Prüfbericht - Nr.: *Test Report No.:*	**16800861 001**		**Seite 1 von 55** *Page 1 of 55*
Auftraggeber: *Client:*	**Beijing Fulei industrial & Commercial Co., Ltd.** *No.1 Anxiangli Deshengmenwai, Chaoyang District, Beijing 100101, P.R. China*		
Gegenstand der Prüfung: *Test item:*	Heat Transfer Machine		
Bezeichnung: *Identification:*	TTM-2500, TTM-1700A, TTM-1700B	**Serien-Nr.:** *Serial No.:*	Engineering Sample
Wareneingangs-Nr.: *Receipt No.:*	1143006341	**Eingangsdatum:** *Date of receipt:*	2011-10-18
Prüfort: *Testing location:*	**TÜV Rheinland (China) Ltd. Beijing Laboratory** Room 1303, Chuang Xin Building No. B, No. 12, Hong Da Road(north), Economic-Technological Development Area, Beijing 100176, P.R. China		
Prüfgrundlage: *Test specification:*	**EN 60950-1:2006+A11:2009+A1:2010+A12:2011**		
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*		
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (China) Ltd. Beijing Laboratory** Room 1303, Chuang Xin Building No. B, No. 12, Hong Da Road(north), Economic-Technological Development Area, Beijing 100176, P.R. China		

geprüft/ *tested by:*

Yang Kun

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*
2012-07-09	Yang Kun /PE	

kontrolliert/ *reviewed by:*

Liu Xuhua

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*
2012-07-09	Liu Xuhua /Reviewer	

Sonstiges/ *Other Aspects:*

Attachment 1: Equipment list attached: 1 Page.

Attachment 2: EN 60950-1:2006/A1:2010/A12:2011: 15 Page

Abkürzungen:			*Abbreviations:*		
P(ass)	=	*entspricht Prüfgrundlage*	*P(ass)*	=	*passed*
F(ail)	=	*entspricht nicht Prüfgrundlage*	*F(ail)*	=	*failed*
N/A	=	*nicht anwendbar*	*N/A*	=	*not applicable*
N/T	=	*nicht getestet*	*N/T*	=	*not tested*

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006
Information technology equipment – Safety – Part 1: General requirements

Report Reference No. ..... :	16800861 001
Date of issue ..... :	See Cover page
Total number of pages	See Cover page
CB/CCA Testing Laboratory ..... :	See Cover page
Address ..... :	See Cover page
Applicant's name ..... :	**Beijing Fulei industrial & Commercial Co., Ltd.**
Address ..... :	No.1 Anxiangli Deshengmenwai, Chaoyang District, Beijing 100101, P.R. China
Manufacturer's name ..... :	**Same as applicant**
Address ..... :	Same as applicant
Factory's name ..... :	**Same as applicant**
Address ..... :	Same as applicant
Test specification:	
Standard ..... :	☐ IEC 60950-1:2005 (2nd Edition) and/or ☒ EN 60950-1:2006+A11
Test procedure ..... :	LVD
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IECEN60950_1C
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2007-01

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.

If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.

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

Test item description ..... :	Heat Transfer Machine
Trade Mark ..... :	
Manufacturer ..... :	Beijing Fulei industrial & Commercial Co., Ltd.
Model/Type reference ..... :	TTM-2500, TTM-1700A, TTM-1700B
Ratings ..... :	230/400V, 3W+N+PE, 50Hz, 50A(TTM-2500)/30A(TTM-1700A, TTM-1700B)

Testing procedure and testing location:	
☐ **CB/CCA Testing Laboratory:**	N/A
Testing location/ address ..... :	N/A
☐ **Associated CB Laboratory:**	N/A
Testing location/ address ..... :	N/A
Tested by (name + signature)..... :	N/A
Approved by (+ signature)..... :	N/A
☐ Testing procedure: TMP	N/A
Tested by (name + signature)..... :	N/A
Approved by (+ signature)..... :	N/A
Testing location/ address ..... :	N/A
☐ Testing procedure: WMT	N/A
Tested by (name + signature)..... :	N/A
Witnessed by (+ signature)..... :	N/A
Approved by (+ signature)..... :	N/A
Testing location/ address ..... :	N/A
☐ Testing procedure: SMT	N/A
Tested by (name + signature)..... :	N/A
Approved by (+ signature)..... :	N/A
Supervised by (+ signature) ..... :	N/A
Testing location/ address ..... :	N/A
☐ Testing procedure: RMT	N/A
Tested by (name + signature)..... :	N/A
Approved by (+ signature)..... :	N/A
Supervised by (+ signature) ..... :	N/A
Testing location/ address ..... :	N/A

Summary of testing:

1. AC mains tolerance considered for input current test, leakage current test and temperature test. 230/400V, 3W+N+PE, 50Hz used for all single fault condition.
2. The heat transfer machine of TTM-2500, TTM-1700A and TTM-1700B have been tested according to EN60950-1:2006+A11,
3. All tests are performed according to the user's final configurations, which can be see General product information below.
4. Maximum ambient temperature: 40°C.
5. See the differences of TTM-2500, TTM-1700A and TTM-1700B for detail in table A. components difference see detail in table 1.5.1.
6. TTM-2500 can provide the most severe test condition for temperature rising and single fault test. Unless otherwise specified, throughout this report all safety related tests were performed on TTM-1700A and TTM-1700B.
7. All the tested items are passed.

Table A

Type	Pressure motor	Fan (group)	Rated current
TTM-2500	Yes	1	50A
TTM-1700A	Yes	2	30A
TTM-1700B	No	1	30A

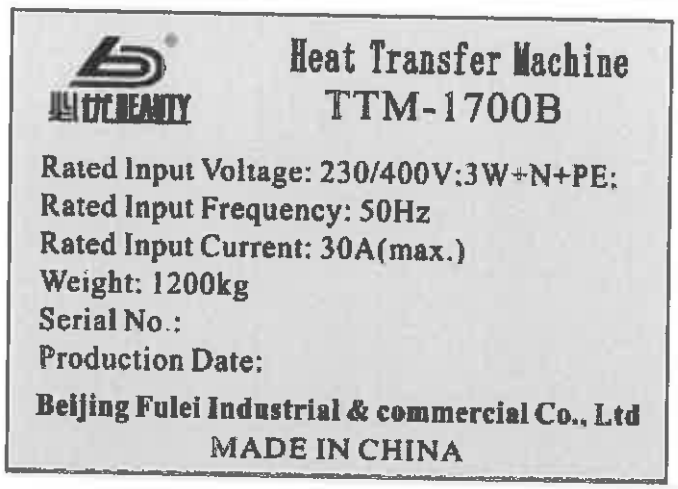
Tests performed (name of test and test clause):

