

#### TEST REPORT

EN 60950-1: 2006+A2:2013

Information technology equipment – Safety – Part 1: General requirements

Report Reference No.....: TH19KR-2197S

Tested by (signature)....: Eric

Reviewed by (signature)....: Prince

Approved by (signature)...... Prince

Testing Laboratory Name...... Shenzhen Tian Hai Test Technology Co., Ltd.

Address....: 4F, A3 BLDG, The Silicon Valley Power intelligent terminal industrial

park, Guanlan street, Longhua district, Shenzhen

Testing location.....: Same as above

Applicant's Name...... Armortec Technology Limited

Address...... 6<sup>th</sup> Floor, Building F1, Jinyucheng Industrial Park, Zhonghao 2<sup>nd</sup> Road,

Bantian County, Longgang District, Shenzhen, China.

Test specification

Standard....: EN 60950-1: 2006+A2:2013

Test procedure .....: : CE mark

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

Test item description...... NETWORK APPLIANCE

8764-2O, FW-8010, FW-8210, FWA-1781-4O, FWA-8781-4O, FW-B158-4O,

FWC-6761, FWD-BT61, FWF-BT41, NC-3860, NC-4010, NC-6010, NC-8210,

NC-C362, NCC-BT41S2)

Manufacturer..... Armortec Technology Limited

Address...... 6<sup>th</sup> Floor, Building F1, Jinyucheng Industrial Park, Zhonghao 2<sup>nd</sup> Road,

Bantian County, Longgang District, Shenzhen, China.

Rating(s)..... Input: DC 5V,50Hz,2A,10W

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#### Test item particulars:

Equipment mobility .....: Movable equipment

Protection against electric shock...... Continuous

Mains supply tolerance (%).....: -10%, +10%

Tested for IT power systems .....: No

IT testing, phase-phase voltage (V) .....: N/A

Class of equipment .....: Class II

Altitude of operation (m) ...... less than 2000 meters

Altitude of test laboratory (m) ...... less than 2000 meters

Protection against ingress of water .....: IPX0

#### Test case verdicts

Test case does not apply to the test object .........: N/A(Not applicable)

Test item does meet the requirement .....: P(Pass)

Test item does not meet the requirement ..........: F(Fail)

#### **General remarks:**

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

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

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

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The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

#### Copy of Marking Plate:

**NETWORK APPLIANCE** 

Model: NC-334R

**Input: DC 5V,50Hz,2A,10W** 



#### **Armortec Technology Limited**

6<sup>th</sup> Floor, Building F1, Jinyucheng Industrial Park, Zhonghao 2<sup>nd</sup> Road, Bantian County,

Longgang District, Shenzhen, China.

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1	GENERAL		/\(\rangle P
1.5	Components	4 6	P
1.5.1	General	See below	P
	Comply with IEC 60950 or relevant component standard	1. 2	P
1.5.2	Evaluation and testing of components	Components that are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC	P
N. S.		standards are tested under the conditions present in the equipment.	E.
1.5.3	Thermal controls	No thermal controls	N/A
1.5.4	Transformers	See Annex C	Z P
1.5.5	Interconnecting cables		P
1.5.6	Capacitors in primary circuits	Ś	P
1.5.7	Resistors bridging insulation	4	Λ P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	E E E	? P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		P
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	59	P
1.5.8	Components in equipment for IT power systems	Not for IT power system	N/A
1.5.9	Surge suppressors	2 24	N/A
1.5.9.1	General	F F	N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR	73	N/A
1.5.9.4	Bridging of basic insulation by a VDR	É	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	5 5 5	N/A
1.6	Power interface	The The The	P
1.6.1	AC power distribution systems	The The	N/A
1.6.2	Input current	2A	P
1.6.3	Voltage limit of hand-held equipment	7,	N/A
1.6.4	Neutral conductor	N A	P
1.7	Marking and instructions	, , , , ,	P
1.7.1.1	Power rating mark	,5	,6 P
	Multiple mains supply connections	The River of	N/A
17	Rated voltage(s) or voltage range(s) (V)	DC 5V	P
3	Symbol for nature of supply, for d.c. only:		N/A
P	Rated frequency or rated frequency range (Hz):	50Hz	P

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	, <u> </u>		(0)
	Rated current (mA or A):	19 1	∠∜ P
1.7.1.2	Identification markings	E 19 .	P
V	Manufacturer's name or trademark or identification	Lavelle Networks Private	Р
. 8	mark	Limited	
7	Model identification or type reference::	H-CP-SFL-M	P
	Symbol for Class II equipment only:		N/A
	Other markings and symbols:	Additional symbols may be	Р
149	, 42	provided when submitted for	ć
F		International Approval.	14
1.7.1.3	Use of graphical symbols	F Z	P
1.7.2	Safety instructions and marking	Operating/safety instructions	₹P
	7 7	made available to the user.	T.
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Plug	P
1.7.2.3	Overcurrent protective devices	Fuse resistance	A P
1.7.2.4	IT power distribution systems	25 25 2	N/A
1.7.2.5	Operator access with a tool	B B A	P
1.7.2.6	Ozone	Z. Z.	N/A
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment:	No voltage adjustment	N/A
6	Methods and means of adjustment; reference to installation instructions	18	N/A
1.7.5	Power outlets on the equipment	3	P
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference):	Fuse resistance	P
1.7.7	Wiring terminals	See below.	P
1.7.7.1	Protective earthing and bonding terminals:	<u></u>	N/A
1.7.7.2	Terminal for a.c. mains supply conductors	4 4 4	₹ P
1.7.7.3	Terminals for d.c. mains supply conductors	F 19 F	N/A
1.7.8	Controls and indicators	3, -1, 3,	P
1.7.8.1	Identification, location and marking:	On enclosure	Р 🔾
1.7.8.2	Colours:	F	P
1.7.8.3	Symbols according to IEC 60417:	Α,	P
1.7.8.4	Markings using figures:	<u> </u>	P
1.7.9	Isolation of multiple power sources:	Only one supply from the mains.	N/A
1.7.10	Thermostats and other regulating devices	19	N/A

