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Joint Task Force: UL 325

The Proper Intallation of

Photoelectric Sensors on Vehicular Commercial Door Operators

A pending Technical Data Sheet being produced by a joint Task Force on Safety Messaging through IDA, IDEA and DASMA, addresses photoelectric sensors in commercial applications being placed above 6 inches from the floor... Most often, this is to protect vehicles, which is an unacceptable diversion of a life-safety device intended to protect people.

Introduction

Much of this article relates to a pending Technical Data Sheet being produced by a joint Task Force on Safety Messaging, through IDA, IDEA and DASMA. The TDS will address the common problem of photoelectric sensors in commercial applications being placed above 6 inches from the floor. Most often, this is to protect vehicles, which is an unacceptable diversion of a life safety device intended to protect people. In fact, it was only a few short years ago a garage owner lost his own life due to his insistence that photo-eyes be mounted at four feet in order to protect buses.

Since 2010, Underwriters Laboratories Standard UL 325 has required all vehicular commercial door operators to be equipped with a monitored entrapment protection device or to permit closing with constant pressure on the push button. Typically, that entrapment protection device is an edge sensor or a photoelectric sensor.

Photoelectric Sensor Entrapment Protection Installation Height

Photoelectric sensors, when used for primary entrapment protection, must be installed parallel to the floor and no higher than six inches above the floor. In the past, some commercial door technicians have installed photoelectric sensors at a height of three feet or more above the finished floor in an effort to protect vehicles. Installing the entrapment protection sensors higher than six inches violates UL 325 requirements and manufacturers' instructions and creates a dangerous environment that could expose the dealer and the building owner to liability.

If vehicle protection is required additional devices may be used. They are not required to be monitored but they may never take the place of the primary entrapment protection device. Installers and service technicians may often encounter end users who believe that the primary entrapment protection device needs to protect both people and vehicles with a bumper height that is greater than six inches above the floor. In this case, a monitored edge might be in order. If the end user demands that the photo-eyes be placed higher than six inches above floor level they need to be instructed that this would be both a violation of the UL listing and could also be a violation of OSHA safe workplace regulations.

Ancillary Protection, Not used for Entrapment Protection

If vehicle protection is desired devices such as safety edges, light curtains, vehicle loop detectors, or additional sets of photo eyes can be utilized. Note that any ancillary

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protection provided for vehicular protection is not required to be monitored; however, systems with monitored entrapment protection provide feedback when the system is not functioning properly. When a non-monitored safety device is utilized, the only way to determine if the device is functioning properly is to have just tested it.

Important

Both IDA and DASMA encourage homeowners and building maintenance personnel to conduct the required regular testing of automatic garage door and operator systems to ensure ongoing safe operation. The manufacturer's instructions provided with the garage door operator should be reviewed concerning this testing.

Testing

Testing of the safety systems includes monthly testing of the inherent reversing mechanism for residential garage door as well as monthly testing of the photoelectric sensors for both residential and commercial garage door openers to verify proper working order. Commercial Vehicular Door Operators are not required to include inherent reversing systems so the testing of these types of systems will only be recommended if the manufacturer has included the system in the operator. This most likely will not occur unless the operator is dual listed with UL for both residential and commercial use.

To test the photoelectric sensor, start the door moving down. Then apply a controlled obstruction in the path of the photoelectric beam. Verify that the garage door movement reverses direction and that the door returns to the fully open position.

Do not use a part of your body for this test because if for some reason the system is not functioning properly bodily injury could result.

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