



Test Report issued under the responsibility of:



TEST REPORT
IEC 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number: AE13A0180275-01

Date of issue.....: 13.01.2014

Total number of pages: 55

CB Testing Laboratory.....: IMQ S. p. A.

Address: Via Quintiliano 43, I-20138 Milano

Applicant's name.....: Colibrì System S.p.A.

Address: Via Enrico Cernuschi, 4 I-20129 Milano

Manufacturer's name.....: Colibrì System S.p.A.

Address: Via Ripamonti, 44 I-20141 Milano

Test specification:

Standard: IEC 60950-1:2005 (Second Edition) + Am 1:2009

Test procedure: CB Scheme

Non-standard test method.....: N/A

Test Report Form No.....: IEC60950_1C

Test Report Form(s) Originator: SGS Fimko Ltd

Master TRF.....: Dated 2012-08

Copyright © 2012 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.



If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.

Test item description: Bookbinder, cover system

Trade Mark: 

Manufacturer: Colibrì System S.p.A. - Via Ripamonti, 44 I-20141 Milano

Model/Type reference.....:  and 

Ratings: 115-230 V, 60-50 Hz, 3.5 A

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	IMQ S. p. A.
Testing location/ address		Via Quintiliano 43, I-20138 Milano
<input type="checkbox"/>	Associated CB Laboratory:	
Testing location/ address		
Tested by (name + signature)		M. Giacometti
Approved by (name + signature)		S. Bilotta
<input type="checkbox"/>	Testing procedure: TMP	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT	
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: SMT	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		
<input type="checkbox"/>	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):

Test Report, pages 55
 Annex 1 : Photographs, pages 9
 Annex 2 : PWB layout scheme, pages 7
 Annex 3 : electric scheme, pages 6
 Annex 4 : drawings, pages 13
 Annex 5 : USA-CAN national differences – pages 4
 Annex 6 : EU_GD_IEC60950_1C_II Attachment – pages 17

Summary of testing:**Tests performed (name of test and test clause):**

1.6.2 Electrical data
 1.7.11 Durability
 2.1.1.7 Risk of electric shock
 2.2 SELV circuits
 2.6.3.4 Resistance of earthing conductors and their terminations
 2.10.2 Working voltage measurement
 2.10.3; 2.10.4 Clearance And Creepage Distance Measurements
 2.10.5 Distance through insulation measurements
 2.9.2 Humidity conditioning
 4.2.4 Steady Force, 250 N
 4.2.5 Impact Test
 4.2.7 Stress relief test
 4.5 Thermal requirements
 4.5.5 Resistance to abnormal heat
 4.7 Resistance to fire (Annex A.2)
 5.1 Touch current measurement
 5.2 Electric Strength Tests And Impulse Tests
 5.3. Simulation of faults
 Annex B, Motor tests under abnormal conditions
 Annex C, Transformers

Testing location:

IMQ S. p. A.
 Via Quintiliano 43, I-20138 Milano

Summary of compliance with National Differences

List of countries addressed:

GROUP DIFFERENCES (CENELEC common modifications EN), Canada, USA.

The product fulfils the requirements of CAN/CSA C22.2 No. 60950-1-07 and ANSI/UL 60950-1, 2nd 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.

(Additional requirements for markings. See 1.7 NOTE)

CoLibri System S.p.A. **CE**
 Model: e-DaVinci MADE IN ITALY
S/N: DV01501
 Input: 115-230V~, 60-50 Hz, 3.5A-Assembled by: Fast Assembler srl

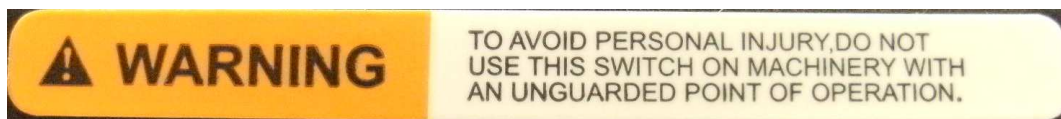
2013				2014				2015			
1	2	3	4	5	6	7	8	9	10	11	12

CoLibri System S.p.A. **CE**
 Model: e-Leonardo MADE IN ITALY
S/N: EL01501
 Input: 115-230V~, 60-50 Hz, 3.5A-Assembled by: Fast Assembler srl

2013				2014				2015			
1	2	3	4	5	6	7	8	9	10	11	12



Cycle start pedal



Test item particulars:	
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	115-230 V
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	20A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IP/
Altitude during operation (m)	2000m
Altitude of test laboratory (m)	122m
Mass of equipment (kg)	See General product information
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	: 06.02.2013 – 16.04.2013 – 06.06.2013 – 17.06.2013 – 06.11.2013 – 02.12.2013 (Item sent and sampling by the applicant)
Date(s) of performance of tests	: 07.06.2013 to 12.12.2013
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 appended table)" refers to a table appended to the report.

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

The uncertainties for the tests and measurements are those listed in IMQ Operational Instruction IO-LAB-001.

No. of .B.E.M. : 67216 – 68329 – 69035 – 69159 – 70666 – 71008 (IMQ reference number).

Manufacturer's Declaration per sub-clause 6.2.5 of IEC 60335-1:

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) : FAST Assembler S.r.l. | Via S. Domenico, 11/13 - 20010 Bareggio (MI)

General product information:

Models e-DaVinci and e-Leonardo, are covering system for books and all types of publications. It used the special transparent coverings of the CoLibri system, which come in four standard formats A4/A3/A2/A1 (A1 only for e-DaVinci model).

Ambient temperature 25°C.

Models e-DaVinci and e-Leonardo, differ by overall dimensions, and heating resistor length.

e-DaVinci

The overall dimensions are 85mm (h), 705mm (w), 440mm (d) for a total weight of 6kg approx.

e-Leonardo

The overall dimensions are 85mm (h), 560mm (w), 435mm (d) for a total weight of 4.5kg. approx.

The bookbinders are also provided with a cycle start pedal, it has the function of the cycle start push-button and it allows you to carry out the covering.

Firmware revision: 3.3.6, not involved in the security operations.

GENERAL CONDITION FOR TESTS:

According to 1.4 "General conditions for the tests" with the appliance operating as follows:



- continuous operation;
- cut adjust set on 5.