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1.7.11	Durability	The labels were subjected to the	ν P
4	H L H L	permanence of marking test. The	5
5	A S	labels were rubbed with cloth	7
· · · · · ·		soaked with water for 15 s and then again for 15 s with the cloth	THE STREET
TA	The state of the s	soaked with petroleum spirit.	~
	E. E.	After this test there was no	TA
		damage to the labels. The marking	
Ś	5	on the labels did not fade. There was no curling or lifting of the	
4	L W L	label's edges.	,6
1.7.12	Removable parts	Power connector	P
1.7.13	Replaceable batteries	No batteries	N/A
11	Language(s):	E. C.	Z-
1.7.14	Equipment for restricted access locations:	Equipment not intended for use in	N/A
4		restricted access location.	
5		2	4
2	PROTECTION FROM HAZARDS	43 8	9 P 3
2.1	Protection from electric shock and energy hazards	5 3 5	P 🕺
2.1.1	Protection in operator access areas	See below	P
2.1.1.1	Access to energized parts	See below.	P
7	Test by inspection:	Operator can not contact with any	P
		parts with only basic insulation to	15
4	4 6	ELV or hazardous voltage.	1
150	Test with test finger (Figure 2A)	No access with test finger to any	P
7	Zi Ei Zi Zi	parts with only basic insulation to	F
Th	A TA TA	ELV or hazardous voltage.	/
7	Test with test pin (Figure 2B):	T. A.	P
	Test with test probe (Figure 2C):	No TNV present.	N/A
2.1.1.2	Battery compartments:	24	N/A
2.1.1.3	Access to ELV wiring	£ 18 £	P
78	Working voltage (Vpeak or Vrms); minimum distance	Z. Z. Z.	4
P.	through insulation (mm):	THE TAX	7
7	Working voltage (Vpeak or Vrms); minimum distance	F.	7
	through insulation (mm)	~	1
2.1.1.4	Access to hazardous voltage circuit wiring	<u>^</u>	P
2.1.1.5	Energy hazards:	4 44	<sub>A</sub> P
2.1.1.6	Manual controls	S X	(5) P
2.1.1.7	Discharge of capacitors in equipment	Z, Z, (	P
_	Time-constant (s); measured voltage (V):	THE THE THE	P A
2.1.1.8	Energy hazards – d.c. mains supplies	· F	N/A
TA	a) Capacitor connected to the d.c. mains supply:	,	N/A

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	A A	A-	(2)
	b) Internal battery connected to the mains supply:	150	N/A
2.1.1.9	Audio amplifiers in information technology equipment	5 49	N/A
2.1.2	Protection in service access areas	7, 7, 3	P
2.1.3	Protection in restricted access locations	The unit is not limited to be used in restricted access locations.	N/A
2.2	SELV circuits	X	P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V):	Between any conductor of the SELV circuits 42.4V peak or 60Vd.c. are not exceeded.	P
2.2.3	Voltages under fault conditions (V):	\$ 7.	N/A
2.2.4	Connection of SELV circuits to other circuits	13	N/A
2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits.	N/A
7	Type of TNV circuits:	19	S
2.3.2	Separation from other circuits and from accessible parts	E & E	N/A
. 5	Insulation employed:	A TA TA	78
2.3.2.1	General requirements	F	N/A
2.3.2.2	Protection by basic insulation	~	N/A
2.3.2.3	Protection by earthing	15	N/A
2.3.2.4	Protection by other constructions	. 8	N/A
2.3.3	Separation from hazardous voltages	200	N/A
70	Insulation employed:	E E	B
2.3.4	Connection of TNV circuits to other circuits		N/A
2	Insulation employed:	72	
2.3.5	Test for operating voltages generated externally	4	N/A
2.4	Limited current circuits		₹ P
2.4.1	General requirements	See below.	P
2.4.2	Limit values	0.7mA Peak	P
P.	Frequency (Hz):	50Hz	7
7,	Measured current (mA):	0.092	VR.
	Measured voltage (V):	~	1
4	Measured capacitance (µF)	Ś	
2.4.3	Connection of limited current circuits to other circuits	4	∠ P
2.5	Limited power sources	43 8	y P
	a) Inherently limited output	2 3	N/A
	b) Impedance limited output	The The The	N/A
THE STATE OF THE S	c) Regulating network limited output under normal operating and single fault condition	, IN	N/A