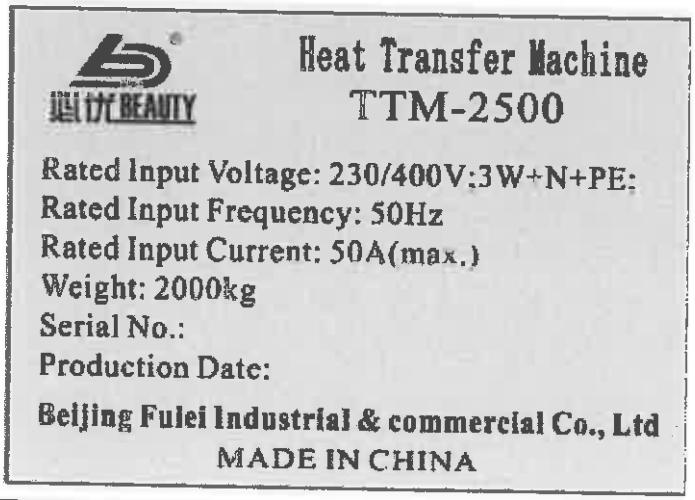
1.6.2	Input Current
1.7.11	Durability
2.9.2	Humidity Conditioning
2.10.3.3	Clearance and creepage distance measurements
3.2.6	Cord anchorages and strain relief
4.1	Stability, angle of 10°
4.2.4	Steady Force Test, 250N
4.2.5	Impact test
4.5.2	Temperature Tests
4.5.5	Resistance to abnormal heat
5.2	Electric Strength Test
5.3	Abnormal operating and fault conditions

Testing location:
TÜV Rheinland (China) Ltd. Beijing Laboratory
Room 1303, Chuang Xin Building No. B, No. 12, Hong Da Road(north), Economic-Technological Development Area, Beijing 100176, P.R. China

Summary of compliance with National Differences:
EU Group Differences, EU Special National Conditions

Copy of marking plate





Test item particulars ..... :	
Equipment mobility ..... :	[] movable [] hand-held [] transportable [×] stationary [] for building-in [] direct plug-in
Connection to the mains ..... :	[] pluggable equipment [×] permanent connection [] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition ..... :	[×] continuous [] rated operating / resting time:
Over voltage category (OVC) ..... :	[] OVC I [×] OVC II [] OVC III [] OVC IV
Mains supply tolerance (%) ..... :	+10%, -10%
Tested for IT power systems ..... :	[] Yes [×] No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	[×] Class I [] Class II [] Class III [] Not classified
Pollution degree (PD) ..... :	[] PD 1 [×] PD 2 [] PD 3
IP protection class ..... :	IP2X
Altitude during operation (m) ..... :	2000m
Mass of equipment (kg) ..... :	TTM-2500: 2000kg, TTM-1700A: 1100kg, TTM-1700B: 1200kg
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 ..... :	2011-10-26
Date(s) of performance of tests ..... :	2011-11-05 to 2012-06-25

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.

Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.

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

General product information:

The heat transfer machines adopt the oil heating mode to control the temperature, they has functions such as automatic blanket off, automatic lifting off backing paper and automatic rolling picture etc.

For TTM-2500:

The equipment's dimension is: 3320mm×1290mm×1780mm, the weight of which is 2000kg. The heat transfer machine accepts AC power 230V/400V, 3W+N+PE, 50Hz, 50A. The protection class is CLASS I, and a protective earthing terminal is provided inside.

For TTM-1700A:

The equipment's dimension is: 2480mm×780mm×1435mm, the weight of which is 1100kg. The heat transfer machine accepts AC power 230V/400V, 3W+N+PE, 50Hz, 30A. The protection class is CLASS I,

and a protective earthing terminal is provided inside.

For TTM-1700B:

The equipment's dimension is: 2480mm×780mm×1435mm, the weight of which is 1200kg. The heat transfer machine accepts AC power 230V/400V, 3W+N+PE, 50Hz, 30A. The protection class is CLASS I, and a protective earthing terminal is provided inside.

TTM-2500 can provide the most severe test condition for temperature rising and single fault test. Unless otherwise specified, throughout this report all safety related tests were performed on TTM-1700A and TTM-1700B.

The equipment is composed of electronic box, machine racks, heater box, AC motor, etc.

An AC motor is provided for driving with chains and chain wheel, all of them were enclosed.

An electric box is provided, all electric related components were enclosed into it, and a lock-key is provided for special authorized personnel.

Heater box is class I structure, the live parts in it is insulated with touchable parts by enough electrical clearance, and abnormal heating is protected by the thermostat. The heating temperature's range is controlled from 0-240℃.

The equipment is equipped with four wheels and four supports under. When installed in position, four supports were used and replace the wheels for reducing the vibration and noise.

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	Thermal controls approved according to relate IEC standard, see appended table 1.5.1.	P
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables		N/A
1.5.6	Capacitors bridging insulation	No such capacitor	N/A
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.7.4	Accessible parts		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors	No such application	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
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
1.6	Power interface		P
1.6.1	AC power distribution systems		P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.2	Input current	(see appended table 1.6.2) All test shows: the steady state input current of the sample does not exceed the rated current by more than 10% under normal load.	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor	Neutral conductor is insulated with earth and case	P

