



CE LVD TEST REPORT

For
TOUCH SWITCHES

Model No.: VVT-5711, VT-5811, VT-5111, VT-5112, VT-5131, VT-5132,
VT-5133, VT-5143, VT-5121, VT-5311, VT-5411, VT-542

Applicant : V-TAC EXPORTS LIMITED
ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD
CENTRAL, CENTRAL, HONGKONG

Manufacturer : V-TAC EXPORTS LIMITED
ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD
CENTRAL, CENTRAL, HONGKONG

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Report Number : GST.190416.A004S

Issued Date : April 24, 2019

Date of Report : April 24, 2019

Note:

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| TEST REPORT EN 60950-1 Information Technology Equipment including-Safety Part 1: General equipments | |
|--|--|
| Report reference No. | GST.190416.A004S |
| Testing laboratory | Global-Standard Testing Service Co., Ltd. |
| Location..... | Room 1505, Building B, Chuangxin Plaza, Pingshan Avenue, Pingshan District, Shenzhen, China |
| Applicant..... | V-TAC EXPORTS LIMITED |
| Address:..... | ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD CENTRAL, CENTRAL, HONGKONG |
| Manufacturer..... | V-TAC EXPORTS LIMITED |
| Address:..... | ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD CENTRAL, CENTRAL, HONGKONG |
| Standards..... | EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 |
| Procedure deviation..... | N/A |
| Non-standard test method..... | N/A |
| Type of test equipment | TOUCH SWITCHES |
| Trade mark..... |  |
| Model/Type designation..... | VVT-5711, VT-5811, VT-5111, VT-5112, VT-5131, VT-5132, VT-5133, VT-5143, VT-5121, VT-5311, VT-5411, VT-542 |
| Rating..... | Input: AC180-240V, 50/60Hz |
| Copyright blank test report: | Global-Standard Testing Service Co., Ltd. |
| Test item particulars: | N/A |
| Equipment mobility | Portable equipment |
| Operating Condition | Continuous |
| Tested for IT power systems | No |
| IT testing, phase-phase voltage (V) | N.A. |
| Mass of equipment (Kg) | Approximately 0.2kg |
| Protection against ingress of water | IP20 |

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|---|--------|
| Possible test case verdicts : | |
| test case does not apply to the test object | N(/A.) |
| test object does meet the requirement | P(ass) |
| test object does not meet the requirement | F(ail) |

Name and address of the testing laboratory :

Global-Standard Testing Service Co., Ltd.
 Room 1505, Building B, Chuangxin Plaza, Pingshan Avenue,
 Pingshan District, Shenzhen, China

Tested by : John Huang April 20, 2019
 Signature Date

John Huang / Engineer
 Name/title

Reviewed by : Gloria Wang April 24, 2019
 Signature Date

Gloria Wang / Supervisor
 Name/title

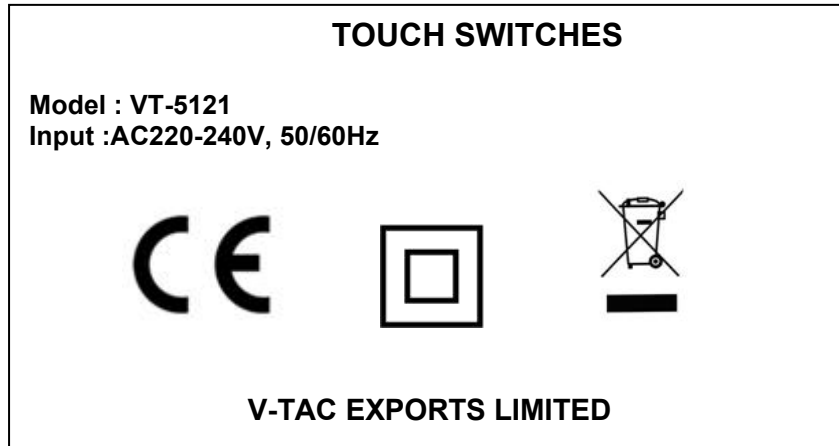
Approved by :  April 24, 2019
 Signature Date

Nico Xie / Manager
 Name/title

| | |
|---|--|
| General remarks: | |
| <p>“(see remark #)” refers to a remark appended to the report.</p> <p>“(see appended table)” refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>Until otherwise specified, all tests are done under normal ambient condition $25^{\circ}\text{C}\pm 10^{\circ}\text{C}$, Max RH: 75% and air pressure of 860 mbar to 1060 mbar.</p> | <p>Attached with:</p> <p>Attachment - A. Photo Documentation</p> |
| <p>Remark:</p> <ol style="list-style-type: none"> 1. The test samples were pre-production samples without serial numbers. This report shall not be reproduced except in full without the written approval of the testing laboratory. 2. This report covers TOUCH SWITCHES with models VT-5711, VT-5811, VT-5111, VT-5112, VT-5131, VT-5132, VT-5133, VT-5143, VT-5121, VT-5311, VT-5411, VT-542 3. The maximum ambient is 25°C. 4. The test result presented in this report relate only to the object tested. The samples tested comply with the requirements of this standard. | |

| EN 60950-1 | | | |
|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

label:



Remark:

- 1.The above copy of marking plate as an example for the VT-5121, All the other model will have the same marking plate except the difference of model number.
- 2.The above markings are the minimum requirements required by the safety standard. For the final productions samples, the additional markings which do not give rise to misunderstanding may be added.
3. Unless otherwise specified, model VT-5121 was selected as representative model to perform all tests. All tests were conducted on one model and the test result was pass.
4. The dimension for height of CE mark is at least 5mm height and the height of WEEE directive mark is at least 7mm height

| EN 60950-1 | | | |
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| Clause | Requirement | Result - Remark | Verdict |

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|---|---------|--|---|
| 1 | GENERAL | | P |
|---|---------|--|---|

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|---------|---|----------------------------|-----|
| 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 | | P |
| 1.5.3 | Thermal controls | No thermal controls. | N/A |
| 1.5.4 | Transformers | | N/A |
| 1.5.5 | Interconnecting cables | | N/A |
| 1.5.6 | Capacitors bridging insulation | | N/A |
| 1.5.7 | Resistors bridging insulation | No such resistors | 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 |
| 1.5.8 | Components in equipment for IT power systems | | N/A |
| 1.5.9 | Surge suppressors | | P |
| 1.5.9.1 | General | | P |
| 1.5.9.2 | Protection of VDRs | | P |
| 1.5.9.3 | Bridging of function insulation by a VDR | | P |
| 1.5.9.4 | Bridging of basic insulation by a VDR | No such construction | N/A |
| 1.5.9.5 | Bridging of supplementary, double or reinforced insulation by a VDR | No such construction | N/A |

