Test Report issued under the responsibility of:
DT&C Co., Ltd.

42/46/38, Yurim-ro, 154beon-gil, Cheoin-gu,
Yongin-si, Gyeonggi-do, 17042, Korea, Republic of

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

Report Number.	DRMCEL1711-0076(1)
Date of issue	January 25, 2019
Total number of pages	136 pages
Applicant's name	Plasmapp Co., Ltd.
Address	3F 301, 1F, Jukdong-ro 83, Yuseong-gu, Daejeon, Republic of Korea (Zip code: 34127)
Test specification:	
Standard	EN 61010-1:2010 (Third Edition)
Test procedure	—
Non-standard test method	N/A
Test Report Form No.	IEC61010_1J(DT&C Co., Ltd.: TRF-MS-253(03)181120)
Test Report Form(s) Originator	VDE (DT&C modified on 2018-11-20)
Master TRF	2013-11

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

This report is not valid as a KOLAS Test Report

Test item description	Low Temperature Plasma Sterilizer
Trade Mark	
Manufacturer	Plasmapp Co., Ltd. / 3F 301, 1F, Jukdong-ro 83, Yuseong-gu, Daejeon, Republic of Korea (Zip code: 34127)
Model/Type reference	FPS-15s Plus
Ratings	100-120/220-240 V~, 50/60 Hz, 10 A

If this test report is required to confirmation of authenticity, please contact to report@dtnc.net.

Testing procedure and testing location:		
☒ Testing Laboratory:	DT&C Co., Ltd.	
Testing location/ address.....:	42/46/38, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Korea, Republic of	
☐ Associated Laboratory:		
Testing location/ address.....:		
Tested by (name + signature).....:	KyoJin Kim	
Approved by (name + signature).....:	HanJin Lee	
☐ Testing procedure: TMP		
Testing location/ address.....:		
Tested by (name + signature)..... :		
Approved by (name + signature)..... :		
☐ Testing procedure: WMT		
Testing location/ address.....:		
Tested by (name + signature)..... :		
Witnessed by (name + signature) .... :		
Approved by (name + signature)..... :		
☐ Testing procedure: SMT		
Testing location/ address.....:		
Tested by (name + signature)..... :		
Approved by (name + signature)..... :		
Supervised by (name + signature)... :		
☐ Testing procedure: RMT		
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.
Annex A	EN 61010-2-040:2015	29
Attachment 1	Photograph	128-134
Attachment 2	Schematic	135-136

Documents referenced by this report (available on request):		
Document Name or No.	Documents description	Page No.

Summary of testing:

- The equipment fulfils the requirements of standard of EN 61010-1:2010 (Third Edition)
- Maximum ambient temperature recommended by manufacturer: 40 ℃
- Max. normal operation : Continuous operation STERLOAD mode
- Operating environmental conditions
  - Temperature: 10 to 40 ℃
  - Humidity: 30 to 80 % R.H., (non-condensing)
  - Atmospheric Pressure: 700 to 1 060 hPa

Clause	Comment
N/A	N/A

Test Report History:
This report may consist of more than one report and is valid only with additional or previous issued reports:

Ref. No.	Item
DRMCEL1711-0076	Original test report
DRMCEL1711-0076(1)	Change and add component (See TABLE 3), Change mode

Tests performed (name of test and test clause):

Test Report (DRMCEL1711-0076)

- Input test (Clause 5.1.3 c))
- Marking durability test (Clause 5.3)
- Determination of accessible parts (Clause 6.2 and 6.3)
- Tightening torque test (Clause 6.5.2.3)
- Protective earthing test (Clause 6.5.2.4)
- Clearances and creepage distances measurement (Clause 6.7)
- Dielectric strength test (Clause 6.8)
- Humidity test (Clause 6.8.2)
- Enclosure rigidity test (Clause 8.2.1, 8.2.2 and 6.8)
- Single fault conditions test (Clause 9.1 a), 4.4 and 6.8)
- Temperature measurement test (Clause 10.1 and 10.4.2)
- Non-metallic ENCLOSURE (Clause 10.5.2)
- Ball pressure test (Clause 10.5.3)
- Transformer short-circuit/Overload Test (Clause 4.4.2.7)

Test Report (DRMCEL1711-0076(1))

- Input test (Clause 5.1.3 c))
- Temperature measurement test (Clause 10.1 and 10.4.2)

Testing location:
DT&C Co., Ltd. /
42/46/38, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Korea, Republic of

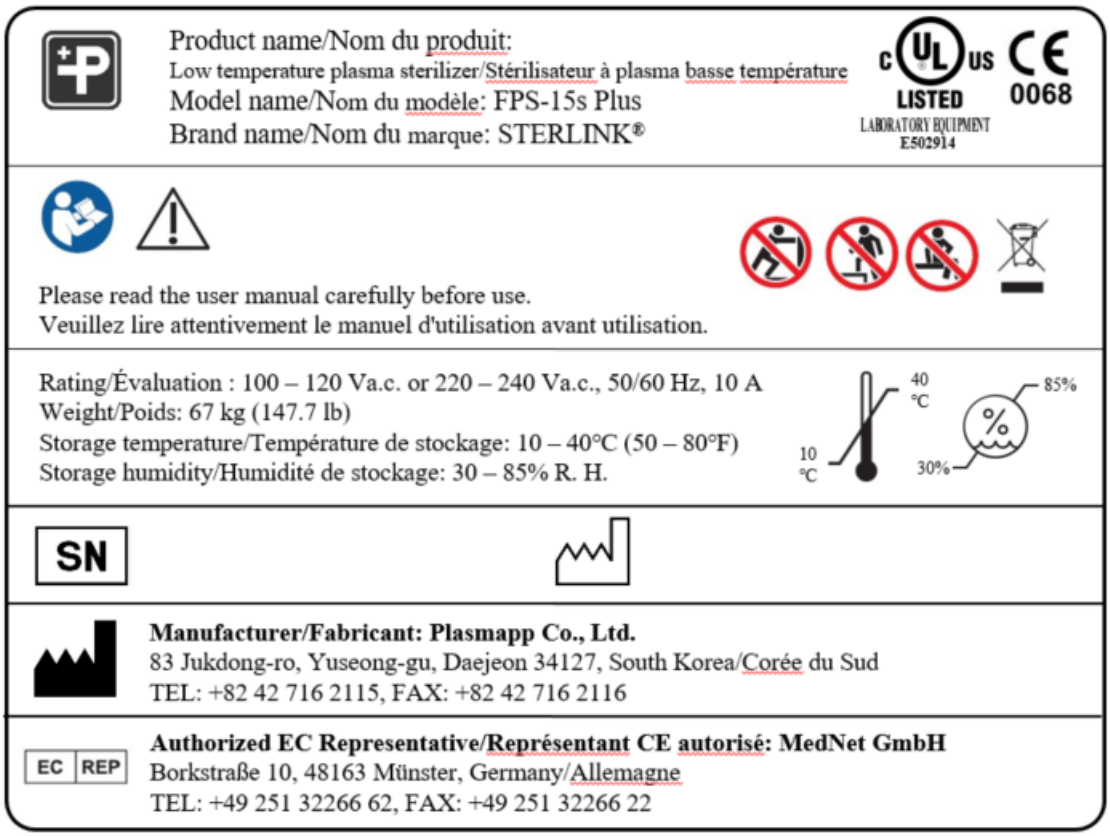
Summary of compliance with National Differences

List of countries addressed: N/A

☒ **The product fulfils the requirements of EN 61010-1:2010**

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.



Test item particulars:	
Type of item ..... :	Laboratory
Description of equipment function..... :	Low Temperature Plasma Sterilizer
Connection to MAINS supply..... :	Detachable cord set
Overvoltage category ..... :	II
POLLUTION DEGREE..... :	2
Means of protection ..... :	Class I (PE connected)
Environmental conditions ..... :	Normal
For use in wet locations..... :	No
Equipment mobility ..... :	Floor standing
Operating conditions..... :	Continuous
Overall size of equipment (W x D x H)..... :	433.0 mm x 614.0 mm x 437.0 mm
Mass of equipment (kg)..... :	67 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 27, 2018
Date (s) of performance of tests..... :	December 28, 2018 to January 17, 2019
General remarks:	
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. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB 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 ..... :	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the general product information section.	
Name and address of factory (ies):	Plasmapp Co., Ltd. / 3F 301, 1F, Jukdong-ro 83, Yuseong-gu, Daejeon, Republic of Korea (Zip code: 34127)

General product information:
Description of unit:

- FPS-15s Plus is the sterilizer using plasma and sterilant to sterilize the medical device and materials in low temperature, and it is most suitable for sterilization of medical devices which is sensitive on heat and humidity since it is the low temperature plasma sterilizer.
- This equipment is classified as Class I and Detachable cord set.
- The equipment uses the power supply, Model MPS-200-24 (Meanwell Enterprises Co., Ltd.), certified by UL according to IEC 60601-1(ed.3) For more info, see Table 3
- External printer power source is used approved Adaptor (see TABLE 3)

- Test Report History

The original CE Test Report (Report No. DRMCEL1711-0076) was issued on 2017-12-29 was modified to Include changes/additions as following:

1. Change and add component (See TABLE 3)
   - There is no change in the structure of the high voltage transformer, and the name of the manufacturer has been changed.
   - Interchangeable parts of same specification PCB and stepping motor have been added.
   - A inrush current limit device has been added

2. Change mode

	Before	After
Mode	Pouch Mode [STERPACK (Fast/Normal)]	STERPACK
		STERPACK PLUS
	Chamber Mode [STERLOAD (Fast/Normal)]	STERLOAD

   - Fast, normal modes of STERPACK and STERLOAD are integrated.
   - The principle and operation time of STERPACK and STERLOAD are the same.
   - STERPACK PLUS mode has been added and the principle is the same.

Description of model differences. N/A

Description of special features: N/A
(HV circuits, high pressure systems etc.)

	TABLE: 1 - Test Report Index Page	P
Document No.	Documents included / attached to this report (description)	Page Numbers
TABLE 1	This page	7
TABLE 2	List of test equipment used for measurements	8-9
TABLE 3	List of safety relevant components	10-13

	TABLE: 2 - Test equipment list				P
Item	Type	Equipment No.	Calibration date		Comments
			Last[1]	Due	
The Report (DRMCEL1711-0076) equipment					
Data Logger	GT342	M-S119	2017-04-20	2018-04-20	
Barometer	testo 511	M-S126	2017-04-19	2018-04-19	
Digital calipers	CD-20CPX	M-S007	2017-01-03	2018-01-03	
Earth Continuity Tester	TOS6210	M-S127	2017-04-18	2018-04-18	
Electronic Balance	DB-150	M-S010	2017-01-03	2018-01-03	
Steel Ball	5 N	M-S015	2016-04-29	2019-04-29	
LCR Meter	3532-50	M-S069	2017-04-18	2018-04-18	
Standard tape rule	5.5 m	M-S091	2016-01-13	2018-01-13	
Slanting board	DEMC-SB2	M-S151	N/A	N/A	
Digital Oscilloscope	TDS3032	M-S111	2017-04-17	2018-04-17	
High Voltage probe	P6015A	M-S113	2017-04-17	2018-04-17	
True RMS Multimeter	289	M-S117	2017-04-17	2018-04-17	
Digital Protractor	DXL360	M-S118	2017-04-26	2018-04-26	
Midi Logger	GL820	M-S120	2017-04-21	2018-04-21	
Stop Watch	W073-4000	M-S125	2017-04-17	2018-04-17	
Digital Force Gauge	DS2-1000N	M-S129	2017-01-03	2018-01-03	
Digital Power Meter	WT310	M-S134	2017-04-17	2018-04-17	
Withstanding Voltage Tester	TOS5101	M-S137	2017-04-17	2018-04-17	
Switch Box for Voltage Limitation	DEMC-SBVL	M-S143	N/A	N/A	
Measuring Circuit for touch current	DEMC-MDME1	M-S041	2017-01-04	2018-01-04	
Hot line resistance meter	DAC-HRE-1	M-S138	2017-04-18	2018-04-18	
Ball pressure Tester	BPT	SFR-037	2017-03-15	2020-03-15	
TNV Test Probe	TP-Figure 2C	SFT-041	2017-09-06	2018-09-06	
Un-jointed Test Finger	UJTF	SFT-042	2017-03-16	2018-03-16	
Jointed Test Finger	JTF-Figure2A	SFT-043	2017-09-07	2018-09-07	
Dry oven	J-300S	SFT-060	2017-09-05	2018-09-05	
Torque tester	DI-5M-RL6	SFT-093	2017-03-16	2018-03-16	
Digital Microscope	DS-MV1C	SFT-094	2017-03-16	2018-03-16	
Humidity chamber	J-RHC3-10T	SFT-196	2017-09-08	2018-09-08	

	TABLE: 2 - Test equipment list				P
Item	Type	Equipment No.	Calibration date		Comments
			Last[1]	Due	
The Report (DRMCEL1711-0076(1)) equipment					
Data Logger	GT342	M-S119	2018-04-10	2019-04-10	
Barometer	testo 511	M-S126	2018-04-11	2019-04-11	
Midi Logger	GL820	M-S120	2018-04-20	2019-04-20	
Stop Watch	W073-4000	M-S125	2018-04-09	2019-04-09	
Digital Power Meter	WT310	M-S134	2018-04-09	2019-04-09	
1) or interval between calibrations.					

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

	TABLE: 3 - 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)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Unit	Power Plug	Korea KDK Co., Ltd.	KKP-4819D	250 V~, 16 A	VDE / 40018535
Unit	Power cord	Korea KDK Co., Ltd.	H05VV-F	0.75 ㎟	VDE / 101928
Unit	Power connector	Korea KDK Co., Ltd.	KKS-16A	250 V~, 10 A	ENEC14 / 09133-3
Unit	Appliance inlet with filter	Dong Il Technology Ltd.	IR3-N10C2H	250 V~, 10 A, 50/60 Hz, 2 x 2 200 ㎊(Y2,), 2 x 0.22 ㎌ (X2),	VDE / 40023595
Unit	Main switch	EVEREL GROUP SPA	82	250 V, 16 A	UL / E98133
Unit	Fuse holder	Shin Chin Industrial Co., Ltd.	R3-11	250 V~, 10 A	UL / E72169
Unit	Fuse	Littelfuse Inc.	215	250 V~, 10 A	UL / E10480
Unit	Surge protector	Lsis Co Ltd	BK10S-T2	220 V~, 50/60 Hz, 10 kA	UL / E487006
Unit	*Inrush current limit	Gefi elektronik	TRR	230V~, 50/60 Hz, 3.5 kW	Tested in equipment
Unit	Internal terminal block	Dong-A Bestech Co.,Ltd.	DFT-20A	600 V~, 20 A	UL / E119716

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

	TABLE: 3 - 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)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)	
Unit	Toroidal Transformer	Hanam Electronics Co., Ltd.	T1800VA-ISP1800T-AC110VX2X2	Input: 100-120 / 220-240 V~, 50/60 Hz Output: 220 V~	Tested in equipment	
Unit	Internal noise filter	Dong Il technology Ltd	ES1-T10	250 V~, 50/60 Hz, 10 A, 2 x 3 300 pF(Y2,), 2 x 0.33 μF (X2)	UL / E105227	
Unit	SMPS	Mean Well Enterprises Co., Ltd	MPS-200-24	Input: 100-240 V~, 50/60 Hz 3.5-1.6 A, Output: 24 Vd.c., 8.4 A	UL / E227340	
Unit	**High voltage power supply	Plasmapp. Co., Ltd.	BO-10QNAON	Input: 200-240 V~ Output: 5 kV	Tested in equipment	
Unit	Vacuum pump	Pfeiffer Vaccum GmbH	UNO6	230-240 V~, 50/60 Hz, 0.15 kW/ 0.18 kW	Declaration of conformity (EN 61010-1)	
Unit	Upper heater	Plasmapp.co., Ltd.	S02E010	220 V~, 200 W	Tested in equipment	
Unit	Lower heater	Plasmapp.co., Ltd.	S02E009	220 V~, 800 W	Tested in equipment -	
Unit	Vaporizer heater	Plasmapp.co., Ltd.	HY01-CHA*6*32*310 220V 800W	220 V~, 800 W	Tested in equipment -	

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

	TABLE: 3 - 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)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Unit	Bellows heater	Plasmapp.co., Ltd.	S00E001	220 V~, 36 W	Tested in equipment -
Unit	Heater thermostats	Seki Controls Co., Ltd.	ST-22	250 V, 1 A, 100 ℃	UL / E162183 -
Unit	Solid state relay	Union Elecom Co., Ltd.	PDA1-205Z	Input: 4-32 Vd.c., Load: 250 V, 5 A	UL / E181171 -
Unit	Relay(six provided)	Panasonic Corporation.	PA1a-5V	Contact: 5 A, 250 V~; 5 A, 30 Vd.c., Coil: 5 Vd.c.	UL / E43149
Unit	Solenoid valve	SMC Corp.	VX234NY	24 Vd.c., 10.5 W Pressure: 0.1 MPa	UL / MH11419
Unit	Stepping motor(three provided)	J C International Inc.	IG-22CGM	24 Vd.c., 110 mA, 1.7 W, 7 400 RPM, reduction ratio: 1/1014, Rated torque: 3 000 g·cm	Tested in equipment
Unit	*Stepping motor(three provided) - Alternate	J C International Inc.	Interchangeable	24 Vd.c., 110 mA, 1.7 W, 7 400 RPM, reduction ratio: 1/1014, Rated torque: 3 000 g·cm	Tested in equipment
Unit	Micro limit switch	KLS Electronic	KLS7-KW10	250 V~, 1 A	Tested in equipment
Unit	Door switch	Taekwang Corp C., Ltd.	VP-331A0D	250 Va.c., 10 A	UL / E74741

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

	TABLE: 3 - 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)	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
Unit	DC fan(eighth provided)	J C International Inc.	BFL8010S	12 Vd.c., 0.12 A	UL / E347107
Unit	Touch LCD Panel	Eastrising Co., Ltd.	ER-TFT070-4	3.3 Vd.c., 40 mA	Tested in equipment
Unit	Lithium ion Battery (Non-Rechargeable)	Maxell, Ltd.	CR1220	3 Vd.c., Max. Abnormal charging current: 3 mA	UL / MH12568
Unit	Printed wiring board	Im Circuit Co., Ltd.	KM4	Rated Min. V-0, Min. 130 ℃	UL / E177694
Unit	*Printed wiring board - Alternate	Interchangeable	Interchangeable	Rated Min. V-0, Min. 130 ℃	UL
Unit	Printer	Woosim System Inc	Porti-PP40	12-24 Vd.c., 3 A	Tested in equipment -
Unit	Printer adaptor	Shenzhen Jinhuasheng Power Technology Co., Ltd.	RS-025/24-S335	Input: 100-240 V~, 1.5 A, 50-60 Hz Output: 24 Vd.c., 2.71 A	UL / E255936 -

Note → 1 List all different manufacturers of the above components
→ 2 May include electrical, mechanical values
→ 3 List licence no, standard or method of acceptance
4 → asterisk indicates mark assuring agreed level of surveillance
*: Additional component
**: Manufacturer changed component

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	TESTS		—
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		P
4.4.2.4	Equipment or parts for short-term or intermittent operation	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		P
4.4.2.7.2	Short circuit	(See Form A.1)	P
4.4.2.7.3	Overload	(See Form A.1)	P
4.4.2.8	Outputs	(See Form A.1)	P
4.4.2.9	Equipment for more than one supply	Single supply	N/A
4.4.2.10	Cooling	(See Form A.26A)	—
	– air holes closed	No hazards	P
	– fans stopped	No hazards	P
	– coolant stopped		N/A
	– loss of cooling liquid		N/A
4.4.2.11	Heating devices		P
	– timer overridden	No such timer	N/A
	– temperature controller overridden	No hazards (See Form A.1)	P
4.4.2.12	Insulation between circuits and parts		N/A
4.4.2.13	Interlocks	(See Form A.1)	P
4.4.2.14	Voltage selectors	No such voltage selectors	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)	P
5	MARKING AND DOCUMENTATION		—
5.1.1	Required equipment markings		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	– visible from the exterior; or		P
	– visible after removing cover or opening door		P
	– visible after removal from a rack or panel	No rack mounted unit	N/A
	Not put on parts which can be removed by an operator	No part 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	Symbols 2, 6, 9, 10, 12, 14	P
	Equipment is identified by:		—
	a) Manufacturer's or supplier's name or trademark		P
	b) Model number, name or other means	FPS-15s Plus	P
	Manufacturing location identified		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 ..... :	50/60 Hz	—
	2) d.c. with symbol 1..... :		—
	b) RATED supply voltage(s) or range ..... :	100-120/220-240 V~	—
	c) Max. RATED power (W or VA) or input current ..... :	10 A	—
	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 %		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:	No socket outlets	—
	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:		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	The maximum rated current or power; or		N/A
	Symbol 14 with full details in the documentation		N/A
5.1.4	Fuses		N/A
	Operator replaceable fuse marking (see also 5.4.5).....:	Not operator replaceable fuse	—
5.1.5	TERMINALS, connections and operating devices		P
5.1.5.1	General		—
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked	Marked	P
	If insufficient space, symbol 14 used	Not used	N/A
	Push-buttons and actuators of emergency stop devices and indicators:	No emergency stop switch	—
	– 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):	No such means	—
	– to safety of persons; or		N/A
	– safety of the environment		N/A
5.1.5.2	TERMINALS		—
	MAINS supply TERMINAL identified	(See below)	P
	Other TERMINAL marking:		—
	a) FUNCTIONAL EARTH TERMINALS (symbol 5 used)	No FE terminals	N/A
	b) PROTECTIVE CONDUCTOR TERMINALS:	(See below)	—
	Symbol 6 is placed close to or on the TERMINAL; or	Marked "⏚" near protective earth terminal	P
	Part of appliance inlet		N/A
	c) TERMINALS of control circuits (symbol 7 used)	No such terminals	N/A
	d) HAZARDOUS LIVE TERMINALS supplied from the interior	No such terminals	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		P
	If disconnecting device, off position clearly marked	Switch used (Symbol 9 and 10 used)	P

