
NIPF.SA10989

Active Opto-electronic Protective Devices

Active Opto-electronic Protective Devices

See General Information for Active Opto-electronic Protective Devices

**ROCKWELL AUTOMATION/
ALLEN-BRADLEY**
2 EXECUTIVE DR
CHELMSFORD, MA 01824 USA

SA10989

Type 4 light curtain, Model SAFE SHIELD Series (+).

Type 4 light curtain , Model GuardShield (+), Series 440L followed by P, T or R, followed by 4,f followed by J or K, followed by xxxx, followed by Y, followed by D.

Type 4 light curtain accessories, Remote Teach Box, Model No. 440L-M8600. For use only with the Series 440L Light Curtains with Suffix D.

Intelliface , Module 442L-M4200.

+ - Also complies with UL1998, the Standard for Safety Related Software.

+++ - Also complies with IEC61508-1 through -7.

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NIPF.GuideInfo

Active Opto-electronic Protective Devices

[Industrial Control Equipment] (Electro-sensitive Protective Equipment) Active Opto-electronic Protective Devices

See General Information for Electro-sensitive Protective Equipment

GENERAL

This category covers electro-sensitive protective equipment (ESPE) for the safeguarding of machinery, employing active opto-electronic protective devices (AOPD) for the sensing function.

The sensing function is performed by opto-electronic emitting and receiving elements detecting the interruption of optical radiations generated, within the device, by an opaque object present in the specified detection zone.

Excluded from this category are AOPDs employing radiation at wavelengths outside the range 400 nm to 1,500 nm.

ADDITIONAL INFORMATION

For additional information, see Electro-sensitive Protective Equipment (**NIOZ**), Industrial Control Equipment (**NIMX**) and Electrical Equipment for Use in Ordinary Locations (**AALZ**).

REQUIREMENTS

The basic standards used to investigate products in this category are UL 508, "Industrial Control Equipment," UL 61496-1, "Electro-Sensitive Protective Equipment Part 1: General Requirements and Tests" and UL 61496-2, "Electro-Sensitive Protective Equipment Part 2: Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDs)."

UL MARK

The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction to this Directory) together with the word "LISTED," a control number, and one of the following product names or abbreviations, as appropriate: "Electro-Sensitive Protective Equipment" or "ESPE," "Active Opto-Electronic Protective Device" or "AOPD," or other appropriate product name as shown in the individual Listings.

Last Updated on 2002-02-19

NIOZ.GuideInfo

Electro-sensitive Protective Equipment

[Industrial Control Equipment] Electro-sensitive Protective Equipment

See General Information for Industrial Control Equipment

GENERAL

This category covers electro-sensitive protective equipment (ESPE) for the safeguarding of machinery. ESPE is applied to machinery that presents a risk of personal injury. It provides protection by causing the machine to revert to a safe condition before a person can be placed in a hazardous situation. In addition to fire and electric shock hazards, these devices have been investigated for their safety-related performance features.

ESPE is designated as a certain "Type" as shown in the individual Listings and as defined in UL 61496-1, "Electro-Sensitive Protective Equipment Part 1: General Requirements and Tests." In addition, the individual Listings identify products that also have been investigated to UL 1998, "Software in Programmable Components."

This category does not specify the dimensions or configuration of the sensing zone and its disposition in relation to hazardous parts for any particular application, nor what constitutes a hazardous state of any machine. It is restricted to the functioning of the ESPE, the means by which it monitors the condition of the machine, and how it interfaces with the machine controls.

Products covered in this category may be relevant to applications other than those for the protection of persons, for example for the protection of machinery or products from mechanical damage. In those applications additional requirements may be necessary, for example when the materials that have to be recognized by the sensing function have different properties from those of persons.

ADDITIONAL INFORMATION

For additional information, see Industrial Control Equipment ([NIMX](#)) and Electrical Equipment for Use in Ordinary Locations ([AALZ](#)).

