Press **Ent** to go into edit mode, then use **Nxt** and **Prv** to increase or decrease the floor height position given by **Floor To Edit**‘ by 0.1” per button press. Use **Nxt** to raise the floor height if the car is stopping too low, and use **Prv** to lower the floor height if the car is stopping too high. The floor height position at each floor may be fine adjusted up to +/- 1.0”.
20. The entered offset is added to the saved floor height, so a positive offset value will increase the floor height and a negative offset value will decrease the floor height. After changing the offset values, the floor position values on the **Display ELGO Floor Height Data** will update to reflect that offset for each respective landing.

NOTE: After adjusting and confirming the Trim Offset while the car is at the updated floor, the car will immediately relevel while on Normal Operation. To accurately verify floor level, run the car away and call it back to the floor to observe the stopping position after a full-speed run from both directions.

21. Repeat steps 17-20 for the remaining landings.

Configure Leveling and Slowdown Positions

22. Navigate to the **ELGO APS I/O Data** menu screen, which displays current state of the Up/Down Leveling, Slowdowns, Access Zones, and Floor Switches computed by the ELGO positioning data.
23. Verify that the values of each target are in the correct state while moving throughout the shaft. All positions are computed relative to the floor position values given by the **Display ELGO Floor Height Data** menu, and relative positions may be adjusted using the **Edit ELGO APS** menu.
24. To adjust the positions of the selector signals, use the **Edit ELGO APS** menu, and refer to Section 3.2.8 for specific adjustment details.

2.6.3 Slowdown & Leveling Adjustments

Make your final adjustments for the slowdown targets using the UHS/DHS Slowdown Distance adjustments in the **Edit ELGO APS** Setup Menu. Adjust the valve for ride quality. Once valve adjustments are finalized, reduce UHS/DHS distance to reduce leveling time. A rule of thumb is reduce 1” of UHS/DHS Distance per second of leveling time.

NOTE: Default factory preset slowdown distances (see Table 5) are likely overestimated for safety and longer than necessary. Adjust the UHS/DHS distances in both up and down direction to reduce extra leveling time and optimize ride time.

Table 5 - Factory Default UHS/DHS Slowdown Distances

Contract Speed (FPM)	Default Slowdown Distance (inches)
50 or less	12
75	18
100	24
125	30
150	36
200	48
250	60
300	84
350	102
400	126
450	156
500	180
600	252
700+	312

See Section 3.2.8 for the complete list and details for adjusting all available positioning signals.

2.6.4 One Floor Learn

The ELGO Learn procedure (per Section 2.6.2) measures the door zone target at each landing, which requires the alignment of the targets to be within 1" of floor level. If a particular door zone target is misaligned in excess of 1", a One Floor Learn procedure allows a particular landing to be relearned without requiring a full hoistway scan.

To relearn a particular landing for the ELGO Pulsing Selector system:

1. On the Vision Simulator CPU screen, go to the Setup Menu -> Edit ELGO APS.
2. The car will need to start in the Door Zone (DZ) of the landing being learned while in Inspection Mode.
3. In the '**Floor to Edit**' row, enter the landing being relearned.
4. Position the car to floor level using Inspection. This position will be saved as the center of leveling & dead zone at this floor.

   NOTE: The door zone target should be centered around floor level. A One Floor Learn will fail if the measured door zone target is misaligned by more than 1".

5. Turn on '**1 Floor Learn**' by pressing **Ent** on the '**1 Floor Learn**' row, then press **1** on the keypad, and then press **Ent** again. The display should read "ON".
6. Move the car out of Door Zone using Inspection up or down, at which point the display reads "OFF".
7. The controller will validate that the starting position is within +/-1" of the center of Door Zone, and calculate the '**Trim Offset**' based on this. This marks the completion of the 1 Floor Learn.
8. Verify the car stops at floor level while running in both directions, or note how far the car is from floor level.
9. Adjust the stopping position to match floor level using '**Trim Offset**' in the Edit ELGO APS setup menu as needed. (see Section 2.6.2, step 18)
10. To save these changes, press **Esc** to exit the Edit ELGO APS setup menu, and then press **1** to confirm and save the new floor height data.

Error Display Conditions:

When turning on '**1 Floor Learn**', the text on the right shows one of the following:

- **`On/Off`** – Indicates the state of 1 Floor Learn Operation, with none of the error conditions below.
- **`notDZ`** – The Door Zone input is not being read by the controller.
- **`Floor`** – The '**Floor to Edit**' row does not match where the car position is relative to the landings above and below.
- **`>1.0"`** – The Trim Offset cannot be more than an inch from Door Zone center. The Door Zone center needs to be within that range of the floor level to be relearned.