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
5.1.7	Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION	Class I Equipment	P
	Protected throughout (symbol 11 used)		N/A
	Only partially protected (symbol 11 not used)		P
5.1.8	Field-wiring TERMINAL boxes	No field-wiring terminal boxes	N/A
	If TERMINAL or ENCLOSURE exceeds 60 °C:		—
	Cable temperature RATING marked ..... :		—
	Marking visible before and during connection or beside TERMINAL		N/A
5.2	Warning markings		P
	Visible when ready for NORMAL USE	Cleary visible	P
	Are near or on applicable parts	Marked on applicable parts	P
	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	Complied	P
	b) symbols and text moulded, stamped or engraved in material min. 2,0 mm high and	No such parts	N/A
	0,5 mm depth or raised if not contrasting in colour		N/A
	If necessary marked with symbol 14		P
	Statement to isolate or disconnect if access by using a tool to HAZARDOUS LIVE parts is permitted		P
5.3	Durability of markings		P
	The required markings remain clear and legible in NORMAL USE	(See Form A.3)	P
5.4	Documentation		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		N/A
	Documentation necessary for safe operation is provided in printed media or		P
	in electronic media if available at any time		N/A
	Documentation includes:		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) intended use	Described on manual	P
	b) technical specification	Described on manual	P
	c) name and address of manufacturer or supplier	Described on manual	P
	d) information specified in 5.4.2 to 5.4.6	Described on manual	P
	e) information to mitigate residual RISK (see also subclause 17)		N/A
	f) accessories for safe operation of the equipment specified	Described on manual	P
	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		P
	Warning statements and a clear explanation of warning symbols:		—
	– provided in the documentation; or	Described on manual	P
	– information is marked on the equipment		N/A
5.4.2	Equipment ratings		P
	Documentation includes:		—
	a) Supply voltage or voltage range..... :	100-120/220-240 V~	—
	Frequency or frequency range ..... :	50/60 Hz	—
	Power or current rating..... :	10 A	—
	b) Description of all input and output connections in accordance to 6.6.1 a)	Described on manual	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)	Described on manual	P
	e) Degree of protection (IEC 60529)	IPX0	N/A
	f) If impact rating less than 5 J:		—
	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		P
	Documentation includes instructions for:		—
	a) assembly, location and mounting requirements	Described on manual	P
	b) protective earthing	Described on manual	P
	c) connections to supply	Described on manual	P
	d) PERMANENTLY CONNECTED EQUIPMENT:	Not permanently equipment	—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	1) Supply wiring requirements		N/A
	2) If external switch or circuit-breaker, requirements and location recommendation		N/A
	e) ventilation requirements	Described on manual	P
	f) special services (e. g. air, cooling liquid)	No special services	N/A
	g) instructions relating to sound level	No sound power	N/A
5.4.4	Equipment operation		P
	Instructions for use include:		—
	a) identification and description of operating controls	Described on manual	P
	b) positioning for disconnection	Described on manual	P
	c) instructions for interconnection	Described on manual	P
	d) specification of intermittent operation limits	Continuous operation	N/A
	e) explanation of symbols used	Described on manual	P
	f) replacement of consumable materials	Described on manual	P
	g) cleaning and decontamination	Described on manual	P
	h) listing of any poisonous or injurious gases and quantities		N/A
	i) RISK reduction procedures relating to flammable liquids (see 9.5)		N/A
	j) RISK reduction procedures relating burn from surfaces permitted to 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	Described on manual	P
5.4.5	Equipment maintenance and Service		P
	Instructions for RESPONSIBLE BODY include:		—
	Instructions sufficient in detail permitting safe maintenance and inspection and continued safety:		—
	Instruction against the use of detachable MAINS supply cord with inadequate rating	Described on manual	P
	Specific battery type of user replaceable batteries	No user replaceable batteries	N/A
	Any manufacturer specified parts	Described on manual	P
	Rating and characteristics of fuses		N/A
	Instructions include following subjects permitting safe servicing and continued safety:		—
	a) product specific RISKS may affect service personnel		N/A
	b) protective measures for these RISKS		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) verification of the safe state after repair		N/A
5.4.6	Integration into systems or effects resulting from special conditions		N/A
	Aspects described in documentation		N/A
6	PROTECTION AGAINST ELECTRIC SHOCK		—
6.1	General	(See Form A.14 and A.15)	P
6.1.1	Requirements		P
	Protection against electric shock maintained in NORMAL CONDITION and SINGLE FAULT CONDITION		P
	ACCESSIBLE parts not HAZARDOUS LIVE	No hazardous live	P
	Voltage, current, charge or energy below the limits in NORMAL CONDITION and in SINGLE FAULT CONDITION between:		—
	ACCESSIBLE parts and earth		P
	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		P
6.1.2	Exceptions	No exception	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		N/A
	Capacitance test if charge is received from internal capacitor		N/A
6.2	Determination of ACCESSIBLE parts	(See Form A.4)	P
6.2.1	General		P
	Unless obviously determination of ACCESSIBLE parts as specified in 6.2.2 to 6.2.4	(See 6.2.2 to 6.2.4)	P
6.2.2	Examination		P
	– with jointed test finger (as specified B.2)	Complied	P
	– with rigid test finger (as specified B.1) and a force of 10 N	Complied	P
6.2.3	Openings above parts that are HAZARDOUS LIVE	No openings	N/A
	– test pin with length of 100 mm and 4 mm in diameter applied		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.4	Openings for pre-set controls		N/A
	– test pin with length of 100 mm and 3 mm in diameter applied	No openings for pre-set controls	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.		P
	for WET LOCATIONS voltage limits less than 16 V r.m.s. and 22,6 V peak or 35 V d.c.	Not intended for use in wet locations	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 µC 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.		P
	for WET LOCATIONS voltage limits less than 33 V r.m.s. and 46,7 V peak or 70 V d.c.	Not intended for use in wet locations	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	Not intended for use in wet locations	N/A
	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		P

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)		P
	b) BASIC INSULATION (see 6.4.3)		P
	c) Impedance (see 6.4.4)	No impedance	N/A
6.4.2	ENCLOSURES or PROTECTIVE BARRIERS	(See Form A.15 and A.16)	—
	– meet rigidity requirements of 8.1	Complied	P
	– meet requirements for BASIC INSULATION, if protection is provided by insulation	Complied	P
	– meet requirements of 6.7 for CREEPAGE and – CLEARANCES between ACCESSIBLE parts and – HAZARDOUS live parts, if protection is provided by – limited access	Complied	P
6.4.3	BASIC INSULATION	(See Form A.15 and A.16)	—
	– meet CLEARANCE, CREEPAGE DISTANCE and solid – insulation requirements of 6.7		P
6.4.4	Impedance	No protective impedance	—
	Impedance used as primary means of protection meets all of following requirements:		—
	a) limits current or voltage to level of 6.3.2		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		N/A
6.5	Additional means of protection in case of SINGLE FAULT CONDITION		P
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)		P
	b) SUPPLEMENTARY INSULATION (see 6.5.3)		P
	c) automatic disconnection of the supply (see 6.5.5)	No automatic disconnection	N/A
	d) current- or voltage-limiting device (see 6.5.6)	No such device	N/A
	Alternatively one of the single means of protection is used:		—
	e) REINFORCED INSULATION (see 6.5.3)		P
	f) PROTECTIVE IMPEDANCE (see 6.5.4)	No protective impedance	N/A
6.5.2	PROTECTIVE BONDING	(See Form A.7, A.8, A.9)	P
6.5.2.1	ACCESSIBLE conductive parts, may become HAZARDOUS LIVE in SINGLE FAULT CONDITION:		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Bonded to the PROTECTIVE CONDUCTOR TERMINAL; or		P
	Separated by conductive screen or barrier bonded to PROTECTIVE CONDUCTOR TERMINAL	No screen or barrier bonded to PE 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	Single connection	P
	b) Soldered connections:	No soldered connections	—
	Independently secured against loosening		N/A
	Not used for other purposes		N/A
	c) Screw connections are secured		P
	d) PROTECTIVE BONDING not interrupted; or	Complied	P
	exempted as removable part carries MAINS SUPPLY input connection	Complied	P
	e) Any movable PROTECTIVE BONDING connection specifically designed, and meets 6.5.2.4	No moveable conductive connector	N/A
	f) No external metal braid of cables used (not regarded as PROTECTIVE BONDING)	No external metal braid of cables	N/A
	g) IF MAINS SUPPLY passes through:		—
	Means provided for passing protective conductor;	No main supply connection for other equipment	N/A
	Impedance meets 6.5.2.4		N/A
	h) Protective conductors bare or insulated, if insulated, green/yellow	Green / Yellow	P
	Exceptions:		—
	1) earthing braids;	No such parts	N/A
	2) internal protective conductors etc.;	No such parts	N/A
	Green/yellow not used for other purposes	Not used for other purposes	P
	TERMINAL suitable for connection of a PROTECTIVE CONDUCTOR, and meets 6.5.2.3	(See clause 6.5.2.3)	P
6.5.2.3	PROTECTIVE CONDUCTOR TERMINAL		—
	a) Contact surfaces are metal		P
	b) Appliance inlet used		N/A
	c) For rewirable cords and PERMANENTLY CONNECTED EQUIPMENT, PROTECTIVE CONDUCTOR TERMINAL is close to MAINS supply TERMINALS	No permanently connected equipment	N/A
	d) If no MAINS supply is required, any PROTECTIVE CONDUCTOR TERMINAL:	No such parts	—
	Is near terminals of circuit for which protective earthing is necessary		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	External if other terminals external		N/A
	e) Equivalent current-carrying capacity to MAINS supply TERMINALS	(See Form A.7)	P
	f) If plug-in, makes first and breaks last		P
	g) If also used for other bonding purposes, PROTECTIVE CONDUCTOR:	No PE connection for other bonding purposes	—
	Applied first;		N/A
	Secured independently;		N/A
	Unlikely to be removed by servicing		N/A
	h) PROTECTIVE CONDUCTOR of measuring circuit:	No 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	No functional earth terminals	N/A
	j) If a binding screw used for PROTECTIVE CONDUCTOR TERMINAL:	(See Form A.8)	—
	Suitable size for bond wire		P
	Not smaller than M 4		P
	At least 3 turns of screw engaged		P
	Passes tightening torque test		P
	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		P
	– 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	Non-permanently connected equipment	—
6.5.2.6	Transformer PROTECTIVE BONDING screen	No protective bonding screen	—
	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

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	Meet CLEARANCE, CREEPAGE DISTANCE and solid insulation requirements of 6.7		P
6.5.4	PROTECTIVE IMPEDANCE	No protective impedance	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		N/A
	The PROTECTIVE IMPEDANCE consists of one or more of the following:		—
	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	No automatic disconnection	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	No such devices	N/A
	Device complies with all of:		—
	a) RATED to limit the current or voltage to the level of 6.3.2		N/A
	b) RATED for the maximum WORKING VOLTAGE; and		N/A
	RATED for the maximum operational current if applicable		N/A
	c) CLEARANCE, CREEPAGE DISTANCE between terminations of the impedance meet requirements of SUPPLEMENTARY INSULATION of 6.7		N/A
6.6	Connections to external circuits	No 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:		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	– the external circuits		N/A
	– the equipment	External printer	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	Described on manual	P
	b) Required RATING of external circuit insulation		N/A
6.6.2	TERMINALS for external circuits	No external circuits	N/A
	TERMINALS which receive a charge from an internal capacitor are not HAZARDOUS LIVE after 10 s of interrupting supply connection		N/A
6.6.3	Circuits with terminals which are HAZARDOUS LIVE	No hazardous live 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 stranded conductors	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	(See Form A.14)	P
6.7.1	The nature of insulation		—
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		P
6.7.1.2	CLEARANCES		—
	Required CLEARANCES reflecting factors of 6.7.1.1	(See Form A.14 and A.15)	P
	Equipment rated for operating altitude greater than 2000 m correction factor of Table 3 of 61010-1 applied	Up to 2 000 m	N/A
6.7.1.3	CREEPAGE DISTANCES		—
	Required CREEPAGE DISTANCES reflecting factors of 6.7.1.1 a) to d)	(See Form A.14 and A.15)	P
	CTI material group reflected by requirements		P
	CTI test performed		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.7.1.4	Solid insulation		—
	Required solid insulation reflecting factors of 6.7.1.1 a) to d)	(See Form A.14 and A.15)	P
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	Applied	P
	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		P
6.7.2.1	CLEARANCES and CREEPAGE DISTANCES	(See Form A.14 and A.15)	—
	Values for MAINS CIRCUITS of Table 4 are met		P
	Coatings to achieve reduction to POLLUTION DEGREE 1 comply with requirements of Annex H	Pollution degree 2	N/A
6.7.2.2	Solid insulation		—
6.7.2.2.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4		P
	Equipment passed voltage tests of 6.8.3 with values of Table 5	(See Form A.18)	P
	Complies as applicable:		—
	a) ENCLOSURE or PROTECTIVE BARRIER of Clause 8	Enclosure complies with the rigidity requirements of clause 8	P
	b) moulded and potted parts requirements of 6.7.2.2.2	Approval SMPS used	N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) inner layers of printed wiring boards requirements of 6.7.2.2.3	No such parts	N/A
	d) thin-film insulation requirements of 6.7.2.2.4	Approval SMPS used	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	No such parts	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	Approval SMPS used	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		N/A
6.7.3	Insulation for secondary circuits derived from MAINS CIRCUITS of OVERVOLTAGE CATEGORY II up to 300 V	No such insulation relied upon	N/A
6.7.3.1	Secondary circuits where separation from MAINS CIRCUITS is achieved by a transformer providing:	No such insulation relied upon	—
	– REINFORCED INSULATION		N/A
	– DOUBLE INSULATION		N/A
	– screen connected to the PROTECTIVE CONDUCTOR TERMINAL		N/A
6.7.3.2	CLEARANCES	No such insulation relied upon	—
	a) meet the values of Table 6 for BASIC INSULATION and SUPPLEMENTARY INSULATION; or		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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;		—
	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		—
	Based on WORKING VOLTAGE meets the values of Table 7 for BASIC and SUPPLEMENTARY INSULATION	No such insulation relied upon	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		—
6.7.3.4.1	Withstands electrical and mechanical stresses in normal use and all RATED environmental conditions of 1.4	No such insulation relied upon	—
	a) Equipment passed voltage test of 6.8.3.1 for 5 s with VALUES of Table 6 for BASIC and SUPPLEMENTARY INSULATION		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		N/A
	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		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductors between same two layers are separated by applicable distances of Table 8	No such insulation relied upon	N/A
6.7.3.4.3	Inner insulation layers of printed wiring boards	No such insulation relied upon	—
	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	No such insulation relied upon	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:		—
	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	(See Form A.14 and A.18)	P
6.9	Constructional requirements for protection against electric shock		P
6.9.1	If a failure could cause a HAZARD:		—
	a) security of wiring connections	Not depend on soldering	P
	b) screws securing removable covers	No such screws	N/A
	c) accidental loosening		P
	d) CLEARANCES and CREEPAGE DISTANCES not reduced below the values of basic insulation by loosening of parts or wires	Not reduced	P
6.9.2	Insulating materials		P
	Material not to be used for safety relevant insulation:		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) easily damaged materials not used	Certified insulating materials used	P
	b) non-impregnated hygroscopic materials not used	Non-impregnated hygroscopic materials not used	P
6.9.3	Colour coding		P
	Green-and-yellow insulation shall not be used except:		—
	a) protective earth conductors;	Green / Yellow	P
	b) PROTECTIVE BONDING conductors;	Green / Yellow	P
	c) potential equalization conductors;	No such conductors	N/A
	d) functional earth conductors	No such conductors	N/A
6.10	Connection to MAINS supply source and connections between parts of equipment		P
6.10.1	MAINS supply cords		—
	RATED for maximum equipment current (see 5.1.3 c)	0.75 mm^2 x 3G	P
	Cable complies with IEC 60227 or IEC 60245	H05VV-F	P
	Heat-resistant if likely to contact hot parts	No such parts	N/A
	Temperature RATING (cord and inlet) .....:		—
	Green/yellow used only for connection to PROTECTIVE CONDUCTOR TERMINALS	Green / Yellow	P
	Detachable cords with IEC 60320 MAINS connectors:		—
	Conform to IEC 60799; or		P
	Have the current RATING of the MAINS connector		P
6.10.2	Fitting of non-detachable MAINS supply cords		—
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
6.10.2.2	Cord anchorage		—
	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

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Push-pull and or torque test		N/A
6.10.3	Plugs and connectors		P
	MAINS supply plugs, connectors etc., conform with relevant specifications		P
	If equipment supplied at voltages below 6.3.2.a) or from a sole source:	100-120/220-240 V~ rated	—
	Plugs of supply cords do not fit MAINS sockets above rated SUPPLY voltage		P
	MAINS type plugs used only for connection to MAINS supply		P
	Plug pins which receive a charge from an internal capacitor	(See Form A.5)	P
	Accessory MAINS socket outlets:	No 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		P
6.11.1	Disconnects all current-carrying conductors	Switch and Detachable power cord used	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	Not permanently connected 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
	c) marking as disconnecting for the equipment		N/A
6.11.3.2	Single-phase cord-connected equipment		P
	Equipment is provided with one of the following:		—
	a) switch or circuit-breaker	Switch used	P
	b) appliance coupler (disconnectable without tool)	Appliance coupler used	P
	c) separable plug (without locking device)		P
6.11.4	Disconnecting devices		P
6.11.4.1	Disconnecting device part of equipment		P
	Electrically close to the SUPPLY		P

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
6.11.4.2	Switches and circuit-breakers	Switch used	P
	When used as disconnection device:		—
	Meets IEC 60947-1 and IEC 60947-3		P
	Marked to indicate function .....:	Symbols 9, 10 used	—
	Not incorporated in MAINS cord		P
	Does not interrupt PROTECTIVE EARTH CONDUCTOR		P
6.11.4.3	Appliance couplers and plugs	Appliance couplers, Plug used	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		P
	PROTECTIVE EARTH CONDUCTOR connected first and disconnected last		P
7	PROTECTION AGAINST MECHANICAL HAZARDS		—
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		P
	Easily touched parts are smooth and rounded	No hazards	P
	Do not cause injury during NORMAL USE and		P
	Do not cause injury during SINGLE FAULT CONDITION		P
7.3	Moving parts		P
7.3.1	HAZARDS from moving parts limited to a tolerable level with the conditions specified in 7.3.2 and 7.3.5	No such moving parts	N/A
	RISK assessment in accordance with 7.3.3 carried out		N/A
7.3.2	Exceptions		P
	Access to HAZARDOUS moving parts permitted under following circumstances:		—
	a) obviously intended to operate on parts or materials external of the equipment		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	2) statement about training in the instructions	Described on manual	P
	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	No such 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	No such parts	N/A
	Following levels are met in NORMAL and SINGLE FAULT CONDITION:		—
	Continuous contact pressure below 50 N / cm² with force below 150 N		N/A
	Temporary force below 250 N for an area at least of 3 cm² for a maximum duration of 0,75 s		N/A
7.3.5	Gap limitations between moving parts	No moving parts	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	No moving parts	—
	Maximum gap as specified in table 14 assured in NORMAL and in SINGLE FAULT CONDITION		N/A
7.4	Stability		P
	Equipment not secured to building structure is physical stable		P
	Stability maintained after opening of drawers etc. by automatic means, or		N/A
	warning marking requires the application of means		P
	Compliance checked by following tests as applicable:		—
	a) 10° tilt test for other than handheld equipment	Not overvalance	P