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| 1.6 | Power interface | | P |
| 1.6.1 | AC power distribution systems | | N/A |
| 1.6.2 | Input current | (see appended table 1.6.2) | P |
| 1.6.3 | Voltage limit of hand-held equipment | Not hand-held equipment | N/A |
| 1.6.4 | Neutral conductor | The neutral conductor is regarded as line conductor | P |

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| 1.7 | Marking and instructions | | P |
| 1.7.1 | Power rating | See below | P |

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| Clause | Requirement | Result - Remark | Verdict |
| | Rated voltage(s) or voltage range(s) (V) | AC180-240V | P |
| | Symbol for nature of supply, for d.c. only..... | Mains from AC source | P |
| | Rated frequency or rated frequency range (Hz) .. | | N/A |
| | Rated current (mA or A) | - | N/A |
| | Manufacturer's name or trademark or identification mark | See copy of marking label | P |
| | Type/model or type reference..... | See copy of marking label | P |
| | Symbol for Class II equipment only | Double square symbol provided. | P |
| | Other marking and symbols | See copy of marking label | P |
| 1.7.2 | Safety instructions and marking | Operating Instructions provided to the operator, containing necessary instructions and caution information. English version checked. | P |
| 1.7.2.1 | General | "User Manual" provided that contains information regarding the maximum ambient temperature | P |
| 1.7.2.2 | Disconnect device | Direct plug-in equipment | N/A |
| 1.7.2.3 | Overcurrent protective device | Direct plug-in equipment | N/A |
| 1.7.2.4 | IT power distribution systems | | N/A |
| 1.7.2.5 | Operator access with a tool | No operator accessible area that needs to be accessed by the use of a tool | N/A |
| 1.7.2.6 | Ozone | Not such equipment | N/A |
| 1.7.3 | Short duty cycles | Continuous operation. | 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 standard power outlet | N/A |
| 1.7.6 | Fuse identification (marking, special fusing characteristics, cross-reference) | | N/A |
| 1.7.7 | Wiring terminals | See below. | N/A |
| 1.7.7.1 | Protective earthing and bonding terminals | | N/A |
| 1.7.7.2 | Terminal for a.c. mains supply conductors | Direct plug-in equipment | N/A |
| 1.7.7.3 | Terminals for d.c. mains supply conductors | No d, c mains supply | N/A |

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| Clause | Requirement | Result - Remark | Verdict |

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| 1.7.8 | Controls and indicators | No safety related switches or indicators. | N/A |
| 1.7.8.1 | Identification, location and marking | | N/A |
| 1.7.8.2 | Colours | | N/A |
| 1.7.8.3 | Symbols according to IEC 60417 | | N/A |
| 1.7.8.4 | Markings using figures | | N/A |
| 1.7.9 | Isolation of multiple power sources | Only one supply from the mains. | N/A |
| 1.7.10 | Thermostats and other regulating devices | No such components provided. | N/A |
| 1.7.11 | Durability | | P |
| 1.7.12 | Removable parts | No removable part. | N/A |
| 1.7.13 | Replaceable batteries | No battery provided | N/A |
| | Language(s) | | — |
| 1.7.14 | Equipment for restricted access locations | Not intended for use in 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 | No access with test finger and test pin to any parts with only basic insulation to ELV or hazardous voltage. | P |
| 2.1.1.1 | Access to energized parts | See above | P |
| | Test by inspection | See above | P |
| | Test with test finger | See above | P |
| | Test with test pin | See above | P |
| | Test with test probe | See above | P |
| 2.1.1.2 | Battery compartments | No TNV circuits. | N/A |
| 2.1.1.3 | Access to ELV wiring | No ELV wiring in operator accessible area | N/A |
| | Working voltage (V _{peak} or V _{rms}); minimum distance (mm) through insulation | | — |
| 2.1.1.4 | Access to hazardous voltage circuit wiring | Not accessible to operator. | N/A |
| 2.1.1.5 | Energy hazards | No energy hazard. (see appended table 2.1.1.5) | P |
| 2.1.1.6 | Manual controls | No manual controls | N/A |

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| Clause | Requirement | Result - Remark | Verdict |
| 2.1.1.7 | Discharge of capacitors in equipment | | N/A |
| | Measured voltage (V);time-constant(s).....: | (see appended table 2.1.1.7) | — |
| 2.1.1.8 | Energy hazards-d.c.mains supply | Connected to a.c mains. | 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.....: | Not such equipment | N/A |
| 2.1.2 | Protection in service access areas | No operator accessible area that needs to be accessed by the use of a tool. | N/A |
| 2.1.3 | Protection in restricted access locations | Not intended to be installed in a restricted access location. | N/A |
| 2.2 | SELV circuits | | P |
| 2.2.1 | General requirements | | P |
| 2.2.2 | Voltages under normal conditions (V).....: | | P |
| 2.2.3 | Voltages under fault conditions (V).....: | | P |
| 2.2.4 | Connection of SELV circuits to other circuits.....: | See 2.2.2 and 2.2.3. | P |
| 2.3 | TNV circuits | | N/A |
| 2.3.1 | Limits | No TNV circuits | 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 | | N/A |

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| Clause | Requirement | Result - Remark | Verdict |

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| 2.4.1 | General requirements | (see appended table 2.4.2) | N/A |
| 2.4.2 | Limit values | (see appended table 2.4.2) | N/A |
| | Frequency (Hz)..... : | 50 | — |
| | Measured current (mA)..... : | See appended table 2.4.2 | — |
| | Measured voltage (V)..... : | See appended table 2.4.2 | — |
| | Measured circuit capacitance (Nf or μ F)..... : | | — |
| 2.4.3 | Connection of limited current circuits to other circuits | The limited current circuit is supplied from SELV 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 | See appended table 2.5 | N/A |
| | d)Overcurrent protective device limited output | | N/A |
| | Max output voltage (V), max.output current (A), max.apparent power (VA)..... : | See appended table 2.5 | — |
| | Current rating of overcurrent protective device (A) | | — |

| | | | |
|---------|--|--|-----|
| 2.6 | Provisions for earthing and bonding | | N/A |
| 2.6.1 | Protective earthing | | N/A |
| 2.6.2 | Functional earthing | | N/A |
| 2.6.3 | Protective earthing and protective bonding conductors | | N/A |
| 2.6.3.1 | General | | N/A |
| 2.6.3.2 | Size of protective earthing conductors | | N/A |
| | Rated current (A), cross-sectional area (mm ²), AWG..... : | | — |
| 2.6.3.3 | Size of protective bonding conductors | | N/A |
| | Rated current (A), cross-sectional area (mm ²), AWG..... : | | — |
| | Protective current rating(A), cross-sectional area(mm ²), AWG..... : | | N/A |
| 2.6.3.4 | Resistance (Ω) of earthing conductors and their terminations, resistance(Ω) voltage drop(V) test current (A), duration(min)..... : | | N/A |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

