

TEST REPORT

Reference No. WTD15D1136592S

Applicant PortaPower(HK) Limited

Flat 1003, 10/F., Hopeful Factory Centre 10-16 Wo Shing Street, Address

Fotan, N.T.Hong Kong

Manufacturer Guangzhou Zhanhui Electronics Co., Ltd.

Shinan Road, Guantan Village, Dongchong Town, Nansha District, Address

Guangzhou, 511453, P. R. China

Product Name Charger

C060L1001, C060F1101, C060L0701, C060F0801, C060L0901 Model No.

Safety of household and similar electrical appliances Part 2: Particular requirements for battery chargers

Standards..... EN 60335-1:2012+A11:2014

EN 60335-2-29:2004+A2:2010

EN 62233:2008

Date of Receipt sample.... 2015-04-01

Date of Test..... 2015-04-03 to 2015-04-17

Date of Issue 2015-12-04

Test Report Form No...... WSH-60335229F-03A

Pass Test Result

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

Waltek Services (Dongguan) Co., Ltd.

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Gary Liang / Project Engineer

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Test item description Charger

Trademark /

Model and/or type reference: C060L1001, C060F1101, C060L0701, C060F0801, C060L0901

Rating(s)...... Input: 100-240 V~, 50/60 Hz, 1,2 A (Max.);

Output: see the general product information

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Class 2 Battery Charger

Model: C060L0701 Input: 100V-240V~

50-60Hz 1.2A

Output: 29.4V == 1.5A

DATE CODE:

15	16	17	1	2	3	4	5	6	
15	16	17	7	8	9	10	11	12	1

CAUTION

- Risk of injury. Charge only 36V
 Li-ion type rechargeable batteries.
- Before charging, read the instructions.
- For indoor use.
- Disconnect the supply before making or breaking the connections to the battery.
- •WARNING Explosive gases.
 Prevent flames and sparks.

Provide adequate ventilation during charging.



Class 2 Battery Charger

Model: C060L1001 Input: 100V-240V~

50-60Hz 1.2A

Output: 42.0V == 1.35A

DATE CODE:

4.5	40	17	1	2	3	4	5	6
15	16	17	7	8	9	10	11	12

CAUTION

- Risk of injury. Charge only 36V Li-ion type rechargeable batteries.
- Before charging, read the instructions.
- For indoor use.
- Disconnect the supply before making or breaking the connections to the battery.
- •WARNING Explosive gases.
 Prevent flames and sparks.



⊖-**(** ⊕-⊕ PortaPower (HK) Limited

ad Importer: XXXXX Compan Address: XXXXX

Note:

This is a representative label, the others are identical to it except for the model number and output ratings as listed in the model description.

The height dimension of CE mark should not less than 5mm, the height dimension of WEEE symbol should not less than 7mm.

Summary of testing:

- 1. The samples are tested and found to be complied with the requirements of standards listed on cover page.
- 2. The report was copied from report No. WTD14D0615641X2S of Waltek Services (Dongguan) Co., Ltd for adding a model C060L0901, it is no new test performed.



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Test item particulars:

Classification of installation and use...... Portable appliance and household indoor use

used

Possible test case verdicts:

General remarks:

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

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

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

General product information:

- 1. The battery charger is class II appliance.
- 2. The appliance is for household and indoor use only.
- 3. It is intended to charge maximum capacity battery.
- 4. Model list are shown as below:

Model	Input	Output Voltage	Output current
C060L1001	AC 100-240V 50/60Hz 1.2A	DC42.0V	1.35A
C060F1101	AC 100-240V 50/60Hz 1.2A	DC39.6V	1.35A
C060L0701	AC 100-240V 50/60Hz 1.2A	DC29.4V	1.50A
C060F0801	AC 100-240V 50/60Hz 1.2A	DC28.8V	1.50A
C060L0901	AC 100-240V 50/60Hz 1.2A	DC37.6V	1.35A

Models C060F1101, C060F0801, C060L0901 are identical to models C060L1001, C060L0701 except that they have the different output and model names, all the tests were performed on models C060L1001 and C060L0701 at the worst case.



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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
5	GENERAL CONDITIONS FOR THE TESTS	WALLER WALLER	n P
ek walte	Tests performed according to cl. 5, e.g. nature of supply, sequence of testing, etc.	TEK OLIEK MITEK MO	LIET NET P
5.2	If the test of 21.101 is carried out two additional battery chargers required (IEC 60335-2-29)	y set set ast	A TEXT P
5.3	The test of 19.14 carried out before the test of 19.11	My My My	Р
5.101	Battery chargers tested as motor-operated appliances (IEC 60335-2-29)	UNITER WHITER WHITE	WALTE WALTE

6	CLASSIFICATION	Will Mur Aug All	P
6.1	Protection against electric shock: Class 0, 0I, I, II, III	Class II	LIFP
6.2	Protection against harmful ingress of water	IPX0	et N

7	MARKING AND INSTRUCTIONS		P
7.1	Rated voltage or voltage range (V)	See page 2	Р
EX O	Nature of supply	See page 2	P
72,	Rated frequency (Hz)	See page 2	Р
NITE	Rated power input (W)	See page 2	P
- L	Rated current (A)	See page 2	N
ynlite.	Manufacturer's or responsible vendor's name, trademark or identification mark:	See page 2	P
TEX .	Model or type reference	See page 2	P
- 30	Symbol 5172 of IEC 60417, for Class II appliances	WE. MILL AND	N
المال المال	IP number, other than IPX0	IPX0	II N
TEX	Symbol IEC 60417-5180, for class III appliances, unless	t the text text	N
m.	the appliance is operated by batteries only	MULL MULL MULL MU	N
ILITER V	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hosesets for connection of an appliance to the water mains	WHITEK WHITEK WHITEK WHITE	- NTE
7/2	Battery chargers marked with (IEC 60335-2-29):	WILL MUIT MILL	Р
المال	- rated d.c. output voltage (V)	et let let liet	JO P
20,	- rated d.c. output current (A)	me me me	Р
MLTE	- rated current (A) of protective devices incorporated in a d.c. distribution board	UNITER WATER WHITER WHI	N



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01-	IEC 60335-2-29	Day # Day 1	٠,
Clause	Requirement + Test	Result - Remark	Verdic
	- polarity of the output terminals indicated by symbol IEC 60417-5005 for the positive terminal and IEC 60417-5006 for the negative terminal	Special output terminal used.	VIII P
THE STATE	- time-current characteristic of fuse-links of the time-lag type	The second second	Р
211 3	If the output exceeds 20 VA, battery chargers marked	I with (IEC 60335-2-29):	Р
LIEK W	- before charging, read the instructions	LET LET LET LET	P
	- for indoor use or do not expose to rain, unless appliance is at least IPX4	indoor use	P
, with	If the output exceeds 20 VA and the battery charger chargers marked with (IEC 60335-2-29):	is for lead-acid batteries, battery	W P
WALTE	- disconnect the supply before making or breaking the connections to the battery	EX WHILE MULTER WHILE W	Р
WALTER OF	 WARNING: Explosive gases. Prevent flames and sparks. Provide adequate ventilation during charging. 	Whitek Whitek Whitek Whi	EK P
Lifer Wal	Battery chargers incorporating an engine cracking sw supply a supplementary starting current for the engine		N N
ex alle	- maximum "on" time	it let let let	Ň
'E't	- minimum "off" time or maximum ratio between "on" time and "off" time	lite mail mar was	N
7.2	Warning for stationary appliances for multiple supply	ex write write many m	N
TEX	Warning placed in vicinity of terminal cover	a at at a	← N
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	MULL MULL MILL MILL	P
	Different rated values marked with the values separated by an oblique stroke	ALL STEE WHITE WALTE	'n' N
7.4	If the appliance can be adjusted for different rated voltages, the voltage to which the appliance is adjusted shall be clearly discernible.	THE WALTER W	NIT'N
white v	Requirement met if frequent changes are not required and the rated voltage to which the appliance is to be adjusted is determined from a wiring diagram	Hanifek whilek whilek wh	F NA
EK White	Output voltage clearly discernible if the battery charger can be adjusted to different rated d.c. output voltages (IEC 60335-2-29)	and who we writed	MITTER
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless	EX WILEX MILES ON	LITE'N W
in a	the power input is related to the arithmetic mean value of the rated voltage range	MILL MILL MULL MULL	N



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2/2 - 2/1	IEC 60335-2-29	- C W. W. W.	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1
Clause	Requirement + Test	Result - Remark	Verdic
ek mijek	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear	Write Auril Muri Auril	N
7.6	Correct symbols used	The My My	Р
MILLE V	Symbol for nature of supply placed next to rated voltage	MATER WHITE WATER OF	P
NLTEK WY	Symbol for class II appliances placed unlikely to be confused with other marking	DITEK MITEK WALTER WAL	P
IEK WALTE	Units of physical quantities and their symbols according to international standardized system	TEX LIEX SLIEN MITER	P
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless	THE WILLER WHITER WHITER	ALTER N
TEX	correct mode of connection is obvious	A A A	N N
7.8	Except for type Z attachment, terminals for connection as follows:	n to the supply mains indicated	Р
The Muni	- marking of terminals exclusively for the neutral conductor (N)	Inties Mitter White Mit	N.
WALTE	- marking of protective earthing terminals (symbol 5019 of IEC 60417)	LIES WHITES WHITES	JILL P
LIEK	- marking not placed on removable parts	at at at the	Р
7.9	Marking or placing of switches which may cause a hazard	mer me me	Р
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means	white white white whi	N
y Tex	The applies also to switches which are part of a control	the set	N
7/11 CK	If figures are used, the off position indicated by the figure 0	The transfer of	N
unt, a	The figure 0 indicates only OFF position, unless no confusion with the OFF position	ANTIER MALTE MALTE WA	Ņ
7.11	Indication for direction of adjustment of controls	TEK STEK WITER WITE	N
7.12	Instructions for safe use provided	Mr. M. M.	P
Whi	Details concerning precautions during user maintenance	LIEK WAITER WALTER WALTE	P
CLIE	The instructions state that:	et tet itet liet	P
MULIEK M	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction	Whitek Auritek Muritek Mar	P



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31 2 31	IEC 60335-2-29		" OILE
Clause	Requirement + Test	Result - Remark	Verdict
111	- children being supervised not to play with the appliance	Writes Murician Murician Muricia	Р
and the	Instructions for safe use contains (IEC 60335-2-29):	THE THE THE STEEL	Р
Jer	- specification of types, number of cells and rated capacity of batteries that can be charged	the state of	P
	- warning against recharging non-rechargeable batteries	Muster must must m	Р
NEK W	- statement that during charging, batteries must be placed in the well ventilated area, only for battery chargers for lead-acid batteries	WALLER MULTER WALLE MILL	P
· Whi - Alifek	- statement that battery chargers must only be plugged into an earthed socket-outlet, only for portable Class I battery chargers for outdoor use	NITER WHITE WHITE WHITE	WAN N
'un	- explanation of automatic function stating any limitation, only for automatic battery chargers	int my my	N
	Battery chargers for charging automobile batteries inc (IEC 60335-2-29):	clude substance concerning	N
ex white	- The battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains;	UNITER WHITER WHITER WHITE	WILLER
WALTEX	- After charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.	ex nifex unifex whilek	NITEX P
INLIEK W	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided	whitek whitek whitek whi	
IE WAY	Instructions for class III appliances state that it must only be supplied at SELV, unless	ati Tie Marie Walie	White
	it is a battery-operated appliance, the battery being charged outside the appliance	L A TEL ITEL	I.E.N
7.12.1	Sufficient details for installation supplied	Mr. In My	Р
WALTER V	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated	MULTER WHITER WHITER W	N N
iek muri	The instructions for battery chargers for installation in caravans and similar vehicles shall state that the connection to the supply mains is to be in accordance with the national wiring rules (IEC 60335-2-29).	WHILE MALLEY WHILE WHILEY	MITTEL
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules	ex uniter uniter uniter uni	TEN VIII



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ال سيال	IEC 60335-2-29	the the the	They are
Clause	Requirement + Test	Result - Remark	Verdict
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions stating that the fixed wiring must be protected	united white white,	MAN N
7.12.4	Instructions for built-in appliances:	The Mary May 201	N
MITE	- dimensions of space	the state of the said	N
*	- dimensions and position of supporting means	The The An	N
VII. W	- distances between parts and surrounding structure	LIEK NITER WITE	Maril Mari
IEK INIT	- dimensions of ventilation openings and arrangement	Alt THE THE	N.L.
- LIEX	- connection to supply mains and interconnection of separate components	in the contract of	N
Willey Willey	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless	ifet sifet nut	Must series
	a switch complying with 24.3	1416 141 142	N
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord	United Whitek Whiter	UNITE VIN
MALTE	Replacement cord instructions, type Y attachment	TEX TEX STEEL	LIER MUP
*	Replacement cord instructions, type Z attachment	e me me m	N
7.12.6	If a non-self-resetting thermal cut-out is required in order to comply with the standard then the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains shall contain the substance of the following:	Whitek whitek whitek	whit it whit
ynitek Vinitek	CAUTION: In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.	ner printing	A SEA OF MAN
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed	mile mi mi	NI N
7.12.8	Instructions for appliances connected to the water ma	ins:	We NA
et is	- max. inlet water pressure (Pa):	3 × 3	N-
Me	- min. inlet water pressure, if necessary (Pa):	LIFE WALL WALL W	V. W.N
WALTER	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets	EX WHITEX WHITEK WAS	IEK WITEN
7.13	Instructions and other texts in an official language	English	R.
7.14	Marking clearly legible and durable	me me	P
7.15	Marking on a main part	LET LET LET	P

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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
: 125 - 131 :4 - 161	Marking clearly discernible from the outside, if necessary after removal of a cover	UNITED WILLIAM WILLIAM	ur P
Mer	For portable appliances, cover can be removed or opened without a tool	LIER MYTER MUTE M	N S
WHITE.	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation	A ANTIER MUTTER MUT	IN SE NOW
NEX INIT	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions	White white whi	WALLEY WILLER
MULTER	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading	CEX MUST WHITEX WA	TEK WITEL
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link	Whitek whitek white	Mer Tex
7.101	D.C. distribution boards marked with (IEC 60335-2-29	9): (1)	Mr. MN
EK WIT	- maximum output current (A) for each output circuit	TEX SITEX MITEX	NITER WITH
NLTEK	- types of any additional power supply which can be connected	of the the	TEKN OF

8	PROTECTION AGAINST ACCESS TO LIVE PARTS	- TEX LIEX NITER INT	P
8.1	Adequate protection against accidental contact with live parts	THE THE LIER LIER	P
8.1.1	Requirement applies for all positions, detachable parts removed	We will the	Р
MU	Insertion or removal of lamps, protection against contact with live parts of the lamp cap	In the August August A	N W
MULT	Use of test probe B of IEC 61032: no contact with live parts	White while while wh	P
8.1.2	Use of test probe 13 of IEC 61032 through openings in class 0 appliances and class II appliances/ constructions: no contact with live parts	WHITE WHITE WHITE WHITE	NIP TEX
WALLEY KALLEY	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts	et et tet tet	N N
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032: no contact with live parts of visible glowing heating elements	unit was whitek witek was	N N
8.1.4	Accessible part not considered live if:	74	P



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are, a	IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict		
× ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	- safety extra-low a.c. voltage: peak value not exceeding 42,4 V	Write Write Murie Mile	N		
anse.	- safety extra-low d.c. voltage: not exceeding 42,4 V	Measured max.: 42,186 V	Р		
MITER	- or separated from live parts by protective impedance	# ifet lifet nifet in	JEK P		
LIEK	If protective impedance: d.c. current not exceeding 2 mA, and	THE TEX LIEX NUT	N		
	a.c. peak value not exceeding 0,7 mA	Mer. Mur. Alle An.	N		
ier wal	- for peak values over 42,4 V up to and including 450 V, capacitance not exceeding 0,1 μF	NITER WHITEK WHITEK WHITE	sin N		
WALTER	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC	Et NIEK WIFEK WILLER W	TT N		
MITEK	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ	itek alifek mitek wat	ex N		
8.1.5	Live parts protected at least by basic insulation before	e installation or assembly:	N		
LITE WA	- built-in appliances	LIEX NIEX MIEX MILE	N		
* *	- fixed appliances	n m n	N-		
MIC	- appliances delivered in separate units	TEX SLIET WITE WAITE	w N		
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only	Et Writek Writek Writek W	TEKP VIII		
ال ثار	Only possible to touch parts separated from live parts by double or reinforced insulation	MALIE WALL WALL WALL	√P		
9 (1)	STARTING OF MOTOR-OPERATED APPLIANCES	The Marie Marie	N		
MULT	Requirements and tests are specified in part 2 when necessary	A List Marie A	N		
MALTE.	muri mur muri muri tet iet iet	ex writer writer an	The Mai		
10	POWER INPUT AND CURRENT	W The state of the	Р		
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1	white white white white	NN SEL		
VIII.	Test for an appliance with one or more rated voltage ranges	The Mary Mary Mary	N N		
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2	(see appended table 10.2)	PV		
n 0	Test for an appliance with one or more rated voltage	(see appended table 10.2)	Р		

ranges



1/CICICIO	rage 11 01 34		
	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
10.101	No-load d.c. output voltage does not exceed 42,2 V (IEC 60335-2-29)	(see appended table 10.101)	√ P
10.102	Arithmetic mean value of output current does not deviate from rated d.c. output current by more than 10 % (IEC 60335-2-29)	(see appended table 10.102)	onli P N

11	HEATING		P
11.1	No excessive temperatures in normal use	White White White White	√P
11.2	Placing and mounting of battery chargers in the test corner as specified for heating appliances (IEC 60335-2-29)	NITEK WHITEK WHITEK	MULPIK
11.3	Temperature rises, other than of windings, determined by thermocouples	EX WHIEX MALTER WALLER	N LIT P N
NALTER.	Temperature rises of windings determined by resistance method, unless	MILER WHITER WHITER WA	N
LIEK	the windings makes it difficult to make the necessary connections	LIEK WIEK WIEK WIT	E PER
11.4	Heating appliances operated under normal operation at 1,15 times rated power input	TEX TEX STEX STEX	N-
11.5	Battery chargers supplied only at 1,06 times rated voltage (IEC 60335-2-29)	at left that the	P
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1,06 times rated voltage	THE STEET WITEE ON	N N
11.7	Battery chargers operate until steady conditions are established (IEC 60335-2-29)	THE LIFE OLIVE	Per
11.8	Temperature rises not exceeding values in table 3	(see appended table 11.8)	Р
MULLE	If the temperature rise of a motor winding exceeds the value of table 3, or	TER WITE	N N
TEX	if there is doubt with regard to classification of insulation,	t it let	⊬ N
	tests of Annex C are carried out	While Mur Aur An	N
LIEK	Sealing compound does not flow out	et set set s	P. P.
10	Protective devices do not operate, except	MULL MULL MULL MULL	Р
EK WAL	components in protective electronic circuits tested for the number of cycles specified in 24.1.4	No such parts	MIN .

