

Directive-compliant heating mantles in accordance with the latest EU Standard

Dated: March 2016

Latest safety standard according to EN 61010-1:2010

Important legal changes which apply to your equipment

In October 2013, the EN Standard 61010-1:2001 that had been in effect until then (Safety Regulations for Electrical Measuring Instruments, Control Devices and Laboratory Equipment. General requirements) was withdrawn and the new EN Standard 61010-1:2010 (Safety Regulations for Electrical Measuring Instruments, Control Devices and Laboratory Equipment. General requirements) came into effect. This change affects all heating mantles as important basic laboratory equipment.

What relevant changes were stipulated by the new EN Standard 61010-1:2010?

- Extension of the Standard's scope of application from devices for industrial use to the area of private use
- The requirements for the insulation of the devices has been completely revised
- Additional requirements regarding protection against mechanical hazards have been updated in the Standard's text
- Apart from the requirements concerning ergonomic aspects, the requirements with regard to predictable misuse by the user of the devices has been revised
- Extension of the Standard by a separate section about hazards and environments which were not covered by the previous Standard
- For statements dealing with the problem of risk assessment, please refer to appendix.¹

All new products that are introduced to the European market have to also comply with the new applicable Standard since this has come into effect or will come into effect soon.² EN 61010-1:2010; 2013; 2015; 2017

Do ITA Instruments heating mantles comply with the new directives?

Yes. The ITA mantles have been designed and produced in accordance with the current safety regulations pursuant to EN 61010-1:2010.

What is the unique aspect of ITA Instruments heating mantles?

ITA mantles are unique in their element design and are unlike any other known manufacturer. All known manufacturers are using a type of heating element where a cooper wire is woven into a glass-like fiber material which is sewn into a basket shape where the glass vessels rest holding the liquid. This glass cotton fails to protect the element from liquid ingress which in turn results in the element needing to be humidity preconditioned to enable them to pass the solid insulation and voltage tests as described.

ITA heating mantles have an electrical element that is contained within a fully mineral insulated sheath. If liquid is spilt in the mantle potentially moistening the heating element, ITA mantles are fully protected and therefore unaffected by such an event due to their mineral insulated sheath.

ITA mantles meet the solid insulation and voltage test requirements as described in paragraphs 6.7 and 6.8 Patent applications filed.

If you require further information please do not hesitate to contact us.

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Relevant parts are to be found in BS EN61010-1:2010¹

11.3 Spillage

If, in NORMAL USE, liquid is likely to be spilt into the equipment, the equipment shall be designed so that no HAZARD will occur, for example as a result of the wetting of insulation or of internal uninsulated parts, or as a result of the contact of potentially aggressive substances (such as corrosive, toxic or flammable liquids) with parts of the equipment. If in NORMAL USE potentially aggressive substances (such as corrosive, toxic or flammable liquids) are likely to be spilt on parts of the equipment, the wetted material should be analyzed to determine compatibility with the aggressive substance. Conformity is checked by inspection. In case of doubt, 0.2 l of water is poured steadily from a height of 0.1 m over a period of 15s onto each point in turn where liquid might gain access to electrical parts. Immediately after this treatment, the CLEARANCES and solid insulation should pass the voltage tests of 6.8 (without humidity preconditioning) applicable to the type of insulation (see 6.7) and ACCESSIBLE parts should not exceed the limits of 6.3.1.

11.4 Overflow

Liquid overflowing from any container in the equipment which can be overfilled should not be able to cause a HAZARD during NORMAL USE, for example as a result of the wetting of insulation or of internal uninsulated parts that are HAZARDOUS LIVE.

Equipment likely to be moved around, while a container full of liquid is placed inside should be protected against liquid surging out of the container. Conformity is checked using the following treatment and tests. The liquid container is completely filled. A further quantity of liquid equal to 15% of the capacity of the container or 0.25 l, whichever is the greater, is then poured in steadily over a period of 60 s. If equipment is likely to be moved while a container full of liquid is placed inside is then tilted 15° in the least favorable direction from the position of NORMAL USE. Immediately after this treatment, the CLEARANCES and solid insulation should pass the voltage tests of 6.8 (without humidity preconditioning) applicable to the type of insulation (see 6.7) and ACCESSIBLE parts should not exceed the limits.²

¹ BS EN61010-1:2010 is the British version of the EU Standard EN 61010-1:2010.

² Source: BS EN61010-1:2010. The correctness of this text is not warranted.

For the original wording, please refer to BS EN61010-1:2010, page 91 in Section 11.3 "Spillage" and Section 11.4 "Overflow".