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Intro. of particular standards for IEC 61010-1:2010 3rd edition

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I. List of part 2 standards for IEC 61010-1: 2010 (Third Edition)

The following standards are particular standards that used in conjunction with IEC 61010-1: 2010 (Third Edition);

1. **IEC 61010-2-010:2014**
Particular requirements for laboratory equipment for the heating of materials
2. IEC 61010-2-011:2016 (Not included in IECEE system yet)
Particular requirements for REFRIGERATING EQUIPMENT
3. IEC 61010-2-012:2016 (Not included in IECEE system yet)
Particular requirements for climatic and environmental testing and other temperature conditioning equipment
4. IEC 61010-2-020:2016
Particular requirements for laboratory centrifuges
5. **IEC 61010-2-030:2017**
Particular requirements for equipment having testing or measuring circuits
6. IEC 61010-2-032: 2012
Particular requirements for HAND-HELD and HAND-MANIPULATED CURRENT SENSORS for electrical test and measurement



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7. IEC 61010-2-033: 2012
Particular requirements for HAND-HELD MULTIMETERS and other METERS, for domestic and professional use, capable of measuring MAINS voltage
8. IEC 61010-2-034:2017 (Not included in IEC EE system yet)
Particular requirements for measurement equipment for insulation resistance and test equipment for electric strength
9. IEC 61010-2-040:2015
Particular requirements for sterilizers and washer-disinfectors used to treat medical materials
10. IEC 61010-2-051:2015
Particular requirements for laboratory equipment for mixing and stirring
11. IEC 61010-2-061:2015
Particular requirements for laboratory atomic spectrometers with thermal atomization and ionization



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- 12. IEC 61010-2-081:2015
Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes
- 13. IEC 61010-2-091: 2012
Particular requirements for cabinet X-ray systems
- 14. IEC 61010-2-101:2015
Particular requirements for in vitro diagnostic (IVD) medical equipment
- 15. IEC 61010-2-120:2016
Particular safety requirements for machinery aspects of equipment
- 16. IEC 61010-2-201:2013
Particular requirements for control equipment
- 17. IEC 61010-2-202:2016
Particular requirements for electrically operated valve actuators
- *) IEC 61010-031:2015 (Stand-alone standard)
Particular requirements for hand-held probe assemblies for electrical measurement and test



II. Summary of IEC 61010-2-010:2014

1. Scope: This part 2 standard specifies safety requirements for **electrically powered laboratory equipment for the heating of materials**, where the heating of materials is one of the functions of the equipment.
Ex.) Electric oven, Environment Chamber, Heating water tank
2. Always used in conjunction with IEC 61010-1 (Part 1), where requirements of the particular standard IEC 61010-2-010 take precedence over Part 1
3. Maybe used in combination with other particular standards IEC 61010-2-xxx
4. Key safety requirements:
 - Additional requirements dealing with HEAT TRANSFER MEDIUM
 - Change of the requirements of 14.3 Overtemperature protection devices;
Self-resetting device over-temperature protection device **shall not be used**.



III. Summary of IEC 61010-2-030:2010

1. Scope: This part 2 standard specifies safety requirements for testing and measuring circuits which are connected for test or measurement purposes to devices or circuits outside the measurement equipment itself.
Ex.) Voltage or current meter, temperature measurement instrument via thermocouple, Hipot tester (inject a voltage onto a circuit to analyze a new design)
2. Always used in conjunction with IEC 61010-1 (Part 1), where requirements of the particular standard IEC 61010-2-030 take precedence over Part 1
3. Key safety requirements:
 - Additional requirements dealing with **MEASUREMENT CATEGORIES** (0, II, III or IV)
 - Additional requirements for **Measuring circuit** and **its TERMINALS**
 - Over-range indication requirement
 - Protection against mismatches of inputs and ranges



IV. Summary of IEC 61010-2-051:2015

1. Scope: This part 2 standard is applicable to electrically operated laboratory equipment and its accessories for mechanical mixing and stirring, where mechanical energy influences the shape or size or homogeneity of materials and their accessories. Such devices may contain heating elements.
2. Always used in conjunction with IEC 61010-1 (Part 1), where requirements of the particular standard IEC 61010-2-051 take precedence over Part 1
3. Maybe used in combination with other particular standards IEC 61010-2-xxx
4. Key safety requirements:
 - Additional requirements for Protection against mechanical HAZARDS such as Speed controls, Movement during operation and Restarting after interruption, HAZARDS related to application.

