



**TEST REPORT
IEC 61010-1
Safety requirements for electrical equipment for measurement,
control, and laboratory use
Part 1: General requirements**

Report Number : SAF-052-2018
Date of issue : January 21, 2019
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Applicant's name : Phyto-IT BVBA
Address : Jozef Guislainstraat 4, B-9000 Ghent, Belgium

Test specification:

Standard : EN 61010-1:2010 (Third Edition)
Test procedure : CE Scheme
Non-standard test method : N/A

Test Report Form No. : IEC61010_1J
Test Report Form(s) Originator : VDE Testing and Certification Institute
Master TRF : 2013-11

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Test item description : Plant monitoring system
Trade Mark : Phyto-IT
Manufacturer : Phyto-IT BVBA
Model/Type reference : PhytoStem Model 1
Ratings : 9 VDC 2 A

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CE Testing Laboratory:	
Testing location/ address	BlueGuideEMCLab Joseph Cardijnstraat 21, 9420 Erpe-Mere, Belgium
Tested/Edited by (name + signature) :	Danny Van Hoecke 
Approved by (name + signature)	Ivan Malfait 
<hr/>	
<input type="checkbox"/> Testing procedure: TMP	N/A
Testing location/ address	
Tested by (name + signature)	
Approved by (name + signature)	
<hr/>	
<input type="checkbox"/> Testing procedure: WMT	N/A
Testing location/ address	
Tested by (name + signature)	
Witnessed by (name + signature)	
Approved by (name + signature)	
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<input type="checkbox"/> Testing procedure: SMT	N/A
Testing location/ address	
Tested by (name + signature)	
Approved by (name + signature)	
Supervised by (name + signature)	
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<input type="checkbox"/> Testing procedure: RMT	N/A
Testing location/ address	
Tested by (name + signature)	
Approved by (name + signature)	
Supervised by (name + signature)	

List of Attachments (including a total number of pages in each attachment)		
Document No.	Documents included / attached to this report (description)	Page No.
SAF-052-2018_Photo's	Photographs applicable to the product in this report.	8

Documents referenced by this report (available on request):		
Document Name or No.	Documents description	Page No.
PhytoStem User Guide v1.2	PhytoStem User Guide Powered by PhytoSense Document Version: v1.2 Date of Issue: 2019	17

Summary of testing:

The tested appliance sample is model 'PhytoStem Model 1' with ID number 'stem226'.

An external CLASS II AC/DC power supply adapter from XP Power (type: VER18US90-JA) provides the direct current supply for the 'PhytoStem'. This supply is separate approved and forms no part of this test report.

The tests on the 'PhytoStem' were performed with a voltage range of 9 VDC -10 % to 9 VDC +10 % and a rated operating altitude up to 2000 m.

Extended environmental operational conditions specified by the manufacturer:

- ambient temperature between +10 °C and +50 °C
- relative humidity between +10 %RH and +90 %RH (non-condensing).

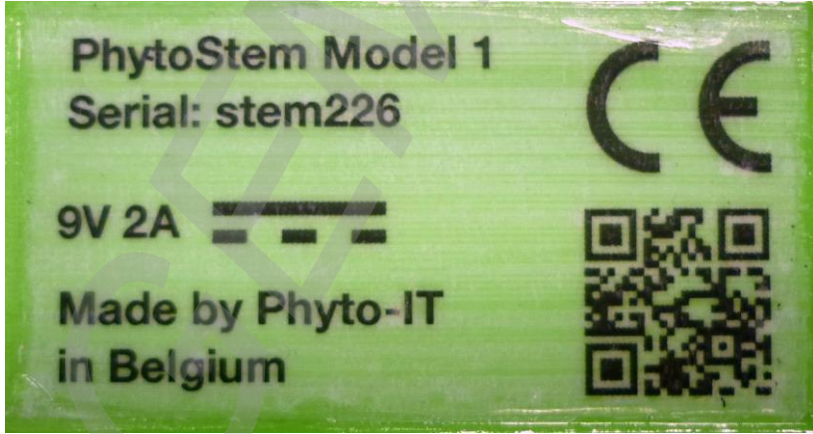
For some testing the sap flow sensor, diameter variation sensor and antenna are connected to the PhytoStem. They forms no part of this investigation.

The manufacturer provided all information (list of critical components, specifications, CE declarations, schematics,...) required for the conformity checks.

In the clause overview below the name of the tests and test clauses are listed.

Clause	Comment
4 – Tests	Pass
5 – Marking and documentation	Pass
6 – Protection against electric shock	Pass
7 – Protection against mechanical hazards	Pass
8 – Resistance to mechanical stresses	Pass
9 – Protection against the spread of fire	Pass
10 – Equipment temperature limits and resistance to heat	Pass (REMARK: see clause 10.3)
11 – Protection against hazards from fluids	N/A
12 – Protection against radiation, including laser sources, and against sonic and ultrasonic pressure	N/A
13 – Protection against liberated gases and substances, explosion and implosion	N/A
14 – Components and subassemblies	Pass
15 – Protection by interlocks	N/A
16 – Hazards resulting from application	N/A
17 – Risk assessment	N/A
ANNEX F – Routine tests	N/A
ANNEX H – Qualification of conformal coatings for protection against pollution	N/A
ANNEX K – Insulation requirements not covered by clause 6.7	N/A

Test Report History: N/A	
This report may consist of more than one report and is valid only with additional or previous issued reports:	
Ref. No.	Item
Tests performed (name of test and test clause):	Testing location:
Summary of compliance with National Differences	
When placing the product on the market in different European countries the manufacturer must comply with the European Group Differences and National Differences (supply cords, supply plugs, environmentally hazardous substances, etc.). The manufacturer must also ensure that the operating instructions, rating labels and warnings are available in an accepted or official language.	
List of countries addressed:	
Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, Albania, Bosnia Herzegovina, Macedonia, Moldavia, Montenegro, Serbia, Turkey	
<input checked="" type="checkbox"/> The product fulfils the requirements of EN 61010-1:2010 (edition 3.0)	
(REMARK: see clause 10)	

Copy of marking plate:
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBS that own these marks.
Applicable to the product 'PhytoStem Model 1':


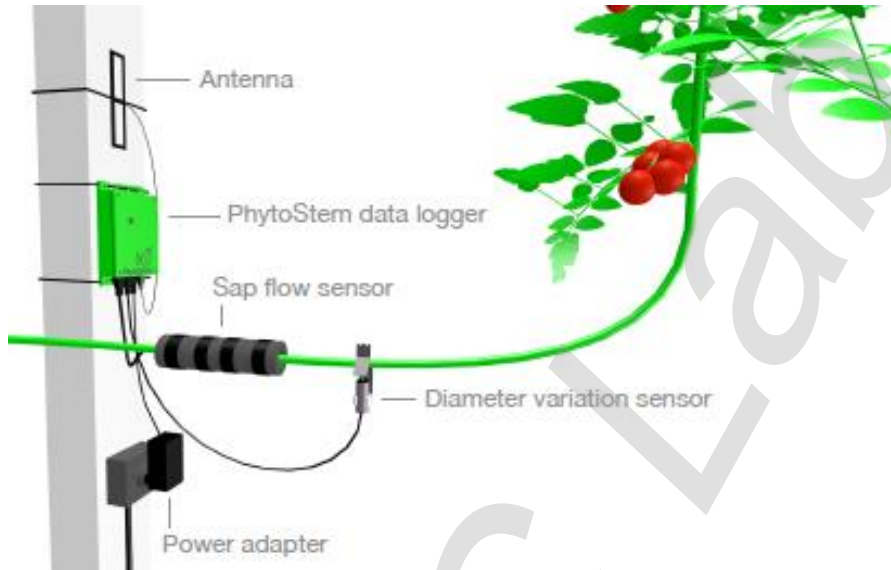
Test item particulars:	
Type of item	Measurement
Description of equipment function	Plant monitoring system
Connection to MAINS supply	None (no direct connection to a low-voltage electricity supply system but via a detachable cord set to a DIRECT PLUG-IN AC/DC power supply adapter)
Overtoltage category	II
POLLUTION DEGREE	PD2
Means of protection	No means of protection required (Class III)
Environmental conditions	Extended (see 'Summary of testing')
For use in wet locations.....	No
Equipment mobility	Fixed
Operating conditions	Continuous
Overall size of equipment (W x D x H)	100 x 40 x 170 mm
Mass of equipment (kg).....	0,276 Kg
Marked degree of protection to IEC 60529	IPX0
Possible test case verdicts:	
- Test case does not apply to the test object.....	N/A (Not Applicable)
- Test object does meet the requirement.....	P (Pass)
- Test object does not meet the requirement.....	F (Fail)
Testing:	
Date of receipt of test item	December 03, 2018
Date (s) of performance of tests	December 13, 2018 - December 18, 2018
General remarks:	
<p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory. "(see ENCLOSURE #)" refers to additional information appended to the report. "(see Form A.xx)" refers to a table appended to the report. Bottom lines for measurement tables Form A.xx are optional if used as record.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60529:	
<p>The application for obtaining a CE Test Certificate includes more than one factory location and a declaration from the manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable</p>	
When differences exist; they shall be identified in the general product information section.	
Name and address of factory (ies).....	Phyto-IT BVBA Jozef Guislainstraat 4 B-9000 Gent Belgium

General product information:

The PhytoStem plant monitoring system allows measuring sap flow and stem diameter variations of plants with stem diameters ranging from 8 - 19 mm.

The sensors show plant responses to changes in the environment (irrigation, lighting, temperature changes,...) or plant manipulation (pruning, harvesting,...).

The system is suitable for herbaceous or woody stems.




Description of model differences.

N/A

Description of special features.
(HV circuits, high pressure systems etc.)

N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	TESTS		P
4.4	Testing in SINGLE FAULT CONDITIONS		P
4.4.1	Fault tests	(see Form A.1)	P
4.4.2	Application of SINGLE FAULT CONDITIONS		P
4.4.2.1	SINGLE FAULT CONDITIONS not covered by 4.4.2.2 to 4.4.2.14	(see Form A.1)	—
4.4.2.2	PROTECTIVE IMPEDANCE	No protective impedance.	N/A
4.4.2.3	PROTECTIVE CONDUCTOR	(see Form A.6)	N/A
4.4.2.4	Equipment or parts for short-term or intermittent operation	Equipment built for continuous operation.	N/A
4.4.2.5	Motors		—
	– stopped while fully energized		N/A
	– prevented from starting		N/A
	– one phase interrupted (multi-phase)		N/A
4.4.2.6	Capacitors		N/A
4.4.2.7	MAINS transformers		N/A
4.4.2.7.2	Short circuit	(see Form A.39)	N/A
4.4.2.7.3	Overload	(see Form A.26B and A.40)	N/A
4.4.2.8	Outputs		P
4.4.2.9	Equipment for more than one supply		N/A
4.4.2.10	Cooling	No cooling or air holes. (see Form A.26A)	—
	– air holes closed		N/A
	– fans stopped		N/A
	– coolant stopped		N/A
	– loss of cooling liquid		N/A
4.4.2.11	Heating devices	No heating device.	—
	– timer overridden		N/A
	– temperature controller overridden		N/A
4.4.2.12	Insulation between circuits and parts		N/A
4.4.2.13	Interlocks	No interlocks	N/A
4.4.2.14	Voltage selectors	No voltage selector.	N/A
4.4.3	Duration of tests	(see Form A.1)	—
4.4.4	Conformity after application of fault conditions	(see Form A.1; A.6, A.18)	N/A
5	MARKING AND DOCUMENTATION		P
5.1.1	Required equipment markings		—
	– visible from the exterior; or		P

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	– visible after removing cover or opening door		N/A
	– visible after removal from a rack or panel		N/A
	Not put on parts which can be removed by an operator		P
	Letter symbols (IEC 60027) used		P
	Graphic symbols (IEC 61010-1: Table 1) used		P
5.1.2	Identification		P
	Equipment is identified by:		—
	a) Manufacturer's or supplier's name or trademark	Phyto-IT	P
	b) Model number, name or other means	PhytoStem Model 1	P
	Manufacturing location identified	Manufactured at one location.	N/A
5.1.3	MAINS supply		P
	Equipment is marked as follows:		—
	a) Nature of supply:		—
	1) a.c. RATED MAINS frequency or range of frequencies:		N/A
	2) d.c. with symbol 1:	 IEC 60417-5031 (2002-10) - Direct current.	P
	b) RATED supply voltage(s) or range:	9V	P
	c) Max. RATED power (W or VA) or input current:	2A	P
	The marked value not less than 90 % of the maximum value	(see Form A.2)	P
	If more than one voltage range:		—
	Separate values marked; or		N/A
	Values differ by less than 20 %	(see Form A.2)	N/A
	d) OPERATOR-set for different RATED supply voltages:		—
	Indicates the equipment set voltage		N/A
	Portable equipment indication is visible from the exterior		N/A
	Changing the setting changes the indication		N/A
	e) Accessory MAINS socket-outlets accepting standard MAINS plugs are marked:		—
	With the voltage if it is different from the MAINS supply voltage:		—
	For use only with specific equipment		N/A
	If not marked for specific equipment it is marked with:		—
	The maximum rated current or power; or		N/A
	Symbol 14 with full details in the documentation		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.4	Fuses		—
	Operator replaceable fuse marking (see also 5.4.5):	No OPERATOR replaceable fuse.	N/A
5.1.5	TERMINALS, connections and operating devices		N/A
5.1.5.1	General		—
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked		N/A
	If insufficient space, symbol 14 used		N/A
	Push-buttons and actuators of emergency stop devices and indicators:		—
	– used only to indicate a warning of danger; or		N/A
	– the need for urgent action		N/A
	– coloured red		N/A
	– coded as specified in IEC 60073		N/A
	Supplementary means of coding provided, if meaning of colour relates (see IEC 60073):		—
	– to safety of persons; or		N/A
	– safety of the environment		N/A
5.1.5.2	TERMINALS		—
	MAINS supply TERMINAL identified	No direct connection to a low-voltage electricity supply system (MAINS).	N/A
	Other TERMINAL marking:	No such TERMINALS.	—
	a) FUNCTIONAL EARTH TERMINALS (symbol 5 used)		N/A
	b) PROTECTIVE CONDUCTOR TERMINALS:		—
	Symbol 6 is placed close to or on the TERMINAL; or		N/A
	Part of appliance inlet		N/A
	c) TERMINALS of control circuits (symbol 7 used)		N/A
	d) HAZARDOUS LIVE TERMINALS supplied from the interior		N/A
	Standard MAINS socket outlet; or		N/A
	RATINGS marked; or		N/A
	Symbol 14 used		N/A
5.1.6	Switches and circuit breakers		N/A
	If disconnecting device, off position clearly marked		N/A
	If push-button used as power supply switch:		—
	– symbol 9 and 15 used for on-position		N/A
	– symbol 10 and 16 used for off-position		N/A
	– pair of symbols 9, 15 and 10, 16 close together		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION	Class III equipment.	N/A
	Protected throughout (symbol 11 used)		N/A
	Only partially protected (symbol 11 not used)		N/A
5.1.8	Field-wiring TERMINAL boxes	No field wiring TERMINAL boxes.	N/A
	If TERMINAL or ENCLOSURE exceeds 60 °C:	(see Form A.26A)	N/A
	Cable temperature RATING marked:		N/A
	Marking visible before and during connection or beside TERMINAL		N/A
5.2	Warning markings		N/A
	Visible when ready for NORMAL USE	No usage related warning signs.	N/A
	Are near or on applicable parts		N/A
	Symbols and text correct dimensions and colour:		—
	a) symbols min 2,75 mm and text 1,5 mm high and contrasting in colour with background		N/A
	b) symbols and text moulded, stamped or engraved in material min. 2,0 mm high and		N/A
	0,5 mm depth or raised if not contrasting in colour		N/A
	If necessary marked with symbol 14		N/A
	Statement to isolate or disconnect if access by using a tool to HAZARDOUS LIVE parts is permitted	No HAZARDOUS LIVE voltages however access by using a tool is not permitted to an OPERATOR. The 'PhytoStem' manual mentioned 'Opening the PhytoStem datalogger is only allowed by Phyto-IT or an authorized service provider'.	N/A
5.3	Durability of markings		P
	The required markings remain clear and legible in NORMAL USE	(see Form A.3)	P
5.4	Documentation	'PhytoStem User Guide v1.2' checked.	P
5.4.1	General		P
	Equipment is accompanied by documentation for safety purposes for OPERATOR or RESPONSIBLE BODY		P
	Safety documentation for service personnel authorized by the manufacturer		P
	Documentation necessary for safe operation is provided in printed media or	Printed media provided.	P
	in electronic media if available at any time	Per request	P
	Documentation includes:		—
	a) intended use	Described.	P
	b) technical specification	Described.	P
	c) name and address of manufacturer or supplier	Fully address added.	P