Last Updated on 2002-02-19

NIMX.GuideInfo

Industrial Control Equipment

Industrial Control Equipment

Guide Information for Electrical Equipment for Use in Ordinary Locations

The listing covers the following products:

Industrial Control Panels

Motor Control Centers

Motor Controllers

Miscellaneous Apparatus

Programmable Controllers

Industrial Control Switches

Enclosed industrial control equipment identified with an enclosure type designation is intended for use as indicated in the guide information at the front of this directory (AALZ).

Industrial Control Equipment, is for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Industrial Control Equipment, for which accessory kits are available for the field or distributor modification of the basic product or which may be assembled in many forms from separate components are marked to indicate the suitable accessories or separate components which may be used.

Control Panels

If the sealed rating of the operating coil circuit of a magnetically operated industrial control device exceeds 125 volt-amperes, the coil circuit rating is marked on the device.

Overload relays or industrial control equipment incorporating overload relays are identified as to their maximum tripping time at 600 per cent of the overload relay current element trip rating. The designations "Class 10, Class 20, and Class 30" are used to identify the maximum tripping times, with the Class number indicating the maximum tripping time in seconds. Overload relays with maximum tripping times of 10 or 30 seconds are marked Class 10 or Class 30 respectively. Overload relays with a maximum tripping time of 20 seconds may be marked Class 20. Overload relays with tripping times in excess of 30 seconds are marked with their maximum tripping times. All unmarked overload relays have a maximum tripping time of 20 seconds.

There are open, across-the-line starters intended for bolt on mounting to panelboards and dead front switchboards and are so restricted by the Listing Mark. They are provided with a cover or door and the remaining portions of the enclosure are provided by the panel or switchboard enclosure.

Some industrial control equipment is suitable for use as service equipment and may be so marked. Such marking is part of the Listing Mark or is an integral part of other required markings.

Some of the equipment listed in this category has also been investigated for use aboard marine vessels over 65 ft. in length as covered by the Electrical Engineering Regulations of the United States Coast Guard, Subchapter J, CG-259, (46 CFR Parts 110-113).

The Electrical Engineering Regulations of the United States Coast Guard classify marine type equipment as "Non-Watertight," "Drip-proof," or "Watertight."

Some industrial control equipment incorporates neutrals factory bonded to the frame or enclosure. Such units are marked "Suitable Only For Use As Service Equipment."

Open type across-the-line starters designed only for use in panelboards or dead front switchboards employ Listing Marks with the product identity "INDUSTRIAL CONTROL EQUIPMENT FOR USE IN PANELBOARDS AND DEAD FRONT SWITCHBOARDS" or "IND. CONT. EQ. FOR USE IN PANELBOARDS AND DEAD FRONT SWITCHBOARDS."

For other than industrial control panels, and unless indicated otherwise in the general information for the following subcategories, enclosed type product Listing Marks contain the product identity "INDUSTRIAL CONTROL EQUIPMENT" or the abbreviation "IND. CONT. EQ." on the enclosure, or the product identity "INDUSTRIAL CONTROL EQUIPMENT ENCLOSED" on the mechanism mounted within the enclosure. In either case, the Listing Mark indicates that the overall product with its enclosure is Listed.

Enclosures for use with open type products employ Listing Marks with the product identification "Enclosure For Industrial Control Equipment" or "Enclosure For Ind. Cont. Eq." and are marked to specify the Listed open type products to be installed within. Look for a Listing Mark on both the enclosure and the open mechanism.

For industrial control panels, one of the following product identities appears on the Listing Mark: "Open Industrial Control Panel" , "Industrial Control Panel Enclosure" , "Enclosed Industrial Control Panel" .

The "Enclosed Industrial Control Panel" Listing Mark covers both the enclosure and the panel provided with it. Open panels employ the "Open Industrial Control Panel" Listing Mark. The "Industrial Control Panel Enclosure" Listing Mark covers only the enclosure; the compatibility of the enclosure and the installed equipment and associated wiring has not been investigated unless an "Enclosed Industrial Control Panel" Listing Mark is also present.

The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Industrial Control Equipment" (or "Ind. Cont. Eq."); "Marine Industrial Control Equipment For Use Only On Vessels Over 65 Feet" .

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