PD CLC IEC/TR 61508-0:2019

BSI Standards Publication

Functional safety of electrical/electronic/ programmable electronic safety-related systems

Part 0: Functional safety and IEC 61508 (IEC/TR 61508-0:2005)

bsi.

National foreword

This Published Document is the UK implementation of CLC IEC/TR 61508-0:2019. It is identical to IEC TR 61508-0:2005. It supersedes PD IEC/TR 61508-0:2005, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/65/1, System considerations.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Amendments/corrigenda issued since publication

Date	Text affected
31 March 2019	This corrigendum renumbers PD IEC/TR 61508-0:2005 as PD CLC IEC/TR 61508-0:2019

TECHNICAL REPORT

RAPPORT TECHNIQUE

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CLC IEC/TR 61508-0

February 2019

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English Version

Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 0: Functional safety and IEC 61508 (IEC/TR 61508-0:2005)

Sécurité fonctionnelle des systèmes électriques/électroniques/électroniques programmables relatifs à la sécurité - Partie 0: La sécurité fonctionnelle et la CEI 61508
(IEC/TR 61508-0:2005)

Funktionale Sicherheit sicherheitsbezogener elektrischer/elektronischer/programmierbarer elektronischer Systeme - Teil 0: Funktionale Sicherheit und IEC 61508
(IEC/TR 61508-0:2005)

This Technical Report was approved by CENELEC on 2019-02-18.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (CLC IEC/TR 61508-0:2019) consists of the text of IEC/TR 61508-0:2005 prepared by SC 65A "System aspects" of IEC/TC 65 "Industrial-process measurement, control and automation".

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

Endorsement notice

The text of the International Standard IEC/TR 61508-0:2005 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 61508-1	1998	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements	EN 61508-1	2001
IEC 61508-2	2000	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems	EN 61508-2	2001
IEC 61508-3	1998	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 3: Software requirements	EN 61508-3	2001
IEC 61508-4	1998	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 4: Definitions and abbreviations	EN 61508-4	2001
IEC 61508-5	1998	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 5: Examples of methods for the determination of safety integrity levels	EN 61508-5	2001
IEC 61508-6	2000	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 6: Guidelines on the application of IEC 61508-2 and IEC 61508-3	EN 61508-6	2001
IEC 61508-7	2000	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 7: Overview of techniques and measures	EN 61508-7	2001

Publication	Year	Title	EN/HD	Year
IEC Guide 104	-	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FUNCTIONAL SAFETY OF ELECTRICAL/ELECTRONIC/ PROGRAMMABLE ELECTRONIC SAFETY-RELATED SYSTEMS –

Part 0: Functional safety and IEC 61508

FOREWORD

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IEC 61508-0, which is a technical report, has been prepared by subcommittee 65A: System Aspects, of IEC technical committee 65: Industrial-process measurement and control.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
65A/413/DTR	65A/422/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The parts of this publication, IEC 61508, under the general title *Functional safety of electrical/ electronic/programmable electronic safety-related systems* are listed in 4.6.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

INTRODUCTION

The purpose of this Technical Report is to introduce the concept of functional safety and to give an overview of the IEC 61508 series of standards.

You should read it if you are:

- wondering whether IEC 61508 applies to you,
- involved in the development of electrical, electronic or programmable electronic systems which may have safety implications, or
- drafting any other standard where functional safety is a relevant factor.

Clause 3 of this document gives an informal definition of functional safety, describes the relationship between safety functions, safety integrity and safety-related systems, gives an example of how functional safety requirements are derived, and lists some of the challenges in achieving functional safety in electrical, electronic or programmable electronic systems. Clause 4 gives details of IEC 61508, which provides an approach for achieving functional safety. The clause describes the standard's objectives, technical approach and parts framework. It explains that IEC 61508 can be applied as is to a large range of industrial applications and yet also provides a basis for many other standards.

FUNCTIONAL SAFETY OF ELECTRICAL/ELECTRONIC/ PROGRAMMABLE ELECTRONIC SAFETY-RELATED SYSTEMS –

Part 0: Functional safety and IEC 61508

1 Scope

This Technical Report introduces the concept of functional safety and gives an overview of the IEC 61508 series.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61508-1:1998, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: General requirements*

IEC 61508-2:2000, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems*

IEC 61508-3:1998, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 3: Software requirements*

IEC 61508-4:1998, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 4: Definitions and abbreviations*

IEC 61508-5:1998, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 5: Examples of methods for the determination of safety integrity levels*

IEC 61508-6:2000, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 6: Guidelines on the application of IEC 61508-2 and IEC 61508-3*

IEC 61508-7:2000, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 7: Overview of techniques and measures*

IEC Guide 104, *The preparation of safety publications and the use of basic safety publications and group safety publications*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*