SMARTRISE

NEMA 4 LANDING SYSTEM

VERSION 1.0

SMARTRISE

Document History

Date	Version	Summary of Changes
September 23,2021	1.0	Initial Submittal

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Table of Contents

List of Figures

NEMA 4 Landing System

The Smartrise NEMA 4 Landing System tracks elevator position with high precision and superior reliability. The position is read from a coded magnetic strip that is guided through the position sensor. The position sensed from the magnetic strip is contact free. The door zone sensor is contact-less.

The advantage of using the Smartrise NEMA 4 Landing system is that there is no need for alignment or contrast monitoring.

The Smartrise NEMA 4 Landing System consists of:

- Proximity Sensor Assembly
- Coded Magnetic Tape
- Mounting Assembly
- Guide with Sensor Detector

Proximity Sensor Assembly

The magnetic proximity senser in the Sensor Assembly reads the Smartrise Door Zone 6" magnetic strips. These sensors are non-latching. The magnets are installed next to the central protruding part of the guide rail.

The Proximity Sensor Assembly consist of:

- Right Angle Mounting Bracket
- Cable
- Proximity Sensor

The following procedure describes how to assemble the Proximity Sensor Assembly.

1. Secure one nut onto the proximity sensor.
2. Slide the proximity sensor through the right angle mounting bracket.
3. Secure the other nut onto the proximity sensor.

Figure 1: Proximity Sensor Assembly

When installing the Proximity Sensor Assembly, the distance of the sensor head to the magnet should be up to one inch.

Below is an example of how the Proximity Sensor Assembly can be mounted.

NOTE: The customer is responsible on how they want to mount the sensor.

Figure 2: Mounting Proximity Sensor Assembly (Example)

After the Sensor Assembly has been mounted, wire the Sensor Assembly to the Car Top. See the Controller +CTC sheet for wiring information.

Installation

The Safe Magnetic Absolute Sensor Assembly is installed using the mounting kit supplied by ELGO. See the *ELGO Operating Manual* on how to install the Assembly.

Mounting Magnetic Tape in the Hoistway

The magnetic tape is to be mounted to the top and bottom of the hoistway. Verify the magnetic tape has the magnetic side facing the sensor and has the arrows on the tape facing the top of the hoistway. See the *ELGO Operating Manual* on how to install the magnetic tape along the guide rail and spring.

Mounting the Sensor to the Car

The sensor has to be mounted to the car. The sensor must be positioned upwards towards the top of the hoistway during installation. See the *ELGO Operating Manual* on how to mount the sensor.

Perform the following to attach the mounting bracket to the sensor.

1. Insert two sets of nuts into each groove of the sensor.
2. Line up the nuts to the holes within the placement of the bracket on the sensor.
3. Secure the bracket to the sensor using the two sets of screws and lock washers.

NOTE: The customer is responsible for the direction of the mounting bracket to the sensor and attaching the mounting bracket to the car.

Install Magnetic Tape Through Sensor

The sensor reads the positioning information from the magnetic tape. The magnetic tape is a special stainless steel tape that provides absolute positioning information.

WARNING

THE TAPE EDGE IS SHARP. CUT-PROOF GLOVES MUST BE WORN WHILE HANDLING THE TAPE.

Figure 3: Gloves Required

The tape consists of a steel side and a magnetized side. When installing the magnetic tape through the tape guide, the steel side of the tape must touch the guide.

There are two ways to install the magnetic tape through the tape guide.

1. Feed the tape from one end of the tape through the tape guide to the other end.
2. Removing the cotter pin.
    - Remove the cotter pin from the channel.
    - Remove tape guide.
    - Place tape on sensor housing.
    - Reinstall tape guide.
    - Reinstall cotter pin.

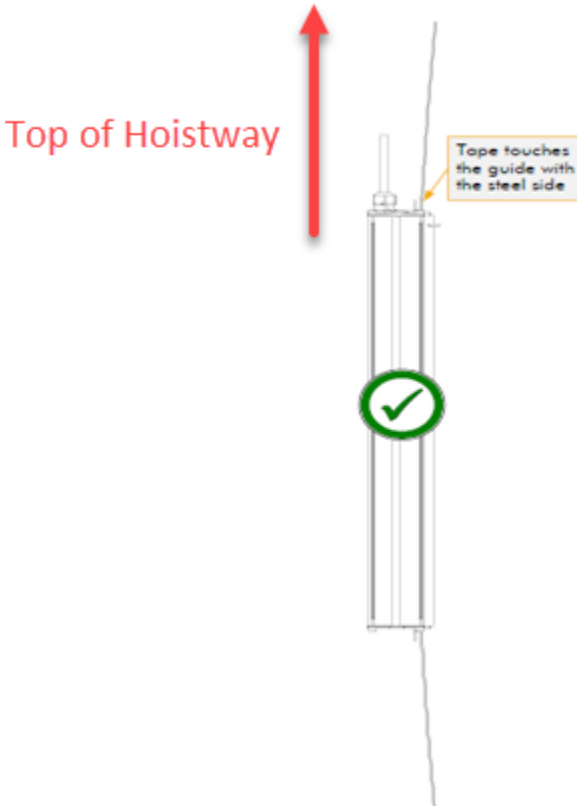

Figure 4: Magnetic Tape Installation[1]

See the *ELGO Operating Manual* for proper tape installation.

LEDs

There are three LEDs on the sensor (yellow, green, and red). Depending upon the input, each of the LEDs determine if the landing system is working properly or if an error has occurred. See the *ELGO Operating Manual* for the definition of each LED condition.

Learning the Hoistway

Learning the Hoistway is required after the Smartrise NEMA 4 Landing System has been installed. See the *Controller User Manual Learning the Hoistway* for the procedures on how to learn the hoistway.

[1] See ELGO Operating Manual LIMAX33 RED Safe Magnetic Absolute Shaft Information System

Slow Down

The following must be set for traction and hydraulic type elevators after learning the hoistway has been completed.

- Traction Elevators – Emergency Terminal Slowdown (ETS). See *C4 User Manual* for setting the ETS slowdown points.
- Hydraulic Elevators –Terminal Slowdown Reducing Device (TSRD). See the *Hydro:Evolved User Manual* for setting the TSRD distance.

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