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| 2.6.3.5 | Colour of insulation.....: | | N/A |
| 2.6.4 | Terminals | | N/A |
| 2.6.4.1 | General | | N/A |
| 2.6.4.2 | Protective earthing and bonding terminals | | N/A |
| | Rated current (A), type and nominal thread diameter (mm).....: | | — |
| 2.6.4.3 | Separation of the protective earthing conductor from protective bonding conductors | | N/A |
| 2.6.5 | Integrity of protective earthing | | N/A |
| 2.6.5.1 | Interconnection of equipment | | N/A |
| 2.6.5.2 | Components in protective earthing conductors and protective bonding conductors | | N/A |
| 2.6.5.3 | Disconnection of protective earth | | N/A |
| 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 | | N/A |
| 2.6.5.7 | Screws for protective bonding | | N/A |
| 2.6.5.8 | Reliance on telecommunication network or cable distribution system | No TNV | N/A |

| | | | |
|-------|--|---|---|
| 2.7 | Overcurrent and earth fault protection in primary circuits | | P |
| 2.7.1 | Basic requirements | The built-in device fuse provides overcurrent protection. Pluggable equipment type A Equipment relies on 16A rated fuse or circuit breaker of the building installation for short circuit and earth fault. | P |
| | Instructions when protection relies on building installation | Pluggable equipment type A Instruction regarding socket outlet provided in manual. | P |
| 2.7.2 | Faults not simulated in 5.3.7 | Considered. | P |
| 2.7.3 | Short-circuit backup protection | Pluggable equipment type A, the building installation is considered as providing short circuit protection. Additionally verification by short / abnormal tests | P |

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| Clause | Requirement | Result - Remark | Verdict |

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| 2.7.4 | Number and location of protective devices | Single-phase; one fuse is located in primary circuit. | 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 | No safety interlocks. | 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 |
| 2.8.7.3 | Endurance test | | N/A |
| 2.8.7.4 | Electric strength test | | N/A |
| 2.8.8 | Mechanical actuators | | N/A |

| | | | |
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| 2.9 | Electrical insulation | | P |
| 2.9.1 | Properties of insulating materials | Natural rubber, asbestos or hygroscopic materials are not used. | N/A |
| 2.9.2 | Humidity conditioning | Humidity treatment conducted for 48h. | N/A |
| | Relative humidity (%),temperature (°C) : | 93%R.H, 30°C | — |
| 2.9.3 | Grade of insulation | Kind of insulation and working voltage considered. | N/A |
| 2.9.4 | Separation from hazardous voltages | The secondary circuit is from hazardous voltages by reinforce insulation. | N/A |
| | Method(s) used..... | Method 1 used. | — |

| | | | |
|----------|---|--|---|
| 2.10 | Clearances, creepage distances and distances through insulation | | P |
| 2.10.1 | General | | P |
| 2.10.1.1 | Frequency..... | | P |

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| Clause | Requirement | Result - Remark | Verdict |
| 2.10.1.2 | Pollution degrees.....: | | P |
| 2.10.1.3 | Reduced values for functional insulation | See 5.3.4 | N/A |
| 2.10.1.4 | Intervening unconnected conductive parts | No such part | N/A |
| 2.10.1.5 | Insulation with varying dimensions | No such transformer used | N/A |
| 2.10.1.6 | Special separation requirements | No TNV | N/A |
| 2.10.1.7 | Insulation in circuits generating starting pulses | No such circuit | N/A |
| 2.10.2 | Determination of working voltage | The r.m.s. and the peak voltages were measured. | N/A |
| 2.10.2.1 | General | See above | N/A |
| 2.10.2.2 | RMS working voltage | | N/A |
| 2.10.2.3 | Peak working voltage | | N/A |
| 2.10.3 | Clearances | (see appended table 2.10.3 and 2.10.4) | N/A |
| 2.10.3.1 | General | Comply with 2.10.3.1 and 2.10.3.2, Annex G not applied. | N/A |
| 2.10.3.2 | Mains transient voltages | See below | N/A |
| | a)AC mains supply | Normal transient voltage considered.(See appended table 2.10.3 and 2.10.4) | N/A |
| | b)Earthed d.c.mains supplies.....: | AC mains | N/A |
| | c)Unearthed d.c.mains supplies | | N/A |
| | d)Battery operation | | N/A |
| 2.10.3.3 | Clearances in primary circuits | Annex F and minimum clearances considered.(see appended table 2.10.3 and 2.10.4) | N/A |
| 2.10.3.4 | Clearances in secondary circuits | See 5.3.4 | N/A |
| 2.10.3.5 | Clearances in circuits having starting pulses | No such circuit | N/A |
| 2.10.3.6 | Transients from a.c.mains supply.....: | See 2.10.3.2 | N/A |
| 2.10.3.7 | Transients from d.c.mains supply.....: | | N/A |
| 2.10.3.8 | Transients from telecommunication networks and cable distribution systems.....: | No TNV circuit | N/A |
| 2.10.3.9 | Measurement of transient voltage levels | See 2.10.3.6 | N/A |
| | a)Transients from a mains supply | | N/A |
| | For an a.c.mains supply..... | | N/A |
| | For an d.c.mains supply..... | | N/A |

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| Clause | Requirement | Result - Remark | Verdict |

