



Total Quality. Assured.

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Work Instruction (Inspection)		Document No.: WI-R-EMEA-CERT-INSP-PCS023
EMEA CERTIFICATION SCHEMES - PRODUCT CONTROL SPECIFICATIONS		
Issue Date: 2015-02-11	Revision Date: 2018-11-10	Approved by: Fredrik Wennersten
	Effective Date: 2019-01-10	

1.0 Purpose

Product Control Specifications (PCS) specify the requirements for routine inspections, tests, Product Verification Tests and sample selection for products certified under an Intertek EU Type 5 certification scheme (including GS, S, BEAB, ASTA, ENEC, BAUART and TICK MARK). They are for use by manufacturers and by factory inspectors.

2.0 Scope

Products: Controls
Standards: IEC 60730
Marks: S, BEAB, BG, TICK, GS, ENEC

3.0 Routine inspections and tests

3.1 General

The following requirements apply to most products.

Variations may be permitted by prior, written agreement from the certification body.

The factory should have a quality plan defining all inspections and tests on materials, components and completed products as appropriate.

Completed products shall be marked to confirm satisfactory completion of all required testing.

Any products which fail inspection or testing shall be segregated and not allowed to continue through the process until rectified and re-inspected or retested.

Products shall not be released until the testing equipment has been checked again following a production batch.

Records of inspections and test should be maintained and held for at least two years.

Records shall include:

- Type of product
- Date of test
- Place of manufacture
- Quantity tested
- Number of failures and actions taken

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3.2 Required inspections and tests (for Intertek Certification Marks)

Inspection/test	Test parameters	Sampling plan
Earthing continuity test	<p>For class I appliances, a current of at least 10 A derived from a source having a no-load voltage not exceeding 12 V, is passed between:</p> <ul style="list-style-type: none"> - The earthing terminal - The earthing termination or - The earthing contact - Each other accessible part required to be connected thereto, in turn if applicable. <p>The voltage drop is measured and the resistance is calculated from the current and voltage drop. The resistance shall not exceed 0.1 Ω.</p> <p><i>NOTE 1: The test is only carried out for the duration necessary for the measurement to be performed. The test should be carried out for at least 1 second.</i></p> <p><i>NOTE 2: Care is to be taken to ensure that the contact resistance between the tip of the measuring probe and the metal part under test does not influence the test results.</i></p> <p><i>NOTE 3: The resistance of any external conductor or internal conductor is not included in the resistance measurement, but the resistance of any integrated conductor is included.</i></p>	100%
Functional test		100%
Dielectric strength test	<p>The test is conducted between live parts and all metal surfaces accessible to the user including foil or a suitable alternative on accessible nonmetallic surfaces when the control is mounted as declared.</p> <p>A substantially sinusoidal AC test voltage having a frequency of 50 Hz or 60 Hz is applied between live parts and:</p> <ul style="list-style-type: none"> - Accessible metal surfaces - Accessible non-metallic surfaces covered by metal foil or a suitable alternative separated from live parts - Metal parts separated by basic insulation only 	100%

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	<p>The values shown in the following table shall be applied for at least 1 second.</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Application of test voltage on ¹⁾</th> <th colspan="3">Test voltage V</th> </tr> <tr> <th>Protection Class I</th> <th>Protection Class II</th> <th>Protection Class III</th> </tr> </thead> <tbody> <tr> <td>Basic insulation ²⁾</td> <td>1000 V</td> <td>---</td> <td>400 V</td> </tr> <tr> <td>Double insulation ²⁾</td> <td>2500 V</td> <td>2500 V</td> <td>---</td> </tr> <tr> <td>Reinforced insulation ²⁾</td> <td>2500 V</td> <td>2500 V</td> <td>---</td> </tr> <tr> <td>Basic insulation ³⁾</td> <td>---</td> <td>1000 V ⁴⁾</td> <td>---</td> </tr> </tbody> </table> <p>1) Special components which might render the test impractical, such as electronic parts, neon lamps, coils or windings shall be disconnected at on pole or bridged as appropriate to the insulation being tested. 2) Between live parts and accessible metal parts 3) Between live parts and metal parts 4) This test may be carried out on components during assembly.</p> <p>No flash over or breakdown shall occur during the tests.</p> <p><i>NOTE 1: The circuit used for the test incorporates a current sensing device which trips when the current exceeds 5 mA. However, it may be necessary to set the device to trip at a higher value which shall not exceed 30 mA. Tripping of the device shall indicate break-down by audible and/or visual means. The high voltage transformer shall be capable of maintaining the specified voltage until the tripping current flows.</i></p> <p><i>NOTE 2: Instead of being subjected to an AC voltage, the insulation may be subjected to a DC voltage of 1.5 times the value shown in the table. An AC voltage having a frequency up to 5 Hz is considered to be a DC voltage.</i></p>	Application of test voltage on ¹⁾	Test voltage V			Protection Class I	Protection Class II	Protection Class III	Basic insulation ²⁾	1000 V	---	400 V	Double insulation ²⁾	2500 V	2500 V	---	Reinforced insulation ²⁾	2500 V	2500 V	---	Basic insulation ³⁾	---	1000 V ⁴⁾	---	
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3.3 Required inspections and tests (for ENEC Marked products)