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) information specified in 5.4.2 to 5.4.6		P
	e) information to mitigate residual RISK (see also subclause 17)	RISK assessment not carried out.	N/A
	f) accessories for safe operation of the equipment specified		N/A
	g) guidance provided to check correct function of the equipment, if incorrect reading may cause a HAZARD from harmful or corrosive substances of HAZARDOUS live parts		N/A
	h) instructions for lifting and carrying	Fixed equipment <18 kg.	N/A
	Warning statements and a clear explanation of warning symbols:		—
	– provided in the documentation; or		N/A
	– information is marked on the equipment		N/A
5.4.2	Equipment ratings	Described.	P
	Documentation includes:		—
	a) Supply voltage or voltage range	9 VDC	P
	Frequency or frequency range	Direct current.	N/A
	Power or current rating.....	1,4 Wmax. (more than 90% of the maximum measured value of 1,49 W).	P
	b) Description of all input and output connections in accordance to 6.6.1 a)		P
	c) RATING of insulation of external circuits in accordance to 6.6.1 b)		N/A
	d) Statement of the range of environmental conditions (see 1.4)	Operating temperature range between +10 °C and +50 °C Operating humidity range between 10 %RH and 90 %RH (non-condensing).	P
	e) Degree of protection (IEC 60529)		N/A
	f) If impact rating less than 5 J:	Impact RATING of 5 Joule.	—
	IK code in accordance to IEC 62262 marked; or		N/A
	symbol 14 of table 1 marked, with		N/A
	RATED energy level and test method stated		N/A
5.4.3	Equipment installation		—
	Documentation includes instructions for:		—
	a) assembly, location and mounting requirements	Described.	P
	b) protective earthing		N/A
	c) connections to supply	Described.	P
	d) PERMANENTLY CONNECTED EQUIPMENT:		—
	1) Supply wiring requirements		N/A
	2) If external switch or circuit-breaker, requirements and location recommendation		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	e) ventilation requirements		N/A
	f) special services (e. g. air, cooling liquid)		N/A
	g) instructions relating to sound level		N/A
5.4.4	Equipment operation		—
	Instructions for use include:		—
	a) identification and description of operating controls	Described.	P
	b) positioning for disconnection	Described.	P
	c) instructions for interconnection	Described.	P
	d) specification of intermittent operation limits	No intermittent operation limits.	N/A
	e) explanation of symbols used	Described.	P
	f) replacement of consumable materials	No consumable materials.	N/A
	g) cleaning and decontamination	Cleaning agent not specified.	N/A
	h) listing of any poisonous or injurious gases and quantities	No gases.	N/A
	i) RISK reduction procedures relating to flammable liquids (see 9.5)	No flammable liquids.	N/A
	j) RISK reduction procedures relating burn from surfaces permitted to exceed limits of 10.1	Surfaces not exceed limits of 10.1.	N/A
	Additional precautions for IEC 60950 conforming equipment in regard to moistures and liquids		N/A
	A statement about protection impairment if used in a manner not specified by the manufacturer		P
5.4.5	Equipment maintenance and Service		—
	Instructions for RESPONSIBLE BODY include:		—
	Instructions sufficient in detail permitting safe maintenance and inspection and continued safety:		P
	Instruction against the use of detachable MAINS supply cord with inadequate rating	Equipment not directly connected to a low-voltage electricity supply system but via a detachable cord set to a DIRECT PLUG-IN AC/DC power supply adapter. No detachable MAINS supply cord is used in this setup.	N/A
	Specific battery type of user replaceable batteries	No batteries.	N/A
	Any manufacturer specified parts	AC/DC power supply adapter.	P
	Rating and characteristics of fuses	No replaceable fuses.	N/A
	Instructions include following subjects permitting safe servicing and continued safety:	Instructions available to service personnel.	—
	a) product specific RISKS may affect service personnel		P
	b) protective measures for these RISKS		P
	c) verification of the safe state after repair		P

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.6	Integration into systems or effects resulting from special conditions	No such effects resulting from special ambient or application conditions.	N/A
	Aspects described in documentation		N/A
6	PROTECTION AGAINST ELECTRIC SHOCK		P
6.1	General	(see Form A.14 and A.15)	P
6.1.1	Requirements	Equipment powered from an external approved AC/DC power supply adapter. The DC output voltage of this supply is below the levels of clauses 6.3.1a) (NORMAL CONDITION) and 6.3.2a) (SINGLE FAULT CONDITION) for ACCESSIBLE parts so is not deemed to be HAZARDOUS LIVE. Protection against a HAZARD provided by CLEARANCES, CREEPAGE DISTANCES and solid insulation forming insulation between ACCESSIBLE parts and HAZARDOUS LIVE parts are part of the AC/DC power supply adapter who forms no part of this investigation. Checks and tests of clauses 6.4 to 6.11 are part of approval.	P
	Protection against electric shock maintained in NORMAL CONDITION and SINGLE FAULT CONDITION	Voltage levels of clauses 6.3.1a) and 6.3.2a) not exceeded.	P
	ACCESSIBLE parts not HAZARDOUS LIVE	ACCESSIBLE parts are not able to cause an electric shock or electric burn.	P
	Voltage, current, charge or energy below the limits in NORMAL CONDITION and in SINGLE FAULT CONDITION between:		—
	ACCESSIBLE parts and earth		N/A
	two ACCESSIBLE parts on same piece of the equipment within a distance of 1,8 m		P
	Conformity is checked by the determination of 6.2 and 6.3 followed by the tests of 6.4 to 6.11	See clause 6.1.1	P
6.1.2	Exceptions	No exceptions applied.	N/A
	Following HAZARDOUS LIVE parts may be ACCESSIBLE to an OPERATOR:		—
	a) parts of lamps and lamp sockets after lamp removal		N/A
	b) parts to be replaced by OPERATOR only by the use of tool and warning marking		N/A
	Those parts not HAZARDOUS LIVE 10 s after interruption of supply	(see Form A.5)	N/A
	Capacitance test if charge is received from internal capacitor	(see Form A.4 and A.5)	N/A
6.2	Determination of ACCESSIBLE parts	(see Form A.4)	P
6.2.1	General		P

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Unless obviously determination of ACCESSIBLE parts as specified in 6.2.2 to 6.2.4	Obviously ACCESSIBLE parts.	P
6.2.2	Examination		P
	– with jointed test finger (as specified B.2)	No access possible with jointed test finger.	P
	– with rigid test finger (as specified B.1) and a force of 10 N	No access possible with rigid test finger	P
6.2.3	Openings above parts that are HAZARDOUS LIVE	No such openings.	N/A
	– test pin with length of 100 mm and 4 mm in diameter applied		N/A
6.2.4	Openings for pre-set controls	No such openings.	N/A
	– test pin with length of 100 mm and 3 mm in diameter applied		N/A
6.3	Limit values for ACCESSIBLE parts		P
6.3.1	Levels in NORMAL CONDITION	(see Form A.5)	—
	a) Voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.	Voltage level for ACCESSIBLE parts less than voltage limits.	P
	for WET LOCATIONS voltage limits less than 16 V r.m.s. and 22,6 V peak or 35 V d.c.		N/A
	Voltages are not HAZARDOUS LIVE the levels of:		—
	b) Current less than 0,5 mA r.m.s. for sinusoidal, 0,7 mA peak non-sinusoidal or mixed frequencies or 2 mA d.c. when measured with measuring circuit A.1 or A.2 if less than 100 Hz		N/A
	for WET LOCATIONS measuring circuit A.4 used		N/A
	70 mA r.m.s. when measured with circuit A.3 for higher frequencies		N/A
	or		—
	c) Levels of capacitive charge or energy less:		—
	1) 45 μ C for voltages up to 15 kV peak or d.c. or line A of Figure 3		N/A
	2) 350 mJ stored energy for voltages above 15 kV peak or d.c.		N/A
6.3.2	Levels in SINGLE FAULT CONDITION	(see Form A.6)	—
	a) Voltage limits less than 55 V r.m.s. and 78 V peak or 140 V d.c.	Voltage level for ACCESSIBLE parts less than voltage limits.	P
	for WET LOCATIONS voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.		N/A
	Voltages are not HAZARDOUS LIVE the levels of:		—
	b) Current less than 3,5 mA r.m.s. for sinusoidal, 5 mA peak non-sinusoidal or mixed frequencies or 15 mA d.c. when measured with measuring circuit A.1 or A.2 if less than 100 Hz		N/A
	for WET LOCATIONS measuring circuit A.4 used		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	500 mA r.m.s. when measured with circuit A.3 for higher frequencies		N/A
	or		—
	c) Levels of capacitive charge or energy less line B of Figure 3		N/A
6.4	Primary means of protection	Class III equipment. No HAZARDOUS LIVE parts, no means of protection needed. See clause 6.1.1.	N/A
6.4.1	ACCESSIBLE parts prevented from being HAZARDOUS LIVE by one or more of following means:		—
	a) ENCLOSURES or PROTECTIVE BARRIERS (see 6.4.2)		N/A
	b) BASIC INSULATION (see 6.4.3)		N/A
	c) Impedance (see 6.4.4)		N/A
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS	(see Form A.15 and A.16)	—
	– meet rigidity requirements of 8.1		N/A
	– meet requirements for BASIC INSULATION, if protection is provided by insulation		N/A
	– meet requirements of 6.7 for CREEPAGE and – CLEARANCES between ACCESSIBLE parts and – HAZARDOUS live parts, if protection is provided by – limited access		N/A
6.4.3	BASIC INSULATION	(see Form A.15 and A.16)	—
	– meet CLEARANCE, CREEPAGE DISTANCE and solid – insulation requirements of 6.7		N/A
6.4.4	Impedance	(see Form A.12 and A.15)	—
	Impedance used as primary means of protection meets all of following requirements:		—
	a) limits current or voltage to level of 6.3.2	(see Form A.6)	N/A
	b) RATED for maximum WORKING VOLTAGE and the amount of power it will dissipate		N/A
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of BASIC INSULATION of 6.7	(see Form A.15)	N/A
6.5	Additional means of protection in case of SINGLE FAULT CONDITION	Class III equipment. No HAZARDOUS LIVE parts, no means of protection needed. See clause 6.1.1.	N/A
6.5.1	ACCESSIBLE parts are prevented from becoming HAZARDOUS live by the primary means of protection and supplemented by one of:		—
	a) PROTECTIVE BONDING (see 6.5.2)		N/A
	b) SUPPLEMENTARY INSULATION (see 6.5.3)		N/A
	c) automatic disconnection of the supply (see 6.5.5)		N/A
	d) current- or voltage-limiting device (see 6.5.6)		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Alternatively one of the single means of protection is used:		—
	e) REINFORCED INSULATION (see 6.5.3)		N/A
	f) PROTECTIVE IMPEDANCE (see 6.5.4)		N/A
6.5.2	PROTECTIVE BONDING	(see Form A.7, A.8, A.9, A.10 or A.11)	N/A
6.5.2.1	ACCESSIBLE conductive parts, may become HAZARDOUS LIVE in SINGLE FAULT CONDITION:		—
	Bonded to the PROTECTIVE CONDUCTOR TERMINAL; or		N/A
	Separated by conductive screen or barrier bonded to PROTECTIVE CONDUCTOR TERMINAL		N/A
6.5.2.2	Integrity of PROTECTIVE BONDING		—
	a) PROTECTIVE BONDING consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses		N/A
	b) Soldered connections:		—
	Independently secured against loosening		N/A
	Not used for other purposes		N/A
	c) Screw connections are secured		N/A
	d) PROTECTIVE BONDING not interrupted; or		N/A
	exempted as removable part carries MAINS SUPPLY input connection		N/A
	e) Any movable PROTECTIVE BONDING connection specifically designed, and meets 6.5.2.4		N/A
	f) No external metal braid of cables used (not regarded as PROTECTIVE BONDING)		N/A
	g) IF MAINS SUPPLY passes through:		—
	Means provided for passing protective conductor;		N/A
	Impedance meets 6.5.2.4		N/A
	h) Protective conductors bare or insulated, if insulated, green/yellow		N/A
	Exceptions:		—
	1) earthing braids;		N/A
	2) internal protective conductors etc.;		N/A
	Green/yellow not used for other purposes		N/A
	TERMINAL suitable for connection of a PROTECTIVE CONDUCTOR, and meets 6.5.2.3		N/A
6.5.2.3	PROTECTIVE CONDUCTOR TERMINAL		—
	a) Contact surfaces are metal		N/A
	b) Appliance inlet used		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) For rewirable cords and PERMANENTLY CONNECTED EQUIPMENT, PROTECTIVE CONDUCTOR TERMINAL is close to MAINS supply TERMINALS		N/A
	d) If no MAINS supply is required, any PROTECTIVE CONDUCTOR TERMINAL:		—
	Is near terminals of circuit for which protective earthing is necessary		N/A
	External if other terminals external		N/A
	e) Equivalent current-carrying capacity to MAINS supply TERMINALS	(see Form A.7)	N/A
	f) If plug-in, makes first and breaks last		N/A
	g) If also used for other bonding purposes, PROTECTIVE CONDUCTOR:		—
	Applied first;		N/A
	Secured independently;		N/A
	Unlikely to be removed by servicing		N/A
	h) PROTECTIVE CONDUCTOR of measuring circuit:		—
	1) Current RATING equivalent to measuring circuit TERMINAL;		N/A
	2) PROTECTIVE BONDING: not interrupted by any switch or interrupting device		N/A
	i) FUNCTIONAL EARTH TERMINALS allow independent connection		N/A
	j) If a binding screw used for PROTECTIVE CONDUCTOR TERMINAL:		—
	Suitable size for bond wire		N/A
	Not smaller than M 4		N/A
	At least 3 turns of screw engaged		N/A
	Passes tightening torque test	(see Form A.8)	N/A
	k) Contact pressure not capable being reduced by deformation of materials		N/A
6.5.2.4	Impedance of PROTECTIVE BONDING of plug-connected equipment	(see Form A.9)	—
	Impedance between PROTECTIVE CONDUCTOR TERMINAL and each ACCESSIBLE part where PROTECTIVE BONDING is specified, is:		—
	– less than 0,1 Ohm; or		N/A
	– less than 0,2 Ohm if equipment is provided with non-detachable cord		N/A
6.5.2.5	Bonding impedance of PERMANENTLY CONNECTED EQUIPMENT	(see Form A.10)	N/A
6.5.2.6	Transformer PROTECTIVE BONDING screen	(see Form A.11)	—

