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**BUREAU OF INDIAN STANDARDS**  
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*Draft Indian Standard*

**SAFETY OF MACHINERY–SAFETY-RELATED SENSORS USED FOR THE PROTECTION OF  
PERSONS**  
**PART 3: SENSOR TECHNOLOGIES AND ALGORITHMS**  
(ICS 13.110; 21.020)

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Safety of Machinery Electrotechnical Aspects  
Sectional Committee ETD 44

Last Date of Comments:  
01-April-2023

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**NATIONAL FOREWORD**

This draft Indian Standard which is identical with IEC 62998-3:2023 ‘Safety of Machinery–Safety-Related Sensors Used for The Protection of Persons Part 3: Sensor Technologies and Algorithms’ issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendation of the Safety of Machinery Electrotechnical Aspects Sectional Committee and approval of the Electrotechnical Division Council.

The text of the IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words ‘International Standard’ appears referring to this standard, they should be read as ‘Indian Standard’.
- b) Comma (,) has been used as a decimal marker, while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to International Standards for which Indian Standards also exists. The corresponding Indian Standards, which are to be substituted, are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
IEC 60079-29 (all parts), Explosive atmospheres - Part 29 - Gas detectors	IS/IEC 60079-29-1 : 2016, Explosive atmospheres Part 29 Gas detectors Section 1 Performance Requirements of Detectors for Flammable Gases	Identical
	IS/IEC 60079-29-2 : 2015, Explosive atmospheres: Part 29 gas detectors: Sec 2 selection, installation, use and maintenance of detectors for flammable gases and oxygen ( <i>First Revision</i> )	Identical
	IS/IEC 60079-29-4 : 2009, Explosive atmospheres: Part 29 gas detectors: Sec 4 performance requirements of open path detectors for flammable gases	Identical
IEC 61508 (all parts), Functional safety of electrical/electronic/programmable electronic safety related systems	IS/IEC 61508-0 : 2005, Functional safety of electrical electronic/programmable electronic safety - Related systems: Part 0 functional safety and IEC 61508	Identical
	IS/IEC 61508-1 : 2010, Functional Safety of Electrical / Electronic / Programmable Electronic Safety-Related Systems Part 1 General Requirements ( <i>First Revision</i> )	Identical
	IS/IEC 61508-2 : 2010, Functional safety of electrical/electronic/programmable electronic safety - Related systems: Part 2 requirements for electrical/electronic/ programmable electronic safety related systems ( <i>First Revision</i> )	Identical
	IS/IEC 61508-3 : 2010, Functional safety of electrical/electronic/programmable electronic safety-related systems : Part 3 Software requirements	Identical
	IS/IEC 61508-4 : 2010, Functional safety of electrical/electronic/programmable electronic safety-related systems : Part 4 Definitions and abbreviations	Identical

	IS/IEC 61508-5 : 2010, Functional safety of electrical/electronic/programmable electronic safety - related systems : Part 5 Examples of methods for the determination of safety integrity levels	Identical
	IS/IEC 61508-6 : 2010, Functional safety of electrical/electronic/programmable electronic safety-related systems : Part 6 Guidelines on the applications	Identical
	IS/IEC 61508-7 : 2010, Functional safety of electrical/electronic/programmable electronic safety-related systems : Part 7 Overview of techniques and measures	Identical

The technical committee has reviewed the provisions of the following international standards referred in this adopted standard and decided that they are acceptable for use in conjunction with this standard.

<i>International Standard</i>	Title
IEC TS 62998-1:2019	Safety of machinery - Safety-related sensors used for the protection of persons
EN 50402	Electrical apparatus for the detection and measurement of combustible or toxic gases or vapours or of oxygen – Requirements on the functional safety of fixed gas detection systems

Only English language text has been retained while adopting it in this Indian Standard, and as such the page numbers given here are not the same as in the International Standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test, shall be rounded off in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Note: The technical content of the document is not available on website. For details, please refer the corresponding IEC 62998-3:2023 or kindly contact:

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