PD CLC IEC/TR 61511-0:2019

BSI Standards Publication

Functional safety - Safety instrumented systems for the process industry sector

Part 0: Functional safety for the process industry and IEC 61511

bsi.

National foreword

This Published Document is the UK implementation of CLC IEC/TR 61511-0:2019. It is identical to IEC TR 61511-0:2018.

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.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

Date	Text affected
31 July 2019	This corrigendum renumbers PD IEC TR 61511-0:2018 as PD CLC IEC/TR 61511-0:2019

TECHNICAL REPORT

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English Version

Functional safety - Safety instrumented systems for the process industry sector - Part 0: Functional safety for the process industry and IEC 61511 (IEC/TR 61511-0:2018)

Sécurité fonctionnelle - Systèmes instrumentés de sécurité pour le secteur des industries de transformation - Partie 0: Sécurité fonctionnelle relative aux industries de transformation et l'IEC 61511 (IEC/TR 61511-0:2018)

Funktionale Sicherheit - PLT-Sicherheitseinrichtungen für die Prozessindustrie - Teil 0: Funktionale Sicherheit für die Prozessindustrie und IEC 61511 (IEC/TR 61511-0:2018)

This Technical Report was approved by CENELEC on 2019-07-01.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (CLC IEC/TR 61511-0:2019) consists of the text of IEC/TR 61511-0:2018 prepared by IEC/SC 65A "System aspects", of IEC technical committee 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 61511-0:2018 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 61511-1	2016	Functional safety - Safety instrumented systems for the process industry sector - Part 1: Framework, definitions, system, hardware and application programming requirements	EN 61511-1	2017
IEC 61511-2	2016	Functional safety - Safety instrumented systems for the process industry sector - Part 2: Guidelines for the application of IEC 61511-1:2016	EN 61511-2	2017
IEC 61511-3	2016	Functional safety - Safety instrumented systems for the process industry sector - Part 3: Guidance for the determination of the required safety integrity levels	EN 61511-3	2017

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FUNCTIONAL SAFETY – SAFETY INSTRUMENTED SYSTEMS FOR THE PROCESS INDUSTRY SECTOR –

Part 0: Functional safety for the process industry and IEC 61511

FOREWORD

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IEC TR 61511-0, which is a technical report, has been prepared by subcommittee 65A: System aspects, of IEC technical committee 65: Industrial-process measurement, control and automation.

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

Enquiry draft	Report on voting
65A/847/DTR	65A/852/RVDTR

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

A list of all parts in the IEC 61511 series, published under the general title *Functional safety – safety instrumented systems for the process industry sector*, can be found on the IEC website.

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

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

A bilingual version of this publication may be issued at a later date.

FUNCTIONAL SAFETY – SAFETY INSTRUMENTED SYSTEMS FOR THE PROCESS INDUSTRY SECTOR –

Part 0: Functional safety for the process industry and IEC 61511

1 Scope

This part of IEC 61511 provides an overview of the other three parts of IEC 61511.

2 Normative references

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.

IEC 61511-1:2016, *Functional safety – Safety instrumented systems for the process industry sector – Part 1: Framework, definitions, system, hardware and application programming requirements*

IEC 61511-2:2016, *Functional safety – Safety instrumented systems for the process industry sector – Part 2: Guidelines for the application of IEC 61511-1:2016*

IEC 61511-3:2016, *Functional safety – Safety instrumented systems for the process industry sector – Part 3: Guidance for the determination of the required safety integrity levels*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 Process industry environment and the Safety Instrumented System (SIS)

4.1 General

There are many hazards in process industries that can lead to loss of containment, resulting in an impact on health, safety, environment and plant assets. Process safety is best achieved by using inherently safe processes. However, when this is not practical or possible, protective systems are required to mitigate the risk of hazards to an acceptable level. Functional requirements for these protective systems are determined from a Hazard and Risk Assessment (H&RA) and good engineering practices. Protective systems may be implemented using different technologies such as mechanical, chemical, pneumatic, hydraulic, electric, electronic or programmable electronic.