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation SI	
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		-
1.5	Components		-
1.5.1	General		-
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their certified ratings and they comply with applicable parts of IEC 950. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 950. Components, for which no relevant IEC or EN standards exist, have been tested under the conditions occurring in the equipment.	P
1.5.3	Thermal controls		N/A
1.5.4	Transformers	(see annex C and table 5.3)	P
1.5.5	Interconnecting cables	Pedal.	P
1.5.6	Capacitors bridging insulation	Capacitors bridging basic insulation (see appended tables 1.5.1)	P
1.5.7	Resistors bridging insulation		P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Functional insulation.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	Not provided.	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	Not provided.	N/A
1.5.8	Components in equipment for IT power systems	Not intended for IT system.	N/A
1.5.9	Surge suppressors		-
1.5.9.1	General		P
1.5.9.2	Protection of VDRs	Fuse provided in the primary circuit.	P
1.5.9.3	Bridging of functional insulation by a VDR	(see appended tables 1.5.1)	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6	Power interface		-
1.6.1	AC power distribution systems	TT	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		P
1.7	Marking and instructions		-
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:	Only one connections.	N/A
	Rated voltage(s) or voltage range(s) (V)	115-230 V	P
	Symbol for nature of supply, for d.c. only		N/A
	Rated frequency or rated frequency range (Hz)	60-50 Hz	P
	Rated current (mA or A)	3.5A	P
1.7.1.2	Identification markings		-
	Manufacturer's name or trade-mark or identification mark		P
	Model identification or type reference		P
	Symbol for Class II equipment only	Class I equipment	N/A
	Other markings and symbols		N/A
1.7.2	Safety instructions and marking	Special precautions are given in the instruction manual.	P
1.7.2.1	General		-
1.7.2.2	Disconnect devices	Power supply cord used as the disconnect device..	P
1.7.2.3	Overcurrent protective device	Pluggable equipment type A.	N/A
1.7.2.4	IT power distribution systems	Not intended for connection to the IT power distribution system.	N/A
1.7.2.5	Operator access with a tool	There are not operator access areas reachable by means of a tool.	N/A
1.2.7.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment	100-230 V. Full range.	N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	Not provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Marking F1 placed on PWB of the PSU. The fuse are not located in the operator access area.	P
1.7.7	Wiring terminals		-
1.7.7.1	Protective earthing and bonding terminals	Symbol IEC 417-1 No. 5017 concerning the protective conductor terminal is placed on certified power inlet .	P
1.7.7.2	Terminals for a.c. mains supply conductors	Detachable power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		-
1.7.8.1	Identification, location and marking	Placed on switch body.	P
1.7.8.2	Colours		N/A
1.7.8.3	Symbols according to IEC 60417	Symbol IEC 417-1 No. 5007 for "ON" and IEC 417-1 No. 5008 for "OFF".	P
1.7.8.4	Markings using figures		N/A
1.7.9	Isolation of multiple power sources	Only one connection to the power supplies.	N/A
1.7.10	Thermostats and other regulating devices		N/A
1.7.11	Durability	Labels made of adhesive film withstand the required test. Test performed.	P
Marking and labelling are made by Avery Dennison Materials Europe B V according to CSA C22.2 No 0.15 and ANSI/UL 969 standards, (UL MH27538).			
1.7.12	Removable parts	Markings are placed on the backside, which is not removable without use of tools.	P
1.7.13	Replaceable batteries	Not provided.	N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations.....		N/A
2	PROTECTION FROM HAZARDS		-
2.1	Protection from electric shock and energy hazards		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1	Protection in operator access areas	The construction of the appliance provides an adequate protection against Operator contact with bare parts at ELV or Hazardous voltage or parts, other than safety earth, separated from these with basic or operational insulation only.	P
2.1.1.1	Access to energized parts	Only SELV and Safety Earth in the accessible area.	P
	Test by inspection	No contact with parts mentioned in 2.1.1.1	P
	Test with test finger (Figure 2A)	No contact with bare conductive parts at Hazardous voltage.	P
	Test with test pin (Figure 2B)	No contact with bare conductive parts at Hazardous voltage.	P
	Test with test probe (Figure 2C)	No TNV connectors are present.	N/A
2.1.1.2	Battery compartments	Not provided.	N/A
2.1.1.3	Access to ELV wiring	No internal ELV wiring is present in the appliance.	N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No internal Hazardous voltage wiring accessible to the operator.	N/A
2.1.1.5	Energy hazards	Hazardous energy present in the circuits no accessible to the operator. (see appended tables 2.1.1.5)	N/A
2.1.1.6	Manual controls	No shaft or knobs etc. at ELV or hazardous voltage or TNV.	N/A
2.1.1.7	Discharge of capacitors in equipment	(see appended tables 2.1.1.7)	P
	Measured voltage (V); time-constant (s)		—
2.1.1.8	Energy hazards – d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply ..		N/A
	b) Internal battery connected to the d.c. mains supply		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.9	Audio amplifiers	See cl. 2.1.1.1 See separate test report IEC/EN 60065	N/A
2.1.2	Protection in service access areas	Unintentional contact is unlikely during service operations.	P
2.1.3	Protection in restricted access locations	Appliance not intended to be installed in restricted access locations.	N/A

2.2	SELV circuits		
2.2.1	General requirements	No accessible voltage exceeds the SELV limit even after a single fault.	P
2.2.2	Voltages under normal conditions (V)	< 42.4 V _{peak} or 60 V _{dc}	P
2.2.3	Voltages under fault conditions (V)	< 71 V peak or 120 V d.c.	P
2.2.4	Connection of SELV circuits to other circuits	SELV circuits not connected to primary circuits.	N/A

2.3	TNV circuits		-
2.3.1	Limits	Not provided	N/A
	Type of TNV circuits.....		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N/A

2.4	Limited current circuits		-
2.4.1	General requirements	Not present.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz).....		—
	Measured current (mA)		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V)		—
	Measured circuit capacitance (nF or μ F)		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources	(see appended table 2.5)	-
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)		—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters	(See Annex CC)	
2.6	Provisions for earthing and bonding		-
2.6.1	Protective earthing	Accessible conductive metal parts are earthed.	P
2.6.2	Functional earthing	Not present.	N/A
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors		P
	Rated current (A), cross-sectional area (mm^2), AWG	AWG 18	—
2.6.3.3	Size of protective bonding conductors	(See component list)	P
	Rated current (A), cross-sectional area (mm^2), AWG	AWG 18	—
	Protective current rating (A), cross-sectional area (mm^2), AWG.....		
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	(See table 2.6.3.4)	P
2.6.3.5	Colour of insulation	Green/yellow	P
2.6.4	Terminals		-
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals	Appliance provided with appliance inlets.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Appliance provided with appliance inlets.	N/A
2.6.5	Integrity of protective earthing		-
2.6.5.1	Interconnection of equipment	No interconnecting equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductor.	P
2.6.5.3	Disconnection of protective earth		P
2.6.5.4	Parts that can be removed by an operator	Appliance provided with appliance inlets.	P
2.6.5.5	Parts removed during servicing		P
2.6.5.6	Corrosion resistance	No risk of corrosion. (see annex J)	P
2.6.5.7	Screws for protective bonding		P
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		-
2.7.1	Basic requirements	Primary fuse provided	P
	Instructions when protection relies on building installation	Pluggable type A equipment.	N/A
2.7.2	Faults not simulated in 5.3.7		-
2.7.3	Short-circuit backup protection	Pluggable type A equipment.	P
2.7.4	Number and location of protective devices :	Primary fuse and device in the building installation.	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel :	Only one primary fuse placed on phase pole.	N/A