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	4	4	,60
	Use of integrated circuit (IC) current limiters:	15 K	24
5	d) Overcurrent protective device limited output	42	P
¥ .	Max. Output voltage (V), max. Output current (A),	H	
. 8	max. Apparent power (VA)	E HI III	
~	Current rating of overcurrent protective device (A):	Y. A	8
2.6	Provisions for earthing and bonding	A .	N/A
2.6.1	Protective earthing	4 19	N/A
2.6.2	Functional earthing	4 6 5	N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General	R. R.	N/A
2.6.3.2	Size of protective earthing conductors	The Marie Ma	N/A
	Rated current (A), cross-sectional area (mm2), AWG.:		18
2.6.3.3	Size of protective bonding conductors		N/A
5	Rated current (A), cross-sectional area (mm2), AWG. :	4	z
2.6.3.4	Resistance ( $\Omega$ ) of earthing conductors and their	5	N/A
	terminations, test current (A)	E 31 E	Ý
2.6.3.5	Colour of insulation:	The The	N/A
2.6.4	Terminals	E.	N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals	5	N/A
	Rated current (A), type and nominal thread diameter		
,5	(mm)	X 42	JE
2.6.4.3	Separation of the protective earthing conductor from	E E	N/A
J.F.	protective bonding conductors		
2.6.5	Integrity of protective earthing	The second	N/A
2.6.5.1	Interconnection of equipment	4	/ N/A
2.6.5.2	Components in protective earthing conductors and	49	N/A
	protective bonding conductors	5 5	
2.6.5.3	Disconnection of protective earth	El Th Th	N/A
2.6.5.4	Parts that can be removed by an operator	7/2 1/2	N/A
2.6.5.5	Parts removed during servicing	E A	N/A
2.6.5.6	Corrosion resistance	7,1	N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable	, 47	N/A
4	distribution system	5	,5
2.7	Overcurrent and earth fault protection in primary circuits	Z Z Z	P
2.7.1	Basic requirements	Protection provided as part of the	P
3		building installation.	

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	4	4	6
4	Instructions when protection relies on building installation	4 5	A P
2.7.2	Faults not covered in 5.3	The protection devices are well dimensioned and mounted.	Р
2.7.3	Short-circuit backup protection	C. E	P.V
2.7.4	Number and location of protective devices:	One protective device in the "LIVE" phase.	P
2.7.5	Protection by several devices	Protection by one fuse.	N/A
2.7.6	Warning to service personnel:		P.47
2.8	Safety interlocks	E E	N/A
2.8.1	General principles	No such part	N/A
2.8.2	Protection requirements	A. P.	N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation	4	N/A
2.8.5	Moving parts	5	N/A
2.8.6	Overriding	2 3 6	N/A
2.8.7	Switches and relays	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	N/A
2.8.7.1	Contact gaps (mm)	E S	N/A
2.8.7.2	Overload test	2	N/A
2.8.7.3	Endurance test	.5	N/A
2.8.7.4	Electric strength test	X X	N/A
2.8.8	Mechanical actuators	- F	N/A
2.9	Electrical insulation	3	E P
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning	48 hours	P
	Relative humidity (%), temperature (°C)::	95%, 31deg C	4_
2.9.3	Grade of insulation		€ P
2.9.4	Separation from hazardous voltages	\$ 5	P
, INH	Method(s) used:	Primary circuit separated from Secondary circuit by double or reinforced insulation.	MA
2.10	Clearances, creepage distances and distances through ins	sulation	P
2.10.1	General	6	P
2.10.1.1	Frequency	4 4	, P
2.10.1.2	Pollution degrees	Pollution degree 2 applicable	45 P
2.10.1.3	Reduced values for functional insulation	7. 7.	N/A
2.10.1.4	Intervening unconnected conductive parts	The The The	N/A
2.10.1.5	Insulation with varying dimensions	T. P.	N/A
2.10.1.6	Special separation requirements	, ~	N/A

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1	4	4	,6
2.10.1.7	Insulation in circuits generating starting pulses	19 4	N/A
2.10.2	Determination of working voltage	£ 22 ×	P
2.10.2.1	General	H. Z. Z.	P
2.10.2.2	RMS working voltage	E HI III	N/A
2.10.2.3	Peak working voltage	T. J.	P
2.10.3	Clearances	4	P
2.10.3.2	Mains transient voltages	A (5)	P
4	a) AC mains supply:	4 6 5	N/A
· F	b) Earthed d.c. mains supplies	DC 5V	P.
Z,	c) Unearthed d.c. mains supplies	R E	N/A
The state of the s	d) Battery operation:	The second second	N/A
2.10.3.3	Clearances in primary circuits	713	Р
2.10.3.4	Clearances in secondary circuits		P
2.10.3.5	Clearances in circuits having starting pulses	4	<sub>A</sub> P
2.10.3.6	Transients from a.c. mains supply:	1500 Vpk assumed in secondary circuits	9 P
2.10.3.7	Transients from d.c. mains supply:	B B B	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems:	The state of the s	N/A
2.10.3.9	Measurement of transient voltage levels		P
	a) Transients from a mains supply	69	P 69
	For an a.c. mains supply:	5 5	P
5	For a d.c. mains supply	24	N/A
7	b) Transients from a telecommunication network	F F	N/A
2.10.4	Creepage distances	3	P
2.10.4.1	General	77	P
2.10.4.2	Material group and comparative tracking index	â	Δ P
_	CTI tests:	Material group IIIb; 100 <= CTI < 175.	W
2.10.4.3	Minimum creepage distances	2 2 2	P
2.10.5	Solid insulation	Solid or laminated insulating materials having adequate thickness are provided.	PH
2.10.5.1	General	4	P
2.10.5.2	Distances through insulation	15	P
2.10.5.3	Insulating compound as solid insulation	6	ΔP
2.10.5.4	Semiconductor devices	Le Fr	N/A
2.10.5.5	Cemented joints	F F R	N/A
2.10.5.6	Thin sheet material – General	Z. Y. Z.	N/A
2.10.5.7	Separable thin sheet material	713	N/A