13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE	
13.1	Leakage current not excessive and electric strength adequate	Р



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IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
:	Heating appliances operated at 1,15 times rated power input	MULTER MULTE MULTE MULTE	N	
MUL	Motor-operated appliances and combined appliances supplied at 1,06 times rated voltage:	(see appended table 13.2 and 13.3)	P N	
Marie.	Protective impedance and radio interference filters disconnected before carrying out the tests	EEK WALTER WALTER WALTER WA	Pint	
13.2	Leakage current measured by means of the circuit described in figure 4 of IEC 60990	WILER WILER MULES WILL	PIE	
TEX S	Leakage current measurements	(see appended table 13.2)	Р	
13.3	The appliance is disconnected from the supply	Will MULL MULL MULL	u P	
t JEY	Electric strength tests according to table 4	(see appended table 13.3)	Р	
111	No breakdown during the tests	AUT, MUT, MUT, A	Р	

14	TRANSIENT OVERVOLTAGES	MUT, MUT, MY, MI	N
ALTER	Appliances withstand the transient overvoltages to which they may be subjected	OLIEK WHITEK WHITEK WHITE	NINE
EK WI	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6	LIEK WALTER WALTER	Unit No
WALTE	No flashover during the test, unless of functional insulation	TEX WHITEK WHITEK WHITEK WE	I'M Nuri
MALIEK.	In case of flashover of functional insulation, the appliance complies with clause 19 with the clearance short circuited	Whitek whitek whitek whi	N

15	MOISTURE RESISTANCE	P
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance	In the many war N me
WALTE.	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3	WHITE WALTER WALE WALE
nt w IEX ni	No trace of water on insulation which can result in a reduction of clearances and creepage distances below values specified in clause 29	EX TEX STEX STEX
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529:	My An Litt
WILEK	Water valves in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances	WALL WALLEY WITH WALLEY
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test	N I I I I I I I I I I I I I I I I I I I



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Clause	Requirement + Test	Result - Remark	Verdict
0.000	Trequirement + rect	A A	Volume
	Built-in appliances installed according to the instructions	write white whi	The ANN
whit.	Appliances placed or used on the floor or table placed on a horizontal unperforated support	TER MITTER MILIE M	N S
White.	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board	MULTER WALTER WALT	N
itek mit	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube	White White white	THE N
* WALTER	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube	hr wh whe	TEL N
WUTER A	However, for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube	Whitek whitek while	y will will
ek nutie	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support	Write Mrite Mriter	WILEY WILEY
WALTER	For IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min	ex whitek whitek whi	COL N
in the m	Wall-mounted appliances, take into account the distance to the floor stated in the instructions	WILEK WHILEK WHILE	Will Will
TEX	Appliances with type X attachment fitted with a flexible cord as described	all strainter	UNLIFE THE NEXT
* (6)	Detachable parts tested as specified		, N
15.2	Spillage of liquid does not affect the electrical insulation	An An Is An	N N
MILITA	Appliances with type X attachment fitted with a flexible cord as described	Whitek Whitek White	W. N.
nlifet wh	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable	JUNITER WHITER WHITER	unite un
MUL	Detachable parts removed	LIER WITE WALLE	n' n'N
MALTEX	Overfilling test with additional amount of water, over a period of 1 min (I)	EX ITEX SITEX ON	TEK WITEN
TEX	The appliance withstands the electric strength test of 16.3	The state of	, N



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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
ek _{met} e	No trace of water on insulation that can result in a reduction of clearances and creepage distances below values specified in clause 29	United White White White	N N
15.3	Appliances proof against humid conditions	ne me me	Р
anite.	Humidity test for 48 h in a humidity cabinet	25°C, 93 % R.H.	P.N.
	The appliance withstands the tests of clause 16	Mr. Mr. M.	Р

16	LEAKAGE CURRENT AND ELECTRIC STRENGTH	M1. M. 2.	P
16.1	Leakage current not excessive and electric strength adequate	ALTER WALTER WALTER WALTER	WP V
WALTE	Protective impedance disconnected from live parts before carrying out the tests	TEX WHITEK WHITEK	WILL PUN
16.2	Single-phase appliances: test voltage 1,06 times rated voltage:	(see appended table 16.2)	L'ER PLIF
ALTEK W	Three-phase appliances: test voltage 1,06 times rated voltage divided by √3:	STEX OUTER WITER SANT	E- NEX
et i	Leakage current measurements	(see appended table 16.2)	P-
16.3	Electric strength tests according to table 7	(see appended table 16.3)	July P W
- LEX	No breakdown during the tests	The state of	P

17	OVERLOAD PROTECTION OF TRANSFORMERS A	AND ASSOCIATED CIRCUITS	P
izek av	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use	(see appended table 17)	VP MLTEX
EK WYTE	Appliance supplied with 1,06 or 0,94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied:	(see appended table 17)	ALTER JUN
MLIEK	Output terminals of battery chargers are short-circuited (IEC 60335-2-29)	The appliance did not work	FEX P
.+	Basic insulation is not short-circuited	211 211 20	N
VEL ON	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K	united united united united	WP.
t TEX	Temperature of the winding not exceeding the value specified in table 8,	LIFE WALL WALL WALL	M P
MUF	however limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1	THE WALLE WALLE WALLE W	Non

18	ENDURANCE	N



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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
it uis	Requirements and tests are specified in part 2 when necessary	William Mariet Awares A	In The
19	ABNORMAL OPERATION		P
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated	White white white	ur Pir
nii w	Electronic circuits so designed and applied that a fault will not render the appliance unsafe	WALTER WALTER WALTER	Mrt MP
TE WALT	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and	NITER WHITER WHITER W	ALTE WALN
WALTER	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable	et liet miret mi	IET WITCH
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11	onitek whitek whiteh	MULTINAL MAL
ILLEK WA	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11 Appliances incorporating voltage selector switches	INLIEK WALTER WALTER	unite un N. E
EL MALTY	subjected to the test of 19.15	TEX TEX STEEL OF	LIER INLIN
19.2	Test of appliance with heating elements with restricted heat dissipation; test voltage (V): power input of 0,85 times rated power input:	et with writes writ	ex un tex un
19.3	Test of 19.2 repeated; test voltage (V): power input of 1,24 times rated power input	THE STEE STEEL	INT X N
19.4	Test conditions as in cl. 11, any control limiting the temperature during tests of cl. 11 short-circuited	THE THE	NIEK NEIK
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the elements sheath	THE THE THE	N N
White Y	The test repeated with reversed polarity and the other end of the heating element connected to the sheath	MULTER WHITER WHITE	W. N.
EX WALT	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4	White white while	MAL MINITER
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions	Et TEX TEX	EK JETEN



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Clause	Requirement + Test	Result - Remark	Verdict
10 X		a state	- 16th - 15th
White White	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures	Mitter Militer Whitek W Test Whitest Whitest W H Test Test hi	SUPER SUPER
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque or locking moving parts of other appliances	wifet writes writes	white white
iek whi	Locked rotor, motor capacitors open-circuited or short-circuited, if required	THE STEE STEEL	unlitek anlink
- 11	Locked rotor, capacitors open-circuited one at a time	b. M. D.	N
MUL	Test repeated with capacitors short-circuited one at a time, if required	TEL WAITE WAITE WA	N N N N
MALTER V	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed	Whitek Whitek White	mi Ni
	Other appliances supplied with rated voltage for a period as specified	United White White	my my
WULL	Winding temperatures not exceeding values specified in table 8	liet whitek whiteh w	NI N
19.8	Three-phase motors operated at rated voltage with one phase disconnected	et writet writet wri	TER NI
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously	whitek whitek whitek	whit & N.T.
ie wh	Winding temperatures not exceeding values as specified	ALL JUNITER VIOLITER	un'N
19.10	Series motor operated at 1,3 times rated voltage for 1 min	TEX VI	LITER WILLIAM
MALTEX	During the test, parts not being ejected from the appliance	et alter auter aut	et we see
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless they comply with the conditions specified in 19.11.1	JUNITER WHITER WHITER	white white
WILL	Appliances incorporating an electronic circuit subjected to the tests of 19.11.3 and 19.11.4	LIER WHITE WHITE V	N. W.N
WALTE	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8 unless	EX UNITEX WALLEY WAS	K W C N
TEX .	Restarting at any point in the operating cycle after interruption of operation due to supply voltage not result in a hazard	mile mil mi	W N



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Clause	Requirement + Test	Result - Remark	Verdic
oluude A	rtoquilionity (oot	A A A	Toralo
ek onvries	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4	TEX MULTER WALTER WHITER	N
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, of circuit meet both of the following conditions:	it is checked if circuits or parts	JEST P
NITEK W	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified	WHITEK WHITEK WHITEK WHITE	← N
iek whit	the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit	NITER WHITER WHITER WHITER	MALTER OF
19.11.2	Fault conditions applied one at a time, the appliance of specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage, the design of the specified in cl. 11, but supplied at rated voltage.		Р
ritek Mr. A	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in 29	(see appended table 19.11.2)	P
A 0	b) open circuit at the terminals of any component	hus Any Any Any	P
WALL	c) short circuit of capacitors, unless they comply with IEC 60384-14	LIER WALTER WALLE WALLE	Р
WALTER OF	d) short circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the two circuits of an optocoupler	ex whitex whitex whitex wh	IF PULL
	e) failure of triacs in the diode mode	Mr. Mr. My	Р
IE WY	f) failure of an integrated circuit	TE ALTER ALTER	P
بد ب	g) failure of an electronic power switching device		N
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to f) of 19.11.2	t lift while w	VI N
et.	During and after each test the following is checked:	2/11 /20 /20	N
TI, M	- the temperature rise of the windings do not exceed the values specified in table 8	White white white white	N
WALL	- the appliance complies with the conditions specified in 19.13	LITER WHITER WHITE	an'N
WALTER	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4	EX WILEX WAITER WAITER	TEN N
MITEK	If a conductor of a printed board becomes open-circui to have withstood the particular test, provided all three met:		ex N



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16 The	IEC 60335-2-29	t let see see	The sale
Clause	Requirement + Test	Result - Remark	Verdict
it in	- the material of the printed circuit board withstands the burning test of annex E	Initer mility white	n N
whitek	- any loosened conductor does not reduce the clearances or creepage distances between live parts and accessible metal parts below the values specified in cl. 29	TEK WATER WATER ON	Et un seit une
NITEK NA	- the appliance withstands the tests of 19.11.2 with open-circuited conductor bridged	TEX LIEX SLIEN	Mill While
19.11.4	Appliances having a switch with an off position obtained by electronic disconnection, or	the text text	SITEL NIC
, J.	a switch that can be placed in the stand-by mode,	vr. Mr. Mr. 2	N
MITE	subjected to the tests of 19.11.4.1 to 19.11.4.7	TEX TEX TEX	TEN TIEN
WILLER M	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, except that	White wife white	K JUNE JUNES
ILIEK WAL	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.	UNITER WALTER WALTER	WITE WER
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4	LIEK WALTER WALTER W	N N
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3	ex miles miles mi	May NA
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified	Whitek whitek whiteh	No.
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified	CLI SEE WILL A	ALL ALL
ZEX.	Earthed heating elements in class I appliances disconnected	The the the	N N
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3	multi mil mi	W N
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11	JUNITER WHITE WHITE	while will
WILL	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34	THE MILLE MILLS A	N N
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2	Murit Murit Mr.	N N



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Clause	Clause Reguirement + Test Result - Remark V			
Oldusc	Trequirement - Test	result - Remark	Verdict	
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduces to a level such that the appliance ceases to respond or a programmable component cease to operate.	unite whitek whitek whitek	N N	
21/2 Z	The appliance continues to operate normally or requires a manual operation to restart	THE MULTER WHILE WHILE WAS	N	
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A)	Whitek whitek whitek whitek	NP TO A STATE OF THE STATE OF T	
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts	(see appended table 19.13)	EK PUL	
STEP ST	Temperature rises not exceeding the values shown in table 9	THE THE THE TELL	P	
	During the tests, the values of Table 8 apply (IEC 60335-2-29)	Write Murre muse muse	P	
	Compliance with clause 8 not impaired	TEX TEX STEX WITER	P	
	No rupture of the battery	to My to an	Р	
MULL	If the appliance can still be operated it complies with 20.2	EX WHITEK WHITE WHITE W	Pur	
in in in	Insulation, other than of class III appliance, withstand the test voltage specified in table 4:	the electric strength test of 16.3,	PLI	
TEX ST	- basic insulation	1000V	P	
10,	- supplementary insulation:	1750V	Ъ	
NITE OF	- reinforced insulation:	3000V	ıP	
WHITEH W	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage	Multer Autler Autler Aus	P	
nite whi	The appliance does not undergo a dangerous malfunction, and	WHITEK WHITEK WHITE WHITE	Р	
IER WALTE	no failure of protective electronic circuits, if the appliance is still operable	LIER WHITEL WHITER	ant N	
MALTER	Appliances tested with an electronic switch in the off position, or in the stand-by mode:	EK SLIEK MITEK WALTER W	LEN	
EX	- do not become operational, or	70 x 2+ 2+	↓ N	
in in	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4	White white with whi	N	



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	IEC 60335-2-29			
Clause	Requirement + Test	Result - Remark	Verdict	
in the	If the appliance contains lids or doors that are control one of the interlocks may be released provided that:		N	
	- the lid or door does not move automatically to an open position when the interlock is released, and	ITEX WAITER WAITER	nt N	
MALTER.	- the appliance does not start after the cycle in which the interlock was released	A TEX STEX STEX STEEL ST	JEE N	
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited	TIEK NITEK MITEK WILL	← N	
TEKWIT	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time	LIER WILER WILER	N.C	
MULIER	A relay or contactor operating only to ensure the appliance is energized for normal use is not shortcircuited	TEK ALTER MILER MALTER	LIEN W	
JEX	If more than one relay or contactor operates in clause 11, they are short-circuited in turn	The second second	N N	
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied	white whitek whitek white	N	
19.101	Battery chargers supplied at rated voltage and operated under normal operation, any control limiting the temperature during tests of clause 11 short-circuited (IEC 60335-2-29)	LIEK WHIEK WHIEK	INT. N	
19.102	Reverse connection of battery chargers to a fully charged battery at rated voltage (IEC 60335-2-29)	The appliance did not work	P	
NUT. M	The capacity of the battery (IEC 60335-2-29)	Tested	P	
19.103	Battery chargers intended to be used with a d.c. distribution board supplied at rated voltage and operated under normal operation, load increased as specified until protective device operates or short-circuit conditions are established (IEC 60335-2-29)	AL TEK WALTER WALTER	NEK WILLEK	

20	STABILITY AND MECHANICAL HAZARDS	MULL MULL MULL MILL	Р
20.1	Adequate stability	et et set se	P
IEX WY	Tilting test through an angle of 10° (appliance placed on an inclined plane/horizontal plane); appliance does not overturn	WILL WALL AND AND THE	Whitek v
t MITE	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°	et tet itet sitet e	LITEIN
WALTEK.	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9	Whitek writek whitek whi	N N
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury	No such parts	Nex



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IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
:12 <u>1111.9</u> :32 4: 15	Protective enclosures, guards and similar parts are non-detachable	MILIE WILLE WILLE	W. W.	
The.	have adequate mechanical strength	TEX SLIER OLIER ON	U JAUN J	
LUE P	Enclosures that can be opened by overriding an interlock are considered to be detachable parts	+ 11 11 1	, N	
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, by unexpected reclosure	to mil only with	Mile White	
IEX NI	Not possible to touch dangerous moving parts with test probe	the text text	N.C.	

21	MECHANICAL STRENGTH	THE THE LIER NITER OF	Р
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling	int the the state of the	P
NI WA	Checked by applying blows to the appliance in accordance with test Ehb of IEC 60068-2-75, spring hammer test, impact energy 1,0 J \pm 0,05 J (IEC 60335-2-29)	United Whitek Whitek White	P
EK WALT	If necessary, supplementary or reinforced insulation subjected to the electric strength test of 16.3	Liet Milet Whilet Whilet Whilet	Ń
WALTER	If necessary, repetition of groups of three blows on a new sample	et street miles waitest un	N N
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements	Tet Tet Stet Mil	P
	The insulation is tested as specified, unless	Mr. Mr. M. M.	N
The WA	the thickness of supplementary insulation is at least 1 mm and reinforced insulation is at least 2 mm	IL WALLE WALLE	P
21.101	Battery chargers, other than built-in battery chargers, having a mass not exceeding 5 kg, subjected to a drop test (IEC 60335-2-29)	THE WAITER AND	Р
White .	Battery chargers show no damage that could impair compliance with 8.1, 15.1.1, 16.3 and cl. 29 (IEC 60335-2-29)	MULTER WALTER WALTER WAY	P
21.102	Battery chargers for installing in caravans and similar vehicles withstand vibrations to which they may be subjected (IEC 60335-2-29)	untile matter unit unit	WN LIEK
t vii	Vibration test as specified in IEC 60068-2-6 (IEC 60335-2-29)	err and with any	N
WAL.	Battery chargers show no damage that could impair compliance with 8.1, 15.1.1, 16.3 and cl. 29 (IEC 60335-2-29)	THE WALL WILL WILL WILL WILL	Non
71 2	Connections have not worked loose (IEC 60335-2-29)	MULL MULL MULL MULL	N



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	IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict		
22	CONSTRUCTION	WILLER MATER MATERIAL	Р		
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IPX0	et protin		
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available:		an in Nati		
CLIER II	- a supply cord fitted with a plug	LEK TEK ITEK	TE NYE		
1, 2,	- a switch complying with 24.3	mi me me	N		
ier whi	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided	NIFEK WALTER WALTER WA	in N		
MUL	- an appliance inlet	TEL OLIER MALIE WALLE	Way Nan		
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase	Whitek whitek whitek	WALE WALE		
v. n	conductor	Will Mills Marin M	T. MUL		
22.3	Appliance provided with pins: no undue strain on socket-outlets	et set set si	Et NIN.		
	Applied torque not exceeding 0.25 Nm	ir, Aur Au, Au	N		
White	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm	ex uniter uniter uniter	we it North		
LIEK WA	Each pin subjected to a torque of 0.4Nm; the pins are not rotating unless rotating does not impair compliance with the standard	white white wh	TEX WILLER		
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets	THE ANTIEST WHITE	THE THE W		
22.5	No risk of electric shock when touching the pins of the plug, for appliances having a capacitor with rated capacitance exceeding $0.1\mu F$, the appliance being disconnected from the supply at the instant of voltage peak	Not exceeding 0,1 μF	was fee Nai		
22.6	Electrical insulation not affected by condensing water or leaking liquid	LIEK MIEK MIEK WAI	WALL PA		
k NALTEK	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak	et tet stret stret	- LIEN		
22.7	Adequate safeguards against the risk of excessive pressure in appliances provided with steam-producing devices	Whitek whitek	MULTER N		



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Clause	Requirement + Test	Result - Remark	Verdict
Ciaaoo	Troquitorite Foot	Troodic Tromain	Voluio
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use	TEX MUTER MUTER MU	TEX NUTER
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances	MUNITER WHITER WHITE	WALLER P.
Will M	Adequate insulating properties of oil or grease to which insulation is exposed	Whitek Whitek Whitek	WILL WILL
22.10	Not possible to reset voltage-maintained non-self- resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance	No such parts	itek minin
TEK	Non-self resetting thermal motor protectors have a trip-free action, unless	and who will	N
211. 2	they are voltage maintained	White Aut Aut	N N
LIFEK WA	Location or protection of reset buttons of non-self- resetting controls is so that accidental resetting is unlikely	Writer Multer Multer	NE WA
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts	Appliance inlet used	t Tex
MV.	Obvious locked position of snap-in devices used for fixing such parts	antit with white	Y N
iek vi	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing	white white white	and N
20	Tests as described	WELL MY	N
22.12	Handles, knobs etc. fixed in a reliable manner	TEX II	IT P
WALTEK V	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible	t lifet milet milet	Whitek Wh
NITEK NA	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied	Tet Tet Tet	NITE ANITE
TEX SIT	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied	and any and	TEX TEXT
22.13	Unlikely that handles, when gripped as in normal use, make the operators hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only	EX WHILE MULLER WHILE	X WILLEY W
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance	- LIEK SLIEK MITER	WILL AND



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اله عمل	IEC 60335-2-29		The one
Clause	Requirement + Test	Result - Remark	Verdict
ek miles	No exposed pointed ends of self tapping screws etc., liable to be touched by the user in normal use or during user maintenance	miter while white	SUPER STEEL
22.15	Storage hooks and the like for flexible cords smooth and well rounded	The many	at N
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands, no undue wear of contacts	MULLER MULTER MULTER	White white
TER OLT	Cord reel tested with 6000 operations, as specified	et let jet	JEST N
t TEX	Electric strength test of 16.3, voltage of 1000 V applied	in the lit	N
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner	Maria Maria	T N
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use	MULTER MALTER MALL	Nu Pu
22.19	Driving belts not used as electrical insulation	No such parts	MIN' MIN'
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible	TEL MUTER MUTER	ALTER ALTER
WALL	Compliance is checked by inspection and, if necessary, by appropriate test	White white whi	W Pu
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated	Whitek whitek white	WALL VER
Y NITER	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements	No such parts	un un'n
22.22	Appliances not containing asbestos	" " " " "	Р
22.23	Oils containing polychlorinated biphenyl (PCB) not used	* unliek whilek while	White Pari
22.24	Bare heating elements, other than those in class III appliances or class III constructions that do not contain live parts, shall be supported so that the heating conductor is unlikely to come into contact with accessible metal parts if they rupture.	Whitek whitek whitek	MITER MITER
MLTEX	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts	et let let	TEL STEIN
22.25	Appliances shall be constructed so that sagging heating conductors cannot come into contact with accessible metal parts. This requirement does not apply to class III appliances or class III constructions that do not contain live parts.	White white white	Maria Maria



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. (L ^{LL})	IEC 60335-2-29	t the the the	" WILL MILL
Clause	Requirement + Test	Result - Remark	Verdict
22.26	Output circuit supplied through a safety isolating transformer (IEC 60335-2-29)	MILLER WALLER MALLER	M. P.
MULL	No connection between the output circuit and accessible metal parts or an earthing terminal (IEC 60335-2-29)	ITER WALTER WILLES WI	A CH
WILEK W	Insulation between parts operating at safety extra- low voltage and live parts complies with the requirements for double or reinforced insulation (IEC 60335-2-29)	NITER WITER WITER	WALTE WALTE
22.27	Parts connected by protective impedance separated by double or reinforced insulation	TEK LIEK NITEK	MITEL WALTER
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water: separated from live parts by double or reinforced insulation	EX WILLEY WHILEY WH	TEK WITEN
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation	WAITER WALTER WALL	ME NE
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or	WILL MALL MALL	WIR WP
Whitek	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete	EX MULTER MULTER MUL	EL WY
22.31 N	Clearances and creepage distances over supplementary and reinforced insulation not reduced below values specified in clause 29 as a result of wear	White white white	unit uniter
ek Watifik	Clearances and creepage distances between live parts and accessible parts not reduced below values for supplementary insulation, if wires, screws etc. become loose	The The Table And	LIET WIFE W
22.32	Supplementary and reinforced insulation designed or protected against deposition of dirt or dust	MILLE WALLE WILL	W P
LIE WALTE	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2	united united white	MILE WILEY
WALTER	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation	EX WILEX MULTER MUL	LEK M TIE N
UNLIEK W	Oxygen bomb test at 70°C for 96 h and 16 h at room temperature	- LIEX SLIEX WITE	* NUT EX NUT