2.8	Safety interlocks		-
2.8.1	General principles	Not provided.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm)		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		
2.9.1	Properties of insulating materials	Insulation materials have adequate thermal and mechanical strength. Neither natural rubber, material containing asbestos nor hygroscopic materials are used as insulation.	P
2.9.2	Humidity conditioning	Performed for 48 h.	P
	Relative humidity (%), temperature (°C)	95%	—
2.9.3	Grade of insulation	30°C	P
2.9.4	Separation from hazardous voltages	Insulation used in the various parts of the appliance are adequate for the application.	P
	Method(s) used	Performed for 48 h.	—

2.10	Clearances, creepage distances and distances through insulation		-
2.10.1	General		P
2.10.1.1	Frequency	Considered	P
2.10.1.2	Pollution degrees	Considered	P
2.10.1.3	Reduced values for functional insulation	Considered	P
2.10.1.4	Intervening unconnected conductive parts	Considered	P
2.10.1.5	Insulation with varying dimensions	Considered	P
2.10.1.6	Special separation requirements	Considered	N/A
2.10.1.7	Insulation in circuits generating starting pulses	Considered	N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General	(see appended table)	P
2.10.2.2	RMS working voltage	(see appended table)	P
2.10.2.3	Peak working voltage	(see appended table)	P
2.10.3	Clearances		-
2.10.3.1	General		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.2	Mains transient voltages		P
	a) AC mains supply	Overvoltage category II; 2500V	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.6	Transients from a.c. mains supply	2500V	P
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		-
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		-
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices	(see appended table 1.5.1 Opto Electronic Devices)	P
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material – General	(see appended table C.2 and 5.2)	P
2.10.5.7	Separable thin sheet material		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Number of layers (pcs)..... :	(see appended table C.2 and 5.2)	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		P
	Electric strength test	(see appended table 2.10.5 e C.2)	—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5 e C.2)	N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components		P
2.10.5.12	Wire in wound components		P
	Working voltage	(See Annex C and annex U)	P
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		P
	c) Compliance with Annex U		P
	Two wires in contact inside wound component; angle between 45° and 90°		P
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test	(see appended table 2.10.5)	—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		-
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4) vedi tabella	P
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4) vedi tabella	P
2.10.6.4	Insulation between conductors on different layers of a printed board		P
	Distance through insulation	(see appended table 2.10.5)	-
	Number of insulation layers (pcs)..... :	3	-
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

3	WIRING, CONNECTIONS AND SUPPLY		-
3.1	General		-
3.1.1	Current rating and overcurrent protection	Internal wiring gauge is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	The wireways are smooth and free of sharp edges.	P
3.1.3	Securing of internal wiring	The internal wirings are mechanically secured in a manner to prevent undue displacement or damaging.	P
3.1.4	Insulation of conductors	Insulation of all internal wiring is suitable for the application. (see appended table 5.2)	P
3.1.5	Beads and ceramic insulators	Not provided.	N/A
3.1.6	Screws for electrical contact pressure	No electrical contact pressure transmitted by means of screws.	N/A
3.1.7	Insulating materials in electrical connections	Contact pressure transmitted only through metal parts.	P
3.1.8	Self-tapping and spaced thread screws	Not present	N/A
3.1.9	Termination of conductors		P
	10 N pull test		P
3.1.10	Sleeving on wiring		N
3.2	Connection to a mains supply		-
3.2.1	Means of connection		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	Connection to an a.c. mains supply	Appliance inlet for connection of a detachable power supply cord provided.	P
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections	Only one connection to the mains.	N/A
3.2.3	Permanently connected equipment	The EUT is not permanently connected to the mains.	N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	(see appended table 1.5)	P
3.2.5	Power supply cords	Detachable power supply cord.	-
3.2.5.1	AC power supply cords	(see appended table 1.5)	P
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Detachable power supply cord.	N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	See above.	N/A
3.2.8	Cord guards	See above.	N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space	See above.	N/A

3.3	Wiring terminals for connection of external conductors		-
3.3.1	Wiring terminals	Detachable power supply cord.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	Disconnection from the mains supply		-
3.4.1	General requirement		P
3.4.2	Disconnect devices	Power supply cord provided with a plug.	P
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized	When the cord set is disconnected no parts remain under hazardous voltage.	N/A
3.4.5	Switches in flexible cords	Not present	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	Both poles disconnected simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single-phase equipment	N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices	See 1.7.2	P
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		-
3.5.1	General requirements		N/A
3.5.2	Types of interconnection circuits		N/A
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A
4	PHYSICAL REQUIREMENTS		-
4.1	Stability		P
	Angle of 10°	The test has been performed. The EUT does not overbalance when tilted of a 10 degrees in any direction from its normal upright position. Further test not applied since the machine is not floor-standing and is less than 1 m high.	P
	Test force (N)		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.2	Mechanical strength		-
4.2.1	General	The EUT has adequate mechanical strength.	P
	Rack-mounted equipment.	(see Annex DD)	N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	(see appended table)	P
4.2.5	Impact test	(see appended table)	P
	Fall test	(see appended table)	P
	Swing test	(see appended table)	P
4.2.6	Drop test; height (mm)	No hand-held equipment.	N/A
4.2.7	Stress relief test	Lateral mechanical support tested. (see appended table)	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified	(see separate test report or attached certificate)	N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	Appliance not intended for wall or ceiling mounting.	N/A

