

中国认可 国际互认 检测 TESTING CNAS L4062



TEST REPORT

Reference No.	: -1	WTX21X12149580S
Applicant	: 3	GlobTek, Inc.
Address	ên.	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer	şî ^{ler}	The same as above
Address	j.	The same as above
Product Name	: <	ITE POWER SUPPLY
Model No	: 	GT-81081-60x-y-a (see general product information for model designation)
Test specification	NUT TEX	IEC 61558-2-16:2009+A1:2013 used in conjunction with IEC 61558-1 2005 + A1:2009 Include deviations for Australia and New Zealand Safety of power transformers, power supplies, reactors and similar products for supply voltages up to 1100 V Part 2: Particular requirements and tests for switch mode power sup- ply units and transformers for switch mode power supply units
Date of Receipt sample	*	2022-02-16
Date of Test		2022-02-16 to 2022-03-11
Date of Issue	;//	2022-04-27
Test Report Form No	: 6	WTX_IEC61558_2-16_2009B
Test Result	:	Pass & the first state million million

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 approver.

> Prepared By: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China Tel :+86-755-33663308 Fax:+86-755-33663309 Email: <u>sem@waltek.com.cn</u>

Tested by:

John Zhong

John Zhong

Approved by:

Harvid Wei

Waltek Testing Group (Shenzhen) Co., Ltd. http://www.waltek.com.cn

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Test item description ITE POWER	RSUPPLY				
Trademark					
Model and/or type reference	GT-81081-60x-y-a (see general product information for model designation)				
Serial number	the state street marger marter annut annut				
Rating(s) Input: 100-2 Output: (det	240V~ 50/60Hz 1.5A cails see next page)				
Remark: Whether parts of tests for the product have been s ☐ Yes ⊠ No	ubcontracted to other labs:				
If Yes, list the related test items and lab information: Test items:					
Lab information:	inter white white white and the state				
Summary of testing:					
Tests performed (name of test and test clause):	: Testing location:				
 IEC 61558-2-16:2009+A1:2013 IEC 61558-1:2005 + A1:2009 AS/NZS 61558.1:2008+A1:2009+A2:2015 AS/NZS 61558.2.16:2010+A2:2012+A3:2014 	Waltek Testing Group (Shenzhen) Co., Ltd. Address: 1/F., Room 101, Building 1, Hongwei In- dustrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China				
The submitted samples were found to comply with the requirements of above specification.	and the street white and survey and				
Summary of compliance with National Difference	ces:				
List of countries addressed: AU AU=Australia					
The product fulfils the requirements of Austral 61558.1:2008+A1:2009+A2:2015 and AS/NZS 61	lia and New Zealand National Differences AS/NZS 558.2.16:2010+A2:2012+A3:2014				

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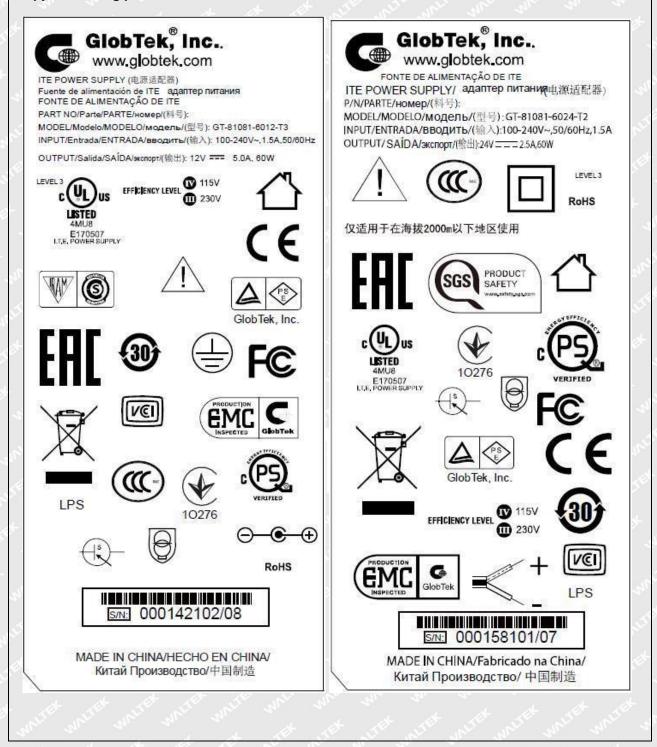


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Copy of marking plate:



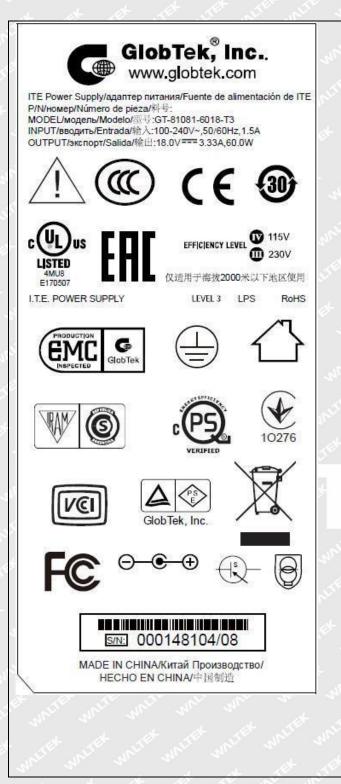
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Test item particulars:	THE THE STIPL MUTE MUTE WATE WATE
Type of transformers:	Switching power supply incorporating safety isolat- ing transformer
Application:	ITE POWER SUPPLY
Protection against electric shock:	Class I (model: GT-81081-6012-T3, GT-81081- 6018-T3)
	Class II (model: GT-81081-6024-T2)
Short-circuit protection:	Yes
inherently short-circuit proof:	No
non-inherently short-circuit proof:	Yes
non short-circuit proof:	No
fail safe:	No with which which which we
Protection index:	IPX0
Other characteristics:	Weight: 273g Max.
Rated ambient temperature ta (°C):	40
Short-circuit voltage (V):	N/A
Possible test case verdicts:	a star star star star with
- test case does not apply to the test object:	N/A (not applicable)
- test object does meet the requirement:	P (Pass)
- test object does not meet the requirement:	F (Fail)
General remarks:	A AT AT AT A

General remarks:

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a comma (point) is used as the decimal separator.



General product information:

The equipment is a series of class I or class II external type switching mode power supply adaptors (desk top type with appliance inlet) for DC supply of information technology equipment. Models of Class I are identical with Class II except 3 pin AC inlet and the earthing wire (green/yellow wire) between AC inlet (not located on trace) to secondary output V-. Also, Class I construction have CY1 and CY2 between lines and earthing.

External enclosure is made of V-0 plastic material. Two pieces of enclosure are enclosed with ultrasonic welding without screw.

Model Differences :

1. Transformer: The adapters with different output voltage have different secondary winding of transformer. 2. R3, R4, R26, R18, R20, C10 and C11: The parameters of these components depend on output power and output voltage.

