

Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-IS-11190-01-03 according to DIN EN ISO/IEC 17020:2012

Valid from: 15.02.2024

Date of issue: 15.02.2024

This annex is a part of the accreditation certificate D-IS-11190-01-00.

Holder of partial accreditation certificate:

TÜV SÜD Rail GmbH
Barthstraße 16, 80339 München

with the location

TÜV SÜD Rail GmbH
Inspection Body
Barthstraße 16, 80339 Munich

The inspection body type A meets the requirements of DIN EN ISO/IEC 17020:2012 to carry out the conformity assessment activities listed in this annex. The inspection body meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17020 are written in the language relevant to the operations of inspection bodies and they conform to the principles of DIN EN ISO 9001.

Inspections in the fields Functional Safety for

- **machine technology**
- **process technology/automation technology**

and Compliance with Specified Requirements and - on the Basis of Expert Judgement - with General Requirements.

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.

Abbreviations used: see last page

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1 Assessment of Functional Safety

- machine technology
- process technology/automation technology

1.1 General Requirements

Inspections according to:

TR_RA_P_04.05 2019-08-02	Inspection procedures in accordance with 61508 and applicationspecific standards
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Based on the evaluation and specification documentation listed below:

IEC 61508-1 2010 DIN EN 61508-1 VDE 0803-1 2011-02	Functional safety of electrical/electronic/programmable electronic safety-related systems Part 1: General requirements
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IEC 61508-2 2010 DIN EN 61508-2 VDE 0803 Teil 2 2011-02	Functional safety of electrical/electronic/programmable electronic safety-related systems Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems
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IEC 61508-3 2010 DIN EN 61508-3 VDE 0803 Teil 3 2011-02	Functional safety of electrical/electronic/programmable electronic safety-related systems Part 3: Software requirements
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IEC 60870-5-1 1990 DIN EN 60870-5-1 VDE 0803-5 1994-07 Berichtigung 1 2001-11	Telecontrol equipment and systems Part 5: transmission protocols; section one: transmission frame formats
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1.2 Generic safety components

Inspections according to:

TR_RA_P_04.05 2019-08-02	Inspection procedures in accordance with 61508 and applicationspecific standards
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Based on the evaluation and specification documentation listed below:

EN 280 2013 A1: 2015	Mobile elevating work platforms - Part 1: Design calculations, Stability criteria, Construction - Safety, Examinations and tests
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DIN EN 280 2016-04	Mobile elevating work platforms - Part 1: Design calculations, Stability criteria, Construction - Safety, Examinations and tests
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DIN EN 574 2008-12	Safety of machinery - Two-hand control devices - Functional aspects - Principles for design
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ZH 1/547 1976-06	Guidelines for radio control of cranes
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EN 692 2005 A1:2009 DIN EN 692 2009-10 DIN EN 692 Berichtigung 1: 2012	Machine tools - Mechanical presses - Safety
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EN 954-1 1997-03	Safety of machinery - Safety-related parts of control systems Part 1: General principles for design
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ISO 10218-1 2011-07 EN ISO 10218-1 2011 DIN EN ISO 10218-1 2012	Robots and robotic devices - Safety requirements for industrial robots Part 1: Robots
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ISO 10218-2 2011-07 EN ISO 10218-2 2011 DIN EN ISO 10218-2 2012	Robots and robotic devices - Safety requirements for industrial robots Part 2: Robot systems and integration (ISO 10218-2:2011); German Vision EN ISO 10218-2:2011
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<p>EN 12978 2003 A1:2009 DIN EN 12978 2009-10</p>	<p>Industrial, commercial and garage doors and gates - Safety devices for power operated doors and gates - Requirements and test methods</p>
<p>ISO 13849-1 2015 EN ISO 13849-1 2015 DIN EN ISO 13849-1 2016-06</p>	<p>Safety of machinery - Safety-related parts of control systems Part 1: General principles for design</p>
<p>ISO 13849-2 2012 EN ISO 13849-2 2012 DIN EN ISO 13849-2 2013-02</p>	<p>Safety of machinery - Safety-related parts of control systems Part 2: Validation</p>
<p>ISO 13851 2019-03 DIN EN ISO 13851 2018</p>	<p>Safety of machinery - Two-hand control devices - Principles for design and selection (ISO/DIS 13851:2017); German and English version prEN ISO 13851:2017</p>
<p>ISO 13856-1 2013 EN ISO 13856-1 2013 DIN EN ISO 13856-1 2013-08</p>	<p>Safety of machinery - Pressure-sensitive protective devices - Part 1: General principles for the design and testing of pressure-sensitive mats and pressure-sensitive floors</p>
<p>ISO 13856-2 2013 EN ISO 13856-2 2013 DIN EN ISO 13856-2 2013-08</p>	<p>Safety of machinery - Pressure-sensitive protective devices - Part 2: General principles for the design and testing of pressure-sensitive edges and pressure-sensitive bars</p>
<p>ISO 13856-3 2013 EN ISO 13856-3 2013 DIN EN ISO 13856-3 2013-12</p>	<p>Safety of machinery - Pressure-sensitive protective devices - Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices</p>