3. Screen Navigation & Adjustments

3.1 User Interface Screen Navigation

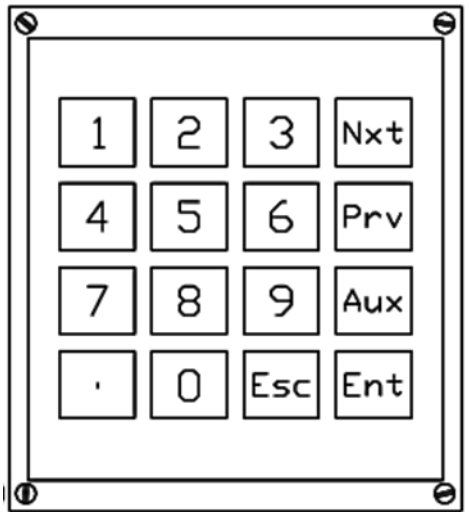


Figure 20: Keypad layout

General Key Operations:

Press **Nxt** to scroll up lists and go to the next menu screen or fault.

Press **Prv** to scroll down lists and go to the previous menu screen or fault.

Press **Aux** to enter two screen mode.

- The Status LED4 indicates the 2nd screen is active.
- Setup mode is only available while on the 1st screen, disabled while on 2nd.
- Press again to return to single-screen mode and enable the Setup menus.

Press **Esc** to return to the menu screens or cancel an edit.

Press **Ent** to edit and confirm parameter changes, and enter menus.

Press **.** to view firmware information while on the I/O status screen.

Press **1** to turn ON 2-state settings.

Press **0** to turn OFF 2-state settings.

Press **0** - **9** to enter numerical data or select CANbus channels on the I/O status screen.

3.2 CPU Menu Structure

3.2.1 Banner Screen

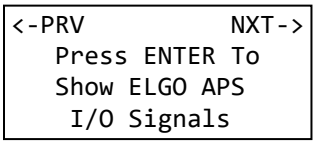
```
Virginia Controls  A
Vision 2.0 Job  RTOS
REV:1440  CFG: PULSE
08/14/2023  12:34:56
```

The Banner Screen displays general information for the controller that distinguishes it from other systems, based on Job # and software version.

- The first line always contains '**Virginia Controls**', followed by the controller alphanumeric index.
- The second line identifies the controller CPU as the '**Vision 2.0**' model.
- The third line displays the current software revision number and configuration version "PULSE".
- The fourth line displays the current date and time.

Press any key to enter the main menu.

3.2.2 ELGO Data Screen



The **Show ELGO APS I/O Signals** screen displays the state of virtual positioning signals.

The leading text indicates the corresponding terminal label for the signal.

The default target lengths may be adjusted using the **Edit ELGO APS** setup menu screen (see Section 3.2.8)

Signal Active	**Target Length** (default)	**Signal Reference** (default)
20 Door Zone	Fixed Length (6”)	Centered at floor level
ELGOAPS DoorZone	Fixed Length (6”)	Centered at floor level
21 Up Level	**Up Level Range** (6”)	**DEAD ZONE RNG** / 2 below floor level (0.25”)
UHS Up Slowdown	**UHS Range** (6”)	**UHS DISTANCE** below floor level (see slowdown table)
DHS Dn Slowdown	**DHS Range** (6”)	**DHS DISTANCE** above floor level (see slowdown table)
22 Down Level	**Dn Level Range** (6”)	**DEAD ZONE RNG** / 2 above floor level (0.25”)
USS UpSlowSlowdn	**USS Range** (6”)	**USS DISTANCE** below floor level (half shortest floor height distance)
DSS DnSlowSlowdn	**DSS Range** (6”)	**DSS DISTANCE** above floor level (half shortest floor height distance)
TU Access Zone	**Acc Top Range** (8ft)	(**Acc Top Range + Access Offset**) below top floor (8ft + 3ft)
TD Access Zone	**Acc Top Range** (8ft)	**Acc Top Range** below top floor (8ft)
BU Access Zone	**Acc Bot Range** (8ft)	**Acc Bot Range** above bottom floor (8ft)
BD Access Zone	**Acc Bot Range** (8ft)	(**Acc Bot Range + Access Offset**) above bottom floor (8ft + 3ft)
1FP Floor Reset	Fixed Length (6”)	Centered at floor level
2FP Floor Reset	Fixed Length (6”)	Centered at floor level
4FP Floor Reset	Fixed Length (6”)	Centered at floor level
8FP Floor Reset	Fixed Length (6”)	Centered at floor level