3. C1, R19, R19A, D5, C9, C10 and C11: The parameters of these components depend on output voltage.

The models GT-81081-6012-T3, GT-81081-6024-T2 and GT-81081-6018-T3 are representing the worst case because the models had highest V, A, VA and control method of secondary voltage. Unless otherwise specified, all tests were conducted under worst case. Max. normal load condition: Output load to rated output.

Explanation of model designation GT-81081-60x-y-a:

"x" is the rated standard output voltage designation, which can be 12, 14, 15, 18, 19, 20, 22 or 24; "y" is minor adjusting variable to standard output voltage, which can be 0.1 - 2.9 in step of 0.1 or blank; "a" represents the inlet type, which can be T2 or T3 or T3A; T2 represents C8 inlet type (Class II construction), T3 represents C14 inlet type(Class I construction), T3A represents C6 inlet type(Class I construction); Combination "x" and "y":

X	12	14	15	18	19	20	22	24
У	blank	Blank or 0.1-1.9	Blank or 0.1-0.9	Blank or 0.1-2.9	Blank or 0.1-0.9	Blank or 0.1-0.9	Blank or 0.1-1.9	Blank or 0.1-1.9

Model rating list:

Model	Output Voltage (Vdc)	Max. Output Power (W)
GT-81081-6012-a	12.0	60
GT-81081-6014-y-a	12.1-13.9	60
GT-81081-6014-a	14.0	60
GT-81081-6015-y-a	14.1-14.9	60
GT-81081-6015-a	15.0V	60
GT-81081-6018-y-a	15.1-17.9	se 60 se
GT-81081-6018-a	18.0	60
GT-81081-6019-y-a	18.1-18.9	60
GT-81081-6019-a	19.0	60
GT-81081-6020-y-a	19.1-19.9	60 0
GT-81081-6020-a	20.0	60
GT-81081-6022-y-a	20.1-21.9	60
GT-81081-6022-a	22.0	60
GT-81081-6024-y-a	22.1-23.9	60
GT-81081-6024-a	24.0	60

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in and	IEC 61558-2-16	of the the state	ne in
Clause	Requirement + Test	Result - Remark	Verdic
B	MARKING AND OTHER INFORMATION	WALTER WAITER WATER WA	Р
8.1	Transformer marked with:	at at at 3	P
20 - 20	a) rated supply voltage or voltage range (V):	100-240V 🕾	Р
inet int	b) rated output voltage (V):	See marking label	P
	c) rated output (VA, kVA or W):	Mr. W. M.	N/A
NNL12	d) rated output current (A):	See marking label	P
*	e) rated frequency (Hz):	50/60Hz	P
MALL	f) rated power factor (if not 1):	UTER ALTER MUTER WA	N/A
NUTEX M	g) symbol AC for alternating current, or DC for di- rect current-output	The symbol for DC The symbol \sim for AC	+ NUTP
Set WALT	 h) symbol for electrical function (according to one or more part's 2) in addition with the symbol for SMPS (IEC 61558-2-16:09) 	For example:	un Int P
WALTER	 manufacturer's name or trademark or name of the responsible vendor 	See marking label	UTE NP.
Set	j) model or type reference	See marking label	et P [*]
	k) vector group according to IEC 60076 for three- phase transformer	Single-phase	N/A
it ma	I) symbol for Class II	I wanter water	N PS
whit	m) symbol for Class III	A SUTE SUPER SUPER S	N/A
, st	n) index IPXX if other than IP00	IPX0	P.
when.	o) rated max. ambient temperature ta (if not 25 °C):	40 °C	Р
Intra M	 p) rated minimum ambient temperature ta min, if <10° C and if a temperature sensitive device is used 	NUTER WALTER WALTER WALTER	N/A
A MULTER	 q) short-time duty cycle: operating time Intermit- tent duty cycle: operating and resting time (e.g. 5min/30min) 	and white white white	N/A
WALTER	r) for tw-marked transformers marked with the rated max. operating temperature, increased by multiples of 5 (e.g. tw 120; tw 125)	where we wanted where	N/A
LIEK WN	s) transformers used with forced air cooling shall be marked with "AF" in m/s	Tet with milet white	N/A
et mit	t) Information from the manufacturer to the pur- chaser (data sheet) :	at the the state	N/A
- Utek	 short-circuit voltage (% rated supply volt- age) for stationary transformers > 1000 VA 	when when any	N/A
-2m	 electrical function of the transformer 	with with with with	N/A

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	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdic
8.2	Marking for transformers IP00 or for associated transformers: type and trademark, instruction sheets	AND	N/A
8.3	Adjusted voltage easily and clearly discernible	r w w	N/A
8.4	For each tapping or winding: rated output voltage and rated output	ret waite waite waite w	N/A
NULLE	necessary connections clearly indicated	t ist ist miter with	N/A
8.5	For short-circuit proof transformers or non- inherently short-circuit proof transformers:	Non-replaceable protective device only	N/A
NUTER WA	Rated current (A or mA) and symbol for time cur- rent characteristics of the fuses for non-inherently short-circuit proof transformer with incorporated fuses and non-short-circuit proof transformer:	tret while white white	N/A
TE white	Manufacturer's model or type reference and rating of the device for non-inherently short-circuit proof transformers with incorporated replaceable protec- tive device (other than fuses)	and an inter an inter and	N/A
whitek w	Construction sheet for transformers with replacea- ble protective device (other than fuses) information with information about the replacement.	whitek wantek wantek wantek	N/A
8.6	Terminals for neutral: "N"	the state state	N/A
14 . 18	Terminal for protective earth marked with earthing symbol		Р
m	Identification of input terminals: "PRI"	inter water water water	N/A
- Jet	Identification of output terminals: "SEC"	the state of	N/A
	Symbol for any point/terminal in connection with frame or core	H	N/A
8.7	Indication for correct connection	See marking label	Р
8.8	Instruction sheet for type X, Y, Z attachments	at at let set	N/A
8.9	Transformer for indoor use shall be marked with the relevant symbol.		Р
8.10	Symbol for Class II construction not confused with maker's name or trademark.	See marking label (Model: GT- 81081-6024-T2)	P
which w	Class II transformer with parts to be mounted – de- livered with all parts for class II after mounting.	white white white white	N/A
NUTE MA	Symbol for class II transformer placed on the part which provides class II.	and writer writer writer w	ν [°] Ρ _ι
8.11	Correct symbols:	the set set is	P
100	Volts	V	Р
MUTER	Amperes	A (mA)	Р
	Volt amperes (or volt-amperes reactive for reactors)	VA or (VAR)	N/A