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) multi-directional force test for equipment exceeds height of 1 m and mass of 25 kg	Tested 250 N force at unit height 473 mm	P
	c) downward force test for floor-standing equipment	Test: 800 N	P
	d) overload test with 4 times maximum load for castor or support that supports greatest load	No such castor	N/A
	e) castor or support that supports greatest load removed from equipment	No such castor	N/A
7.5	Provisions for lifting and carrying	Described on manual	P
7.5.1	Equipment more than 18 kg :	Unit weight: 67 kg	—
	Has means for lifting or carrying; or		N/A
	Directions in documentation	Described on manual	P
7.5.2	Handles and grips	No handles and grips	—
	Handles or grips withstand four times weight		N/A
7.5.3	Lifting devices and supporting parts	No 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	No wall mounting	N/A
	Mounting brackets withstand four times weight		N/A
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		—
8.1	Equipment does not cause a HAZARD when subjected to mechanical stresses in NORMAL USE		P
	Normal protection level is 5 J	Considered 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
	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

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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	(See Clause 8.2.1)	P
	2) impact test of 8.2.2 with 5 J except for HAND-HELD EQUIPMENT	(See Clause 8.2.2)	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	(See Clause 8.3.1)	P
	Equipment RATED with an impact rating of IK 08 that obviously meets the criteria		N/A
	After the tests inspection with following results:		—
	– HAZARDOUS LIVE parts above the limits of 6.3.2 not ACCESSIBLE		P
	– insulation pass the voltage tests of 6.8	(See Form A.30)	P
	i) no leaks of corrosive and harmful substances		P
	ii) ENCLOSURE shows no cracks resulting in a HAZARD		P
	iii) CLEARANCES not less than their permitted values		P
	iv) insulation of internal wiring remains undamaged		P
	v) PROTECTIVE BARRIERS not damaged or loosened	No protective barriers	N/A
	vi) No moving parts exposed, except permitted by 7.3		P
	vii) no damage which could cause spread of fire		P
8.2	ENCLOSURE rigidity test		P
8.2.1	Static test	(See Form A.21A)	P
	– 30 N with 12 mm rod to each part of ENCLOSURE	Applied to enclosure with acceptable results	P
	– in case of doubt test conducted at maximum RATED ambient temperature		P
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.....:	IK08	—
	Non-metallic ENCLOSURES cooled to minimum RATED ambient temperature if below 2 °C		N/A
8.3	Drop test		P
8.3.1	Other than HAND-HELD and DIRECT-PLUG-IN EQUIPMENT	Equipment weight: 67 kg	P
	Tests conducted with a drop height or angle of .....:	(See Form A.21B)	—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.2	HAND-HELD and DIRECT-PLUG-IN EQUIPMENT		—
	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		—
9.1	No spread of fire in NORMAL and SINGLE FAULT CONDITION		P
	MAINS supplied equipment meets requirements of 9.6 additionally	Overcurrent protection per clause 9.6 provided	P
	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	(See Form A.1)	P
	b) Application of 9.2 (eliminating or reducing the sources of ignition); or		N/A
	c) Application of 9.3 (containment of fire within the equipment)		P
9.2	Eliminating or reducing the sources of ignition within the equipment	No relied upon	N/A
	a) 1) Limited-energy circuit (see 9.4); or		N/A
	b) 2) BASIC INSULATION provided for parts of different potential; or		N/A
	Bridging the insulation does not cause ignition		N/A
	c) Surface temperature of liquids and parts (see 9.5)		N/A
	d) No ignition in circuits designed to produce heat		N/A
9.3	Containment of the fire within the equipment, should it occur		P
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	Enclosure is conform with constructional requirements of 9.3.2	P
	Requirements of 9.5 are met	No flammable liquids	N/A
9.3.2	Constructional requirements		—
	a) Connectors and insulating material have flammability classification V-2 or better		P
	b) Insulated wires and cables are flame retardant (VW-1 or equivalent)		P
	c) ENCLOSURE meets following requirements:	(See Form A.22)	—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	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		P
	3) ENCLOSURE and any baffle or flame barrier have adequate rigidity	Enclosure have adequate rigidity	P
9.4	Limited-energy circuit	No limited-energy circuit	N/A
	a) Potential not more than 30 r.m.s. and 42,4 V peak, or 60 V dc		N/A
	b) Current limited by one of following means:		—
	1) Inherently or by impedance (see table 17); or		N/A
	2) Overcurrent protective device (see table 18); or		N/A
	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		N/A
9.5	Requirements for equipment containing or using flammable liquids	No flammable liquids	N/A
	Flammable liquids contained in or specified for use with equipment do not cause spread of fire		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		P
9.6.1	MAINS supplied equipment protected		P
	BASIC INSULATION between MAINS parts of opposite polarity provided	(See Form A.14 and A.15)	P

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Devices not in the protective conductor	Not fitted	P
	Fuses or single-pole circuit-breakers not fitted in neutral (multi-phase)	Single-phase equipment	N/A
9.6.2	PERMANENTLY CONNECTED EQUIPMENT	Non-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		—
	Protection within the equipment	Protection device provided within the equipment	P
10	EQUIPMENT TEMPERATURE LIMITS AND RESISTANCE TO HEAT		—
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	The equipment tested maximum ambient temperature at 40 ℃	P
	– for equipment rated above 40 °C ambient temperature limits not exceeded raised by the difference to 40 °C		N/A
	Heated surfaces necessary for functional reasons exceeding specified values:		—
	– 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
10.2	Temperatures of windings	(See Form A.26A)	P
	Limits not exceeded in:		—
	NORMAL CONDITION	Not exceeded	P
	SINGLE FAULT CONDITION	Not exceeded	P
10.3	Other temperature measurements		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

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Parts made of insulating material supporting parts connected to MAINS supply		P
	e) Terminals carrying a current more than 0,5 A		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		P
	Tests conducted in test corner	(See Form A.26A)	P
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	(See Form A.16)	P
10.5.2	Non-metallic ENCLOSURES		P
	Within 10 min after treatment:		—
	Equipment subjected to suitable stresses of 8.2 and 8.3 complying with criteria of 8.1		P
10.5.3	Insulating material		P
	a) Parts supporting parts connected to MAINS supply		P
	b) TERMINALS carrying a current more than 0,5 A		P
	Examination of material data; or		N/A
	in case of doubt:		P
	1) Ball pressure test; or	(See Form A.28)	P
	2) Vicat softening test of ISO 306		N/A
11	PROTECTION AGAINST HAZARDS FROM FLUIDS		—
11.1	Protection to OPERATORS and surrounding area provided by EQUIPMENT		P
	All fluids specified by manufacturer considered		P
11.2	Cleaning	(See Form A.30)	P
11.3	Spillage		N/A
11.4	Overflow		N/A
11.5	Battery electrolyte	No battery	N/A
	Battery electrolyte leakage presents no HAZARD		N/A
11.6	Specially protected equipment	IPX0	N/A
11.7	Fluid pressure and leakage		N/A
11.7.1	Maximum pressure ..... :		—

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 ....:		—
	a) product of pressure and volume > 200 kPal; 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		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
12	PROTECTION AGAINST RADIATION, INCLUDING LASER SOURCES, AND AGAINST SONIC AND ULTRASONIC PRESSURE		—
12.1	Equipment provides protection		N/A
12.2	Equipment producing ionizing radiation	No ionizing radiation.	N/A
12.2.1	Ionizing radiation		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 µSv/h marked with the following:		—
	a) symbol 17 (ISO 361)		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) abbreviations of the radionuclides..... :		—
	c) with maximum dose at 1 m; or ..... :		—
	with dose rate value between 1 µSv/h and 5 µSv/h in m..... :		—
12.2.1.3	Equipment not intended to emit radiation		—
	Limit for unintended stray radiation of 1 µSv/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 ultraviolet 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 and ultrasonic pressure	N/A
12.5.1	Sound level		—
	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		N/A
	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

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
13	PROTECTION AGAINST LIBERATED GASES AND SUBSTANCES, EXPLOSION AND IMPLOSION		—
13.1	Poisonous and injurious gases and substances	No such gases inside	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	No such component	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 such component	—
	If explosion or fire HAZARD could occur:		—
	Protection incorporated in the equipment; or		N/A
	Instructions specify batteries with built-in protection		N/A
	In case of wrong type of battery used:		—
	No HAZARD; or		N/A
	Warning by marking and within instructions		N/A
	Equipment with means to charge rechargeable batteries:		—
	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 cathode ray tubes	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

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	If glass screen, not in contact with surface of tube		N/A
14	COMPONENTS AND SUBASSEMBLIES		—
14.1	Where safety is involved, components and subassemblies meet relevant requirements	(See TABLE 3)	P
14.2	Motors	Approval motor used	N/A
14.2.1	Motor temperatures		N/A
	Does not present a HAZARD when stopped or prevented from starting; or		N/A
	Protected by over-temperature or thermal protection device conform with 14.3		N/A
14.2.2	Series excitation motors	No series excitation motors	N/A
	Connected direct to device, if overspeeding causes a HAZARD		N/A
14.3	Overtemperature protection devices	(See TABLE 3)	P
	Devices operating in a SINGLE FAULT CONDITION		P
	a) Reliable function is ensured		P
	b) RATED to interrupt maximum current and voltage		P
	c) Does not operate in NORMAL USE		P
	If self-resetting device used to prevent a HAZARD, protected part requires intervention before restarting		N/A
14.4	Fuse holders	(See TABLE 3)	P
	No access to HAZARDOUS LIVE parts	No operator replaceable fuse	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	(See Form A.39, 40)	P
14.7	Printed circuit boards		P
	Data shows conformity with V-1 of IEC 60695-11-10 or better; or	(See TABLE 3)	P
	Test shows conformity with V-1 of IEC 60695-11-10 or better		N/A
	Not applicable for printed wiring boards with limited-energy circuits (9.4)		N/A
14.8	Circuits or components used as TRANSIENT OVERVOLTAGE limiting devices	No such devices	N/A
	Test conducted between each pair of MAINS SUPPLY TERMINALS		N/A
	No HAZARD resulting from rupture or overheating of the component:		—
	– no bridging of safety relevant insulation		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	– no heat to other parts above the self-ignition points		N/A
15	PROTECTION BY INTERLOCKS		—
15.1	Interlocks are designed to remove a HAZARD before OPERATOR exposed		P
15.2	Prevention of reactivation	Program reset by operator	P
15.3	Reliability		P
	Single fault unlikely to occur; or	The door does not opened by vacuum, No hazard	P
	Cannot cause a HAZARD	Test by 10 000 cycle of operation	P
16	HAZARDS RESULTING FROM APPLICATION		—
16.1	REASONABLY FORESEEABLE MISUSE		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		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
17	RISK ASSESSMENT		—
	RISK assessment conducted, if HAZARD might arise and not covered by Clauses 6 to 16		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

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		—
	Manufacturer ´s declaration		P
ANNEX H	QUALIFICATION OF CONFORMAL COATINGS FOR PROTECTION AGAINST POLLUTION		—
H.1	General	No such parts	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:		—
	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		N/A
	Coating complies with the conformity requirements.		N/A

EN 61010-1			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX K	INSULATION REQUIREMENTS NOT COVERED BY CLAUSE 6.7	Overvoltage category II	N/A

EN 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
4.4.2.3	1	Protective conductor open[1)]	1 h 38 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.3	2	Protective conductor open[2)]	2 h 13 min	Normal operation, No hazard No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.7	3	Transformer short[1)]	10 min	Immediately main fuse open, No hazard	P
4.4.2.7	4	Transformer overload[2)]	5 h 56 min	Main fuse open, No hazard	P
4.4.2.7	5	Transformer short[1)]	10 min	Immediately main fuse open, No hazard	P
4.4.2.7	6	Transformer overload[2)]	8 h 13 min	Secondary thermal fuse operating, No hazard	P
4.4.2.8	7	Output short[1)]	1 h 38 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.8	8	Output short[2)]	1 h 15 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.10	9	Ventilation block[1)]	5 h 6 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.10	10	Ventilation block[2)]	4 h 42 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P

EN 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
4.4.2.10	11	Fan lock (Left)[1)]	2 h 8 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.10	12	Fan lock (Left)[2)]	2 h 10 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.10	13	Fan lock (Right)[1)]	3 h 35 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.10	14	Fan lock (Right)[2)]	2 h 17 min	Normal operation, No hazard, No damage, Not exceed the temperature limited (Refer to appended form A.26A)	P
4.4.2.13	15	Interlock[1) 2)]	1 s	Error Message and alarmed (ERROR #3.1 Door open)	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:

1): 132 V, 50 Hz, 2): 264 V, 50 Hz

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

5.1.3c)	**TABLE: MAINS supply**		**Form A.2**	P
	Marked rating ..... :	100-120/220-240	V	—
	Phase ..... :	Single phase		—
	Frequency ..... :	50/60	Hz	—
	Current ..... :	10	A	—
	Power ..... :	-	W	—
	Power ..... :	-	kVA	—

Test No.	Voltage [V]	Frequency [Hz]	Current [A]	Power [kW]	Power [kVA]	Comments
1	90	50	5.55	0.50	0.50	*Max. Normal operation
2	100	50	5.69	0.57	0.57	*Max. Normal operation
3	120	50	5.91	0.70	0.71	*Max. Normal operation
4	132	50	5.92	0.71	0.77	*Max. Normal operation
5	90	60	6.19	0.59	0.59	*Max. Normal operation
6	100	60	6.66	0.65	0.66	*Max. Normal operation
7	120	60	6.22	0.72	0.74	*Max. Normal operation
8	132	60	6.23	0.81	0.82	*Max. Normal operation
9	198	50	3.16	0.57	0.61	*Max. Normal operation
10	220	50	3.26	0.69	0.73	*Max. Normal operation
11	240	50	3.28	0.71	0.75	*Max. Normal operation
12	264	50	3.43	0.87	0.89	*Max. Normal operation
13	198	60	2.93	0.56	0.60	*Max. Normal operation
14	220	60	2.99	0.64	0.68	*Max. Normal operation
15	240	60	2.94	0.67	0.69	*Max. Normal operation
16	264	60	3.06	0.77	0.81	*Max. Normal operation

NOTE – Measurements are only required for marked ratings.

Supplementary information:
- *Max. Normal operation : Continuous operation STERLOAD mode
- Retest due to component change and addition

EN 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)
MAINS supply (5.1.3)	1)
Fuses (5.1.4)	-
Terminals and operating devices (5.1.5.2)	2)
Switches and circuit breakers (5.1.6)	2), 5)
Double/reinforced equipment (5.1.7)	-
Field wiring Terminal boxes (5.1.8)	-
Warning marking (5.2)	1)
Battery charging (13.2.2)	-

Method	Test agent	Remains legible	Label loose	Curled edges	Comments
		Verdict	Verdict	Verdict	
Rubbed by cloth	B	Yes	No	No	Rubbed for 30 s

Supplementary information:

EN 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)
1	Plastic enclosure	V, J, R	N/A
2	LCD Panel	V, J, R	N/A
3	Metal enclosure	V, J, R	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:

EN 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[1)]	0.15	-	-	-	-	-	-	-	-	-	-	-	
2[1)]	0.15	-	-	-	-	-	-	-	-	-	-	-	
3[1)]	0.01	-	-	-	-	-	-	-	-	-	-	-	
1[2)]	0.15	-	-	-	-	-	-	-	-	-	-	-	
2[2)]	0.15	-	-	-	-	-	-	-	-	-	-	-	
3[2)]	0.01	-	-	-	-	-	-	-	-	-	-	-	
Cl. 6.10.3	-	-	-	-	-	-	-	-	-	14	25.6	-	

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:
[1)]: 132 V~, [2)]: 264 V~

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

6.3.2	**TABLE: Values in SINGLE FAULT CONDITION**										**Form A.6**	P
Item	Subclause and	Voltage			Transient (see NOTE)		Current				Capacitance	Comments
(see Form A.4)	fault No. (see Form A.1)	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	1[1)]	2.0	-	-	-	-	-	-	-	-	-	
2	1[1)]	2.1	-	-	-	-	-	-	-	-	-	
3	1[1)]	33	-	-	-	-	-	-	-	-	-	
1	2[2)]	1.2	-	-	-	-	-	-	-	-	-	
2	2[2)]	1.4	-	-	-	-	-	-	-	-	-	
3	2[2)]	34	-	-	-	-	-	-	-	-	-	
1	3	2.0	-	-	-	-	-	-	-	-	-	
2	3	2.1	-	-	-	-	-	-	-	-	-	
3	3	1.8	-	-	-	-	-	-	-	-	-	
1	4	2.0	-	-	-	-	-	-	-	-	-	
2	4	2.1	-	-	-	-	-	-	-	-	-	
3	4	1.8	-	-	-	-	-	-	-	-	-	
1	7[1)]	2.0	-	-	-	-	-	-	-	-	-	
2	7[1)]	1.9	-	-	-	-	-	-	-	-	-	
3	7[1)]	1.8	-	-	-	-	-	-	-	-	-	
1	8[2)]	1.9	-	-	-	-	-	-	-	-	-	
2	8[2)]	1.9	-	-	-	-	-	-	-	-	-	

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

6.3.2	**TABLE: Values in SINGLE FAULT CONDITION**										**Form A.6**	P
Item	Subclause and	Voltage			Transient (see NOTE)		Current				Capacitance	Comments
(see Form A.4)	fault No. (see Form A.1)	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)	
3	8[2)]	1.8	-	-	-	-	-	-	-	-	-	
1	9[1)]	2.1	-	-	-	-	-	-	-	-	-	
2	9[1)]	2.0	-	-	-	-	-	-	-	-	-	
3	9[1)]	1.9	-	-	-	-	-	-	-	-	-	
1	10[2)]	2.2	-	-	-	-	-	-	-	-	-	
2	10[2)]	1.9	-	-	-	-	-	-	-	-	-	
3	10[2)]	1.8	-	-	-	-	-	-	-	-	-	
1	11[1)]	2.2	-	-	-	-	-	-	-	-	-	
2	11[1)]	1.9	-	-	-	-	-	-	-	-	-	
3	11[1)]	1.8	-	-	-	-	-	-	-	-	-	
1	12[2)]	1.25	-	-	-	-	-	-	-	-	-	
2	12[2)]	1.40	-	-	-	-	-	-	-	-	-	
3	12[2)]	34.9	-	-	-	-	-	-	-	-	-	
1	13[1)]	0.15	-	-	-	-	-	-	-	-	-	
2	13[1)]	0.15	-	-	-	-	-	-	-	-	-	
3	13[1)]	0.01	-	-	-	-	-	-	-	-	-	
1	14[2)]	0.15	-	-	-	-	-	-	-	-	-	

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

6.3.2	**TABLE: Values in SINGLE FAULT CONDITION**										**Form A.6**	P
Item	Subclause and	Voltage			Transient (see NOTE)		Current				Capacitance	Comments
(see Form A.4)	fault No. (see Form A.1)	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)	
2	14[2)]	0.15	-	-	-	-	-	-	-	-	-	
3	14[2)]	0.01	-	-	-	-	-	-	-	-	-	
1	15[1) 2)]	0.15	-	-	-	-	-	-	-	-	-	
2	15[1) 2)]	0.15	-	-	-	-	-	-	-	-	-	
3	15[1) 2)]	0.01	-	-	-	-	-	-	-	-	-	
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: [1)]: 132 V~, [2)]: 264 V~												

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

6.5.2.2	TABLE: Cross-sectional area of bonding conductors	Form A.7	P
Conductor location	CROSS-SECTIONAL AREA [mm²]		Verdict
Internal metal plate	0.75		P
Supplementary information:			

6.5.2.3	TABLE: Tightening torque test	Form A.8	P
Conductor location	Size of screw	Tightening torque [Nm]	Verdict
Internal metal plate	4.0 mm	1.2	P
Supplementary information:			

6.5.2.4	TABLE: Bonding impedance of plug connected equipment	Form A.9	P
ACCESSIBLE part under test	Test current [A]	Voltage attained after 1 min [V]	Calculated resistance (Maximum 0,1 Ω) [Ω] (NOTE 1)	Verdict
Metal enclosure	25	0.675	0.027	P
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 PROTECIVE 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:				