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Transformer provided with screen for PROTECTIVE BONDING:		—
	screen bonding consists of directly connected structural parts or discrete conductors or both; and withstands thermal and dynamic stresses (see 6.5.2.2 a)		N/A
	screen bonding with soldered connection (see 6.5.2.2 b) is:		N/A
	– Independently secured against loosening		N/A
	– Not used for other purposes		N/A
6.5.3	SUPPLEMENTARY and REINFORCED INSULATION		N/A
	Meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		N/A
6.5.4	PROTECTIVE IMPEDANCE	(see Form A.12)	N/A
	Limits current or voltage to level of 6.3.1 in NORMAL and to level of 6.3.2 in SINGLE FAULT CONDITION		N/A
	CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of DOUBLE or REINFORCED INSULATION of 6.7	(see Form A.15)	N/A
	The PROTECTIVE IMPEDANCE consists of one or more of the following:	(see TABLE 1 and Form A.12)	—
	a) appropriate single component suitable for safety and reliability for protection, it is:		—
	1) RATED twice the maximum WORKING VOLTAGE		N/A
	2) resistor RATED for twice the power dissipation for maximum WORKING VOLTAGE		N/A
	b) combination of components		N/A
	Single electronic device not used as PROTECTIVE IMPEDANCE		N/A
6.5.5	Automatic disconnection of the supply		N/A
	a) RATED to disconnect the load within time specified in Figure 2		N/A
	b) RATED for the maximum load conditions of the equipment		N/A
6.5.6	Current- or voltage-limiting devices	(see Form A.12)	N/A
	Device complies with all of:		—
	a) RATED to limit the current or voltage to the level of 6.3.2	(see Form A.6)	N/A
	b) RATED for the maximum WORKING VOLTAGE; and		N/A
	RATED for the maximum operational current if applicable		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of SUPPLEMENTARY INSULATION of 6.7	(see Form A.14, A.15)	N/A
6.6	Connections to external circuits		P
6.6.1	Connections do not cause ACCESSIBLE parts of the following to become HAZARDOUS LIVE in NORMAL CONDITION or SINGLE FAULT CONDITION:		—
	– the external circuits	No ACCESSIBLE parts of an external circuit becomes HAZARDOUS LIVE.	P
	– the equipment	No ACCESSIBLE parts of the equipment becomes HAZARDOUS LIVE.	P
	Protection achieved by separation of circuits; or		N/A
	short circuit of separation does not cause a HAZARD		P
	Instructions or markings for each terminal include:		—
	a) RATED conditions for TERMINAL		N/A
	b) Required RATING of external circuit insulation	No electrical shock hazard can arise.	N/A
6.6.2	TERMINALS for external circuits	No such terminals.	N/A
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE after 10 s of interrupting supply connection	(see Form A.5)	N/A
6.6.3	Circuits with terminals which are HAZARDOUS LIVE	No such terminals.	N/A
	These circuits are:		—
	Not connected to ACCESSIBLE conductive parts; or		N/A
	Connected to ACCESSIBLE conductive parts, but are not MAINS CIRCUITS and have one TERMINAL contact at earth potential		N/A
	No ACCESSIBLE conductive parts are HAZARDOUS LIVE		N/A
6.6.4	ACCESSIBLE terminals for stranded conductors	No such terminals.	N/A
	No RISK of accidental contact because:		—
	– Located or shielded		N/A
	– Self-evident or marked whether or not connected to ACCESSIBLE conductive parts		N/A
	ACCESSIBLE TERMINALS will not work loose		N/A
6.7	Insulation requirements	Class III equipment. Protection against a HAZARD not provided by CLEARANCES, CREEPAGE DISTANCES and solid insulation. See clause 6.1.1. (see Form A.14)	N/A
6.7.1	The nature of insulation	Class III equipment. Protection against a HAZARD not provided by CLEARANCES, CREEPAGE DISTANCES and solid insulation. See clause 6.1.1.	—

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.7.1.1	Insulation between ACCESSIBLE parts or between separate circuits consist of CLEARANCES, CREEPAGE DISTANCES and solid insulation if provided as protection against a HAZARD		N/A
6.7.1.2	CLEARANCES	See clause 6.1.1.	—
	Required CLEARANCES reflecting factors of 6.7.1.1	(see Form A.14 and A.15)	N/A
	Equipment rated for operating altitude greater than 2000 m correction factor of Table 3 of 61010-1 applied		N/A
6.7.1.3	CREEPAGE DISTANCES	See clause 6.1.1.	—
	Required CREEPAGE DISTANCES reflecting factors of 6.7.1.1 a) to d)	(see Form A.14 and A.15)	N/A
	CTI material group reflected by requirements		N/A
	CTI test performed		N/A
6.7.1.4	Solid insulation	See clause 6.1.1.	—
	Required solid insulation reflecting factors of 6.7.1.1 a) to d)	(see Form A.14 and A.15)	N/A
6.7.1.5	Requirements for insulation according to type of circuit	(see Form A.14 and A.15)	—
	a) 6.7.2 MAINS circuits of OVERVOLTAGE CATEGORY II up to nominal supply voltage of 300 V		N/A
	b) 6.7.3 secondary circuits separated from circuits defined in a) by transformer		N/A
	c) K.1 MAINS circuits of OVERVOLTAGE CATEGORY III and IV or OVERVOLTAGE CATEGORY II over 300 V		N/A
	d) K.2 secondary circuits separated from circuits defined in c) by transformer		N/A
	e) K.3 circuits having one or more of:		—
	1) maximum TRANSIENT OVERVOLTAGE is limited to known level below the level of MAINS CIRCUIT		N/A
	2) maximum TRANSIENT OVERVOLTAGE above the level of MAINS CIRCUIT		N/A
	3) WORKING VOLTAGE is the sum of more than one circuit or a mixed voltage		N/A
	4) WORKING VOLTAGE includes recurring peak voltage, may include non-sinusoidal or non-periodic waveform		N/A
	5) WORKING VOLTAGE with a frequency above 30 kHz		N/A
6.7.2	Insulation for MAINS CIRCUITS of OVERVOLTAGE CATEGORY II with a nominal supply voltage up to 300 V	Class III equipment. Protection against a HAZARD not provided by CLEARANCES, CREEPAGE DISTANCES and solid insulation. See clause 6.1.1.	N/A
6.7.2.1	CLEARANCES and CREEPAGE DISTANCES	See clause 6.1.1. (see Form A.14 and A.15)	—

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Values for MAINS CIRCUITS of Table 4 are met		N/A
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.2.2	Solid insulation	See clause 6.1.1.	—
6.7.2.2.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		N/A
	Equipment passed voltage tests of 6.8.3 with values of Table 5	(see Form A.18)	N/A
	Complies as applicable:		—
	a) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		N/A
	b) moulded and potted parts requirements of 6.7.2.2.2		N/A
	c) inner layers of printed wiring boards requirements of 6.7.2.2.3		N/A
	d) thin-film insulation requirements of 6.7.2.2.4		N/A
6.7.2.2.2	Moulded and potted parts		—
	Conductors between same two layers are separated by at least 0,4 mm after moulding is completed		N/A
6.7.2.2.3	Inner insulating layers of printed wiring boards		—
	Separated by at least 0,4 mm between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness of insulation is at least 0,4 mm		N/A
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	c) insulation is assembled of minimum two separate layers, where the combination is rated for test voltage of Table 5 for REINFORCED INSULATION		N/A
6.7.2.2.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.2.1		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness through the insulation at least 0,4 mm		N/A
	b) insulation is assembled of min two separate layers, each RATED for test voltage of Table 5 for BASIC INSULATION		N/A
	c) insulation is assembled of min three separate layers, where the combination of two layers passed voltage tests of 6.8.3 with values of Table 5 for REINFORCED INSULATION	(see Form A.18)	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.7.3	Insulation for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	Class III equipment. Protection against a HAZARD not provided by CLEARANCES, CREEPAGE DISTANCES and solid insulation. See clause 6.1.1.	N/A
6.7.3.1	Secondary circuits where separation from MAINS CIRCUITS is achieved by a transformer providing:	See clause 6.1.1.	—
	– REINFORCED INSULATION		N/A
	– DOUBLE INSULATION		N/A
	– screen connected to the PROTECTIVE CONDUCTOR TERMINAL		N/A
6.7.3.2	CLEARANCES	See clause 6.1.1.	—
	a) meet the values of Table 6 for BASIC INSULATION and SUPPLEMENTARY INSULATION; or		N/A
	twice the values of Table 6 for REINFORCED INSULATION		N/A
	or		—
	b) pass the voltage tests of 6.8 with values of Table 6;	(see Form A.18)	—
	with following adjustments:		—
	1) values for reinforced insulation are 1,6 times the values for basic insulation		N/A
	2) if operating altitude is greater than 2000 m values of CLEARANCES multiplied with factor of Table 3		N/A
	3) minimum CLEARANCE is 0,2 mm for POLLUTION DEGREE 2 and 0,8 mm for POLLUTION DEGREE 3		N/A
6.7.3.3	CREEPAGE DISTANCES	See clause 6.1.1.	—
	Based on WORKING VOLTAGE meets the values of Table 7 for BASIC and SUPPLEMENTARY INSULATION		N/A
	Values for REINFORCED INSULATION are twice the values of BASIC INSULATION		N/A
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H		N/A
6.7.3.4	Solid insulation	See clause 6.1.1.	—
6.7.3.4.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		—
	a) Equipment passed voltage test of 6.8.3.1 for 5 s with VALUES of Table 6 for BASIC and SUPPLEMENTARY INSULATION	(see Form A.18)	N/A
	values for REINFORCED INSULATION are 1,6 times the values of BASIC INSULATION		N/A
	b) if WORKING VOLTAGE exceeds 300 V, equipment passed voltage test of 6.8.3.1 for 1 min with a test voltage of 1,5 times working voltage for BASIC or SUPPLEMENTARY INSULATION	(see Form A.18)	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	value for REINFORCED INSULATION are twice the WORKING VOLTAGE		N/A
	Complies as applicable:		—
	1) ENCLOSURE or PROTECTIVE BARRIER of Clause 8		N/A
	2) moulded and potted parts requirements of 6.7.3.4.2		N/A
	3) inner layers of printed wiring boards requirements of 6.7.3.4.3		N/A
	4) thin-film insulation requirements of 6.7.3.4.4		N/A
6.7.3.4.2	Moulded and potted parts		—
	Conductors between same two layers are separated by applicable distances of Table 8		N/A
6.7.3.4.3	Inner insulation layers of printed wiring boards		—
	Separated by at least by applicable distances of Table 8 between same two layers		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		N/A
	b) insulation is assembled of minimum two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N/A
	c) insulation is assembled of min two separate layers, where the combination is RATED for 1,6 times the test voltage of Table 6		N/A
6.7.3.4.4	Thin-film insulation		—
	Conductors between same two layers are separated by applicable CLEARANCES and CREEPAGE DISTANCE of 6.7.3.2 and 6.7.3.3		N/A
	REINFORCED INSULATION have adequate electric strength; one of following methods used:		—
	a) thickness at least applicable distance of Table 8		N/A
	b) insulation is assembled of min. two separate layers, each RATED for test voltage of Table 6 for BASIC INSULATION		N/A
	c) insulation is assembled of min. three separate layers, where the combination of two layers passed voltage tests with 1,6 time values of Table 6:	(see Form A.18)	—
	a.c. test of 6.8.3.1; or		N/A
	d.c. test of 6.8.3.2 for circuits stressed only by d.c. voltages		N/A
6.8	Procedure for dielectric strength tests	Class I nor Class II equipment. See clause 6.1.1. (see Form A.14 and A.18)	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.9	Constructional requirements for protection against electric shock	See clause 6.1.1 A constructional failure of the equipment can't cause an electric shock.	N/A
6.9.1	If a failure could cause a HAZARD:		—
	a) security of wiring connections		N/A
	b) screws securing removable covers		N/A
	c) accidental loosening		N/A
	d) CLEARANCES and CREEPAGE DISTANCES not reduced below the values of basic insulation by loosening of parts or wires		N/A
6.9.2	Insulating materials		N/A
	Material not to be used for safety relevant insulation:		—
	a) easily damaged materials not used		N/A
	b) non-impregnated hygroscopic materials not used		N/A
6.9.3	Colour coding		N/A
	Green-and-yellow insulation shall not be used except:		—
	a) protective earth conductors;		N/A
	b) PROTECTIVE BONDING conductors;		N/A
	c) potential equalization conductors;		N/A
	d) functional earth conductors		N/A
6.10	Connection to MAINS supply source and connections between parts of equipment	Equipment not directly connected to a low-voltage electricity supply system but supplied via a separate approved DIRECT PLUG-IN AC/DC power supply adapter. No MAINS supply cord is used. Tests and checks of clause 6.10.3 are part of approval.	P
6.10.1	MAINS supply cords	See clause 6.10.	—
	RATED for maximum equipment current (see 5.1.3 c)	(see Table 1)	N/A
	Cable complies with IEC 60227 or IEC 60245		N/A
	Heat-resistant if likely to contact hot parts		N/A
	Temperature RATING (cord and inlet)		—
	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS		N/A
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		N/A
	Have the current RATING of the MAINS connector		N/A
6.10.2	Fitting of non-detachable MAINS supply cords	See clause 6.10.	—
6.10.2.1	Cord entry		—
	a) inlet or bushing with a smoothly rounded opening; or		N/A
	b) insulated cord guard protruding >5 D (diameter)		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.10.2.2	Cord anchorage	(see Table 1)	—
	Protective earth conductor is the last to take the strain		N/A
	a) cord is not clamped by direct pressure from a screw		N/A
	b) knots are not used		N/A
	c) cannot push the cord into the equipment to cause a HAZARD		N/A
	d) no failure of cord insulation in anchorage with metal parts		N/A
	e) not to be loosened without a tool		N/A
	f) cord replacement does not cause a HAZARD and method of strain relief is clear		N/A
	Push-pull and or torque test	(see Form A.19)	N/A
6.10.3	Plugs and connectors	See clause 6.10.	—
	MAINS supply plugs, connectors etc., conform with relevant specifications		N/A
	If equipment supplied at voltages below 6.3.2.a) or from a sole source:		—
	Plugs of supply cords do not fit MAINS sockets above rated SUPPLY voltage		N/A
	MAINS type plugs used only for connection to MAINS supply		N/A
	Plug pins which receive a charge from an internal capacitor	(see Form A.5)	N/A
	Accessory MAINS socket outlets:		—
	a) marking if accepts a standard MAINS supply plug (see 5.1.3e)		N/A
	b) input has a protective earth conductor if outlet has EARTH TERMINAL CONTACT		N/A
6.11	Disconnection from supply source	CONN3 (9 VDC power socket 'stem v7' board) used as disconnected device.	P
6.11.1	Disconnects all current-carrying conductors		P
6.11.2	Exceptions		N/A
6.11.3	Requirements according to type of equipment		—
6.11.3.1	PERMANENTLY CONNECTED EQUIPMENT and multi-phase equipment		N/A
	Employs switch or circuit-breaker		N/A
	If switch or circuit-breaker is not part of the equipment, documentation requires:		—
	a) switch or circuit-breaker to be included in building installation		N/A
	b) suitable location easily reached		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) marking as disconnecting for the equipment		N/A
6.11.3.2	Single-phase cord-connected equipment		N/A
	Equipment is provided with one of the following:		—
	a) switch or circuit-breaker		N/A
	b) appliance coupler (disconnectable without tool)		N/A
	c) separable plug (without locking device)		N/A
6.11.4	Disconnecting devices	CONN3 (9 VDC power socket 'stem v7' board) used as disconnected device.	P
6.11.4.1	Disconnecting device part of equipment		P
	Electrically close to the SUPPLY		P
	Power-consuming components not electrically located between the supply source and the disconnecting device		P
	Except electromagnetic interference suppression circuits permitted to be located on the supply side of the disconnecting device		N/A
6.11.4.2	Switches and circuit-breakers	No switches or circuit-breakers.	N/A
	When used as disconnection device:		—
	Meets IEC 60947-1 and IEC 60947-3		N/A
	Marked to indicate function:		—
	Not incorporated in MAINS cord		N/A
	Does not interrupt PROTECTIVE EARTH CONDUCTOR		N/A
6.11.4.3	Appliance couplers and plugs	CONN3 (9 VDC power socket 'stem v7' board) used as disconnected device.	P
	Where an appliance coupler or separable plug is used as the disconnecting device (see 6.11.3.2):		—
	Readily identifiable and easily reached by the operator		P
	Single-phase portable equipment cord length not more than 3 m		N/A
	PROTECTIVE EARTH CONDUCTOR connected first and disconnected last		N/A