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| | b) Transients from a telecommunication network : | | N/A |
| 2.10.4 | Creepage distances | See below | N/A |
| 2.10.4.1 | General | (see appended table 2.10.3 and 2.10.4) | N/A |
| 2.10.4.2 | Material group and comparative tracking index | | N/A |
| | CTI test | CTI rating for all materials of min.100. | N/A |
| 2.10.4.3 | Minimum creepage distance | (see appended table 2.10.3 and 2.10.4) | N/A |
| 2.10.5 | Solid insulation | | N/A |
| 2.10.5.1 | General | See below | N/A |
| 2.10.5.2 | Distances through insulation | Enclosure provided(see appended table 2.10.5) | N/A |
| 2.10.5.3 | Insulating compound as solid insulation | No such component | N/A |
| 2.10.5.4 | Semiconductor devices | | N/A |
| 2.10.5.5 | Cemented joints | No such construction | N/A |
| 2.10.5.6 | Thin sheet material-General | | P |
| 2.10.5.7 | Separable thin sheet material | See above | P |
| | Number of layers (pcs) | | — |
| 2.10.5.8 | Non-separable thin sheet material | Not such material | N/A |
| 2.10.5.9 | Thin sheet material- standard test procedure | | P |
| | Electric strength test | | — |
| 2.10.5.10 | Thin sheet material- alternative test procedure | | N/A |
| | Electric strength test | | — |
| 2.10.5.11 | Insulation in wound components | | P |
| 2.10.5.12 | Wire in wound components | See above | N/A |
| | Working voltage.....: | | N/A |
| | a)Basic insulation not under stress | | N/A |
| | b)Basic,supplementary,reinforced insulation | | N/A |
| | c)Compliance with Annex U.....: | | N/A |
| | Two wires in contact inside wound component;angle between 45°C and90°C | By insulation tape | N/A |
| 2.10.5.13 | Wire with solvent-based enamel in wound components | No such construction | N/A |
| | Electric strength test | | — |

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| Clause | Requirement | Result - Remark | Verdict |

| | | | |
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| | Routine test | | N/A |
| 2.10.5.14 | Additional insulation in wound components | No such construction | N/A |
| | Working voltage | | N/A |
| | -Basic insulation not under stress..... | | N/A |
| | Supplementary, reinforced insulation | | N/A |
| 2.10.6 | Construction of printed insulation | See below | 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 | No coated printed boards. | N/A |
| 2.10.6.3 | Insulation between conductors on the same inner surface of a printed board | No multi-layer PCBs provided | N/A |
| 2.10.6.4 | Insulation between conductors on different layers of a printed board | No multi-layer PCBs provided | N/A |
| | Distance through insulation | | N/A |
| | Number of insulation layers (pcs)..... | | N/A |
| 2.10.7 | Component external terminations | (see appended table 2.10.3 and 2.10.4) | N/A |
| 2.10.8 | Tests on coated printed boards and coated components | No such boards and components | N/A |
| 2.10.8.1 | Sample preparation and preliminary inspection | | N/A |
| 2.10.8.2 | Thermal conditioning | | N/A |
| 2.10.8.3 | Electric strength test | | 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 | No hermetically sealed component | N/A |

| | | | |
|-------|---|---|---|
| 3 | WIRING, CONNECTIONS AND SUPPLY | | P |
| 3.1 | General | | P |
| 3.1.1 | Current rating and overcurrent protection | Sufficient cross sectional area of internal wiring. | P |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|--------|--|--|-----|
| 3.1.2 | Protection against mechanical damage | Wires do not touch sharp edges and heat sinks that could damage the insulation and cause hazard. | P |
| 3.1.3 | Securing of internal wiring | | P |
| 3.1.4 | Insulation of conductors | | P |
| 3.1.5 | Beads and ceramic insulators | | N/A |
| 3.1.6 | Screws for electrical contact pressure | | N/A |
| 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 | All conductors are reliable secured. | P |
| | 10 N pull test | Force of 10N applied to the termination points of the conductors. | P |
| 3.1.10 | Sleeving on wiring | | P |

| | | | |
|---------|---|---------------------|-----|
| 3.2 | Connection to a mains supply | | N/A |
| 3.2.1 | Means of connection | Direct plug-in plug | N/A |
| 3.2.1.1 | Connection to an a.c. mains supply | | N/A |
| 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 | | N/A |
| | Number of conductors, diameter (mm) of cable and conduits | | — |

| | | | |
|---------|--|---------------|-----|
| 3.2.4 | Appliance inlets | | N/A |
| 3.2.5 | Power supply cords | | N/A |
| 3.2.5.1 | AC power supply cords | | N/A |
| | Type..... | | N/A |
| | 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 | No power cord | N/A |
| | Mass of equipment (kg), pull (N) | | — |
| | Longitudinal displacement (mm) | | — |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|-------|---|--|-----|
| 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 | Not permanent connection or non-detachable power cord type | N/A |

| | | | |
|-------|--|--|-----|
| 3.3 | Wiring terminals for connection of external conductors | | N/A |
| 3.3.1 | Wiring terminals | | N/A |
| 3.3.2 | Connection of non-detachable power supply cords | | N/A |
| 3.3.3 | Screw terminals | | N/A |
| 3.3.4 | Conductor sizes to be connected | | N/A |
| | Rated current (A), cord/cable type, cross-sectional area (mm ²)..... | | — |
| 3.3.5 | Wiring terminal sizes | | N/A |
| | Rated current (A), type and nominal thread diameter (mm) | | — |
| 3.3.6 | Wiring terminals 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 | | P |
| 3.4.2 | Disconnect devices | | N/A |
| 3.4.3 | Permanently connected equipment | | N/A |
| 3.4.4 | Parts which remain energized | there are not remaining parts at hazardous voltage. | N/A |
| 3.4.5 | Switches in flexible cords | No flexible cords | N/A |
| 3.4.6 | Number of poles-single-phase and d.c. equipment | | N/A |
| 3.4.7 | Number of poles-three-phase equipment | Single phase equipment | N/A |
| 3.4.8 | Switches as disconnect devices | | N/A |
| 3.4.9 | Plugs as disconnect devices | | N/A |