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لو سيان	IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict		
ek wite	Insulating material in which heating conductors are embedded is considered to be basic insulation and not reinforced insulation	unities white white	WILLIEF WIN		
22.33	Conductive liquids that are or may become accessible in normal use are not in direct contact with live parts	it with with an	EK WATEK N		
all the	Electrodes not used for heating liquids	70, 7	- N		
TEK MIT	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless	White white whitek	MILER MILER		
WULL	the reinforced insulation consists of at least 3 layers	TEX WATER WATER WA	I WILL N'W		
WALTER O	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless	whitek whitek white	MALE NALL		
ALTE WA	the reinforced insulation consists of at least 3 layers	INLIER WALTER WALTER	weight and		
EK WALTE	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid	ETEK WILLEK WILLEK W	NITEL WINN		
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed	EX WHITEX WHITEX WAS	Puni		
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation	white white whi	THE THEFT		
WALTEX	Such parts being of metal, and their shafts or fixings are likely to become live in the event of an insulation fault, they are either adequately covered by insulation material, or their accessible parts are separated from their shafts or fixings by supplementary insulation	Auritek militek militek	LIEK WALTEN		
VILLEK MUTE	This requirement does not apply to handles, levers and knobs on stationary appliances other than those of electrical components, provided they are either reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal	Mr. Mr. Mr.	WINLTE WINLES		
WALTER	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation	iek whitek whitek whi	L WELL NOW		



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IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
22.36	Handles continuously held in the hand in normal use are so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless they are separated from live parts by double or reinforced insulation	TEX WHITE WHITE WHITE	WIN N	
22.37	Capacitors in Class II appliances not connected to accessible metal parts, unless complying with 22.42	No accessible metal parts	N n	
urit wh	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42	Whitek whitek white wh	it whitek	
22.38	Capacitors not connected between the contacts of a thermal cut-out	No thermal cut-outs	N N	
22.39	Lamp holders used only for the connection of lamps	in in in	N	
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible	Whitek whitek whitek wh	ni a Nai	
WALTER	Unless the appliance can operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch. The actuating member of the switch being easily visible and accessible	LIEK WALTER WALTER	uni N	
22.41	No components, other than lamps, containing mercury	stiet wifet writer ou	LIST PLIF	
22.42	Protective impedance consisting of at least two separate components	THE STATES OF	P	
et Liter	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited	THE THE	Р	
TEX	Resistors checked by the test of 14.1 a) in IEC 60065	The solution of	N	
MUT.	Capacitors checked by the tests for class Y capacitors in IEC 60384-14	Approved	P	
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur	uniter uniter uniter	N N	
22.44	Appliances shall not have an enclosure that is shaped or decorated like a toy	LIFE WALL WALL WALL	P	
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.4 due to deformation as a result of an external force applied to the enclosure	ex united white white	undi Pun	



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Claves	Deguirement L Test	Dogult Domari	\/a mali at
Clause	Requirement + Test	Result - Remark	Verdict
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1	TEX MATER WALTER	ound ou N
WALTER.	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards	y united united unit	et un
itek mit	These requirements are not applicable to software used for functional purpose or compliance with clause 11	White white white	WALL WILLIEM
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use	With My A	N TEXT
MEX	No leakage from any part, including any inlet water hose	The Mary Mary Mary	X N
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water	White mult will	und Na
22.49	For remote operation, the duration of operation set before the appliance can be started, unless	auri mar mur	ALL LEX
- Cit	the appliance switches off automatically or operate continuously without hazard	Lie wait wait w	N V
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation	et writer writer wri	N/L
22.51	A control on the appliance being manually adjusted to the setting for remote operation before the appliance operated in this mode	Whitek whitek whiteh	WILL WILL
T Wh	Visual indication showing that the appliance is adjusted for remote operation	White And the	unit with
WALTE TEX	Manual setting and visual indication not necessary on appliances that can operate as follows, without giving rise to a hazard:	THE THE THE	A REF
Mr. 1	- operate continuously,	INLIER MALTE WALL	W Nu
TEX	- operate automatically, or		N.O
7, 71,	- be operated remotely	White White Whi	We WN
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold	TIEK MILIEK MILIEK	nitek whin
22.102	Each circuit supplied from a d.c. distribution board incorporates an overload protective device (IEC 60335-2-29)	EX WHITEX WATER WAY	t with Nor
22.103	Battery chargers for installing in caravans or similar vehicles constructed so that they can be securely fixed to a support (IEC 60335-2-29)	White White White	N N



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el el	IEC 60335-2-29	t the the steel	The start
Clause	Requirement + Test	Result - Remark	Verdict
23	INTERNAL WIRING	UNITED WALTER WALTER WALTER	Р
23.1	Wireways smooth and free from sharp edges	a st st st	P
Jul.	Wires protected against contact with burrs, cooling fins etc.	ite whi with whi	P
where.	Wire holes in metal well rounded or provided with bushings	MULTER MULTER MULTER	N
nitt w	Wiring effectively prevented from coming into contact with moving parts	Whitek Multer Multer An	N
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges or corners	NITEK WALTER WALTER WALT	IN N
MULL	Beads inside flexible metal conduits contained within an insulating sleeve	THE MILITER WHITE WHILL	No.
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress	Whitek Whitek Whitek W	N C
VEY MY	Flexible metallic tubes not causing damage to insulation of conductors	write while while who	- N
MULL	Open-coil springs not used	TER STEE WITE WITE	Jun N
MITEX	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another	ek jek liek mitek	TEKN
	No damage after 10 000 flexings for conductors flexed during normal use or 100 flexings for conductors flexed during user maintenance	who my writer on	LI KINLI
TEX	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts	No accessible metal parts	Nex Nex
y nite	Not more than 10% of the strands of any conductor broken, and	TEK LIEK	N
TEX	not more than 30% for wiring supplying circuits that consume no more than 15 W	In the second	N
23.4	Bare internal wiring sufficiently rigid and fixed	MULL WILL MILL A	P
23.5	The insulation of internal wiring withstanding the electrical stress likely to occur in normal use	TIEK MIEK MITEK MA	IE PIE
TEX WALT	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or	ar whilet whilet while	K ME NE
WALTER	No breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation	EX WHITEX WHITEX	WITEP
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or	Whitek Whitek White M	N.C.



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recipient	e No WID 13011303923 Fage 30 01 94			
IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
et w	be such that it can only be removed by breaking or cutting	NATER WALLET WALLERY	N	
23.7	The colour combination green/yellow used only for earthing conductors	ITER WALTER WHITE MAI	N S	
23.8	Aluminium wires not used for internal wiring	No aluminium wires	Р	
23.9	No lead-tin soldering of stranded conductors where they are subject to contact pressure, unless	My My M	P RUTE	
	clamping means so constructed that there is no risk of bad contact due to cold flow of the solder	MULT MUT MUT	N TEL	
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)	ALTE WILL WALTER WAL	EX WITTER M	

24	COMPONENTS		P
24.1	Components comply with safety requirements in relevant IEC standards	Write Mulit Muli Mark	WP
WALL	List of components	(see appended table 24.1)	Jr [©] P J
WILTER	Components not tested and found to comply with relevant IEC standard for the number of cycles specified are tested in accordance with 24.1.1 to 24.1.9	ex multex multex multex m	TEKP WY
itex was	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9	white white white white	VP.
ex white	Components not tested and found to comply with relevant IEC standard, components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance	THE WALTER WALTER	P NITEP NI
WILEK M	Lampholders and starterholders not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard	JUNITER WHITE WHITEK WHITE	N C
rice whites	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309	Et liet while while while.	unt P
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14, or	Approved	EK P



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21 ² 21		35-2-29		100
Clause	Requirement + Test	" "	Result - Remark	Verdict
21/2	tested according to annex F	NITE !	INCITED WHITE WALLE WALL	N
24.1.2	Safety isolating transformers complying with IEC 61558-2-6, or		TEX STEX INTEX MILIER	N
e de la companya de l	tested according to annex G		* * *	P
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000, or		antific multi water w	N
VIII W	tested according to annex H		LIER NIER WITE WIL	N
iek inti	If the switch operates a relay or contactor, the complete switching system is subjected to the test		TEX TEX TEX STEE	N. N.
MULIER	If the switch only operates a motor staring complying with IEC 60730-2-10 with the recycles of a least 10 000 as specified, the switching system need not be tested	number of	EX WILLEX MULTER MULTER	N LITER OF
24.1.4	Automatic controls complying with IEC 60730-1 with recycles of operation being:		relevant part 2. The number of	N
LIEK N	- thermostats:	10 000	et tet tet it	N
, , , , , , , , , , , , , , , , , , ,	- temperature limiters:	1 000	hur, Mur, Mur, And	N
il antik	- self-resetting thermal cut-outs:	300	CEX TEX STEX STEX	N
LIEK	- voltage maintained non-self-resetting thermal cut-outs:	1000	of the tip tight	N
TEX	- other non-self-resetting thermal cut- outs:	30	mer me me m	N
W. W	- timers:	3 000	WILL MULL MULL MA	N
CENT C	- energy regulators:	10 000		N
y wites	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D		ner of whit white	N N
Whilek o	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		AND THE MILIER ON	N WAS
24.1.5	Appliance couplers complying with IEC 60	320-1	Approved	Р
WALT	However, appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3		LIFE WALTER WALTER	N N
MULIER	Interconnection couplers complying with IEC 60320-2-2		EX SLIEN WILEY WILLER	USCIEN VIII
24.1.6	Small lamp holders similar to E10 lamphol complying with IEC 60238, the requiremer lampholders being applicable		"NITEK MITEK MAITEK MA	SEX N



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J 2 1	IEC 60335-2-29	the the the the	Serie Ser
Clause	Requirement + Test	Result - Remark	Verdict
24.1.7	If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151	NATER MATER MATER OF	TITEL WITEH
24.1.8	The relevant standard for thermal links is IEC 60691. Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19	H WALTER WALTER WALT	
24.1.9	Relays, other than motor starting relays, tested as part of the appliance	mury mury mur	N N
WALTER WALTER	They also tested in accordance with Clause 17 of IEC 60730-1, the number of operations in 24.1.4 selected according to the relay function in the appliance	ALTER WALTE WALTER WAS	ILEK WEITER W
24.2	Appliances not fitted with:		P
111. 1	- switches or automatic controls in flexible cords	MULL MULL MULL	A P
LIEK	 devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance 	INLIEK WALTER WALTER	WALTE WAR
ex while	- thermal cut-outs that can be reset by soldering, unless	LIEX WIFE WILLEY	LIFEK WALING
TEX	the solder has a melding point of at least 230°C	* * *	et REN
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and having a contact separation in all poles, providing full disconnection under overvoltage category III conditions	MATER MATER WALTER	white white
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1	TEX WHITE OF	TEK WILLER
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance and used accordingly	Whitek whitek white	Was Na
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load	White white whitek	NITEK MILIEK
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42V	EX MULTEX MULTER MUL	
in a	In addition, the motors are complying with the requirements of Annex I	mir mir m	N N



IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
24.7	Hose-sets for connection of appliances to the water mains, complying with IEC 61770 and supplied with the appliance	MULLER MULLER MULLER	MIN N	
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure	ist milities multiple and in	EX UN TEX N	
	One or more of the following conditions are to be m	et:	Note Note	
	- the capacitors are of class P2 according to IEC 60252-1	MULL MULL MULL	W VN	
, who	- the capacitors are housed within a metallic or ceramic enclosure	ALTER WALTER WHILE V	an an N	
MALTE	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm	CEX WILEY WILEY MV.	I'E N N N	
NALTER	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E	BLIEF WHIEF WHIE	Whi Ex Ni	
LIEK	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10	NITER WHITEK WHITEK	WALTE WALTE	

25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS	Р
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:	
LIEK	- supply cord fitted with a plug	N
ilek wa	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance	P
* .	- pins for insertion into socket-outlets	N
25.2	Appliance not provided with more than one means of connection to the supply mains	Р
White Nifek	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown	SE NA
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:	W. N.
MALTE	- a set of terminals allowing the connection of a flexible cord	LITE'N
	- a fitted supply cord	N
MILITE.	- a set of supply leads accommodated in a suitable compartment	N



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01	D	D	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Clause	Requirement + Test	Result - Remark	Verdict
ak Antie	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support	INCITE WALTER WALTER	SITE STEET
MALTER VI	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support	antiek whitek whitek	White mult
IEK WALT	Appliances intended to be permanently connected to fixed wiring that are provided with	NITER MITER WHITER	INLIER WIN NEW
WALTER	a set of terminals allowing the connection of cables of fixed wiring having the nominal cross-sectional areas specified in 26.6, or	EX WILLER WHILEK WA	TEK WITEN
	a set of terminals and cable entries, conduit entries, knock-outs or glands, which allow the connection of the appropriate types of cable or conduit,	Whitek whitek white	No.
et de	shall allow the connection of the supply conductors after the appliance has been fixed to its support.	unit was war	N I I I I I I I I I I I I I I I I I I I
	If a fixed appliance is constructed so that parts can be removed to facilitate easy installation, this requirement is considered to be met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support. In this case, removable parts are to be constructed for ease of reassembly without risk of incorrect assembly or damage to the wiring or terminals.	EX WHITEX WHITEX WHITEX	THE THE WALL
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10	ALL WALTER	until vin N
WALTER	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in 29	The Till we	THE WALLEN
25.5	Method for assemble supply cord with the appliance:	EX NITEX WITE WALT	IN NO
it.	- type X attachment	71, 7, 7	- N
r, M	- type Y attachment	WILL WILL MULL	Whi. WN
Et it	- type Z attachment, if allowed in part 2	The state of	Nt Nt
MU	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords	LIFE WALL WALL W	N N
WALTELY W	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment	ER WHITE MALTE WAS	F M S No.
25.6	Plugs fitted with only one flexible cord	211. 211. 22	N



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IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
25.7 WILLIER OF THE STREET OF	Supply cords, other than for class III appliances, be	ing one of the following types:	Р	
	- rubber sheathed (at least 60245 IEC 53)	at let set	Ň	
	- polychloroprene sheathed (at least 60245 IEC 57)	rie Muri Mur Ann	N	
	- cross-linked polyvinyl chloride sheathed (at least 60245 IEC 87)	it united united whiteh w	N	
	Polyvinyl chloride sheathed: Not used if they are likely to touch metal parts having a temperature rise exceeding 75K during the test of Clause 11.	Whitek whitek whitek whi	SE NIEL	
	- light polyvinyl chloride sheathed cord (at least 60227 IEC 52), appliances not exceeding 3 kg	t it it it	P	
	- ordinary polyvinyl chloride sheathed cord (at least 60227 IEC 53), other appliances	MULL MULL MULL	N	
	Heat resistant polyvinyl chloride sheathed: Not used for type X attachment other than specially prepared cords.	White Main whi was	N	
	- Heat-resistant light polyvinyl chloride sheathed cord (at least 60227 IEC 56), appliances not exceeding 3 kg	TEX WILEY WHILEY WHILEY	N	
	- heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), other appliances	EX STEX OTEX MITER	n ITEX N	
	Supply cords for class III appliances adequately insulated	The The State of	SEK N	
	A voltage of 500 V is applied for 2 min between the conductor and metal foil wrapped around the insulation, the insulation being at the temperature measured during the test of Clause 11. There shall be no breakdown during this test.	white white white	N	
	Battery chargers for charging automobile batteries shall not be fitted with natural rubber sheathed supply cords (IEC 60335-2-29).	In the let	ON N	
25.8	Nominal cross-sectional area of supply cords according to table 11; rated current (A); cross-sectional area (mm²)	TEK TEK TEK NI	N	
25.9	Supply cord not in contact with sharp points or edges	THE THE TEXT TEXT	N	
25.10	Green/yellow core for earthing purposes in Class I appliance	of the man and and	N	
25.11	Conductors of supply cords not consolidated by lead-tin soldering where they are subject to contact pressure, unless	ter while while while w	N _{ell}	
	clamping means so constructed that there is no risk of bad contacts due to cold flow of the solder	Mur. Mur. Mr. Mr.	N	



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IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord	MALIER WALLE	n N	
25.13	Inlet opening so shaped as to prevent damage to the supply cord	TER WHITE WHITE W	N	
	Unless the enclosure at the inlet opening is of insulation material, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided	H WHITEK WHITEK WHITE ITEK TITEK MITEK	er un se Na	
	If unsheathed supply cord, a similar additional bushing or lining is required, unless	Mr. M. W. TEX	ALTER OLITER	
	the appliance is class 0	Vr. My My A	N	
	a class III appliance not containing live parts	cet tet tiet of	TEN N	
25.14	Supply cords adequately protected against excessive flexing	isk tex in	N N	
	Flexing test:	MULL MULL MULL	N N	
LIER	- applied force (N)	EX TEX TEX	NE NE	
	- number of flexings	AUT, AUT, AU	N	
MULICATION OF THE WALLES	The test does not result in:	TEX TEX LIEK	LITE MUN	
	- short circuit between the conductors	ir me m	N	
	- breakage of more than 10% of the strands of any conductor	EX MITER MITER MIT	W.	
	- separation of the conductor from its terminal	TEX TEX STE	N.T	
	- loosening of any cord guard	Mur. Mur. Mur.	N	
	- damage, within the meaning of the standard, to the cord or the cord guard	ALL WALTER	unite un N	
	- broken strands piercing the insulation and becoming accessible	TEX IN	LIER WILLIAM	
25.15 V	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage	t jet sjet mi	EK N	
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged	who whitek whitek	white white	
	Pull and torque test of supply cord, values shown in table 10: pull (N); torque (not on automatic cord reel) (Nm)	LIEK WILLER WILLER	NITER WIN	
	Max. 2 mm displacement of the cord, and conductors not moved more than 1 mm in the terminals	EX WHITEK WHITEK WH	t Nu	
	Creepage distances and clearances not reduced below values specified in 29.1	White white white	W. N.	