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

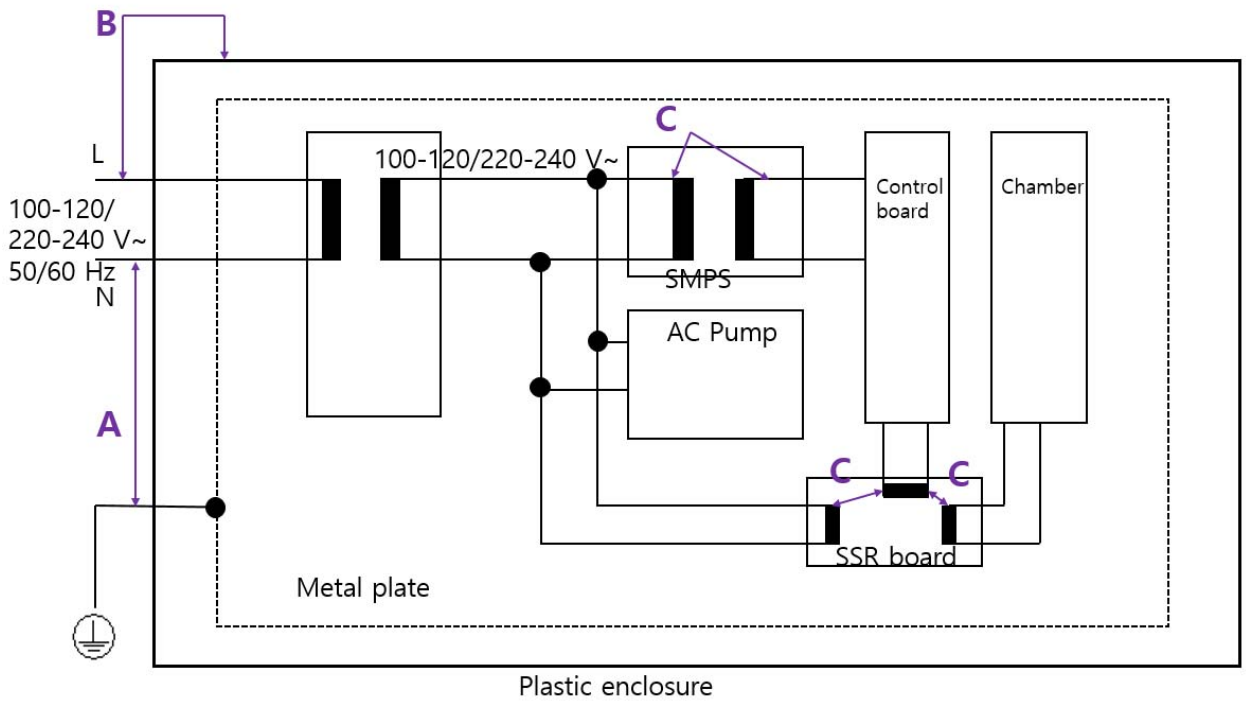
6.5.4	**TABLE: protective impedance**							**Form A.12**	N/A
A single component									
Component	Location	Measured		Calculated	Rated		Verdict	Comments	
		Working voltage [V]	Current [A]	Power dissipation [W]	Working voltage [V]	Power dissipation [W]			
A combination of components									
Component	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:									

EN 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:								

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

6.7	TABLE: Insulation requirements- Block diagram of system	Form A.14	P



Pollution degree..... : 2 | Overvoltage category..... : II

Area	Location	Insulation type	WORKING VOLTAGE			Test voltage	Comments (NOTE 3)
		(NOTE 1)	RMS [V]	Peak [V]	Frequency [kHz]	(NOTE 2) [V]	
A	Mains to earthed metal enclosure	BI	240	-	-	1 500	No breakdown
B	Mains to Plastic enclosure	DI/RI	240	-	-	3 000	No breakdown
C	Mains to secondary circuit	DI/RI	240	-	-	3 000	No breakdown

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: Cut-off current: 10 mA

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

6.7	**TABLE: Insulation requirements- Clearances and Creepages**		**Form A.15**	P
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	Insulation type	WORKING VOLTAGE (NOTE 2)			Clearance		Creepage		CTI	Verdict	Comments
	(See Form A.14)	(NOTE 1)	RMS [V]	Peak [V]	Frequency [kHz]	Required [mm]	Measured [mm]	Required [mm]	Measured [mm]			
A	Mains to earthed metal enclosure	BI	240	-	-	1.5	5.0	3.0	5.0	IIIb	P	
B	Mains to Plastic enclosure	DI/RI	240	-	-	3.0	8.0	6.0	8.0	IIIb	P	
C	Mains to secondary circuit	DI/RI	240	-	-	3.0	8.0	6.0	8.0	IIIb	P	

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…….:	240	V	50	Hz

Supplementary information:

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

6.7	**TABLE: Insulation requirements- Clearances and Creepages**		**Form A.16**	P
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.	Measured after test (if required)		Verdict	Comments
			Applied force	Rigidity (8.2)		Drop (8.3)		RATED ambient	Clearance	Creepage distance		
			N	Static (8.2.1)	Impact (8.2.2)	Normal (8.3.1)	Hand-held/ Plug-in	(10.5.1)	mm	mm		
A	Mains to earthed metal enclosure	BI	30	P	P	-	-	40 ℃	5.0 (1.5)	5.0 (3.0)	P	
B	Mains to Plastic enclosure	DI/RI	30	P	P	-	-	40 ℃	8.0 (3.0)	8.0 (6.0)	P	
C	Mains to secondary circuit	DI/RI	30	P	P	-	-	40 ℃	8.0 (3.0)	8.0 (6.0)	P	

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

Supplementary information:

EN 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**	N/A

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 / 125 °C	1 h / 25 °C	2 h / 0 °C	1 h / 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:

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

6.8	**TABLE: Dielectric strength tests**	**Form A.18**	P
4.4.4.1 b)	Conformity after application of SINGLE FAULT CONDITIONS[1]		P
6.4	Primary means of protection[2]		P
6.6	Connections to external circuits		N/A
6.7.	Insulation requirements[2] (see Annex K)		N/A
6.10.2	Fitting of non-detachable MAINS supply cords[1]		N/A
9.2 a) 2)	Eliminating or reducing the sources of ignition within the equipment		N/A
9.4 c)	Limited-energy circuit		N/A
9.6.1	Overcurrent protection basic insulation between MAINS - parts		P
	Test site altitude .....:	2 000 m	—
	Test voltage correction factor (see table 10).....:	1.0	—

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 to 15 (Form A.1)	4.4.4.1 b)	No	240	1 500	No breakdown	P
A (Form A.14)	6.8.3	Yes	240	1 500	No breakdown	P
B (Form A.14)	6.8.3	Yes	240	3 000	No breakdown	P
C (Form A.14)	6.8.3	Yes	240	3 000	No breakdown	P

[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: Cut-off current: 10 mA

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:							

EN 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 /cm² @ max. 150 N	max. 250 N / 3 cm² @ 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:

EN 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:	-					—
	Operated at ambient temperature .....:	40	° C		h		—
Location		Comments					Verdict
1) Plastic enclosure (Top)		No damage, No hazard					P
2) Plastic enclosure (Side: Left, Right)		No damage, No hazard					P
3) Plastic enclosure (Front)		No damage, No hazard					P
4) Plastic enclosure (Rear)		No damage, No hazard					P
Supplementary information:							
8.2.2	**Dynamic test**						P
	Material of enclosure .....:	Non-metallic					—
	Corresponding IK-code .....:	-					—
	Preparation for the test:	-					—
	Cooled to (temperature) .....:		° C				—
Location		Comments					Verdict
1) Top		No damaged, No hazard					P
2) Side left / right		No damaged, No hazard					P
3) Bottom		No damaged, No hazard					P
Supplementary information:							

EN 61010-1			
Clause	Requirement – Test	Result - Remark	Verdict

8.3	**Drop test**		**Form A.21B**	P
8.3.1	Other equipment			P
Location	Raised up to		Comments	—
	[mm]	30 °		—
1) Front- Right side	100	-	No damaged, No hazard	P
2) Front- Left side	100	-	No damaged, No hazard	P
3) Rear- Left side	100	-	No damaged, No hazard	P
4) Rear- Right side	100	-	No damaged, No hazard	P
Supplementary information:				

8.3.2	Hand-held EQUIPMENT and direct plug-in equipment		N/A
	Material of enclosure .....:	Metal / non-metallic	—
	Preparation for the test:		—
	Cooled to (temperature) .....:	° C	—
Location		Comments	Verdict
1) Side			
2) Edge			
3) Corner			
Supplementary information:			

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

9	**TABLE: Protection against the spread of fire**		**Form A.22**	P
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	Circuit, component	9.1 a)	Complied with clause 4.4.4.3	P
2	Enclosure	9.1 c)	Complied with clause 9.3	P
Supplementary information:				

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

9.3.2	**TABLE: Constructional requirements**	**Form A.23**	N/A
14.7	Printed circuit boards		N/A

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:

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

9.4	TABLE: Limited-energy circuit					Form A.24	N/A
Item or Location (see Form A.22)	9.4 a) Maximum potential in circuit voltage r.m.s./d.c. [V]	9.4 b) Current limitation (NOTE) Maximum available current [A]	Overload protection after 120 s [A]	9.4 c) Circuit separation	Decision Yes/No	Comments	
NOTE – Maximum values see Tables 17 and 18 of IEC 61010-1							
Supplementary information:							

9.5	TABLE: Requirements for equipment containing or using flammable liquids		Form A.25	N/A
Type of liquid	9.5 Flammable liquids			Verdict
	b) Quantity	c) Containment		
Supplementary information:				

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	60 Hz	Test room ambient temperature (ta) .. :	23.4 °C
Voltage..... :	90 V	Test duration ..... :	2 h 19 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	42.7	59.3	-	-	
Primary wire	26.6	43.2	105	P	
AC terminal block	35.3	51.9	-	-	
Inrush current limit body	84.7	101.3	-	-	
Toroidal Transformer	35.2	51.8	105	P	
Noise filter(ES1-T10)	25.1	41.7	-	-	
Relay(PDA1 In SSR board)	33.2	49.8	-	-	
PCB near S8 (In SSR board)	33.9	50.5	105	P	
Fuse holder	52.1	68.7	-	-	
T1 Coil (MSP-200-24)	44.9	61.5	105	P	
T1 Core (MSP-200-24)	41.5	58.1	105	P	
High voltage transformer	41.3	57.9	-	-	
Solenoid valve	68.0	84.6	105	P	
PCB near J12 (In control board)	29.6	46.2	105	P	
Vacuum pump	72.5	89.1	105	P	
LCD Panel	28.4	45.0	85	P	
Plastic enclosure (Left)	27.2	43.8	85	P	
Plastic enclosure (Right)	35.2	51.8	85	P	
Plastic enclosure (Rear)	37.3	53.9	85	P	
Plastic enclosure (Front)	27.4	44.0	85	P	
Plastic enclosure (Top)	28.2	44.8	85	P	
Ambient	23.4	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	60 Hz	Test room ambient temperature (ta) .. :	23.4 °C
Voltage..... :	90 V	Test duration ..... :	2 h 19 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

- Max. operating temperature: 40 ℃
- Retest due to component change and addition

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	23.4 °C
Voltage..... :	132 V	Test duration ..... :	2 h 34 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	45.3	61.9	-	-	
Primary wire	29.8	46.4	105	P	
AC terminal block	34.4	51.0	-	-	
Inrush current limit body	88.7	105.3	-	-	
Toroidal Transformer	41.7	58.3	105	P	
Noise filter(ES1-T10)	27.0	43.6	-	-	
Relay(PDA1 In SSR board)	34.4	51.0	-	-	
PCB near S8 (In SSR board)	35.5	52.1	105	P	
Fuse holder	56.8	73.4	-	-	
T1 Coil (MSP-200-24)	49.0	65.6	105	P	
T1 Core (MSP-200-24)	45.3	61.9	105	P	
High voltage transformer	45.1	61.7	-	-	
Solenoid valve	70.0	86.6	105	P	
PCB near J12 (In control board)	31.1	47.7	105	P	
Vacuum pump	87.2	103.8	105	P	
LCD Panel	29.7	46.3	85	P	
Plastic enclosure (Left)	28.4	45.0	85	P	
Plastic enclosure (Right)	39.3	55.9	85	P	
Plastic enclosure (Rear)	41.0	57.6	85	P	
Plastic enclosure (Front)	28.5	45.1	85	P	
Plastic enclosure (Top)	29.4	46.0	85	P	
Ambient	23.4	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	23.4 °C
Voltage..... :	132 V	Test duration ..... :	2 h 34 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

- Max. operating temperature: 40 ℃
- Retest due to component change and addition

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Protective conductor open		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	19.7 °C
Voltage..... :	132 V	Test duration ..... :	1 h 38 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	34.7	55.0	-	-	
Primary wire	38.6	58.9	105	P	
AC terminal block	37.0	57.3	-	-	
Surge protector	32.6	52.9	-	-	
Toroidal Transformer	35.9	56.2	150	P	
Noise filter(ES1-T10)	24.9	45.2	-	-	
Relay(PDA1 In SSR board)	29.5	49.8	-	-	
PCB near S8 (In SSR board)	38.8	59.1	105	P	
Fuse holder	36.5	56.8	-	-	
T1 Coil (MSP-200-24)	36.9	57.2	150	P	
T1 Core (MSP-200-24)	38.5	58.8	150	P	
High voltage transformer	44.9	65.2	-	-	
Solenoid valve	64.6	84.9	150	P	
PCB near J12 (In control board)	24.9	45.2	105	P	
Vacuum pump	64.6	84.9	150	P	
LCD Panel	26.0	46.3	105	P	
Plastic enclosure (Left)	31.3	51.6	105	P	
Plastic enclosure (Right)	28.2	48.5	105	P	
Plastic enclosure (Rear)	32.3	52.6	105	P	
Plastic enclosure (Front)	28.0	48.3	105	P	
Plastic enclosure (Top)	38.6	58.9	105	P	
Ambient	19.7	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Protective conductor open		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	19.7 °C
Voltage..... :	132 V	Test duration ..... :	1 h 38 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Output short		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	19.7 °C
Voltage..... :	132 V	Test duration ..... :	1 h 38 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	34.5	54.8	-	-	
Primary wire	37.3	57.6	105	P	
AC terminal block	37.0	57.3	-	-	
Surge protector	32.6	52.9	-	-	
Toroidal Transformer	35.0	55.3	150	P	
Noise filter(ES1-T10)	25.9	46.2	-	-	
Relay(PDA1 In SSR board)	29.6	49.9	-	-	
PCB near S8 (In SSR board)	38.8	59.1	105	P	
Fuse holder	38.8	59.1	-	-	
T1 Coil (MSP-200-24)	37.3	57.6	150	P	
T1 Core (MSP-200-24)	38.3	58.6	150	P	
High voltage transformer	44.8	65.1	-	-	
Solenoid valve	61.9	82.2	150	P	
PCB near J12 (In control board)	24.9	45.2	105	P	
Vacuum pump	64.8	85.1	150	P	
LCD Panel	25.9	46.2	105	P	
Plastic enclosure (Left)	31.2	51.5	105	P	
Plastic enclosure (Right)	28.0	48.3	105	P	
Plastic enclosure (Rear)	32.3	52.6	105	P	
Plastic enclosure (Front)	28.1	48.4	105	P	
Plastic enclosure (Top)	38.6	58.9	105	P	
Ambient	19.7	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Output short		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	19.7 °C
Voltage..... :	132 V	Test duration ..... :	1 h 38 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Ventilation block		
Frequency..... :	50 Hz	Test room ambient temperature (ta) ...:	19.5 °C
Voltage..... :	132 V	Test duration ..... :	5 h 06 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	64.9	85.4	-	-	
Primary wire	68.9	89.4	105	P	
AC terminal block	71.2	91.7	-	-	
Surge protector	65.6	86.1	-	-	
Toroidal Transformer	66.7	87.2	150	P	
Noise filter(ES1-T10)	19.6	40.1	-	-	
Relay(PDA1 In SSR board)	65.6	86.1	-	-	
PCB near S8 (In SSR board)	69.1	89.6	105	P	
Fuse holder	73.9	94.4	-	-	
T1 Coil (MSP-200-24)	74.8	95.3	150	P	
T1 Core (MSP-200-24)	75.8	96.3	150	P	
High voltage transformer	74.4	94.9	-	-	
Solenoid valve	85.2	105.7	150	P	
PCB near J12 (In control board)	64.1	84.6	105	P	
Vacuum pump	100.3	120.8	150	P	
LCD Panel	41.3	61.8	105	P	
Plastic enclosure (Left)	48.5	69.0	105	P	
Plastic enclosure (Right)	46.0	66.5	105	P	
Plastic enclosure (Rear)	46.7	67.2	105	P	
Plastic enclosure (Front)	31.0	51.5	105	P	
Plastic enclosure (Top)	36.7	57.2	105	P	
Ambient	19.5	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Ventilation block		
Frequency..... :	50 Hz	Test room ambient temperature (ta) ...:	19.5 °C
Voltage..... :	132 V	Test duration ..... :	5 h 06 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Supplementary information: Max. operating temperature: 40 ℃					

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Fan lock (Left)		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	17.3 °C
Voltage..... :	132 V	Test duration ..... :	2 h 8 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	37.0	59.7	-	-	
Primary wire	38.3	61.0	105	P	
AC terminal block	40.5	63.2	-	-	
Surge protector	35.7	58.4	-	-	
Toroidal Transformer	32.8	55.5	150	P	
Noise filter(ES1-T10)	17.3	40.0	-	-	
Relay(PDA1 In SSR board)	31.3	54.0	-	-	
PCB near S8 (In SSR board)	41.2	63.9	105	P	
Fuse holder	38.0	60.7	-	-	
T1 Coil (MSP-200-24)	41.0	63.7	150	P	
T1 Core (MSP-200-24)	40.3	63.0	150	P	
High voltage transformer	48.3	71.0	-	-	
Solenoid valve	66.3	89.0	150	P	
PCB near J12 (In control board)	25.6	48.3	105	P	
Vacuum pump	69.7	92.4	150	P	
LCD Panel	26.1	48.8	105	P	
Plastic enclosure (Left)	31.8	54.5	105	P	
Plastic enclosure (Right)	27.9	50.6	105	P	
Plastic enclosure (Rear)	33.1	55.8	105	P	
Plastic enclosure (Front)	28.1	50.8	105	P	
Plastic enclosure (Top)	38.8	61.5	105	P	
Ambient	17.3	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Fan lock (Left)		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	17.3 °C
Voltage..... :	132 V	Test duration ..... :	2 h 8 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Fan lock(Right)		
Frequency..... :	50 Hz	Test room ambient temperature (ta) ...:	19.4 °C
Voltage..... :	132 V	Test duration ..... :	3 h 35 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	33.3	53.9	-	-	
Primary wire	38.8	59.4	105	P	
AC terminal block	37.6	58.2	-	-	
Surge protector	34.7	55.3	-	-	
Toroidal Transformer	33.1	53.7	150	P	
Noise filter(ES1-T10)	19.9	40.5	-	-	
Relay(PDA1 In SSR board)	32.8	53.4	-	-	
PCB near S8 (In SSR board)	39.0	59.6	105	P	
Fuse holder	38.7	59.3	-	-	
T1 Coil (MSP-200-24)	41.3	61.9	150	P	
T1 Core (MSP-200-24)	40.9	61.5	150	P	
High voltage transformer	45.1	65.7	-	-	
Solenoid valve	65.4	86.0	150	P	
PCB near J12 (In control board)	30.0	50.6	105	P	
Vacuum pump	66.0	86.6	150	P	
LCD Panel	27.0	47.6	105	P	
Plastic enclosure (Left)	32.1	52.7	105	P	
Plastic enclosure (Right)	29.5	50.1	105	P	
Plastic enclosure (Rear)	35.9	56.5	105	P	
Plastic enclosure (Front)	28.7	49.3	105	P	
Plastic enclosure (Top)	39.0	59.6	105	P	
Ambient	19.4	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Fan lock(Right)		
Frequency..... :	50 Hz	Test room ambient temperature (ta) ...:	19.4 °C
Voltage..... :	132 V	Test duration ..... :	3 h 35 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Supplementary information: Max. operating temperature: 40 ℃					