4.3	Design and construction		-
4.3.1	Edges and corners	Edges and corners of the appliance enclosure are adequately routed and smoothed.	P
4.3.2	Handles and manual controls; force (N)		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts	All hazardous parts are fixed to retain in position in the event of termination failure.	P
4.3.5	Connection by plugs and sockets	Not provided.	N/A
4.3.6	Direct plug-in equipment		N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment	Heating element in secondary circuit.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.8	Batteries	Not provided. (see appended tables 4.3.8)	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	See above.	N/A
4.3.11	Containers for liquids or gases	The equipment does not contain liquids or gases.	N/A
4.3.12	Flammable liquids	See above.	N/A
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A
4.3.13	Radiation		-
4.3.13.1	General	The equipment does not generate ionizing radiation.	N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		N/A
4.3.13.5.1	Lasers (including laser diodes)	(see separate test report of IEC/EN 60825-1 / IEC/EN 60825-2)	N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)		—
4.3.13.6	Other types		N/A
4.4	Protection against hazardous moving parts		-
4.4.1	General		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.2	Protection in operator access areas	<p>Enclosure present on bottom back side accessibility to moving parts; roller and belt roller:</p> <p>1) the hazardous moving parts is directly involved in the process.</p> <p>2) the appliance have a suitable construction to reduce the likelihood of access to rollers parts</p> <p>3) the hazard is not obvious but not particularly dangerous</p> <p>4) warning plate with the following warning is present on the appliance: "WARNING HAZARDOUS MOVING PARTS KEEP FINGERS AND OTHER BODY PARTS AWAY".</p> <p>The front part of the device has the accessible slit, under the sealing bar to allow the entrance of the cover, of 2.8mm. The hazard is obvious and not particularly dangerous. The notes 1) and 4) shown above are applied.</p>	
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas	Unintentional contact with the moving parts is unlikely during servicing operations.	N/A
4.4.5	Protection against moving fan blades	Not provided.	N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a).....:		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5	Thermal requirements		-
4.5.1	General		P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L	EUT setted on "Cut Adjust" 5 medium value.	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat	Thermoplastic parts are certified as separate parts. (see also appended table 4.5.5)	P
4.6	Openings in enclosures		-
4.6.1	Top and side openings	No openings.	P
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	No openings.	P
	Construction of the bottomm, dimensions (mm) ..		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No adhesive used for securing barriers or screens.	N/A
	Conditioning temperature (°C), time (weeks).....		—
4.7	Resistance to fire		-
4.7.1	Reducing the risk of ignition and spread of flame	Risk of ignition is minimized. According to 4.5 results, electrical components are used so that their maximum temperature is not likely to cause ignition of their surroundings.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.2	Conditions for a fire enclosure	Fire enclosure is in compliance with the requirements.	P
4.7.2.1	Parts requiring a fire enclosure	Component in primary and secondary circuits are required to be protected by fire enclosure.	P
4.7.2.2	Parts not requiring a fire enclosure	Internal wiring insulated with PVC and strapped by individual cable ties. Heating resistor doesn't need fire enclosure qua is a part of the equipment provided with a momentary contact switch, which the user has to activate continuously and the release of which removes power from the part of the equipment.	P
4.7.3	Materials		-
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	Enclosure made in metal.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	See Table 4.7	P
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal wirings are insulated with PVC or the like. All located parts inside the fire enclosure are rated V-2 or better. For mains transformer see annex C and table 5.3. Motors provided by metal enclosure see annex B and table 5.3.	P
4.7.3.5	Materials for air filter assemblies	Not provided	N/A
4.7.3.6	Materials used in high-voltage components	Not provided	N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		-
5.1	Touch current and protective conductor current		-
5.1.1	General	(see appended Table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)	Only one connection to mains.	P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.3	Test circuit	The appliance was tested with the circuit in fig. 5.A of this standard.	P
5.1.4	Application of measuring instrument		P
5.1.5	Test procedure		P
5.1.6	Test measurements	Circuit D.1 used.	P
	Supply voltage (V)	(see appended table 5.1)	—
	Measured touch current (mA)	(see appended table 5.1)	—
	Max. allowed touch current (mA)	(see appended table 5.1)	—
	Measured protective conductor current (mA)	(see appended table 5.1)	—
	Max. allowed protective conductor current (mA)...	(see appended table 5.1)	—
5.1.7	Equipment with touch current exceeding 3,5 mA	(see appended table 5.1)	N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

5.2	Electric strength		-
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	Considered.	P

5.3	Abnormal operating and fault conditions		
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	(see appended Annex B)	P
5.3.3	Transformers	(see appended Annex C)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.4	Functional insulation..... :	a) and c)	P
5.3.5	Electromechanical components	No electromechanical components other than motors and switch provided within in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE :	Not provided. See separate test report IEC/EN 60065	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	In accordance with the requirements.	P
5.3.9.2	After the tests	In accordance with the requirements.	P
6	CONNECTION TO TELECOMMUNICATION NETWORKS		-
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V) :		—
	Current in the test circuit (mA) :		—
6.1.2.2	Exclusions :		N/A
6.2	Protection of equipment users from overvoltages on telecommunication networks		-
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	N/A
6.2.2.3	Compliance criteria		N/A
6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A) :		—
	Current limiting method :		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		-
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test	(see appended table 5.2)	N/A
7.4.3	Impulse test	(see appended table 5.2)	N/A

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		-
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.2.1	Samples, material	a) Complete part of the lateral support. b) Complete part of the plastic abutment c) Complete part of the roller d) Complete part of the working plate e) rubber flap	—
	Wall thickness (mm)	a)2mm; b)1.5mm; c)1.2mm; d)1.5mm; e)7mm.	—
A.2.2	Conditioning of samples; temperature (°C) ..	168h/70°C	P
A.2.3	Mounting of samples	Considered.	P
A.2.4	Test flame (see IEC 60695-11-4)		P
	Flame A, B or C	A	—
A.2.5	Test procedure	30s/60s/30s	P
A.2.6	Compliance criteria		P
	Sample 1 burning time (s)	a)0s; b)0s; c)0s; d)0s; e)0s	—
	Sample 2 burning time (s)	a)0s; b)0s; c)0s; d)0s; e)0s	—
	Sample 3 burning time (s)	a)0s; b)0s; c)0s; d)0s; e)0s	—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		-
B.1	General requirements		P
	Position	DC motors in secondary circuit.	—
	Manufacturer	1) cut motor, micro motors s.r.l. 2) welding motor, micro motors s.r.l.	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Type	1) HV 155.24.43 2) RH 158.24.200	—
	Rated values	1) 24 Vdc, 280 mA (load) 2) 24 Vdc, 290 mA (load)	—
B.2	Test conditions	Tested on the bench.	P
B.3	Maximum temperatures	(see appended table 5.3)	P
B.4	Running overload test	(see appended table 5.3)	N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits	Locked-rotor is the worst condition. Motors inherent impedance protected.	N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		-
B.7.1	General	Motors locked per 7h	P
B.7.2	Test procedure	(see appended table 5.3)	P
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)	(see appended table 5.2)	N/A
B.8	Test for motors with capacitors	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	N/A
B.10	Test for series motors	No series motor.	N/A
	Operating voltage (V)		—
See Annex 4 Drawings and Data sheet.			

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		
	Position	Main Transformer T2	—
	Manufacturer	I.C.E. s.r.l.	—
	Type	Colibri code: 259800 R.04-T2 ICE code 123073 or 123075	—
	Rated values	SMPT, 40W	—
	Method of protection	Primary fuse F1	—
C.1	Overload test	(see appended table 5.3)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
C.2	Insulation	(see appended tables 5.2 and C2)	P
	Protection from displacement of windings		P
<p>Construction : concentrically windings positioned on single coil-former</p> <p>Insulation : UL Recognised (OBJS2), windings N3 insulated by CSA/UR certified reinforced insulated winding wire manufactured by FURUKAWA ELECTRIC Co. LTD. type TEX-E, rated 130°C or UL Recognised OBJT2, certified reinforced insulated winding wire manufactured by Rubadue Wire Co Inc, type T26A01TXXX-1.5, rated 155°C.</p> <p>Core Epcos Mat. N87 dimensions 31.5x30x10 mm</p> <p>Bobbin : Polyethylene Terephthalate (PET), glass reinforced, flame retardant, "Rynite",, manufactured by E I DUPONT DE NEMOURS & CO INC, type FR530(I)(+)(f1),, rated 155°C, UL94V-0 flammability, thick 1mm, (E41938) or equivalent</p> <p>Tubing on wire: Silicone rubber tubing, manufactured by NIKKAN INDUSTRIES CO LTD., type E-651U-2, rated 200°C, VW-1 flammability, thick >0.4mm, (E884 68)</p> <p>Or</p> <p>Silicone varnished fiberglass sleeving, manufactured by, ISOLCAVI SAS DI GHIDONI ANNA & C, type GVES, rated 250°C, VW-1 flammability, thick >0.4mm (E311983)</p> <p>Or</p> <p>silicone rubber coated fiberglass sleeveings, manufactured by, VARFLEX CORP, type Varglas, rated 200°C, VW-1 flammability, thick >0.4mm (E63450)</p> <p>Tape, mylar : complies with flame retardant requirements</p> <p>Windings : Primary N1 : 80 spires, Ø 0.28 mm Primary N2 : 10 spires, Ø 0.28 mm Secondary N3 : 12 spires, Ø 0.7 mm</p> <p>See also Annex 4 Drawings and Data sheet.</p>			
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		-
	Position	Welding Transformer T1	—
	Manufacturer	I.C.E. s.r.l.	—
	Type	Colibri code: 259801 R.03-T2 ICE code 123208 or 123212	—
	Rated values	SMPT , 320W	—
	Method of protection	Primary fuse F1	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended tables 5.2 and C2)	P
	Protection from displacement of windings		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