Reference	No.: WTX21X1214	49580S
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Clause	Requirement + Test	Result - Remark	Verdic
WILL	Watts	W	Р
	Hertz	Hz	Г . ́Р
and all	Input	PRI	N/A
10 5	Output	SEC	N/A
- wr	Direct current	d.c. (DC) or ===	P
<u>بر روا</u>	Neutral	N	P
- m		and the and the	
- Str	Single-phase a.c.		P
rue 1	Three-phase a.c.	3	N/A
Let	Three-phase and neutral a.c.	3/N KA-2	N/A
20	Power factor	COS φ	N/A
	Class II construction	(Model: GT-81081-6024- T2)	Set P
WALTER	Class III construction		N/A
dt.	Fuse-link	the state	N/A
n in	Rated max. ambient temperature	NUTER INTE MALL WALL	N/A
dt i	Frame or core terminal	and the state	N/A
	Protective earth	De la sur sur	Р
white	IP number	IPX0	P
, t	Earth (ground for functional earth)	- The second second	N/A
white .	For indoor use only		vР
LIE N	tw5 YYY	tet itet itet aute	N/A
4	tw10 YYY	1 - M. M. M.	N/A
	twx YYY	tet stet with white of	N/A
L . A	Additional Symbols (IEC 61558-2-16:09)	- 14 - 14 - 14 - 14 - 14 - 14 - 14 - 14	C P
when	SMPS incorporating a Fail-safe separating transformer		N/A
NAL V	SMPS incorporating a Non-short-circuit-proof separating transformer		N/A
ex white	SMPS incorporating a Short-circuit-proof separating transformer (inherently or non-inherently)		N/A
NUTER	SMPS incorporating a Fail-safe isolating transformer	F or DF	N/A

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	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
WALTER W	SMPS incorporating a Non-short-circuit-proof isolating transform- er		N/A
inex whi	SMPS incorporating a Short-circuit-proof isolating transformer (inherently or non-inherently)		N/A
ex white	SMPS incorporating a Fail-safe safety isolating transformer		N/A
whitek y	SMPS incorporating a Non-short-circuit-proof safety isolating transformer		N/A
nuter wh	SMPS incorporating a Short-circuit-proof safety isolating transformer (inherently or non-inherently)		у Р "
n nnt	SMPS incorporating a Fail-safe auto-transformer	GF or GF	N/A
white	SMPS incorporating a Non-short-circuit proof auto-transformer	or -O	N/A
white w	SMPS incorporating a Short-circuit proof auto-transformer (inherently or non-inherently)	or -O	N/A
at de	SMPS (Switch mode power supply unit)	-	Р
8.12	Figures, letters or other visual means for different positions of regulating devices and switches	No switch	N/A
when .	OFF position indicated by figure 0	white mile white white	N/A
1et	Greater output, input etc. indicated by higher figure	in at at at	N/A
8.13	Marking not on screws or other easily removable parts	white white white white	Р
and and	Marking clearly discernible (transformer ready for use)	Sex summer summer summer out	R
WALTER	Marking for terminals clearly discernible if neces- sary after removal of the cover	No such terminal	N/A
WALTER	Marking for terminals: no confusion between input and output	No such terminal	N/A
NUTEK WA	Marking for interchangeable protective devices po- sitioned adjacent to the base	No such interchangeable pro- tective devices	N/A
IEX WALTE	Marking for interchangeable protective devices clearly discernible after removal of cover and pro-tective device	at white white white whi	N/A
8.14	Special information for installation (in the catalogue, data sheet, or instruction sheet) if necessary:	aret saret suret soure	P

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	IEC 61558-2-16					
Clause	Requirement + Test	Result - Remark	Verdict			
The state	when which which when when it is	- 15 A 50	JUE MIL			
	For non-inherently short-circuit proof transformers with non-self-resetting or non replaceable devices (weak-point, thermal link):	AND AND AND A	N/A			
	The device can not be reseted or replaced		at at			
Et white	For transformers generating a protective earth con- ductor current of 10 mA (see also cl. 18.5.2): The installation shall be made according to the wir- ing rules.	The while while whi	N/A			
	 For associated- and IP00-transformers: At 10% over or under voltage in the supply voltage, the rated output of the transformer shall be selected accordingly. 	white white white	N/A			
net st	For stationary transformers exceeding 1000 VA: The short circuit voltage in % of the rated voltage	white white white we	N/A			
A WALLEY	For all transformers the electrical function: An information about the electrical function of the transformer (e.g. inherently short circuit proof safety isolating transformer)	water water water	white white			
WALTER W	For associated- and IP00-transformers: The max. abnormal winding temperature	milet whilet whilet	N/A			
NUTER JUNI	For tw-transformers: The specific constant S is (e.g. S6 says S = 6000)	at an anna an	N/A			
LEX WALLE	For transformers with more than one output wind- ing, not for series or parallel connection	and the antibet would	N/A			
whitek	 an information in the in the instruction sheet: the transformer is not intended for se- ries/parallel connection 	whitek whitek whitek	N/A			

9 🔊	PROTECTION AGAINST ELECTRIC SHOCK		P
9.1	Protection against contact with hazardous live parts	s at at a	P
9.1.1	A live part is not a hazardous live part if:	untite wait wat wat	- P
INLIEK MAI	 it is separated from the supply by double or re- inforced insulation 	and water sparet sparet	N P N
Tex white	- the requirements of 9.1.1.1 and 9.1.1.2 are ful- filled	of the street marked on	P
9.1.1.1	The touch voltage is \leq 35 V(peak) a.c. or \leq 60 Vd.c.	Measured maximum output voltage: Max. 24.36Vd.c.	P

For IP00-transformers the test of 27.2 is not per-

formed. The result may be affected by the enclosure in the final application.

Marking durable and easily legible

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Clause	Requirement + Test	Result - Remark	Verdict
9.1.1.2	If the touch voltage is > 35 V (peak)a.c. or > 60 V d.c., the following requirements shall be fulfilled:	white white white whi	Р
me m	The touch current shall not exceed:	ALTE WALL WALL WALL	Р
et white	– for a.c. 0,7 mA (peak)	L, N to output terminals: 0.45mA peak Max. L, N to enclosure: 0.07mA peak max.	Ρ
*	– for d.c. 2,0 mA (see Annex J)	me m m	N/A
WILL D	In addition, when a capacitor is connected to live parts:	antifet watter watter watt	m
9.1.1.2.1	discharge: < 45 C (between 60 V and 15 kV)	let the state with	N/A
9.1.1.2.2	energy: <u><</u> 350 mJ (voltage >15 kV)	the man me me	N/A
9.1.2	Transformers shall have an adequate protection against accessibility to hazardous live parts:	et watter watter watter w	P.P.
WALTER	The enclosure of class I and class II transformers gives an adequate protection against accentual contact with hazardous live parts.	white white white wh	P
WALL W	Class I transformers: accessible parts are separat- ed from hazardous live parts by at least basic insu- lation.	united white white white	N/A
Et mirel	Class II transformers: no accessibility to basic insu- lation, or conductive parts separated from hazard- ous live parts by basic insulation.	and white sume	P
	Hazardous live parts are not accessible after re- moval of detachable parts.	at set set is	N/A
Sur .	Hazardous live parts are not accessible after re- moval of detachable parts except for:	No lamp or fuse holder	N/A
ne m	- lamps having caps larger B9 and E10	ALTE WALT WALL WAL	N/A
Set St	 type D fuse holder 	at the left	N/A
et unitet	Lacquers, enamel, paper, cotton, oxide film on metal parts not used for protection against acci- dental contact with hazardous live parts:	Such substance not used	N/A
NUTEK	Shafts, handles, operating levers, knops are not hazardous life parts.	No such parts	N/A
Set 1	Compliance is checked by inspection and by relevant tests according to IEC 60 529	when when when when	Р
	Class II transformers and Class II parts of Class I construction are tested with the test pin (fig. 3)	with which which which	Р
s white	Hazardous live parts shall not be touchable by test finger (fig. 2)	at month would would we	Р
white.	for Class II transformers: metal parts separated by basic insulation from hazardous live parts not touchable by test finger	watter watter watter wat	P