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	60 Hz	Test room ambient temperature (ta) .. :	21.1 °C
Voltage..... :	198 V	Test duration ..... :	3 h 02 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	42.0	60.9	-	-	
Primary wire	27.7	46.6	105	P	
AC terminal block	30.3	49.2	-	-	
Inrush current limit body	49.1	68.0	-	-	
Toroidal Transformer	40.0	58.9	105	P	
Noise filter(ES1-T10)	27.1	46.0	-	-	
Relay(PDA1 In SSR board)	33.7	52.6	-	-	
PCB near S8 (In SSR board)	34.7	53.6	105	P	
Fuse holder	50.4	69.3	-	-	
T1 Coil (MSP-200-24)	49.2	68.1	105	P	
T1 Core (MSP-200-24)	45.8	64.7	105	P	
High voltage transformer	45.7	64.6	-	-	
Solenoid valve	72.8	91.7	105	P	
PCB near J12 (In control board)	30.7	49.6	105	P	
Vacuum pump	81.1	100.0	105	P	
LCD Panel	30.1	49.0	85	P	
Plastic enclosure (Left)	28.3	47.2	85	P	
Plastic enclosure (Right)	36.5	55.4	85	P	
Plastic enclosure (Rear)	26.4	45.3	85	P	
Plastic enclosure (Front)	28.0	46.9	85	P	
Plastic enclosure (Top)	29.3	48.2	85	P	
Ambient	21.1	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	60 Hz	Test room ambient temperature (ta) .. :	21.1 °C
Voltage..... :	198 V	Test duration ..... :	3 h 02 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

- Max. operating temperature: 40 ℃
- Retest due to component change and addition

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	20.7 °C
Voltage..... :	264 V	Test duration..... :	2 h 14 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	41.2	60.5	-	-	
Primary wire	27.4	46.7	105	P	
AC terminal block	30.0	49.3	-	-	
Inrush current limit body	48.6	67.9	-	-	
Toroidal Transformer	40.9	60.2	105	P	
Noise filter(ES1-T10)	26.9	46.2	-	-	
Relay(PDA1 In SSR board)	33.4	52.7	-	-	
PCB near S8 (In SSR board)	34.2	53.5	105	P	
Fuse holder	49.1	68.4	-	-	
T1 Coil (MSP-200-24)	48.7	68.0	105	P	
T1 Core (MSP-200-24)	45.1	64.4	105	P	
High voltage transformer	45.1	64.4	-	-	
Solenoid valve	70.2	89.5	105	P	
PCB near J12 (In control board)	30.3	49.6	105	P	
Vacuum pump	81.1	100.4	105	P	
LCD Panel	29.5	48.8	85	P	
Plastic enclosure (Left)	28.0	47.3	85	P	
Plastic enclosure (Right)	36.1	55.4	85	P	
Plastic enclosure (Rear)	25.1	44.4	85	P	
Plastic enclosure (Front)	27.4	46.7	85	P	
Plastic enclosure (Top)	28.8	48.1	85	P	
Ambient	20.7	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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~~	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode		
Frequency..... :	50 Hz	Test room ambient temperature (ta) .. :	20.7 °C
Voltage..... :	264 V	Test duration..... :	2 h 14 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Supplementary information: - Max. operating temperature: 40 ℃ - Retest due to component change and addition					

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Protective conductor open		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	21.2 °C
Voltage.....:	264 V	Test duration ..... :	2 h 13 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	31.6	50.4	-	-	
Primary wire	31.0	49.8	105	P	
AC terminal block	33.4	52.2	-	-	
Surge protector	28.3	47.1	-	-	
Toroidal Transformer	31.0	49.8	150	P	
Noise filter(ES1-T10)	24.9	43.7	-	-	
Relay(PDA1 In SSR board)	38.0	56.8	-	-	
PCB near S8 (In SSR board)	35.8	54.6	105	P	
Fuse holder	33.7	52.5	-	-	
T1 Coil (MSP-200-24)	38.3	57.1	150	P	
T1 Core (MSP-200-24)	41.7	60.5	150	P	
High voltage transformer	42.0	60.8	-	-	
Solenoid valve	67.9	86.7	150	P	
PCB near J12 (In control board)	30.5	49.3	105	P	
Vacuum pump	57.6	76.4	150	P	
LCD Panel	27.0	45.8	105	P	
Plastic enclosure (Left)	29.2	48.0	105	P	
Plastic enclosure (Right)	29.2	48.0	105	P	
Plastic enclosure (Rear)	30.8	49.6	105	P	
Plastic enclosure (Front)	25.3	44.1	105	P	
Plastic enclosure (Top)	35.4	54.2	105	P	
Ambient	21.2	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Protective conductor open		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	21.2 °C
Voltage.....:	264 V	Test duration ..... :	2 h 13 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Output short		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	22.0 °C
Voltage.....:	264 V	Test duration ..... :	1 h 15 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	32.4	50.4	-	-	
Primary wire	32.1	50.1	105	P	
AC terminal block	34.7	52.7	-	-	
Surge protector	28.5	46.5	-	-	
Toroidal Transformer	33.7	51.7	150	P	
Noise filter(ES1-T10)	25.8	43.8	-	-	
Relay(PDA1 In SSR board)	38.5	56.5	-	-	
PCB near S8 (In SSR board)	36.0	54.0	105	P	
Fuse holder	34.2	52.2	-	-	
T1 Coil (MSP-200-24)	39.9	57.9	150	P	
T1 Core (MSP-200-24)	42.8	60.8	150	P	
High voltage transformer	42.5	60.5	-	-	
Solenoid valve	66.6	84.6	150	P	
PCB near J12 (In control board)	31.1	49.1	105	P	
Vacuum pump	58.9	76.9	150	P	
LCD Panel	28.0	46.0	105	P	
Plastic enclosure (Left)	29.5	47.5	105	P	
Plastic enclosure (Right)	29.0	47.0	105	P	
Plastic enclosure (Rear)	31.1	49.1	105	P	
Plastic enclosure (Front)	26.4	44.4	105	P	
Plastic enclosure (Top)	35.9	53.9	105	P	
Ambient	22.0	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Output short		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	22.0 °C
Voltage.....:	264 V	Test duration ..... :	1 h 15 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Ventilation block		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	23.9 °C
Voltage.....:	264 V	Test duration ..... :	4 h 42 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	62.4	78.5	-	-	
Primary wire	62.1	78.2	105	P	
AC terminal block	63.4	79.5	-	-	
Surge protector	59.5	75.6	-	-	
Toroidal Transformer	63.1	79.2	150	P	
Noise filter(ES1-T10)	55.8	71.9	-	-	
Relay(PDA1 In SSR board)	66.2	82.3	-	-	
PCB near S8 (In SSR board)	62.4	78.5	105	P	
Fuse holder	65.8	81.9	-	-	
T1 Coil (MSP-200-24)	68.9	85.0	150	P	
T1 Core (MSP-200-24)	71.7	87.8	150	P	
High voltage transformer	67.0	83.1	-	-	
Solenoid valve	83.0	99.1	150	P	
PCB near J12 (In control board)	61.7	77.8	105	P	
Vacuum pump	90.9	107	150	P	
LCD Panel	40.8	56.9	105	P	
Plastic enclosure (Left)	51.8	67.9	105	P	
Plastic enclosure (Right)	45.8	61.9	105	P	
Plastic enclosure (Rear)	47.1	63.2	105	P	
Plastic enclosure (Front)	42.9	59.0	105	P	
Plastic enclosure (Top)	35.4	51.5	105	P	
Ambient	23.9	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode Ventilation block		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	23.9 °C
Voltage.....:	264 V	Test duration ..... :	4 h 42 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode DC Fan Lock(Left)		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	21.7 °C
Voltage.....:	264 V	Test duration ..... :	2 h 10 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	36.6	54.9	-	-	
Primary wire	34.5	52.8	105	P	
AC terminal block	38.4	56.7	-	-	
Surge protector	31.0	49.3	-	-	
Toroidal Transformer	36.7	55.0	150	P	
Noise filter(ES1-T10)	27.2	45.5	-	-	
Relay(PDA1 In SSR board)	41.5	59.8	-	-	
PCB near S8 (In SSR board)	39.7	58.0	105	P	
Fuse holder	36.6	54.9	-	-	
T1 Coil (MSP-200-24)	40.9	59.2	150	P	
T1 Core (MSP-200-24)	44.2	62.5	150	P	
High voltage transformer	44.6	62.9	-	-	
Solenoid valve	66.4	84.7	150	P	
PCB near J12 (In control board)	32.4	50.7	105	P	
Vacuum pump	61.5	79.8	150	P	
LCD Panel	29.0	47.3	105	P	
Plastic enclosure (Left)	30.7	49.0	105	P	
Plastic enclosure (Right)	29.5	47.8	105	P	
Plastic enclosure (Rear)	32.9	51.2	105	P	
Plastic enclosure (Front)	27.1	45.4	105	P	
Plastic enclosure (Top)	35.9	54.2	105	P	
Ambient	21.7	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode DC Fan Lock(Left)		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	21.7 °C
Voltage.....:	264 V	Test duration ..... :	2 h 10 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode DC Fan Lock(Right)		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	21.5 °C
Voltage.....:	264 V	Test duration ..... :	2 h 17 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Noise filter	31.7	50.2	-	-	
Primary wire	31.7	50.2	105	P	
AC terminal block	35.2	53.7	-	-	
Surge protector	27.4	45.9	-	-	
Toroidal Transformer	37.2	55.7	150	P	
Noise filter(ES1-T10)	25.4	43.9	-	-	
Relay(PDA1 In SSR board)	38.8	57.3	-	-	
PCB near S8 (In SSR board)	31.1	49.6	105	P	
Fuse holder	34.3	52.8	-	-	
T1 Coil (MSP-200-24)	40.3	58.8	150	P	
T1 Core (MSP-200-24)	44.2	62.7	150	P	
High voltage transformer	41.8	60.3	-	-	
Solenoid valve	64.2	82.7	150	P	
PCB near J12 (In control board)	31.1	49.6	105	P	
Vacuum pump	59.9	78.4	150	P	
LCD Panel	27.0	45.5	105	P	
Plastic enclosure (Left)	29.0	47.5	105	P	
Plastic enclosure (Right)	28.2	46.7	105	P	
Plastic enclosure (Rear)	30.8	49.3	105	P	
Plastic enclosure (Front)	25.2	43.7	105	P	
Plastic enclosure (Top)	35.4	53.9	105	P	
Ambient	21.5	40.0	-	-	

NOTE 1 - t_m = measured temperature
t_c = t_m corrected (t_m–t_a+ **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

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

10.	**TABLE : Temperature Measurements** **Form A.26A**	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	P
10.3	Other temperature measurements	P

Operating conditions:	Max normal operating: Continuous operation STERLOAD mode DC Fan Lock(Right)		
Frequency.....:	50 Hz	Test room ambient temperature (ta) .. :	21.5 °C
Voltage.....:	264 V	Test duration ..... :	2 h 17 min

Part / Location	t_m [°C]	t_c [°C]	t_{max} [°C]	Verdict	Comments

Supplementary information:

Max. operating temperature: 40 ℃

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Normal		
Frequency.....:	60 Hz	Test room ambient temperature (ta1/ta2)..:	19.8 / 20.7 °C (initial / final)
Voltage.....:	90 V	Test duration.....:	2 h 50 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 2*	0.189	0.200	-	13.90	53.90	105	P	
Transformer Secondary / Pin 5 to 8*	0.628	0.683	-	21.37	61.37	105	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 1, 3 to 2, 4 of the transformer are connected in parallel

* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Normal		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	19.8 / 21.1 °C (initial / final)
Voltage.....:	132 V	Test duration.....:	1 h 54 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 2*	0.189	0.207	-	22.92	62.92	105	P	
Transformer Secondary / Pin 5 to 8*	0.628	0.687	-	22.59	62.59	105	P	

NOTE 1- R_{cold} = initial resistance; R_{warm} = final resistance
t_r = temperature rise; t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 1, 3 to 2, 4 of the transformer are connected in parallel

* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Protective conductor open		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	19.8 / 21.1 °C (initial / final)
Voltage.....:	132 V	Test duration.....:	1 h 38 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 2*	0.189	0.207	-	21.57	61.57	105	P	
Transformer Secondary / Pin 5 to 8*	0.628	0.712	-	32.71	72.71	105	P	

NOTE 1- R_{cold} = initial resistance; R_{warm} = final resistance
t_r = temperature rise; t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 1, 3 to 2, 4 of the transformer are connected in parallel

* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Output short		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	19.8 / 19.8 °C (initial / final)
Voltage.....:	132 V	Test duration.....:	1 h 38 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 2*	0.189	0.207	-	24.22	64.22	105	P	
Transformer Secondary / Pin 5 to 8*	0.628	0.701	-	27.43	69.56	105	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 1, 3 to 2, 4 of the transformer are connected in parallel

* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Ventilation block		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	19.8 / 19.4 °C (initial / final)
Voltage.....:	132 V	Test duration.....:	5 h 06 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 2*	0.189	0.230	-	55.57	95.57	105	P	
Transformer Secondary / Pin 5 to 8*	0.628	0.702	-	57.09	97.09	105	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise $t_c = t_r$ corrected ($t_c = t_r - \{t_{a2} - t_{a1}\} + [40\ °C$ or max RATED ambient$]$)
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 1, 3 to 2, 4 of the transformer are connected in parallel

* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Fan lock(Left)		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	19.8 / 19.1 °C (initial / final)
Voltage.....:	132 V	Test duration.....:	2 h 08 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 2*	0.189	0.208	-	26.26	66.26	105	P	
Transformer Secondary / Pin 5 to 8*	0.628	0.694	-	27.43	67.43	105	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 1, 3 to 2, 4 of the transformer are connected in parallel

* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Fan lock(Right)		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	19.8 / 17.7 °C (initial / final)
Voltage.....:	132 V	Test duration.....:	3 h 35 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 2*	0.189	0.209	-	29.01	69.01	105	P	
Transformer Secondary / Pin 5 to 8*	0.628	0.702	-	32.07	72.07	105	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:
* Pin 1, 3 to 2, 4 of the transformer are connected in parallel
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions ..... :	Max normal operating: Continuous operation STERLOAD mode Normal		
Frequency..... :	60 Hz	Test room ambient temperature (ta1/ta2)	20.1 / 23.9 °C (initial / final)
Voltage..... :	198 V	Test duration.....	1 h 06 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 4*	0.588	0.625	-	12.22	52.22	105	P	
Transformer Secondary / Pin 5 to 8*	0.706	0.743	-	99.54	49.54	105	P	

NOTE 1- R_{cold} = initial resistance; R_{warm} = final resistance
t_r = temperature rise
t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 2, 3 of transformer are connected and Pin 1, 4 of transformer are connected in series
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings Resistance method Temperature Measurements** **Form A.26B**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions.. :	Max normal operating: Continuous operation STERLOAD mode Normal		
Frequency..... :	50 Hz	Test room ambient temperature (ta1/ta2).:	20.1 / 22.8 °C (initial / final)
Voltage..... :	264 V	Test duration .....:	1 h 53 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 4*	0.588	0.635	-	17.65	57.65	105	P	
Transformer Secondary / Pin 5 to 8*	0.706	0.729	-	5.59	45.59	105	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 2, 3 of transformer are connected and Pin 1, 4 of transformer are connected in series
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Protective conductor open							
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:					20.1 / 21.2 °C (initial / final)	
Voltage.....:	264 V	Test duration.....:					1 h 52 min	
Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 4*	0.588	0.632	-	17.95	57.95	150	P	
Transformer Secondary / Pin 5 to 8*	0.706	0.735	-	9.36	49.36	150	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 2, 3 of transformer are connected and Pin 1, 4 of transformer are connected in series
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings Resistance method Temperature Measurements** **Form A.26B**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions.. :	Max normal operating: Continuous operation STERLOAD mode Output short		
Frequency..... :	50 Hz	Test room ambient temperature (ta1/ta2).. :	20.1 / 22.0 °C (initial / final)
Voltage..... :	264 V	Test duration..... :	1 h 15 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 4*	0.588	0.633	-	17.58	57.58	150	P	
Transformer Secondary / Pin 5 to 8*	0.706	0.734	-	8.20	48.20	150	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 2, 3 of transformer are connected and Pin 1, 4 of transformer are connected in series
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode Ventilation block		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	20.1 / 23.9 °C (initial / final)
Voltage.....:	264 V	Test duration.....:	4 h 42 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 4*	0.588	0.717	-	52.06	92.06	150	P	
Transformer Secondary / Pin 5 to 8*	0.706	0.773	-	20.36	60.36	150	P	

NOTE 1- R_{cold} = initial resistance; R_{warm} = final resistance
t_r = temperature rise; t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 2, 3 of transformer are connected and Pin 1, 4 of transformer are connected in series
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings Resistance method Temperature Measurements** **Form A.26B**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions.. :	Max normal operating: Continuous operation STERLOAD mode DC Fan Lock(Left)		
Frequency..... :	50 Hz	Test room ambient temperature (ta1/ta2).. :	20.1 / 21.7 °C (initial / final)
Voltage..... :	264 V	Test duration ..... :	2 h 10 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 4*	0.588	0.630	-	16.59	56.59	150	P	
Transformer Secondary / Pin 5 to 8*	0.706	0.737	-	9.58	49.58	150	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise t_c = t_r corrected (t_c= t_r - { t_{a2} - t_{a1}} + [40 °C or max RATED ambient])
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 2, 3 of transformer are connected and Pin 1, 4 of transformer are connected in series
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.2	**TABLE: Temperature of windings** **Form A.26B** **Resistance method Temperature Measurements**	P
4.4.2.7	MAINS transformers	P
14.2.1	Motor temperatures	N/A

Operating conditions..:	Max normal operating: Continuous operation STERLOAD mode DC Fan Lock(Right)		
Frequency.....:	50 Hz	Test room ambient temperature (ta1/ta2)..:	20.1 / 21.5 °C (initial / final)
Voltage.....:	264 V	Test duration.....:	2 h 17 min

Part / Designation	Rcold [Ω]	Rwarm [Ω]	Current [A]	t_r [K]	t_c [°C]	t_{max} [°C]	Verdict	Comments
Transformer Primary / Pin 1 to 4*	0.588	0.633	2.84	18.08	58.08	150	P	
Transformer Secondary / Pin 5 to 8*	0.706	0.740	-	10.86	50.86	150	P	

NOTE 1- R_{cold} = initial resistance R_{warm} = final resistance
t_r = temperature rise $t_c = t_r$ corrected ($t_c = t_r - \{t_{a2} - t_{a1}\} + [40\ °C$ or max RATED ambient$]$)
t_{max} = maximum permitted temperature
NOTE 2 - Indicate insulation class (IEC 60085) under comments (optional)
NOTE 3 - Record values for NORMAL CONDITION and / or SINGLE FAULT CONDITION in this Form use additional form if necessary

Supplementary information:

* Pin 2, 3 of transformer are connected and Pin 1, 4 of transformer are connected in series
* Pin 6, 7 of transformer are connected and Pin 5, 8 of transformer are connected in series

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

10.5.2	**TABLE: Resistance to heat of non-metallic ENCLOSURES**			**Form A.27**	P
	Test method used:				—
	Non-operative treatment ..... :	[V]			P
	Empty ENCLOSURE ..... :	[ ]			N/A
	Operative treatment ..... :	[ ]			N/A
	Temperature during tests ..... :	70 ℃ / 7 hour			—

Description	Material	Comments	Verdict
Plastic enclosure	Plastic	No hazard	P

Dielectric strength test (6.8) ..... :	3 000	V	r.m.s./~~peak/d.c.~~	P

NOTE – Within 10 minutes of the end of treatment suitable tests in acc. to 8.2 and 8.3 must be conducted and pass criteria of 8.1.

Supplementary information: cut-off current: 10 mA

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

10.5.3	**TABLE: Insulating Materials**	**Form A.28**	P
10.5.3 1)	Ball-pressure test		P
	Max. allowed impression diameter ..... :	2 mm	—

Part	Test temperature [°C]	Impression diameter [mm]	Verdict
Main Terminal block	125	1.146	P

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:

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

8	**TABLE: Mechanical resistance to shock and impact** **Form A.30**	P
11	**Protection against HAZARDS from fluids**	P

Voltage tests can be carried out once after performing the tests of clause **8** and clause **11**. However, if voltage tests are carried out separately after each set of tests, two forms can be used.

Location (see Form A.14)	Clause 8 tests				Clause 11 tests				Working voltage [V]	Test voltage [V]	Verdict	Comments
	Static (8.2.1) 30 N	Impact (8.2.2)	Normal (8.3.1)	Handheld Plug-in	Cleaning (11.2)	Spillage (11.3)	Overflow (11.4)	IEC 60529 (11.6)				
A	P	P	P	-	P	-	-	-	240	1 500	P	No breakdown
B	P	P	P	-	P	-	-	-	240	3 000	P	No breakdown
C	P	P	P	-	P	-	-	-	240	3 000	P	No breakdown

NOTE – Use r.m.s., d.c. or peak to indicate the used test voltage.