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|------------|--------------------------|---|---------|
| Clause | Requirement | Result - Remark | Verdict |
| 3.4.10 | Interconnected equipment | No interconnections using hazardous voltages. | N/A |
| 3.4.11 | Multiple power sources | Only one supply connection provided. | N/A |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|-------|--|------------------------|-----|
| 3.5 | Interconnection of equipment | | P |
| 3.5.1 | General requirements | | P |
| 3.5.2 | Types of interconnection circuits..... : | | P |
| 3.5.3 | ELV circuits as interconnection circuits | No ELV interconnection | N/A |
| 3.5.4 | Data ports for additional equipment | No such ports | N/A |

| | | | |
|-----|-----------------------|--|-----|
| 4 | PHYSICAL REQUIREMENTS | | P |
| 4.1 | Stability | | P |
| | Angle of 10° | | P |
| | Test: force (N).....: | | N/A |

| | | | |
|--------|--|---|-----|
| 4.2 | Mechanical strength | | P |
| 4.2.1 | General | See below. After tests, unit comply with 2.1.1, 2.6.1, 2.10 and 4.4.1 | P |
| 4.2.2 | Steady force test, 10 N | Applied to relevant parts, no hazard. | P |
| 4.2.3 | Steady force test, 30 N | No internal enclosure | N/A |
| 4.2.4 | Steady force test, 250 N | 250N applied to outer enclosure. No engery or other hazards. | P |
| 4.2.5 | Impact test | | N/A |
| | Fall test | | N/A |
| | Swing test | | N/A |
| 4.2.6 | Drop test; height(mm).....: | No hazard as result from drop test | P |
| 4.2.7 | Stress relief test | After 7h at 80°C and cooling down to room temperature, no shrinkage, distortion or loosing of enclosure parts was noticeable on the unit. | P |
| 4.2.8 | Cathode ray tubes | No CRT provided | N/A |
| | Picture tube separately certified.....: | | N/A |
| 4.2.9 | High pressure lamps | No high pressure lamps provided | N/A |
| 4.2.10 | Wall or ceiling mounted equipment; force (N): | Direct plug-in equipment | N/A |

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|------------|--|---|---------|
| Clause | Requirement | Result - Remark | Verdict |
| 4.3 | Design and construction | | P |
| 4.3.1 | Edges and corners | All edges and corners are rounded and / or smoothed. | P |
| 4.3.2 | Handles and manual controls; force (N).....: | No such part | N/A |
| 4.3.3 | Adjustable controls | | N/A |
| 4.3.4 | Securing of parts | Electrical and mechanical connections can be expected to withstand usual mechanical stress. | P |
| 4.3.5 | Connection of plugs and sockets | In operator and service areas, mismatching prevented by incompatible form or location. | P |
| 4.3.6 | Direct plug-in equipment | | N/A |
| | Torque.....: | $0.02\text{Nm} \leq 0.25\text{Nm}$ | N/A |
| | Compliance with the relevant mains plug standard.....: | | N/A |
| 4.3.7 | Heating elements in earthed equipment | | N/A |
| 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 | Insulation not in contact with oil or grease. | N/A |
| 4.3.10 | Dust, powders, liquids and gases | Equipment in intended use not considered to be exposed to these. | N/A |
| 4.3.11 | Containers for liquids or gases | No container for liquid or gas. | N/A |
| 4.3.12 | Flammable liquids.....: | No flammable liquids present. | N/A |
| | Quantity of liquid (l).....: | | N/A |
| | Flash point (°C).....: | | N/A |
| 4.3.13 | Radiation | No radiation hazards. | N/A |
| 4.3.13.1 | General | | N/A |
| 4.3.13.2 | Ionizing radiation | No ionizing radiation. | N/A |
| | Measured radiation (pA/kg) | | — |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|----------|---|--------------------------------|-----|
| | Measured high-voltage (kV) | | — |
| | Measured focus voltage (kV) | | — |
| | CRT markings | | — |
| 4.3.13.3 | Effect of ultraviolet (UV) radiation on materials | No ultraviolet (UV) radiation. | 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) | No laser. | N/A |
| | Laser class | | — |
| 4.3.13.6 | Other types | | N/A |

| | | | |
|-------|---|--------------------------|-----|
| 4.4 | Protection against hazardous moving parts | | N/A |
| 4.4.1 | General | No hazardous moving part | N/A |
| 4.4.2 | Protection in operator access areas | | N/A |
| 4.4.3 | Protection in restricted access locations | | N/A |
| 4.4.4 | Protection in service access areas | | N/A |

| | | | |
|-------|--|----------------------------|---|
| 4.5 | Thermal requirements | | P |
| 4.5.1 | General | See below | P |
| 4.5.2 | Temperature tests | (see appended table 4.5.2) | P |
| | Normal load condition per Annex L..... | (see appended table 1.6.2) | — |
| 4.5.3 | Temperature limits for materials | (see appended table 4.5.2) | P |
| 4.5.4 | Touch Temperature limits | (see appended table 4.5.2) | P |
| 4.5.5 | Resistance to abnormal heat..... | (see appended table 4.5.5) | P |

| | | | |
|---------|--|--|-----|
| 4.6 | Openings in enclosures | | N/A |
| 4.6.1 | Top and side openings | | N/A |
| | Dimensions (mm) | | — |
| 4.6.2 | Bottoms of fire enclosures | | N/A |
| | Construction of the bottom, dimensions (mm)..... | | — |
| 4.6.3 | Doors or covers in fire enclosures | | N/A |
| 4.6.4 | Openings in transportable equipment | | N/A |
| 4.6.4.1 | Constructional design measures | | N/A |

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| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|---------|---|--|-----|
| | Dimensions (mm).....: | | — |
| 4.6.4.2 | Evaluation measures for larger openings | | N/A |
| 4.6.4.3 | Use of metallized parts | | N/A |
| 4.6.5 | Adhesives for constructional purposes | | N/A |
| | Conditioning temperature (°C), time (weeks).....: | | — |

| | | | |
|---------|--|---|-----|
| 4.7 | Resistance to fire | | P |
| 4.7.1 | Reducing the risk of ignition and spread of flame | Materials with the required flammability classes are used. Safety relevant components used within their specified rating. Electrical parts are not likely to ignite nearby materials. Temperatures see 4.5.2. | P |
| | Method 1, selection and application of components wiring and materials | (see appended table 1.5.1) | P |
| | Method 2, application of all of simulated fault condition tests | See below. | N/A |
| 4.7.2 | Conditions for a fire enclosure | | P |
| 4.7.2.1 | Parts requiring a 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 | Parts were mounted on V-1 or better PCB. Materials with the required flammability classes are used. | P |
| 4.7.3.2 | Materials for fire enclosures | Fire enclosure is V-0 material. | P |
| 4.7.3.3 | Materials for components and other parts outside fire enclosures | No part outside fire enclosure. | N/A |
| 4.7.3.4 | Materials for components and other parts inside fire enclosures | Internal components except small parts are V-2, HF-2 or better. Insulating material consists of PVC. | P |
| 4.7.3.5 | Materials for air filter assemblies | No air filters provided. | N/A |
| 4.7.3.6 | Materials used in high-voltage components | No high-voltage components provided. | N/A |

| | | | |
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| 5 | ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS | | N/A |
| 5.1 | Touch current and protective conductor current | | N/A |