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Clause	Requirement + Test	Result - Remark	Verdic
J.T.	white and when when we go	- 11 11 50	alle min
SN.	hazardous live parts shall not be touchable with the test pin	white white white	Р
9.1.3	Accessibility of non hazardous live parts	NUTER WALT WALL W	P
et strey	Non hazardous live parts of the output circuit may be accessible if they are isolated from the input cir- cuit by double or reinforced insulation and if the fol- lowing conditions are fulfilled:	ret water water wat	Р
MUTER	 The no load output voltage is ≤ 35 V peak a.c. or ≤ 60 V ripple free d.c., both poles are accessible 	MALE MALE MALE	P
NITEX MA	 The no load output voltage is > 35 V peak a.c. or > 60 V ripple free d.c. and < 250 V a.c., only one pole may be accessible 	LITEX MOUTEX MOUTEX M	N/A
9.2	Transformers with primary supply plug: 1 s after the interruption of the supply the voltage between the pins do not exceed 35 V (peak) a.c. or 60 V ripple free d.c.	et sourcet sourcet source	Р
SUNLIFEK S	Transformers without a primary supply plug: 5 s af- ter the interruption of the supply the voltage be- tween the input terminals do not exceed 35 V (peak) a.c. or 60 V ripple free d.c.	milet anilet anilet a	N/A
UTER IN	The following tests are required :	at a set	S ^{et} S ^{et} P
et 56	If the nominal capacitance is $\leq 0,1 \ \mu\text{F} - \text{no test}$ is conducted.	a con an	N/A
When	 10 times switch the supply source on and off, or use a special equipment for to switch off at the most unfavourable electrical angle 	24V	P
	If the measured voltage is > 60 V ripple free d.c., the discharge must be \leq 45 μ C.	when when when	N/A

10 🔬	CHANGE OF INPUT VOLTAGE SETTING		TE P ST
et 564	Voltage setting not possible to change without a tool	when we we we	N/A
-m	Different rated supply voltages:	white white white white	N/A
WALTER	 indication of voltage for which the transformer is set, is discernible on the transformer. 	white white white white	N/A
10.101	A wide range of the input (100 V a. c, to 240 V a.c voltage is allowed (IEC 61558-2-16:09):	THE STREE MUTCH MUTCH IN	NUTER SIL
JEX MLT	 if the output voltages does not exceed the rated output voltage 	at that the wind in	P P
+ .5et	 if the no-load voltage does not exceed the limits of output voltage deviation 	when when we we are	P

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IEC 61558-2-16

Clause	Requirement + Test	Result - Remark	Verdict
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11	OUTPUT VOLTAGE AND OUTPUT CURRENT UN	IDER LOAD	Р
11.1	Difference from rated value (without rectifier; with rectifier):	MITER WAITER WAITER WAITER	J. P
LIFEK W	a) inherently short-circuit proof transformers with one rated output voltage for output voltage: a.c. 10%; d.c. 15%	VIEK WAITER WAITER WAITER W	N/A
ie wnir	b) inherently short-circuit proof transformers with one more than 1 rated output voltage for high- est output voltage: a.c. 10%; d.c. 15%	et watter watter watter wat	N/A
whe	c) idem for other output voltages: a.c. 15%; d.c. 20%	amile while while whe	N/A
unite v	d) other transformers for output voltages: a.c. 5%; d.c. 10%	See appended table	P

12	NO-LOAD OUTPUT VOLTAGE (see supplementary requirements in Particular States and States a	rt 2) P
WALL	Remark: with rectifier measuring on both sides of the rectifier	N/A
12.101	The no load output voltage shall not exceed (IEC 61558-2-16:09):	NULLER OF P
LIEK WAY	 For SMPS incorporating separating or auto- transformers: 1000V a.c. or 1415 V ripple free d.c. 	N/A
White	 For SMPS including isolating transformers: 500 V a.c. or 708 V ripple-free d.c. 	N/A
WALTER	 For SMPS including safety isolating transform- ers: 50 V a.c. or 120 V ripple-free d.c. 	VINITE VINPE
INLIEK WI	For independent transformers , this output voltage limitation applies even when output windings, not for interconnection, are connected in series	N/A
12.202	The difference between output voltage at no load and the output voltage measured in clause 11 does not exceed the values of table 101 (IEC 61558-2-16:2009), Rated output (VA) Rated value %	Par Marine

13	SHORT-CIRCUIT VOLTAGE	N/A
INLIER.	Difference from marking for short-circuit voltage 20%	N/A

14 👋	HEATING	inter and and and and	Р
14.1	General requirements	a at at at at	P
20	No excessive temperature in normal use	the water water water	Р

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Clause	Requirement + Test	Result - Remark	Verdic
No. Com	with such such and have	- the state strength	ute water
	Room temperature: rated ambient temperature ta <u>+</u> 5 °C	where where we are	et Jet
	Type X, Y, Z attachments: 1 pull (5 N/A) to the connection windings	MITE MAIL MALL MAR	N/A
I WILL	Upri (V): 1,1 times rated supply voltage loaded with rated impedance – for independent transformers	264V	mrm
WALTER	Upri (V): 1,1 times rated supply voltage: with I sec (A), measured with rated impedance and 1,0 times of the rated supply voltage for others than inde- pendent transformers	TEX NIEL MITEL MITEL	INTE VITE
JEt	Type X, Y, Z attachments: 1 pull (5 N/A) to the connection windings	and and the state	N/A
	Max. temperature windings:	(see appended table)	Р
Er NNET	– Class A: 100 °C	et the state where	N/A
A	– Class E: 115 °C	The she we	N/A
white	– Class B: 120 °C	with all and and a	N ² NP
1. Ar	– Class F: 140 °C	Shi was	N/A
10 - 11	– Class H: 165 °C	white white white whi	N/A
et :	– other classes	1 1 1 1	N/A
- WI- *	Temperature of external enclosures of stationary transformers:	and hunt much	N/A
me	– metal: 70 °C	mitter white white	N/A
. At	– other material: 80 °C	a de det	N/A
WALLEY	Temperature of external enclosure of stationary transformer 85 °C (not touchable with the IEC test finger)	white white whe wh	N/A
et al	Temperature of external enclosures, handles, etc. of portable transformers:	at at the set	P
20	– continuously held parts of metal: 55 °C	mat when when	N/A
white	 continuously held parts of other material: 75 °C 	watter watter watter w	N/A
NUE	– not continuously held parts of metal: 60 °C	it let bet a	N/A
let .	 not continuously held parts of other material: 80 °C 	inter and and an	P
14	Temperature of terminals for external conductors 70 °C	white white white white	N/A
me	Temperature of terminals of switches 70 °C	and another and and and a	√ N/Â
Set	Temperature of internal and external wiring:	(see appended table)	S P
n.	– rubber: 65 °C	white white white w	N/A