7	PROTECTION AGAINST MECHANICAL HAZARDS		P
7.1	Equipment does not cause a mechanical HAZARD in NORMAL nor in SINGLE FAULT CONDITION		P
	Conformity is checked by 7.2 to 7.7		P
7.2	Sharp edges	No sharp edges.	P
	Easily touched parts are smooth and rounded		P
	Do not cause injury during NORMAL USE and		P
	Do not cause injury during SINGLE FAULT CONDITION		P
7.3	Moving parts	No moving parts	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.3.1	HAZARDS from moving parts limited to a tolerable level with the conditions specified in 7.3.2 and 7.3.5		N/A
	RISK assessment in accordance with 7.3.3 carried out		N/A
7.3.2	Exceptions		N/A
	Access to HAZARDOUS moving parts permitted under following circumstances:		—
	a) obviously intended to operate on parts or materials external of the equipment		N/A
	inadvertent touching of moving parts minimized by equipment design (e.g. guards or handles)		N/A
	b) If OPERATOR access is unavoidable outside NORMAL USE following precautions have been taken:		—
	1) access requires TOOL		N/A
	2) statement about training in the instructions		N/A
	3) warning markings on covers prohibiting access by untrained OPERATORS		N/A
	or symbol 14 with full details in documentation		N/A
7.3.3	RISK assessment for mechanical HAZARDS to body parts		N/A
	RISK is reduced to a tolerable level by protective measures as specified in table 12		N/A
	Minimum protective measures:		—
	A. Low level measures		N/A
	B. Moderate measures		N/A
	C. Stringent measures		N/A
7.3.4	Limitation of force and pressure	(see Form A.20)	N/A
	Following levels are met in NORMAL and SINGLE FAULT CONDITION:		—
	Continuous contact pressure below 50 N / cm ² with force below 150 N		N/A
	Temporary force below 250 N for an area at least of 3 cm ² for a maximum duration of 0,75 s		N/A
7.3.5	Gap limitations between moving parts	(see Form A.20)	N/A
7.3.5.1	Access normally allowed		—
	If levels of 7.3.4 exceeded and body part may be inserted minimum gap as specified in table 13 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.3.5.2	Access normally prevented		—
	Maximum gap as specified in table 14 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.4	Stability	Fixed equipment.	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Equipment not secured to building structure is physical stable		N/A
	Stability maintained after opening of drawers etc. by automatic means, or		N/A
	warning marking requires the application of means		N/A
	Compliance checked by following tests as applicable:		—
	a) 10° tilt test for other than handheld equipment		P
	b) multi-directional force test for equipment exceeds height of 1 m and mass of 25 kg		N/A
	c) downward force test for floor-standing equipment		N/A
	d) overload test with 4 times maximum load for castor or support that supports greatest load		N/A
	e) castor or support that supports greatest load removed from equipment		N/A
7.5	Provisions for lifting and carrying	Fixed equipment < 18 kg.	N/A
7.5.1	Equipment more than 18 kg :		—
	Has means for lifting or carrying; or		N/A
	Directions in documentation		N/A
7.5.2	Handles and grips		—
	Handles or grips withstand four times weight		N/A
7.5.3	Lifting devices and supporting parts		—
	RATED for maximum load; or		N/A
	tested with four times maximum static load		N/A
7.6	Wall mounting	Fixed equipment.	P
	Mounting brackets withstand four times weight	4 fixation points loaded with 0,276 kg + 0,828 kg (1,038 kg extra weight used). 3 fixation points loaded with 0,276 kg + 0,276 kg (0,547 kg extra weight used).	P
7.7	Expelled parts	No expelled parts.	N/A
	Equipment contains or limits the energy		N/A
	Protection not removable without the aid of a tool		N/A

8	RESISTANCE TO MECHANICAL STRESSES		P
8.1	Equipment does not cause a HAZARD when subjected to mechanical stresses in NORMAL USE		P
	Normal protection level is 5 J		P
	Levels below 5 J but not less than 1 J are acceptable if all of following criteria are met:		—
	a) lower level justified by RISK assessment of manufacturer		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) equipment installed in its intended application is not easily touched		N/A
	c) only occasional access during NORMAL USE		N/A
	d) IK code in accordance to IEC 62262 marked or symbol 14 used with full information in the documentation		N/A
	for non-metallic ENCLOSURES rated below 2 °C ambient temperature value chosen for minimum RATED temperature		N/A
	impact energies between IK values, the IK code marked for nearest lower value		N/A
	Conformity is checked by performing following tests:		—
	1) static test of 8.2.1	30 N applied to each part of the ENCLOSURE. Test performed after the equipment is operated at the maximum RATED ambient temperature of +50 °C.	P
	2) impact test of 8.2.2 with 5 J except for HAND-HELD EQUIPMENT	Impact energy level of 5 Joule applied to any point on surfaces which are easily touched.	P
	if impact energy not selected to 5 J alternate method of IEC 62262 used		N/A
	3) drop test of 8.3.1 or 8.3.2 except for FIXED EQUIPMENT and equipment with mass over 100 kg	Fixed equipment.	N/A
	Equipment RATED with an impact rating of IK 08 that obviously meets the criteria		P
	After the tests inspection with following results:		—
	– HAZARDOUS LIVE parts above the limits of 6.3.2 not ACCESSIBLE	No HAZARDOUS LIVE voltages present.	N/A
	– insulation pass the voltage tests of 6.8	(see Form A.30)	N/A
	i) no leaks of corrosive and harmful substances		N/A
	ii) ENCLOSURE shows no cracks resulting in a HAZARD	No cracks.	P
	iii) CLEARANCES not less than their permitted values	Class III equipment. Protection against a HAZARD not provided by CLEARANCES.	N/A
	iv) insulation of internal wiring remains undamaged	Antenna cable.	P
	v) PROTECTIVE BARRIERS not damaged or loosened	No protective barriers.	N/A
	vi) No moving parts exposed, except permitted by 7.3	No moving parts.	N/A
	vii) no damage which could cause spread of fire		P
8.2	ENCLOSURE rigidity test		P
8.2.1	Static test	Not likely to cause a HAZARD if damaged. (see Form A.21A)	P
	– 30 N with 12 mm rod to each part of ENCLOSURE		P
	– in case of doubt test conducted at maximum RATED ambient temperature	+50 °C maximum RATED ambient temperature.	P

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.2.2	Impact test	(see Form A.21A)	P
	Impact applied to any part of ENCLOSURE causing a HAZARD if damaged		P
	Impact energy level and corresponding IK code	5 (IK08)	—
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C	+10 °C minimum RATED ambient temperature.	N/A
8.3	Drop test	Fixed equipment not directly connected to a low-voltage electricity supply system but supplied via a separate approved DIRECT PLUG-IN AC/DC power supply adapter. Test and checks of clause 8.3.2 are part of approval. (see Form A.21B)	N/A
8.3.1	Other than HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		N/A
	Tests conducted with a drop height or angle of:		—
8.3.2	HAND-HELD and DIRECT-PLUG-IN EQUIPMENT	See clause 8.3.	—
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		N/A
	Drop test conducted with an height of 1 m		N/A
9	PROTECTION AGAINST THE SPREAD OF FIRE		P
9.1	No spread of fire in NORMAL and SINGLE FAULT CONDITION		P
	MAINS supplied equipment meets requirements of 9.6 additionally	No direct connection to a low-voltage electricity supply system (MAINS).	N/A
	Conformity is checked by minimum one or a combination of the following (see Figure 11):	(see Form A.22)	—
	a) SINGLE FAULT test of 4.4; or	Method 9.1b) used. (see Form A.1)	N/A
	b) Application of 9.2 (eliminating or reducing the sources of ignition); or	This method is used.	P
	c) Application of 9.3 (containment of fire within the equipment)	Method 9.1b) used.	N/A
9.2	Eliminating or reducing the sources of ignition within the equipment		P
	a) 1) Limited-energy circuit (see 9.4); or		P
	b) 2) BASIC INSULATION provided for parts of different potential; or	(see Form A.14 and A.18)	N/A
	Bridging the insulation does not cause ignition	(see Form A.1)	N/A
	c) Surface temperature of liquids and parts (see 9.5)		N/A
	d) No ignition in circuits designed to produce heat	(see Form A.1)	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.3	Containment of the fire within the equipment, should it occur	Application 9.2a) used.	N/A
9.3.1	Spread of fire outside equipment reduced to a tolerable level if:		—
	a) Energizing of the equipment is controlled by an OPERATOR held switch		N/A
	b) ENCLOSURE is conform with constructional requirements of 9.3.2; and		N/A
	Requirements of 9.5 are met		N/A
9.3.2	Constructional requirements		—
	a) Connectors and insulating material have flammability classification V-2 or better	(see TABLE 1 or Form A.23)	N/A
	b) Insulated wires and cables are flame retardant (VW-1 or equivalent)	(see TABLE 1 or Form A.23)	N/A
	c) ENCLOSURE meets following requirements:	(see Form A.22)	—
	1) Bottom and sides in arc of 5 ° (see Figure 13) to non-limited circuits (9.4) meets:		—
	i) no openings; or		N/A
	ii) perforated as specified in table 16; or		N/A
	iii) metal screen with a mesh; or		N/A
	iv) baffles as specified in Figure 12		N/A
	2) Material of ENCLOSURE and any baffle or flame barrier is made of:		—
	Metal (except magnesium); or		N/A
	Non-metallic materials have flammability classification V-1 or better	(see TABLE 1 or Form A.22)	N/A
	3) ENCLOSURE and any baffle or flame barrier have adequate rigidity		N/A
9.4	Limited-energy circuit	(see Form A.24)	P
	a) Potential not more than 30 V r.m.s. and 42,4 V peak, or 60 V dc		P
	b) Current limited by one of following means:		—
	1) Inherently or by impedance (see table 17); or		P
	2) Overcurrent protective device (see table 18); or		P
	3) A regulating network limits also in SINGLE FAULT CONDITION (see table 17)		N/A
	c) Is separated by at least BASIC INSULATION		N/A
	Fuse or a nonadjustable electromechanical device is used		P
9.5	Requirements for equipment containing or using flammable liquids	No flammable liquids.	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire	(see Form A.25)	N/A
	RISK is reduced to a tolerable level:		—
	a) The temperature of surface or parts in contact with flammable liquids is 25 °C below fire point		N/A
	b) The quantity of liquid is limited		N/A
	c) Flames are contained within the equipment		N/A
	Detailed instructions for RISK-reduction provided		N/A
9.6	Overcurrent protection	Equipment not directly connected to a low-voltage electricity supply system (MAINS) but supplied via an external approved AC/DC power supply adapter. Input protection inside adapter present. Tests and checks of clause 9.6.1 are part of approval.	P
9.6.1	MAINS supplied equipment protected		N/A
	BASIC INSULATION between MAINS parts of opposite polarity provided	(see Form A.14 and A.15)	N/A
	Devices not in the protective conductor		N/A
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase)		N/A
9.6.2	PERMANENTLY CONNECTED EQUIPMENT		N/A
	Overcurrent protection device:		—
	Fitted within the equipment; or		N/A
	Specified in manufacturer's instructions		N/A
9.6.3	Other equipment	Input protection inside equipment.	—
	Protection within the equipment	By fuse FS2.	P
10	EQUIPMENT TEMPERATURE LIMITS AND RESISTANCE TO HEAT		P
10.1	Surface temperature limits for protection against burns		P
	Easily touched surfaces within the limits in NORMAL and in SINGLE FAULT CONDITION:	(see Form A.26A)	—
	– at an specified ambient temperature of 40 °C		N/A
	– for equipment rated above 40 °C ambient temperature limits not exceeded raised by the difference to 40 °C	Maximum operational ambient temperature specified at +50°C.	P
	Heated surfaces necessary for functional reasons exceeding specified values:	No heated surfaces.	—
	– Are recognizable as such by appearance or function; or		N/A
	– Are marked with symbol 13		N/A
	– Guards are not removable without tool		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.2	Temperatures of windings		N/A
	Limits not exceeded in:	(see Form A.26B)	—
	NORMAL CONDITION		N/A
	SINGLE FAULT CONDITION		N/A
10.3	Other temperature measurements	REMARK: The measured temperature of the heat-sensing electronics of the sap flow sensor is according the specification a few degrees Celsius above his maximum operating ambient temperature. This can be resulting in a reliability issue of the sensor. (see Form A.26A1, A.26A2, A.26A3)	P
	Following measurements conducted if applicable:	(see Form A.26A)	—
	a) Value of 60 °C of field-wiring terminal box not exceeded	No field-wiring terminal box.	N/A
	b) Surface of flammable liquids and parts in contact with this liquids	No flammable liquids.	N/A
	c) Surface of non-metallic ENCLOSURES		P
	d) Parts made of insulating material supporting parts connected to MAINS supply	Equipment not directly connected to a low-voltage electricity supply system (MAINS).	N/A
	e) Terminals carrying a current more than 0,5 A	Certified components and modules used within their specifications.	P
10.4	Conduct of temperature tests		P
10.4.1	Tests conducted under reference test conditions and manufacturer's instructions	(see Form A.26A)	P
10.4.2	Temperature measurement of heating equipment		N/A
	Tests conducted in test corner	(see Form A.26A)	N/A
10.4.3	Equipment intended for installation in a cabinet or wall		N/A
	Equipment built in as specified in installation instructions		N/A
10.5	Resistance to heat		P
10.5.1	Integrity of CLEARANCE and CREEPAGE DISTANCES	Class III equipment. Protection against a HAZARD not provided by CLEARANCES and CREEPAGE DISTANCES. (see Form A.16)	N/A
10.5.2	Non-metallic ENCLOSURES	(see Form A.27)	P
	Within 10 min after treatment:	7 h at 70 °C	—
	Equipment subjected to suitable stresses of 8.2 and 8.3 complying with criteria of 8.1	Non-metallic material be resistant to elevated temperature.	P
10.5.3	Insulating material		P
	a) Parts supporting parts connected to MAINS supply	Equipment not directly connected to a low-voltage electricity supply system (MAINS).	N/A
	b) TERMINALS carrying a current more than 0,5 A	Certified components and modules used within their specifications.	P

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Examination of material data; or	Data examined.	P
	in case of doubt:		N/A
	1) Ball pressure test; or	(see Form A.28)	N/A
	2) Vicat softening test of ISO 306	(see Form A.29)	N/A

11	PROTECTION AGAINST HAZARDS FROM FLUIDS		N/A
11.1	Protection to OPERATORS and surrounding area provided by EQUIPMENT		N/A
	All fluids specified by manufacturer considered		N/A
11.2	Cleaning	(see Form A.30)	N/A
11.3	Spillage	(see Form A.30)	N/A
11.4	Overflow	(see Form A.30)	N/A
11.5	Battery electrolyte	No batteries.	N/A
	Battery electrolyte leakage presents no HAZARD		N/A
11.6	Specially protected equipment	(see Form A.30)	N/A
11.7	Fluid pressure and leakage		N/A
11.7.1	Maximum pressure:	(see Form A.31)	—
	Maximum pressure of any part does not exceed P_{RATED}		N/A
11.7.2	Leakage and rupture at high pressure		—
	Fluid-containing parts subjected to hydraulic test if:	(see Form A.31)	—
	a) product of pressure and volume > 200 kPa; and		N/A
	b) pressure > 50 kPa		N/A
	Parts of refrigerating systems meets pressure-related requirements of IEC 60335-24 or IEC 60335-2-89		N/A
11.7.3	Leakage from low-pressure parts	(see Form A.32)	N/A
11.7.4	Overpressure safety device		N/A
	Does not operate in NORMAL USE		N/A
	a) Connected as close as possible to parts intended to be protected		N/A
	b) Easy access for inspection, maintenance and repair		N/A
	c) Adjustment only with TOOL		N/A
	d) No discharge towards person		N/A
	e) No HAZARD from deposit of discharged material		N/A
	f) Adequate discharge capacity		N/A
	No shut-off valve between overpressure safety device and protected parts		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
12	PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE		N/A
12.1	Equipment provides protection		N/A
12.2	Equipment producing ionizing radiation	No ionizing radiation.	N/A
12.2.1	Ionizing radiation	(see Form A.33)	N/A
12.2.1.1	Equipment meets the following requirements:		—
	a) if intended to emit radiation meets requirements of 12.2.1.2; or		N/A
	tested, classified and marked in accordance to IEC 60405		N/A
	b) if only emits stray radiation meets requirements of 12.2.1.3		N/A
12.2.1.2	Equipment intended to emit radiation		—
	Effective dose rate of radiation measured:		—
	If dose rate exceeds 5 $\mu\text{Sv/h}$ marked with the following:		—
	a) symbol 17 (ISO 361)		N/A
	b) abbreviations of the radionuclides:		N/A
	c) with maximum dose at 1 m; or:		N/A
	with dose rate value between 1 $\mu\text{Sv/h}$ and 5 $\mu\text{Sv/h}$ in m:		N/A
12.2.1.3	Equipment not intended to emit radiation	(see Form A.34)	—
	Limit for unintended stray radiation of 1 $\mu\text{Sv/h}$ at any easily reached point kept:		—
12.2.2	Accelerated electrons		—
	Compartments opened only by the use of a TOOL		N/A
12.3	Ultraviolet (UV) radiation	No UV radiation.	N/A
	No unintentional HAZARDOUS escape of UV radiation:		—
	– checked by inspection; and		N/A
	– evaluation of RISK assessment documentation		N/A
12.4	Microwave radiation	No microwave radiation.	N/A
	Power density does not exceed 10 W/m^2 :		N/A
12.5	Sonic and ultrasonic pressure	No sonic or ultrasonic pressure.	N/A
12.5.1	Sound level	(see Form A.35)	—
	No HAZARDOUS sound emission		N/A
	Maximum sound pressure level measured and calculated for maximum sound power level as specified in ISO 3746 or ISO 9614-1		N/A
	Instruction describes measures for protection		N/A
12.5.2	Ultrasonic pressure	(see Form A.36)	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Equipment not intended to emit ultrasound does not exceed limit of 110 dB between 20 kHz and 100 kHz		N/A
	Equipment intended to emit ultrasound:		N/A
	Outside useful beam does not exceed limit of 110 dB between 20 kHz and 100 kHz		N/A
	If inside useful beam above values exceeded:		—
	Marked with Symbol 14 of table 1		N/A
	and following information in the documentation:		—
	a) dimensions of useful beam		N/A
	b) area where ultrasonic pressure exceed 110 dB		N/A
	c) maximum sound pressure inside beam area		N/A
12.6	Laser sources	No laser sources.	N/A
	Equipment meets requirements of IEC 60825-1		N/A
13	PROTECTION AGAINST LIBERATED GASES AND SUBSTANCES, EXPLOSION AND IMPLOSION		N/A
13.1	Poisonous and injurious gases and substances	No such gases.	N/A
	No poisonous or injurious gases or substances liberated in NORMAL CONDITION		N/A
	Attached data/test reports demonstrate conformity		N/A
13.2	Explosion and implosion		N/A
13.2.1	Components		N/A
	Components liable to explode:		—
	Pressure release device provided; or		N/A
	Apparatus incorporates operator protection (see also 7.7)		N/A
	Pressure release device:		—
	Discharge without danger		N/A
	Cannot be obstructed		N/A
13.2.2	Batteries and battery charging	No batteries. (see Form A.37)	—
	If explosion or fire HAZARD could occur:		—
	Protection incorporated in the equipment; or		P
	Instructions specify batteries with built-in protection		N/A
	In case of wrong type of battery used:		—
	No HAZARD; or		P
	Warning by marking and within instructions		N/A
	Equipment with means to charge rechargeable batteries:		—