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|------------|---|--|---------|
| Clause | Requirement | Result - Remark | Verdict |
| 5.1.1 | General | Measurement circuit according to annex D used as described in cl. 5.1.2 to 5.1.7 | N/A |
| 5.1.2 | Configuration equipment under test (EUT) | EUT has only one mains connection | N/A |
| 5.1.2.1 | Single connection to an a.c.mains supply | | |
| 5.1.2.2 | Redundant multiple connection to an a.c.mains supply | | N/A |
| 5.1.2.3 | Simultaneous multiple connection to an a.c.mains supply | | N/A |
| 5.1.3 | Test circuit | | N/A |
| 5.1.4 | Application of measuring instrument | Per Annex D. | N/A |
| 5.1.5 | Test procedure | | N/A |
| 5.1.6 | Test measurements | | N/A |
| | Supply voltage (V) | (see appended table 5.1.6) | — |
| | Measured touch current (mA) | (see appended table 5.1.6) | — |
| | Max. allowed touch current (mA) | 0.15mA | — |
| | 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 connection to the supply | | N/A |
| 5.1.8 | Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks | No TNV | N/A |
| 5.1.8.1 | Limitation of the touch current to a telecommunication network and 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 |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|-------|-------------------|--------------------------|---|
| 5.2 | Electric strength | | P |
| 5.2.1 | General | (see appended table 5.2) | P |
| 5.2.2 | Test procedure | (see appended table 5.2) | 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 | | N/A |
| 5.3.3 | Transformers | Adequate protection against overload provided. (see appended Annex C) | P |
| 5.3.4 | Functional insulation..... : | Short circuit tests. (see appended table 5.3) | P |
| 5.3.5 | Electromechanical components | Not provided. | N/A |
| 5.3.6 | Audio amplifiers in ITE..... : | No such component | N/A |
| 5.3.7 | Simulation of faults | Results see appended table 5.3 | P |
| 5.3.8 | Unattended equipment | None of the listed components was provided | N/A |
| 5.3.9 | Compliance criteria for abnormal operating and fault conditions | No fire propagated beyond the equipment. No molten metal was emitted. | 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 |
| 6.1.2.1 | Requirements | | N/A |
| | Test 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 |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|---------|----------------------------------|--|-----|
| 6.2.2 | Electric strength test procedure | | N/A |
| 6.2.2.1 | Impulse test | | N/A |
| 6.2.2.2 | Steady-state test | | 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 | Not connected to cable distribution system | 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 | | N/A |
| 7.4.3 | Impulse test | | N/A |

| | | | |
|-------|---|--|-----|
| 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 |

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|------------|--|----------------------------|---------|
| Clause | Requirement | Result - Remark | Verdict |
| | 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 | | 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 60695-2-2, cl. 4 and 8 | | N/A |
| | Sample 1 burning time (s).....: | | — |
| | Sample 2 burning time (s).....: | | — |
| | Sample 3 burning time (s).....: | | — |
| A.3 | Hot flaming oil test (see 4.6.2) | | N/A |
| A.3.1 | Mounting of samples | | N/A |
| A.3.2 | Test procedure | | N/A |
| A.3.3 | Compliance criterion | | N/A |
| B | ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2) | | N/A |
| B.1 | General requirements | | N/A |
| | Position | (see appended table 1.5.1) | — |
| | Manufacturer | (see appended table 1.5.1) | — |
| | Type | (see appended table 1.5.1) | — |
| | Rated values | (see appended table 1.5.1) | — |
| B.2 | Test conditions | | N/A |

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|------------|--|---|---------|
| Clause | Requirement | Result - Remark | Verdict |
| B.3 | Maximum temperatures | (see appended table 5.3) | N/A |
| B.4 | Running overload test | (see appended table 5.3) | N/A |
| B.5 | Locked-rotor overload test | | N/A |
| | Test duration (days) | | — |
| | Electric strength test: test voltage (V) | | — |
| B.6 | Running overload test for d.c. motors in secondary circuits | | N/A |
| B.7 | Locked-rotor overload test for d.c. motors in secondary circuits | | N/A |
| B.7.1 | Test procedure | (see appended table 5.3) | N/A |
| B.7.2 | Alternative test procedure; test time (h)..... | | N/A |
| B.7.3 | Electric strength test | (see appended table 5.2) | N/A |
| B.8 | Test for motors with capacitors | (see appended table 5.3) | N/A |
| B.9 | Test for three-phase motors | (see appended table 5.3) | N/A |
| B.10 | Test for series motors | | N/A |
| | Operating voltage (V) | | — |
| C | ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3) | | P |
| | Position | | — |
| | Manufacturer | | — |
| | Type | -- | — |
| | Rated values | | — |
| | Method of protection..... | | — |
| C.1 | Overload test | (see appended table 5.3) | N/A |
| C.2 | Insulation | (see appended table 5.2) | N/A |
| | Protection from displacement of windings..... | Fixed by insulation tape, margin tape and tube. | N/A |
| D | ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4) | | N/A |
| D.1 | Measuring instrument | | N/A |
| D.2 | Alternative measuring instrument | | N/A |
| E | ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13) | | N/A |

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|------------|---|--------------------------|---------|
| Clause | Requirement | Result - Remark | Verdict |
| F | ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10) | | P |
| G | ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES | | N/A |
| G.1 | 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 | DC mains supply | | N/A |
| G.3 | Determination of telecommunication network transient voltage (V).....: | | N/A |
| G.4 | Determination of required withstand voltage (V).: | | N/A |
| G.5 | Measurement of transient levels (V).....: | | 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 used | stainless steel | — |
| K | ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7) | | N/A |
| K.1 | Making and breaking capacity | | N/A |
| K.2 | Thermostat reliability; operating voltage (V).....: | | N/A |
| K.3 | Thermostat endurance test; operating voltage (V) | | N/A |
| K.4 | Temperature limiter endurance; operating voltage (V) | | N/A |
| K.5 | Thermal cut-out reliability | | N/A |
| K.6 | Stability of operation | (see appended table 5.3) | N/A |
| L | ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1) | | P |
| 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 |

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|------------|---|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |
| 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 | Ringling 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 2.10.3.4, 6.2.2.1, 7.3.2 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 | | P |
| Q | ANNEX Q, BIBLIOGRAPHY | | N/A |
| 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) | | 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 |