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	<i>L</i>	Α	6
	Number of layers (pcs):	,5	4-
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure	F. 2. 3	N/A
8	Electric strength test	E III	
2.10.5.10	Thin sheet material – alternative test procedure	T. R.	N/A
	Electric strength test	4	^
2.10.5.11	Insulation in wound components	4 6	P
2.10.5.12	Wire in wound components	8 5	Р &
A.	Working voltage:	24 27	P.
7	a) Basic insulation not under stress::	R R	P
The same of the sa	b) Basic, supplementary, reinforced insulation:	Zi, V	P
	c) Compliance with Annex U	7,7	P
5	Two wires in contact inside wound component; angle between 45° and 90°	524	P
2.10.5.13	Wire with solvent-based enamel in wound components	19 8	N/A
4	Electric strength test	E 2 E	2
R	Routine test	7	N/A
2.10.5.14	Additional insulation in wound components	R	N/A
TA	Working voltage:	A	N/A
	- Basic insulation not under stress:	199	N/A
4	- Supplementary, reinforced insulation:	- 5	N/A
2.10.6	Coated printed boards	24	P
2.10.6.1	Uncoated printed boards	E E	N/A
2.10.6.2	Coated printed boards	Y 7 X	P
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	4	P
2.10.6.4	Insulation between conductors on different surfaces of a printed board	\$ 5 \$	₹ P
2.10.7	Enclosed and sealed parts:	£	N/A
2.10.8	Tests on coated printed boards and coated components	Photo couplers are approved components. No other components applied for.	P
2.10.8.1	Sample preparation and preliminary inspection		P
2.10.8.2	Thermal conditioning	,5	P
2.10.8.3	Electric strength test	4 5	<u> </u>
2.10.8.4	Abrasion resistance test	4 7	∜ P
2.10.9	Thermal cycling	R R R	N/A
2.10.10	Test for Pollution Degree 1 environment and for insulating compound	Z. I., Z.	N/A

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2.10.11	Tests for semiconductor devices and for cemented joints		N/A
2.10.12	Enclosed and sealed parts	Y	N/A
. 8	The Francisco	E H	
3	WIRING, CONNECTIONS AND SUPPLY	T. F.	PR
3.1	General		P
3.1.1	Current rating and overcurrent protection	4 19	P
3.1.2	Protection against mechanical damage	6 6	Р 💪
3.1.3	Securing of internal wiring	5 44 37	P,
3.1.4	Insulation of conductors	R E	P
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	No screws used for electrical connection.	N/A
3.1.7	Insulating materials in electrical connections	(5)	N/A
3.1.8	Self-tapping and spaced thread screws	No self tapping screws are used.	N/A
3.1.9	Termination of conductors	20 21 2	P
,	10 N pull test	B B	P
3.1.10	Sleeving on wiring	7	N/A
3.2	Connection to mains supply		P
3.2.1	Means of connection		P Á
3.2.1.1	Connection to an a.c. mains supply	Connect to an a.c. mains	P, W
3.2.1.2	Connection to a d.c. mains supply	F S	N/A
3.2.2	Multiple supply connections	7 7	N/A
3.2.3	Permanently connected equipment	The Figure 1	N/A
1/1/2	Number of conductors, diameter (mm) of cable and conduits:	T. A.	
3.2.4	Appliance inlets	5	N/A
3.2.5	Power supply cords	Le L	4 P
3.2.5.1	AC power supply cords	R B R	P
P. Z.	Type:	ARI ARI	- 3
~	Rated current (A), cross-sectional area (mm2), AWG:	R	F.
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Ś	N/A
45	Mass of equipment (kg), pull (N)	4 4	<u> </u>
	Longitudinal displacement (mm):	12 X	49
3.2.7	Protection against mechanical damage	£ 2 6	Р
3.2.8	Cord guards	The The The	N/A
- 2	D (mm); test mass (g)	T. F	

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	L L	Δ	60
	Radius of curvature of cord (mm):	19 4	4-
3.2.9	Supply wiring space	E 19	P
3.3	Wiring terminals for connection of external conductors	Th. 7. 7.	N/A
3.3.1	Wiring terminals	E III	N/A
3.3.2	Connection of non-detachable power supply cords	C. F.	N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected	4 9	N/A
The state of the s	Rated current (A), cord/cable type, cross-sectional area (mm2)		-6
3.3.5	Wiring terminal sizes	R E	N/A
TA	Rated current (A), type and nominal thread diameter (mm)	THE THE PERSON OF THE PERSON O	A.
3.3.6	Wiring terminals design	<u>^</u>	
3.3.7	Grouping of wiring terminals	4 44	N/A
3.3.8	Stranded wire	19 8	N/A
3.4	Disconnection from the mains supply	Z. Z. Z.	P
3.4.1	General requirement	E THE THE	P
3.4.2	Disconnect devices	F	Р
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	5	N/A
3.4.5	Switches in flexible cords	37	N/A
3.4.6	Single-phase equipment and d.c. equipment	5V	R P
3.4.7	Three-phase equipment	7	N/A
3.4.8	Switches as disconnect devices	77	N/A
3.4.9	Plugs as disconnect devices	6	δ P
3.4.10	Interconnected equipment	Let L	⟨✓ P
3.4.11	Multiple power sources	R S R	N/A
3.5	Interconnection of equipment	7, 7, 7,	P
3.5.1	General requirements	Interconnection circuits of SELV through the DC output connectors.	P
3.5.2	Types of interconnection circuits:	Interconnection circuits are	P
,5		LIMITED POWER SOURCE CIRCUITS and SELV circuit.	_
3.5.3	ELV circuits as interconnection circuits	. 43 8	N/A
3.5.4	Data ports for additional equipment	Z Z	N/A