<p>Construction : concentrically windings positioned on single coil-former</p> <p>Insulation : UL Recognised (OBJ2), windings N1, N2 insulated by CSA/UR certified reinforced insulated winding wire manufactured by FURUKAWA ELECTRIC Co. LTD. type TEX-E, rated 130°C or UL Recognised OBJ2, certified reinforced insulated winding wire manufactured by Rubadue Wire Co Inc, type T26A01TXXX-1.5, rated 155°C.</p> <p>Core Epcos Mat. N87 dimensions : 31.5x30x10 mm</p> <p>Bobbin : Polyethylene Terephthalate (PET), glass reinforced, flame retardant, "Rynite",, manufactured by E I DUPONT DE NEMOURS & CO INC, type FR530(l)(+)(f1),, rated 155°C, UL94V-0 flammability, thick 1mm, (E41938) or equivalent</p> <p>Tubing on wire: Silicone rubber tubing, manufactured by NIKKAN INDUSTRIES CO LTD., type E-651U-2, rated 200°C, VW-1 flammability, thick >0.4mm, (E884 68)</p> <p>Or</p> <p>Silicone varnished fiberglass sleeving, manufactured by, ISOLCAVI SAS DI GHIDONI ANNA & C, type GVES, rated 250°C, VW-1 flammability, thick >0.4mm (E311983)</p> <p>Or</p> <p>silicone rubber coated fiberglass sleeveings, manufactured by, VARFLEX CORP, type Varglas, rated 200°C, VW-1 flammability, thick >0.4mm (E63450)</p> <p>Tape, mylar : complies with flame retardant requirements</p> <p>Windings : Primary N1 : 36 spires, Ø 0.5mm Primary N2 : 36 spires, Ø 0.5mm Secondary N3 : 6 spires, LITZ (60xØ 0.01mm) Secondary N4 : 6 spires, LITZ (60xØ 0.01mm)</p> <p>See also Annex 4 Drawings and Data sheet.</p>			
---	--	--	--

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		-
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		-
----------	--	--	---

F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		-
----------	---	--	---

G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		-
G.1	Clearances		N/A
G.1.1	General		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		
	Metal(s) used	aluminium, copper, steel	—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		-
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation	(see appended table 5.3)	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		-
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	EUT setted on "Cut Adjust" 5. Cut Adjust: it allows you to change the unit setting. Allowable values: 0 ÷ 10. Increasing the parameter pressure.	P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		-
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		-
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		-

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Preferred climatic categories	Component certified . See table 1.5.1.	P
	b) Maximum continuous voltage		P
	c) Pulse current		P
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		-
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		-
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		-
		See separate test report	—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
		Insulated windings wire certified as separate part.	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		-
V.1	Introduction		P
V.2	TN power distribution systems		N/A
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		-
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		-
X.1	Determination of maximum input current		P
X.2	Overload test procedure		P
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		-
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		P
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		-
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		-
CC.1	General		N/A
CC.2	Test program 1.....		N/A
CC.3	Test program 2.....		N/A
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		-
DD.1	General		N/A
DD.2	Mechanical strength test, variable N.....		N/A
DD.3	Mechanical strength test, 250N, including end stops.....		N/A
DD.4	Compliance.....		N/A
EE	ANNEX EE, Household and home/office document/media shredders		-
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....		N/A
	Information of user instructions, maintenance and/or servicing instructions.....		N/A
EE.3	Inadvertent reactivation test.....		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols.....:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A):		N/A
	Test with wedge probe (Figure EE1 and EE2):		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Cord set Mains plug Flexible cord Connector socket	Phino Electric Co., Ltd.	PHP-305 H05VV-F PHS-301	10A, 250 V 3x0.75 mm ² 10A, 250V	EN 50575 HD 21.5 S3 IEC 60320	IMQ IMQ, VDE IMQ, VDE
Cord set (2) Mains plug Flexible cord Connector socket	Min-Tec Industriale S.r.l.	P620 SJT PA99	10 A, 125 V 3x18 AWG 10 A, 125 V	C22.2 NO 21- M1984, E.C.N. 436D UL 817	CSA, UL
Mains appliance inlet	Elektron Technology Uk Limited	BZM1	250 V, 15 A	ANSI/UL 498, ANSI/UL 60320- 1, CSA-C22.2 No.55182.3, EN 60320-1:201+ A1:2007	ENEC10, UR, CSA
Mains switch	Elektron Technology Uk Limited	8500	250 V, 15 A	EN 61058- 1:2002+A2:2008 UL1054, CSA- C22.2 No.55	ENEC15, UR, CSA
Primary fuse F1	Littelfuse Inc.	372 SERIES	micro fuses: cartridge enclosed, 4 A, 250 V, Time delay	IEC 60127-3/4 CSA-C22.2 No. 248-1-00 CSA-C22.2 No. 248-14-00 ANSI/UL 248-1 ANSI/UL 248-14	cURus(E67006) , VDE, CCC
Varistor RV1	Epcos (Zhuhai Ftz) Co Ltd	S20K275	250V	UL 1449, IEC 61052-2 + IEC 60950-1 AnnexQ	cURus(E32112 6), VDE
EMI Coil L4	Epcos	B82724-J2222- N020	2x15mH, 2.2A 250 V Case flame class UL94V-0	IEC 938-2(VDE 568-1) ANSI/UL 1283,	VDE, UR (E70122)