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Warning against the charging of non-rechargeable batteries; and		N/A
	Type of rechargeable battery indicated; or		N/A
	Symbol 14 used		N/A
	Battery compartment design		N/A
	Single component failure		N/A
	Polarity reversal test		N/A
13.2.3	Implosion of cathode ray tubes	No CRT.	N/A
	If maximum face dimensions > 160 mm:		—
	Intrinsically protected and correctly mounted; or		N/A
	ENCLOSURE provides protection:		N/A
	If non-intrinsically protected:		—
	Screen not removable without TOOL		N/A
	If glass screen, not in contact with surface of tube		N/A

14	COMPONENTS AND SUBASSEMBLIES		P
14.1	Where safety is involved, components and subassemblies meet relevant requirements	(see TABLE 1)	P
14.2	Motors	No motors.	N/A
14.2.1	Motor temperatures		N/A
	Does not present a HAZARD when stopped or prevented from starting; or	(see Form A.1; A.26B)	N/A
	Protected by over-temperature or thermal protection device conform with 14.3		N/A
14.2.2	Series excitation motors		N/A
	Connected direct to device, if overspeeding causes a HAZARD		N/A
14.3	Overtemperature protection devices	No such devices.	N/A
	Devices operating in a SINGLE FAULT CONDITION	(see Form A.38)	N/A
	a) Reliable function is ensured		N/A
	b) RATED to interrupt maximum current and voltage		N/A
	c) Does not operate in NORMAL USE		N/A
	If self-resetting device used to prevent a HAZARD, protected part requires intervention before restarting		N/A
14.4	Fuse holders	No fuse holder.	N/A
	No access to HAZARDOUS LIVE parts		N/A
14.5	MAINS voltage selecting devices	No such devices.	N/A
	Accidental change not possible		N/A
14.6	MAINS transformers tested outside equipment	No MAINS transformer. (see Form A.39 and A.40)	N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
14.7	Printed circuit boards	'stem v7' board and certified module.	P
	Data shows conformity with V-1 of IEC 60695-11-10 or better; or	Not applicable for Printed Circuit Boards with limited-energy circuits however data shows conformity with requirement V-1 of IEC 60695-11-10 or better.	N/A
	Test shows conformity with V-1 of IEC 60695-11-10 or better	(see Form A.23)	N/A
	Not applicable for printed wiring boards with limited-energy circuits (9.4)		P
14.8	Circuits or components used as TRANSIENT OVERVOLTAGE limiting devices		N/A
	Test conducted between each pair of MAINS SUPPLY TERMINALS	(see Form A.41)	N/A
	No HAZARD resulting from rupture or overheating of the component:		—
	– no bridging of safety relevant insulation		N/A
	– no heat to other parts above the self-ignition points		N/A
15	PROTECTION BY INTERLOCKS		N/A
15.1	Interlocks are designed to remove a HAZARD before OPERATOR exposed		N/A
15.2	Prevention of reactivation		N/A
15.3	Reliability		N/A
	Single fault unlikely to occur; or		N/A
	Cannot cause a HAZARD		N/A
16	HAZARDS RESULTING FROM APPLICATION		N/A
16.1	REASONABLY FORESEEABLE MISUSE	Measurement equipment. No hardware-based or software based controls.	N/A
	No HAZARDS arising from settings not intended and not described in the instructions		N/A
	Other cases of REASONABLY FORESEEABLE MISUSE addressed by RISK assessment		N/A
16.2	Ergonomic aspects	Ergonomic aspects cannot affect HAZARDS.	N/A
	Factors giving rise to a HAZARD the RISK assessment is reflecting those aspects:		—
	a) limitation of body dimensions		N/A
	b) displays and indicators		N/A
	c) accessibility and conventions of controls		N/A
	d) arrangement of TERMINALS		N/A

IEC 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
17	RISK ASSESSMENT		N/A
	RISK assessment conducted, if HAZARD might arise and not covered by Clauses 6 to 16	HAZARDS fully addressed in Clauses 6 to 16. No RISK ASSESSMENT conducted.	N/A
	TOLERABLE RISK achieved by iterative documented process covering the following:		—
	a) RISK analysis		N/A
	Identifies HAZARDS and estimates RISK		N/A
	b) RISK evaluation		N/A
	Plan to judge acceptability of resulting RISK level based on the estimated severity and likelihood of a RISK		N/A
	c) RISK reduction		N/A
	Initial RISK reduced by counter measures;		N/A
	Repeated RISK evaluation without new RISKS introduced		N/A
	RISKS remaining after RISK assessment addressed in instructions to RESPONSIBLE BODY:		—
	Information contained how to mitigate these RISKS		N/A
	Following principles in methods of RISK reduction applied by manufacturer in given order:		—
	1) RISKS eliminated or reduced as far as possible		N/A
	2) Protective measures taken for RISKS that cannot be eliminated		N/A
	3) User information about residual RISK due to any defect of the protective measures		N/A
	Indication of particular training is required		N/A
	Specification of the need for personal protective equipment		N/A
	Conformity checked by evaluation of the RISK assessment documentation		N/A

ANNEX F	ROUTINE TESTS		N/A
	Manufacturer 's declaration	Class III equipment. No HAZARDOUS LIVE parts.	N/A

ANNEX H	QUALIFICATION OF CONFORMAL COATINGS FOR PROTECTION AGAINST POLLUTION		N/A
H.1	General		N/A
	Conformal coatings meet the requirements of Clause H.2 and H.3.		N/A
H.2	Technical properties		N/A
	Technical properties of conformal coatings are suitable for the intended application. In particular:		—

IEC 61010-1

Clause	Requirement + Test	Result - Remark	Verdict
	a) Manufacturer indicate that it is a coating for PWBs;		N/A
	b) RATED operating temperature include the temperature range of the indicated application;		N/A
	c) CTI, insulation resistance and dielectric strength are suitable for the intended application;		N/A
	d) Coating have adequate UV resistance, if it is exposed to sunlight;		N/A
	e) Flammability RATING of the coating is at least the required flammability RATING of the applied PWB.		N/A
H.3	Qualification of coatings	(see Form A.42)	N/A
	Coating complies with the conformity requirements.		N/A
ANNEX K	INSULATION REQUIREMENTS NOT COVERED BY CLAUSE 6.7	(see Form A.15 and A.18)	N/A

IEC 61010-1					
Clause	Requirement — Test			Result — Remark	Verdict
4.4	TABLE: Testing in SINGLE FAULT CONDITION – Results			Form A.1	P
Test subclause	Fault No.	Fault description	Td 4.4.3 (NOTE)	How was test terminated Comments	Meets 4.4.4
Applicable to the product: Wireless Edge Gateway					
4.4.2.1	1	CONN3 (.1 to .2) short-circuited.	0:05:00	No safety HAZARD.	P
4.4.2.1	2	C1 short-circuited.	1:00:00	No safety HAZARD. (U7 = 61,7 °C)	P
4.4.2.8	3	CONN1 (.3 to GND) short-circuited.	1:00:00	No safety HAZARD. (L2 = 80,2 °C, A5 = 73,3 °C, U6 = 34,1 °C)	P
4.4.2.8	4	CONN2 (.1 to GND) short-circuited.	0:05:00	FS1 interrupts immediately, no safety HAZARD.	P
4.4.2.1	5	C7 short-circuited.	0:15:00	No safety HAZARD.	P
4.4.2.1	6	Polarity DC supply switched.	0:05:00	FS2 interrupts immediately, no safety HAZARD. (Ipeak > 4,2 A)	P
NOTE Td = Test duration in hh:mm:ss Record dielectric strength test on Form A.18 and temperature tests on Form A.26A and or A.26B. Record in the comments column for each test whether carried out during or after SINGLE FAULT CONDITION.					
Supplementary information: Ambient temperature tests performed: 22,4 °C Ambient relative humidity tests performed: 33,7 %RH For protection against the spread of fire outside the equipment method b) of clause 9.1 is applicable. A small number of SINGLE FAULT CONDITIONS carried out.					

TESTED BY: Danny Van Hoecke

DATE: 17.12.2018

TEST EQUIPMENT LIST ITEM: PEMC 12 015 K, BGEMC 01-086K, BGEMC 01-109,
BGEMC 01-066K, BGEMC 01-082K

IEC 61010-1						
Clause	Requirement — Test			Result — Remark		Verdict
5.1.3c)	TABLE: MAINS supply				Form A.2	P
	Marked rating			9 VDC		—
	Phase			—		—
	Frequency			— Hz		—
	Current			2 A		—
	Power			1,4 Wmax. (acc. documentation)		—
	Power			— VA		—
Test No.	Voltage [V]	Frequency [Hz]	Current [A]	Power		Comments
				[W]	[VA]	
1	8,1	—	0,145	1,18	—	U _{NOMINAL} +10 %
2	9	—	0,164	1,49	—	U _{NOMINAL}
3	9,9	—	0,103	1,03	—	U _{NOMINAL} -10 %
Supplementary information: Ambient temperature tests performed: 21,3 °C Ambient relative humidity tests performed: 28,0 %RH Current and power are the maximum measured values.						

TESTED BY: Danny Van Hoecke

DATE: 13.12.2018

TEST EQUIPMENT LIST ITEM: PEMC 12 015 K, BGEMC 01-086K, BGEMC 01-103

IEC 61010-1					
Clause	Requirement — Test			Result — Remark	Verdict
5.3	TABLE: Durability of markings			Form A.3	P
Marking method (see NOTE)			Agent		
1) Adhesive label			A Water		
2) Ink printed			B Isopropyl alcohol 70%		
3) Laser marked			C (specify agent)		
4) Film-coated (plastic foil control panel)			D (specify agent)		
5) Imprinted on plastic (moulded in)			E (specify agent)		
NOTE – Where applicable include print method, label material, ink or paint type, fixing method, adhesive and surface to which marking is fixed.					
Marking location			Marking method (see above)		
Identification (5.1.2)			1, 2		
MAINS supply (5.1.3)			1, 2		
Fuses (5.1.4)			N/A		
Terminals and operating devices (5.1.5.2)			N/A		
Switches and circuit breakers (5.1.6)			N/A		
Double/reinforced equipment (5.1.7)			N/A		
Field wiring Terminal boxes (5.1.8)			N/A		
Warning marking (5.2)			N/A		
Battery charging (13.2.2)			N/A		
Method	Test agent	Remains legible	Label loose	Curled edges	Comments
		Verdict	Verdict	Verdict	
1, 2	A	P	P	P	—
1, 2	B	P	P	P	—
Supplementary information: Ambient temperature tests performed: 23,3 °C Ambient relative humidity tests performed: 33,1 %RH					

TESTED BY: Danny Van Hoecke

DATE: 14.12.2018

TEST EQUIPMENT LIST ITEM: BGEMC 01-091, BGEMC 01-086K, BGEMC 01-066K,

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
6.2	TABLE: List of ACCESSIBLE parts	Form A.4	P
6.1.2	Exceptions		—
6.2	Determination of ACCESSIBLE parts		—
Item	Description	Determination method (NOTE 5)	Exception under 6.1.2 (NOTE 4)
Applicable to the product: Wireless Edge Gateway			
1	ENCLOSURE (all sides)	V, J	N/A
2	Cover	V, J	N/A
3	Connectors	V, J	N/A
4	Connector cover plate	V, J	N/A
NOTE 1 – Test fingers and pins are to be applied without force unless a force is specified (see 6.2.2) NOTE 2 – Special consideration should be given to inadequate insulation and high voltage parts (see 6.2) NOTE 3 – Parts are considered to be ACCESSIBLE if they could be touched in the absence of any covering which is not considered to provide suitable insulation (see 6.4). NOTE 4 – Capacitor test may be required (see Form A.5). NOTE 5 – The determination methods are: V = visual; R = rigid test finger; J = jointed test finger; P3 = pin 3 mm diameter; P4 = pin 4 mm diameter.			
Supplementary information: Ambient temperature tests performed: 23,3 °C Ambient relative humidity tests performed: 33,1 %RH			

TESTED BY: Danny Van Hoecke

DATE: 14.12.2018

TEST EQUIPMENT LIST ITEM: BGEMC 01-086K, PEMC 11-003 K

IEC 61010-1													
Clause	Requirement — Test	Result — Remark										Verdict	
6	TABLE: Values in NORMAL CONDITION											Form A.5	P
6.1.2	Exceptions	11.2 Cleaning and decontamination										—	
6.3.1	Values in NORMAL CONDITION (see NOTE 1)	11.3 Spillage										—	
6.6.2	Terminals for external circuit	11.4 Overflow										—	
6.10.3	Plugs and connections											—	
Item (see Form A.4)	Voltage			Current				Capacitance		10 s / 5 s test (NOTE)			Comments
	V r.m.s.	V peak	V d.c.	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.	μC	mJ	V	μC	mJ	
1	—	—	0	—	—	—	—	—	—	—	—	—	
2	—	—	0	—	—	—	—	—	—	—	—	—	
3	—	—	10,0 (max)	—	—	—	—	—	—	—	—	—	
4	—	—	0	—	—	—	—	—	—	—	—	—	
NOTE – A 10 s test is specified in 6.1.2 a) b). A. 5 s test is specified in 6.10.3. The capacitance level versus voltage below the limits given from figure 3 of IEC 61010-1.													
Supplementary information: Ambient temperature tests performed: 23,3 °C Ambient relative humidity tests performed: 33,1 %RH													

TESTED BY: Danny Van Hoecke

DATE: 14.12.2018

TEST EQUIPMENT LIST ITEM: BGEMC 01-086K, PEMC 12-015 K

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

6.3.2 TABLE: Values in SINGLE FAULT CONDITION												Form A.6	P
Item (see Form A.4)	Subclause and fault No. (see Form A.1)	Voltage			Transient (see NOTE)		Current			Capacitance	Comments		
		V r.m.s.	V peak	V d.c.	V	s	Test circuit A1/A2/A3	mA r.m.s.	mA peak	mA d.c.		μF (see NOTE)	
1	All SINGLE FAULT CONDITIONS	—	—	0	—	—	—	—	—	—	—	—	
2	All SINGLE FAULT CONDITIONS	—	—	0	—	—	—	—	—	—	—	—	
3	All SINGLE FAULT CONDITIONS	—	—	10,0 (max)	—	—	—	—	—	—	—	—	
4	All SINGLE FAULT CONDITIONS	—	—	0	—	—	—	—	—	—	—	—	

NOTE – Transient voltages must be below the limits given from Figure 2 and the capacitance below the limits from figure 3 of IEC 61010-1.
 Supplementary information:
 Ambient temperature tests performed: 22,4 °C
 Ambient relative humidity tests performed: 39,1 %RH