Supplementary information: Cut-off current: 10 mA

EN 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:

EN 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:				

EN 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	
At operator's normal position and at bystanders' positions				
a)				
Supplementary information:				

12.5.2	Ultrasonic pressure		**Form A.36**	N/A
Locations tested		Measured values		Comments
		[dB]	[kHz]	
At operator's normal position				
At 1 m from the ENCLOSURE				
a)				
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:				

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

13.2.2	**TABLE: Batteries**	**Form A.37**	N/A
	Battery load and charging circuit diagram:		
	Battery type..... :		—
	Battery manufacturer/model/catalogue No. ..... :		—
	Battery ratings..... :		—
	Reverse polarity instalment test		

Single component failures	Verdict	
Component	Open circuit	Short circuit

Supplementary information:

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

14.3	**TABLE: Overtemperature protection devices**	**Form A.38**	N/A

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:

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

4.4.2.7	**TABLE: MAINS transformer**			**Form A.39**	P
4.4.2.7.2	Short circuit				P
14.6	MAINS transformers tested outside equipment				P
Type ..... :	T1800VA-ISP1800T-AC110VX2X2				—
Manufacturer..... :	Hanam Electronics Co., Ltd.				—
Test in equipment					N/A
Test on bench					P
Test repeated inside equipment (see 14.6)					N/A
Optional – Insulation class (IEC 60085) of the lowest rated winding ..... :			Class A		—
Winding identification		Secondary (Pin 5 to 8)			
Type of Protector for winding (NOTE 1)		OP			
Elapsed time		10 min			
Current, A primary		0.0 A			
secondary		-			
Winding temperature, °C primary		18.6			
(see NOTE 2) secondary		-			
Tissue paper / cheesecloth OK ? (Pass / Fail)		Pass			
Voltage tests (see NOTE 3)					
Primary to secondary	3 000 V r.m.s.	NB			
Primary to core	_____ V ____				
Secondary to secondary	_____ V ____				
Secondary to core	_____ V ____				
Verdict		Pass			

NOTE 1: Primary fuse - PF / ( ) A
Secondary fuse - SF / ( ) A
Overtemperature protection - OP / (119) °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:

Immediately main fuse (250 V~, 10 A) open, No hazard, Final Input current: 0.0 A, Cut-off current: 10 mA, Test voltage: 132 V~, 50 Hz, *Pin 6 to 7 Common

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

4.4.2.7	**TABLE: MAINS transformer**			**Form A.39**	P
4.4.2.7.2	Short circuit				P
14.6	MAINS transformers tested outside equipment				P
Type ..... :	T1800VA-ISP1800T-AC110VX2X2				—
Manufacturer..... :	Hanam Electronics Co., Ltd.				—
Test in equipment					N/A
Test on bench					P
Test repeated inside equipment (see 14.6)					N/A
Optional – Insulation class (IEC 60085) of the lowest rated winding ..... :				Class A	—

Winding identification	Secondary (Pin 5 to 8)			
Type of Protector for winding (NOTE 1)	OP			
Elapsed time	10 min			
Current, A primary	0.0			
secondary				
Winding temperature, °C primary	20.8			
(see NOTE 2) secondary				
Tissue paper / cheesecloth OK ? (Pass / Fail)	Pass			
Voltage tests (see NOTE 3)				
Primary to secondary 3 000 V r.m.s.	NB			
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 / (119) °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:

Immediately main fuse(250 V~, 10 A) open, No hazard, Final Input current: 0.0 A, Cut-off current: 10 mA, Test voltage: 264 V~, 50 Hz, *Pin 6 to 7 Common

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

4.4.2.7	**TABLE: MAINS transformer**			**Form A.40**	P
4.4.2.7.3	Overload tests (for MAINS transformers)				P
14.6	MAINS transformers tested outside equipment				P
Type .....:	T1800VA-ISP1800T-AC110VX2X2				—
Manufacturer .....:	Hanam Electronics Co., Ltd.				—
Test in equipment					N/A
Test on bench					P
Test repeated inside equipment (see 14.6)					N/A
Optional – Insulation class (IEC 60085) of the lowest rated winding .....:				Class A	—

Winding identification	Secondary (Pin 5 to 8)			
Type of Protector for winding (NOTE 1)	OP			
Elapsed time	5 h 56 min			
Current, A primary	07.6			
secondary	7.5			
Winding temperature, °C primary	R / 138.90			
(see NOTE 2) secondary	R / 143.02			
Tissue paper / cheesecloth OK ? (Pass / Fail)	Pass			
Voltage tests (see NOTE 3)				
Primary to secondary 3 000 V r.m.s.	NB			
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 / (119) °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:

Main fuse(250 V~, 10 A) open, No hazard, Final input current: 0.12 A, Cut-off current: 10 mA,
Test voltage: 132 V~, 50 Hz

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

4.4.2.7	**TABLE: MAINS transformer**				**Form A.40** P
4.4.2.7.3	Overload tests (for MAINS transformers)				P
14.6	MAINS transformers tested outside equipment				P
Type .....:	T1800VA-ISP1800T-AC110VX2X2				—
Manufacturer .....:	Hanam Electronics Co., Ltd.				—
Test in equipment					N/A
Test on bench					P
Test repeated inside equipment (see 14.6)					N/A
Optional – Insulation class (IEC 60085) of the lowest rated winding .....:			Class A		—
Winding identification		Secondary (Pin 5 to 8)			
Type of Protector for winding (NOTE 1)		OP			
Elapsed time		8 h 13 min			
Current, A primary		7.6			
secondary		7.5			
Winding temperature, °C primary		R / 129.58			
(see NOTE 2) secondary		R / 126.85			
Tissue paper / cheesecloth OK ? (Pass / Fail)		Pass			
Voltage tests (see NOTE 3)					
Primary to secondary	3 000 V r.m.s.	NB			
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 / (119) °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:

Main fuse(250 V~, 10 A) open, No hazard, Final input current: 0.12 A, Cut-off current: 10 mA, Test voltage: 264 V~, 50 Hz

EN 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:

EN 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	Samples						Verdict	Comments
			h	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:

EN 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:				

Attachment 1 - Photographs

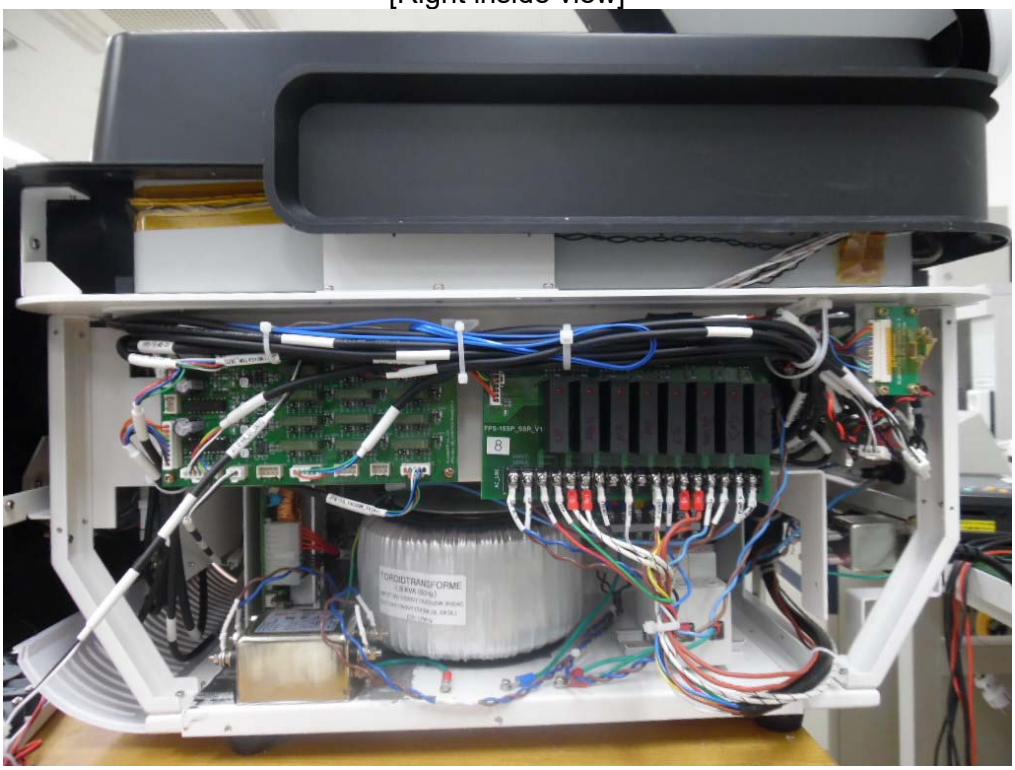
[Front side view]

[Front side view]

Attachment 1 - Photographs

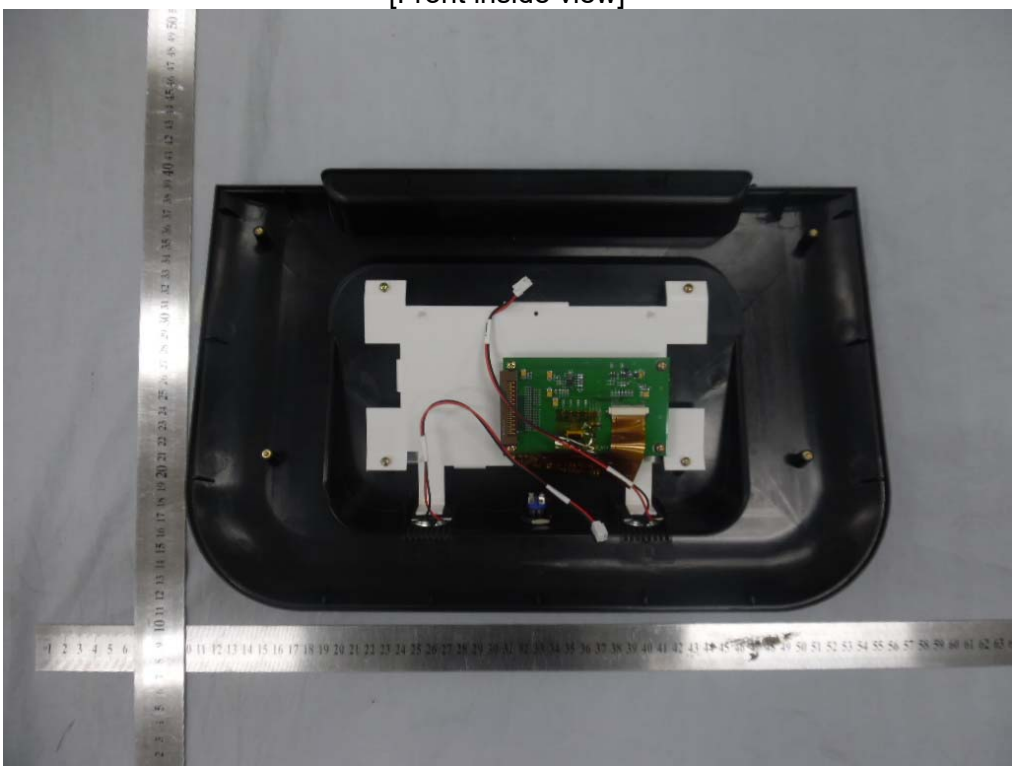
[Left inside view]

[Right inside view]

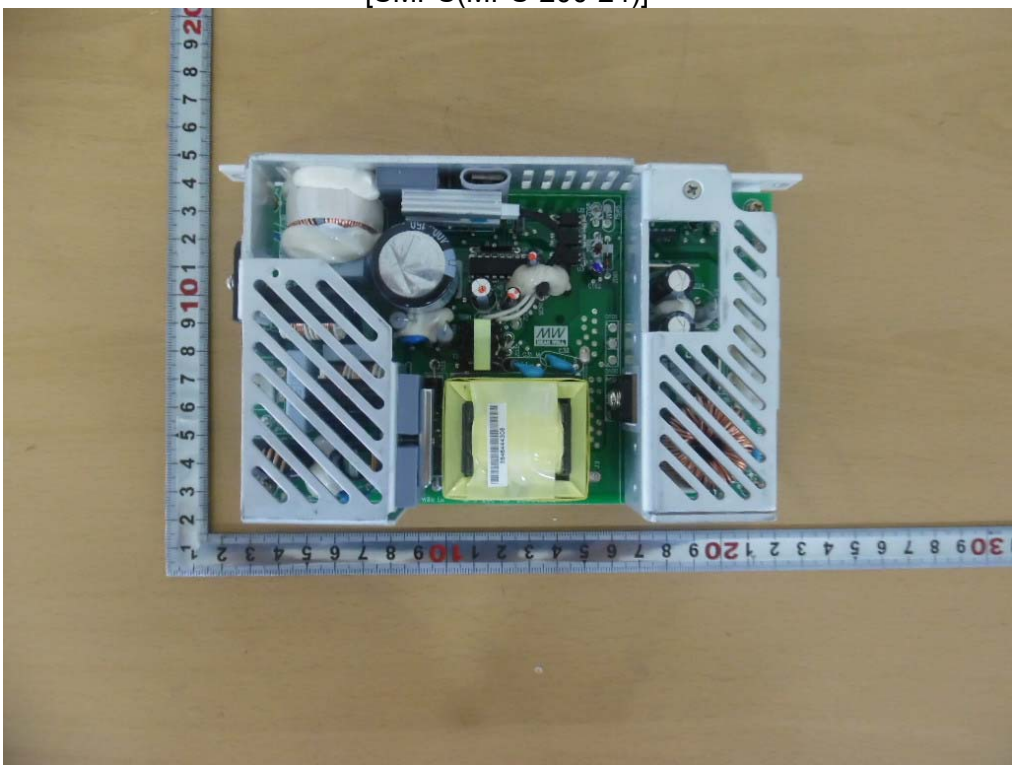


Attachment 1 - Photographs

[Front inside view]



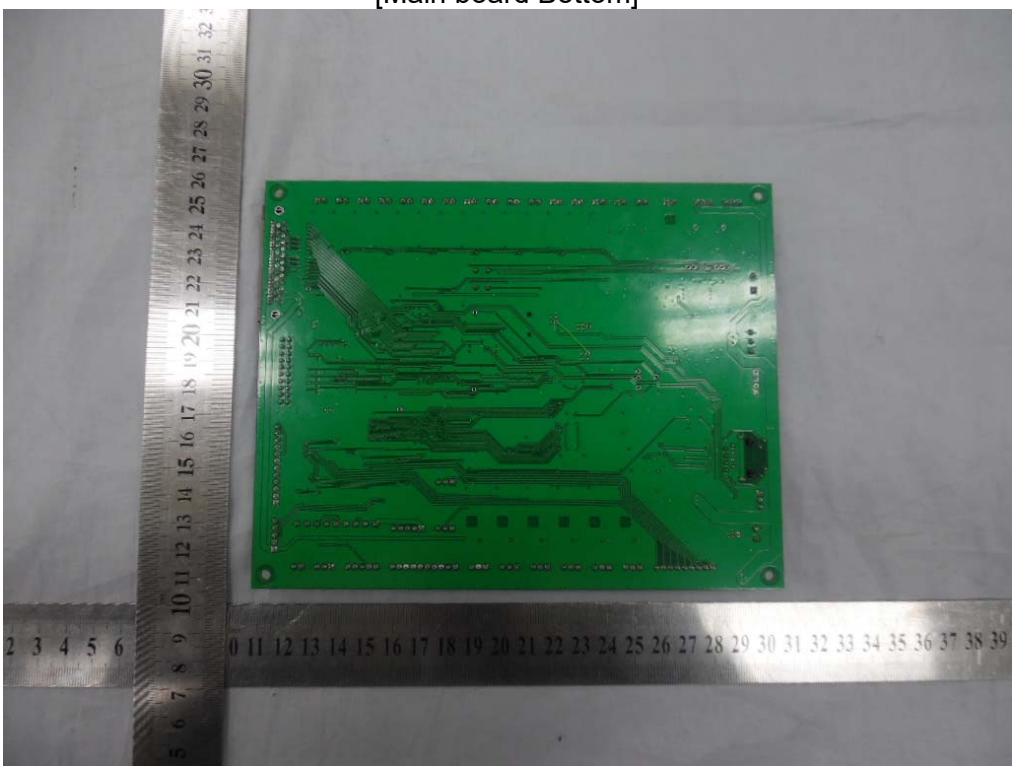
[SMPS(MPS-200-24)]



Attachment 1 - Photographs

[Main board front]

[Main board Bottom]



Attachment 1 - Photographs

[External printer 1]

[External printer 2]

Attachment 1 - Photographs

[Power cord]

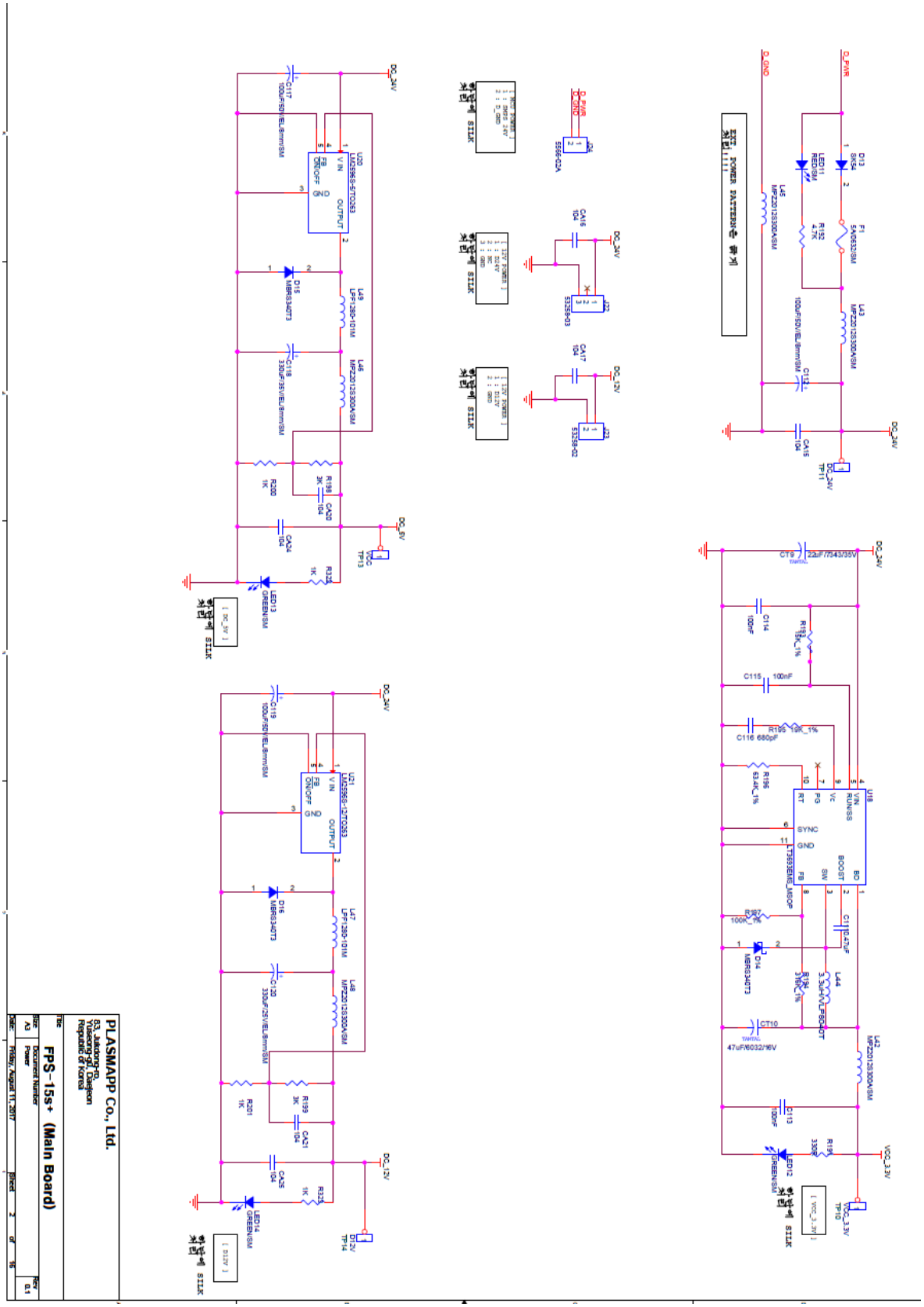
[Netmate USB2.0 Cable]

Attachment 1 - Photographs

[Printer adaptor]