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Clause	Requirement + Test	Result - Remark	Verdict	
WILL'	– PVC: 70 °C	Martin Martin Martin	Р	
Set .	Temperature of parts where safety can be affected:		N/A	
mer en	– rubber: 75 °C	Were Muril Muril Sunt	N/A	
LIEK IND	– phenol-formaldehyde: 105 °C	at all all all a	N/A	
	– urea-formaldehyde: 85 °C	a way way way or	N/A	
-NALLES	 impregnated paper and fabric: 85 °C 	t uter surer multing	N/A	
1t	– impregnated wood: 85 °C		N/A	
when a	 PVC, polystyrene and similar thermoplastic ma- terial: 65 °C 	waited water waite wait	N/A	
we we	– varnished cambric: 75 °C	Lifet mile while while	N/A	
1 1	Temperature rise of supports 85 °C	i i it it	Ø P	
t set	Temperature of printed boards:	UL approved PCB used, the limit is 130 °C	Р	
me	– bonded with phenol-formaldehyde: 105 °C	mile white white white	N/A	
. At	– melamine-formaldehyde: 105 °C	the the set	N/A	
m n	– phenol-furfural: 105 °C	inter water water water	N/A	
TEX NI	– polyester: 105 °C	at the set	N/A	
- 24	– bonded with epoxy: 140 °C	PCB rating: 130°C	Р	
et white	Electric strength between input and output windings (18.3, 1 min); test voltage (V):	Test Voltage: 3000Vac 1min	Р	
14.101	Winding temperature measured by thermocouples at the surface of the winding(IEC 61558-2-16:09)	MITEX WATER WATER WATE	P	
1.th	 if the internal frequencies is > 1kHz 	a at at at	P	
in m	 the values of Table 1 for windings temperatures are reduced by 10°C 	NUTE WALL WALL WALL	Р	
14.2	Application of 14.1 or 14.3 according to the insula- tion system	White white white all	R	
14.2.1	Class of isolating system (classified materials ac- cording to IEC 60 085 and IEC 60 216)	Class B	P	
14.2.2	No classified material, or system but the measured temperature does not exceed the value of Class A	MUTEX MALTER MALTER MALTER	N/A	
14.2.3	No classified material or system but the measured temperature exceeds the value for Class A, the live parts of the transformers are submitted to the test of 14.3	aret would would would be	N/A	
14.3	Accelerated ageing test for undeclared class of iso- lating system	white white white white	N/A	
me	Cycling test (10 cycles):	INTERNATE MALL WALL	N/A	
.it	 measuring of the no-load input current (mA) 	i i it it	N/A	

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Clause	Requirement + Test	Result - Remark	Verdict
14.3.1	– heat run (temperature in table 2)	MALER MALER WALFER	N/A
14.3.2	 vibration test: 30 min; amplitude 0,35 mm; fre- quency range: 10 Hz, 55 Hz, 10 Hz 	NUTER AND THE MALTER AN	N/A
14.3.3	– moisture treatment (48 h, 17.2)	A of the	<u>م</u> الم
14.3.4	Measurements and tests at the beginning and after each test:	and and an	N/A
MAL	 deviation of the no-load input current, measured at the beginning of the test is 30% 	WALTE WALT WAL	N/A
White	– insulation resistance acc. cl.18.1 and 18.2	TEX NUTER MUTE	N/A
NITEX N	 electric strength, no breakdown (18.3); 2 min; test voltage 35% of specified value (table VI) 	all state state of	N/A
Tet white	 Transformers (50 or 60 Hz version) are tested after the dielectric strength test as follows: under no load; duration: 5 min; Up- ri(V):1,2 times rated supply voltage; frequency (Hz): 2 times rated frequency 	et white white white	N/A

15	SHORT-CIRCUIT AND OVERLOAD PROTECTION	let the state state	P
15.1	General	We we we	Р
LITE M	Tests direct after 14.1 at the same ta and without changing position.	(see appended table)	P
et whit	Supply voltage between 0,9 times and 1,1 times of the rated supply voltage	1.1 times and 0.9 times had been considered	in mi
whitek	Transformer with rectifier tests of 15.2 and 15.3 at the input and the output terminals of the rectifier.	attet with antiet antiet	P
INLITEK D	Transformers with more than one output winding or tapping, all windings tested with normal load, the winding with the highest temperature is short circuited.	Only one output winding	N/A
m.	Winding protected inherently (15.2)	fet intife white white w	N/A
white	 Max. temperature of winding protected inherently (insulation class): 150 °C (A); 165 °C (E); 175 °C (B); 190 °C (F); 210 °C (H) 	whitet whitet whitet whit	N/A
NUTER	Winding protected by protective device:	at the state with	P
NUTER W	 Test according 15.3.2 - 15.3.3 – 15.3.4: max. temperature of winding during the time required or the time T given in table 4 (a) (insulation class): 200 °C (A); 215 °C ;(E); 225 °C (B); 240 °C (F); 260 °C (H) 	white white white white	N/A
WALTER	 Test according 15.3.1: max. temperature of winding during the first hour, peak value (insulation class): 200 °C (A); 215°C (E); 225 °C (B); 240°C (F); 260 °C (H) 	Protected, no high temperature	Р