1.7	Marking and instructions		P
1.7.1	Power rating		P
	Rated voltage(s) or voltage range(s) (V) ..... :	230V/400V	P
	Symbol for nature of supply, for d.c. only..... :		N/A
	Rated frequency or rated frequency range (Hz) .. :	50Hz	P
	Rated current (mA or A) ..... :	50A (TTM-2500); 30A (TTM-1700A, TTM-1700B)	P
	Manufacturer's name or trade-mark or identification mark ..... :		P
	Model identification or type reference ..... :	See marking plate	P
	Symbol for Class II equipment only ..... :	Class I equipment	N/A
	Other markings and symbols ..... :	See marking plate	P
1.7.2	Safety instructions and marking	Safety related operation explained in user instructions.	P
1.7.2.1	General	English user manual provided	P
1.7.2.2	Disconnect devices	Circuit breaker provided	P
1.7.2.3	Overcurrent protective device	permanent connection, F63A(TTM-2500)/F40A(TTM-1700A, TTM-1700B) fuses provided	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.2.7.6	Ozone	No ozone	N/A
1.7.3	Short duty cycles	Continuous equipment	N/A
1.7.4	Supply voltage adjustment ..... :		N/A
	Methods and means of adjustment; reference to installation instructions ..... :		N/A
1.7.5	Power outlets on the equipment ..... :	No additional power outlets	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Fuses not located in operator access areas, relevant information in user manual.	P
1.7.7	Wiring terminals		P
1.7.7.1	Protective earthing and bonding terminals ..... :	⏚ near protective earthing terminal	P
1.7.7.2	Terminals for a.c. mains supply conductors		P
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking ..... :		P
1.7.8.2	Colours ..... :		P
1.7.8.3	Symbols according to IEC 60417.....:		P
1.7.8.4	Markings using figures .....:		N/A
1.7.9	Isolation of multiple power sources .....:		N/A
1.7.10	Thermostats and other regulating devices .....:		P
1.7.11	Durability		P
1.7.12	Removable parts		N/A
1.7.13	Replaceable batteries .....:	No battery	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations.....:		N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	The equipment has an electrical and fire enclosure for electric units, which is made of metal, earthed, and the energized parts can't be accessed during normal operation	P
	Test by inspection .....:	See above.	P
	Test with test finger (Figure 2A) .....:	See above.	P
	Test with test pin (Figure 2B) .....:	See above.	P
	Test with test probe (Figure 2C) .....:	See above.	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring	No such ELV wiring	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.5	Energy hazards .....:	Test finger cannot bridge between any two hazards parts.	N/A
2.1.1.6	Manual controls	Switch and button are certified	P
2.1.1.7	Discharge of capacitors in equipment		N/A
	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
2.1.1.9	Audio amplifiers .....:		N/A
2.1.2	Protection in service access areas		P
2.1.3	Protection in restricted access locations		N/A
2.2	SELV circuits	(approved SPS provided)	N/A
2.2.1	General requirements		N/A
2.2.2	Voltages under normal conditions (V) ..... :		N/A
2.2.3	Voltages under fault conditions (V) ..... :		N/A
2.2.4	Connection of SELV circuits to other circuits .....:		N/A
2.3	TNV circuits		N/A
2.3.1	Limits		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	(approved SPS provided)	N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Frequency (Hz)..... :		—
	Measured current (mA)..... :		—
	Measured voltage (V)..... :		—
	Measured circuit capacitance (nF or µF)..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources		N/A
	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)		—
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing		P
2.6.2	Functional earthing		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	No supply cord provided	N/A
	Rated current (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.3	Size of protective bonding conductors	No protective bonding conductor provided	N/A
	Rated current (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) ..... :	The requirement of protective conductors meet the minimum conductor sizes throughout their lenth and whose terminals all meet the minimum sizes.	P
2.6.3.5	Colour of insulation..... :	Green and yellow	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals		P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm) ..... :	A M6 screw used for protective bonding terminal, a washer below to scratch paint	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No such component	P
2.6.5.3	Disconnection of protective earth		P
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		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		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation	Over current fuse provided	N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection	permanent connection, reply on building installation	P
2.7.4	Number and location of protective devices ..... :	One F63A(TTM-2500)/F40A(TTM-1700A, TTM-1700B) fuse provided in each line conductor	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A
2.8	Safety interlocks		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) ..... :		N/A
2.8.7.2	Overload test		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
2.9.1	Properties of insulating materials	An approved SPS is provided. No hygroscopic materials, asbestos and natural rubber used.	P
2.9.2	Humidity conditioning	48h	P
	Relative humidity (%), temperature (°C) ..... :	93%, 25°C	—
2.9.3	Grade of insulation	Test voltage AC 1500V is applied for the basic insulation between L1, L2, L3, N and protective earthing position, AC 3000V is applied for the reinforced insulation at both sides of the SPS and between L1, L2, L3, N and control panel.	P
2.9.4	Separation from hazardous voltages	Reinforced insulation provided for pri. Side and sec. side of SPS and between L1, L2, L3, N and control panel. Other hazardous voltage circuit and motor was separated by basic insulation and protective earthing.	P
	Method(s) used ..... :		—
2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency ..... :		P
2.10.1.2	Pollution degrees ..... :	Pollution degree 2 considered	P
2.10.1.3	Reduced values for functional insualtion		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	(see appended table 2.10.3 and 2.10.4)	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.2.3	Peak working voltage	(see appended table 2.10.3 and 2.10.4)	P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply ..... :		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 ..... :		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 suplply		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		P
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		N/A
2.10.5	Solid insulation	In SPS and the other insulation subunit of this system, the related insulation materials are certified.	P
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.6	Thin sheet material – General	There is no dimensional or constructional requirement for insulation in thin sheet material used as functional insulation or basic insulation	N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) ..... :		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage ..... :		N/A
	a) Basic insulation not under stress ..... :		N/A
	b) Basic, supplemetary, reinforced insulation ..... :		N/A
	c) Compliance with Annex U ..... :		N/A
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		N/A
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
	- Supplemetary, reinforced insulation ..... :		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)..... :		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		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		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Appoved internal wire, circuit breaker and fuse provided	P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring	Internal wiring is well secured	P
3.1.4	Insulation of conductors	All wire inside is approved (see appended table 5.2)	P
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure	Engage more than two complete threads into a metal plate	P
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	The terminals and connectors all passed pull test.	P
	10 N pull test	Test passed	P
3.1.10	Sleeving on wiring	Sleeving on wiring is satisfied	P
3.2	Connection to a mains supply		P
3.2.1	Means of connection	Circuit breaker provided for mains connection	P
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment	Circuit breaker provided for mains connection, no supply cord provided	P
	Number of conductors, diameter of cable and conduits (mm) ..... :	3W+N+PE, 10mm^2× 3+6mm^2+10mm^2	—

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords	no supply cord provided	N/A
3.2.5.1	AC power supply cords		N/A
	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		N/A
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space		P
3.3	Wiring terminals for connection of external conductors		P
3.3.1	Wiring terminals	Approved Circuit breaker	P
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		P
3.3.4	Conductor sizes to be connected		P
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :	50A, 3W+N+PE, $10mm^2$× $3+6mm^2+10mm^2$	—
3.3.5	Wiring terminal sizes		P
	Rated current (A), type, nominal thread diameter (mm) ..... :	Approved Circuit breaker provided.	—
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		P
3.4.1	General requirement	Approved Circuit breaker provided.	P
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		P
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.7	Number of poles - three-phase equipment		P
3.4.8	Switches as disconnect devices		P
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		N/A
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		P
4.1	Stability		P
	Angle of 10°		P
	Test force (N) .....:	250N	P
4.2	Mechanical strength		P
4.2.1	General		P
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		P
	Fall test		P
	Swing test		P
4.2.6	Drop test; height (mm) ..... :		N/A
4.2.7	Stress relief test		N/A
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) ..... :		N/A
4.3	Design and construction		P
4.3.1	Edges and corners	No sharp edges and corners	P
4.3.2	Handles and manual controls; force (N)..... :	No such handles or manual control	N/A
4.3.3	Adjustable controls	No such adjustable controls	N/A
4.3.4	Securing of parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.5	Connection by plugs and sockets		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	Thermostat and temperature controller provided in both Line and neutral conductor	P
4.3.8	Batteries		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		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids .....:		N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation		N/A
4.3.13.1	General		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	Laser (including LEDs)		N/A
	Laser class .....:		—
4.3.13.6	Other types .....:		N/A