TESTED BY: Danny Van Hoecke DATE: 17.12.2018 TEST EQUIPMENT LIST ITEM: BGEMC 01-086K, PEMC 12-015 K

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
6.5.2.2	TABLE: Cross-sectional area of bonding conductors	Form A.7	N/A
Conductor location	CROSS-SECTIONAL AREA [mm ²]		Verdict
Supplementary information:			
6.5.2.3	TABLE: Tightening torque test	Form A.8	N/A
Conductor location	Size of screw	Tightening torque [Nm]	Verdict
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1				
Clause	Requirement — Test	Result — Remark		Verdict
6.5.2.4	TABLE: Bonding impedance of plug connected equipment	Form A.9		N/A
ACCESSIBLE part under test	Test current [A]	Voltage attained after 1 min [V]	Calculated resistance (Maximum 0,1 or 0,2 Ω) [Ω] (NOTE 1)	Verdict
NOTE 1 – For none-detachable power cord the impedance between protective conductor plug pin of MAINS cord and each ACCESSIBLE part shall not exceed 0,2 Ohm.				
Supplementary information:				
6.5.2.5	TABLE: Bonding impedance of permanently connected equipment	Form A.10		N/A
ACCESSIBLE part under test	Test current [A]	Voltage attained after 1 min (maximum 10 V) [V]		Verdict
Supplementary information:				
6.5.2.6	TABLE: Transformer PROTECTIVE BONDING screen	Form A.11		N/A
ACCESSIBLE part under test	Test current (see NOTE) [A]	Voltage attained after 1 min (maximum 10 V) [V]	Calculated resistance (maximum 0,1 Ω) [Ω]	Verdict
NOTE – Test current must be twice the value of the overcurrent protection means of the winding. Test is specified in 6.5.2.6 a) or b).				
Supplementary information:				

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1								
Clause	Requirement — Test	Result — Remark					Verdict	
6.5.4	TABLE: protective impedance						Form A.12	N/A
A single component								
Component	Location	Measured		Calculated	Rated		Verdict	Comments
		Working voltage [V]	Current [A]	Power dissipation [W]	Working voltage [V]	Power dissipation [W]		
A combination of components								
Component	Location		Comments					
NOTE – A PROTECTIVE IMPEDANCE shall not be a single electronic device that employs electron conduction in a vacuum, gas or semiconductor.								
Supplementary information:								

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: PEMC 12-015K _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

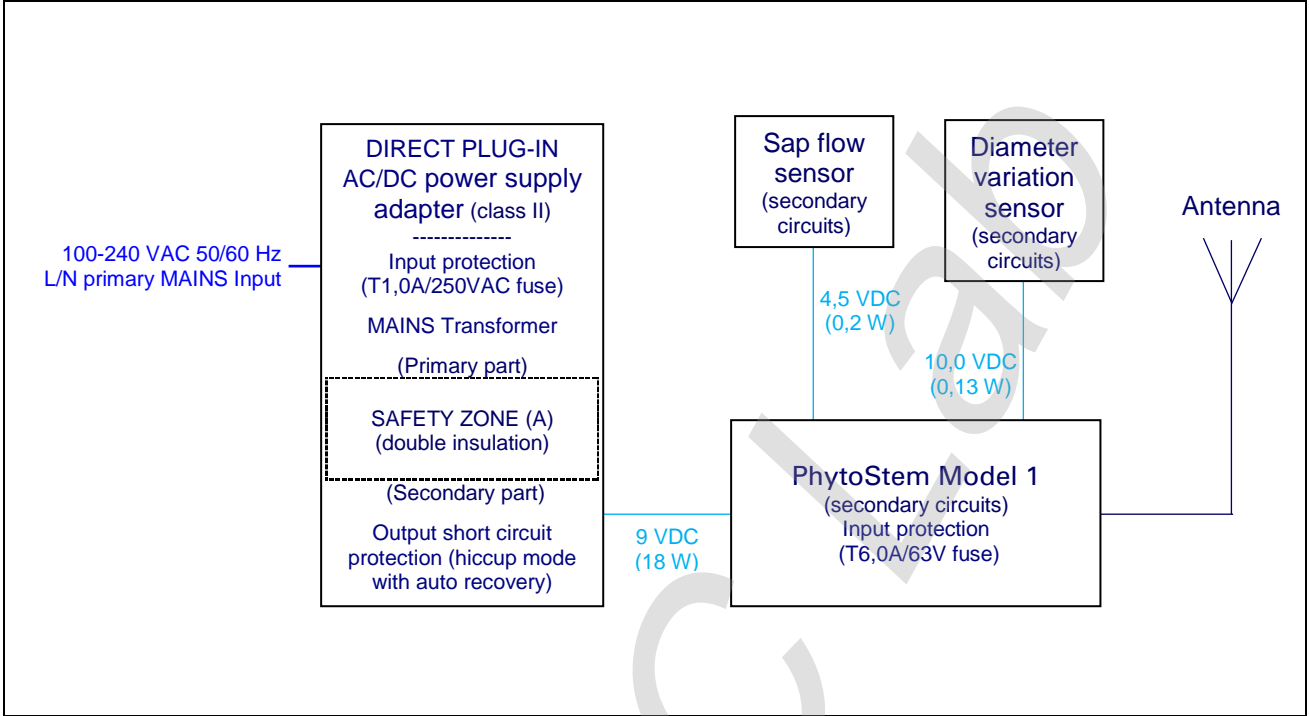
6.5.6	TABLE: Current- or voltage-limiting device					Form A.13	N/A
Component	Location	Measured		Rated		Verdict	Comments
		Working voltage [V]	Current [A]	Working voltage [V]	Current [A]		
Supplementary information:							

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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6.7	TABLE: Insulation requirements- Block diagram of system	Form A.14	P
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Pollution degree : 2

Overvoltage category..... : II

Area	Location	Insulation type (NOTE 1)	WORKING VOLTAGE			Test voltage (NOTE 2) [V]	Comments (NOTE 3)
			RMS [V]	Peak [V]	Frequency [kHz]		
A	SAFETY ZONE	DI	240	—	50	3000 Vr.m.s.	N/A
B							
C							
D							
E							
F							

NOTE 1 – Type of insulation:
 BI = BASIC INSULATION
 DI = DOUBLE INSULATION
 PI = PROTECTIVE IMPEDANCE
 RI = Reinforced INSULATION
 SI = Supplementary INSULATION
 see also Form A.15 for further details

NOTE 2 - Types of voltage
 Peak impulse test voltage (pulse)
 r.m.s.
 d.c.
 peak

NOTE 3 - OVERVOLTAGE CATEGORIES or POLLUTION DEGREES which differ should be shown under "Comments"

Supplementary Information:

Separate approved AC/DC power supply adapter who forms no part of this investigation. Test voltage is part of approval.

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1												
Clause	Requirement — Test	Result — Remark							Verdict			
6.7	TABLE: Insulation requirements- Clearances and Creepage								Form A.15	N/A		
6.2.2	Examination	6.5.4	Protective impedance							—		
6.4.2	ENCLOSURES and protective barriers	6.5.6	Current- or voltage-limiting device							—		
6.4.4	Impedance	9.6.1	BASIC INSULATION between opposite polarity							—		
Area	Location (See Form A.14)	Insulation type (NOTE 1)	WORKING VOLTAGE (NOTE 2)			Clearance		Creepage		CTI	Verdict	Comments
			RMS [V]	Peak [V]	Frequency [kHz]	Required [mm]	Measured [mm]	Required [mm]	Measured [mm]			
A												
B												
C												
D												
E												
F												
NOTE 1 – refer to Form A.14 for type of insulation shown in the insulation diagram						NOTE 2 - to be used for definition of required insulation (see Form A.14)						
Input supply voltage.....:		V	Hz									
Supplementary information:												

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

6.7	TABLE: Insulation requirements- Clearances and Creepages	Form A.16	N/A
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS	9.6.1	Overcurrent protection basic insulation between MAINS parts
8	Mechanical resistance to shock and impact	10.5.1	Integrity of CLEARANCES and CREEPAGE distances

Area	Location (See Form A.14)	Insulation type	Mechanical tests (NOTE)					Test at max. RATED ambient	Measured after test (if required)		Verdict	Comments
			Applied force N	Rigidity (8.2)		Drop (8.3)			Clearance mm	Creepage distance mm		
				Static (8.2.1)	Impact (8.2.2)	Normal (8.3.1)	Hand-held/ Plug-in	(10.5.1)				
A												
B												
C												
D												
E												
F												

NOTE – Refer to Form A.18 for dielectric strength tests following the above tests.
 Supplementary information:

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1							
Clause	Requirement – Test			Result — Remark	Verdict		
6.7.2.2.2	TABLE: Reliability of potted components			Form A.17 (optional)	N/A		
14.1 b)	Components and subassemblies						
Temperature Cycling Test							
Manufacturer							
Type.....							
Construction							
Potting compound							
CREEPAGE distances measured.....							
CLEARANCES measured							
Thickness through insulation.....							
Adhesive test Pass/Fail							
Test temperature T °C.....							
Cycles at U= AC 500 V				Leakage current (500 V) mA			
Number of cycles	Date			68 h /	1 h /	2 h /	1 h /
				125 °C	25 °C	0 °C	25 °C
1. Cycle from		to					
2. Cycle from		to					
3. Cycle from		to					
4. Cycle from		to					
5. Cycle from		to					
6. Cycle from		to					
7. Cycle from		to					
8. Cycle from		to					
9. Cycle from		to					
10. Cycle from		to					
After Cycling Test :							
Humidity conditioning				48 h			
Requirements for dielectric strength (s. insulation diagram)				Test voltage V r.m.s		Verdict	
Basic insulation _____ V r.m.s.							
Supplementary insulation _____ V r.m.s.							
Reinforced insulation _____ V r.m.s.							
NOTE - to be used for evaluation of components containing insulation through solid insulation, when the component standard require thermal cycling test. Ref Clause 14.1 and Figure 15, option b)							
Supplementary information:							

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1						
Clause	Requirement — Test				Result — Remark	Verdict
6.8	TABLE: Dielectric strength tests				Form A.18	N/A
4.4.4.1 b)	Conformity after application of SINGLE FAULT CONDITIONS ¹					
6.4	Primary means of protection ²					
6.6	Connections to external circuits					
6.7.	Insulation requirements ² (see Annex K)					
6.10.2	Fitting of non-detachable MAINS supply cords ¹					
9.2 a) 2)	Eliminating or reducing the sources of ignition within the equipment					
9.4 c)	Limited-energy circuit					
9.6.1	Overcurrent protection basic insulation between MAINS - parts					
	Test site altitude				m	—
	Test voltage correction factor (see table 10)				—	—
Location or references from Forms A.1 and A.14	Clause or sub-clause	Humidity	Working voltage	Test voltage	Comments (NOTE)	Verdict
		Yes/No	V	r.m.s./peak/d.c.		
¹ Record the fault, test or treatment applied before the dielectric strength test. ² Humidity preconditioning required. NOTE: Test duration may be recorded. Supplementary information:						

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1						
Clause	Requirement — Test			Result — Remark		Verdict
6.10.2	TABLE: Cord anchorage			Form A.19	N/A	
Location	Mass [kg]	Pull [N]	Verdict	Torque [Nm]	Verdict	Comment
Dielectric strength test for 1 min. (6.8.3.1)..... :				V r.m.s.		
Supplementary information:						

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

7.	TABLE: Protection against mechanical HAZARDS	Form A.20	N/A
7.3.4	Limitation of force and pressure		—
7.3.5	Gap limitations between moving parts		—

Part / Location	Clause 7.3.4		Clause 7.3.5.1								Clause 7.3.5.2			Verdict	Comments
	Continuous	Temporary	Minimum gaps [mm]								Maximum gaps [mm]				
	Contact pressure max. 50 N /cm ² @ max. 150 N	max. 250 N / 3 cm ² @ max. 0,75 s	Torso 500	Head 300	Leg 180	Foot 120	Toes 50	Arm 120	Hand 100	Finger 25	Head 120	Foot 35	Finger 4		

Supplementary information:

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement – Test	Result - Remark	Verdict
8.2	ENCLOSURE rigidity test	Form A.21A	P
8.2.1	Static test		P
	Material of enclosure..... :	Non-metallic	—
	Preparation for the test:	Elevated temperature	—
	Operated at ambient temperature..... :	+50 °C 1 h	—
	Location	Comments	Verdict
	1) ENCLOSURE (all sides)	30 Newton applied	P
	2) Cover	30 Newton applied	P
	3) Connector cover plate	30 Newton applied	P
Supplementary information:			
8.2.2	Dynamic test:		P
	Material of enclosure:	Non-metallic	—
	Corresponding IK-code:	8 (5 Joule)	—
	Preparation for the test:	N/A	—
	Cooled to (temperature):	— °C	—
	Location	Comments	Verdict
	1) ENCLOSURE (all sides)	5 Joule applied	P
	2) Cover	5 Joule applied	P
	3) Connector cover plate	5 Joule applied	P
Supplementary information: Ambient temperature tests performed : 23,3 °C Ambient relative humidity tests performed: 33,1 %RH			

TESTED BY: Danny Van Hoecke

DATE: 14.12.2018

TEST EQUIPMENT LIST ITEM:

PEMC 11-006 K, PEMC 11-008K, PEMC 11-025, BGEMC 01-002, PEMC 11-012 K, BGEMC 01-086K, BGEMC 01-110, BGEMC 01-016K

IEC 61010-1			
Clause	Requirement – Test	Result - Remark	Verdict
8.3	Drop test	Form A.21B	N/A
8.3.1	Other equipment		N/A
	Location	Raised up to	Comments
		[mm]	30°
1)			
2)			
3)			
4)			
Supplementary information:			
8.3.2	Hand-held EQUIPMENT and direct plug-in equipment		N/A
	Material of enclosure:	Metal	—
	Preparation for the test:		—
	Cooled to (temperature):	° C	—
	Location	Comments	Verdict
	1) Side		
	2) Edge		
	3) Corner		
Supplementary information:			

TESTED BY:

DATE:

TEST EQUIPMENT LIST ITEM:

IEC 61010-1				
Clause	Requirement — Test		Result — Remark	Verdict
9	TABLE: Protection against the spread of fire			Form A.22
Item	Source of HAZARD or area of the equipment considered (circuit, component, liquid etc.)	Protection Method (9.1 a, b or c)	Protection details	Verdict
1	Secondary circuits	9.1 b)	Limited-energy circuits	P
2	Output circuits	9.1 b)	Limited-energy circuits	P
3	Components located within ENCLOSURE	9.1 c)	Approved components and modules	P
4	Overcurrent at SINGLE FAULT CONDITION	9.1 a)	MAINS fuse* in series (overcurrent protection according clause 9.6)	P
Supplementary information: Protection Method 9.1b) and overcurrent protection is used as protection against the spread of fire. *Part of separate approved AC/DC power supply adapter.				

TESTED BY: Danny Van HoeckeDATE: 13.12.2018TEST EQUIPMENT LIST ITEM: —

IEC 61010-1									
Clause	Requirement — Test	Result — Remark				Verdict			
9.3.2	TABLE: Constructional requirements	Form A.23				N/A			
14.7	Printed circuit boards								
Material tested									
Generic name									
Material manufacturer									
Type									
Colour									
Conditioning details									
				Sample					
				1	2	3	4	5	6
Thickness of specimen	mm								
Duration of flaming after first Application	s								
Duration of flaming plus glowing After second application	s								
Specimen burns to holding clamp	Yes/No								
Cotton ignited	Yes/No								
Sample result	Pass/Fail								
Supplementary information:									

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1							
Clause	Requirement — Test	Result — Remark				Verdict	
9.4	TABLE: Limited-energy circuit					Form A.24	P
Item or Location (see Form A.22)	9.4 a)	9.4 b) Current limitation (NOTE)		9.4 c)	Decision	Comments	
	Maximum potential in circuit voltage r.m.s./d.c. [V]	Maximum available current [A]	Overload protection after 120 s [A]	Circuit separation	Yes/No		
Applicable to the product: Wireless Edge Gateway							
1	9 VDC	2,0 A	0	—*	Yes	Circuit protected (FS2)	
2	4,5 VDC	0,045 A	0	—	Yes	Circuit protected (FS1)	
2	10 VDC	0,013 A	0	—	Yes	Circuit protected (U6)	
NOTE – Maximum values see Tables 17 and 18 of IEC 61010-1							
Supplementary information: Ambient temperature tests performed : 23,3 °C Ambient relative humidity tests performed: 33,1 %RH *Part of separate approved AC/DC power supply adapter.							