4	PHYSICAL REQUIREMENTS	N. S.	1A	P
4.1	Stability	_	7	N/A

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	L .	4	60
	Angle of 10°	<7kg	N/A
6	Test: force (N):	K 19	N/A
4.2	Mechanical strength	Z	P
4.2.1	General	E II II	P
4.2.2	Steady force test, 10 N	No energy or other hazards.	P
4.2.3	Steady force test, 30 N	4	N/A
4.2.4	Steady force test, 250 N	<u> </u>	N/A
4.2.5	Impact test	4 6	P d
, F	Fall test	- 14 F	P.
Z,	Swing test	R R	P
4.2.6	Drop test	\$ 4	P
4.2.7	Stress relief test	No indication of shrinkage or distortion on enclosures due to the stress relief test (7 hours)	Р
4.2.8	Cathode ray tubes	No CRT in the unit.	N/A
	Picture tube separately certified:	29 25 24	N/A
4.2.9	High pressure lamps	No high pressure lamp provided.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N):	Not wall or ceiling mounted equipment.	N/A
4.3	Design and construction		P
4.3.1	Edges and corners	All edges and corners judged to be sufficiently well rounded so as not to constitute a hazard.	P
4.3.2	Handles and manual controls; force (N)	T T	N/A
4.3.3	Adjustable controls	No such controls provided.	N/A
4.3.4	Securing of parts		P
4.3.5	Connection of plugs and sockets	.6	6 P
4.3.6	Direct plug-in equipment		N/A
2	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N):	0.16Nm	P
4.3.7	Heating elements in earthed equipment	No such elements.	N/A
4.3.8	Batteries	F	N/A
4.3.9	Oil and grease	Insulation in intended use not considered to be exposed to 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 liquids or gases provided.	N/A
4.3.12	Flammable liquids:	No flammable liquids provided.	N/A

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	<u> </u>	Α	6
	Quantity of liquid (l)	19 1	N/A
5	Flash point (°C):	19	N/A
4.3.13	Radiation; type of radiation:	Th. 7. 7	N/A
4.3.13.1	General	E HI III	N/A
4.3.13.2	Ionizing radiation	No ionizing radiation	N/A
	Measured radiation (pA/kg)		
, A	Measured high-voltage (kV)	4 69	
4	Measured focus voltage (kV):	8 6 5	(
, F	CRT markings:	£ 74 F	<
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	R R	N/A
K	Part, property, retention after test, flammability classification:	N. C.	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation:		N/A
4.3.13.5	Laser (including LEDs)	5	N/A
	Laser class:	6 5	5
4.3.13.6	Other types:	To 31 7	N/A
4.4	Protection against hazardous moving parts	8 8 8	N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas	1/2	N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas	A L	N/A
4.5	Thermal requirements		P
4.5.1	General	(see appended table 4.5)	₹ P
4.5.2	Normal load condition per Annex L:	(see appended table 4.5)	P
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:	100	,S P
4.6	Openings in enclosures	6 5	N/A
4.6.1	Top and side openings	No openings	N/A
74	Dimensions (mm):	R R	
4.6.2	Bottoms of fire enclosures	Z. V.	N/A
*	Construction of the bottom, dimensions (mm)	No opening.	77
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment	49	N/A
4.6.4.1	Constructional design measures	5	N/A
4.6.4.2	Evaluation measures for larger openings	The state of	N/A
4.6.4.3	Use of metallized parts	X X X	N/A
4.6.5	Adhesives for constructional purposes	7, 7, 7,	N/A
	Conditioning temperature (°C)/time (weeks):		<del>                                     </del>

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4.7	Resistance to fire	19	VP
4.7.1	Reducing the risk of ignition and spread of flame	No excessive temperatures. No easily burning materials employed. Safety relevant components used within their specified temperature limits	P
4	Method 1, selection and application of components wiring and materials	2 5	P
17/2	Method 2, application of all of simulated fault condition tests	15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	N/A
4.7.2	Conditions for a fire enclosure	Use fire enclosure.	P
4.7.2.1	Parts requiring a fire enclosure	A fire enclosure covers all parts except as noted in 4.7.2.2.	A NA
4.7.2.2	Parts not requiring a fire enclosure	Output cord supplied by a limited power source complying with 2.5	P
4.7.3	Materials	6 5	S P
4.7.3.1	General	See below.	P
4.7.3.2	Materials for fire enclosures	Equipment is moveable with mass less than 18 kg. Fire enclosure material is V-1 minimum.	PA
4.7.3.3	Materials for components and other parts outside fire enclosures	Output cord supplied by a limited power source complying with 2.5	PS
4.7.3.4	Materials for components and other parts inside fire enclosures	Electronic components are mounted on a class V-0 PCB.	A. A.
4.7.3.5	Materials for air filter assemblies	The Third of	N/A
4.7.3.6	Materials used in high-voltage components	F	N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED	ABNORMAL CONDITIONS	S P
5.1	Touch current and protective conductor current	5	P
5.1.1	General	See below.	P
5.1.2	Equipment under test (EUT)	Equipment designed for connection to only one power source.	P
5.1.2.1	Single connection to an a.c. mains supply	-	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	19	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	THE THE PERSON OF THE PERSON O	N/A
5.1.3	Test circuit	Equipment of figure 5A used.	P
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	P