4.4	Protection against hazardous moving parts	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.1	General	Rubber roller totally enclosed inside equipment. switch for power disconnection provided, an additional forward and backward switch also provided in control panel. Attention should be aware of ties, necklace etc. when opertion to avoid roll into equipment. This was stated in the user manual	P
4.4.2	Protection in operator access areas ..... :		P
4.4.3	Protection in restricted access locations ..... :		P
4.4.4	Protection in service access areas		P
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L ..... :		—
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 ..... :	(see appended table 4.5.5)	P
4.6	Openings in enclosures		P
4.6.1	Top and side openings		P
	Dimensions (mm) ..... :	Test finger and test pin inspection performed, no entry or contact of bare live parts. Fire protection through clause 4.7	—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottomm, dimensions (mm) . :	Test finger and test pin inspection performed, no entry or contact of bare live parts. Fire protection through clause 4.7	—
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		P
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditioning temperature (°C), time (weeks) ..... :		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7) Method 1 seleced	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	Mains circuit inside metal enclosure require fire enclosure	P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	All materials against fire have been certified by UL, and enclosure, PCB, and other materials are rated V-1, or better.	P
4.7.3.2	Materials for fire enclosures	Metal	P
4.7.3.3	Materials for components and other parts outside fire enclosures	No such material or component	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	See appended table 1.5.1	P
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	Stationary permanently connected equipment,the protective conductor current (8.7mA)not exceed 5% of input current(2.5A). High touch current warning lable provided..	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply	Only one single 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
5.1.3	Test circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.4	Application of measuring instrument		P
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) . :		—
5.1.7	Equipment with touch current exceeding 3,5 mA		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		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P
5.3	Abnormal operating and fault conditions		P
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)	N/A
5.3.4	Functional insulation..... :		P
5.3.5	Electromechanical components		P
5.3.6	Audio amplifiers in ITE ..... :		N/A
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment	Not such type equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
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	(see appended table 5.2)	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		N/A
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 ..... :		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
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)		N/A
A.2.1	Samples, material .....:		—
	Wall thickness (mm).....:		—
A.2.2	Conditioning of samples; temperature (°C) .....:		N/A
A.2.3	Mounting of samples .....:		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C .....:		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
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

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Clause	Requirement + Test	Result - Remark	Verdict
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		P
B.1	General requirements		P
	Position .....:	Primary circuit AC motor (M1) secondary circuit DC motor (M2-M4)	—
	Manufacturer .....:	Orient Drive Industry(shanghai) CO.,Ltd (M1) Reifeng (M2, M4) vtv motor manufacture CO.,Ltd (M3)	—
	Type .....:	GV-40-1500 (M1) ZD2930 (M2, M4) 90JB 25G15 (M3)	—
	Rated values .....:	AC 380V/1.5KW (M1) DC24V 100W (M2, M4) DC24V 90W (M3)	—
B.2	Test conditions		P
B.3	Maximum temperatures		P
B.4	Running overload test	(see appended table 5.3) Protectvie impedance proteciton, s-c present the most unfavorable condition than that of o-l. so no o-l single fault simulated	N/A
B.5	Locked-rotor overload test	M1, Protective impedance protection motor, maximum temperature is 45.9°C for lock rotor test and do not exceed table B.1.	P
	Test duration (days) .....:	15d	—
	Electric strength test: test voltage (V) .....:	1500V	—
B.6	Running overload test for d.c. motors in secondary circuits	(see appended table 5.3) Protectvie impedance proteciton, s-c present the most unfavorable condition than that of o-l. so no o-l single fault simulated	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

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Clause	Requirement + Test	Result - Remark	Verdict
B.7	Locked-rotor overload test for d.c. motors in secondary circuits	M2/M3, Protective impedance protection motor, maximum temperature is 29.2°C/29.5°C for lock rotor test and do not exceed table B.1.	P
B.7.1	General		P
B.7.2	Test procedure	Test for 7 hours	P
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....:	24VDC motor, no high-pot test conducted	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		N/A
	Operating voltage (V) .....:		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position .....:		—
	Manufacturer .....:		N/A
	Type .....:		N/A
	Rated values .....:		N/A
	Method of protection..... :		
C.1	Overload test		N/A
C.2	Insulation	(see appended table 5.2)	N/A
	Protection from displacement of windings..... :		N/A
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N/A
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		P
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A

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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)		N/A
	Metal(s) used .....:		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		P
K.1	Making and breaking capacity		P
K.2	Thermostat reliability; operating voltage (V) .....:	Approved thermostat	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	200 times over heat simulated at AC 250V, 50Hz	P
K.6	Stability of operation	(see appended table 5.3) Thermostat used	N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
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/A
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)		N/A
	a) Preferred climatic categories .....:		N/A
	b) Maximum continuous voltage .....:		N/A
	c) Pulse current .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
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)		N/A
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)		N/A
		See separate test report	—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
		See separate test report	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
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
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current	Protective impedance protection way	N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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)		N/A
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—

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Clause	Requirement + Test	Result - Remark	Verdict

EN 60950-1:2006 – CENELEC COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations	P
General	Delete all the "country" notes in the reference document according to the following list: 1.4.8 Note 2; 1.5.1 Note 2 & 3; 1.5.7.1 Note 1.5.8 Note 2; 1.5.9.4 Note; 1.7.2.1 Note 4, 5 & 6 2.2.3 Note; 2.2.4 Note; 2.3.2 Note 2.3.2.1 Note 2; 2.3.4 Note 2; 2.6.3.3 Note 2 & 3 2.7.1 Note; 2.10.3.2 Note 2; 2.10.5.13 Note 3 3.2.1.1 Note; 3.2.4 Note 3.; 2.5.1 Note 2 4.3.6 Note 1 & 2; 4.7 Note 4; 4.7.2.2 Note 4.7.3.1 Note 2; 5.1.7.1 Note 3 & 4; 5.3.7 Note 1 6 Note 2 & 5; 6.1.2.1 Note 2; 6.1.2.2 Note 6.2.2 Note 6.; 2.2.1 Note 2; 6.2.2.2 Note 7.1 Note 3; 7.2 Note; 7.3 Note 1 & 2 G.2.1 Note 2; Annex H Note 2	P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	N/A
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	N/A
1.7.2.1	Add the following NOTE: NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: | Up to and including 6 | | 0,75 [a)] | | Over 6 up to and including 10 | (0,75) [b)] | 1,0 | | Over 10 up to and including 16 | (1,0) [c)] | 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a)]. In NOTE 1, applicable to Table 3B, delete the second sentence.		P
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: | Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A.		N/A
4.3.13.6	Add the following NOTE: NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Biblio-graphy	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—

ZB	SPECIAL NATIONAL CONDITIONS	P
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N/A
1.5.7.1	In **Finland**, **Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	N/A
1.7.2.1	In **Finland, Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"	N/A
1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	P

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Clause	Requirement + Test	Result - Remark	Verdict

2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998 Plug Type 25 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998 Plug Type 21 L+N 250 V, 16 A SEV 5934-2.1998 Plug Type 23 L+N+PE 250 V, 16 A	N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	N/A
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that o is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and o has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and o is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

6.1.2.1	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.	N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.	N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	N/A
7.3	In **Norway** and **Sweden**, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.	N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.	N/A

ZC	A-DEVIATIONS (informative)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**Sweden** (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted.	N/A
1.5.1	**Switzerland** (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.	N/A
1.7.2.1	**Denmark** (Heavy Current Regulations) Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."	N/A
1.7.2.1	**Germany** (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2). If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.	N/A
1.7.5	**Denmark** (Heavy Current Regulations) With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	N/A
1.7.13	**Switzerland** (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.81 applies for batteries.	N/A
5.1.7.1	**Denmark** (Heavy Current Regulations, Chapter 707, clause 707.4) TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.	N/A