3.2.3 ELGO Status Screen

```
<-PRV          NXT->
   Press ENTER To
   Show ELGO APS
    Status
```

APS Learn	Learned status. OFF = no learn data.
DZ: APS == HW	Door Zone mismatch between hardware door zone input and previously learned door zone range.
APS Channel A	ELGO Channel A comm status.
APS Channel B	ELGO Channel B comm status.
APS Tape	ELGO tape error. OFF = no tape data detected.
APS A-B Offset	ELGO tape data is out-of-range of top or bottom landings.
APS DZs Valid	ELGO learn data error. OFF = learned door zone data is out of sequence.

3.2.4 ELGO Floor Heights Screen

```
<-PRV          NXT->
   Press ENTER To
 Display ELGO Floor
    Height Data
```

```
Floor 1   0’ 0”
Floor 2   10’ 1”
Floor 3   20’ 2”
Floor 4   30’ 6”
```

View the learned floor heights (all floor heights will be 0’ 0” with no learned data).

Height data is relative to Floor 1 (0’ 0”).

Floor heights may be trimmed up to +/- 1.0” (See Section 2.6.2), with the resulting floor height shown here.

3.2.5 I/O Status Screen

```
<-PRV          NXT->
   Press ENTER To
   Show I/O Status
```

```
CAN BUS 1 ELGO APS A
Position     Velocity
 12345mm      123mm/s
100' 10.0"   123.4fpm
```

```
CAN BUS 2, BOARD 0
  Inputs     Outputs
 1111 1111 1111 1111
 1111 1111 1111 1111
```

Press **0** or **1** to view the ELGO APS data.

While on the **CAN BUS 1 ELGO APS** screen, press **Nxt** or **Prv** to switch between ELGO channels A & B.

Position in ‘mm’ represents the raw pulse count from the ELGO tape.

Position in feet (‘) and inches (“) represents the car position relative to the bottom landing (0’ 0”)

Press **2** to view the I/O status of the simulator I/O board #0.

Input states 1-16 are shown on the left two columns. Output states 1-16 are shown on the right two columns.

Press **.** to view the I/O Board Processor firmware version of the I/O board.

3.2.6 Show Memory

```
<-PRV          NXT->
   Press ENTER To
    Show Memory
```

```
A0000000 00 00 00 00
A0000004 00 00 00 00
A0000008 00 00 00 00
A000000C 00 00 00 00
```

Factory Diagnostics only

3.2.7 Setup Menu

```
<-PRV          NXT->
   Press ENTER To
  Show Setup Menu
```

Note: The Show Setup Menu screens are disabled when using Aux Button 2nd screen feature. (see Section 3.1)

3.2.8 ELGO Adjustments Screen

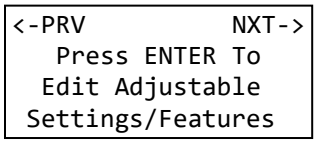
```
<-PRV          NXT->
   Press ENTER To
   Edit ELGO APS
```

Note: To Enter the Edit ELGO APS screen, the password '911' must be entered.

Table 6: ELGO APS Adjustable Settings Menu Parameter Descriptions.