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			60
5.1.5	Test procedure	Test made on 10 x 20 cm metal foil in contact with accessible	P
,6	2 5 5	non-conductive part.	Y
5.1.6	Test measurements	See appended table 5.1.	P
18	Test voltage (V):	See appended table 5.1	7
	Measured touch current (mA)	See appended table 5.1	18
	Max. allowed touch current (mA):	See appended table 5.1	
Ś	Measured protective conductor current (mA):	5 , 4	,
L	Max. allowed protective conductor current (mA):	4 5	,6
5.1.7	Equipment with touch current exceeding 3.5 mA:	Not such equipment.	N/A
5.1.7.1	General	T T	N/A
5.1.7.2	Simultaneous multiple connections to the supply	2	N/A
5.1.8	Touch currents to and from telecommunication	No TNV circuit connection.	N/A
7	networks and cable distribution systems and from	5	
5	telecommunication networks	2	4
5.1.8.1	Limitation of the touch current to a telecommunication	43 8 4	N/A
,	network and a cable distribution system	5 3 5	~ ~
R	Test voltage (V):	E TIL	477
7	Measured touch current (mA)	F	
18	Max. allowed touch current (mA):	_ ~	A
5.1.8.2	Summation of touch currents from telecommunication	No TNV.	N/A
	networks:		7
5.2	Electric strength	Z 24	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	Output of Switching power supply short-circuit test	S P
5.3.2	Motors	\$ 5 5	N/A
5.3.3	Transformers	Results of the short-circuit tests see Annex C.	Р
5.3.4	Functional insulation:	Functional insulation complies	PAR
	The The	with the requirements (a), (b), or (c).	The
5.3.5	Electromechanical components	No electromechanical component	N/A
19	19 1	provided.	4
5.3.6	Audio amplifiers in information technology equipment	19 A	N/A
5.3.7	Simulation of faults	2 Z 2	P
5.3.8	Unattended equipment	The	N/A

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7.4

7.4.1

7.4.2

7.4.3

## Shenzhen Tian Hai Test Technology Co., Ltd.

	4	7	6
5.3.9	Compliance criteria for abnormal operating and fault	- No fire, emission of molten	/\P
4	conditions	metal or deformation was	Z'
4	Z L Z L	noted during the tests.	
R		Electric Strength tests performed after abnormal and fault tests.	
5.3.9.1	During the tests	arer acromar and radic tests.	P
5.3.9.2	After the tests	4	P
ć	S	5 , 4	
6	CONNECTION TO TELECOMMUNICATION NETW	ORKS	N/A
6.1	Protection of telecommunication network service persor	is, and users of other equipment	N/A
7	connected to the network, from hazards in the equipmen	(2)	The
6.1.1	Protection from hazardous voltages	EZ ,	N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	5	N/A
2	Test voltage (V):	A 24	۸
	Current in the test circuit (mA):	£ 7 5	S
6.1.2.2	Exclusions:	5 3 5	N/A
6.2	Protection of equipment users from overvoltages on tele	communication networks	N/A
6.2.1	Separation requirements	T	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test	5	N/A
6.2.2.3	Compliance criteria	3, 4	N/A
6.3	Protection of the telecommunication wiring system from	overheating	N/A
Z,	Max. output current (A):	2	
	Current limiting method:	7,	
	4 4	.6	S
7	CONNECTION TO CABLE DISTRIBUTION SYSTEM	MS	N/A
7.1	Protection of cable distribution system service persons,	7 J. J.	N/A
3	and users of other equipment connected to the system, from hazardous voltages in the equipment		
7.2	Protection of equipment users from overvoltages on the	Z.	N/A
	cable distribution system	77	17
7.3	Protection of equipment users from overvoltages on the		N/A
5	cable distribution system	49	

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N/A

N/A

N/A

N/A

Insulation between primary circuits and cable

distribution systems

Voltage surge test

General

Impulse test



A		//:		
11	ANNEX A, TESTS FOR RESISTANCE TO HEAT AN	D FIRE	42	N/A
A.1	Flammability test for fire enclosures of movable equipment 18 kg, and of stationary equipment (see 4.7.3.2)	ent having a total m	nass exceeding	N/A
A.1.1	Samples	Y, E		8
	Wall thickness (mm)	~	,	
A.1.2	Conditioning of samples; temperature (°C)	4	,5	N/A
A.1.3	Mounting of samples	49 5		N/A
A.1.4	Test flame (see IEC 60695-11-3)	4	-XY	N/A
Z,	Flame A, B, C or D	, F	F	7
A.1.5	Test procedure	T.	~	N/A
A.1.6	Compliance criteria	12	,	N/A
7	Sample 1 burning time (s):			
Ś	Sample 2 burning time (s):	4	W.	£
/	Sample 3 burning time (s):	19	5	9
IN I	exceeding 18 kg, and for material and components locate and 4.7.3.4)  UL recognized material V-0 enclosure used.	ed miside file elicios	outes (SCC 4.7.3.2	~
Λ 2 1	Samples metarial	<b>*</b>		, A
A.2.1	Samples, material ::	5		5
_	Wall thickness (mm)	5	6	S
A.2.2	Wall thickness (mm):  Conditioning of samples			N/A
A.2.2 A.2.3	Wall thickness (mm):  Conditioning of samples  Mounting of samples:			N/A
A.2.2	Wall thickness (mm):  Conditioning of samples  Mounting of samples:  Test flame (see IEC 60695-11-4)			3
A.2.2 A.2.3 A.2.4	Wall thickness (mm):  Conditioning of samples  Mounting of samples:  Test flame (see IEC 60695-11-4)  Flame A, B or C:			N/A N/A
A.2.2 A.2.3 A.2.4 A.2.5	Wall thickness (mm)			N/A N/A  N/A
A.2.2 A.2.3 A.2.4	Wall thickness (mm):  Conditioning of samples  Mounting of samples:  Test flame (see IEC 60695-11-4)  Flame A, B or C:  Test procedure  Compliance criteria		THE TO SEE	N/A N/A
A.2.2 A.2.3 A.2.4 A.2.5	Wall thickness (mm)			N/A N/A  N/A
A.2.2 A.2.3 A.2.4 A.2.5	Wall thickness (mm)			N/A N/A  N/A
A.2.2 A.2.3 A.2.4 A.2.5 A.2.6	Wall thickness (mm)			N/A N/A  N/A
A.2.2 A.2.3 A.2.4 A.2.5	Wall thickness (mm)			N/A N/A  N/A N/A  
A.2.2 A.2.3 A.2.4 A.2.5 A.2.6	Wall thickness (mm)			N/A N/A N/A N/A N/A N/A N/A
A.2.2 A.2.3 A.2.4 A.2.5 A.2.6	Wall thickness (mm)			N/A N/A N/A N/A N/A
A.2.2 A.2.3 A.2.4 A.2.5 A.2.6	Wall thickness (mm)		A HAMEL A STATE OF THE STATE OF	N/A N/A N/A N/A N/A
A.2.2 A.2.3 A.2.4 A.2.5 A.2.6	Wall thickness (mm)			N/A N/A N/A N/A N/A
A.2.2 A.2.3 A.2.4 A.2.5 A.2.6 A.2.7	Wall thickness (mm)			N/A N/A N/A N/A N/A N/A N/A N/A