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1.5.1	TABLE: List of critical components				P
Object/part No	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
TTM-2500					
Circuit breaker	ZheJiang Chint Electrics Co.,Ltd.	DZ158LE-100 80A 3P+N	AC400V80A 3P+N	EN 60947-2:2003	CE mark
AC Contactor	ZheJiang Chint Electrics Co.,Ltd.	NC8-8011	AC400V/80A	EN60947-4-1:2001+A1:2002+A2:2005 EN60947-5-1:2004	KEMA 2128757.01A
Solid-state relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HFS34 D-380A100ZSL 80A	AC 380V/80A DC 4-32V	EN 62314:2006	TUV R 50166328
SPS	Mean Well Eterprises Co.,Ltd	SP-320-24	Input: AC100-240V, 5A Output: DC24V, 13A	EN 60950-1:2006+A11	TUV R 50026832
Relay(KM3, KM4)	YUEQING QIANJI RELAY CO.,LTD	JQX-40F-2Z	AC250V/40A DC24V 70℃	EN 61810-1:2008	CE mark
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HF-115F	AC 250V/ 8A DC24V	EN 61810-1:2008	VDE 116934
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	JZX-18FF/024-4Z-1	AC 250V/ 5A DC 24V	EN 61810-1:2008	TUV R 50147087
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HF13F/024-2Z-1	AC 250V/ 10A DC 24V	EN 61810-1:2008	TUV R 50154518
Time relay	xinling eletctric CO.,LTD	HHS8	AC 220V/ 0.5A	60947-5-1:2004	CE 100306002736
Temperature controller	Xiamen Yudian Automation Technology CO.,Ltd	MPA-520	AC 240V	EN 61010-1:2001	CE AN 50203312
Motor (M1)	Orient Drive Industry(shanghai) CO.,Ltd	GV-40-1500	AC 380V/1.5KW 1420r/min	EN 60034-1:2004 EN 60034-5:2001	CE AN 50139635
Abrupt stop switch	Shanghai tianyi Electric Co.,LTD	LA42J	AC 230V / 3A	EN 60950-1:2006+A11:2009	Test with equipment
Gate sensor	Omron Corp.	Z-15G-B	AC 250V /15A	EN 61058-1/A1：1993	TUV R 9451585
Fan	SUNON	KD2412PMB1-6A	DC24V/6.2W	EN 60335-1 EN 60335-2-80	CE mark
Filter	Beijing Jones Co.,Ltd.	FLET01-10A	AC 250V /10A	EN 60950-1:2006+A11:2009	Test with equipment
Photoelectric switch	Banner Engineering	S18SN6DL	DC24V	EN 60950-1:2006+A11:2	Test with equipment

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	Crop			009	
Fuse(F1-F3)	ZheJiang ZhongTai Fuses Co.,Ltd	RT18-63X 63A	500V/T63A	DIN EN 60127-1/A1	CE mark
Fuse(F4, F5)	Littelfuse Inc.	800 01/816	500V/T10A	DIN EN 60127-1/A1	VDE 123336
Fuse(F6)	Suzhou Littelfuse OVS Ltd.	617 series	AC250V/T5A	DIN EN 60127-1/A1	VDE 40007750
Fuse Holder(F6)	stelvio Spa	ptf/35	AC250V/ 6.3A	DIN EN 60127-6	VDE 133367
Fuse Holder(F4-F5)	ZheJiang ZhongTai Fuses Co.,Ltd	RO16	AC500V/10A	EN 60950-1:2006+A11:2009	Test with equipment
Fuse Holder(F1-F3)	ZheJiang ZhongTai Fuses Co.,Ltd	RO16	AC500/63A	EN 60950-1:2006+A11:2009	Test with equipment
Transducer	Delta Electronics.inc	VFD015E21A	AC250V/0.1.5KW	EN 61800-5-1:2005 EN 50178:1997	CE mark
Button	Schneider-Electric	ZB2-BE101C	AC250V/3A	EN 60947-1:2007	CE mark
Button	Schneider-Electric	ZB2-BE102C	AC250V/3A	EN 60947-1:2007	CE mark
Sensor	Xiamen Yudian Automation Technology CO.,Ltd	Pt100	DC5V	EN 60950-1:2006+A11:2009	Test with equipment
Motor(M2, M4)	Reifeng	ZD2930	DC24V 100W 72r/min	EN 60950-1:2006+A11:2009	Test with equipment
Motor(M3)	vtv motor manufacture CO.,Ltd	90JB 25G15	DC24V 90W 72r/min	EN 60950-1:2006+A11:2009	Test with equipment
Heating roller	Beijing guanke eletctric CO.,LTD	¢16 *2.5KW	AC250V / 12A	EN 60950-1:2006+A11:2009	Test with equipment
Internal wire	SHANGHAI ECHU WIRE&CABLE CO.,LTD	1007 1015	300V/500V 450V/750V 20AWG, 15AWG, 7AWG	UL 758	UL E312831
Thermostat	Tongbao-Hualong Controls CO.,LTD	KSD301-9.0/10BL15R-G	AC250V/10A 90℃	EN60730-1:2000	TUV R 50128729
TTM-1700A					
Circuit breaker	ZheJiang Chint Electrics Co.,Ltd.	DZ47LE-63 C60	AC400V60A 3P+N	EN 60947-2:2003	CE mark
AC Contactor	ZheJiang Chint Electrics Co.,Ltd.	NC8-40	AC400V/40A	EN60947-4-1:2001+A1:2002+A2:2005 EN60947-5-	KEMA 2128757.01A

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

				1:2004	
Solid-state relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HFS34 D-380A100ZSL 80A	AC 400V/80A	EN 62314:2006	TUV R 50166328
SPS	Mean Well Eterprises Co.,Ltd	SP-320-24	DC24/13A	EN 60950-1:2006+A11	TUV R 50026832
Relay(KM3, KM4)	YUEQING QIANJI RELAY CO.,LTD	JQX-40F-2Z	AC250V/40A DC24V 70℃	EN 61810-1:2008	CE mark
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HF-115F	AC 250V/ 8A DC24V	EN60947-1:2004	VDE 116934
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	JZX-18FF/024-4Z-1	AC 250V/ 5A DC 24V	EN 61810-1:2008	TUV R 50147087
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HF13F/024-2Z-1	AC250V/ 10A DC 24V	EN 61810-1:2008	TUV R 50154518
Time relay	xinling eletctric CO.,LTD	HHS8	AC 220V/ 0.5A	60947-5-1:2004	CE mark
Temperature controller	Xiamen Yudian Automation Technology CO.,Ltd	MPA-520	AC240V	EN 61010-1:2001	TUV AN 50203312
Motor(M1)	Orient Drive Industry(shanghai) CO.,Ltd	GV-40-750	AC380V/0.75KW 1400r/min	EN 60034-1:2004 EN 60034-5:2001	TUV AN 50139635
Abrupt stop switch	Shanghai tianyi Electric Co.,LTD	LA42J	AC 230V / 3A	EN 60950-1:2006+A11:2009	Test with equipment
Gate sensor	Omron Izumo Co., Ltd	Z-15G-B	AC250V /15A	EN 61058-1/A1：1993	TUV R 9451585
Fan	SUNON	KD2412PMB1-6A	DC24V/6.2W	EN 60335-1 EN 60335-2-80	CE mark
Filter	Beijing Jones Co.,Ltd.	FLET01-10A	AC250V /10A	EN 60950-1:2006+A11:2009	Test with equipment
Photoelectric switch	Banner Engineering Crop	S18SN6DL	DC24V	EN 60950-1:2006+A11:2009	Test with equipment
Fuse(F1-F3)	ZheJiang ZhongTai Fuses Co.,Ltd	RT18-63X 40A	AC400VT/40A	DIN EN 60127-1/A1	CE mark
Fuse(F4-F5)	Littelfuse Inc.	RT18-10 10A	500V/T10A	DIN EN 60127-1/A1	VDE 123336
Fuse(F6)	Suzhou Littelfuse OVS Ltd.	617 series	AC250V/T5A	DIN EN 60127-1/A1	VDE: 40007750
FuseHolder (F1-F3)	ZheJiang ZhongTai Fuses Co.,Ltd	RO16	500V/40A	EN 60950-1:2006+A11:2009	Test with equipment