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Clause	Requirement + Test	Result - Remark	Verdict
76 ^t .	The state of the s	at at at	56 56 S
25.16	Cord anchorages for type X attachments constructed	and located so that:	N N
it 500	- replacement of the cord is easily possible	a state .	Ket KN
un. Lit	- it is clear how the relief from strain and the prevention of twisting are obtained	with muth my	N
Mrs.	- they are suitable for different types of cord	in wife with with	n Nic
NLTEK W	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless separated from accessible metal parts by supplementary insulation	MULTER MULTER MULTER	white Nite
	- the cord is not clamped by a metal screw which bears directly on the cord	write mail war. W	of N
WAL	- at least one part of the cord anchorage securely fixed to the appliance, unless part of a specially prepared cord	TEX MITTER WALTE WAL	N N
iliek wa	- screws which have to be operated when replacing the cord do not fix any other component, if applicable	Whit whit while with	WALTE WALTER
ek mir	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood	ILY THE THE	TEK NIN
WALTER	- for Class 0, 0I and I appliances: they are of insulating material or are provided with an insulating lining, unless a failure of the insulation of the cord does not make accessible metal parts live	ex murex murex mure	it who were
inrite M	- for Class II appliances: they are of insulating material, or if of metal, they are insulated from accessible metal parts by supplementary insulation	Whitek Whitek Whiteh	MALT NI
25.17	Adequate cord anchorages for type Y and Z attachment	THE WALL OF	L WN
25.18	Cord anchorages only accessible with the aid of a tool, or	THE THE WALL	N
WALTER	so constructed that the cord can only be fitted with the aid of a tool	ex unitex unitex unite	W. N.
25.19	Type X attachment, glands not used as cord anchorage in portable appliances	LIER MIEK WHITEK	MALTE - NE
iek whit	Tying the cord into a knot or tying the cord with string not used	THE LIFE WITH W	LIEX WITH
25.20	Conductors of the supply cord for type Y and Z attachment adequately additionally insulated		N N



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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed to permit checking of conductors with respect to correct positioning and connection before fitting any cover, no risk of damage to the conductors when fitting the cover, no contact with accessible metal parts if a conductor becomes loose, etc.	White white white whi	MI N
	For portable appliances, the uninsulated end of a conductor prevented from any contact with accessible metal parts, unless the end of the cord is such that the conductors are unlikely to slip free	WALTER WALTER WALTER	White Wife
25.22	Appliance inlet:	nur mur mur a	Р
CLIE	- live parts not accessible during insertion or removal	et set set	TEP N
ar a	- Requirement not applicable to appliance inlets complying with IEC 60320-1	ing any and	P
WALL Y	- connector can be inserted without difficulty	NITER INLIER WALTE	WILL PULL
EX	- the appliance is not supported by the connector	70 V	P. P.
vr. Av	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless	INLIES WALTER WALLE	mr mn
EX WALTE	the supply cord is unlikely to touch such metal parts	TEK TEK WEEK	LITER INLINE
25.23	Interconnection cords comply with the requirements for the supply cord, except as specified	er was as as	TEX N
41.	If necessary, electric strength test of 16.3	Mur. Mur. Mr.	N
25.24	Interconnection cords not detachable without the aid of a tool if compliance with the standard is impaired when they are disconnected	MILIER MILIER WALTER	THE TEL
25.25	Dimensions of pins compatible with the dimensions of the relevant socket-outlet. Dimensions of pins and engagement face in accordance with the relevant plug in IEC 60083	TEX WILL	JOSEPH NO N

26	TERMINALS FOR EXTERNAL CONDUCTORS	in the water water was	Р
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors	Whitek whitek whitek	- Prek
IE. WA	Terminals only accessible after removal of a non- detachable cover, except	LIET MILIER WILLER WHITE.	N N
t ite	for class III appliances that do not contain live parts	L ST SET SET	JON J
MULLEX	However, earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection	whitek mittek muttek mit	N'W



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10 M	IEC 60335-2-29	the state of the state of	e aller
Clause	Requirement + Test	Result - Remark	Verdict
26.2	Appliances with type X attachment and appliances for connection of cables of fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless the connections are soldered	TEX WITE WITEX	N
Mer.	the connections are soldered	A WILL MULL MULL ON	N
nliek w	Screws and nuts serve only to clamp supply conductors, except	TEL STEE WILER WILL	F N
iek wali	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors	Wiley Multer Multer Multer	N.C.
L WALTER	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone	EK WILLER WHILEK WHILEK W	TEN M
narie v	Soldering alone used, barriers provided, clearances and creepage distances satisfactory if the conductor becomes free at the soldered joint	Whitek whitek whitek whi	N
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor	UNLIER WHITE WHITEK	WN With
MULL	Terminals for type X attachment and those for connect when tightening or loosening the clamping means:	ction to fixed wiring so fixed that	N
المرتاقة	- the terminal does not loosen	TEX TEX STEX OUT	N
	- internal wiring is not subjected to stress	Mer. My Mr. Mr.	N
	- clearances and creepage distances are not reduced below the values in 29	TEY WALTER WALTER	N
MALTER	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified. Nominal diameter of thread (mm); screw category; torque (Nm)	A WILLER MATER MATER MA	ALT N W
26.4	Terminals for type X attachment, except those with a specially prepared cord, and those for connection to fixed wiring, no special preparation of conductors required, and so constructed or placed that conductors prevented from slipping out	Whitek whitek whitek whitek	Niti
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard	EX WHITEX WHITEX W	LIEN W
	Stranded conductor test, 8 mm insulation removed	alter wife wall wall	N



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	IEC 60335-2-29			
Clause	Requirement + Test	Result - Remark	Verdict	
EX MILTE	No contact between live parts and accessible metal parts and, for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only	ILEK MATER MATER M	and an N	
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with required cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm²)	A MULTER WALTER WALTER	et was set N	
LET I	Terminals only suitable for a specially prepared cord	The second second	N+	
26.7	Terminals for type X attachment accessible after removal of a cover or part of the enclosure	NITE WALL WILL A	W W N	
26.8	Terminals for the connection to fixed wiring, including the earthing terminal, located close to each other	the white wh	it was Nati	
26.9	Terminals of the pillar type constructed and located as specified	murr murr murr	W N	
26.10 VI	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless conductors ends fitted with a device suitable for screw terminals	ITEK WITEK WITEK	WILL WIN	
TEX	Pull test of 5 N to the connection	s at at	Et CETN	
26.11	For type Y and Z attachment: soldered, welded, crimped and similar connections may be used	MILL MILL MA	An N	
YELL W	For Class II appliances: the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone	White white white	TEL STEE	
ex white,	For Class II appliances: soldering, welding or crimping alone used, barriers provided, clearances and creepage distances satisfactory if the conductor becomes free	The property of	Lifet as Lifet as	

27	PROVISION FOR EARTHING	Mur, Aur All An	Р
27.1	Accessible metal parts of Class 0I and I appliances, permanently and reliably connected to an earthing terminal or contact of the appliance inlet	WHITEK WHITEK WHITEK WHITE	PIL
, m	Earthing terminals not connected to neutral terminal	LIER WITE WALL WALL	W. b M
k Malife	Class 0, II and III appliance have no provision for earthing	Class II	LIEYP
CLIEK	Safety extra-low voltage circuits not earthed, unless protective extra-low voltage circuits	with the test of	EX P
27.2	Clamping means adequately secured against accidental loosening	ALL ALL ALL ALL	N



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01	IEC 60335-2-29	Dari Dari ani ani	1, 2, 11
Clause	Requirement + Test	Result - Remark	Verdict
	Terminals used for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and	MATER MALIE MALIE MALE	N
	do not provide earthing continuity between different parts of the appliance	t at let let	N
VIII.	Conductors cannot be loosened without the aid of a tool	white with with w	N
27.3 W	For detachable parts that are plugged into another part of the appliance, and having an earth connection, the earth connection made before and separated after current-carrying connections when removing the part	White while white white	MITEL
WALL	For appliances with supply cord, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage	TEX WHITE WHITE	N N
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal	Mitty Miles Auto Au	N
ek nit	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure	inties white white whi	WN
MALIEK	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, thickness at least 5 µm	et alter outer uniter	N TEK N
unliek w	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure	Whitek whitek whitek wh	NUTTE N
TEX	In case of aluminium alloys precautions taken to avoid risk of corrosion	THE MILIER WALTE	NEW
27.5	Low resistance of connection between earthing terminal and earthed metal parts	TEX MITER	NALTEN SI
	This requirement does not apply to connections providing earthing continuity in the protective extralow voltage circuit, provided that clearances of basic insulation are based on the rated voltage of the appliance	Anries anries anries an	E NOTE
EK J	Resistance not exceeding 0,1 Ω at the specified low-resistance test	No accessible earthed parts	N
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.	Not a hand-held appliance	N
MITEK	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit	Whitek multek multek mu	N N



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Clause	Requirement + Test	Result - Remark	Verdic
10 ^t 1		a a at at	1 3
28	SCREWS AND CONNECTIONS	WHILE MILL MULL MULL	Р
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses	TEX WALTER WALTER WALTER	Р
WALTE.	Screws not of soft metal liable to creep, such as zinc or aluminium	MATER WHITER WHITER OF	Pin
LIEK O	Diameter of screws of insulating material min. 3 mm	EX TEX ITEX IT	N
iek waii	Screws of insulating material not used for any electrical connection or connections providing earthing continuity	TEK WILEY WILEY WILEY	P
WALTER	Screws used for electrical connections or connections providing earthing continuity screw into metal	Et Mitet Whitek Whitek	ALTEN -N
WALTER V	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation	Whitek whitek whitek wh	N V
ir while	Type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw can impair basic insulation	Writes whites white white	White .
	For screws and nuts; test as specified	(see appended table 28.1)	LΡ
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless	H WILLER WILLER WILLER	Por
IEK IN	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material	who we start start	N
t Jet	This requirement does not apply to electrical connection which:	ctions in circuits of appliances	N
W.E.K.	30.2.2 is applicable and that carry a current not exceeding 0,5 A	m in m	N
MUT.	30.2.3 is applicable and that carry a current not exceeding 0,2 A	MULTER WALTER WALLE AND	N
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together	MULTER WATER WHITE WALL	N
WALTER	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread	EX WILEX MULEX MILLER	M N
NITEX V	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer	TITEL STEEL MILITER MAN	Set N
IEK N	Thread-cutting, thread rolling and space threaded scr providing earthing continuity provided it is not necessary		N



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	IEC 60335-2-29			
Clause	Requirement + Test	Result - Remark	Verdict	
in the	- in normal use,	Write Writer Writer	an an N	
et ste	- during user maintenance,	at let let	JEL JAN	
TEX.	- when replacing a supply cord having a type X attachment, or	The same of	N	
u.	- during installation	I WALL WALL MAN	ALL N	
nliek w	At least two screws being used for each connection providing earthing continuity, unless	WIFE WALTER WALTER	WILL WILE	
TEKWI	the screw forms a thread having a length of at least half the diameter of the screw	TIEX WIFEX WIFEX	untitle untint	
28.4 TEL	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity	EX WILEX MULTER MU	THE WATER	
oint v	Rivets for electrical connections or connections providing earthing continuity secured against loosening if subjected to torsion	white white white	NA NATER	

29	CLEARANCES, CREEPAGE DISTANCES AND SOI	LID INSULATION	P
LIEK	Clearances, creepage distances and solid insulation withstand electrical stress	at the the the	P
INLIEK V	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies	while while white whi	N N
IEX IN	The microenvironment is pollution degree 1 under type 1 protection	The state of the	N
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3	THE WALLEY	N
WALTER	These values apply to functional, basic, supplementary and reinforced insulation	* NIFEK MILEK MILEK WI	I NA
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless	(see appended table 29.1)	P. P. F. WALTE
M	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14	Hite White white white	N. N
WILLER .	However, if the construction is affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable	WALTER WHITE WALTER WA	N.V
LIE.	Impulse voltage test not applicable:	TEX TEX TEX STE	Ń



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12 Tally	IEC 60335-2-29	t the life of	in our
Clause	Requirement + Test	Result - Remark	Verdict
3, 4,	- when the microenvironment is pollution degree 3	UNITED WALTER WALTER WALTER	N N
ik white	- for basic insulation of class 0 and class 01 appliances	TEX BUTER MUTER MUTER	SINTEN S
Alt.	Appliances are in overvoltage category II		υP
whi.	Clearances less than specified in table 16 not allowed for basic insulation of class 0 and class 0 appliances,	White white white w	N
	or if pollution degree 3 is applicable	Mr. Mr. Mr. M.	N
IE WALT	Compliance is checked by inspection and measurements as specified	NIFEK WALTER WALTER WALTER	WILL D.
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage	EX WALTER WALTER	WALLE P
NALITE V	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1mm if the microenvironment is pollution degree 1	Whitek Whitek Whitek W	N. C
it was	Lacquered conductors of windings considered to be bare conductors	write mail mail was	WP.
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16	(see appended table 29.1)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, but using the next higher step for rated impulse voltage	(see appended table 29.1)	n TE Par
int w	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation	White white white white	P
29.1.4	Clearances for functional insulation are the largest v	ralues determined from:	Р
	- table 16 based on the rated impulse voltage:	(see appended table 29.1)	Р
MULT	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz	A MULTER WHITER WHITE W	N.
ALTER ON	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz	WILER OWIER MUTER WAT	NE
EX WALT	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless	LIEK WHITEK WHITE	F WILLIAM
NITE	the microenvironment is pollution degree 3, or	et let let let	N
TEX	the distances can be affected by wear, distortion, movement of the parts or during assembly	were the the	N
TEX .	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited	MILL MILL MAL M	Р



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J. C. O	IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdic		
- July	Lacquered conductors of windings considered to be bare conductors	Write Mriting White Miles	Р		
White	However, clearances at crossover points are not measured	TEX STEX STEX SISTERS	P		
MUTER	Clearance between surfaces of PTC heating elements may be reduced to 1mm	of the state state in	SELV.		
29.1.5	Appliances having higher working voltages than rate insulation are the largest values determined from:	ed voltage, clearances for basic	Р		
<i>"</i>	- table 16 based on the rated impulse voltage:	(see appended table 29.1)	Р		
iek wali	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz	NIFEK MITER MITER WITER	UNIN		
NALTER	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz	Et IET NIET MIET N	JEN N		
unliek v	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation	whitek whitek whitek whi	EK N VINT		
it walif	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation	inch whilet whilet whilet,	MALITER .		
WILLER M	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation	MULTER WHITE WALTER WALTER	Non Muli		
TEX WAY	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage	TEK WITEK WITEK	N. S. WILLER		
WALTER V	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation based on the working voltage used as the rated voltage in table 15	H WHITEH WHITEH WHITEH WH	N N N		
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree	(see appended table 29.2)	P		
TEX	Pollution degree 2 applies, unless	, L A A	P		
Mur	precautions taken to protect the insulation; pollution degree 1	MULLE MULL MULL W	N		
Wright A	insulation subjected to conductive pollution; pollution degree 3	MILIER WHITE WHITE WHI	N		



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. 1 ²² 11	IEC 60335-2-29	the state of the state of	the Marie
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by inspection and measurements as specified	Write Mills Mary Mury	√ ^{ill} P
29.2.1	Creepage distances of basic insulation not less than specified in table 17	TER WATER WATER WALL	JAP D
whitek wh	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17	Considered	IN PORT
TEK WALTER	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14	NITER WHITER WHITE	N. N. N. L.
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or	(see appended table 29.2)	P WALL
	Table 2 of IEC 60664-4, as applicable:	111 11	Not
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or	(see appended table 29.2)	WP
211.	Table 2 of IEC 60664-4, as applicable	re when were were	N
29.2.4	Creepage distances of functional insulation not less than specified in table 18	A WILLER WHILER	IN THE PUNI
unitek w	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18	Considered	TE PITE
ex whitex	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited	TEX WILLER	VALUE N
29.3	Supplementary and reinforced insulation having adequate thickness, or a sufficient number of layers, to withstand the electrical stresses	* WALTER WHITER WHITER W	NIEK PULL
NITE. NO	Compliance checked by:	TEX TEX STEE IN	Р
	- measurement, in accordance with 29.3.1, or	Mus. Mrs. Ans. An	Р
IL WALL	- an electric strength test in accordance with 29.3.2, or	LIFET WHITEK WHITE	MILL P
WALTER	- an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3	EX MITEX WAITER WAITER	N TEN
White w	- for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or	White white white wh	N



	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
5° 5	E all was all	3 1 1 1 1	
er witer	 as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz 	Marie Marie Marie Marie	- N
29.3.1	Supplementary insulation having a thickness of at least 1 mm	t the the the	P
WILL .	Reinforced insulation having a thickness of at least 2 mm	must more mis	Р
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation	White White while we	P
The Wali	Supplementary insulation consisting of at least 2 layers	ALTER WALTER WALTER WALT	in P
NITE	Reinforced insulation consisting of at least 3 layers	Insulation for transformer	ITE P
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by	of the rule	N
21/2 2	the electric strength test of 16.3	while man was a	N
LIER WA	If the temperature rise during the tests of Clause 19 does not exceed the value specified in Table 3, the test of IEC 60068-2-2 is not carried out	UNITER WHITEK WHITEK WH	N CO
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19	TEX WITER WITER WITE	N. N.

30	RESISTANCE TO HEAT AND FIRE		P
30.1	External parts of non-metallic material,	White white white was	Р
TEX	parts supporting live parts, and	the set of the	P
	thermoplastic material providing supplementary or reinforced insulation,	at the win	Р
Mer	sufficiently resistant to heat	The state of the state of	P m
TEX	Ball-pressure test according to IEC 60695-10-2	and the set of	(P
WILEK W	External parts: at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 75°C, whichever is the higher; temperature (°C)	(see appended table 30.1)	PILITER
TEK WAL	Parts supporting live parts: at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125°C, whichever is the higher; temperature (°C)	(see appended table 30.1)	uni Pt w
Whitek.	Parts of thermoplastic material providing supplementary or reinforced insulation, 25°C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C)	(see appended table 30.1)	P WALTE



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لەر ئىكى	IEC 60335-2-29		ale Li
Clause	Requirement + Test	Result - Remark	Verdict
30.2	Parts of non-metallic material adequately resistant to ignition and spread of fire	united white white white	Р
ane.	This requirement does not apply to:	LIER RUTER INLIE MINIS	P
WILLER.	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or	A MUTTER MUTTER MUTTER M	TEX P
nlite w	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance	WALTER WALTER WALTER WALTE	N
ie wali	Compliance checked by the test of 30.2.1. In addition:	NIET WHITEK WHITEK WHITE	P
CLIER	- attended appliances, 30.2.2 applies	at let tet itelt	N.
12,	- unattended appliances, 30.2.3 applies	THE ME THE T	Р
CLIER	Appliances for remote operation, 30.2.3 applies	TEX TEX STEX ON	N
	Base material of printed circuit board, 30.2.4 applies	Mur Mur Mir M.	Р
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550 °C	(see appended table 30.2-1)	P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or	LITER WHITER WHITER	IN TO
WALTE	the material is classified at least HB40 according to IEC 60695-11-10	EX MITER WITER WITE WI	Nu
INLIEE W	Parts for which the glow-wire test cannot be carried out meet the requirements in ISO9772 for category HBF material	JUNITER WHITER WHITER WHI	N.T.
30.2.2	Appliances operated while attended, parts of nonmetallic material supporting current-carrying connections, and	Not applicable for IEC 60335-2-29	WN N
TEX TEX	parts of non-metallic material within a distance of 3 mm of such connections,	m m m	N
W	subjected to the glow-wire test of IEC 60695-2-11	in life while while who	N
TEX	The test severity is:		- N
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation 650 °C, for other connections	multiplication with the contraction of the contract	N
ant.	Glow-wire applied to an interposed shielding material, if relevant	THE WATER WITE WALL	N
MULL	The glow-wire test is not carried out on parts of mater wire flammability index according to IEC 60695-2-12		No
Write A	-750°C, for connections carrying a current exceeding 0,5A during normal operation	WHIER WHIER WHIEF WHI	N
JEK N	-650°C, for other connections	at let let let	N



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Clause	Requirement + Test	Clause Reguirement + Test Result - Remark			
Clause	requirement i rest	Tresuit - Tremain	Verdict		
in the	Test as specified for an interposed shielding material	WHITE WALL WALL WALL	ZII N		
JE 38	The glow-wire test is also not carried out on small pa	arts. These parts are to:	N		
M. ITEK	- comprise material having a glow-wire flammability index of at least 750 °C, or 650 °C as appropriate, or	of the tex	N		
20,	- comply with the needle-flame test of Annex E, or	Weign Aug Aug a	N		
nliek w	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10	LIER STER STER WILL	NIE		
cet s	Glow-wire test not applicable to conditions as specified	We will be the	N		
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2	(see appended table 32.2-1)	P		
MUT.	Tests not applicable to conditions as specified	CEX ALTER WITE MALTE	N PM		
30.2.3.1	Parts of insulating material supporting connections carrying a current exceeding 0,2A during normal operation, and	Whitek Milek Multer Wh	EF P		
	parts of non-metallic material within a distance of 3mm,	NUTER WILER WALTER WALT	AN SER		
ex white	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850°C	TEX LIEX SLIEX MITER	P		
WALTER	Glow-wire test not carried out on parts of material classified as having a glow-wire flammability index of at least 850°C according to IEC 60695-2-12	EX OUTEX MUTEX MUTER OF	N TEKN		
initek m	Glow-wire test not carried out on small parts that comply with the needle-flame test of Annex E or on small parts of material classified as V-0 or V-1 according to IEC 60695-11-10	WALTER WALTER WALTER WAL	P.T.		
10,	Test as specified for an interposed shielding material	Wr. Mur. Mur.	An P		
30.2.3.2	Parts of non-metallic material supporting current- carrying connections, and	TEX WILLER	NATE P		
MITER	parts of non-metallic material within a distance of 3mm,	t lifet olifet olifet ou	VIET P		
et.	subjected to glow-wire test of IEC 60695-2-11	1111 1111	Р		
in M	The test severity is:	SITER WITER WITE WALL	WP.		
iek alif	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation	at at all all	P		
11,	- 650 °C, for other connections	in mer mer me	N		
MALTER	Glow-wire applied to an interposed shielding material, if relevant	Et LIET WIET WIFE.	N CON		
MITEK 1	However, the glow-wire test of 750 °C or 650 °C as a on parts of material fulfilling both or either of the following the state of the s		X N		
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:	Mur Mur Mr 200	N		