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
PFC Coil L3	ICE	259802	Class F, Case and resin flame class: UL94V-0	UL 94	UR, (E143312) (E60641); (E41938); (E116643)
Y2 capacitor C48	Murata MFG Co LTD	KH series	4.7 nF; 250V	ANSI/UL 60384- 14, ANSI/UL 1283, CAN/CSA- E60384-1 CAN/CSA- E60384-14 C22.2 No. 8 IEC 384-14 II	CSA UR (E37921)
Y2 capacitor C47, C50, C58	Murata MFG Co LTD	KH series	2.2 nF; 250V	ANSI/UL 60384- 14, ANSI/UL 1283, CAN/CSA- E60384-1 CAN/CSA- E60384-14 C22.2 No. 8 IEC 384-14 II	CSA UR (E37921)
X2 Capacitors C49, C57	Okaya Electric Industries Co Ltd	LE474	0.47uF, 275 Vac	ANSI/UL 60384- 14, ANSI/UL 1283, CAN/CSA- E60384-1 CAN/CSA- E60384-14 C22.2 No. 8 IEC 384-14 II	cUR (E47474, E78644) SEMKO
Varistor RV3, RV4	Littelfuse Inc.	V275LA20CP	250V	UL 1449, IEC 61052-2 + IEC 60950-1 AnnexQ	CSA, UR (E320116)
NTC RT1	EPCOS	B57237S100M	NTC 10OHM/3,7A	is UL 1434, IEC 60730-1, Annex J, CSA LTR I-003	cUR - E69802
Transformer T2	I.C.E. s.r.l.	Colibri code: 259800 R.04-T2 ICE code 123073 or 123075	SMT, 40W	-	Tested in appliance

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾
Transformer T1	I.C.E. s.r.l.	Colibri code: 259801 R.03-T2 ICE code 123208 or 123212	SMT, 320W	-	Tested in appliance
Optocouplers (V1, V6, V7)	Vishay	CNY17F-3	Insulation voltage : 5 KV	UL 1577, IEC 60950-1 EN 60065:2002 + A1:2006 + A11:2008	cUR (E52744), VDE, FIMKO
Resistore R48, R76	Vishay	RLP	0.1Ω	/	Tested in appliance
Secondary motor (cut motor)	Micromotors s.r.l	HV 155.24.43	24 V, 280 mA (loaded) Class A considered	-	Tested in appliance
Secondary motor (welding motor)	Micromotors s.r.l	RH 158.24.200	24 V, 290 mA (loaded) Class A considered	-	Tested in appliance
Heating resistor	Sandvik Italia S.p.A. Kanthal Division	KANTHAL A-1	1400°C	-	Tested in appliance
CCR sensor (two provided)	AMS-TAOS USA INC.	TCS3414CS	3.8V, 20mA	/	/
Foot switch	Suns Electric (Zhangzhou) Co Ltd	FS-81-10-2	125/250V, 10A (1/2HP),	ANSI/UL 508, ANSI/UL 60947- 1, ANSI/UL 60947-4-1A, CSA-C22.2 No. 14, CAN/CSA- C22.2 No. 60947- 1-2007, CAN/CSA-C22.2 No. 60947-4-1- 2007,	cURus(E24019 9)

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: Opto Electronic Devices	
Manufacturer : VISHAY		
Type..... : CNY17F-3		
Separately tested..... : Certified as separate component by UL, cUR, VDE, BSI, FIMKO		
Bridging insulation : Reinforced		
External creepage distance : 9.4mm		
Internal creepage distance : 6		
Distance through insulation : 0.4		
Tested under the following conditions : /		
Input..... : /		
Output..... : /		
supplementary information		
Double protection optical isolators having an isolation voltage of 5000Vrms		

1.6.2	TABLE: Electrical data (in normal conditions)						
U (V)	I (A)	Irated (A)	P (W)	F(Hz)	Ifuse (A)	Condition/status	
104	3.75	3.5	366	60	-	EUT setted on "Cut Adjust" 10 max permitted.	
115	3.46	3.5	377	60	-		
127	3.45	3.5	388	60	-		
207	1.80	3.5	364	50	-		
230	1.59	3.5	361	50	-		
254	1.45	3.5	360	50	-		
Supplementary information: Environmental conditions: relative humidity 52%; atmospheric pressure 996mbar, temperature 25°C.							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.7	TABLE: Risk of electric shock			
Measurement From / To	Supply Voltage/Freq.	Time constant	Switch ON/OFF	Voltage measured
Neutral to Earth	104V/60Hz	36ms	ON	15V _{peak}
Neutral to Earth	104V/60Hz	542 ms	OFF	12V _{peak}
Line to Earth	104V/60Hz	900ms	OFF	0V _{peak}
Line to Earth	104V/60Hz	1s	ON	4V _{peak}
Line to Neutral	104V/60Hz	5ms	ON	0V _{peak}
Line to Neutral	104V/60Hz	660ms	OFF	36V _{peak}
Line to Neutral	127V/60Hz	905ms	OFF	36V _{peak}
Line to Neutral	254V/50Hz	482ms	OFF	37V _{peak}
Line to Neutral	254V/50Hz	18ms	ON	0V _{peak}
Line to Earth	254V/50Hz	719ms	ON	18V _{peak}
Line to Earth	254V/50Hz	950ms	OFF	5V _{peak}
Neutral to Earth	254V/50Hz	250ms	OFF	14V _{peak}
Neutral to Earth	254V/50Hz	512ms	ON	14V _{peak}
Supplementary information: Environmental conditions: relative humidity 52%; atmospheric pressure 996mbar, temperature 25°C.				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.6.3.4	TABLE: resistance of earthing conductors and their terminations			
Accessible conductive part	Test current (A) 40x2'	Voltage drop (V)	Calculated Resistance (Ω)	
Welding Bar	Yes	0.85	0.021	
Top enclosure	Yes	0.25	0.006	
Bottom enclosure	Yes	0.42	0.011	
Earth track on PWB	Yes	0.26	0.007	
Supplementary information: Environmental conditions: relative humidity 48%; atmospheric pressure 994mbar, temperature 24°C.				