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ISO 14119 2013 EN ISO 14119 2013-10 DIN EN ISO 14119 2014-03	Safety of machinery - Interlocking devices associated with guards - Principles for design and selection
DIN EN 50178 VDE 0160 1998-04	Electronic equipment for use in power installations
IEC 60204-1 2016 EN 60204-1 2018	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
DIN EN 60204-1 VDE 0113-1 2019-06	Safety of machinery - Electrical equipment of machines – Part 1: General requirements
IEC 60204-32 2008 DIN EN 60204-32 VDE 0113-32 2009-03	Safety of machinery - Electrical equipment of machines - Part 32: Requirements for hoisting machines
IEC 60335-1: 2010 AMD 1: 2014 AMD 2: 2016-05 DIN EN 60335-1 VDE 0700-1 2014-11	Household and similar electrical appliances - Safety - Part 1: General requirements; Interpretation Sheet 1 (modified)
IEC 60730-1: 2013 AMD 1: 2015-12 DIN EN 60730-1 VDE 0631-1 2017-05	Automatic electrical controls - Part 1: General requirements (modified)
EN 60947-1:2011-01 DIN EN 60947-1 VDE 0660-100 2018-06	Low-voltage switchgear and controlgear - Part 1: General rules (IEC 60947-1:2007 + A1:2010)

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DIN EN 60947-5-1:2018 IEC/EN 60947-5-1 VDE 0660-200 2016-05	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 61496-1:2012 DIN EN 61496-1 VDE 0113-201 2015-08	Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests
IEC 61496-2 2013 DIN EN 61496-2 VDE 0113-202 2014-06 DIN EN 61496-2/A1 VDE 0113-202/A1 2019-01	Safety of machinery - Electro-sensitive protective equipment - Part 2: Particular requirements for equipment using active opto-electronic protective devices
EN IEC 61496-3 2019-02	Safety of machinery - Electro-sensitive protective equipment Part 3: Particular requirements for active opto-electronic protective devices responsive to diffuse Reflection (AOPDDR)
IEC 61496-3 2018	Safety of machinery - Electro-sensitive protective equipment Part 3: Particular requirements for active opto-electronic protective devices responsive to diffuse Reflection (AOPDDR)
IEC/TR 61496-4 2007	Safety of machinery - Electro-sensitive protective equipment - Part 4: Particular requirements for equipment using vision based protective devices
IEC/TS 61496-4-2 2014 DIN IEC/TS 61496-4-2 VDE V 0113-204-2 2015-06	Safety of machinery - Electro-sensitive protective equipment Part 4-2: Particular requirements for equipment using vision based protective devices (VBPD) - Additional requirements when using reference pattern techniques (VBPDP)
IEC/TS 61496-4-3 2015 DIN IEC/TS 61496-4-3 VDE V 0113-204-3 2016-08	Safety of machinery - Electro-sensitive protective equipment - Part 4-3: Particular requirements for equipment using vision based protective devices (VBPD) - Additional requirements when using stereo vision techniques (VBPDS)

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<p>EN IEC 62046 2018 DIN EN IEC 62046 VDE V 0113-211 2019</p>	<p>Safety of machinery - Application of protective equipment to detect the presence of persons</p>
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<p>IEC 62061 2005 A1:2012 A2:2015 DIN EN 62061 VDE 0113-50 2016-05</p>	<p>Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems</p>
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1.3 Specific Application