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. (C ^{LTV})	IEC 60335-2-29	t tet tet tet tet out	" WIN
Clause	Requirement + Test	Result - Remark	Verdict
it in	775 °C, for connections carrying a current exceeding 0,2 A during normal operation	uniter uniter uniter unite	N
Mec	675 °C, for other connections	THE OUTER MALLE WALLE	N
other .	- a glow-wire flammability index according to IEC 60695-2-12 of at least:	et the state state in	TEKN . WY
LIEK	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation	We all the let like	N
	- 650 °C, for other connections	Mur, Mur, Mur, Mr.	N
iek anii	The glow-wire test is also not carried out on small p	arts. These parts are to:	N
t white	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or	ter with my my miles	N N
JALTEK V	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or	Whitek whitek whitek whi	EK N
JEK N	- comply with the needle-flame test of Annex E, or	A LET LET LE	N
* 1°	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10	mer mer mer m	N
	The consequential needle-flame test of Annex E appendix encroach within the vertical cylinder placed above the and on top of the non-metallic parts supporting curresparts of non-metallic material within a distance of 3 parts are those:	ne centre of the connection zone ent-carrying connections, and	TEL M
ICIT W	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or	White white white whi	N
K NITE	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or	net stranger	WIN N
MITEK.	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or	* Wiley Writer Marier And	IEK NU
LIEK N	- small parts for which the needle-flame test of Annex E was applied, or	THE STEEL STIER WITE	- N.E
EK OLT	- small parts for which a material classification of V-0 or V-1 was applied	of the text till	N
TEX	However, the consequential needle-flame test is no parts, including small parts, within the cylinder that a		N
MU	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or	MILL WALL WALL W	N
1	- parts comprising material classified as V-0 or V-1		N



Ν

Reference No.: WTD15D1136592S Page 51 of 94 IEC 60335-2-29 Clause Requirement + Test Result - Remark Verdict parts shielded by a flame barrier that meets the N needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10 30.2.4 Base material of printed circuit boards subjected to Approved PCB used Ν needle-flame test of annex E Test not applicable to conditions as specified Ν 31 RESISTANCE TO RUSTING Ν Relevant ferrous parts adequately protected against rusting 32 RADIATION, TOXICITY AND SIMILAR HAZARDS Р Р Appliance shall not emit harmful radiation, present a toxic or similar hazard due to their operation in normal use Relevant tests specified in part 2, if necessary Ν ANNEX A (INFORMATIVE) Ν **ROUTINE TESTS** N Description of routine tests to be carried out by the manufacturer N Test voltage of electric strength test between the input and output circuits (IEC 60335-2-29) В ANNEX B (NORMATIVE) Ν APPLIANCES POWERED BY RECHARGEABLE BATTERIES The following modifications to this standard are Ν applicable for appliances powered by batteries that are recharged in the appliance Ν This annex does not apply to battery chargers N 3.1.9 Appliance operated under the following conditions: N -the appliance, supplied by its fully charged battery, operated as specified in relevant part 2

cannot operate

-the battery is charged, the battery being initially discharged to such an extent that the appliance



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Clause	IEC 60335-2-29	Result - Remark	\/and:-4
Clause	Requirement + Test	Result - Remark	Verdict
ex united	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2	itest milites milites m	N N
	If the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed	MULTER WHITE WHITE	white white
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable	TEX SIEK NIEK	WILLER WILLIAM
5.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances	et set set	TEX LITE, N
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals	Wifet Wifet Will	A ME EX MI
LIEK	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006	MILER WHITER WHITER	WALTE WALTER
7.12	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information	LIEK WALTER WHITER W	NITER MIN
MULL	Details about how to remove batteries containing materials hazardous to the environment given	ek whitek whitek whi	in in Na
7.15	Markings placed on the part of the appliance connected to the supply mains	MILEK WHITEK WHITEK	WILL MILE
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment	ner Jak whitek	unties Nes
W.	If the appliance can be operated without batteries, double or reinforced insulation required	An An An	N N
11.7	The battery is charged for the period described	A WILL MULL MULL	W No
19.1	Appliances subjected to tests of 19.101, 19.102 and 19.103	TER STER WITER	antie Ne
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged	The Tex Tex	NITEL MI
19.B.102	Short-circuiting of the terminals of the battery, being fully charged, for appliances having batteries that can be removed without the aid of a tool	et who will a	SEEK WESTERN
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction	Whitek Whitek White	MI H N



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الو محال	IEC 60335-2-29	er the strength out	arr
Clause	Requirement + Test	Result - Remark	Verdict
21.B.101	Appliances having pins for insertion into socket- outlets have adequate mechanical strength, checked according to procedure 2 of IEC 68-2-32	INCIDENTAL WALL WALL WALLEY	N
- Lifet	Part of the appliance incorporating the pins subjecte of IEC 60068-2-32, the number of falls being:	d to the free fall test, procedure 2,	N
24, 3	- 100, the mass of part does not exceed 250 g	I will mir mer m	N
ALTEK IN	- 50, the mass of part exceeds 250 g	t fet fet lifet alle	N
1614 J	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met	Whit was the let	N
22.3	Appliances having pins for insertion into socket- outlets tested as fully assembled as possible	white must make must	WIN N
25.13	An additional lining or bushing not required for interconnection cords operating at safety extra-low voltage	EX WHILE MULTER WHILE W	
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies	while with while with	N
ir in	For other parts, 30.2.2 applies	WILE WILL MULT MULT	M
	ALTER AND NETE A		TEX
C WILL	ANNEX C (NORMATIVE) AGEING TEST ON MOTORS	file must must must	N
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding	THE WITTER WITTER WITTER AND	ik Wil
10 10	A A LEX TEX TUTE WITE MILE	Mr. Mr. Mr. M.	10,
DEL	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS	THE MILIER WAITER	N N
whitek	Applicable to appliances having motors that incorporate thermal motor protectors	itek militek	NITIEN S
EX	TEX TIEX WILL MULL MULL MIN M		LEX.
Elv. 2	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST	IEE WHITE WHITE WHIT WAS	N
Vill Mu	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:	WHITEK WHITEK WHITEK WHITE	N ²
7	Severities	the The The William	N
TEK	The duration of application of the test flame is $30 \text{ s} \pm 1 \text{ s}$	the me me me	N
9 🐠	Test procedure	THE MULT WALL WALL W	N
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1	E WHITEK WHITEK WHITEK WHI	N C



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	IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict		
9.2	The first paragraph does not apply	MITE MILITER WILLIAM	an N		
ek wate	If possible, the flame is applied at least 10 mm from a corner	TEX SLIEK WILER ON	LITELY DELT N		
9.3	The test is carried out on one specimen		A-N		
whitek	If the specimen does not withstand the test, the test may be repeated on two further specimens, both withstanding the test	LEK TEK TEK	N N		
11	Evaluation of test results	MUL MUL MUL	N N		
IET INL	The duration of burning not exceeding 30 s	TEX TEX TEX	N N		
t JEY	However, for printed circuit boards, the duration of burning not exceeding 15 s	ing any any	N		

F LIFE V	ANNEX F (NORMATIVE) CAPACITORS	EX WALTER WAL EX NA
EX WALTE	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:	MILIER WHITE WHITEK
1.5	Terminology	L L
1.5.3	Class X capacitors tested according to subclass X2	MALL WALL NA
1.5.4	This subclause is applicable	L K N
1.6	Marking	In in in
TEX S	Items a) and b) are applicable	NEX NEX
3.4	Approval testing	mr mr mN
3.4.3.2	Table 3 is applicable as described	TEX JEX
4.1	Visual examination and check of dimensions	N N
CLIER	This subclause is applicable	ET JET N
4.2	Electrical tests	N N
4.2.1	This subclause is applicable	ALTER PLIE NAT
4.2.5	This subclause is applicable	N N
4.2.5.2	Only table IX is applicable	WILL WILL MILL
	Values for test A apply	N
WILL	However, for capacitors in heating appliances the values for test B or C apply	TE WALL ME NO
4.12	Damp heat, steady state	ATTER NO
	This subclause is applicable	N



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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
ister surv ister	Only insulation resistance and voltage proof are checked	MULTER WILLIAM WILLIAM	all All N
4.13	Impulse voltage	CLIEB OLITER MALTER AND	2 N 2
At.	This subclause is applicable	31 27 3	A AN
4.14	Endurance	LIER WILL WALL WAL	n Nu
INLIEK W	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 applicable	Et stet stet mile	NITE WITE
4.14.7	Only insulation resistance and voltage proof are checked	Will the lifet	NITEK NE
, , , ,	Visual examination, no visible damage	ayer the min	N
4.17	Passive flammability test	TEX TEX WIFE W	JEN NIN
*	This subclause is applicable	10 20 20	N
4.18	Active flammability test	LIEK OLIEK MITE	N' N'
et	This subclause is applicable	11, 21, 2	N

G WALTER	ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS	THE LIES NITES WITH	JALI P.
NITEK.	The following modifications to this standard are applicable for safety isolating transformers:	et tet tet stet stet o	TEXP
7	Marking and instructions	Mur. My All An	Р
7.1	Transformers for specific use marked with:	TEX TEX STER INTE	Р
TEK STE	-name, trademark or identification mark of the manufacturer or responsible vendor	WIT WITH THE TEXT	P
10,	-model or type reference	WE. MUT MILE	У Р
17	Overload protection of transformers and associated ci	rcuits	J P
TEX	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1	Mr Mr Mr	N
22	Construction	White White White WA	P
NITEK WAT	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable	OLIEK WILEK WALTER WALTE	PIE
29	Clearances, creepage distances and solid insulation	The set set	Р
29.1, 29.2 and 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply	HILL MILL WILL WILL	un P
WILL .	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances	THE WALTER WALTER WALTER W	Pyr
LIEK SLI	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed	MULTE WALL WALL WALL WALL WALL WALL WALL WAL	P



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.11 ^{LT (27} . 11	IEC 60335-2	-29 _{Je} t _{Je} t Jet Jet	aliter will
Clause	Requirement + Test	Result - Remark	Verdict
ek muter	For safety isolating transformers subjected to periodic voltages with a frequency exceeding kHz, the clearances, creepage distances and insulation values specified in IEC 60664-4 are applicable, if greater than the values specified items 2a, 2c and 3 in table 13 of IEC 61558-1	solid	WITE WIP
H ^J E ⁺ .	ANNEX H (NORMATIVE)	must mer mer me	1 N
	MAINEX II (INOINIMITIVE)		10

HIER	ANNEX H (NORMATIVE) SWITCHES	TER WILL WAS
TEX N	Switches comply with the following clauses of IEC 61058-1, as modified:	N N
501 	-The tests of IEC 61058-1 carried out under the conditions occurring in the appliance	ALL ALL N
MUT	-Before being tested, switches are operated 20 times without load	mi y Ns
8	Marking and documentation	in My
.EX	Switches are not required to be marked	N
sir wi	However, switches that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference	WALL WAY
13	Mechanism	n N
NLTER	The tests may be carried out on a separate sample	TEN TEN
15	Insulation resistance and dielectric strength	N
15.1	Not applicable	TEL NI
15.2	Not applicable	N
15.3	Applicable for full disconnection and micro-disconnection	Will WW
17	Endurance	THE TIEN
TEX	Compliance is checked on three separate appliances or switches	N
	For 17.2.4.4, the number of cycles is 10 000, unless otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335	
ilik mur	Switches for operation under no load and which can be operated only by a tool and switches operated by hand that are interlocked so that they cannot be operated under load, are not subjected to the tests	WALTER WATER
WALTE	Subclauses 17.2.2 and 17.2.5.2 not applicable	NICE NOTE NO
WALTEX.	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1	TEK UN W



California	IEC 60335-2-29			
Clause	Requirement + Test	Result - Remark	Verdict	
EK MITE	Temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1	INTER WALLER WHITE WHITE	W N	
20	Clearances, creepage distances, solid insulation and assemblies	coatings of rigid printed board	N	
WILEK M	This clause is applicable to clearances and creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in table 24	whitek multek multek mult	N. N. TE	

l Vynlife Vynlife	ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE F VOLTAGE OF THE APPLIANCE	RATED
WILLER .	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:	TEX WIT EX N
8	Protection against access to live parts	N.C.
8.1	Metal parts of the motor are considered to be bare live parts	N N
11	Heating	W. N
11.3	Temperature rise of the body of the motor is determined instead of the temperature rise of the windings	TEX NO.
11.8	Temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material	er with whi
16	Leakage current and electric strength	an and
16.3	Insulation between live parts of the motor and its other metal parts not subjected to the test	SPLIEF STON
19	Abnormal operation	N N
19.1	The tests of 19.7 to 19.9 not carried out	IL NU NU
19.101	Appliance operated at rated voltage with each of the following fault conditions:	- N
U. M	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit	W NN
MULT	- short circuit of each diode of the rectifier	anti anti
	- open circuit of the supply to the motor	N
MUL	- open circuit of any parallel resistor, the motor being in operation	No.
MALTE	Only one fault simulated at a time, the tests carried out consecutively	N N
22	Construction	N [©]



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17 LT E 81	IEC 60335-2-29	et jet jet jet jiet	" MITEL MALIE
Clause	Requirement + Test	Result - Remark	Verdict
22.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation	DIEK MATEK MATEK AN	TEX ALTER W
WILLER.	Compliance checked by the tests specified for double and reinforced insulation	A STEEL WITER WATE	TEKN TEKN
18th	LIEX STEEL WITE MILE MULL AND MILE		TEX TE
1 1	ANNEX J (NORMATIVE)	White White White	Wr. W

Û, 7	ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS	Mr. Mr. N
CT WAS	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:	nite unit unin u
5.7	Climatic sequence	M. A. N.
WALTER	When production samples are used, three samples of the printed circuit board are tested	ANTER WITER WATE
5.7.1	Cold	Not
Vr. M	The test is carried out at -25°C	wer we will
5.7.3	Rapid change of temperature	at at an
M	Severity 1 is specified	Fr. My N Con
5.9	Additional tests	et jet jetn ji
'n,	This subclause is not applicable	M. M. N.

K	ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES	Mar Mar And And	Р
* 71	The information on overvoltage categories is extracted from IEC 60664-1	Mr. Mr.	P
MUT	Overvoltage category is a numeral defining a transient overvoltage condition	In the man of	P JIP
WALTE	Equipment of overvoltage category IV is for use at the origin of the installation	White White Mulies Wh	N
ALTER.	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements	WHITEK WHITEK WHITEK WHITEK	WILLIEK OF
k Whit	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation	VER WILEY WILEY WILLER	P
WILLEX	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies	MULTER MALTER MALTER WAL	N TE



appropriate low level

Clause Requirement + Test Result - Remark Verdict

Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an

L ANNEX L (INFORMATIVE)
GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE
DISTANCES

Sequences for the determination of clearances and creepage distances

M	ANNEX M (NORMATIVE) POLLUTION DEGREE	EX WALTER WILLEPAN
WALTER	The information on pollution degrees is extracted from IEC 60664-1	WALTER WALTE
TEX.	Pollution	Part Part
	The microenvironment determines the effect of pollution on the insulation, taking into account the microenvironment	TEX SITEX WIFE
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar	P TEX TEX
ALEK AU	Minimum clearances specified where pollution may be present in the microenvironment	Mr. M. Pm.
urci.	Degrees of pollution in the microenvironment	until unt up
LIEK	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:	he P
ex whit	- pollution degree 1: no pollution or only dry, non- conductive pollution occurs. The pollution has no influence	EX WALTER VALLEN
WALTER	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected	WALTER WALTER
LEX MU	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected	TER MITTER MITTER
MULTE	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow	Whitek of the North

N_+	ANNEX N (NORMATIVE)	No.+
WITE AND IN	PROOF TRACKING TEST	



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. (2)	IEC 60335-2-29	t tet tet te	" White While
Clause	Requirement + Test	Result - Remark	Verdict
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:	INTER MILITA MALIER	and and
7	Test apparatus	LIER RUTER MATERIAL	N S
7.3	Test solutions		, N
Mr.	Test solution A is used	ik white white whit	The Nic
10	Determination of proof tracking index (PTI)	at at at	- N
10.1	Procedure	WHITE WALL WALL	M. W
16x ~1	The proof voltage is 100V, 175V, 400V or 600V:	A ST SET	N ⁺
7/1	The last paragraph of Clause 3 applies	VIII MUTI MUTI A	n N
ALTE!	The test is carried out on five specimens	et et det	SEL SEN
NALTEK V	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100	iffet wifet with	X whi ex whi
10.2	Report		N
r. w	The report stating if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V	UNLIER WALTER WALTER	MUT. M.N.

O	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30	JELP JEL
TEX	Description of tests for determination of resistance to heat and fire	P

P	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES	NUN
WALT	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WDaE	N W
WILLER D	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WdaE, if liable to be connected to a supply mains that excludes the protective earthing conductor	N
5	General conditions for the tests	N
5.7	The ambient temperature for the tests of Clauses 11 and 13 is 40 +3/0	N N
7.11	Marking and instructions	Non
7.1	The appliance marked with the letters WDaE	→ N
7.12	The instructions state that the appliance is to be supplied through a RCD having a rated residual operating current not exceeding 30 mA	N

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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
EK MILTE	The instructions state that the appliance is considered to be suitable for use in countries having a warm damp equable climate, but may also be used in other countries	unities whites whites	SUPER DEFENDE
11	Heating	a at all a	# N
11.8	The values of Table 3 are reduced by 15 K	Muri Mur Mur	N ₂
13	Leakage current and electric strength at operating ter	mperature	NO.
13.2	The leakage current for class I appliances not exceeding 0,5 mA	mur mur mur	TEX TEX
15	Moisture resistance	White White Whi.	W. N
15.3	The value of t is 37 °C	at at alt.	ACT OF N
16	Leakage current and electric strength	The War WA	N _n
16.2	The leakage current for class I appliances not exceeding 0,5 mA	MITER WHITER WHITE	THE WALL
19	Abnormal operation	t at at	Net
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3	Write Mary Mary	nn nn
MUL	THE THE	LIER WIFE WALTER	VII WAL A
Q A	ANNEX Q (INFORMATIVE)	23	A N

	ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS	TEKN TO
	Description of tests for appliances incorporating electronic circuits	N

R	ANNEX R (NORMATIVE) SOFTWARE EVALUATION	THE LIFE NITER	N.X
ex whi	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex	THE WHITEK	N Life Wh
R.1	Programmable electronic circuits using software	y tex tiex stier in	N
ALTEK S	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard	united whited white white	N Whitek
R.2	Requirements for the architecture	The Multi Aut. Aug. 0	N
WALTE'S WALTE'S	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software	EX WHITEK WHITEK WHITEK WIL	TEN WALTER



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Claves	Deguirement L Test	Deput Demont	Monali -	
Clause	Requirement + Test	Result - Remark	Verdic	
R.2.1.1	Programmable electronic circuits requiring software control the fault/error conditions specified in table R structures:		W N	
JEF.	- single channel with periodic self-test and monitoring	The the the	N	
ap.	- dual channel (homogenous) with comparison	anite with any of	N	
TEX	- dual channel (diverse) with comparison	A CH ALL S	N N	
iek wi	Programmable electronic circuits requiring software control the fault/error conditions specified in table R structures:		N	
	- single channel with functional test	ur mr m. m.	N	
WALTE	- single channel with periodic self-test	TEX TEX STEEL WILLIAM	N	
*	- dual channel without comparison	201 201 20	N	
R.2.2	Measures to control faults/errors	LIEK NIEK WIFE ON	N	
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area			
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison	ETEX WHITE WHITE WHITE	TEK W	
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths	THE WHITEK WHITEK	N SUPLIFIES	
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate	* Writer Writer Writer M	STEP N	
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired	TEK MULTER MULTER MULTER	WEN W	
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions	Whitek whitek whitek wh	N	



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Meta all	IEC 60335-2-29	N. W.
Clause	Requirement + Test Result - Remark	Verdict
R.2.2.7	Labels used for memory locations are unique	N
R.2.2.8	The software is protected from user alteration of safety-related segments and data	N N
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired	TEK N
R.3	Measures to avoid errors	► N _S ®
R.3.1	General Company of the Company of th	N
TEX WALTE	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied	WAL N.
Whitek W	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1	et Nur
R.3.2	Specification	N
R.3.2.1	Software safety requirements:	N
EK WALTER	The specification of the software safety requirements includes the descriptions listed	JUNE N
R.3.2.2	Software architecture	N-N
R.3.2.2.1	The specification of the software architecture includes the aspects listed	Not
	- techniques and measures to control software faults/errors (refer to R.2.2);	WALT
	- interactions between hardware and software;	SLIER
	- partitioning into modules and their allocation to the specified safety functions;	All A
	- hierarchy and call structure of the modules (control flow);	ing w
	- interrupt handling;	LEW WAL
	- data flow and restrictions on data access;	
	- architecture and storage of data;	MALTE
	- time-based dependencies of sequences and data	1
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis	on UN
R.3.2.3	Module design and coding	Non.
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules	× N



	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
er writer	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements	United White White.	N
R.3.2.3.2	Software code is structured	Wer and any an	N
R.3.2.3.3	Coded software is validated against the module specification by static analysis	Z MALTER WALTER WALT	ALL SE NICE
INLIEK WY	The module specification is validated against the architecture specification by static analysis	ALTER NUTER MUTER	WILL WE
R.3.3.3	Software validation	The The Table	N+
x TEX	The software is validated with reference to the requirements of the software safety requirements specification	WITE MILE WALL A	ALL SULL N
n,	Compliance is checked by simulation of:	"TE WILL WALL WA	N
CITER -	- input signals present during normal operation	et set st	H NI
11, 14	- anticipated occurrences	MULL MULL MULL	N N
TEX	- undesired conditions requiring system action	it at at	N.C.