TESTED BY: Danny Van HoeckeDATE: 14.12.2018TEST EQUIPMENT LIST ITEM: BGEMC 01-086K, PEMC 12-015 K

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
9.5	TABLE: Requirements for equipment containing or using flammable liquids		Form A.25
	Type of liquid	9.5 Flammable liquids	
		b) Quantity	c) Containment
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1						
Clause	Requirement — Test	Result — Remark				Verdict
10.	TABLE : Temperature Measurements:	Form A.26A1				P
10.1	Surface temperature limits – NORMAL CONDITION and / or SINGLE FAULT CONDITION					P
10.2	Temperature of windings – NORMAL CONDITION and / or SINGLE FAULT CONDITION					N/A
10.3	Other temperature measurements					P
Operating conditions:		Normal operating conditions				
Frequency	N/A (Hz)	Test room ambient temperature (ta) ...			+50 °C	
Voltage	9,0 (V)	Test duration			2h 00min	
Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments	
Inside equipment						
Stem v7 board: PCB, near FS2	56,5	N/A	105	P	—	
Electron board: PCB, near POWER MGMT IC	58,5	N/A	60	P	—	
Environmental	52,5	N/A	—	—	Indication	
Stem v7 board: CONN3	50,7	N/A	105	P	—	
Electron board: u-blox CELL MODULE	58,3	N/A	60	P	—	
Outside equipment						
Cover, in the middle	50,9	N/A	85	P	—	
ENCLOSURE, topside	51,3	N/A	85	P	—	
ENCLOSURE, side	50,7	N/A	85	P	—	
ENCLOSURE, bottom	50,7	N/A	85	P	—	
Sap flow sensor (no part of investigation)						
Heat-sensing electronics	54,3	N/A	50	P	REMARK: The measured temperature of the heat-sensing electronics of the sap flow sensor is according the specification a few degrees Celsius above his maximum operating ambient temperature. This can be resulting in a reliability issue of the sensor.	
NOTE 1 - t_m = measured temperature t_c = t_m corrected ($t_m - t_c + 40$ °C or max. RATED ambient) t_{max} = maximum permitted temperature						
NOTE 2 - see also 14.1 with reference to component operating conditions						
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary						
NOTE 4 - see Form A.26B for details of winding temperature measurements						
Supplementary information: Test done in a climate chamber at equipments maximum RATED operating ambient temperature of +50 °C. t_c not applicable.						

TESTED BY: Danny Van Hoecke

DATE: 17.12.2018

TEST EQUIPMENT LIST ITEM: BGEMC 01-086K, BGEMC 01-082K, BGEMC 01-103, BGEMC 01-066K, PEMC 12-015 K, BGEMC 01-016K

10.	TABLE : Temperature Measurements:				Form A.26A2	P
Applicable to the product: Wireless Edge Gateway						
10.1	Surface temperature limits – NORMAL CONDITION and / or SINGLE FAULT CONDITION					P
10.2	Temperature of windings – NORMAL CONDITION and / or SINGLE FAULT CONDITION					N/A
10.3	Other temperature measurements					P
Operating conditions:		Normal operating conditions				
Frequency	N/A (Hz)	Test room ambient temperature (ta) ...			+50 °C	
Voltage	8,1 (V)	Test duration			1h 00min	
Part / Location		t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Inside equipment						
Stem v7 board: PCB, near FS2		55,8	N/A	105	P	—
Electron board: PCB, near POWER MGMT IC		57,4	N/A	60	P	—
Environmental		52,4	N/A	—	—	Indication
Stem v7 board: CONN3		50,7	N/A	105	P	—
Electron board: u-blox CELL MODULE		57,1	N/A	60	P	—
Outside equipment						
Cover, in the middle		50,7	N/A	85	P	—
ENCLOSURE, topside		51,0	N/A	85	P	—
ENCLOSURE, side		50,5	N/A	85	P	—
ENCLOSURE, bottom		50,5	N/A	85	P	—
Sap flow sensor (no part of investigation)						
Heat-sensing electronics		54,0	N/A	50	P	REMARK: The measured temperature of the heat-sensing electronics of the sap flow sensor is according the specification a few degrees Celsius above his maximum operating ambient temperature. This can be resulting in a reliability issue of the sensor.
NOTE 1 - t_m = measured temperature t_c = t_m corrected ($t_m - t_c + 40$ °C or max. RATED ambient) t_{max} = maximum permitted temperature						
NOTE 2 - see also 14.1 with reference to component operating conditions						
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary						
NOTE 4 - see Form A.26B for details of winding temperature measurements						
Supplementary information: Test done in a climate chamber at equipments maximum RATED operating ambient temperature of +50 °C. t_c not applicable.						

TESTED BY: Danny Van Hoecke

DATE: 17.12.2018

TEST EQUIPMENT LIST ITEM:

BGEMC 01-086K, BGEMC 01-082K, BGEMC 01-103, BGEMC 01-066K, PEMC 12-015 K, BGEMC 01-016K

10.	TABLE : Temperature Measurements:				Form A.26A3	P
Applicable to the product: Wireless Edge Gateway						
10.1	Surface temperature limits – NORMAL CONDITION and / or SINGLE FAULT CONDITION					P
10.2	Temperature of windings – NORMAL CONDITION and / or SINGLE FAULT CONDITION					N/A
10.3	Other temperature measurements					P
Operating conditions:		Normal operating conditions				
Frequency	N/A (Hz)	Test room ambient temperature (ta) ...			+50 °C	
Voltage	9,9 (V)	Test duration			1h 00min	
Part / Location		t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Inside equipment						
Stem v7 board: PCB, near FS2		56,2	N/A	105	P	—
Electron board: PCB, near POWER MGMT IC		57,5	N/A	60	P	—
Environmental		52,5	N/A	—	—	Indication
Stem v7 board: CONN3		50,8	N/A	105	P	—
Electron board: u-blox CELL MODULE		57,2	N/A	60	P	—
Outside equipment						
Cover, in the middle		50,8	N/A	85	P	—
ENCLOSURE, topside		51,0	N/A	85	P	—
ENCLOSURE, side		50,6	N/A	85	P	—
ENCLOSURE, bottom		50,6	N/A	85	P	—
Sap flow sensor (no part of investigation)						
Heat-sensing electronics		54,1	N/A	50	P	REMARK: The measured temperature of the heat-sensing electronics of the sap flow sensor is according the specification a few degrees Celsius above his maximum operating ambient temperature. This can be resulting in a reliability issue of the sensor.
NOTE 1 - t_m = measured temperature t_c = t_m corrected ($t_m - t_c + 40$ °C or max. RATED ambient) t_{max} = maximum permitted temperature						
NOTE 2 - see also 14.1 with reference to component operating conditions						
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary						
NOTE 4 - see Form A.26B for details of winding temperature measurements						
Supplementary information: Test done in a climate chamber at equipments maximum RATED operating ambient temperature of +50 °C. t_c not applicable.						

TESTED BY: Danny Van Hoecke

DATE: 17.12.2018

TEST EQUIPMENT LIST ITEM:

BGEMC 01-086K, BGEMC 01-082K, BGEMC 01-103, BGEMC 01-066K, PEMC 12-015 K, BGEMC 01-016K

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
10.5.3	TABLE: Insulating Materials	Form A.28	N/A
10.5.3 1)	Ball-pressure test		
	Max. allowed impression diameter:	2 mm	—
Part	Test temperature [°C]	Impression diameter [mm]	Verdict
Supplementary information:			
10.5.3 2)	Vicat softening test (ISO 306)	Form A.29	N/A
Part	Vicat softening temperature [°C]	Thickness of sample [mm]	Verdict
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

11.7.2	TABLE: Leakage and rupture at high pressure					Form A.31	N/A
Part	Maximum permissible working pressure [MPa]	Test pressure [MPa]	Leakage Yes / No	Deformation Yes / No	Burst Yes / No	Comments	

NOTE – see also Annex G with requirements for USA and Canada.
 Supplementary information:

11.7.3	Leakage from low-pressure parts			Form A.32	N/A
Part	Test pressure [MPa]	Leakage Yes / No	Comments		

Supplementary information:

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
12.2.1	TABLE: Ionizing radiation	Form A.33	N/A
12.2.1.2	Equipment intended to emit radiation		
Locations tested	Measured values [μSv/h]	Verdict	Comments
Supplementary information:			
12.2.1.3	Equipment not intended to emit radiation	Form A.34	N/A
	Max. allowed effective dose rate at 100 mm.....:	1 μSv/h	—
Locations tested	Measured values [μSv/h]	Verdict	Comments
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
12.5.1	TABLE: Sound level	Form A.35	N/A
	Locations tested	Measured maximum sound pressure level dB(A)	Calculated maximum sound power level
Supplementary information:			
12.5.2	Ultrasonic pressure	Form A.36	N/A
	Locations tested	Measured values	Comments
		[dB] [kHz]	
NOTE – No limit is specified at present, but a limit of 110 dB above the reference pressure value of 20 µPa is under consideration for applicable frequencies between 20 kHz and 100 kHz.			
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
13.2.2	TABLE: Batteries	Form A.37	N/A
	Battery load and charging circuit diagram: Applicable to the product 'Wireless Mesh Device'		—
	Battery type..... :		—
	Battery manufacturer/model/catalogue No..... :		—
	Battery ratings..... :		—
	Reverse polarity instalment test		
Single component failures		Verdict	
Component	Open circuit	Short circuit	
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1

Clause	Requirement — Test	Result — Remark	Verdict
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14.3	TABLE: Overtemperature protection devices	Form A.38	N/A
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Reliability test

Component	Type (NOTE)	Verdict	Comments

NOTE:
NSR = non-self-resetting (10 times)
NR = non-resetting (1 time)
SR = self-resetting (200 times)

Supplementary information:

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
4.4.2.7	TABLE: MAINS transformer	Form A.39	N/A
4.4.2.7.2	Short circuit		
14.6	MAINS transformers tested outside equipment		
Type			—
Manufacturer.....			—
Test in equipment			
Test on bench			
Test repeated inside equipment (see 14.6)			
Optional – Insulation class (IEC 60085) of the lowest rated winding			—
Winding identification			
Type of Protector for winding (NOTE 1)			
Elapsed time			
Current, A	primary		
	secondary		
Winding temperature, °C	primary		
(see NOTE 2)	secondary		
Tissue paper / cheesecloth OK ? (Pass / Fail)			
Voltage tests (see NOTE 3)			
Primary to secondary	_____ V _____		
Primary to core	_____ V _____		
Secondary to secondary	_____ V _____		
Secondary to core	_____ V _____		
Verdict			
NOTE 1:	Primary fuse	- PF / () A	
	Secondary fuse	- SF / () A	
	Overtemperature protection	- OP / () °C	
	Impedance protection	- Z	
NOTE 2:	Indicate method of measurement	- TC = with thermocouple	
		- R = resistance method	
NOTE 3:	If resistance method is used, record resistance in cold and warm condition in FormA.26B.		
	Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown		
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict
4.4.2.7	TABLE: MAINS transformer	Form A.40	N/A
4.4.2.7.3	Overload tests (for MAINS transformers)		
14.6	MAINS transformers tested outside equipment		
Type			—
Manufacturer			—
Test in equipment			
Test on bench			
Test repeated inside equipment (see 14.6)			
Optional – Insulation class (IEC 60085) of the lowest rated winding			—
Winding identification			
Type of Protector for winding (NOTE 1)			
Elapsed time			
Current, A	primary		
	secondary		
Winding temperature, °C primary			
(see NOTE 2) secondary			
Tissue paper / cheesecloth OK ? (Pass / Fail)			
Voltage tests (see NOTE 3)			
Primary to secondary	_____ V _____		
Primary to core	_____ V _____		
Secondary to secondary	_____ V _____		
Secondary to core	_____ V _____		
Verdict			
NOTE 1:	Primary fuse	- PF / () A	
	Secondary fuse	- SF / () A	
	Overtemperature protection	- OP / () °C	
	Impedance protection	- Z	
NOTE 2:	Indicate method of measurement	TC = with thermocouple R = resistance method	
	If resistance method is used, record resistance in cold and warm condition in FormA.26B.		
NOTE 3:	Record the voltage applied and the type of voltage (r.m.s. / d.c. / peak) and for results use NB = no breakdown or B = breakdown		
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement — Test	Result — Remark	Verdict

14.8	TABLE: Transient overvoltage limiting devices									Form A.41	N/A
Component / Designation	Overvoltage Category	MAINS voltage [V rms]	Test voltage [V]	t_m [°C]	t_c [°C]	t_{max} [°C]	Rupture Yes / No	Circuit breaker tripped	Verdict	Comments	

Test room ambient temperature: °C

NOTE - t_m = measured temperature
 $t_c = t_m$ corrected ($t_m - t_a + 40$ °C or max. RATED ambient)
 t_{max} = maximum permitted temperature
 Conformity is checked by applying 5 positive and 5 negative impulses with the applicable impulse withstand voltage, spaced up to 1 min apart, from a hybrid impulse generator (see IEC 61180-1).

Supplementary information:

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1											
Clause		Requirement – Test				Result — Remark				Verdict	
Annex H		TABLE: Qualification of conformal coating for protection against pollution						Form A.42		N/A	
Technical properties											
Manufacturer										—	
Type										—	
Meet requirements of ANSI / UL 746E		[yes / no]									
Manufacturer declaration of coating material		[yes / no]									
Operating temperature of coating		[] °C									
Comparative tracking index (CTI)		[]									
Insulation resistance		[] Ω									
Dielectric strength		[] V									
UV resistance (if required)		[yes / no]									
Flammability rating											
Preparation of the test specimens conducted		[yes / no]									
Item	Test conditioning	Parameter	Td h	Samples						Verdict	Comments
				1	2	3	4	5	6		
1	Scratch resistance										
	Visual inspection										
2	Cold		24								
3	Dry heat		48								
4	Rapid temp. change										
5	Damp heat		24								
6	Adhesion of coating	5 N									
	Visual inspection										
7	Humidity		48								
8	Insulation resistance	>= 100 Ω									
	Visual inspection										
NOTE Td = Test duration time											
Supplementary information:											

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1			
Clause	Requirement – Test	Result — Remark	Verdict
TABLE: Additional or special tests conducted			Form A.43
			N/A
Clause and name of test	Test type and condition	Observed results	—
Supplementary information:			

TESTED BY: _____ DATE: _____ TEST EQUIPMENT LIST ITEM: _____

IEC 61010-1						
Clause	Requirement — Test	Result — Remark				Verdict
	TABLE 1: - List of components and circuits relied on for safety					P
Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
ENCLOSURE	ENCLOSURE	RS Pro	832-0264	Green PLA (poly lactic acid) 3D Printer Filament Melting temp: 210 °C Melting point: 145 °C to 160 °C Vicat softening temp: 60 °C	ISO 306 ASMD D882 ATMD D1505 ASTM D3418	CE
ENCLOSURE Seal	Seal	Ultimaker B.V.	TPU 95A	Thermoplastic polyurethane HB Class Melting temperature: 220 °C Min. 4,8 mm thickness	IEC 60093 IEC 60695	Tested in appliance
PCB	stem v7 board	Eurocircuits	stem v7	FR4 1,6 mm thickness UL 94V-0 105 °C	UL 94	UL (E1027069)
Nano-Fit Power Connector	CONN1_6P CONN2_8P CONN3_2P	Molex	1053141110	250 VAC 6,5 A UL 94V-0 -40 °C to +105 °C	UL 94	UL (E29179)
Non-Resettable Surface Mount Fuse (FS1)	Fuse protection	RS Pro	1206 SMD series RS PRO 0.5A T (764-9365)	Fuse Speed: T 63 Va.c./d.c. 0,5 A Body: FR4 Board -55 °C to +125 °C	UL 1059 UL 1977	cURus

IEC 61010-1						
Clause	Requirement — Test		Result — Remark			Verdict
	TABLE 1: - List of components and circuits relied on for safety					P
Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Non-Resettable Surface Mount Fuse (FS2)	Fuse protection	RS Pro	1206 SMD series RS PRO 2A T (764-9444)	Fuse Speed: T 63 Va.c./d.c. 2,0 A Body: FR4 Board -55 °C to +125 °C	UL 1059 UL 1977	cURus
Switching Voltage Regulator (U5, U7)	Power Management	Texas Instruments	TPS63070RNMR	QFN package Buck-Boost Convertor Input: 2 V to 16 V Output: 2,5 V to 9 V 2,0 A Protection: I/O overvoltage Overtemperature -40 °C to +125 °C	—	—