1.3.1 Fire Detection System, Programmable logic controller and measuring and control equipment

Inspections according to:

<p>TR_RA_P_04.05 2019-08-02</p>	<p>Inspection procedures in accordance with 61508 and applicationspecific standards</p>
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Based on the evaluation and specification documentation listed below:

<p>DIN EN 54-1 2011-06</p>	<p>Fire detection and fire alarm systems Part 1: Introduction (Restriction: <i>only control Units</i>)</p>
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<p>DIN EN 54-2 2016-03</p>	<p>Fire detection and fire alarm systems Part 2: Control and indicating equipment</p>
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<p>DIN EN 54-4 2015-11</p>	<p>Fire detection and fire alarm systems Part 4: Power supply equipment</p>
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<p>IEC 61131-2 2017-08 DIN EN 61131-2 VDE 0411-500 2015-06</p>	<p>Programmable controllers Part 2: Equipment requirements and tests</p>
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<p>DIN EN 61131-6 VDE 0411-506 2011-10</p>	<p>Programmable controllers Part 6: Functional safety</p>
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<p>IEC 61131-6 2012-10 DIN EN 61131-6 VDE 0411-506 2013-10</p>	<p>Programmable controllers Part 6: Functional safety</p>
<p>IEC 61784-3 2010-06</p>	<p>Industrial communication networks – Profiles Part 3: Functional safety fieldbuses - General rules and profile definitions</p>
<p>IEC 61784-3 2016-05 DIN EN 61784-3 VDE 0803-500 2017-09 DIN EN 61784-3 VDE 0803-500 Berichtigung 1: 2018</p>	<p>Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions</p>
<p>IEC 61511-1 2016-02 AMD1 2017-08 DIN EN 61511-1 VDE 0810-1 2019-02</p>	<p>Functional safety - Safety instrumented systems for the process industry sector Part 1: Framework, definitions, system, hardware and application programming requirements</p>
<p>IEC 61511-2 2016-07 DIN EN 61511-2 VDE 0810-2 2019-02</p>	<p>Functional safety - Safety instrumented systems for the process industry sector Part 2: Guidelines for the application of part 1</p>
<p>IEC 61511-3 2016-07 DIN EN 61511-3 VDE 0810-3 2019-02</p>	<p>Functional safety - Safety instrumented systems for the process industry sector Part 3: Guidance for the determination of the required safety integrity levels</p>

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NAMUR Empfehlung NE 31
1995-11

Safety of process plants using measurement and control equipment

DIN EN 50402
VDE 0400-70
2018-01

Electrical apparatus for the detection and measurement of combustible or toxic gases or vapours or of oxygen - Requirements on the functional safety of gas detection systems

DIN EN 50271
VDE 0400-21
2019-03

Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies

**1.3.2 Firing technology
Inspections according to:**

TR_RA_P_04.05
2019-08-02

Inspection procedures in accordance with 61508 and applicationspecific standards

Based on the evaluation and specification documentation listed below:

DIN EN 298
2012-09

Automatic burner control systems for burners and appliances burning gaseous or liquid fuels (Restriction: Only control units)

DIN EN 298
2012-11

Automatic burner control systems for burners and appliances burning gaseous or liquid fuels

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1.3.3 Lift technology

Inspections according to:

TR_RA_P_04.05 2019-08-02	Inspection procedures in accordance with 61508 and applicationspecific standards
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Based on the evaluation and specification documentation listed below:

DIN EN 81-20 2014-11	Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods Part 20: Passenger and goods passenger lifts
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DIN EN 81-22 2014-12	Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods Part 22: Electric lifts with inclined path
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DIN EN 81-50 2015-02	Safety rules for the construction and installation of lifts - Examinations and tests - Part 50: Design rules, calculations, examinations and tests of lift components
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EN 115-1 2010-06	Safety of escalators and moving walks - Part 1: Construction and installation (Restriction: only Control Unit)
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DIN EN 115-1 2010-06	Safety of escalators and moving walks Part 1: Construction and installation
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Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation
TR	TÜV SÜD Rail
TR_P	Inspection Procedure of Inspection Body
TS	Technical Specification

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