



**DASMA**  
Door & Access Systems  
Manufacturers Association  
International

OPERATOR & ELECTRONICS DIVISION

# TECHNICAL DATA SHEET

## #364

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## Installation Location of Photoelectric Sensors on Residential Garage Doors

### Introduction

Residential garage door operators labeled and listed to ANSI/CAN/UL 325 must be designed and manufactured with features that aid in the prevention of an individual from becoming entrapped beneath a closing garage door. One way to achieve this entrapment protection is the incorporation of an external entrapment protection device. This can consist of a photoelectric sensor, an edge sensor, or any other system that meets the protection requirements tested in accordance with ANSI/CAN/UL 325.

Additional information about federal and state legislation related to garage door operators can be found in DASMA TDS-351, *Federal and State Garage Door Operator Legislation Guidelines for Dealers and Installers*.

### Photoelectric Sensor

A photoelectric sensor, also known as a photocell (light beam) is a device that uses one or more light beams for the purpose of detecting obstructions within a detection zone. When permitted by ANSI/CAN/UL 325, it may be used as an entrapment protection means or device. Examples include a through-beam photoelectric sensor where an emitter is mounted on one side of a detection zone and a receiver is mounted on the opposite side of the detection zone. Another example is a retro-reflective photoelectric sensor where an emitter and receiver are in the same electronic device that is installed on one side of a detection zone and a reflector is mounted on the opposite side of the detection zone.

### **▲WARNING**

- To reduce the risk of severe injury or death, it is essential that photoelectric sensors be installed properly according to manufacturer's instructions.

### Installation Height and Horizontal Location

Each photoelectric eye lens, or in the case of multiple sets of photoelectric eyes, the lowest eye lenses of the array, are to be installed to emit a photoelectric beam no higher than six (6) inches above the garage floor.

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**Note: Technical Data Sheets are information tools only and should not be used as substitutes for instructions from individual manufacturers. Always consult with individual manufacturers for specific recommendations for their products and check the applicable local regulations.**

This Technical Data Sheet was prepared by the members of DASMA's Operator & Electronics Division Technical Committee. DASMA is a trade association comprising manufacturers of rolling doors, fire doors, grilles, counter shutters, sheet doors, and related products; upward-acting residential and commercial garage doors; operating devices for garage doors and gates, sensing devices, and electronic remote controls for garage doors and gate operators; as well as companies that manufacture or supply either raw materials or significant components used in the manufacture and installation of the Active Members' products.

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Horizontal positioning is limited to typical manufacturer testing constraints. Photoelectric sensors are usually located up to 20 feet apart, but may be greater if indicated in the instructions provided by the manufacturer. Sensors should also be located within six (6) inches of the path of the door measured perpendicular to the door.

Installation should in all cases be per the garage door operator manufacturer's instructions. Contact the manufacturer if any variations may be needed from the instructions or from the guidelines in this Technical Data Sheet.

### **Important**

DASMA encourages 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. 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.

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