2.10.2	Table: working voltage measurement			
Location	RMS voltage (V)	Peak voltage (V)	Comments	
-DC to drain	196	392	Transformer T2. Supply voltage 115V/60Hz	
-DC to drain	337	555	Transformer T2. Supply voltage 230V/50Hz	
supplementary information:				
Supplementary information: T2 frequency 105KHz The primary circuitry of T1 don't give rise to working voltage exceeding the peak value of the nominal a.c. mains supply voltage, see electrical scheme. Environmental conditions: relative humidity 48%; atmospheric pressure 994mbar, temperature 24°C.				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Basic/supplementary:							
PCB; between primary and earth on external layers.	-	230	2	3	2.5	3	
PCB; between primary and earth on internal layers.	-	230	2	3	2	3	
PCB; between the head of the screw on the PCB (grounded through the frame) and adjacent Primary tracks (W11 on the screen).	-	230	2	5.5	2.5	5.5	
Between primary tracks on PCB and earthed metal enclosure.	-	230	2	2.3	2.5	-	
Reinforced:							
PCB; (side display) between pin 17 of connector J2 and track of C42.	324	230	4	5.3	5	5.3	
PCB (display side) between the pitches of the pin 12 and pin 10 of T1.	324	230	4	7.5	5	7.5	
PCB (display side) between the pitch of the pin 2 of T1 and the track connected to the adjacent point W2.	324	230	4	5.3	5	5.3	
PCB (display side) between the pitch of the pin 2 of T1 (T1 through pin 3 of welded but not connected) and the adjacent track.	324	230	4	5	5	5	
PCB (side display) between primary and secondary tracks across V6 and V7.	324	230	4	6	5	6	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
PCB (side transformer) between a track to dangerous voltage and the pitch connected to pin no. 8 (SELV) of T2.	324	230	4	5.4	5	5.4
PCB (side transformer) between the pitch n. 2 (SELV) of the transformer T1 and the adjacent track to dangerous voltage through the pitch 3 of T1.	324	230	4	5	5	5
PCB (side transformer) between pin 17 of the connector C11 (SELV) and the adjacent pitch also connected to the display side to dangerous voltage	324	230	4	5.3	5	5.3
PCB (side transformer) between tracks connected to connector J15 and adjacent dangerous pitch (for the entire length of the track).	324	230	4	Min.5	5	Min.5
PCB (side transformer) between track connected to connector J15 (SELV) and adjacent dangerous pitch of D12 connected to pin 12 of T2.	555(*)	230	4.4(*)	5	5	5
PCB (strato interno-verde sui disegni) Tra pin 17 di del connettore C11 (SELV) e pista adiacente a tensione pericolosa.	324	230	4(**)	4	4 (**)	4
PCB (inner layer PWR) between the pitch of the pin 10 or 7 or 8 (primary) of T1 and adjacent SELV tracks.	324	230	4(**)	5.5	4(**)	5.5
PCB (inner layer PWR) between the pitch of the pin 2 of T1 and pitch of W2 through pitch of pin 3 (non connected) of T1.	324	230	4(**)	5	4(**)	5

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
PCB (inner layer GND) between the pitch of the pin 2 of T1 and adjacent track through pitch of pin 3 (non connected) of T1.	324	230	4(**)	4.7	4(**)	4.7
PCB (inner layer GND) Between the primary track connected to pin 12 of T2 and the SELV adjacent track.	555(*)	230	4.4(**)(*)	5	4.4(**)(*)	5
PCB (inner layer GND) Between the primary tracks and SELV tracks.	324	230	4(**)	Min.5	4(**)	Min.5
Supplementary information: (*) Peak working voltage (**) Pollution degree 1						

2.10.5	TABLE: Distance through insulation measurements					
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
On the PWB bottom side: between the external copper layer and internal copper layer (between primary and secondary) (R)	324	230	3000	0.4	0.4	
On the PWB between the internal copper layers (between primary and secondary) (R)	324	230	3000	0.4	0.4	
On the PWB top side: between the external copper layer and internal copper layer (between primary and secondary) (R)	324	230	3000	0.4	0.4	
Supplementary information: (*) Peak working voltage (**) CSA/UR certified reinforced insulated winding wire						

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.2.4	TABLE: steady force, 250 N		
Steady force applied to		Results	
Top side		Not damaged	
Lateral side		Not damaged	
Supplementary information: Environmental conditions: relative humidity 48%; atmospheric pressure 1000mbar, temperature 25°C.			

4.2.5	TABLE: impact test		
Steady force applied to		Results	
Enclosure		Not damaged	
Swing applied to		Results	
Enclosure		Not damaged	
Supplementary information: Environmental conditions: relative humidity 48%; atmospheric pressure 1000mbar, temperature 25°C.			

4.2.7	TABLE: stress relief test		
Stress relief applied to		T (°C)	Results
Part of the mechanical plastic enclosure		70	No shrinkage or distortion observed.
Supplementary information: Environmental conditions: relative humidity 48%; atmospheric pressure 1000mbar, temperature 25°C.			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Thermal requirements						
	Supply voltage/frequency	104V/ 60Hz	127V/ 60Hz	207V/ 50Hz	254V/ 50Hz	-	—
	Maximum measured temperature T of part/at::	T (°C)					Allowed T _{max} (°C)
1)	Mains connector	54	53	51	50	-	60
2)	Internal mains cable	59	58	54	54	-	75
3)	PWB adjacent diode bridge D14	88	88	71	69	-	130
4)	Coil L4 (body)	78	76	59	58	-	90(*)
5)	Coil L3 (windings)	105	104	86	79	-	140
6)	Transformer T2 (windings)	71	70	67	67	-	90(*)
7)	Transformer T2 (bobbin)	72	70	68	67	-	90(*)
8)	Transformer T1 (bobbin)	68	67	66	67	-	90(*)
9)	Transformer T1 (windings)	69	69	68	68	-	90(*)
10)	PWB adjacent N1, Q1, Q2, R48	72	72	70	71	-	130
11)	Resistor cable	60	60	59	59	-	200
12)	DC « close» motor (metal enclosure)	77	76	74	74	-	100
13)	DC « cut» motor (metal enclosure)	55	55	54	54	-	100
14)	Mains switch	47	47	42	41	-	60
15)	Metal accessible part (top)	53	53	52	53	-	70
16)	Welding bar accessible	69	67	66	66	-	70
Supplementary information:							
Test conditions: Continuous operation according to sub-clause 1.4.5. EUT setted on "Cut Adjust" 5.							
Limits for an ambient temperature of 25°C							
(*) Measured performed with thermocouples, values reduced by 10°C.							
Environmental conditions: relative humidity 48%; atmospheric pressure 1000mbar, temperature 25°C.							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
-	-	-	-	-	-	-	-
Supplementary information: /							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		
	Allowed impression diameter (mm)	≤ 2 mm	—
Part	Test temperature (°C)	Impression diameter (mm)	
Plastic support for coil L3	125	0.7	
Bobbin of Transformer T1 and T2	125	1.1	
Supplementary information: Environmental conditions: relative humidity 52%; atmospheric pressure 1000mbar, temperature 27°C.			

4.7	TABLE: Resistance to fire					
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
PWB (Sensor board)	Tecnometal Srl	Multilayer printed wiring boards, DS, Type "3", Max temperature operating 110°C	1.6	UL94V-0	UL E155803	
PWB (control board)	KCS SRL	Multilayer printed wiring boards, DS, Type "P-M", Max temperature operating 130°C Distance between conductor layers (distance through) min. Thick 0.4mm	1.6	UL94V-0	ULE223152	
Plastic label on top enclosure	Sabic Innovative Plastics Us L L C	Lexan 8B35	/	VTM2	E121562	
Plastic abutment (lateral side two provided)	MacPlast srl	PC-ABS Marelloy E65FR	min thick 1.5mm	Annex A.2	See Annex A.2	
Plastic support (lateral side two provided)	MacPlast srl	ABS Marelac 150 FV0	min thick 2mm	Annex A.2	See Annex A.2	
Silicon rubber on roller	/	/	min thick 1.5mm	Annex A.2	See Annex A.2	
Plastic working plate	MacPlast srl	ABS Marelac 150 FV0	min thick 2mm	Annex A.2	See Annex A.2	
Rubber flap	Arroweld Italia CETAI	VMQ, silicon rubber rated 200°C	7	Annex A.2	See Annex A.2	
Supplementary information:						

