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Eaton Sensors Rise To Elevator Industry's Challenges

Location:

Canada and United States

Problem:

Developing sensor solutions to address unique elevator industry applications

Solution:

Eaton's ability to meet application-specific needs of elevator industry

Results:

Effective, economical sensor solutions for challenging elevator industry applications

Contact Information

Readers who may have similar application challenges and would like to discuss this sales success are encouraged to contact Eaton's Sensor Application Engineers at 800-426-9184 x1.

Over the years, Eaton has demonstrated its ability to develop sensing solutions to effectively meet the unique challenges of the elevator industry. The company's sensor product expertise, customization capabilities and in depth understanding of the elevator industry have enabled it to develop application-specific solutions for a variety of companies within the industry.

When a large provider of vertically and horizontally sliding freight elevator doors and related equipment was working on an innovative approach to detecting the presence of an object beneath its industrial roll-up doors, it enlisted Eaton's help. While most door manufacturers use a through-beam or retro reflective sensor mounted on the wall in front of the doors, the company developed the idea of having small legs,

which held a through beam sensor pair, descend from the door's bottom edge.

Initially, the company attempted to use Eaton's right angle Comet wide-angle source and detector but they could not be adequately aligned within the confines of the leg assemblies. The standard light source had one dim visible red LED and one bright infrared LED. Eaton replaced these LEDs with two bright red visible LEDs approximately doubling the total light output and at the same time, increased the detector's sensitivity to four times the standard value. This allowed a greater tolerance to misalignment. Since Eaton's standard connector versions had 10 inches of cable and did not provide sufficient length to get the connectors out of the leg assemblies, Eaton designed two versions to meet the company's requirements; one with four foot cables and the other with cables terminated in micro connectors.

Inclinator of America, a manufacturer of residential home elevators, wanted to replace its mechanical floor stops/leveling solution for its elevators and looked to Eaton for a no touch photoelectric sensing solution. The Eaton solution was to use an economical reflex sensor to sense strips of retro reflective material as the elevator approached the floor. As the sensor, which was about five inches away, saw the individual strips of target materials, it was able to recognize the elevator's position and move the elevator forward until it was precisely aligned with the floor.

The company considered Eaton's Prism product, but the application required that it be rated at twice its intended load current. To meet Inclinator's requirements Eaton made a special version of the product with a special output solid state relay, 15-inch cable, no gain pot and an output internally configured for a three wire circuit.



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