Menu Item	Unit	Min	Max	Default	Description
ELGO APS Learn	-	-	-	OFF	Initiates learn mode.
Dead Zone Rng	inch	0.1	0.9	0.5"	Width of Dead Zone range, which defines edge of leveling.
Floor To Edit	floor	1	Top Ldg	1	Select the floor to be edited using **Trim Offset**.
Trim Offset	inch	-1.0	1.0	0.0"	Floor level offset value for the floor # in **Floor To Edit**.
Relevel Offset	inch	0.0	0.4	0.0"	Leveling offset within Dead Zone (use to center leveling).
1 Floor Learn	-	-	-	OFF	Initiates a relearn at a particular floor in **Floor To Edit**.
Up Level Range	inch	4.0	12.0	6.0"	Width of Up Level, starting from lower edge of Dead Zone.
Dn Level Range	inch	4.0	12.0	6.0"	Width of Down Level, from upper edge of Dead Zone.
UHS Distance	inch	9.0	255	See Table 5	Distance of Up High Speed Slowdown from below floor level.
DHS Distance	inch	9.0	255	See Table 5	Distance of Down High Speed Slowdown from above floor level.
USS Distance	inch	9.0	255	Half of Shortest Floor – 2"	Distance of Up Slow (1FR) Slowdown from below floor level.
DSS Distance	inch	9.0	255		Distance of Down Slow (1FR) Slowdn from above floor level.
UHS Range	inch	3.0	36.0	6.0"	Length of UHS Slowdown Target, starting at **UHS Distance**.
DHS Range	inch	3.0	36.0	6.0"	Length of DHS Slowdown Target, starting at **DHS Distance**.
USS Range	inch	3.0	36.0	6.0"	Length of USS Slowdown Target, starting at **USS Distance**.
DSS Range	inch	3.0	36.0	6.0"	Length of DSS Slowdown Target, starting at **DSS Distance**.
Acc Top Range	feet	1.0	20.0	8.0'	Length of top landing TU & TD Inspection Access Zones.
Acc Bot Range	feet	1.0	20.0	8.0'	Length of bottom landing BU & BD Inspection Access Zones.
Access Offset	inch	0.0	36.0	9.0"	The Up and Down Access Zone offset defines how far the car can drift out of a zone, while still being able to run in the opposite direction.
RESET ELGO SET	-	-	-	-	Use to reset all ELGO settings parameters to factory default.
CLEAR ELGO DAT	-	-	-	-	Clears all ELGO floor position data. A relearn operation is required.

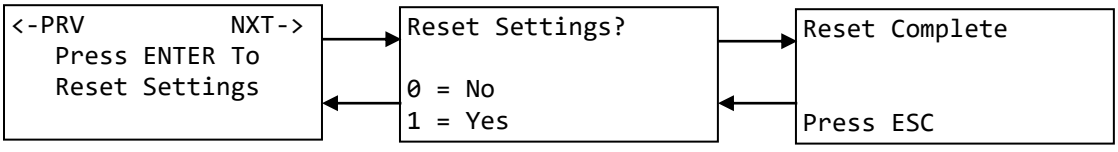
3.2.9 Job Configuration Settings



NOTE: To Enter the Edit Adjustable Settings/Features screen, the password '911' must be entered.

NUMBER OF LDGS	Defines the top landing, which determines the door zone qty during an ELGO Learn, and the location of the Top Access Zones. (default is 6-landings – must be updated)
BOTTOM LANDING #	Defines the bottom landing, which determines the door zone qty during an ELGO Learn, and the location of the Bottom Access Zones.
PULSING SELECTOR	ON = use UHS/DHS for position/floor change. Standard for most applications. (default) OFF = use floor switch model, with a signal per floor.
CNTRCT SPEED FPM	Contract Speed used preset UHS/DHS Distances. (default is 350fpm – must be updated)
2FLOOR RUN SPEED	ON = Use USS/DSS for position reset at terminals. Applies to higher speed traction applications only. OFF = Use UHS/DHS for position reset at terminals. (default)
ENABLE SHORT FLR	ON = Filter leveling signals based on current/stopping position. OFF = Enable all leveling & floor switch signals. Standard for most applications. (default)
BINARY FLR RESET	ON = Enable 1FP, 2FP, 4FP, 8FP Binary Floor Resets at each landing. Disable UHS/DHS Floor Resets at terminals landings. Standard for applications with 4+ landings applying 2010+ fire/safety ASME 17.1 code. (default) OFF = Enable UHS Floor Reset at Top Terminal Landing and DHS Floor Reset at Bottom Terminal Landing. Disable 1FP, 2FP, 4FP, 8FP binary floor resets. Standard for applications for 2-3 landings, or pre-2010 code.
ELGO APS	ON = default; OFF = disable all positioning signals (NTS or Buffer Test)
CANopen Enable	ON = CANOpenLift ELGO type; OFF = standard CAN ELGO type (for factory use only)

3.2.10 Reset Settings



Use Reset Settings to refresh the Job Configuration Settings to the default value. If the settings are reset, the parameters should be reviewed and updated to match the project specifications. See Section 2.3 for recommendations when reconfiguring the Vision Simulator CPU settings.

Resetting the settings should not be required unless the Vision Simulator CPU is replaced.

Resetting the settings will not affect the learned ELGO door zone floor heights data or the ELGO setting parameters. See Section 3.2.8 to reset or clear the ELGO adjustment parameters or learned data.

The screen will require the password '**911**' to confirm the settings reset.

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