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

Fuse Holder (F4-F5)	ZheJiang ZhongTai Fuses Co.,Ltd	RO16	500V/10A	EN 60950-1:2006+A11:2009	Test with equipment
Fuse Holder F6	stelvio Spa	ptf/35	AC250V/ 6.3A	DIN EN 60127-6	VDE 133367
Transducer	Delta Electronics.inc	VFD007E21A	AC250V/0.75KW	EN 61800-5-1:2005 EN 50178:1997	CE mark
Button	Schneider-Electric	ZB2-BE101C	AC250V/3A	EN 60947-1:2007	CE mark
Button	Schneider-Electric	ZB2-BE102C	AC250V/3A	EN 60947-1:2007	CE mark
Sensor	Xiamen Yudian Automation Technology CO.,Ltd	Pt100	DC5V	EN 60950-1:2006+A11:2009	Test with equipment
Motor(M2)	reifeng	ZD2930	DC24V 100W 72r/min	EN 60950-1:2006+A11:2009	Test with equipment
Motor(M4)	reifeng	DC24V 30W	DC24V 30W 72r/min	EN 60950-1:2006+A11:2009	Test with equipment
Motor(M3)	vtv motor manufacture CO.,Ltd	90JB 25G15	DC24V 90W 72r/min	EN 60950-1:2006+A11:2009	Test with equipment
Heating lamp	Beijing guanke eletctric CO.,LTD	¢ 16 *2.5KW	AC250V 12A	EN 60950-1:2006+A11:2009	Test with equipment
Internal wire	SHANGHAI ECHU WIRE&CABLE CO.,LTD	1007 1015	300V/500V 450V/750V 20AWG, 15AWG, 7AWG	UL 758	UL E312831
Thermostat	Tongbao-Hualong Controls CO.,LTD	KSD301-9.0/10BL15R-G	AC250V/10A 90℃	EN60730-1:2000	TUV R 50128729
TTM-1700B					
Circuit breaker	ZheJiang Chint Electrics Co.,Ltd.	DZ47LE-63 C60	AC400V60A 3P+N	EN 60947-2:2003	CE mark
AC Contactor	ZheJiang Chint Electrics Co.,Ltd.	NC8-40	AC400V/40A	EN60947-4-1:2001+A1:2002+A2:2005 EN60947-5-1:2004	KEMA 2128757.01A
Solid-state relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HFS34 D-380A100ZSL 80A	AC 400V/80A DC24V	EN 62314:2006	TUV R 50166328
SPS	Mean Well Eterprises Co.,Ltd	SP-320-24	DC24/13A	EN 60950-1:2006+A11	TUV R 50026832
Relay(KM3, KM4)	YUEQING QIANJI RELAY	JQX-40F-2Z	AC250V/40A 70℃	EN 61810-1:2008	CE mark

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

	CO.,LTD				
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HF-115F	AC 250V/ 8A DC24V	EN60947-1:2004	VDE 116934
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	JZX-18FF/024-4Z-1	AC 250V/ 5A DC 24V	EN 61810-1:2008	TUV R 50147087
Relay	Xiamen Hongfa Electroacoustic Co.,LTD.	HF13F/024-2Z-1	AC250V/ 10A DC 24V	EN 61810-1:2008	TUV R 50154518
Time relay	xinling eletctric CO.,LTD	HHS8	AC 220V/ 0.5A	60947-5-1:2004	CE mark
Temperature controller	Xiamen Yudian Automation Technology CO.,Ltd	MPA-520	AC240V	EN 61010-1:2001	CE AN 50203312
Motor(M1)	Orient Drive Industry(shanghai) CO.,Ltd	GV-40-750	AC380V/0.75KW 1400r/min	EN 60034-1:2004 EN 60034-5:2001	CE AN 50139635
Abrupt stop switch	Shanghai tianyi Electric Co.,LTD	LA42J	AC 230V / 3A	EN 60950-1:2006+A11:2009	Test with equipment
Gate sensor	Omron Izumo Co., Ltd	Z-15G-B	AC250V /15A	EN 61058-1/A1：1993	TUV R 9451585
Fan	SUNON	KD2412PMB1-6A	DC24V/6.2W	EN 60335-1 EN 60335-2-80	CE mark
Filter	Beijing Jones Co.,Ltd.	FLET01-10A	AC250V /10A	EN 60950-1:2006+A11:2009	Test with equipment
Photoelectric switch	Banner Engineering Crop	S18SN6DL	DC24V	EN 60950-1:2006+A11:2009	Test with equipment
Fuse(F1-F3)	ZheJiang ZhongTai Fuses Co.,Ltd	RT18-63X 40A	AC400V/T40A	DIN EN 60127-1/A1	CE mark
Fuse(F4-F5)	Littelfuse Inc.	RT18-10	AC500V/T10A	DIN EN 60127-1/A1	VDE 123336
Fuse(F6)	Suzhou Littelfuse OVS Ltd.	617 series	AC250V/T5A	DIN EN 60127-1/A1	VDE: 40007750
FuseHolder (F1-F3)	ZheJiang ZhongTai Fuses Co.,Ltd	RO16	500V/40A	EN 60950-1:2006+A11:2009	Test with equipment
Fuse Holder (F4-F5)	ZheJiang ZhongTai Fuses Co.,Ltd	RO16	500V/10A	EN 60950-1:2006+A11:2009	Test with equipment
Fuse Holder F6	stelvio Spa	ptf/35	AC250V/ 6.3A	DIN EN 60127-6	VDE 133367
Transducer	Delta Electronics.inc	VFD007E21A	AC250V/0.75KW	EN 61800-5-1: 2005 EN 50178: 1997	CE mark
Button	Schneider-	ZB2-BE101C	AC250V/3A	EN 60947-	CE mark