	TA	BLE R.1 ° – GENERAL FAULT	ERROR CON	IDITIONS		
Component	Fault/error	Acceptable measures b, c	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
1 CPU	× 15	TE OF	20, 20,		الله الله	N/A
1.1	mr m	. Mr	LEY LEY	TELL	TE. WILL	MALL
Registers	Stuck at	Functional test, or	H.2.16.5	21/2 211	12.	3
	In The Marie	periodic self-test using either:	H.2.16.6	- CIV - X	et let	LIE
	20, 3.	- static memory test, or	H.2.19.6	LI WAL.	Min	11.
	VAV	 word protection with single bit redundancy 	H.2.19.8.2	E TEK	WILEK W	TEX W
1.2 VOID	at at	TEX LIFE INCL. WALL	We are	121	20. 0	N/A
1.3	Stuck at	Functional test, or	H.2.16.5	t the	TEN LI	N/A
Programme		Periodic self-test, or	H.2.16.6	WILL W	V. 211.	10.
counter	MULIER	Independent time-slot monitoring, or	H.2.18.10.4	NITEK IN	TEX NATEX	MITEK
	WILLEK WALTE	Logical monitoring of the programme sequence	H.2.18.10.2	The Th	LIEX	LIEK
2	No interrupt	Functional test, or	H.2.16.5	The Mark	111. 11	N/A
Interrupt handling and execution	or too frequent interrupt	time-slot monitoring	H.2.18.10.4	EX WALTER	NATER WAT	EK WIN



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1101010110	0 110 11 1 B 1 0 B 1 1 0 0 0 0 2 C	1 490 00 01 01		
OUTE N		IEC 60335-2-29		
Clause	Requirement + Test	ALTER WALTE WALT	Result - Remark	Verdict

	TA	BLE R.1 ^e – GENERAL FAULT	ERROR CON	IDITIONS		
Component	Fault/error	Acceptable measures b, c	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
Clock	Wrong frequency (for quartz synchronize d clock: harmonics/ sub- harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4	White white	nci whitek	N/A
4. Memory 4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2	WALTER W	WALLER WALTER	N/A
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2	TEK MITE	JUNITER W	N/A
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2	white wh	TEX WHITES	N/A
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2	E TEK	whilek wh	N/A
5.1 VOID	EX TEX	LIER MILE WALL WALL	mr m	20.		N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2	WALTER V		N/A
6 External communicat ion	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14	unite un	WALTEX VI	N/A
6.1 VOID	70	A LET TEX JEN	CLIE OL	WAL.	Nr. Mr.	N/A
6.2 VOID	Et LET	LIE WILL WILL WILL	70, 0,		.L .X	N/A



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1101010110	0 110 11 1 B 1 0 B 1 1 0 0 0 0 2 C	1 490 00 01 01		
OUTE N		IEC 60335-2-29		
Clause	Requirement + Test	ALTER WALTE WALT	Result - Remark	Verdict

20,	TA	BLE R.1 ^e – GENERAL FAULT	ERROR CON	IDITIONS	24,	000
Component	Fault/error	Acceptable measures b, c	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
6.3	Wrong point	Time-slot monitoring, or	H.2.18.10.4	CLIV.	Vice along	N/A
Timing	in time	scheduled transmission	H.2.18.18	70, 1	1 1	
	Aur. Au	Time-slot and logical monitoring, or	H.2.18.10.3	WALTER WA	TELWALTE	MULL
	WALTER WALT	comparison of redundant communication channels by either:	ek whitek v	NITEX WALTE	't MUTIEK	ALTEK (
	LIE WALTE	- reciprocal comparison	H.2.18.15	et let	TEX	LEK (
	Money	- independent hardware comparator	H.2.18.3	MUL	ane an	- W
	Wrong sequence	Logical monitoring, or	H.2.18.10.2		Life White	MULL
		time-slot monitoring, or	H.2.18.10.4	211, 21		1
LIER MILE	Write Mu	Scheduled transmission	H.2.18.18	TEX S	EX SLIER	WITE.
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13	in white	WUILER M	N/A
7.1 VOID	THE MILE	Mary Ang Ang	1	at et	JEK S	N/A
7.2 Analog I/O 7.2.1 A/D and	Fault conditions	Plausibility check	H.2.18.13	MUTIEK MU	TEX MUTTER	N/A
D/A- converter	specified in 19.11.2			TEV SLI	ex whilex	INLITER.
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13	A LIEK	WALLEY WA	N/A
8 VOID	Et TEX	LIFE WILL WILL WILL	41, 41,	4.	1	N/A
9 Custom chips ^d e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6	MULTER MY	VIEW MULTER	N/A

NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.

a) For fault/error assessment, some components are divided into their sub-functions.
b) For each sub-function in the table, the Table R.2 measure will cover the software fault/error.

c) Where more than one measure is given for a sub-function, these are alternatives.

d) To be divided as necessary by the manufacturer into sub-functions.

e) Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.



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51 E	IEC 60335-2-29		all.
Clause	Requirement + Test	Result - Remark	Verdict
AA	ANNEX AA (NORMATIVE) BATTERY CHARGERS FOR USE BY CHILDREN	WHITE WHITE WALTE WASTE	N N
Mer	The battery charger have a d.c. output at SELV not ex not exceeding 50 VA	xceeding 30 V and a rated output	N s
5.210	Use of rechargeable batteries giving the most unfavourable conditions	Whitek Multer Multer M	Nu
6.1	Protection against electric shock for battery chargers for outdoor use: Class III	WHITEK WHITEK WHITEK WHITE	N
t TEX	Protection against electric shock for other battery chargers: Class II, III	NIFER WALLER WALLE WALLER	NA N
6.2	Protection against harmful ingress of water for battery chargers for outdoor use: IPX7	tet itet sitet in	EX NOT
6.201	Protection against ingress of solid foreign objects: IP3X	White the tex its	N
7.1	Symbol 5957 of IEC 60417 or text "For indoor use only" for battery chargers for indoor use	mer mer mer m	N
Mir	IP number	liter while while while	N A
TEX	Smiling face symbol together with 8+	a at all the	N
7.6	Correct symbols used	multiplication with the	N
7.12	Instructions for safe use contains:	L set set set of	N
art s	- Warning to only allow children at least 8 years old to use battery charger	mer mer mer mer	N
it will	Sufficient instructions for safe use of battery charger by a child	ver the must make	ALN.
MULL	Explanation that battery charger is not a toy	TE WILL A	N N
MLIEK	- Instruction for child not to try and recharge non-rechargeable batteries	t let liet wright in	IEK N
LIEK (- Warning to examine battery charger regularly for damage	who we see the	N
10	Warning in case battery charger is damaged	mer me me me	N
IEK WALT	Instruction for Class III battery charger to be supplied from transformer for toys	LIEK MITEK WHITEK	MILIN .
7.14	Height of symbol marked on the appliance at least 10 mm	et allet milet milet w	LIEN
z.t	Height of lettering at least 3 mm	20	ν N



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IEC 60335-2-29				
Clause	Requirement + Test	Result - Remark	Verdict	
8.1.1	Use of test probe B of IEC 61032: no contact with live parts or metal parts separated from live parts by basic insulation only, even after use of a tool to remove parts of enclosure	UNLIER WHITEK WHITEK	SUP SUP SUP	
10.101	The output voltage not exceed 42,4 V peek:	e of of a	d N	
11.8	Temperature rises of parts that can be touched by test probe 18 of IEC 61032	MUT AUT AUT	N	
17	Temperature rises of parts that can be touched by test probe 18 of IEC 61032	WALTER WALTE WALL	ant an	
19.13	Temperature rises of parts that can be touched by test probe 18 of IEC 61032	ALTER WALTER WALTER	un'i n'N	
21.201	Impact test Eha of IEC 60068-2-75, with impact energy of 2 J	EX WILEY WILEY W	TEL WALLEN W.	
MALTER	Free fall test Ed, Procedure 1 of IEC 60068-2-32, from the height of 500 mm	NIFEK MIFEK WALFE	The Thirty Walt	
NITEK NA	Battery charger not damaged to such extend that compliance is impaired, live parts not accessible	TEX LIEX NITER	ONLIE - NEX	
22.201	Battery charger with only one rated voltage or rated voltage range	it it it	LIEK N.	
L TEX	Battery charger not incorporate means for manually adjusting output voltage	the way we want	N	
22.202	Construction of battery charger prevent reverse charging	Murity Mury Mury	An Non	
24.201	Transformer for toys tested in accordance with subclauses 7.2, 20.5.1 and 20.101 and clause 15 of standard IEC 61558-2-7	White white white	N N	
25.1	Battery charger not provided with an appliance inlet	ur, mu	N N	
25.5	Battery charger provided with type Y or type Z attachment	The state of the s	LITER WALLEN	

EN 60335-1:2012/A11:2014		
7	MARKING AND INSTRUCTIONS (EN 60335-1/A11)	P
7.1	(Replacement:)	₩P
IEK NA	In NOTE Z1, replace "IEC 82079-1" by "EN 82079-1".	UNLIEK W
ZF	ANNEX ZF (INFORMATIVE) CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD(EN 60335-1/A11)	
MALTER	(Replacement:) In Table ZF.1 – List of standards under CLC/TC 61, replace line of EN 60335-2-38	N. TEX



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IEC 60335-2-29				
Clause	Requirement + Test	LIER MALL MALL	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60335-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Household and similar electrical appliances – Safety – Part 1: GENERAL REQUIREMENTS

Differences according to : EN 60335-1:2012

EN 62233:2008

Attachment Form No.: EU_GD_IEC60335_1T

Attachment Originator: Nemko AS

Master Attachment: 2013-02

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	CENELEC COMMON MODIFIC	CATIONS	
6.1	Delete "class 0" and "class 01"	LIEX ALTER WILL NO	N
7.1	Single-phase appliances to be connected to the supply mains: 230 V covered	tet tet tet atte	Р
	Multi-phase appliances to be connected to the supply mains: 400 V covered	int was the text	N
7.10	Devices used to start/stop operational functions of the appliance distinguished from other manual devices by means of shape, size, surface texture, position, etc.	EX WHITEX MULTER WHITEX WE	N
TEX	An indication that the device has been operated is g	liven by:	N
n n	a tactile feedback, or	white mit with min	N
JEK N	an audible and visual feedback	TEX JEX	N
7.12	The instructions include the substance of the following	ng: N	Р
WALTER	- this appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved	t on the whitek whitek whi	Р
	- children shall not play with the appliance	Write Mur. Mur. Mr.	Р
TERWALT	- cleaning and user maintenance shall not be made by children without supervision	LIEK MILER WILLER	Р
7.12.Z1	The specific instructions related to the safe operation of this appliance is collated together in the front section of the user instructions	EX WILLEX MULTER MULTER ON	Р
MITER	The height of the characters, measured on the capital letters, is at least 3 mm	MILEY MILEY WALTER WALT	Р



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Clause	Requirement + Test	Result - Remark	Verdic
10 S	A RECEIVED TO THE RECEIVED TO	2 1 10 10	300
	These instructions are also available in an alternative format, e.g. on a website	Mette Mutt Mut Must	Р
3.1.1	Also test probe 18 of EN 61032 is applied	TER OLITER WITE WAITE	Р
MITER	The appliance being in every possible position during the test	the state of the state of	Р
TEX	The force on the probe in the straight position is increased to 10 N when probe 18 is used	und the text it	Р
	When using test probe 18 the appliance is fully assembled as in normal use without any parts removed, and	WHIT WALL WAS WALLEY	N
LIEK	parts intended to be removed for user maintenance are also not removed	net was all the flet	N
3.2	Compliance is checked by applying the test probes of EN 61032	the wife with the man	Р
nni. v	For built-in appliances and fixed appliances, the test probe B and probe 18 of EN 61032 are applied only after installation	white white whit wh	N
11.8	Footnotes to "External enclosure of motor- operated appliances" to be taken into account	men men and and	Р
15.1.2	Appliances with an automatic cord reel tested with the cord in the most unfavourable position so that the reeling of the wet cord may affect electrical insulation during operation, the cord not being dried before reeling	LEE WALTER WALLEY WALTEST W	N
20.2	When using the test probe similar to test probe B with a circular stop face, the accessories and detachable covers are removed	Whitek whitek whitek whi	N
i mu	Test probe 18 applied with a force of 2,5N on the appliance fully assembled	White Murit	N
24.1	Components comply with the safety requirements specified in the relevant standards as far as they reasonably apply	THE WITTER OF	Р
WAL V	The requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance.	white white white wh	Р
TEX WHITE	The requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components	TIER MATER MATER MATER	Р
	Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirements of 30.2	et whilet whilet w	Р
Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need be retested provided that:			Р



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IEC 60335-2-29			
Clause	Requirement + Test	Result - Remark	Verdict
et e	- the severity specified in the component standard is not less than the severity specified in 30.2, and	write merice mery	Р
WILLER	- the test report for the component states whether it complied with the standard for the relevant component with or without flame, flames not exceeding 2 s during the test are ignored	TER WHITE WHITE WHITE	N
VILLER MI	Unless components have been previously tested and found to comply with the relevant standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9	whitek whitek whitek whi	Р
NUTER WALLER	For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9	LIET WHITE WHITE WHITE	Р
MALIEX	Components that have not been separately tested and found to comply with the relevant standard, and	MILER WITER WITER W	N
LIEK	components that are not marked or not used in accordance with their marking,	LIFET OUTER WITER WALT	N
ek walik	are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard	LIEK WHITEK WHITEK	N
WALTER OF	Lamp holders and starter holders that have not been previously tested and found to comply with the relevant standard are tested as a part of the appliance and additionally comply with the gauging and interchangeability requirements of the relevant standard under the conditions occurring in the appliance		N
X WALTER	Where the relevant standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used	CE JUNE WALTER	N
WALTER V	Plugs and socket-outlets and other connecting devices of interconnection cords are not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1, or	A MULTER MULTER MULTER M	N
	with connectors and appliance inlets complying with the standard sheets of IEC 60320-1,	White Mail and Mark	N
WALL	if direct supply to these parts from the supply mains gives rise to a hazard	LIFE WALTER WALTER WALTER	N
24.1.7	If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is EN 41003	EX UNLIER WHITER WHITER	N



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. C	IEC 60335-2-29		e aleke
Clause	Requirement + Test	Result - Remark	Verdict
16.	the wife with the same of the	A DE TO THE	
ek mijek	Compliance with Clause 8 of this standard is not impaired by connecting the appliance to a device covered by EN 41003	White milit while while	N
24.Z1	For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary	EX WALL WHITEK WHITEK WA	N
25.6	Supply cords of single-phase portable appliances hexceeding 16 A, fitted with a plug complying with the IEC/TR 60083:		Р
ynitek ynitek	- for Class I appliances: standard sheet C2b, C3b or C4	Et whilet whilet whilet	N
TEN		Tex Tex Tex	
	- for Class II appliances: standard sheet C5 or C6	Whi while while while	Р
25.7	Rubber sheathed cords (60245 IEC 53) are not suitable for appliances intended to be used outdoors or when they are liable to be exposed to significant amount of ultraviolet radiation	LIET WALTER WALTER	N
Mu	Halogen-free thermoplastic compound sheathed supply cords have properties at least those of:		N
NULL M	 halogen-free thermoplastic compound sheathed cords (H03Z1Z1H2-F or H03Z1Z1-F), for appliances having a mass not exceeding 3 kg 	MALTER WALTER WALTER WALTER	N
EX MUTIEX	 halogen-free thermoplastic compound sheathed cords (H05Z1Z1H2-F or H05Z1Z1-F), for other appliances 	TEK MILIEK	N
WALTER	Cross-linked halogen-free compound sheathed supply cords have properties at least those of cross-linked halogen-free compound sheathed cords (H07ZZ-F)	MULTER WALTER WAITER WA	N
26.11 VI	Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position unless they are held in place near the terminals independently of the solder	white whitek whitek whitek	N
29.3.Z1	Appliance constructed so that if there is a possibility of damaging the insulation during installation, the insulation withstands the scratch and penetration test of 21.2	While while while and	N



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	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdict
32	Compliance regarding electromagnetic fields is checked according to EN 62233	EN 62233	un E
Annex I, 19.I.101	The appliance is supplied at rated voltage and operated under normal operation with each of the fault conditions specified	PIER WALTER WILLIAM	N
240 3	The duration of the test is as specified in 19.7	innite whi whi	n N
ZA	ANNEX ZA (NORMATIVE) SPECIAL NATIONAL CONDITIONS	L MILER WALLEY	WALTE
TEX STE	MILE WILL MALL MALL MARKET	the second	TEK -
7/1	Norway	NITE WALL WALL	N
19.5	The test is also applicable to appliances intended to be permanently connected to fixed wiring	EK CITEK WITEK	TEK N
(EX	TEX STEEL BUTEL		*
mr. M	Norway	OLIEN WALTER WALTE	N un
22.2	The second paragraph of this subclause, dealing with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system	WILER MUITER MUITER	WALTE N
, Mur	In the little	liek intermeter	NLI .
	All CENELEC countries	at at	
25.6 and 25.25	Information concerning National plug and socket- outlets is available from the CENELEC website. Normative national requirements concerning plug and socket-outlets are shown in the relevant National standard	White whitek while	nnir P
LIL WAY	an an	TE MITE	MITE
at at	Ireland and United Kingdom		N
25.8	In the table, the lines for 10 A and 16 A are replace	d by:	LIT N
et	> 10 and ≤ 13 1,25	20, 20, 1	N
MUL. M	> 13 and ≤ 16 1,5	I's NITER INITE MALT	N 'nıı
at	EX TEX ITEX SITES WITH WATER WITH	70, 2, ,	

ANNEX ZB (INFORMATIVE) A-DEVIATIONS	White white white white	
when the the	TEX LIEX SLIER WITE	
Ireland (1) (1)	n m m	N
These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S. 401:1997, or equivalent, to be fitted to domestic appliances	E TEK WILE MULE MULE	N
	Ireland These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S.	A-DEVIATIONS Ireland These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S.