IEC 61010-1						
Clause	Requirement — Test		Result — Remark			Verdict
	TABLE 1: - List of components and circuits relied on for safety					P
Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Low-Noise LDO Regulator (U6)	Linear Voltage Regulator	Micrel Inc.	MIC5205-3.3YM5	SOT-23-5 package Input: 2,5 V to 16 V Output: $V_{IN} = V_{OUT} + 1 V$ 0,1 mA to 150 mA Protection: Current Thermal -40 °C to +125 °C	—	—
Cellular connectivity module	Managing and interacting new connected hardware	Particle	Electron SARA U270	2G/3G 3,9 V to 12 VDC 180 mA -20 °C to +60 °C	—	CE
ACCESSORIES						

IEC 61010-1						
Clause	Requirement — Test	Result — Remark				Verdict
TABLE 1: - List of components and circuits relied on for safety						P
Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
AC/DC Power Supply Adapter	DC power supply	XP Power	VER18 series VER18US090-JA	Class II construction Input: 100-240 VAC 0,6 A 50/60 Hz Protection: T1,0 A/250 VAC fuse Output: 9,0 VDC 2,0 A 18 W Protection: Short-circuit Temperature Isolation: 3000 VAC 0 °C to +60 °C 5 %RH to 95 %RH (non-condensing)	IEC/EN 60950 UL 60950	CE TüV UL
Miniature displacement sensor	Diameter variation sensor	Solartron Metrology	SM/MD/DF series DF5	LVDT 400 Stainless Steel Poly Urethane cable 10 VDC 0,013 A -5 °C to +70 °C	—	—

IEC 61010-1						
Clause	Requirement — Test		Result — Remark			Verdict
	TABLE 1: - List of components and circuits relied on for safety					P
Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
EXO-Skin™ Sap Flow Sensor	Sap flow sensor	Dynamix Inc.	Different types may be used: 09 mm: SGEX-9 10 mm: SGEX-10 13 mm: SGEX-13 16 mm: SGTX-16	Heater and heat-sensing electronics in one layered wrapping Voltage: 4,0 VDC to 4,5 VDC Power: 0,13 W to 0,20 W Heater: 100 Ω to 140 Ω 0 °C to +50 °C	—	—
4G/3G/2G Adhesive T-bar Antenna	Antenna	Siretta Ltd.	Alpha 40 Alpha40/5M/SMAM/S/S/29	Input power: 1 Wmax Impedantie: 50 Ω Gain: 0,5 /1 / 2 dBi Cable: PRO100 low loss -30 °C to +60 °C	—	—
NOTE → 1 List all different manufacturers of the above components → 2 May include electrical, mechanical values → 3 List licence no or method of acceptance → 4 asterisk indicates mark assuring agreed level of surveillance						

ATTACHMENT 1 - Photo Documentation	
Products: PhytoStem	Type designation: Model 1

ATTACHMENT TO TEST REPORT No: SAF-052-2018
Attachment Originator: BlueGuideEMCLab

Photo's applicable to the product: PhytoStem

Picture 1: Top view

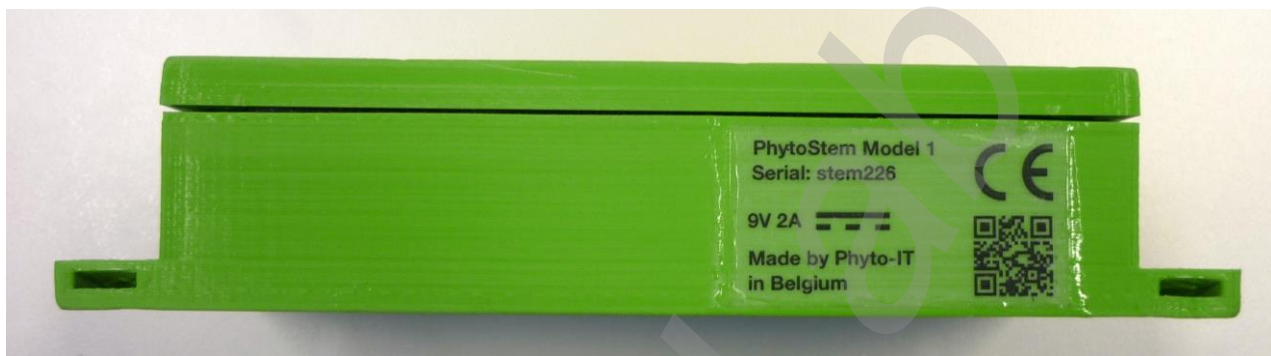


Picture 2: Bottom view



ATTACHMENT 1 - Photo Documentation	
Products: PhytoStem	Type designation: Model 1

Picture 3: Side view



Picture 4: Side view



ATTACHMENT 1 - Photo Documentation	
Products: PhytoStem	Type designation: Model 1

Picture 5: Top view



Picture 6: Bottom view



ATTACHMENT 1 - Photo Documentation

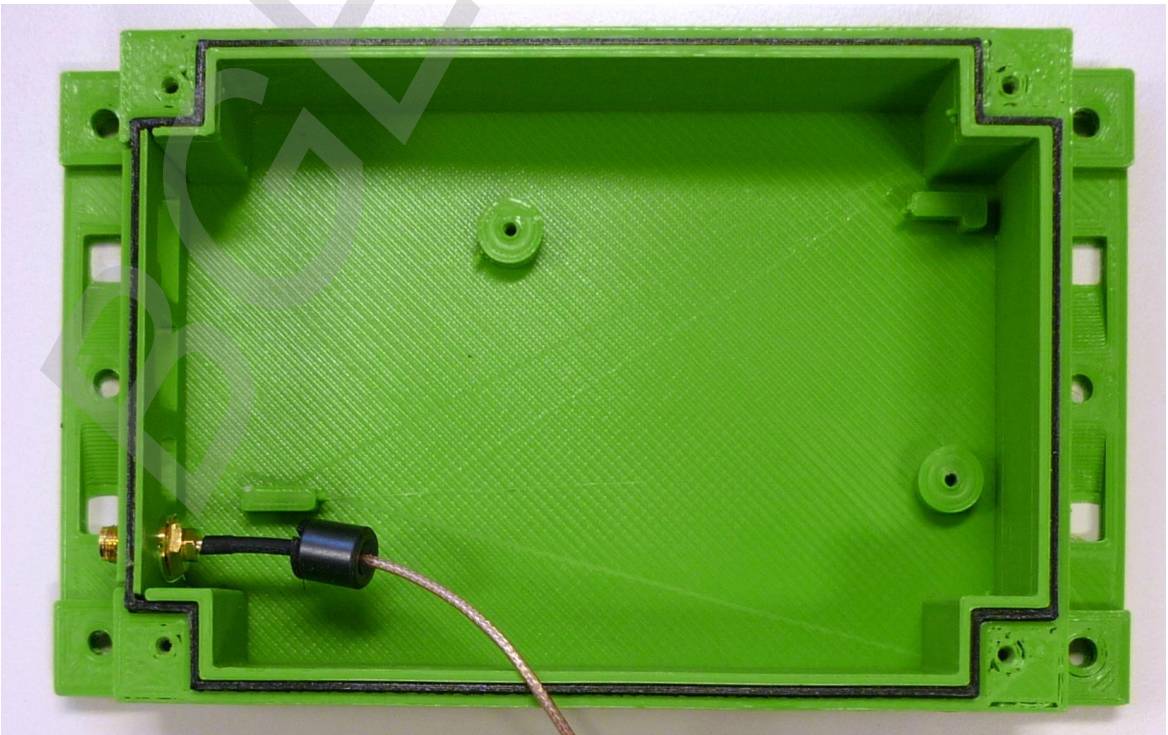
Products: PhytoStem

Type designation: Model 1

Picture 7: Cover (inside view)



Picture 8: Enclosure (inside view)

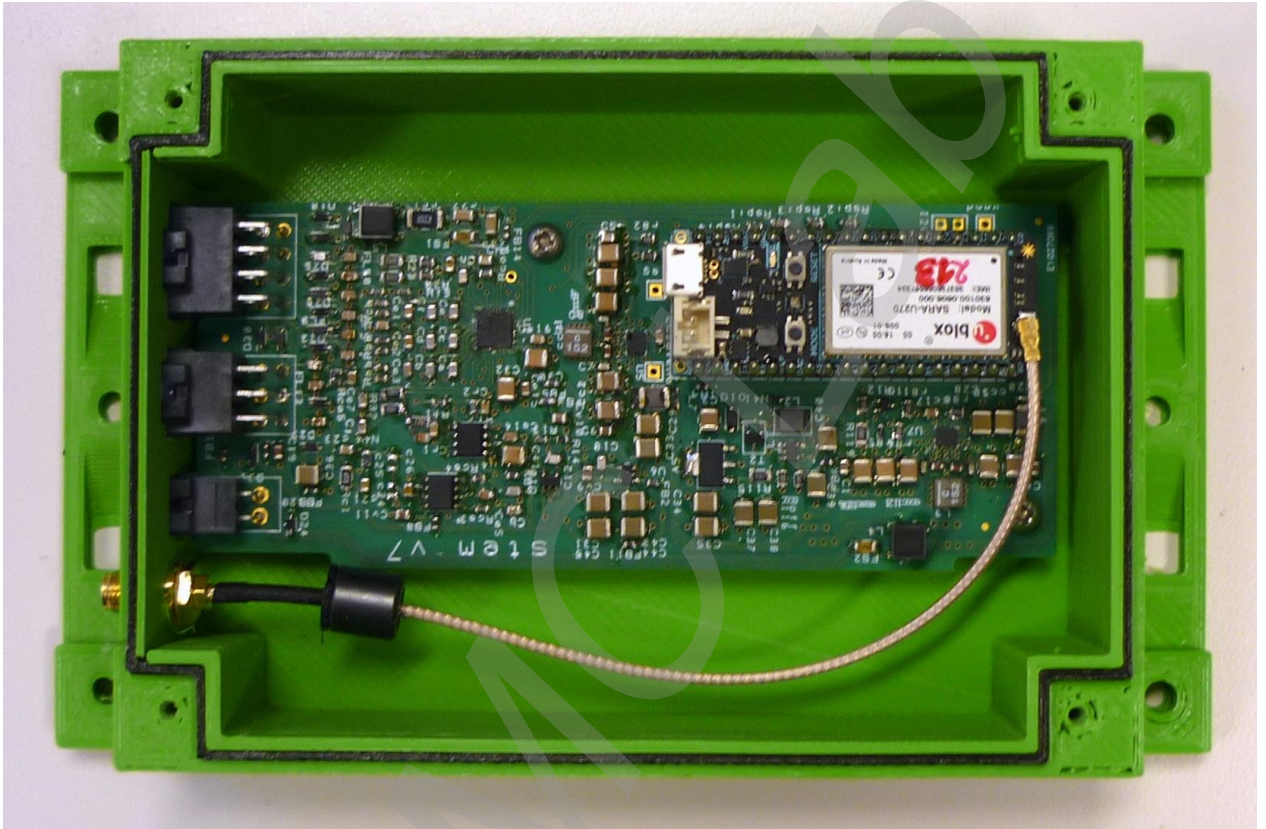


ATTACHMENT 1 - Photo Documentation

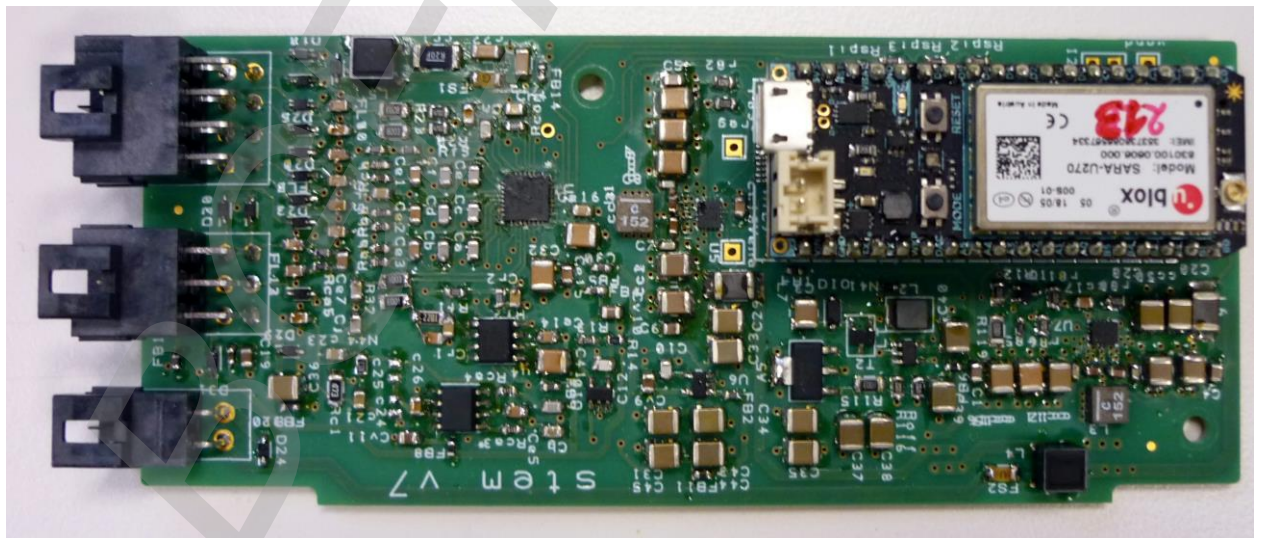
Products: PhytoStem

Type designation: Model 1

Picture 9: Inside view



Picture 10: PCB PhytoStem v7 (component side)

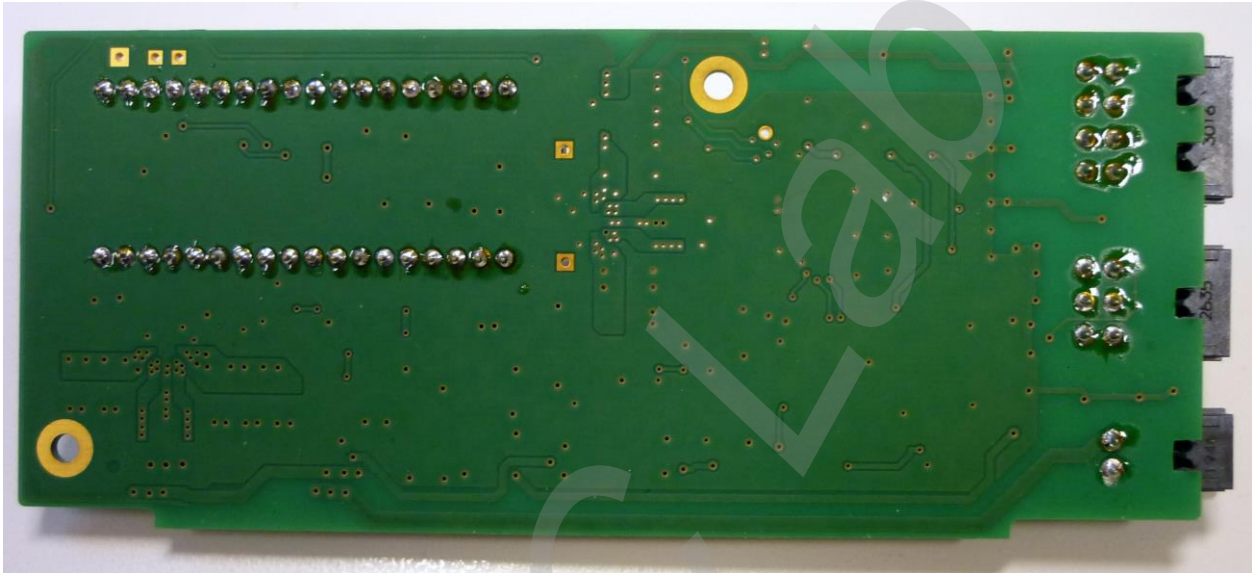


ATTACHMENT 1 - Photo Documentation

Products: PhytoStem

Type designation: Model 1

Picture 10: PCB PhytoStem v7 (solder side)



Photo's applicable to accessories (no part of investigation)

Picture 11: PhytoStem data logger with accessories



ATTACHMENT 1 - Photo Documentation	
Products: PhytoStem	Type designation: Model 1

Picture 12: Snap flow sensor



Picture 13: Diameter variation sensor



ATTACHMENT 1 - Photo Documentation	
Products: PhytoStem	Type designation: Model 1

Picture 14: Antenna



Picture 15: AC/DC Power Supply Adapter