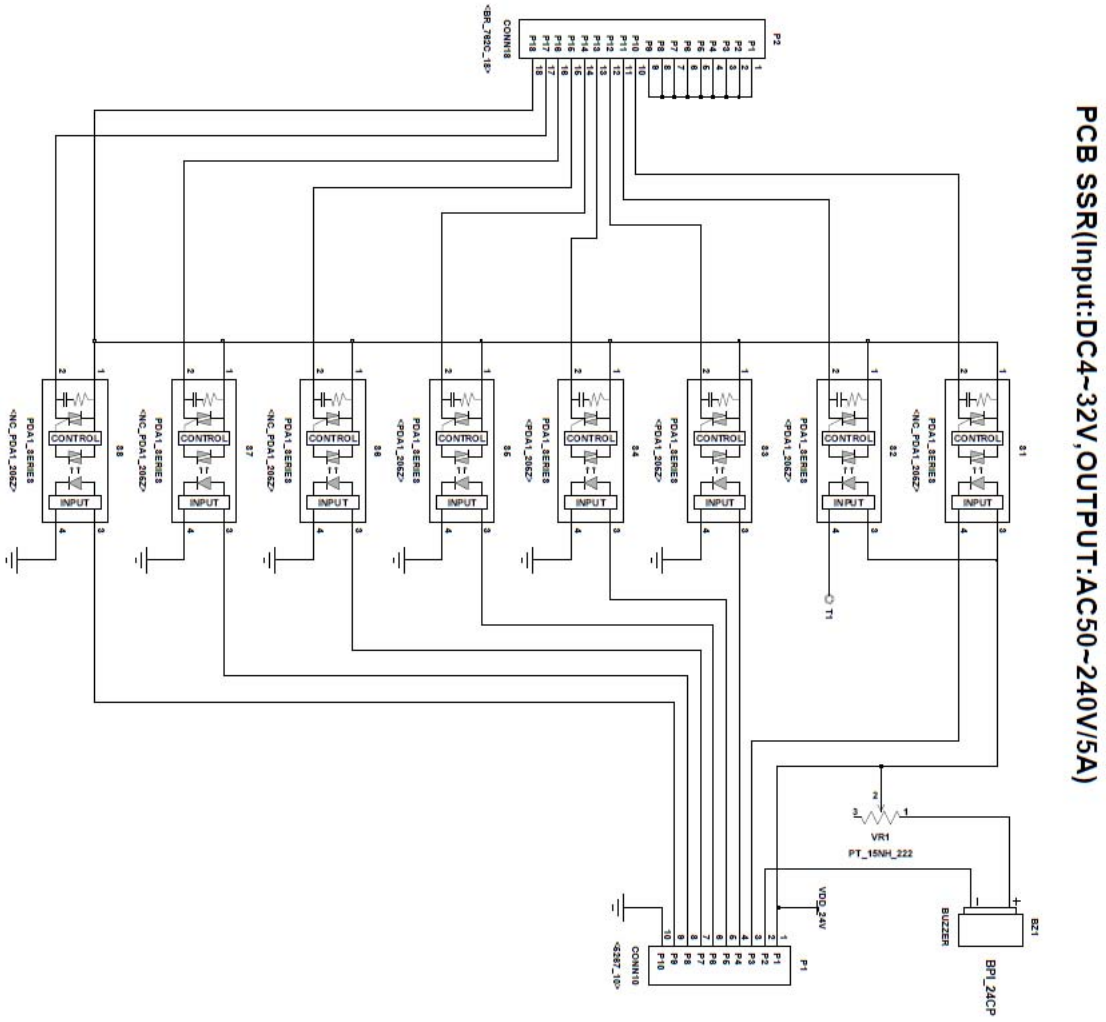
Attachment 2 - Schematic

< Main board >



Attachment 2 - Schematic

<SSR board>



Test Report issued under the responsibility of:
DT&C Co., Ltd.

42/46/38, Yurim-ro, 154beon-gil, Cheoin-gu,
Yongin-si, Gyeonggi-do, 17042, Korea, Republic of

TEST REPORT
EN 61010-2-040
Safety requirements for electrical equipment for measurement, control, and laboratory use
Part 2-040 Particular requirements for sterilizers and washer-disinfectors used to treat medical materials

Report Number..... :	DRMCEL1711-0076(1) Annex A
Date of issue..... :	January 25, 2019
Total number of pages ..... :	29 Pages
Name of Testing Laboratory preparing the Report ..... :	DT&C Co., Ltd. / 42/46/38, Yurim-ro, 154 beon-gil, Cheoin-gu, Yongin-Si, Gyeonggi-do, 17042, Korea, Republic of
Applicant's name ..... :	Plasmapp Co., Ltd.
Address..... :	3F 301, 1F, Jukdong-ro 83, Yuseong-gu, Daejeon, Republic of Korea (Zip code: 34127)
Test specification:	
Standard ..... :	EN 61010-2-040:2015 (Second Edition) for use in conjunction with EN 61010-1:2010 (Third Edition)
Test procedure ..... :	—
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC61010_2_040B (DT&C Co., Ltd.: TRF-MS-280(02)181120)
Test Report Form(s) Originator .... :	VDE Testing and Certification Institute (DT&C modified the TRF on 2018-1120)
Master TRF ..... :	2015-09

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

This report is not valid as a KOLAS Test Report

General disclaimer:

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

If this test report is required to confirmation of authenticity, please contact to report@dtnc.net.

Test item description ..... :	Low Temperature Plasma Sterilizer
Trade Mark ..... :	
Manufacturer ..... :	Plasmapp Co., Ltd.
Model/Type reference ..... :	FPS-15s Plus
Ratings ..... :	100-120/220-240 V~, 50/60 Hz, 10 A

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**Testing Laboratory:**	DT&C Co., Ltd.	
Testing location/ address.....:		42/46/38, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Korea, Republic of	
☐	**Associated Testing Laboratory** ..... :		
Testing location/ address.....:			
Tested by (name, function, signature).....:		(See EN 61010-1 Test Report)	
Approved by (name, function, signature)...:		(See EN 61010-1 Test Report)	
☐	**Testing procedure: CTF Stage 1**..... :		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment):
(See EN 61010-1 Test Report)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
- Failure, or partial failure, of the mains supply (Clause 4.4.2.102) - Transfer of loads into and out of the chamber (Clause 7.5.101)	DT&C Co., Ltd. / 42/46/38, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, 17042, Korea, Republic of

Summary of compliance with National Differences
(List of countries addressed): N/A

☒ **The product fulfils the requirements of** EN 61010-2-040:2015 (Second Edition) for use in conjunction with EN 61010-1:2010 (Third Edition)

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.

(See EN 61010-1 Test Report)

Test item particulars ..... :	
Classification of installation and use ..... :	(See EN 61010-1 Test Report)
Supply Connection ..... :	(See EN 61010-1 Test Report)
..... :	
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing ..... :	
Date of receipt of test item ..... :	(See EN 61010-1 Test Report)
Date (s) of performance of tests ..... :	(See EN 61010-1 Test Report)

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
“(See Form A.xx)” refers to a table at corresponding EN 61010-1 Test Report
“(See Form B.xx)” refers to a table appended to this report.

The Test Results presented in this Test Report relate only to the objected tested. This Test Report shall not be reproduced except in full without the written approval of the testing laboratory.

Throughout this report a point is used as the decimal separator.

Manufacturer’s Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB 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 ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... : (See EN 61010-1 Test Report)

General product information:

(See EN 61010-1 Test Report)

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
4	**TESTS**		—
4.4	Testing in SINGLE FAULT CONDITION		P
4.4.2.5	Motors		N/A
	if impractical to test in place, separate identical motor tested		N/A
4.4.2.13	Interlocks		N/A
	tested without using toxic substances	No such part	N/A
4.4.2.101	Pressure controllers	No pressure controllers	N/A
	Pressure controllers overridden (except for overpressure safety devices complying with 11.7.4)		N/A
4.4.2.102	Failure, or partial failure, of the MAINS supply		P
	Following tests have been conducted:	(see Form B.1)	—
	Operate at 90 % of RATED voltage for one cyle		P
	Operate at 110 % of RATED voltage for one cycle		P
	Set to 90 % of RATED voltage for 5 min		P
	reduced (gradually 10 V / min) to .....:		P
	Reset to RATED voltage		P
4.4.2.103	Failure, or partial failure, of other supplies and services		N/A
	Each non-electrical and service supply interrupted or partial interrupted		N/A

5	**MARKING AND DOCUMENTATION**		—
5.1.2	Identification		P
	The equipment marked with at least the following:		—
	a) name and address of the manufacturer	Manufacturer name marked	P
	b) additional markings required by national and local regulations	Marked on label	P
	name and address of the manufacturer's authorized representative		P
	c) equipment provide unique identifier (e.g. serial number)		P
	d) year and place of manufacturing; if different from manufacturer's address	One factory	N/A
	e) model identification	FPS-15s Plus	P
	f) designated purpose of the equipment.	Described on manual	P
5.1.101	Overpressure safety device	No overpressure safety device	N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Identification includes:		—
	Name of manufacturer .....:		N/A
	Model number .....:		N/A
	If bursting disc marked with:		—
	Specified bursting pressure .....:		N/A
	Associate temperature .....:		N/A
5.1.102	PRESSURE VESSELS and shell boilers		N/A
	national and local regulations that may require additional markings considered		N/A
5.2	Warning markings		P
	Warning markings specified in 5.1.5.1, 5.1.5.2 c), 5.1.5.2 d), 5.1.8, 5.4.4 r), 6.1.2 b), 7.3.2, 7.102 b), 7.102 c), 9.1, 10.1, 13.2.2, and 14.103		—
	meet the following requirements:		—
	Warning and Caution symbols at least 10 mm high.		P
5.4.1	General		P
	Accompanying documents shall be marked with:		—
	- Date of issue, or	Marked	P
	- Revision status and	Marked	P
	- Provided with the equipment		P
	aa) national and local regulations apply to the documentation		P
	bb) if hazardous substances handled in NORMAL USE, the documentation includes:		—
	-information of constitutes, and		N/A
	-correct storage, and		N/A
	-correct use, and		N/A
	-safe disposal		N/A
	Marking, information and language:		—
	1) comply with regulations applying in the country of intended use	Described on manual	P
	NOTE 2: ISO15223-2 offers guidance for equipment classified as a medical device.		—
	2) incude instructions for the disposal of the equipment, its accessories and its packaging	Described on manual	P
	3) give due consideration to the technical knowledge, education and training of different OPERATOR categories	Described on manual	P

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	4) not contradict information contained in documentation.	Not contradict	P
5.4.2	Equipement ratings		P
	aa) RATED ranges of pressure and flow rates for each non-electrical supply		P
5.4.3	Equipment installation		P
	Instructions including details for:		—
	a) location and mounting	Described on manual	P
	b) space required for safe and efficient maintenance;	Described on manual	P
	c) individual weights of principal heavy subassemblies;	No heavy subassemblies	N/A
	d) overall weight and floor loading requirements;	Described on manual	P
	e) unpacking and assembly instructions (see als 7.108)	Described on manual	P
	f) MAINS supply requirements		P
	connection	Described on manual	P
	temperature RATING of cable	No field-wiring terminal boxes	N/A
	g) PERMANENTLY CONNECTED EQUIPMENT:		—
	1) supply wiring requirements		N/A
	2) requirements for:		—
	- external switch or circuit-breaker (see 6.11.3.1)		N/A
	- external overcurrent protection devices (see 9.6.1)		N/A
	- recommendation for placement of switch or circuit breaker near to the equipment		N/A
	h) ventilation requirements (see 11.101, 13.1.103.1, and 13.1.101)		N/A
	i) drainage requirements (see 11.101)		N/A
	j) protective earthing	Described on manual	P
	k) sound level (see 12.5.1)	No sound power	N/A
	l) requirements for special services (air, feed water, cooling liquid, etc.)	No special services	N/A
	m) requirements related to hazardous gas atmospheres (see 13.0)	No hazardous gas atmospheres	N/A
	n) positioning of the equipment not difficult to operate disconnecting device	Described on manual	P
	o) Hazardous substances:	No hazardous substances	—

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	- handling		N/A
	- containment		N/A
	- additional equipment is required for control of emissions (see 13.1)		N/A
	p) HAZARDS caused by:	No hazardous caused	—
	- liquids or		N/A
	- hot items falling from the equipment (see 9.1)		N/A
	q) requirements for material used		N/A
	- in the installation of the equipment		N/A
	- which may come in contact with sterilant (see 13.1.103.4 and 13.2.101)		N/A
	r) instructions for ambient illumination (see 11.102)	Described on manual	P
	NOTE Guidance on lighting is offered in ISO12100-2 and EN1837		—
	s) instructions relating to heat emission		N/A
5.4.3.101	Special systems	No special systems	N/A
	Installation instructions including details for:		—
	a) non-recirculating ventilation system for room (see 13.1.103.3)		N/A
	min. 10 air changes per hour……..:		N/A
	b) if toxic sterilant used:		—
	protection against HAZARDS arising from room ventilation failure (see 13.1.103.3)		N/A
	c) non-recirculating local exhaust system to remove fugitive emissions (see 13.1.101.4)		N/A
	d) drainage system (see 13.1.101.3)		N/A
	e) venting system for the drain (see 13.1.101.3)		N/A
	f) CHAMBER exhaust system (see 13.1.101.2)		N/A
	g) system to control escaping biological emissions (see 13.1.104)		N/A
	h) any other non-electrical supplies		N/A
	including prevention of back syphonage		N/A
5.4.4	Equipment operation		P
	a) identification of operating controls and	Described on manual	P
	their use in all operating modes;		P
	b) positioning for disconnection	Described on manual	P
	c) accessories and other equipment:	Described on manual	—

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	including details for:		—
	interconnection		P
	suitable accessories		P
	detachable parts		P
	special materials		P
	d) specification of limits for intermittent operation	Continuous operation	N/A
	e) an explanation of symbols related to safety which are used on the equipment (see 5.2)	Described on manual	P
	f) instructions for cleaning (see 11.2)	Described on manual	P
	g) measures to make equipment safe after incomplete OPERATION CYCLE	Described on manual	P
	h) use of lockable door closure prevention device (see 7.102.b)	Described on manual	P
	i) safe access to LOAD in CHAMBER in case of failure addressed to RESPONSIBLE BODY (see 13.1.102)		N/A
	j) actions in case of a malfunction including fault diagnosis	Described on manual	P
	k) loading procedure	Described on manual	P
	l) safe disposal of parts as:		—
	detergent containers	No detergent containers	N/A
	sterilant containers	Described on manual	P
	parts contaminated by pathogenic material	No pathogenic material	N/A
	m) testing the function of critical safety devices (see 11.7.4)	No overpressure safety devices	N/A
	n) handling of substances involved in NORMAL USE:	No handling of substances involved	—
	correct use		N/A
	safety provisions		N/A
	methods of safe handling before disposal		N/A
	recommendations on disposal		N/A
	o) methods of reducing burn HAZARDS from surfaces permitted to exceed temperature limits	No such surfaces	N/A
	p) guidelines to follow in case of emergency in which eye, skin contact or inhalation could occur	Described on manual	P
	guidelines prominently displayed on or near the equipment		P

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	q) Safely replenishing containers for dosing chemicals (see 13.102)	No such containers	N/A
	r) Appropriate warning stating types of LOAD which may be used	No hazard other than intended use	N/A
	s) Consumable materials:	No such materials	—
	details of HAZARDS arising from introduction of incorrect quantities consumable materials		N/A
	procedures and details of protection to minimise such HAZARDS		N/A
	t) identification of residual risks and instructions on necessary protective procedures (see clause 17)	No residual risks	N/A
5.4.5	Equipment maintenance and service		P
	Instructions provide sufficient details to:		—
	- permit safe maintenance and	Described on manual	P
	- inspection and	Described on manual	P
	- ensure continued safety of the equipment after the maintenance and inspection procedure		P
	Instructions include:		—
	a) details of maintenance on parts subjected to wear and tear if failure could lead to a HAZARD	Described on manual	P
	b) inspection and replacement of hoses and liquid containing parts if their failure could lead to a HAZARD	Described on manual	P
	c) safety devices fitted:	Described on manual	—
	settings and		P
	replacement procedures		P
	d) procedure for making the equipment safe prior to maintenance.	Described on manual	P
	e) maintenance schedules and repair procedures, including	Described on manual	P
	ambient lighting level (see 11.102) and		N/A
	special precautions to protect against HAZARDS during repair		P
	f) methods of safe handling and disposal for parts containing or contaminated by toxic and/or pathogenic material	No pathogenic material	N/A
	g) specific battery type for equipment using replaceable batteries	No battery	N/A
	h) RATING and characteristics of replaceable fuses	Described on manual	P

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	i) a list of parts (if any):		—
	restricted to examination, and / or		N/A
	supplied by the manufacturer or manufacturer's agent		N/A
	j) RESIDUAL risks (see clause 17) and	No residual risks	N/A
	protective measures for these RISKS		N/A
	k) Verification of the safe state after repair		N/A
5.4.101	OPERATOR training		P
5.4.101.1	Instructions include statement for RESPONSIBLE BODY to ensure that OPERATORS are adequately trained:		—
	a) in operating or maintaining the equipment	Described on manual	P
	b) if exposure limits (i.e. STEL or LTEL) or	No toxic materials	N/A
	permissible working environmental concentration limits (see note to 13.1), could exceeded in NORMAL USE		N/A
	This instructions includes information about:		—
	- relevant health HAZARDS		N/A
	- national regulations		N/A
	- methods for safe use		N/A
	- leak detection methods		N/A
	c) Regular training for all personnel concerned with operation or maintenance including:	Not necessary to requiar training	—
	Emergency procedures for any toxic, flammable, explosive or pathogenic material released into environment,		N/A
	attendance records maintained,		N/A
	evidence of understanding demonstrated		N/A
5.4.101.2	Procedures for potentially hazardous actions	Described on manual	P
	Safety procedures specified for any hazardous action to be carried out by operator		P
	Statement that RESPONSIBLE BODY must provide OPERATORS training in this procedures		P

6	**PROTECTION AGAINST ELECTRIC SHOCK**		—
6.2.2	Examination		N/A
	FIXED EQUIPMENT and equipment with a weight more than 80 kg:	≤ 80 kg	—
	- not tilted or moved to check the bottom		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	- test finger applied in any part of the bottom can be reached		N/A
7	**Protection against mechanical HAZARDS and against HAZARD related to mechanical functions**		—
7.1	General		P
	Conformity is checked by 7.2 to 7.107		P
7.4	Stability		P
	aa) Horizontal door supporting the LOAD withstand 1.2 times of the heaviest RATED LOAD	No damaged	P
7.5.101	Transfer of LOADS into and out of the CHAMBER		P
	means to protect OPERATOR against mechanical hazard during transfer		P
	means to locate and retain the LOAD and its carrier in the correct position		P
	means to prevent sliding shelf tilting or disengaging	No such part	N/A
	force required for loading / unloading does not exceed 250 N		N/A
7.101	Doors, conveyors, etc.		P
	No hazard is caused in NORMAL or SINGLE FAULT CONDITION by:		—
	a) mechanism to open, close or retain door		P
	b) wear on threaded parts	No such parts	N/A
	c) residual movement of:		N/A
	1) operation of emergency shut-down device	No shut-down device	N/A
	2) loss of power		N/A
	3) component failure		N/A
	4) removal of an obstruction		N/A
	d) parts driven by power or stored energy	No stored energy	N/A
7.102	Access to the CHAMBER		P
	Access not possible during OPERATION CYCLE if could cause to a HAZARD	Not possible	P
	Means provided to prevent:	No such chamber	—
	a) starting of the operation cycle if OPERATOR is inside		N/A
	b) door closing (if fitted) if OPERATOR is inside		N/A
	The means shall be:		—

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	- lockable by dedicated key or TOOL or other mechanism, and		N/A
	- manufacturer's instructions shall specify that the OPERATOR must retain the key or TOOL while inside the CHAMBER, and		N/A
	- A warning marking (see 5.2) on the equipment clearly visible to the OPERATOR:	No such chamber	—
	- instruction for the OPERATOR to lock the means and		N/A
	- to retain the locking key, or TOOL at all times		N/A
	Hot liquid remaining in CHAMBER does not cause a hazard in NORMAL CONDITION or	No hot liquid	N/A
	- a warning is kept in manufacturer's instructions and		N/A
	- a warning marking provided (see 5.2)		N/A
	In SINGLE FAULT CONDITION no HAZARD caused by liquids and steam when the door is openend or at the attempt to open it	No liquids and steam	N/A
7.103	Prevention of entry of gas, etc.		P
	until the door is closed and secured, an Interlock is provided to:		—
	- prevent entering or generating of sterilant gas, carrier gas, steam or others in the CHAMBER and		P
	- all pressure retaining parts are engaged		N/A
7.104	Prevention of new OPERATING CYCLE		P
	Start of a new OPERATING CYCLE is not possible, if hazards arising of a failure in:		—
	a) door operating system	New operating cycle is not possible	P
	b) LOAD transport system	No load transport system	N/A
	c) exhaust system	No exhaust system	N/A
	d) any other device (e. g. timer or sensor)	New operating cycle is not possible	P
	e) operation of the emergency shut-down device	No emergency shut-down device	N/A
7.105	Pressure-retaining parts of a door	No Pressure-retaining parts	N/A
	Interlock prevents release of door until CHAMBER is vented to atmospheric pressure		N/A
7.106	Doors of equipment for use with fluids in containers		N/A
	Door locked until:		—