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| Clause | Requirement | Result - Remark | Verdict |
| 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 |
| | | | — |
| U | ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4) | | N/A |
| | | | — |
| V | ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1) | | P |
| V.1 | Introduction | | P |
| V.2 | TN power distribution systems | | N/A |
| W | ANNEX W, SUMMATION OF TOUCH CURRENTS | | P |
| W.1 | Touch current from electronic circuits | | P |
| 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) | | P |
| X.1 | Determination of maximum input current | | P |
| X.2 | Overload test procedure | | P |
| Y | ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3) | | N/A |
| Y.1 | Test apparatus | | N/A |
| Y.2 | Mounting of test samples | | N/A |
| Y.3 | Carbon-arc light-exposure apparatus | | N/A |
| Y.4 | Xenon-arc light exposure apparatus | | N/A |

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| Clause | Requirement | Result - Remark | Verdict |
| Annex ZA | Replace the current Annex ZA Normative references to international publications with their corresponding European publications(60950-1 2006+A11:2009 clause) | | N/A |
| Annex ZB | Change the existing special national conditions as follows: (60950-1 2006+A11:2009 clause) | | N/A |
| 1.1.1 | NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies. (60950-1 2006+A1:2010 clause) | | N/A |
| 1.2.3 | PORTABLE SOUND SYSTEM (60950-1 2006+A1:2010 clause) | | N/A |
| | whose prime purpose is to listen to recorded or broadcasted sound; | | N/A |
| | that uses headphones or earphones that can be worn in or on or around the ears; | | N/A |
| | that allows the user to walk around | | N/A |
| 1.2.13.14 | In Norway and Sweden, for requirements see 1.7.2.1 and 7.3 of this annex. (60950-1 2006+A11:2009 clause) | | 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. (60950-1 2006+A11:2009 clause) | | N/A |

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| Clause | Requirement | Result - Remark | Verdict |
| 1.7.2.1 | <p>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.</p> <p>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 distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway): (see standard)</p> <p>Translation to Swedish: (see standard)</p> <p>(60950-1 2006+A11:2009 clause)</p> | | N/A |
| | <p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <ol style="list-style-type: none"> 1. If this insulation is solid, including insulation forming part of a component, 2. there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, <p>(60950-1 2006+A1:2010 clause6.1.2.1)</p> | | N/A |
| | <p>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.</p> <p>(60950-1 2006+A1:2010 clause)</p> | | N/A |

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|------------|--|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |
| 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. (60950-1 2006+A11:2009 clause) | | N/A |
| 4.3.13.6 | 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 (artificial optical radiation).Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC. (60950-1 2006+A1:2010 clause) | | 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. (60950-1 2006+A11:2009 clause) | | N/A |
| Annex ZC | With below modification (60950-1 2006+A11:2009 clause) | | N/A |
| 1.5.1 | Sweden (Ordinance 1990:944) Delete | | N/A |
| 1.7.2.1 | Denmark (Heavy Current Regulations) Delete | | N/A |
| 1.7.5 | Denmark (Heavy Current Regulations) Delete | | N/A |
| 5.1.7.1 | Denmark (Heavy Current Regulations, Chapter 707, clause 707.4) Delete | | N/A |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|-------|------------------------------------|--|---|
| 1.5.1 | TABLE: list of critical components | | P |
|-------|------------------------------------|--|---|

| TABLE 1.5.1 List of critical components and materials | | | | | |
|--|--|-------------------|---------------------------|----------|---------------------|
| Component | manufacturers / trademark | Type / model | Value / rating | standard | Approval/ Reference |
| Enclosure Material | Lg Chemical (Guangzhou) Engineering Plastics Co., Ltd. | LUPOY ER-1006F(#) | V-0, Min.1.5 mm, 110°C | UL 94 | UL |
| Input wire | WONDERFUL HI-TECH CO LTD | 1015 | 20AWG, 105°C | UL 758 | UL |
| Relay | GOLDEN | GH-1A-12L | 250VAC, 12A | VDE 0435 | VDE |
| Switch | DICGU ENTERPRISE CO., LTD. | SW series | 250V~, 3A | VDE 0630 | VDE |
| PCB | Shenzhen Shenze Electronic Co., Ltd. | S-M | V-0 130° C | UL 94 | UL |
| Internal wire | Dongguan Wenchang Electronic Co., Ltd. | 1015 | VW-1, 22AWG, 105°C, 600V~ | UL 758 | UL |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| 1.6.2 | TABLE: electrical data (in normal conditions) | | | | | P |
|--------|---|-------|-------|-------|-----------|------------------|
| fuse # | Irated (A) | U (V) | P (W) | I (A) | Ifuse (A) | condition/status |
| -- | 0.3 | 230 | 1.78 | 0.18 | -- | |

| 2.1.1.5 | TABLE: max. V, A, VA test | | | | P |
|------------------------|---------------------------|-----------------------|-----------------------|-------------------|---|
| Voltage (rated) (V) | Current (rated) (A) | Voltage (max.) (V) | Current (max.) (A) | VA (max.) (VA) | |
| 230 | 0.095 | 20.14 | 0.13 | 2.62 | |
| - | | | | | |

| 2.2.2 | TABLE: Hazardous voltage measurement | | | N/A |
|-------------|--------------------------------------|--------------|--------|---------------------------------|
| Transformer | Location | max. Voltage | | Voltage Limitation Component |
| | | V peak | V d.c. | |
| Transformer | Pin sec | - | -- | -- |
| -- | -- | -- | - | After Diode D6 |

| 2.2.3 | TABLE: SEL voltage measurement | | N/A |
|-----------------|--------------------------------|----------|-----|
| Location | Voltage measured (V) | Comments | |
| Output terminal | -- | -- | |
| Note: | | | |

| 2.5 | TABLE: limited power source measurement | | | N/A |
|---|---|----------|---------|-----|
| | Limits | Measured | Verdict | |
| Uoc =5.12V (measured under no load conditions) | | | | |
| | Limits | Measured | Verdict | |
| According to Table 2B with the max. load conditions | | | | |
| current (in A) | ≤8 | - | N/A | |
| power (in VA) | ≤100 | - | N/A | |
| According to Table 2B with - open-circuited: | | | | |
| current (in A) | ≤8 | - | N/A | |
| power (in VA) | ≤100 | - | N/A | |
| According to Table 2B with - short-circuited: | | | | |
| current (in A) | ≤8 | - | N/A | |

| EN 60950-1 | | | |
|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|---|------------|---|-----|
| power (in VA) | ≤ 100 | - | N/A |
| According to Table 2B with - short-circuited: | | | |
| current (in A) | ≤ 8 | - | N/A |
| power (in VA) | ≤ 100 | - | N/A |
| Note: test voltage: 264Vac, 60Hz | | | |