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are the	IEC 60335-2-29	THE LIFE WITE WALL	- 412
Clause	Requirement + Test	Result - Remark	Verdict
- 112°	United Kingdom	INCIDE WALTE WALTE	P
25.6	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs to BS 1363 to be fitted to domestic appliances. It also allows plugs to BS 4573 and EN 50075 to be fitted to shavers and toothbrushes	TEX WILLER WILLER WILLER	Р
ALTER NI	THE MULTINATE WAS AND THE SEX	TEX TEX STEX NITE	
ZC	ANNEX ZC (NORMATIVE) NORMATIVE REFERENCES TO INTERNATIONAL CORRESPONDING EUROPEAN PUBLICATIONS	PUBLICATIONS WITH THEIR	
y 164	A list of referenced documents in this standard	The second second	Р
MILL	Who are the text of	EL RITE MITE WALL W	
ZD	ANNEX ZD (INFORMATIVE) IEC and CENELEC CODE DESIGNATIONS FOR FL	EXIBLE CORDS	_
LIEK	A table with IEC and CENELEC code designations for flexible cords	WA WAS TEN TEN	Р
		nor, when my m	
ZE WALL	ANNEX ZE (INFORMATIVE) SPECIFIC ADDITIONAL REQUIREMENTS FOR APIINTENDED FOR COMMERCIAL USE	PLIANCES AND MACHINES	N
7.1	Business name and full address of the manufacturer and, where applicable, his authorized representative	Whitek while white wh	N
me, m	Model or type reference:	write while while whi	N
TEX S	Serial number, if any:	L CH LET LET	N
1/1	Production year	VI. TILL AND AND	N
EK JE	Designation of the appliance	it is the test	N
7.12	Instructions provided with the appliance so that the appliance can be used safely	n in in	N
Mr.	The instructions contain at least the following information	tion:	N
nliek w	- the business name and full address of the manufacturer and, where applicable, his authorized representative	MULTER MULTER MULTER MULTER	N
IEK WALT	- model or type reference of the appliance as marked on the appliance itself, except for the serial number	LIEK WHITEK WHITEK	N
MULL	- the designation of the appliance together with its explanation in case it is given by a combination of letters and/or numbers	EX MILER WALTER MILE W	N
NV. A	- the general description of the appliance, when needed due to the complexity of the appliance	MULTER WALLE WILL WALL	N



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Clause	Requirement + Test	Result - Remark	Verdic	
Clause	Requirement + Test	Result - Remark	Verdic	
ex writer	- specific precautions if required during installation, operation, adjusting, user maintenance, cleaning, repairing or moving	incite ancie ancie o	TIEK N	
	- when needed drawings, diagrams, descriptions and explanations necessary for the safe use and user maintenance of the appliance	it only while on	X N	
ALTEK WA	- the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance	WILER WILER MILER	N N	
IEK WALTE	The words "Original instructions" appear on the language version(s) verified by the manufacturer or by the authorized representative	NIFE WHITEK WHITEK W	N N	
White Martex	When a translation of the original instructions has been provided by a person introducing the appliance on the market; the meaning of the sentence "Translation of the original instructions" appear in the relevant instructions delivered with the appliance			
ex white	The instructions for maintenance/service to be done by specialized personnel, mandated by the manufacturer or the authorized representative may be supplied in only one Community language which the specialized personnel understand	unitek whitek whitek	N	
WALTER O	The instructions indicate the type and frequency of inspections and maintenance required for safe operation including the preventive maintenance measures	EX WHITEX WHITEX WHI	N N	
7.12.ZE1	If needed for specific appliances, the following inform	nation to be given:	N N	
LIET WAY	on use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns, if these operations have consequences on stability of the appliance in order to avoid overturning, falling or uncontrolled movements of the appliance or of its component parts	TEK WALTER WALTER	nite N	
EX TE	on how to maintain adequate mechanical stability when in use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance	MULTER MULTER WHITER	MALTE N	
MULTER	on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided	EX MULTER MULTER MULT	N N	
inritek m	on the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur the operating method to safely unblock the appliance	WALTER WALTER WALTER	- N	



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01		D. W. D. W. L. W.	\ / I:
Clause	Requirement + Test	Result - Remark	Verdic
ek mitek	on the specifications on the spare parts to be used, when these affect the health and safety of the operator	United Military White White	N
State	on airborne noise emissions, determined and relevant Part 2, which includes:	declared in accordance with the	N
Wiley My	- the A-weighted emission sound pressure level at workstations, where this exceeds dB(A);	white whitek whitek white	N
TEK WALTE	- where this level does not exceed 70 dB(A), this fact is indicated	HIEK WALTER WALTER WHITEK	N
WALTER OF	- the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 μPa)	EX OUTEX WHITEX WHITEX W	N
LIFEK WILL	- the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A)	WILER MULTER MULTER MULTER	N
7.12.ZE2	The instructions includes a warning to disconnect the appliance from its power source during service and when replacing parts	LIER WALLER WHITER WHITER	N
AUTIEN AU	If the removal of the plug is foreseen, it is clearly indicated that the removal of the plug has to be such that an operator can check from any of the points to which he has access that the plug remains removed	Whitek whitek whitek whit	N
t whi	If this is not possible, due to the construction of the appliance or its installation, a disconnection with a locking system in the isolated position is provided	ALL STEE WHITEL WALLES	N
19.11.4.8	The appliance continues to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage fluctuation occurred, or	t liet while whi	N
at _	a manual operation is required to restart it	211, 211, 12	N
20.1 white	Appliances and their components and fittings have adequate mechanical stability during transportation, assembly, dismantling and any other action involving the appliance	White white white white	N
20.2	Dangerous moving transmission parts safeguarded either by design or guards	et set set aset	Ν
LTEK .	When guards are used, they are fixed guards, interlocking movable guards or protective devices	me the the	N
11, 14,	Moving parts directly involved in the function of the a made completely inaccessible fitted with:	appliance which cannot be	N



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11 ¹² 11	IEC 60335-2-29	of the the the	out only		
Clause	Requirement + Test	Result - Remark	Verdict		
este _V ales Est merces	- fixed guards or interlocking movable guards preventing access to those sections of the parts that are not used in the work, and	MULLING MULL	N N		
MILIER	- adjustable guards restricting access to those sections of the moving parts where access is necessary	of the will an	N N		
CLIEK OF	Interlocking movable guards used where frequent access is required	THE TEXT LIES	N		
21.1	Appliances and their components and fittings have adequate mechanical strength and is constructed to withstand such rough handling that may be expected in normal use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance				
22.ZE.1	For appliances provided with a seat, the seat gives adequate stability	TEK TEK LIFE	N N		
No.	The distance between the seat and the control devices capable of being adapted to the operator				
22.ZE.2	For appliances provided with separate devices for the start and the stop functions, the stop function is unambiguously identifiable and does always override the start function	TEX WILEX MULTER	N N		
WALTER	For appliances provided with one device performing the start and the stop function, the stop function is unambiguously identifiable and does always override the start function	THE WALTER WALTER WALT	Et N		
22.ZE.3	Appliances designed in such a way that incorrect mounting is avoided, if this can lead to an unsafe situation	White white white	Mar N		
ex writer	If this is not possible, information on the correct mounting is given directly on the part and/or the enclosure	TEL TO	N N		
22.ZE.4	Where the weight, size or shape prevents appliances from being moved manually, they are fitted with attachments for lifting gear, or	A WILLER MULTER MULTE	it w		
nliek wa	so designed that they can be fitted with such attachments, or	TEX STEK WILEY	N N		
IEK INLIE	be shaped in such a way that standard lifting gear can easily be used	on on on	N N		
t water	Appliances to be moved manually are constructed or equipped so that they can be moved easily and safely	et aret kriet mr	N		
22.ZE.5	The fixing systems of fixed guards which prevent access to dangerous moving transmission parts only removable with the use of tools	A UTEX MILES MULTER	r N		



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10 W	IEC 60335-2-29		. The
Clause	Requirement + Test	Result - Remark	Verdict
EX MUTTER	If such guards have to be removed by the user for routine cleaning or maintenance their fixing systems remain attached to the fixed guards or to the machine after removal	Mile Mile White while	N
MITER	Where possible, guards are incapable of remaining in place without their fixings	et they writed writed an	N
NLTEX WA	This does not apply if, after removal of the screws, or if the component is incorrectly repositioned, the appliance becomes inoperative	WILEK WILLER WILLER WILL	N
CENT OF	Movable guards are interlocked	t at at at	N
WALTEX *	The interlocking devices prevent the start of hazardous appliance functions until the guards are fixed in their position, and give a stop command whenever they are no longer closed	EX WILL MULEX WILLER	N
NALTEK V	Where it is possible for an operator to reach the dan hazardous appliance functions has ceased, movable guard locking device in addition to an interlocking de	e guards associated with a	N
LIET WAL	- prevents the start of hazardous appliance functions until the guard is closed and locked, and	WILER WHITER WHITER WHITE	N
EK WILLE	 keeps the guard closed and locked until the risk of injury from the hazardous appliance functions has ceased 	LIER WALTER WALTER	N
WALTE.	Interlocking movable guards remain attached to the appliance when open, and	ex uniter whitek whitek wh	N
INLTER WI	they are designed and constructed in such a way that they can be adjusted only by means of an intentional action	Whitek Multek Multek Mult	N
22.ZE.6	Interlocking movable guards designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous appliance functions	ALL JEK WALTER WALTER	N
WALTEK V	The guard is opened to the extent needed to cause the interlocking to operate and is then closed, the number of operations being defined in the specific Part 2	t writes writes writes wr	N
LIFE WA	After this test any defect that may be expected in normal use is applied to the interlock system, including interruption of the supply, only one defect being simulated at a time	MULTER MULTER WALTER WALTE	N
TEX	After these tests the interlock system is fit for further use	the state of	N
22.ZE.7	Adjustable guards restricting access to areas of the for the work are:	moving parts strictly necessary	N
MULLI W	- adjustable manually or automatically, depending on the type of work involved, and	WHITE WALL WALL WILL	N
LIE ML	- readily adjustable without the use of tools	TEX TEX LIER SLIE	N
- 40.			7.



Reference	e No.: WTD15D1136592S Page 79 of 94	- 10. 10. 1.	
	IEC 60335-2-29		
Clause	Requirement + Test	Result - Remark	Verdic
22.ZE.8	In case of interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply, the appliance does not restart	INCIDENT VINCENT VINCE	IN N
WILLER	However, automatic restarting of the operation is allowed if the appliance may continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage interruption or fluctuation occurred	Antiex multer multe	M M
22.ZE.9	Appliances fitted with means to isolate them from all energy sources	white while with	Wer N
in Mills	Such isolators are clearly identified, and	LIER WIFE WIFE N	N
K WITEK	they are capable of being locked if reconnection endanger persons	et tet itet i	N
WALLER W	After the energy source is disconnected, it is possible to dissipate any energy remaining or stored in the circuits of the appliance without risk to persons	MUTER MUTER MITE	N
LIER	it will may win wi	TEX TEX TEX	ALTE
ZF SMLTE	ANNEX ZF (INFORMATIVE) CRITERIA APPLIED FOR THE ALLOCATION OF STANDARDS IN THE EN 60335 SERIES UNDER I		Y ex
WALTEK.	List of standards under CENELEC/TC61 with the allocation under the LVD (Low Voltage Directive) or the MD (Machinery Directive)	2014/35/EU	n, P
TEX	LIFE MILE WALL IN	L At At Att	C)
ZG	ANNEX ZG (NORMATIVE) UV APPLIANCES	Murit Muri Muri	W
r w	The following modifications to this standard apply to appliances having UV emitters	With Mill M	N
WALTER	This annex is not applicable to appliances covered by the scopes of IEC 60335-2-27, IEC 60335-2-59 or IEC 60335-2-109	THE WAY	N
7.12.ZG	The instructions for appliances incorporating UVC emitters include the substance of the following: WARNING — This appliance contains a UV emitter. Do not stare at the light source	MILE MILE WALLEY	WATE N
32- JALIE	For appliances incorporating UV emitters the manufacturer delivers a declaration providing evidence that the plastic material exposed to the radiation is UV resistant	TIEX MUTER MUTER M	N N
MU	And the text text	TER WITE WALL MALL	24
ZZ	ANNEX ZZ (INFORMATIVE) COVERAGE OF ESSENTIAL REQUIREMENTS OF	F EC DIRECTIVES	- _{NI}



Referenc	e No.: WTD15D1136592S Page 80 of 94	in my	
WITEE W	IEC 60335-2-29	y teh iteh attek mi	TELL WILLS
Clause	Requirement + Test	Result - Remark	Verdict
er ute	Description of the relation between this European standard and the LVD (Low Voltage Directive) and the MD (Machinery Directive)	United Autority Autority Autority	P
200	the state of the state of the state of	The Way and	2
ANNEX	EMF	and the state of	P
The !	The test product also complies with the requirement	nts of EN62233:2008	77115
	Limit100%	Measured: 1.287% Max.	P.O



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Kelelelic	e No WIDISD	11303923	rage of 01 94	900		
			IEC 60335-2-29			
Clause	Appended ta	ble	TEK WITT WI	ir me	m. m	Verdict
10.1	TABLE: Pow	er input deviation	k 17 ⁶¹ 217	A WILLIAM	WILL WILL	N/A
Input deviation of/at: P rat		P rated (W)	P measured (W)	Dp	Required Dp	Remark
	100	27.1	, (c)	- LV-	6 11 0	

10.2	TABLE: Curr	ent deviation				P
Input devia	ition of/at:	I rated (A)	I measured (A)	dl diet	Required dl	Remark
For model:	C060L1001	TEN JEE J	ic and an	70	4,, ,	+ +
AC100V, 5	0Hz	1,2	1,086	-9,5%	+20%	NITE WALLE
AC240V, 5	0Hz	1,2	0,419	-65,1%	+20%	L -X
AC100V, 6	0Hz	1,2	1,047	-12,8%	+20%	White Wh
AC240V, 6	0Hz	1,2	0,499	-58,4%	+20%	- A- A
For model:	C060L0701	Miss	**	1	TET LITE	INLY WALL
AC100V, 5	0Hz	1,2	0,854	-28,8%	+20%	
AC240V, 5	0Hz	1,2	0,338	-71,8%	+20%	WILE - WILE
AC100V, 6	0Hz	1,2	0,822	-31,5%	+20%	- xt
AC240V, 6	0Hz	1,2	0,398	-66,8%	+20%	LIE MILLE

10.101	TABLE: Volta	ige – no load	e – no load			ad the left left		Р
Current deviation of/at: U _o rat		U₀ rated (V)	U₀ measured (V)	Required U _o	Remark			
For model:	C060L1001		1 1	at at	18th 15			
AC100V, 5	50Hz	42,0	42,186	42,4V	Mur - Mr			
AC240V, 5	50Hz	42,0	42,186	42,4V	TEX - LIEK			
AC100V, 6	60Hz	42,0	42,186	42,4V	L 7/1			
AC240V, 6	60Hz	42,0	42,186	42,4V	TEX TIER			
For model:	C060L0701			an all	70, 2			
AC100V, 5	50Hz	29,4	29,683	42,4V	t Total			
AC240V, 5	50Hz	29,4	29,682	42,4V	me - m			
AC100V, 6	60Hz	29,4	29,684	42,4V	JEX- LIE			
AC240V, 6	60Hz	29,4	29,684	42,4V	nn.			

10.102	TABLE: Output	t current deviation	TEK LIEK O	LIER ML	MILL	W. b
Current de	viation of/at:	I _o rated (A)	I _o measured (A)	d I _o	Required d I _o	Remark
For model:	: C060L1001	LEX LITE O		7/12	14, 4,	
AC100V, 5	50Hz	1,35	1,398	4,0%	+10%	ex outex antif
AC240V, 5	50Hz	1,35	1,401	4,2%	+10%	70, -
AC100V, 6	60Hz	1,35	1,399	4,1%	+10%	NITE - NITE

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Reference	e No.: WTD15D1	1303928	Page 82 of 94			
اله سناني	Vice and an	24 24 24 Z	IEC 60335-2-29	et let	John John	Child Will
Clause	Appended tabl	et de de	t while whi	11/2 1	11 24	Verdict
AC240V, 6	60Hz	1,35	1,403	4,4%	+10%	ante - meter
For model	: C060L0701	NOTE THEY	111 111		4	et et
AC100V, 5	50Hz	1,5	1,521	1,4%	+10%	rii. ^{Alte} rii A
AC240V, 5	50Hz	1,5	1,522	1,5%	+10%	at test a
AC100V, 6	60Hz	1,5	1,521	1,4%	+10%	m- m
AC240V, 6	60Hz	1,5	1,523	1,5%	+10%	- 18 1- 18
	- ''(), - ''(), -		1 /			

11.8 TAB	TABLE: Heating test, thermocouples						
in Mur Mu	211	Test 1	Test 2	nui uni-			
Test	voltage (V):	0,94 x 100V =94V	1,06 x 240V =254,4	V_L			
Amb	eient t1(°C):	Et TER	TER MITER WAITE WAL	, m, -			
Amb	pient t2(°C):	- 4	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	t , t -			
Thermocouple locations:		at let lifet	dT (K)	Max. dT (K)			
		Test 1	Test 2				
For model: C060L	_1001		WILL MULL MULL	me m			
Appliance inlet	EL MILL MILL	42,5	33,3	45			
Thermistor (RT1)	At 18th	102,4	81,5	v. vi			
Varistor (VAR1)	MALTE	57,8	51,2	60			
X-capacitor body	(CX1)	61,7	45,4	75			
L2 winding	Write Marine	69,8	52,7	85			
Y-capacitor body	(CY3)	38,2	28,2	100			
C2 body	11/1 1/10	64,1	49,9	80			
Transformer wind	ding	60,0	59,4	85			
Transformer bobl	oin	54,0	53,7	TE NATE			
Y-capacitor body	(CY1)	58,8	50,9	100			
Internal lead wire	MUT. MUT.	56,6	45,7	80			
PCB under D1	TEX TEX	155,8	48,0	105			
C6 body	ur mr m	51,2	44,6	mil 80 m			
Optocoupler (U3)	let tiet of	48,5	42,2	75			
PCB under D9	4/12 1/1	62,6	48,7	105			
Output lead wire	TEX LIE	35,7	33,2	55			
Enclosure (top, ir	nside, near T1)	46,3	43,9	For cl.30			
Enclosure (side, i	inside, near T1)	42,6	35,0	For cl.30			
Enclosure (top, o	utside, near T1)	35,6	32,6	60 0			
Enclosure (side,	outside, near T1)	31,5	29,4	60			



65

18,6

24,7

Reference No.: WTD15D1136592S Page 83 of 94 IEC 60335-2-29 Clause Appended table Verdict 65 25,6 20,8 Test floor 24,3 24,6 Ambient (°C) For model: C060L0701 22,7 18,2 Appliance inlet 45 Thermistor (RT1) 92,4 73,1 Varistor (VAR1) 56,6 41,6 60 50,2 X-capacitor body (CX1) 36,0 75 85 L2 winding 70,5 51,3 100 Y-capacitor body (CY3) 34,2 24,5 80 43,8 C2 body 58,2 85 55,2 52,0 Transformer winding Transformer bobbin 48,9 46,2 100 Y-capacitor body (CY1) 56,1 46,8 80 Internal lead wire 47,8 36,8 105 PCB under D1 56,0 47,1 80 55,7 48,9 C6 body 75 43,8 38,1 Optocoupler (U3) 105 PCB under D9 53.8 40.5 55 34,4 Output lead wire 38,5 For cl.30 Enclosure (top, inside, near T1) 43,8 43,4 For cl.30 Enclosure (side, inside, near T1) 41,4 37,1 60 Enclosure (top, outside, near T1) 38,3 37,6 60 22,9 Enclosure (side, outside, near T1) 28,7

13.2	TABLE: Leakage current			P
in in	Heating appliances: 1,15 x rated input	alier alier	White White	Mer
IEX WIL	Motor-operated and combined appliances: 1,06 x rated voltage	1,06x240V=254,4V		UNLITER V
Leakage	current between	I (mA)	Max. allow	ed I (mA)
Live/Neutral – Plastic enclosure		0,02	0,02 0,35 peak	
Live/Neu	tral – output terminals	0,12	0,35 p	eak

20,5

24,3

		417 . 417 .
13.3	TABLE: Electric strength	Р

Test floor

Ambient (°C)



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Reference	5 NO.: W1D 13D11303925	IEC 60335-2-29	TER LIER NIER WITE
Clause	Appended table	THE WALLE MALL MAY MAY	Verdict

Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
Differnet polarity (fuse link opened)	1000	No
Live/Neutral – plastic part	3000	No
Live/Neutral – output terminals	3000	No w
Primary to secondary of transformer	3000	No-
Core to secondary of transformer	3000	No wh
One layer insulation tape	3000	No No

	14 TABLE: Transient overvoltages					N/A	
	Clearance be	etween:	CI (mm)	Required CI (mm)	Rated impulse voltage (V)	Impulse test voltage (V)	Flashover (Yes/No)
X	-nlife ann	il Muri Mur	-	- Jt	- TEX	LIEF - LIEF	NITE - NITE

16.2	TABLE: Leakage current	at let	TEX TEX	Р
10	Single phase appliances: 1,06 x rated voltage:	1,06x240V=	254,4V	70, -
I EX WAL	Three phase appliances 1,06 x rated voltage divided by √3:	LIEK WITEK -	JEK WITEK	UNITER ON
Leakage	current between	I (mA)	Max. allowe	ed I (mA)
Live/Neu	utral – Plastic enclosure	0,02	0,25	rms
Live/Neu	utral – output terminals	0,12	0,25 r	ms

16.3 TABLE: Electric strength	- 14 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A PA
Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
Differnet polarity (fuse link opened)	1250	No. The No.
Live/Neutral – plastic part	3000	No
Live/Neutral – output terminals	3000	No
Primary to secondary of transformer	3000	No
Core to secondary of transformer	3000	LITE ON ON
One layer insulation tape	3000	No

17	TABLE: Overload protection, temperature rise				
WALL	Test condition:	Overload or Short circuit the secondary winding of transformer			
	Test duration:	Until steady conditions			
WALL	Test voltage (V):	94V/254,4V			
et	Ambient t1 (°C):	-oner and we are an an an are			



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T COTOTION	e No W1D13D11303923	IEC 60335-2-29	itek itek outek ontre
Clause	Appended table	LITER MALL WALL WALL ON	Verdict

Ambient t2 (°C):			
Thermocouple locations	dī	Max. dT (K)	
The The The The	94V	254,4V	in in .
For model: C060L1001	24/25 20, 20,		it it.
Winding of transformer	90,9	110,7	150
Enclosure (top, inside, near T1)	73,5	84,6	For cl.30
Enclosure (side, inside, near T1)	69,2	75,2	For cl.30
Output lead wire	43,8	49,7	70 10
Test corner	26,6	30,8	65
Ambient (°C)	24,5	24,2	TEX STEEL
For model: C060L0701	alife api	Mary Mary M	1. 14, 2
Winding of transformer	87,6	104,8	150
Enclosure (top, inside, near T1)	72,6	80,4	For cl.30
Enclosure (side, inside, near T1)	68,8	72,6	For cl.30
Output lead wire	42,9	45,7	70
Test corner	24,8	28,1	65
Ambient (°C)	24,3	24,5	7,

After the output terminals of the battery charger were short-circuited, the unit was protected and recoverable when the fault was removed, no hazards.

