



DASMA
Door & Access Systems
Manufacturers Association
International

DOOR OPERATOR & ELECTRONICS DIVISION

TECHNICAL DATA SHEET

#363

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Evaluation of Door or Gate Operators Employing Photoelectric Sensors

Introduction

Photoelectric sensors used as non-contact entrapment protection devices must be evaluated to UL325 and UL991 (or equivalent, see below) by operator manufacturers for use with their products; however, a part of that testing might be conducted by the component manufacturer and included as part of the final operator review.

Definition of "Photoelectric Sensor"

By definition, a photoelectric sensor (or "photoelectric sensor") is a type of sensor consisting of a light-emitting device and a light-receiving device, where if the beam is blocked by an obstruction, the sensor signals the operator to stop and reverse.

Components and Testing

A photoelectric sensor is considered a "component" of an automated door or gate system and is intended for use in a specific end product. A component may be incomplete in construction features and/or restricted in performance capabilities. The performance of such a component may change, depending on the operator to which it is attached; therefore, it is necessary for a testing agency to determine the acceptability of a photoelectric sensor when reviewing the operator on which the photoelectric sensor will be used.

Product Review by Nationally Recognized Testing Laboratories

A door or gate operator manufacturer submitting a product for evaluation must include all compatible entrapment protection components as part of their test plan. The testing agency will review the product, as submitted, and issue a report that includes all component options subject to acceptable methods of use and installation.

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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Means of Establishing Acceptable Methods of Use and Installation

Conditions for acceptable usage normally include the following as specified in UL 325, *Standard for Safety for Door, Drapery, Gate, Louver, and Window Operators and Systems*:

- Instructional requirements
- General requirements, installation and power
- Applicable operational verification tests of photo eye by itself and as part of the door/gate operator system
- Current protection
- Applicable electronic circuit reliability requirements, in accordance with one or more of the following:
 - UL 991, *Standard for Safety-Related Controls Employing Solid-State Devices*
 - UL 60730, *Automatic Electrical Controls – Part 1: General Requirements*
 - UL 325 Supplement SA, *UL 60335-1/CAN/CSA-C22.2 No. 60335-1 based requirements for the evaluation of electronic circuits*

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