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Clause	Deguinement - Test	Desult Demark	Mart
Clause	Requirement + Test	Result - Remark	Verdic
WALTER W	 Test according 15.3.1: max. temperature of winding after first hour, peak value (insulation class): 175 °C (A); 190 °C (E); 200 C (B); 215 °C (F); 235 °C (H) 	ANTER ANTER ANTER MATTER	Р
ex white	 Test according 15.3.1: max. temperature of winding after first hour, arithmetic mean value (insulation class): 150 °C (A); 165 °C (E); 175 °C (B); 190 °C (F); 210 °C (H) 	Tet whitet white white w	P.N
MUTER	Max. temperature of external enclosures (accessi- ble by test finger) 105 °C	the set whet with	Pat
	Max. temperature of insulation of wiring (rubber and PVC) 85°C	ount when not state	Р
1. 24	Temperature rise of supports 105 °C	the work when when a	Р
15.2	For inherently short-circuit proof transformers and for transformers with rectifiers test by short circuit of the output winding at rated supply voltage x 1,1: temperature rises values in table 3	et whitet whitet whitet wh	N/A
15.3	For non-inherently short-circuit proof transformers and for transformers with rectifiers: temperature ris- es values in table 3	See appended table	P
15.3.1	Output terminals short-circuited: protection device operates, test at 0,9 1,1 of the rated supply voltage	at white white w	LIC P
15.3.2	If protected by a fuse accordance with either IEC 60 269-2 or IEC 60 269-3, or a technical equiv- alent fuse, the transformer is loaded as in table 4.	white white white white	N/A
15.3.3	If protected by a fuse accordance with either IEC 60 127 or ISO 8820, or a technical equivalent fuse, the transformer is loaded with the current as specified for the longest pre arcing time. If protected by a miniature fuses in accordance to IEC 60127, 1,5 times of the rated fuse, until steady state condition (in addition)	antifick antifick antifick antifick	N/A
15.3.4	If protected by a circuit-breaker according to IEC 60 898 the transformer is loaded with a current equal to 1,45 times the value of the circuit-breaker rated current	white white white white	N/A
15.3.5	If other overload protection than a fuse (IEC 60 127) or a circuit-breaker (IEC 60 898) test with 0,95 times of operating current	Protected by electronic circuit	P
iet white	If an internal week point is used, the test must be repeated with two new samples. The two additional samples works similar to the first sample. Temperatures in the limit of table 3	white white white	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
J.C.	white white white white white and the state	at at 5th .	UP NUE
15.4	For non-short-circuit proof transformers: temperature rises values in table 3, tests as indi- cated in 15.3	white white white whi	N/A
15.5	For fail-safe transformers:	n w w	N/A
15.5.1	Three additional new specimens are used	Jet miles while while	mer -n
1 1	- Upri (V): 1,1 times rated supply voltage:		st - 3
me	- Isec (A): 1,5 times rated output current:	intite white white w	m m
. At	- time until steady-state conditions t1 (h):	A at at	10 50
me 1	- time until failure t2 (h): t1; 5 h	white white when we	24-
15.5.2	During the test:	at at at a	N/A
1. 24	- no flames, molten material, etc.	the must show show	N/A
JEX NIT	– temperature of enclosure 175 °C	at let let with	N/A
	– temperature of plywood support 125 °C	me me m	N/A
NATE	After the test:	the state state of	N/A
sonifiek of	 electric strength (Cl. 18, 1 min, test voltage: 35% of specified value); no flashover or break- down for primary-to-secondary only for safety isolating, isolating and separating transformer and for primary-to-body for all kinds of trans- former 	white white white white	N/A
ex while	 bare hazardous live parts not accessible by test finger through holes of enclosure 	ALTER OWNERS MALITER	N/A
15.101	Electronic circuits of the SMPS fulfils the require- ments of Annex H of part 1 . After a fault: no elec- tric shock, no fire hazard and no unintentional op- eration.	(Details see Annex H)	Р

16	MECHANICAL STRENGTH	1 1 AP
16.1	General	Sur Sur Pu
1 .54	After tests of 16.2, 16.3 and 16.4	
m	– no damage	P
WALTER	 hazardous live parts not accessible by test pin according to 9.2 	MITER MAILER MAP
det .	 no damage for insulating barriers 	A A AP
1. n	 handles, levers, etc. have not moved on shafts 	N/A
16.2	Transformers (stationary and portable s. 16.1)	F P
1917 1 . [6]	For stationary and portable transformers: 3 blows, impact energy 0,5 Nm	Р
16.3	Portable transformers (except of plug in transformers)	WALL NA

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
- white	For portable transformers: 100 falls, 25 mm	the mailer and the and the and	P
16.4	Transformers with integrated pins (plug in trans-	A A A A	N/A
No. N	formers), the following tests are carried out:	NUTER MUTE WALL WIT	
LIEK WAL	a) plug-in transformers: tumbling barrel test: 50 x 250 g; 25 x 250 g	stat minet whitet whitet	N/A
et et	b) torque test of the plug pins with 0,4 Nm	a to the state	√ N/A
m	c) pull force according to table 5 for each pin	It will white white white w	N/A

17	PROTECTION AGAINST HARMFUL INGRESS OF	WATER AND MOISTURE	S P
17.1	Degree of protection (IP code marked on the trans- former)	IPX0	UNIT P
TEX MAL	Test according to 17.1.1 and for other IP ratings test according to IEC 60 529:	at street surger sources as	N STATE P
t ninet	 stable operating temperature before starting the test for < IPX8 	and the state of the sec	N/A
Jet	 transformer mounted and wired as in normal use 	which which the the	N/A
When y	 fixed transformer mounted as in normal use by the tests according to 17.1.1 A to L 	inter senter senter senter	N/A
r nu	 portable transformers placed in the most unfa- vourable position and wired as in normal use 	and while while	N/A
watt	 glands tightened with a torque equal to two- thirds of 25.6 	WALTE WALTE WALTE W	N/A
NUTER	After the tests:	the state state with	N/A
5° 1	 dielectric strength test according to 18.3 	me me me	N/A
MITE N	Inspection:	Tet with white white	N/A
Jet N	a) in dust-proof transformers no deposit of talcum powder	at the set of	N/A
+	b) no deposit of talcum powder inside dust-tight transformers	when when when we	N/A
MALTER	c) no trace of water on live parts except SELV parts below 15 V ac or 25 V dc or insulation if hazard for the user or surroundings no reduc- tion of creepage distances	White white white white	N/A
NUTER W	d) no accumulation of water in transformers IPX1 so as to impair safety	LTOX MILTOX MALTOX MALTOX	N/A
iet whit	e) no trace of water entered in any part of water- tight transformer	of street maret white w	N/A
- Intret	f) no entry into the transformer by the relevant test probe	THE LEF LEF	N/A
17.1.1	Tests on transformers with enclosure:	Mer mer m. m.	Р