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

	Electric			1:2007	
Button	Schneider-Electric	ZB2-BE102C	AC250V/3A	EN 60947-1:2007	CE mark
Sensor	Xiamen Yudian Automation Technology CO.,Ltd	Pt100	DC5V	EN 60950-1:2006+A11:2009	Test with equipment
Motor(M2)	reifeng	ZD2930	DC24V 100W 72r/min	EN 60950-1:2006+A11:2009	Test with equipment
Motor(M3)	vtv motor manufacture CO.,Ltd	90JB 25G15	DC24V 90W 72r/min	EN 60950-1:2006+A11:2009	Test with equipment
Heating lamp	Beijing guanke eletctric CO.,LTD	¢16 *2.5KW	AC250V 12A	EN 60950-1:2006+A11:2009	Test with equipment
Internal wire	SHANGHAI ECHU WIRE&CABLE CO.,LTD	1007 1015	300V/500V 450V/750V 20AWG, 15AWG, 7AWG	UL 758	UL E312831
Thermostat	Tongbao-Hualong Controls CO.,LTD	KSD301-9.0/10BL15R-G	AC250V/10A 90℃	EN60730-1:2000	TUV R 50128729
[1]) An asterisk indicates a mark which assures the agreed level of surveillance					
Supplementary information:					

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

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I_A(A)	I_B (A)	I_C(A)	Irated (A)	Fuse #	Condition/status
TTM-2500						
360	41.2	39.9	39.4	--	F1, F2, F3	Normal operation, max heating temperature and speed.
400	45.0	43.9	44.4	50	F1, F2, F3	As above
440	49.2	45.9	46.4	--	F1, F2, F3	As above
TTM-1700A						
360	24.2	24.6	26.9	--	F1, F2, F3	Normal operation, max heating temperature and speed.
400	27.5	27.3	28.7	30	F1, F2, F3	As above
440	30.6	30.3	31.2	--	F1, F2, F3	As above
Supplementary information:						

2.6.3.3	TABLE: ground continue test		N/A
Location	Resistant measured (Ω)	Comments	

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
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)	
L1, L2, L3, N - earth	565.6	400	3.2	Min10	4.0	Min10	
L1, L2, L3, N - enclosure of heater	565.6	400	3.2	Min10	4.0	Min10	
Heat winding to metal rack	565.6	400	3.2	Min10	4.0	Min10	
Supplementary information:							

2.10.5	TABLE: Distance through insulation measurements					N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Supplementary information:						

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

4.3.8	TABLE: Batteries	N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available		N/A
Is it possible to install the battery in a reverse polarity position?		N/A

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									

Test results:		Verdict
- Chemical leaks		N/A
- Explosion of the battery		N/A
- Emission of flame or expulsion of molten metal		N/A
- Electric strength tests of equipment after completion of tests		N/A
Supplementary information:		

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

4.5	TABLE: Thermal requirements (TTM-2500)			P
	Supply voltage (V) .....:	360	440	—
	Ambient T_{min} (°C) .....:	17.9	17.6	—
	Ambient T_{max} (°C) .....:	19.4	18.1	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
Supply cord		36.2	36.2	75+17.6-40=52.6
Circuit breaker		37.1	36.9	--
Fuse holder (F1)		35.8	35.4	--
Fuse (F1)		66.1	77.7	--
AC contactor (KM2)		37.4	35.4	--
Solid state relay		48.6	44.9	--
SPS		29.8	27.5	--
Transducer		37.6	37.7	--
Motor (M4)		26.1	26.2	120-10+17.6-40=87.6
Motor (M2)		24.8	24.8	120-10+17.6-40=87.6
Relay		41.8	39.5	--
Internal wire		49.1	50.1	105+17.6-40=82.6
Fan		42.3	36.8	--
Fuse (F5)		31.9	30.4	--
Temperature controller		52.1	52.0	--
Control pannel		33.0	32.3	85+17.6-40=62.6
Button		29.5	28.9	85+17.6-40=62.6
Emergency stop switch		27.4	27.3	85+17.6-40=62.6
Baffle plate		56.1	56.9	--
Enclosure		19.8	19.5	60+17.6-40=37.6
Motor (M3)		49.4	51.6	120-10+17.6-40=87.6
Motor (M1)		29.6	29.6	120-10+17.6-40=87.6

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

Supplementary information:							
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:

T is the temperature of the given part measured under the prescribed test conditions;

Tmax is the maximum temperature specified for compliance with the test;

Tamb is the ambient temperature during test;

Tma is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. T_{ma} by this manufacturer is 40°C

This equipment is Non-temperature dependent equipment, T shall not exceed (Tmax + Tamb – Tma).

Two test voltage performed, AC 360V, 50Hz and AC 440V, 50Hz.

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

4.5	TABLE: Thermal requirements (TTM-1700A)			P
	Supply voltage (V) .....:	360	440	—
	Ambient T_{min} (°C) .....:	16.4	19.4	—
	Ambient T_{max} (°C) .....:	18.2	21.7	—
Maximum measured temperature T of part/at::		T (°C)		Allowed T_{max} (°C)
Supply cord		22.5	26.5	75+16.4-40=51.4
Circuit breaker		30.9	37.9	--
Fuse holder		26.7	38.1	--
Fuse		45.2	66.0	--
AC contactor		17.0	18.9	--
Solid state relay		44.5	59.6	--
SPS		23.5	31.8	--
Transducer		28.6	32.6	--
Motor (M2)		20.4	23.4	120-10+16.4-40=86.4
Motor (M4)		17.9	21.9	120-10+16.4-40=86.4
Relay		19.3	24.3	--
Internal wire		34.7	54.5	105+16.4-40=81.4
Fan		25.6	34.0	--
Fuse (F5)		19.6	23.3	--
Temperature controller		40.1	43.3	--
Control pannel		24.1	26.8	85+16.4-40=61.4
Emergency stop switch		23.6	26.0	85+16.4-40=61.4
Enclosure		26.4	30.5	60+16.4-40=36.4
Baffler plater		96.6	97.9	--
Motor (M1)		16.1	21.5	120-10+16.4-40=86.4
Supplementary information:				

Temperature T of winding:

	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class

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

Supplementary information:

T is the temperature of the given part measured under the prescribed test conditions;

Tmax is the maximum temperature specified for compliance with the test;

Tamb is the ambient temperature during test;

Tma is the maximum ambient temperature permitted by the manufacturer's specification,

or 25 °C, whichever is greater. T_{ma} by this manufacturer is 40°C

This equipment is Non-temperature dependent equipment, T shall not exceed (Tmax + Tamb – Tma).

Two test voltage performed, AC 360V, 50Hz and AC 440V, 50Hz. For calculation of allowed Tmax in last column of above table, Tamb use the unfavorable one 16.4°C for easy check among Tamb=16.4 in AC 360V case and Tamb=19.4 in AC 440Vcase.

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) ..... :	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Circuit breaker	125	1.0
Fuse holder	125	1.2
AC contactor	125	1.0
Supplementary information:		

4.7	TABLE: Resistance to fire					N/A
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Supplementary information: metal enclosure used.						