19.11.2	TABLE: fa	ult condition	ons of electro	nic circuit		all the same	√P_
	ch case, the					upplied at rated of the supply occurs	NALTEK.
	Test voltag	ge (V):	See below	m. Mr.	110		_
Test component	Fault condition SC or OC	Test voltage (V)	Measured current (A)	Value A or B flowing through protective impedance (mA)	Duration	Observation	LIFE WI
For model: Co	060L1001						
BD1	SC	240	9,1	ALTE WALTE	1s	Fuse link opened immono hazards.	ediately,
C2	SC	240	9,1	LEK STEK	1s	Fuse link opened immono hazards.	ediately,
T1 (1-3)	SC	240	0,151	- w	10min.	Appliance was protect immediately. When the was removed, the unit recoverable, no hazard	e fault can be
T1 (4-5)	SC	240	0,201	MULTER MULT	10min.	Appliance was protect immediately. When the was removed, the unit recoverable, no hazard	e fault can be



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AV		15° 15	30	1521		
T1 (8-11)	SC	240	0,084	on etter on	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
Q2(S-G)	SC	240	9,1	The - White	1s.	Fuse link opened immediately, no hazards.
Q2(S-D)	SC	240	9,1	K - WIEK	1s.	Fuse link opened immediately, no hazards.
C6	SC	240	0,189	UNLIEK	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
Output terminals	SC	240	0,144	in it in	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
Optocoupler primary	SC	240	0,626	- 711	2h. 1	T1 winding: 69,9K, enclosure inside: 49,3K, test floor: 19,5K, no damage, no hazard.
Optocoupler secondary	SC	240	0,025	on til	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
For model: C0	60L0701	il ni				et let let liet
T1 (1-3)	SC	240	0,104	r whit	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
T1 (4-5)	SC	240	0,092	MLTEK	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
T1 (8-11)	SC	240	0,074	on it i	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
C6	SC	240	0,137	ex rex	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
Output terminals	SC	240	0,109	NUTEK AL	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.
Optocoupler primary	SC	240	0,443	ni ^{fEK} uni	2h.	T1 winding: 65,9K, enclosure inside: 44,3K, test floor: 18,5K, no damage, no hazard.
Optocoupler secondary	SC	240	0,025	TE WALTER	10min.	Appliance was protected immediately. When the fault was removed, the unit can be recoverable, no hazards.

19.13	TABLE: Abnormal operation, temperature rises	Р



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recerence	e No.: W1D13D11303923	IEC 60335-2-29	- itek lifek milek milek
Clause	Appended table	LITER WALL WALL WALL	Verdict

Abnormal conditions:

Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates or until steady conditions are established.

There shall # be no rupture of the battery.

- 1). Cl. 19.101 Battery chargers are supplied at rated voltage and operated under normal operation, any control that operates during the test of Clause 11 being short-circuited.
- 2). Cl. 19.102 The battery charger is connected to a fully charged battery, the connections being in reverse to normal use. The battery is to have the largest capacity of the types specified in the instructions, the capacity of a Lipo battery, however, being 70 Ah. The battery charger is operated while supplied at rated voltage.

- whi	Test voltage (V):	240	240	WITE WALL MALL WA
at	Test conditions:		Battery used: 70Ah	n t et e
B NLL	T1(℃)	- At	EX - SLIER IS	LIE MALTE WALL WALL
EX	T2(℃)	Will M	70, 2,	at the test
Thermo	ocouple locations	1). dT (K)	2). dT (K)	Max. dT (K)
*	TEK SITEK NIT N	7	- 4	et et it
- 1/1	711, 72		LIE TE MITE	Mr. Mr. M. M

Result:	Condition 1)	Condition 2)	
Protective device operated?	ber and an	111, - 111,	
If yes, what was the protective device?	x 10 10	LIE NIE	
How long was the operation until protecti	ve device operated?	Mur - Mur	4, -4,
Deformation of enclosure, which affect th	TEV- TEK	ALTER - OLIE	
Poisonous or ignitable gas?	anti unti ne	-70	- 1
Emit flames?		-TEX	IET MITE W
Molten metal?	E MILL WALL WALL	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-
test voltage applied between:	Break	kdown	
- It let tet tet til	"Mr. "Mr. "Mr. M.	4, - 4,	,t ,()
The Maria Maria	at at -at a	E LIE MILE	antite -water

After the connection to battery reversed, the unit was protected, when the fault was removed, the unit can be revoerable, no hazards.

24.1	TABLE: Components	. 70,		t set set	P
object/part No.	manufacturer/ trademark	type/model	technical data	Standard (Edition/year)	mark(s) of conformity ¹)
Appliance inlet	Steady Electronics Corporation	2124	2,5A, 250V	EN 60320-1	VDE 40036028



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WEITER OF	WILL MULL MULL MULL	IEC 60335-2-29	y lift still with
Clause	Appended table	THE WALL WILL WAS THE	Verdict

	Various	Various	2,5A, 250V	EN 60320-1	VDE
Plastic enclosure	SAMSUNG SDI CO LTD	NH-1015(++)	V-0, 85°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
WALL WA	Various	Various	V-0, 85°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Internal earthed wire	DONGGUANSHI HONGYING WIRE CABLE CO LTD	1015	600V, 105°C, VW-1	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Fuse (F1)	Shenzhen Lanson Electronics Co. Ltd.	3K T1A250V	T1AL250VAC	EN 60127-1 EN 60127-3	VDE 40010682
	Various	Various	T1AL250VAC	EN 60127-1 EN 60127-3	VDE
Varistor (VAR1)	Lien Shun Electronics Co., Ltd.	07D471K	470V, T85	EN 61051-1 EN 61051-2	VDE 40005858
	Various	Various	470V, T85	EN 61051-1 EN 61051-2	VDE
Heating shrinkable tube	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2 (+)	600V, 125°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
	Various	Various	600V, 125°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
РСВ	SUN TAT INDUSTRIAL LTD	ST01	V-0, 130°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
X-Capacitor	Hsuan Tai Electronic Co. Ltd.	MCY	0,1uF, 275V~, 100°C	EN 60384-14	VDE 125205
(CX1)	Various	Various	0,1uF, 280V~, 100°C	EN 60384-14	VDE
Y-capacitor (CY1, CY2, CY3, CY4)	Jyh Chung Electronic Co., Ltd.	LTD IN WALL	400V~, 3300pF, T125, Y1	EN 60384-14	VDE 137027
	Various	Various	400V~, 3300pF, T125, Y1	EN 60384-14	VDE
Optocoupler	Sharp Corporation Electronic Components and Devices Group	PC817	Int. cr: >7,6mm, Ext. cr: >7,6mm, Dti: >0,4mm, T110	EN 60747-5-2	VDE 40008087
(U3)	Various	Various	Int. cr: >7,6mm, Ext. cr: >7,6mm, Dti: >0,4mm, T110	EN 60747-5-2	VDE



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CLIE SI	E NO.: WID 13D 11303923	IEC 60335-2-29	ret set si	K CLIER WALTER
Clause	Appended table	LIFE WALL WALL	me me	Verdict

EK MALTEK	YONG HAO ELECTRICAL INDUSTRY CO LTD	1185	300V, 80°C, VW-1, 16AWG	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Output lead wire	WONDERFUL HI-TECH CO LTD	1185	300V, 80°C, VW-1, 16AWG	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
	Various	Various	300V, 80°C, VW-1, 16AWG	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Line filter (L2)	SHENZHEN RUICHUANGYI ELECTRONICS CO., LTD	RCY-1005047	Class B	EN 60335-1 EN 60335-2- 29	Tested with appliance
Line filter (L4)	SHENZHEN RUICHUANGYI ELECTRONICS CO., LTD	RCY-1003005	Class B	EN 60335-1 EN 60335-2- 29	Tested with appliance
Winding of	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO LTD	UEW	130°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
L2 and L4	Various	Various	130°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Bobbin of L2 and L4	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 150°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Varnish of	ELANTAS	V1630	155°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
L2	Various	Various	155°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Triple insulation	YOUNG CHANG SILICONE CO LTD	STLZW-B	130°C, Class B	EN 60950-1	VDE
wire of L4	FURUKAWA ELECTRIC CO LTD	TEX-E	130°C, Class B	EN 60950-1	VDE
Transformer (T1)	SHENZHEN RUICHUANGYI ELECTRONICS CO., LTD	PQ3220- 360uH(for model C060L0701); PQ3220- 380uH(for model C060L1001)	Class B	EN 60335-1 EN 60335-2- 29	Tested with appliance
Bobbin of T1	CHANGCHUN PLASTICS CO., LTD	T375J	V-0, 150°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Magnet wire of T1	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO LTD	UEW	130°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
LIFEK MITEK	Various	Various	130°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance



Clause	Appended table	SLIFE MALIL WALL	Verdict
and the state of	Will Mer Mer Mer	IEC 60335-2-29	- TEK ITEK AITEK MITE MATE
Reference	ce No.: WTD15D1136592S	Page 90 of 94	

Triple insulation	YOUNG CHANG SILICONE CO LTD	STLZW-B	130°C	EN 60950-1	VDE
wire of T1	Various	Various	130°C	EN 60950-1	VDE
Varnish of T1	Various	Various	155°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Insulation tape of T1	SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD	JY312	130°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
	Various	Various	130°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
Tube of T1	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-T	300V, 200°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance
WALTEK WAL	Various	Various	300V, 200°C	EN 60335-1 EN 60335-2- 29	UL / Tested with appliance

¹) An asterisk indicates a mark which assures the agreed level of surveillance.

28.1 TABLE: Threade	ed part torque test		P
Threaded part identification	Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)
For enclosure	3,0	Ell Tex	0,5
- + + 1	El It alle	Mur Mur. Mur.	70, 7

29.1 T	ABLE: Clearances										
LIER WATE	Overvoltage category		TE TELLER WALTER								
EX TEX		pin	Туре	of insulation:	/	LET LET					
Rated impulse voltage (V):	Min. cl (mm)	Basic	Functional	Supplementary	Reinforced	Verdict / Remark					
White Whi	0,2* / 0,5 / 0,8**	-	# 1.jt	- CEX CEX	-CIEN NI	WIN WILL					
at at	0,2* / 0,5 / 0,8**	TE IN	ri -Mrr.	15 m	7.	N A					
INCT WALL	0,2* / 0,5 / 0,8**	-	* - "	THE LIER	LEE MITE	White Nanti					
et et	0,5 / 0,8** / 1,0***	-NULL	400, 111	- m - m	- 3	N					
it will a	1,5 / 2,0***	>1,5	>1,5	>1,5	ET NITE	WELL A					
t et .	3,0 / 3,5***	WILL.	Mr. Mr.	-111, 12,	>3,0	H Pot					
MUC ME	5,5 / 6,0***	+	et jet	-UER SUIER	- nuite our	IN IN					
Alt A	8,0 / 8,5***	1 L	1, - m	70, 70,		N N					
Mrt. Mrt.	11,0 / 11,5***		E - 18*	JEN CIE	ATER WALL	The N The					



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1 (01010110	0 110:: 11 1B 10B 1 1000020	1 ago o i oi o i	
COLLEGE OF		IEC 60335-2-29	
Clause	Appended table	THE MALL WALL WALL WALL	Verdict

- *) For tracks on printed circuit boards if pollution degree 1 and 2;
- **) For pollution degree 3;
- ***) If the construction is affected by wear, distortion, movement of the parts or during assembly.

29.2 TABLE: Working voltage (V)	Creep	page dis	Cr	reepage di (mm)	stance	tary and	reinforced	l insula	ation	oun' - Juniter	PINE
CEL TEX TEX	.1	in and	<u>2</u>	ir nich		3		Туре	of insu	ılation	TEX
The Till	20	N	laterial g	roup (N	laterial o	group	MULT	-un		
Life Rife.	المالة	MALI	JUL 1	IIIa/IIIb	1	II ,	IIIa/IIIb	B*)	S*)	R*)	Verdict
≤50	0,2	0,6	0,9	1,2	1,5	1,7	1,9		m	- 1/2 m	N
≤50	0,2	0,6	0,9	1,2	1,5	1,7	1,9	C.L	TEX		N
≤50	0,4	1,2	1,8	2,4	3,0	3,4	3,8			10,	N
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4	, t		LIET	N
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4	10	3	_	N
>50 and ≤125	0,6	1,6	2,2	3,0	3,8	4,2	4,8	NI S			N
>125 and ≤250	0,6	1,3	1,8	2,5	3,2	3,6	4,0	>2,5		<u>_</u>	P
>125 and ≤250	0,6	1,3	1,8	2,5	3,2	3,6	4,0	LIE	>2,5	24	Rin
>125 and ≤250	1,2	2,6	3,6	<u>5,0</u>	6,4	7,2	8,0	\	<u> </u>	>5,0	- P.
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	ال	<u> </u>	1/2	N/N
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		E.F	1	N
>250 and ≤400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	CALL!	-2/1		N
>400 and ≤500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	TEX	<u> </u>	et	S [©] N
>400 and ≤500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	w <u> </u>	1/1	-1n	N
>400 and ≤500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	16th		الله	N
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0			70	N
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	×	TEN	120	Ń
>500 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	10.		٠.ــــــــــــــــــــــــــــــــــــ	N
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	n Life			N V
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5			<u>.</u> —	ĹN.
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	NITE	NELT	JUL	N
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	.+		-,4	- N
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0			m	√N
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	_	L	, et	N



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WILL WILLIAM	150 M	2	10 1	IEC 60	335-2-29	Jet-	Let .	Set .	J. C. C.	CITT	and the
Clause Appe	nded tabl	е	SEL SIE	CLEIK "M	CLE WIL	er an	r. 44	. 4	1	74.	Verdict
>1250 and ≤1600) 4,2	6,3	9,0	12,5	16,0	18,0	20,0	11/2	_1/2	~	N
>1250 and ≤1600) 4,2	6,3	9,0	12,5	16,0	18,0	20,0			E.L	N
>1250 and ≤1600) 8,4	12,6	18,0	25,0	32,0	36,0	40,0	7/2	The	"	N
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	18th	-C-1		N
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	t	10-	20	N
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	, <u>-</u>	TEL	NITE	N
>2000 and ≤2500	7,5	10,0	14,0	20,0	25, 0	28,0	32,0	100	_		N
>2000 and ≤2500	7,5	10,0	14,0	20,0	25, 0	28,0	32,0		11		N .
>2000 and ≤2500) 15,0	20,0	28,0	40,0	50,0	56,0	64,0	700		+	N
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	NITE	NI-LIT		Not
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0				← N
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0			MUC	N
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	, t	1	10	N
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		7		an N
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0		t	EX	N
>4000 and ≤5000) 16,0	20,0	28,0	40,0	50,0	56,0	63,0	MIL	-n	_1	N
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	Total Contract of the Contract	J. T. E.	<u> </u>	N
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	<i>y</i> — .	un.	10,	N
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	SEX.	LEK		N
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	-10			N
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0		-11		N.N
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	4	_	,E	N
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	776	MILI		N
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	7.			× N
>8000 and ≤1000	0 32,0	40,0	56,0	80,0	100,0	110,0	125,0		W.	Party.	N
>8000 and ≤1000	0 32,0	40,0	56,0	80,0	100,0	110,0	125,0	, ₄ —	et	TEX	N
>8000 and ≤1000	0 64,0	80,0	112,0	160,0	200,0	220,0	250,0	40		100	e _n N
>10000 and ≤1250	00 40,0	50,0	71,0	100,0	125,0	140,0	160,0		<u>,</u>	TEX	N
>10000 and ≤1250	0,0	50,0	71,0	100,0	125,0	140,0	160,0	1 m	an		N
>10000 and ≤1250	0,08	100,0	142,0	200,0	250,0	280,0	320,0	754	-16	۲	N

29.2	TABLE: Creepage distances, functional insulation	Р
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TROTOTOTO	C 140 W1D 10D 11000020	1 age 50 01 0+	
Willer of	net was were were	IEC 60335-2-29	EX ITEX STEEL WITE WHILE
Clause	Appended table	THE WALL WALL WALL	Verdict

Working voltage (V)	ALTEN			reepage di (mm) Pollution de			MULL	wer we are
7/1 7	1	7.E.	<u>2</u>	THE	W/ CIE	3	ans a	- 2n 2n
THE WALLE WA		N	/laterial o	group	М	aterial g	roup	THE STEE STEE
	+	EH	SE II	IIIa/IIIb	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	VII 3	IIIa/IIIb	Verdict / Remark
≤50	0,2	0,6	0,8	1,1	1,4	1,6	1,8	CLIFE NIE W
>50 and ≤125	0,3	0,7	1,0	1,4	1,8	2,0	2,2	N
>125 and ≤250	0,4	1,0	1,4	2,0	2,5	2,8	3,2	MITE WALL
>250 and ≤400	0,8	1,6	2,2	3,2	4,0	4,5	5,0	N
>400 and ≤500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	LIL WILL N WAL
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	L N
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	Mur. Nur.
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	N.
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	The My M
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	ART ANT ARE
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	N N N
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	IET TIEN STEET
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	N
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	NUTER NUTER
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	N
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	MITE WAY WALL
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	N
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	IN N

30.1 TABLE: Ball pressure									
Part which was	Test temperature (°C)	Impression diameter (mm)	Allowed impression diameter (mm)						
Plastic enclosure	110	0,4	≤2,0						
PCB material	125	1,0	≤2,0						
Transformer bobbin	125	0,9	≤2,0						



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lause	Appended table	THE THE STATE OF T	Verdict
New M	HELL MET MET MET ME	IEC 60335-2-29	LUTER MITER AND

30.2-1	TABLE: resi	istance to heat, fire and tracking, glow-wire test							
Part White White		Test temperature (550 / 650 / 750 / 850 / 960)	Ignition of test sample (Y/N)	Ignition of tissue paper (Y/N)	Ti (s)	te (s)	h _f (mm)	Result	
Plastic enclosure		550	4 N	N Dis	-"W	y u	-2h	Р	
Transformer bobbin		850	N	N	L 4	Ļ X	et (e	P	
		750	N	I N	Nation.	141	Th.	√P P	

Remark: Ti = the time between glow wire touched the material and the material ignited;

Te= the time between glow wire touched the material and the flame extinguished.

0.2-2 TABLE: resistance to heat, fire and tracking, needle-flame test						
Part is white white w	Application time	Ignition of sample Yes / No	t _b	Ignition of wrapping tissue Yes / No	Result	
- Et TEX STEX OUT	ANTE OF	Will Mur	17		TEX	

Remark: tb – Duration of burning.

The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.

===== End of Report =====



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Photo Documentation

Reference No.: WTD15D1136592S

Model: C060L1001, C060L0701

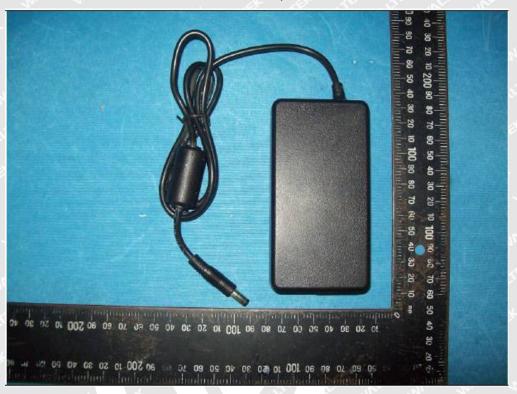


Photo 1 overall view



Photo 2 overall view



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Photo Documentation

Reference No.: WTD15D1136592S

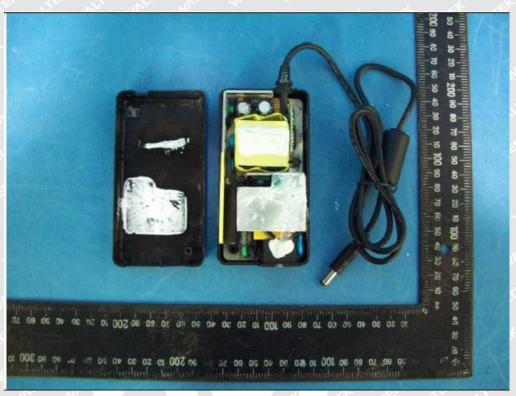


Photo 3 internal view



Photo 4 internal PCB top view



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Photo Documentation

Reference No.: WTD15D1136592S

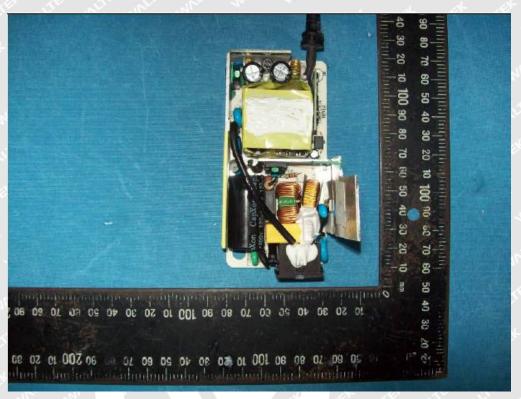


Photo 5 internal PCB top view



Photo 6 internal PCB bottom view