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdic
W.C.	A) Solid-object-proof transformers:	MILLER WALTER WAITE	Р
WALTER W	- 2 IP2X test finger (IEC 60 529) and test pin (fig. 3)	NUTER AND MUTER AND	P
10 5	B) Solid-object-proof transformers:	s at the state	N/A
m	- wire 2,5 mm; force 3 N/A	The white white white	N/A
* 54	- IP4X, wire 1 mm; force 1 N/A	t at at at	N/A
	C) Dust-proof transformers, IP5X; dust chamber according to IEC 60 529, fig. 2:	when when when a	N/A
m a	a) transformer has operating temperature	white white white wh	N/A
NETEX WIN	b) transformer, still operating, is placed in the dust chamber	Lifet milet waitet waite	N/A
at de	c) the door of the dust chamber is closed	1 A A At	N/A
m	d) fan/blower is switched on	Et white white white	N/A
+ whitek	e) after 1 min transformer is switched off for cooling time of 3 h	stret wiret whitet an	N/A
UNLIEK W	A) Dust-tight transformers (IP6X) test according to C)	and which which whi	N/A
JEX N	B) Drip-proof transformers (IPX1) test according to fig. 3 of IEC 60 529 for 10 min	at at the set	N/A
et mutel	C) Rain-proof transformers (IPX2) test according to fig. 3 of IEC 60 529 for 10 min in operation, any angle up to 15°	A LITE MARK MULTER	N/A
whitek	 D) Spray proofed transformers (IPX3) test according to fig. 4 of IEC 60 529 for 10 min in operation and 10 min switched off, time for complete oscillation (2 x 120°) is 4 sec. 	whitek whitek whitek wh	N/A
int whit	 E) Splash-proof transformers (IPX4) test according to fig. 4 of IEC 60 529 (see F) for 10 min in operation and 10 min switched off (the tube shall oscillate ≈360) 	Tet white white white	N/A
* white	F) Jet-proof transformer (IPX5) test according to fig. 6 of IEC 60 529 (nozzle 6,3mm)	stret miret whitet	N/A
NUTER N	G) Powerful Jet-proof transformer (IPX6) test ac- cording to fig. 6 of IEC 60 529 (nozzle 12 mm)	the set set	N/A
1	H) Watertight transformers (IPX7)	ner me m. m.	N/A
Life Main	I) Pressure watertight transformers (IPX8)	ret are aller aller with	N/A
17.2	After moisture test (48 h for IP20, 168 h for other transformers):	at the test that	P
	 insulation resistance and electric strength (Cl. 18) 	when when we we	Р

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Clause	Requirement + Test	Result - Remark	Verdic
I ON THE			NILL NOLL
8	INSULATION RESISTANCE AND ELECTRIC STRE		P
18.2	Insulation resistance between:	with a let a life and	UT NOP
set s	 live parts and body for basic insulation 2 M 	at at at	P JP
5	 live parts and body for reinforced insulation 7 M 	and white white white	N/A
	 input circuits and output circuits for basic insu- lation 2 M 	WHITE WAITE WAIT	N/A
white	 input circuits and output circuits for double or reinforced insulation 5 M 	white white white y	n P
NUTER WY	 each input circuit and all other input circuits connected together 2 M 	whet whitek whitek wh	N/A
sex whit	 each output circuit and all other output circuits connected together 2 M 	et miret miret while	N/A
+ WALTER	 hazardous live parts and metal parts with basic insulation (Class II transformers) 2 M 	whet whet while	N/A
NUTER	 body and metal parts with basic insulation (Class II transformers) 5 M 	when the states	N/A
Jet 1	 metal foil in contact with inner and outer sur- faces of enclosures 7 M 	orthe solution of the	N/A
18.3	Electric strength test (1 min): no flashover or break- down:	a furt with	Р
whe	 basic insulation between input circuits and out- put circuits; working voltage (V); test voltage (V) : 	white white white	N/A
INLIEK NI	 2) double or reinforced insulation between input circuits and output circuits; working voltage (V); test voltage (V) 	(see table 18.3)	P P
de la	3) basic or supplementary insulation between:		, P
NUNE N	a) live parts of different polarity; working volt- age (V); test voltage (V):	(see table 18.3)	P
white	b) live parts and the body if intended to be connected to protective earth	(see table 18.3)	Unit P
MALIER	c) inlet bushings and cord guards and an- chorages	milet whilet whilet w	N/A
LIEK WN	d) live parts and an intermediate conductive part	(see table 18.3)	Set NITP
d 1.	e) intermediate conductive parts and body:	i i i i i	N/A
mer	4) Reinforced insulation between the body and live parts; working voltage (V); test voltage (V) :	(see table 18.3)	P

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
WALTER W	 5) Functional insulation for windings intended to be connected in series or parallel (test voltage = working voltage + 500 V) (IEC 61558-2-16:09) 	while while while while	N/A
18.4	Does not apply (IEC 61558-2-16:09)	r su si si	P
18.101	Impulse test according Table F5 of IEC 60664-1 with 1,2/50 µs (IEC 61558-2-16)	Tet waiter waite water w	P
WALTE	 After the test of 18.3, 10 impulses of each po- larity between input and output terminals 	white white white wh	Р
WALLER V	 During the tests no breakdown of the insulation between turns of a winding, between input and output circuits, or between windings and any conductive core 	whitet whitet whitet white	P
18.5	Touch current and protective earth current	the way with the	Р
18.5.1	Touch current	at the the wife of	P.O
WALTER W	Touch current measured after the clause 14 test (hot) for class I and class II transformers (class II transformers with metal foil at the plastic surface). The test circuit according figure 8. Measuring net- work according Figure J1 (Annex J). If the frequen- cy is >30kHz, measuring across the 500 Ohm resis- tor of J1 (burn effects).	where white white white	P NAVIE MALER
et white	Measurement of the touch current with switch p of picture 8 in both positions and in combination with switches e and n. The measured values are less than the required values of table 8b.	Limit: 0.5mA rms	P
whitek	 switches n and e in on position 	L, N to output terminals: 0.336mA rms Max. L, N to enclosure: 0.036mA rms max.	P
iret whi at writes	 switch n: off and switch e: on 	L, N to output terminals: 0.052mA rms Max. L, N to enclosure: 0.023mA rms max.	P
whitek u	 switch n: on and switch e: off 	L, N to output terminals: 0.324mA rms Max. L, N to enclosure: 0.032mA rms max.	P
18.5.2	Protective earth conductor current	LIER MITTE MAILE WALL	N/As
set white	The transformer is connected as in clause 14 Impedance of the ammeter < 0,5 Ohm, connected	A miret miret whitet we	N/A

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values of table 8b.

tective earth conductor

between earth terminal of the transformer and pro-

The measured values are less than the required

N/A

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IEC	61	55	8-2	2-1	6
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Clause	Requirement + Test	Result - Remark	

19	CONSTRUCTION	P A A A A A A A A A A A A A A A A A A A
19.1	Separation of input and output circuits	P
19.1.1	SMPS incorporating auto-transformers (IEC 61558-2-16:2009)	N/A
19.1.1.1	For plug connected auto-transformers with rated in- put voltage > rated output voltage the potential to earth shall not exceed the rated output voltage. (IEC 61558-2-16:2009)	N/A
19.1.1.2	SMPS with polarised input and output plug and socket-outlet system: an instruction is given with the information, that the transformer shall not be used with non-polarised plug and socket outlet sys- tem. (IEC 61558-2-16:2009)	N/A
19.1.1.3	A polarity detecting device only energises the output in the case: output potential to earth \leq rated output voltage, also with reversed input plug. (IEC 61558-2-16:2009)	N/A
Ster.	– The contact separation of the device is \geq 3mm	N/A
m n	 A current to earth does not exceed 0,75 mA. 	N/A
et mire	 All tests are repeated under fault conditions of H.2.3 of annex H of part 1. The potential to earth does not exceed the max output voltage for more than 5 s. 	N/A
19.1.2	SMPS incorporating separating transformers (IEC 61558-2-16:09)	N/A
19.1.2.1	Input and output circuits electrically separated. (IEC 61558-2-16:09)	N/A
19.1.2.2	The insulation between input and output winding(s) consist of basic insulation (IEC 61558-2-16:09)	N/A
TE MAL	Class I SMPS	N/A
et untret	 Insulation between input windings and body consist of basic insulation 	- N/A
Tret	 Insulation between output windings and body consist of basic insulation 	N/A
w v	Class II SMPS (IEC 61558-2-16:2009)	N/A
NUTER MA	 Insulation between input windings and body consist of double or reinforced insulation 	N/A
ret white	 Insulation between output windings and body consist of double or reinforced insulation 	N/A
19.1.2.3	The insulation between input windings and inter- mediate conductive parts and the output windings and intermediate part consist of basic insulation (IEC 61558-2-16:09)	N/A