5.1.6	TABLE: touch current measurement				N/A
Condition	L→ terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments	

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

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
L1, L2, L3, N to farthest metal enclosure		AC	1500	No
L1, L2, L3, N to plastic control panel		AC	3000	No
L1, L2, L3, N to SPS		AC	3000	No
Supplementary information:				

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	25	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	-	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current	Observation
Motor (M1)	Rotor block	AC 400V	15d	F1, F2, F3	63A	Impedance protection for motor windings. Maximum temperature of motor is 45.9°C. not exceed the allowed temperature 175°C in rotor block single fault condition.
Motor (M2)	Rotor block	DC 24V	7h	F5	10A	Impedance protection for motor windings. Maximum temperature of motor is 29.2°C. not exceed the allowed temperature 175°C in rotor block single fault condition.
Motor (M2)	Rotor block	DC 24V	7h	F5	10A	Impedance protection for motor windings. Maximum temperature of motor is 29.5°C. not exceed the allowed temperature 175°C in rotor block single fault condition.
AC contactor	s-c (L1)	AC 400V	1h	F1, F2, F3	50A	Temperature came to stay, no obvious temperature rise than that in AC 400V, 50Hz normal operation. Equipment operated normally. No hazard occur.
Temperature sensor	s-c	AC 400V	1h	F1, F2, F3	50A	The equipment can not heating, motor working normally. Temperature came to steay, no obvious temperature rise than that in AC 400V, 50Hz normal operation. Equipment operated normally. No hazard occur.

IEC/EN 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Temperature sensor	o-l	AC 400V	1h	F1, F2, F3	50A	The equipment can not heating, motor working normally. Temperature came to steay, no obvious temperature rise than that in AC 400V, 50Hz normal operation. Equipment operated normally. No hazard occur.
Temperature sensor	Stop work	AC 400V	1h	F1, F2, F3	50A	Equipment continue heating, thermostat protected, and then the equipment can not heating, motor working normally. Temperature came to steay. No hazard occur. The thermostat need to manually restore
side opening	All opening coverd	AC 400V	1h	F1, F2, F3	50A	Temperature came to stay, no obvious temperature rise than that in AC 400V, 50Hz normal operation. Equipment operated normally. No hazard occur.
Cooling fan	block	AC 400V	1h	F1, F2, F3	50A	Temperature came to stay, no obvious temperature rise than that in AC 400V, 50Hz normal operation. No hazard occur.
Supplementary information: 1. all single fault test performed at AC 400V,50Hz 2. Impedance protection for drive motors, no electronic protection or thermo/fuse protection provided, so rotor block represent the most unfavorable conditon, no over load test conducted						

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

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES	
Differences according to .....:	EN 60950-1:2006+A11:2009

	CENELEC COMMON MODIFICATIONS (EN)	P
ZA	Normative references to international publications with their corresponding European publications	—

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
1.2.13.14	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.	Not apply for	**N/A**
1.5.7.1	**Replace** the existing SNC by the following: In **Finland, Norway** and **Sweden,** resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	Not apply for	**N/A**
1.7.2.1	**Add** as new SNC: In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable	Not apply for	**N/A**

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)." NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet." Translation to Swedish: "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."		
1.7.5	**Add** the following paragraph to the existing SNC for **Denmark**: For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	Not apply for	**N/A**
7.3	**Delete** the existing SNC for Norway and Sweden (based on NOTE 1 of IEC 60950-1:2005 + corr. 1). **Add** as new SNC (based on future NOTE 3 of IEC 60950-1:200X): In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.	Not apply for	**N/A**

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

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		P
1.5.1	**Sweden** **Delete** the A-deviation.	Not apply for	**N/A**
1.7.2.1	**Denmark** **Delete** the A-deviation.	Not apply for	**N/A**
1.7.5	**Denmark** **Delete** the A-deviation.	Not apply for	**N/A**
5.1.7.1	**Denmark** **Delete** the A-deviation.	Not apply for	**N/A**

List of test equipment used:

Clause	Series No.	Testing / measuring equipment	Type	Next Calibration date
1.7	8956062	Dual display Multimeter	F45	2013-01-31
5.2	200504654	Voltage withstand tester	CS9914B	2013-01-21
5.1	None	Isolated Transformer	BK-500VA	No calibration required
1.7	91F130046	Digital Power Meter	WT210	2013-01-22
1.7/2.1	93040069	Multimeter	15B	2013-01-31
2.1	91G430880	digital oscillograph	DL1620	2013-02-01
2.6.3.4	MC004425	Earth continuity tester	TOS6210	2013-01-15
5.1	60511098	leakage Current Tester	3156	2013-01-19
1.7/4.5/5.1/5.3	9075860	NF power supply	EPO2000S	No calibration required
-	41216013	CAS electronic balance	AD-1	2013-01-31
2.9.2	54666005210010	Damp heat chamber	C4-600	2012-10-26
4.5/5.3	S5H103459	temperature recorder	MV2048	2013-03-14
2.9.2	TH0804210235	Data logger for atmosphere & environment	DSR-TH	2012-09-18
4.5.5	SH9104	Ball pressure device	SH9104	2013-03-17

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to..... :	EN 60950-1:2006/A1:2010/A12:2011
Attachment Form No..... :	EU_GD_IEC60950_1B_II
Attachment Originator..... :	SGS Fimko Ltd
Master Attachment..... :	Date 2011-08

EN 60950-1:2006/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions	P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2; 1.5.1 Note 2 & 3; 1.5.7.1 Note 1.5.8 Note 2; 1.5.9.4 Note; 1.7.2.1 Note 4, 5 & 6 2.2.3 Note; 2.2.4 Note; 2.3.2 Note 2.3.2.1 Note 2; 2.3.4 Note 2; 2.6.3.3 Note 2 & 3 2.7.1 Note; 2.10.3.2 Note 2; 2.10.5.13 Note 3 3.2.1.1 Note; 3.2.4 Note 3.; 2.5.1 Note 2 4.3.6 Note 1 & 2; 4.7 Note 4; 4.7.2.2 Note 4.7.3.1 Note 2; 5.1.7.1 Note 3 & 4; 5.3.7 Note 1 6 Note 2 & 5; 6.1.2.1 Note 2; 6.1.2.2 Note 6.2.2 Note; 6.2.2.1 Note 2; 6.2.2.2 Note 7.1 Note 3; 7.2 Note; 7.3 Note 1 & 2 G.2.1 Note 2; Annex H Note 2	P
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note; 6.1.2.1 Note 2 6.2.2.1 Note 2; EE.3 Note	P

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		P
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		P
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC		P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: – hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: – equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and – a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;		N/A
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 [a] | Over 6 up to and including 10| (0,75) [b] 1,0 | Over 10 up to and including 16| (1,0) [c] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a]. In NOTE 1, applicable to Table 3B, delete the second sentence.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A		P
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).		N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Bibliography	Additional EN standards.		—

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"		N/A
1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V,		N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N/A
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		P

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.		N/A