UL 61496-2

STANDARD FOR SAFETY

Safety of Machinery – Electro-Sensitive Protective Equipment – Part 2: Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDs)

UL Standard for Safety of Machinery – Electro-Sensitive Protective Equipment – Part 2: Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDs), UL 61496-2

Third Edition, Dated February 9, 2021

Summary of Topics

This new edition of ANSI/UL 61496-2 is an adoption of IEC 61496-2, Safety of Machinery – Electro-Sensitive Protective Equipment – Part 2: Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDs) (third edition issued January 2013) as an IEC-based UL standard, with US National Differences.

The new requirements are substantially in accordance with Proposal(s) on this subject dated July 3, 2020.

No Text on This Page

UL 61496-2

Standard for Safety of Machinery – Electro-Sensitive Protective Equipment – Part 2: Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDs)

First Edition – January, 2002

Third Edition

February 9, 2021

This ANSI/UL Standard for Safety consists of the Third Edition.

The most recent designation of ANSI/UL 61496-2 as an American National Standard (ANSI) occurred on February 9, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or Preface. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

No Text on This Page

CONTENTS

Preface (UL)

This UL Standard is based on IEC Publication 61496-2: Third Edition, Safety of Machinery – Electro-Sensitive Protective Equipment – Part 2: Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDS). IEC publication 61496-2 is copyrighted by the IEC.

Efforts have been made to synchronize the UL edition number with that of the corresponding IEC standard with which this standard is harmonized. As a result, one or more UL edition numbers have been skipped to match that of the IEC edition number.

This UL Standard 61496-2 Standard for Safety of Machinery – Electro-Sensitive Protective Equipment – Part 2: Particular Requirements for Equipment Using Active Opto-Electronic Protective Devices (AOPDS) is to be used in conjunction with the third edition of UL 61496-1. The requirements for equipment using active opto-electronic protective devices (AOPDS) are contained in this Part 2 Standard and UL 61496-1.

Requirements of this Part 2 Standard, where stated, amend the requirements of UL 61496-1.

Where a particular subclause of UL 61496-1 is not mentioned in UL 61496-2, the UL 61496-1 subclause applies.

Note – Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

No Text on This Page

NATIONAL DIFFERENCES

National Differences from the text of International Electrotechnical Commission (IEC) Publication 61496-2, Safety of machinery – Electro-sensitive protective equipment – Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDS), copyright 2013 are indicated by notations (differences) and are presented in bold text.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

No Text on This Page

FOREWORD

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF MACHINERY – ELECTRO-SENSITIVE PROTECTIVE EQUIPMENT – Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs)

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.

3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.

5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.

6) All users should ensure that they have the latest edition of this publication.

7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61496-2 has been prepared by IEC technical committee 44: Safety of machinery – Electrotechnical aspects, in collaboration with CENELEC technical committee 44X: Safety of machinery – Electrotechnical aspects

This third edition cancels and replaces the second edition published in 2006. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Requirements have been corrected and made easier to understand.

b) Test procedures have been revised to make them easier to perform and to improve repeatability.