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В	ANNEX B, MOTOR TESTS UNDER ABNORMAL CO	ONDITIONS (see 4.7.2.2 and 5.3.2)	N/A
B.1	General requirements	19	N/A
2	Position	3 2 3	
8	Manufacturer	Z H IL	
7,	Type:	Y, E	7
	Rated values	~~	^
B.2	Test conditions	4 ,9	N/A
B.3	Maximum temperatures	8 6 5	N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test	F E	N/A
P	Test duration (days):	2 7	7
	Electric strength test: test voltage (V):	13	12
B.6	Running overload test for d.c. motors in secondary		N/A
5	circuits	42	1
B.7	Locked-rotor overload test for d.c. motors in secondary of	circuits	N/A
B.7.1	Test procedure	E 3 E	N/A
B.7.2	Alternative test procedure; test time (h):	F. T. T.	N/A
B.7.3	Electric strength test	F	N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors	,9	N/A
B.10	Test for series motors	- 5	N/A
1,50	Operating voltage (V):	2 24	77
7,	The transfer of the transfer o	F R	E.
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)	Z Z	P
	Position:	23	
	Manufacturer	<u></u>	<u> </u>
	Type:	Le L	V
	Rated values	A S A	
7	Method of protection:	Protection by circuit	
C.1	Overload test	77, 77,	P
C.2	Insulation	See appended table 5.2	P
	Protection from displacement of windings:	by insulation tape & Bobbin	P
4	4	Ś	•
D)	ANNEX D, MEASURING INSTRUMENTS FOR TOU	CH-CURRENT TESTS	∠ P
D.1	Measuring instrument	Compliance.	49 P
D.2	Alternative measuring instrument	7 7	N/A
	E E THE THE	THE THE STA	~
E Z	ANNEX E, TEMPERATURE RISE OF A WINDING	7	N/A

4F,A3 BLDG,The Silicon Valley Power intelligent terminal industrial park,Guan lan street,Longhua district,Shenzhen Tel:+86-755-86615100 Fax:+86-755-86615105 http://www.tianhaitest.com

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	, A		6
F	ANNEX F, MEASUREMENT OF CLEARANCES AN	D CREEPAGE DISTANCES	/ P
4	(see 2.10)	19	7
9	I W I W	<b>X</b> X 3	
G	ANNEX G, ALTERNATIVE METHOD FOR DETERM	MINING MINIMUM	Р
1	CLEARANCES	71 2	
G.1	Summary of the procedure for determining minimum		P
O.1	clearances	<u>^</u>	1
G.2	Determination of mains transient voltage (V):	5V	P
G.2.1	AC mains supply	34	P.4
G.2.1 G.2.2	V/11 X V/ X		
	DC mains supply	T T	N/A
G.3	Determination of telecommunication network transient	E.	N/A
	voltage (V):	~	7
G.4	Determination of required withstand voltage (V):	5	P
G.5	Measurement of transient levels (V):	4	N/A
G.6	Determination of minimum clearances:	19 4	S P
	The state of the s	£" \$" E	· .
H 🧳	ANNEX H, IONIZING RADIATION (see 4.3.13)	T T	N/A
Z,	Y, 3, Y, &	Z.	
N. P.	ANNEX J, TABLE OF ELECTROCHEMICAL POTEN	NTIALS (see 2.6.5.6)	N/A
	Metal used	6	0
	(2)	2	_<
K S	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3	5.7)	N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V):	Z Z	N/A
X.3	Thermostat endurance test; operating voltage (V):	T.	N/A
K.3 K.4		1	1-1
N.4	Temperature limiter endurance; operating voltage (V)	9	N/A
7.5	75 65 65 65 65 65 65 65 65 65 65 65 65 65	8 5 5	NT/A
X.5	Thermal cut-out reliability	7 2 7	N/A
K.6	Stability of operation		N/A
P	F & 71 11	371 411	
	ANNEX L, NORMAL LOAD CONDITIONS FOR SOI	ME TYPES OF ELECTRICAL	N/A
	BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		^
ـ.1	Typewriters	5	N/A
ــ.2	Adding machines and cash registers	4 4	N/A
2.3	Erasers	19 x	/SN/A
L.4	Pencil sharpeners	The St. St.	N/A
L.5	Duplicators and copy machines	The The The	N/A
L.6	Motor-operated files	F . F	N/A
L.7	Other business equipment	Α,	N/A