| | | | |
|----------------------------------|-----------------------------|----------|-----|
| 2.6.3.4 | TABLE: ground continue test | | N/A |
| Location | Resistant measured (W) | Comments | |
| From earthing terminal to casing | | | |
| | | | |
| Note: -- | | | |

| | | | | | | |
|---|---|-----|------------------|---------|-------------------|----------|
| 2.10.3 and 2.10.4 | TABLE: clearance and creepage distance measurements | | | | | P |
| clearance cl and creepage distance dcr at/of: | Up (V) | N/A | required cl (mm) | cl (mm) | required dcr (mm) | dcr (mm) |
| L and N | 250 | | 1.5 | 3.5 | 2.5 | 3.5 |
| Live part to enclosure | 250 | | 3.0 | 5.3 | 2.5 | 6.6 |

| | | | | | |
|--|---|------------------|-------------------|----------|-----|
| 2.10.5 | TABLE: distance through insulation measurements | | | | N/A |
| distance through insulation di at/of: | Up (V) | test voltage (V) | required dti (mm) | dti (mm) | |
| Enclosure (Reinforced) | - | - | - | - | |
| Remark: 1) further details are provided in table 1.5 | | | | | |

| | | | |
|-----|-----------------------------------|--------|-------------------------------|
| 4.5 | TABLE: maximum temperatures | | P |
| | test voltage (V) | 275V | — |
| | t _{amb1} (°C) | 25.3 | — |
| | t _{amb2} (°C) | 25.5 | — |
| | maximum temperature T of part/at: | T (°C) | allowed T _{max} (°C) |
| | Relay | 48.6 | 105 |
| | PCB near U2 | 54.8 | 130 |
| | Input wire | 34.7 | 105 |
| | Output wire | 39.4 | 105 |
| | D4 | 45.2 | 130 |

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|------------|-------------|-----------------|---------|
| Clause | Requirement | Result - Remark | Verdict |

| | | | |
|-----------------------------|--------------------|--------|--|
| C10 | | 42.4 | 105 |
| Switch | | 41.7 | 125 |
| Enclosure near U2 | | 37.5 | 110 |
| Enclosure near U2 (outside) | | 71.3 | 90 |
| temperature T of winding: | R ₂ (Ω) | T (°C) | allowed T _{max} (°C) insulation class |
| -- | -- | -- | --- |

Supplementary information:

The maximum ambient temperature permitted by the manufacturer's specification T_{ma}=25°C

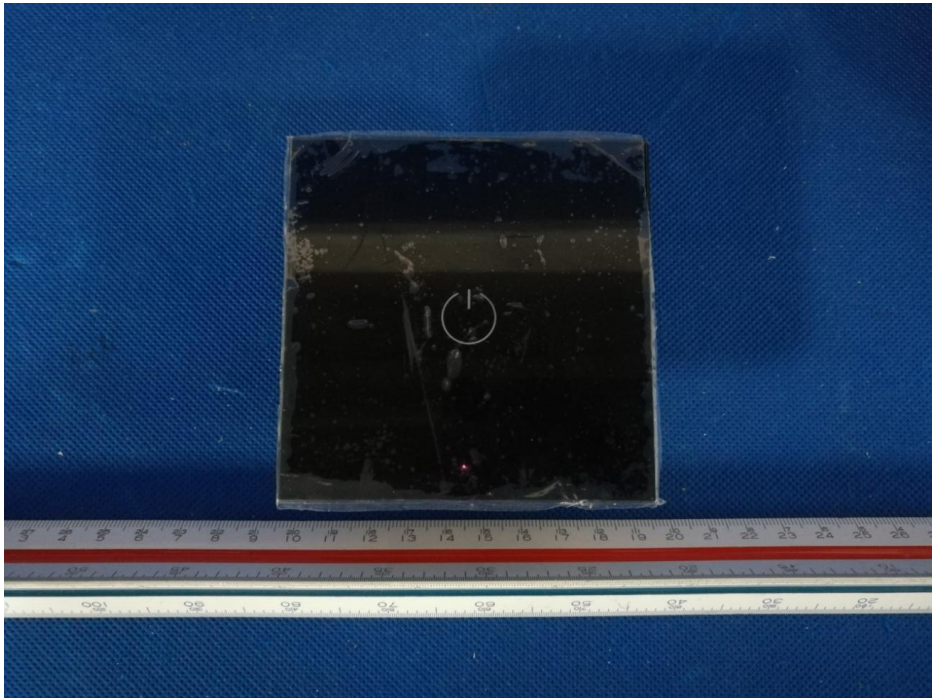
| | | | |
|-----------|--|--------------------------|-----|
| 4.5.5 | TABLE: ball pressure test of thermoplastic parts | | N/A |
| | allowed impression diameter (mm) | ≤ 2 mm | — |
| part | test temperature (°C) | impression diameter (mm) | |
| PCB | -- | - | |
| Enclosure | -- | - | |


| | | | |
|-------------------------------|---|--------------------|---|
| 5.2 | TABLE: electric strength tests, impulse tests and voltage surge tests | | P |
| test voltage applied between: | test voltage (V) a.c. / d.c. | breakdown Yes / No | |
| Input and enclosure | 3000Vac | No | |
| supplementary information | | | |

| | | | | |
|---------------|--------------------------------------|-----------------|-----------|---|
| 5.3 | TABLE: fault condition tests | | | P |
| | ambient temperature (°C) | 25.6°C | | ¾ |
| | model/type of power supply | -- | | ¾ |
| | manufacturer of power supply | -- | | ¾ |
| | Rated markings of power supply | -- | | ¾ |
| Component no. | Fault | Test voltage(V) | Test time | Result |
| D2 | s-c | 275 | 15min | Unit shut down, recoverable. No hazard. |
| U2 2-6 | s-c | 275 | 15min | Unit shut down, recoverable. No hazard. |

Remark: s-c: short circuit, o-l: overload

Attachment – A
Photo Documentation

| | |
|--|---|
| <p>Photo 1</p> <p>View:</p> <p><input checked="" type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p> |  |
|--|---|

| | |
|--|--|
| <p>Photo 2</p> <p>View:</p> <p><input type="checkbox"/> Front</p> <p><input checked="" type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p> |  |
|--|--|

| | |
|--|---|
| <p>Photo 3</p> <p>View:</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input checked="" type="checkbox"/> Internal</p> |  |
|--|---|

--END--