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	temperature of the LOAD and fluid in the CHAMBER is below boiling point at ambient pressure	No such chamber	N/A
	Equipment designed to process fluids in sealed unvented containers:	No such chamber	—
	- incorporate additional controls to keep door locked until the temperature of fluid inside the containers at athmospheric pressure has fallen to:		N/A
	- 20 K below boiling point of water for glass containers, or		N/A
	- 10 K below boiling point water for flexible containers		N/A
	Means provided to compensate the reduced boiling point at increased alstitude		N/A
	Temperature sensing of fluids never based on sensing a single container.		N/A
7.107	Double-ended equipment	No double-ended equipment	N/A
	In NORMAL USE opening or closing of the door at remote end of CHAMBER not possible for the OPERATOR		N/A
	Except for maintenance, opening of both doors at same time is prevented		N/A
	Opening of the door at remote end not possible if the conditions inside the equipment could cause a HAZARD		N/A
7.108	Transport and packaging		N/A
	Packaging fitted with, or accept attachments for easily connection to standard lifting equipment	No such part	N/A
	Equipment and equipment parts packed in a manner that:		—
	- all parts of the equipment remain in position and stable, and		N/A
	- no HAZARD is caused		N/A
	Outside of the packaging marked with instructions for:		—
	- handling,		N/A
	- transport,		N/A
	- storage,		N/A
	- environment,		N/A
	- unpacking.		N/A
7.109	Guards and panelling	No guards and panelling	N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	removal or opening of a guard or panel require the use of a tool (see 14.102)		N/A
	If a personal access is provided in a panel, this access:		—
	- not less than 500 mm wide and 1500 mm high,		N/A
	- free from obstruction and		N/A
	- require the use of a TOOL.		N/A
	Fixings for attaching guards and panels shall remain attached to either the guard, or panel, or to the structure of the equipment.		N/A
7.110	Emergency shut-down device	No emergency shut-down device	N/A
	operated by easily reached and prominently placed push button or other actuator		N/A
	The shutdown device:		—
	a) not disconnect auxiliary circuits necessary for protection against HAZARD		N/A
	b) disconnect accessories necessary for the correct function of the equipment and		N/A
	which if disconnected separately could cause a HAZARD		N/A
	Installation instructions specify requirements for the interconnection of accessories necessary for the correct function of the equipment.		N/A
	If a mechanical HAZARD could occur, there shall be an actuator:		—
	- placed within 1 m of the hazardous moving part		N/A
	- designed to withstand a force of 250 N sustained for a minimum period of 0.75 s		N/A
	Shutdown device operates automatically if power supply to any door or conveyor is interrupted.		N/A
	While emergency shutdown device is in operation:		—
	1) residual movement of powered part does not cause a HAZARD		N/A
	2) potentially hazardous parts returned to safe state		N/A
	parts included to control compressed air, steam, liquids and contaminated materials		N/A
	Interlock system prevents restoration of normal operation until hazardous conditions are eliminated		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Resetting the emergency shut-down device possible only with a key, code or other means or		N/A
9	**PROTECTION AGAINST THE SPREAD OF FIRE**		—
	If hot items fall from the equipment:		—
	Equipment not to be placed on surfaces which could cause a fire or fume, therefore		N/A
	- Warning provided, and		N/A
	- included instruction manual		N/A
9.5.101	Requirements for equipment containing or using flammable gases		N/A
	see 11.7.4. d), 11.105 g), 13.2.102.1 to 13.101.6	No flammable gases	N/A
10	**EQUIPMENT TEMPERATURE LIMITS AND RESISTANCE TO HEAT**		—
10.1	Surface temperature limits for protection against burns		N/A
	For hot items falling outfrom the equipment, see Clause 9.1	No hot items	N/A
	If easily touched heated surfaces are necessary for functional reasons:	(see Form A.26A)	—
	- they are permitted to exceed the values of table 19 in NORMAL CONDITION and		—
	- to exceed 105°C in SINGLE FAULT CONDITION	Not exceed	—
	only if:		—
	- they are recognizable as such by appearance or function or		N/A
	- are marked with symbol 13 of Table 1 (see 5.2).		N/A
10.3	Other temperature measurements		P
	Additional temperatures are within the limits:		—
	In NORMAL CONDITION:	(see Form A.26A)	—
	aa) LOAD and fluid in the CHAMBER (7.106 a))		N/A
	bb) Fluid in sealed unvented containers (7.106 b))		N/A
	In NORMAL CONDITION and SINGLE FAULT CONDITION:		—
	cc) CHAMBER wall (10.5.101)		N/A
	dd) material (10.5.101)		N/A
	ee) Parts contacted by sterilant (13.2.102.2)		N/A
10.5.101	Other materials		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Tempertures of materials not result in deterioration of materials performance in NORMAL CONDITION and SINGLE FAULT CONDITION	No hazardous materials	N/A
11	**PROTECTION AGAINST HAZARDS FROM FLUIDS**		—
11.1	General		N/A
	Pathogenic substances (13.1.104)		N/A
	Chemical dosing (13.102)		N/A
11.7.2	Leakage and rupture at high pressure		N/A
	PRESSURE VESSELS and shell boilers meet the requirements of 14.101		N/A
11.7.4	Overpressure safety device	No overpressure safety device	N/A
	If maximum working pressure will exceeded, the:		—
	- Overpressure safety device fitted as specified in ISO 4126-1, and shall		N/A
	- set to operating pressure less than maximum working pressure, and shall		N/A
	- ensure that 110 % of maximum working pressure does not exceeded.		N/A
	The overpressure safety device shall:		—
	- not operate in NORMAL CONDITION, and		N/A
	- fullfill the following requirements:		—
	a) connected as close as possible to the parts to be protected		N/A
	b) installed in accordance to manufacturers instructions, and		N/A
	provide easy access for inspection, maintenance and repair		N/A
	c) Adjustment possible only by the aid of a TOOL		N/A
	d) Location of discharge opening		N/A
	e) no shut-off valve located between overpressure safety device and parts to be protected		N/A
	f) Fluid is unlikely to accumulate seat of valve		N/A
	g) Drain connection located at lowest position		N/A
	not cause a HAZARD		N/A
	h) Constructed of materials not be degraded to cause a HAZARD		N/A
	i) Marked according 5.1.101		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Bursting disc only used in combination with overpressure safety device		N/A
	Bursting disc is conform with ISO 4126-2		N/A
11.101	Discharge to atmosphere	No such parts	N/A
	Discharge of pressure venting does not cause a HAZARD		N/A
	Discharge pipe:		—
	- has a continous fall to its outlet; or		N/A
	- automatic drain provided at relevant locations; or		N/A
	- specified in manufacturer`s instructions (see also 11.7.4 g))		N/A
	Discharge released inside equipment:		—
	- no pressure built up during ventilation		N/A
	- no HAZARD occurs from venting or discharge		N/A
11.102	Instruments and indicating devices		P
	Indication provided if necessary to protect against a hazard		P
	a) CHAMBER pressure		N/A
	b) Jacket pressure	No jacket	N/A
	c) OPERATING CYCLE counter	Provided	P
	d) current stage of the OPERATING CYCLE	Provided	P
	e) failure or partial falure of safety-related supplies	Provided	P
	f) line pressure for sterilant or chemical supply		N/A
	g) detection of leaks (see 13.1.103.1 a))		N/A
	h) water pump pressures		N/A
	i) vapor condenser temperature		N/A
	j) operating temperature	Provided	P
	Redundancy shall be provided to assure that the OPERATOR receives sufficient information to avoid a HAZARD, even in SINGLE FAULT CONDITION		P
	During operation by a maintenance person		—
	- safety related devices easily seen by OPERATOR		P
	- Readable from 1 m distance		P
	- at illumination level in the range of 215 lx (± 15 lx) to 1500 lx (± 15 lx).	500 lx	P
11.103	Protection of hot and cold water services		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Means provided conform with relevant requirements of IEC 61770		N/A
	National and local regulations considered.		N/A
	If provided by RESPONSIBLE BODY stated in instructions		P
11.105	Equipment with inflatable or pressure activated seals	No inflatable or pressure activated seals	N/A
	Means provided include the following:		—
	a) OPERATING CYCLE stops		N/A
	b) audible or visible alarm signal as fault indicator		N/A
	c) door remains closed		N/A
	d) supply of sterilant, disinfectant, steam, water or air into the CHAMBER interrupted		N/A
	e) local exhaust ventilation		N/A
	f) Sterilant gas:		N/A
	Source is isolated by automatic operated valve		N/A
	Complete system evacuated to discharge pipe		N/A
	g) In case of flammable sterilant, complete system is purged with air or inert gas		N/A
12	**Protection against radiation, including laser sources, and against sonic and ultrasonic pressure**		—
12.3	Optical radiation		N/A
	unintentional escape of radiation at equipment provided with lamp or lamp systems emitting:	No lamp or lamp systems	—
	ultraviolet radiation, or		N/A
	visible radiation, or		N/A
	infrared radiation, including light emitting diodes		N/A
	except for sources according Table 101……:		—
	assessed according IEC 62471, Risk Group……:		—
	labelled according IEC TR 62471-2		N/A
	Accompanying documents contain:		—
	- protective measures,		N/A
	- restrictions on use		N/A
	- conditions of use of Table 102.		N/A
12.5	Sonic and ultrasonic pressure		N/A
12.5.1	Sound level	No sound level	—

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	no hazardous noise level produced, or		N/A
	maximum sound pressure level measured		—
	- at operator's position in NORMAL USE dB(A)……:		N/A
	- at a distance of 1 m from the ENCLOSURE dB(A)….:		N/A
	Exceptions:		—
	- sound from alarms		N/A
	- sound from parts remote from the equipment		N/A
	Hazardous sound pressure level described at the instructions.		N/A
	Installation instructions specify, how the RESPONSIBLE BODY can ensure that:		—
	- sound pressure level from equipment, will not reach a value that could cause a HAZARD after installation		N/A
	1) Identify readily available and practicable protective materials or		N/A
	measures which may be used		N/A
	2) sound pressure level measured in NORMAL USE		N/A
	- at the OPERATOR'S position and		N/A
	- at a point 1m from the ENCLOSURE in a location that has the highest sound pressure level		N/A
13	**PROTECTION AGAINST LIBERATED GASES, SUBSTANCES, EXPLOSION AND IMPLOSION**		—
13.1	Poisonous and injurinous gases and substances	No poisonous and injurious gases	N/A
	Dangerous amounts of such gases not liberated in NORMAL and SINGLE FAULT CONDITION		N/A
	If potentially-hazardous substances are liberated, the OPERATOR shall not be exposed to a quantity of the substance that could cause harm		N/A
	Discharge is not considered to be liberation of hazardous substances		N/A
	Risk assessment carried out if leakage could cause a toxic or explosive atmosphere in NORMAL CONDITION and in SINGLE FAULT CONDITION.:		—
	For CHAMBER access during OPERATING CYCLE, see 7.102 a)		—
	For preventing the start of a new OPERATING CYCLE, see 7.104		—

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	For fire HAZARD from hot items falling out of equipment, see clause 9 (3).		—
13.1.101	CHAMBER discharge systems		N/A
13.1.101.1	Discharge from the CHAMBER		N/A
	Does not cause a HAZARD		N/A
13.1.101.2	Failure of CHAMBER exhaust system		N/A
	If a HAZARD could arise:		—
	- indicated by audible or visible alarm signals, independent from MAINS SUPPLY		N/A
	- emergency power system provided, if a failure in mains supply occure		N/A
	During a failure in CHAMBER exhaust system:		—
	- start of an OPERATING CYCLE prevented or		N/A
	- access to LOAD prevented		N/A
13.1.101.3	Protection from gases liberated from a drain		N/A
	Discharge from CHAMBER does not cause a HAZARD		N/A
	Installation instructions include statement for venting to a safe place		N/A
13.1.101.4	Local exhaust ventilation		N/A
	Means provided to connect to local exhaust system		N/A
	Installation instructions shall warn the RESPONSIBLE BODY that:		—
	a) additional local exhaust ventilation may also be required in storage areas for sterilant gas;		N/A
	b) the discharge from a local exhaust ventilation system is located so as not to cause a HAZARD.		N/A
13.1.102	LOAD access after fault		N/A
	Instructions for safe access to load after a fault provided		N/A
13.1.103	HAZARDS arising from the use of toxic sterilant		N/A
13.1.103.1	CHAMBER leakage		N/A
	If a HAZARD could arise:		—
	OPERATING CYCLE includes leakage check before sterilant gas is admitted to CHAMBER		N/A
	Equipment reverted to safe condition in case of hazardous leakage		N/A
	Non-return valve provided to prevent the escape of toxic sterilant gas for equipment operating above atmospheric pressure		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
13.1.103.2	Protection against gases liberated from the LOAD		N/A
	Door locked until sterilant concentration is reduced to safe level for OPERATOR .....:		N/A
	manufacturer shall advise the RESPONSIBLE BODY of any change required to take account of the very different gas absorption characteristics of materials processed. .....:		N/A
13.1.103.3	Failure of room ventilation system		N/A
	If room ventilation is required to prevent a HAZARD:		—
	a) the equipment go into safe state		N/A
	b) start of a new OPERATING CYCLE is prevented		N/A
	c) indicated by both audible and visible alarm signal		N/A
13.1.103.4	Materials in contact with sterilant		N/A
	Materials in contact with sterilant:		—
	- not react with sterilant or carrier gas		N/A
	- not lead to a leakage in sufficient quantity		N/A
	Instructions include:		—
	- advise that the material used in the installation must not react with sterilant and carrier gas		N/A
13.1.104	Pathogenic substances		N/A
	Emission of aerosols or fluids do not cause a HAZARD:		—
	- in NORMAL CONDITION, or		N/A
	- in SINGLE FAULT CONDITION.		N/A
	Installation instructions include:		—
	additional means required to control emissions		N/A
13.2	Explosion and implosion		N/A
13.2.101	Materials in contact with sterilant		N/A
	Materials in contact with sterilant not reacting with sterilant or carrier gas, causing:		—
	- change in pressure resulting in explosion or implosion		N/A
	Statement included in instructions		N/A
	Attention paid for selection of material:		—
	- for effects of galvanic attack		N/A
	- for different rates of expansion		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Alloy with more than 65% mass fraction of copper not used		N/A
13.2.102	Explosion, implosion and fire of toxic gas STERILIZERS		N/A
13.2.102.1	Flammable sterilants		N/A
	Equipment using flammable sterilant, provide no source of ignition:		—
	- inside the CHAMBER,		N/A
	- inside its sterilant containers,		N/A
	- inside its exhaust pipings		N/A
	Protection in NORMAL and SINGLE FAULT CONDITION if mixture with air during process:		—
	Concentration reduced to below flammable limit before air is admitted at end of OPERATING CYCLE		N/A
	OPERATING CYCLE ensures prevents processing of next step of sterilization cycle in case of fire or explosion HAZARD		N/A
	CHAMBER exhaust system complies with 13.1.101.2		N/A
13.2.102.2	Heating of flammable liquid sterilant		N/A
	Steriliant containers not subjected to direct heating		N/A
	Flammable or explosive liquids not in direct contact with electrical heating element		N/A
	Temperature of parts in contact with sterilant:		—
	not cause fire or explosion HAZARD in NORMAL and SINGLE FAULT CONDITION		N/A
13.101	Other HAZARDS araising from the use of toxic sterilants		N/A
13.101.1	Opening or disconnecting a sterilant supply system		N/A
	Means provided to prevent HAZARDS (e. g. purging)		N/A
13.101.2	Gas blending		N/A
	No toxic, fire or explosion HAZARD occurs as result from incorrect mixing in NORMAL and SINGLE FAULT CONDITION		N/A
13.101.3	Sterilant supply		N/A
	Additional controls or mechanisms provided to interrupt sterilant supply to CHAMBER		N/A
	Means provided for safe dispensing, connecting and positioning of containers		N/A
13.101.4	Supply from sterilant cartridges		N/A
	Means prevent access during OPERATING CYCLE		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
13.101.5	Isolation of any part of sterilant supply system		N/A
	Overpressure safety device complies 11.7.4		N/A
13.101.6	Failure of sterilant supply control system		N/A
	Indicated by visible alarm signal		N/A
	Equipment in safe state		N/A
	Initiating OPERATING CYCLE not possible		N/A
13.102	Chemical dosing systems		N/A
	Means provided to replenish containers without creating a HAZARD		N/A
14	**COMPONENTS**		—
14.101	PRESSURE VESSELS and shell boilers		N/A
	Comply with applicable national PRESSURE VESSEL regulations, codes or standards……..:		N/A
	or		—
	meet the requirements of clause 11.7		N/A
14.102	Access ports		N/A
	If opened and closed by OPERATOR without the use of a TOOL:		—
	opening prevented, if HAZARD exists		N/A
14.103	Control systems		N/A
	If OPERATOR setting causes a HAZARD, a warning marking is provided (see 5.2)	No such setting	N/A
	Automatic controller provided with system to control access to system functions		N/A
	The following functions are protected by increasingly severe constrains [examples in brackets]:		—
	a) Initiating of OPERATING CYCLE [operator]		N/A
	b) Selection of OPERATING CYCLE [OPERATOR / SUPERVISORS]		N/A
	c) Changing OPERATING CYCLE parameters [supervisors]		N/A
	d) Manual advance through OPERATING CYCLE [suitable trained technicians]		N/A
	e) Maintenance [suitable trained technicians]		N/A
	f) changing OPERATING CYCLE programme [manufacturer or agent]		N/A

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Except for a) and b), above functions require the use of different keys, codes or other equivalent means.		N/A
	Higher-level TOOLS, keys or codes may allow access to lower levels.		N/A
	Termination of OPERATING CYCLE does not require special TOOL, key or code		N/A
	Disabling of safety devices prevented during NORMAL USE even in manual advance or automatic mode		N/A
	Selection of manual mode disables automatic controller		N/A
14.104	Microprocessors		P
	Failure of safety-related microprocessors does not cause a HAZARD		P
	Loss of processor memory battery power does not lead to a HAZARD	No battery	N/A
14.105	Asbestos	Not used	N/A
	No parts of asbestos used		N/A

EN 61010-2-40			
Clause	Requirement — Test	Result — Remark	Verdict

4.4	**TABLE: Testing in single FAULT CONDITION – Results**			**Form B.1**	P
Test subclause	Fault No.	Fault description	Td 4.4.3 (NOTE)	How was test terminated Comments	Meets 4.4.4
4.4.2.102	1	Operate with 90 % of rated voltage	1 h 11 min	No adverse effects. No hazards	P
4.4.2.102	2	Operate with 110 % of rated voltage	1 h 21 min	No adverse effects. No hazards	P
4.4.2.102	3	Set to 90 % of RATED voltage for 5 min	5 min	No adverse effects. No hazards	P
4.4.2.102	4	reduced (gradually 10 V / min)	15 min	No adverse effects. No hazards (66 V~ operating stop)	P
NOTE Td = Test duration in h:min:s Record temperature tests on Form B.4. Record in the comments column for each test whether carried out during or after SINGLE FAULT CONDITION.					
Supplementary information:					

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict

7.4.101	TABLE: Transfer of LOADS into and out of the CHAMBER		Form B.2	P
Description where test applied		Force (N)	Remark	Verdict
Replacement of load		242	No mechanical hazards	P
Supplementary information:				

7.101	TABLE: Doors, conveyors etc.			Form B.3	N/A
Description where test applied		Force (N)	Interlocked Yes / No	Remark	Verdict
Supplementary information:					

7.101 d)	TABLE: Residual movement			N/A
Description where test applied		Speed cm / s	Distance moved (cm)	Verdict
Supplementary information:				

11.7.4	TABLE: Overpressure safety device			Form B.4	N/A
Part	Maximum permissible working pressure MPa	Pressure inside PRESSURE VESSEL MPa	Safety device operating YES / NO	Remark	
Supplementary information:					

EN 61010-2-40			
Clause	Requirement - Test	Result - Remark	Verdict

12.5.1	TABLE: Sound level	Form B.5	N/A
Locations tested	Measured maximum sound level dB(A)	Remarks / Comments	
At operator's normal position and at 1 m distance			
a)			
b)			
c)			
d)			
e)			
f)			
Supplementary information:			

SP	TABLE: Additional or special tests conducted	N/A
Clause and Name of Test	**Test type and condition**	**Observed results**
Supplementary information:		