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	- B	4	7
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING	SIGNALS (see 2.3.1)	N/A
M.1	Introduction	H, C, A	N/A
M.2	Method A	E TH TH	N/A
M.3	Method B	V. E	N/A
M.3.1	Ringing signal	Α.	N/A
M.3.1.1	Frequency (Hz):	£ 29	
M.3.1.2	Voltage (V):	8 5	6
M.3.1.3	Cadence; time (s), voltage (V)		
M.3.1.4	Single fault current (mA):	AF IF	X
M.3.2	Tripping device and monitoring voltage:	7	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	4	N/A
M.3.2.3	Monitoring voltage (V)	8 X	N/A
	THE THE THE	2 3 5	-
N V	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	R	N/A
N.2	IEC 60065 impulse test generator		N/A
		,5	10
P Z	ANNEX P, NORMATIVE REFERENCES		N/A
,5	¥ 19 ¥ W	2 24	The
Q	ANNEX Q, BIBLIOGRAPHY	E R	P
Th	The state of the s	Z Z	
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR Q PROGRAMMES	UALITY CONTROL	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)	E E Z	N/A
2	S Z Z Z	The The	- 2
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (s	see 6.2.2.3)	P
3	T . F	~	P
	Test equipment		
S.1	Test procedure	<u> </u>	P
S.1 S.2		4 4	P P
S.1 S.2 S.3	Test procedure		_

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	1,5	1,2	Y.
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS	(see 1.6.1)	P
V.1	Introduction	Equipment is for TN power system.	Р
V.2	TN power distribution systems	Considered.	P
V.3	TT power systems	~	N/A
V.4	IT power systems	4 6	N/A
L.		2 6 6	
W	ANNEX W, SUMMATION OF TOUCH CURRENTS	£ 4 .F	P,4
W.1	Touch current from electronic circuits	E E	P
W.1.2	Earthed circuits	Zi Zi	₹P
W.2	Interconnection of several equipments	23	P
W.2.1	Isolation		Р
W.2.2	Common return, isolated from earth	4	<sub>A</sub> P
W.2.3	Common return, connected to protective earth	19 8	S P
		E 3 E	
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRAIL C.1)	NSFORMER TESTS (see clause	P
X.1	Determination of maximum input current	*	P
X.2	Overload test procedure	9	Р,
,	4 4 4		70
Y ,6	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING	G TEST (see 4.3.13.3)	N/A
Y.1	Test apparatus:	F. A.	N/A
Y.2	Mounting of test samples:		N/A
Y.3	Carbon-arc light-exposure apparatus:	TA	N/A
Y.4	Xenon-arc light exposure apparatus:		N/A
	\$ \$	4 , ,	4
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10	0.3.2 and Clause G.2)	P
2		Zi Zi Zi	
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)	THE THE	N/A
7,	The Management of the Control of the	, F	F
BB	ANNEX BB, CHANGES IN THE SECOND EDITION	1	N/A
	, A	_	
,	(2)	(a	
CC	ANNEX CC, EVALUATION OF INTEGRATED CIR	CUIT (IC) CURRENT LIMITERS	N/A
1, "	ANNEX CC, EVALUATION OF INTEGRATED CIR General	CUIT (IC) CURRENT LIMITERS	N/A N/A
CC.1	47	CUIT (IC) CURRENT LIMITERS	
CC.1 CC.2	General	RCUIT (IC) CURRENT LIMITERS	N/A
CC CC.1 CC.2 CC.3	General Test program 1:	HA THE HA	N/A N/A

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DD	ANNEX DD, REQUIREMENTS FOR THE MOUNTIL RACK-MOUNTED EQUIPMENT	NG MEANS OF	N/A
DD.1	General	4 5	N/A
DD.2	Mechanical strength, variable N	3 4 3	N/A
DD.3	Mechanical strength test ,250N, including end stops	The The The	N/A
DD.4	Compliance:	The State of	N/A

EE	ANNEX EE, HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS		N/A
EE.1 %	General	(5) L	N/A
EE.2	Marking and instructions	1 1 X	N/A
ZZ	Using of markings and symbols	4	N/A
R	Information of user instructions maintenance and/or servicing instructions	N. I.	N/A
EE.3	Inadvertent reactivation test		N/A
EE.4	Disconnection of power to hazards moving pars	5	N/A
ý.	Using of markings and symbols	5 5	N/A
EE.5	Protection against hazards moving pars	La Fr	N/A
1	Test with test finger(Figure 2A)	8 B Z	N/A
371	Test with wedge probe (Figure EE1 and EE2)	7	N/A
H	Test with wedge probe (Figure EE1 and EE2)	7 2	N

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P &	
	allowed impression	diameter (mi	m):	less than or equal to 2.0	
Part:				test temperature (°C)	impression diameter (mm)
Bobbin	72	R	77,	125	0.4
Enclosure of plug	K		18	125	0.8

5.1 TABLE: touch curre	nt measurement	147	P	
Measured between	Measured (mA)	Limit (mA)	Comments/conditions	
Output terminal	0.19	0.25	"e" – closed; P1 – N;	
Output terminal	0.20	0.25	"e" -closed; P1 - R;	
Enclosure	0.011	0.25	"e" -closed; P1 - N;	
Enclosure	0.024	0.25	"e" -closed; P1 - R;	
supplementary information:				
75	4 4	4	4	

5.2	Table: Electric Strength Tests	7	E E	P
test volta	age applied between:		test voltage (V)	breakdown
				Yes / No
Input to	Enclosure	4	3000Vac	No

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	7	, []	
Input to Output	E I	3000Vac	No
Primary winding / Secondary winding	77	3000Vac	No
Secondary winding / Core	S	3000Vac	No
Note:	4 6	4 6	



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#### Appendix for product photo





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\*\*\*\*\*\* END OF REPORT \*\*\*\*\*\*

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