V. Summary of IEC 61010-2-081:2015

1. Scope: This part 2 standard applies to automatic and semi-automatic laboratory equipment for analysis and other purposes.
Automatic and semi-automatic laboratory equipment consists of instruments or systems for measuring or modifying one or more characteristics or parameters of samples, performing the complete process or parts of the process without manual intervention.
Ex.) analytical equipment, automatic sampler (pipettor, aliquoter) and equipment for sample replication and amplification
Note: IVD equipment (Part 2-101) is specifically excluded from the scope.
2. Always used in conjunction with IEC 61010-1 (Part 1), where requirements of the particular standard IEC 61010-2-081 take precedence over Part 1
3. Maybe used in combination with other particular standards IEC 61010-2-xxx
4. Key safety requirements:
 - Additional requirements dealing with Biohazardous substances (Ex. Biohazard marking)
 - Alternative method, for interlock systems containing electric/electronic or programmable components (E/E/P components)



VI. Summary of IEC 61010-2-101:2015

1. Scope: **This part 2 standard applies to equipment intended for in vitro diagnostic (IVD) medical purposes, including self-test IVD medical purposes.**
IVD medical equipment, whether used alone or in combination, is intended by the manufacturer to be used in vitro for the examination of specimens, including blood and tissue samples, derived from the human body, solely or principally for the purpose of providing information concerning one or more of the following; physiological or pathological state; a congenital abnormality or the determination of safety and; compatibility with potential recipients; the monitoring of therapeutic measures.
Self-test IVD medical equipment is intended by the manufacturer for use by lay persons in a home environment.
Note: Automatic and semi-automatic laboratory equipment for analysis (Part 2-081) is excluded from the scope unless they are specifically intended by their manufacturer to be used for in Vitro diagnostic examination.
2. Always used in conjunction with IEC 61010-1 (Part 1), where requirements of the particular standard IEC 61010-2-101 take precedence over Part 1
3. Maybe used in combination with other particular standards IEC 61010-2-xxx
4. Key safety requirements:
 - Additional requirements dealing with Biohazardous substances (Ex. Biohazard symbol)
 - Additional requirements for the manual (**Self-test IVD shall comply with ISO 18113-5**)
 - **Risk assessment is mandatory (ISO 14971)**



VII. Summary of IEC 61010-2-201:2013

1. Scope: This part 2 standard specifies safety requirements and related verification tests **for control equipment of the following types:**
Programmable controllers (PLC and PAC); the components of Distributed Control Systems (DCS); the components of remote I/O – systems; industrial PC (computers) and Programming and Debugging Tools (PADTs); Human-Machine Interfaces (HMI); any product performing the function of control equipment and/or their associated peripherals, which have as their intended use the control and command of machines, automated manufacturing and industrial processes, e.g. discrete and continuous control including components such as the auxiliary stand-alone power supplies; peripherals such as digital and analogue I/O, remote-I/O; industrial network equipment.
2. Always used in conjunction with IEC 61010-1 (Part 1), where requirements of the particular standard IEC 61010-2-201 take precedence over Part 1
3. Key safety requirements:
 - More specific terms are defined in each part such as SELV, Class III.
 - Additional requirements dealing with the state of the control equipment, Switching devices tests (overload, endurance test), Classification against electric shock (Class I, II or III)
 - **Service personnel** is included in the scope. Therefore, clause 16 and 17 is required for safety of service personnel.





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Thank you!

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