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.1	TABLE: touch current measurement		
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
Line-Neutral to Earth	0.44	3.5	104V/60Hz Switch ON
Line-Neutral to Earth	0.46	3.5	104V/60Hz Switch OFF
Line-Neutral to Earth	0.46	3.5	127V/60Hz Switch ON
Line-Neutral to Earth	0.52	3.5	127V/60Hz Switch OFF
Line-Neutral to Earth	0.64	3.5	207V/50Hz Switch ON
Line-Neutral to Earth	0.49	3.5	207V/50Hz Switch OFF
Line-Neutral to Earth	0.73	3.5	254V/50Hz Switch ON
Line-Neutral to Earth	0.60	3.5	254V/50Hz Switch OFF
Supplementary information: Environmental conditions: relative humidity 52%; atmospheric pressure 996mbar, temperature 25°C.			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:			
Primary and earthed parts	AC	1500	NO
Reinforced:			
1 mylar layer used on transformers	AC	3000	NO
Primary and secondary on T2	AC	3000	NO
Primary and secondary on T1	AC	3000	NO
Primary and secondary on optocouplers (V1, V6, V7	AC	3000	NO
Primary and secondary on appliance	AC	3000	NO
Supplementary information: Environmental conditions: relative humidity 48%; atmospheric pressure 1000mbar, temperature 25°C.			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	TABLE: Fault condition tests						
	Ambient temperature (°C)						—
	Power source for EUT: Manufacturer, model/type, output rating						—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
Cut motor	Locked rotor	24dc	7h	-	-	Temperature on metal enclosure 108°C. Initially current 1A, end test current 0.54A. After the test the motor continues to operate as intended. No hazard.	
Welding motor	Locked rotor	24dc	7h	-	-	Temperature on metal enclosure 98°C. Initially current 1.03A, end test current 0.71A. After the test the motor continues to operate as intended. No hazard.	
Secondary of T2	overload	115-230 V	3h	-	-	Max overload current 1.3 A beyond that SMPT operate. No significant temperature, 76°C. No hazard.	
Secondary of T2	S.c.	115-230 V	1h	-	-	SMPT operate immediately. No hazard.	
Secondary of T1	S.c.	115-230 V	1h	-	-	Short circuit is the worst condition. I _{sc} 20A No hazard.	
CCR sensor	S.c.	115-230 V	1h	-	-	The display shows "service n. ...". The appliance operate as intended. Max temperature on accessible Welding bar 69°C.	
CCR sensor	Op	115-230 V	1h	F1	4	The display shows "service n. ...". The appliance operate as intended. Max temperature on accessible Welding bar 69°C. No other critical temperatures observed.	
Diode bridge	S.c.	115-230 V	-	F1	4	Fuse blew immediately. No hazard.	
Capacitor C55	S.c.	115-230 V	-	F1	4	Fuse blew immediately. Approx temperature on RT1 70°C. No hazard.	
Q2 (D-S)	S.c.	115-230 V	-	F1	4	The display shows "service n. ...". The appliance operate as intended. No other critical temperatures on R48 or other parts.	

IEC 60950-1							
Clause	Requirement + Test					Result - Remark	Verdict
Q3 (D-S)	S.c.	115-230 V	-	F1	4	Fuse blew immediately. No hazard.	
Supplementary information:							

C.2	TABLE: transformers						
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T2	Between Primary and secondary soldered pins (R)	555(*)	230	3000	4.4	5	0.4 or 2 layers
Loc.	Tested insulation			Test voltage / V	Measured clearance / mm	Measured creepage dist. / mm	Measured distance thr. insul. / mm; number of layers
T2	Between Primary and secondary soldered pins (R)			/	7 min.	11min	/
T2	Between Primary wire and secondary soldered pins through metal screen (R)			/	9 min.	10min	/
T2	Between the secondary shield wrapped and the primary wire. (R)			/	6	6	/
T2	Between the secondary and primary shields wrapped. (R)			/	8	8	2 layers
T2	Between secondary wrapped metal screen and primary wire through core (R)			/	9 min.	9 min.	/
T2	Between Primary and secondary windings (R)			/	/	/	(**)
supplementary information:							
(*) Peak working voltage							
(**) CSA/UR certified reinforced insulated winding wire							

IEC 60950-1								
Clause	Requirement + Test			Result - Remark			Verdict	
C.2	TABLE: transformers							
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
T1	Between Primary and secondary soldered pins (R)	325	230	3000	4.0	5	0.4 or 2 layers	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
T1	Between Primary and secondary soldered pins (R)			/	6 min.	11min	/	
T1	Between the primary shield wrapped and the secondary wire. (R)			/	8	8	2 layers	
T1	Between Primary and secondary windings (R)			/	/	/	(**)	
supplementary information:								
(**) CSA/UR certified reinforced insulated winding wire								

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:

(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used
1.6 & 2.1.1.7 & 4.5 & 5.3.7	electrical data & Risk of electric shock & thermal requirements & Simulation of faults	Yokogawa, WT 210 S04481	Auto range
1.7.11	Durability	Petroleum spirit	-
2.1.1.1	Access To Hazardous Voltage Circuit Wiring	ICAM, C00601	-
2.1.1.4	Access To Hazardous Voltage Circuit Wiring	ICAM, C00599	-
2.2 & 5.3.7	SELV circuits & Simulation of faults	RFL, 620 S00410	Auto range
2.9.2	Humidity conditioning	ACS P00247	-
2.1.1.7 & 2.10.2 & 5.1	Risk of electric shock & working voltage measurement & touch current	Oscilloscope PHILIPS S01329	-
2.6.3.4	resistance of earthing	SAMAR, PMT/3	S-00632
2.10.3 & 2.10.4 &	Clearance And Creepage Distance Measurements	Mauser, B/03 S00970	175 mm
2.10.3 & 2.10.4 & 2.10.5	Clearance And Creepage Distance Measurements & Solid insulation	Optical gauge Leitz S00865	10mm

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
Clause	Measurement / testing	Testing / measuring equipment / material used	Range used
2.10.5	Solid insulation	MAUSER S00871	25 mm - centesimal
4.2.4	Steady Force, 250N	CHATILLON, DDP-25 kg S03088	25 kg
4.2.5	Impact Test	Steel sphere, 500g	-
4.5 & 5.3.7	Thermal requirements & Simulation of faults	Hybrid recorder Yokogawa, 2300 S01269	0-200 °C
5.2	Electric Strength Tests And Impulse Tests	SCHLEICH, GLP2-e P02788	5000V
4.5 & 5.3.7& 4.5.5	Thermal requirements & Simulation of faults	Tersid, type T	0-100 °C
5.3.7	Simulation of faults	Yokogawa, DL9140L S04542	Auto range
4.2.7	stress relief test	Oven Galli, 790 P00316	150°C
5.1	touch current	Measuring network P03017	100 mA - 200 Vrms