In addition to the inspections and tests detailed in section 3.2, the requirements of document ENEC 303 Annex AB shall be fulfilled.

4.0 Product Verification Tests/Periodic testing (refer to CIG 021 clause 5.8)

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Product verification tests are in addition to the production line inspection and routine tests and are performed on samples taken randomly from the production line. The manufacturer is responsible for conducting or arranging for the following periodic testing to be completed. Records shall be available for review during factory inspection visits.

Certification Mark	Frequency	PVT/periodic testing required
S	(Annual)	PVT is not mandatory, but it is recommended to demonstrate ongoing compliance with EU Directives. The following PVT is recommended: PVT according to Annex AB to ENEC 303
BEAB, GS	Annual (mandatory)	In addition to the above tests, a set of three randomly selected samples from production, per year, for each approved series (family) of controls are to be verified against the samples tested when certification was granted. As a minimum, the following tests should be conducted: <ul style="list-style-type: none"> a) An endurance test at rated load & rated ambient temperature for the number of operations as certified. b) Electric Strength & Insulation Resistance (or combined test) after a) above. c) A post endurance visual examination. d) Post endurance temperature of terminals. e) For Type 2 controls. Deviation and Drift test except for bimetal type controls where the bimetal supplier provides suitable documented test results or other suitable tests have been agreed with Intertek. The above tests can be carried out at the Manufacturer's test rooms or suitably equipped Test House or may be arranged through Intertek. They should be carried out to the requirements of the Safety Standard unless otherwise agreed by Intertek. If significant problems are revealed, these must be investigated and production stocks bonded until resolved with Intertek's agreement. All test records must be available for inspection.
BEAB, GS	Annual (recommended)	In addition to the above it is recommended that the following tests are conducted annually against the requirements of the standard: Clause 7 Marking

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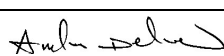
		Clause 8 Protection against electric shock Clause 9 Provisions for protective earthing Clause 10 Terminals Clause 11 Construction Clause 13 Insulation resistance and electric strength Clause 14 Heating
ENEC	Annual	PVT according to Annex AB to ENEC 303

5.0 Surveillance testing by the Certification Body

If required, samples are selected during the factory inspection and the manufacturer should send these to the address provided. If samples are required but not available at the time of the inspection, the manufacturer should send these as soon as they become available. If there is no stock or production, the manufacturer should advise the certification body that samples will not be provided due to no production.

The certification body will arrange for the required testing to be completed. This will be charged to the manufacturer or Licence holder. A report of the testing will be provided.

Certification Mark	Surveillance testing requirements
S, BEAB, BG, TICK, GS	Regular selection of samples is not required. Samples may be required if any deviations to the type tested or non-compliance with the product standard are suspected Required number of samples: 3

Document History				
Revision No.	Date	Changes	Name & Title	
			Author	Approving Official
1	11/02/2015	Original issue	Rajesh Sodha/ R W Hayward	
2	2018-11-10	Modified requirements in 3.2, 4.0 and 5.0	Thomas Jonasson/ Paul Klemets	Fredrik Wennersten

End of Document

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