Verdict

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Clause	Requirement + Test	Result - Remark	Verdict
Clause	Requirement + Test	Result - Remark	veruic
WALLEX SU	For class I SMPS the insulation between input and output windings via the intermediate conductive parts consist of basic insulation (IEC 61558-2-16:2009)	ANTER MATTER MATTER WATER	N/A
er white	For class II SMPS the insulation between input winding and the body and between the output wind- ings and the body via the intermediate conductive parts consist of double or reinforced insulation. (IEC 61558-2-16:2009)	A MALTER WALTER WALTER WAL	N/A
19.1.2.4	Parts of output circuits may be connected to protec- tive earth (IEC 61558-2-16:09)	wifet whifet whifet white	N/A
19.1.2.5	No direct contact between output circuits and the body, unless: (IEC 61558-2-16:2009)	Tet stret wiret wiret	N/A
Tet mile	 Allowed for associated transformers by the equipment standard 	at net net with	N/A
	- Clause 19.8 of part 1 is fulfilled	me me me n	N/A
19.1.3	SMPS incorporating isolating transformers and safety isolating transformers (IEC 61558-2-16:09)	watter waiter waiter wat	P
19.1.3.1	Input and output circuits electrically separated (IEC 61558-2-16:09)	MATER MATTER MATTER MATTER	NN P
LIEK WAL	No possibility of any connection between these cir- cuits	at milet aniret	NUTE P
19.1.3.2	The insulation between input and output winding(s) consist of double or reinforced insulation (exception see 19.1.3.4) (IEC 61558-2-16:09)	ANTER WALK WALTER WAY	P P
WALTER	Class I SMPS not intended for connection to the mains by a plug:	marter waiter waiter waite	N WALFER
untiek wo	 Insulation between input windings and body connected to earth consist of basic insulation rated to the input voltage 	NUTER WALTER WALTER WALTER	N/A
	 Insulation between output windings and body, connected to earth consist of basic insulation rated for the output voltage 	SEX WALLEX WALLEX WALLEX W	N/A
when	Class I SMPS intended for connection to the mains by a plug (EN 61558-2-16:09):	(Model:GT-81081-6012-T3 and GT-81081-6018-T3)	P
where w	 Insulation between input windings and body connected to earth consist of basic insulation rated to the working voltage 	united united whited white	P
nt was set nise	 Insulation between output windings and body, connected to earth consist of supplementary insulation rated for the working voltage 	at the set of	Р
10	Class II SMPS (IEC 61558-2-16:2009)	(Model:GT-81081-6024-T2)	Р
WALTE	 Insulation between input windings and body consist of double or reinforced insulation rated to the input voltage 	white white white white	Р

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IF WITT	IEC 61558-2-16	et set set st	sintite way
Clause	Requirement + Test	Result - Remark	Verdic
Whitek way	 Insulation between output windings and body consist of double or reinforced insulation, rated to the output voltage 	WALLER WALTER WALTER	P Number of the second
19.1.3.3	SMPS with intermediate conductive parts not con- nected to the body (between input/output) (EN 61558-2-16:09):	ret watter watter wat	N/A
19.1.3.3.1	For class I and class II SMPS the insulation be- tween input and output windings, via intermediate conductive parts, consist of double or reinforced in- sulation, rated to the working voltage (EN 61558-2-16:09).	NATES MALES MALES	N/A
	 For class II SMPS the insulation between input winding and the body and between the output windings and the body via the intermediate conductive parts consist of double or reinforced insulation. (rated to the input voltage, for SELV circuits only basic insulation to the body) 	et anitet anitet anitet	N/A
SUNTIFIC SUN	 For transformers, different from independent, the insulation between input and output wind- ings, via intermediate conductive parts, consist of double or reinforced insulation, rated to the working voltage. 	whitek whitek whitek	N/A
19.1.3.3.2	Class I transformers with earthed core, and not al- lowed for class II equipment (EN 61558-2-16:09)	at white wh	N/A
et whitet	 Insulation from the input to the earthed core: basic insulation rated for the input voltage 		N/A
whitek w	 Insulation from the output voltage to the earthed core: basic insulation rated for the out- put voltage 	MUTER MAILER MALIER	N/A
19.1.3.3.3	Insulation between : input to intermediate conduc- tive parts and output and intermediate parts consist of at least basic insulation (EN 61558-2-16:09)	LIFE WALTER WALTER W	N/A
A WALLEY	 If the insulation from input or output to the in- termediate metal part is less than basic insula- tion, the part is considered to be connected to input or output. 	The summer summer summer	N/A
19.1.3.4	For class I SMPS, with protective screen, not con- nected to the mains by a plug the following condi- tions comply (EN 61558-2-16:09):	milet united united	N/A
NITEK WINE	 The insulation between input winding and pro- tective screen consist of basic insulation (rated input voltage) 	LISK WALFER WALFER WA	N/A
VINLIE WALTE	 The insulation between output winding and pro- tective screen consist of basic insulation (rated output voltage) 	A WALTER WALTER WALT	N/A

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Clause

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Verdict

N/A

N/A

N/A

	IEC 61558-2-16	et tet the wifet wi
	Requirement + Test	Result - Remark
	and when when when we are at	. It let be be
ه د	 The protective screen consist of metal foil or a wire wound screen extending the full width of the windings and has no gaps or holes 	white white white
ð	 Where the protective screen does not cover the entire width of the input winding, additional in- sulation to ensure double insulation in this area, is used. 	Tet whitet whitet whitet w
ŝ	 If the screen is made by a foil, the turns are isolated, overlap at least 3 mm 	watter watter wath wat
2	 The cross-section of the screen and the lead out wire is at least corresponding to the rated current of the overload device 	sontret white white white
¢	 The lead our wire is soldered or fixed to the protective screen. 	the watt water water w
	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)	at white white white why
2	No connection between output circuit and protective earth, except of associated transformers (allowed by equipment standard) or 19.8 is fulfilled (EN 61558-2-16:09).	waitet waitet waitet waite

5/	
7	
_	
Ξ	
-	
2	
-	

	 The cross-section of the screen and the lead out wire is at least corresponding to the rated current of the overload device 	WALTER WALTER WALTER WALT	N/A
n nn	 The lead our wire is soldered or fixed to the protective screen. 	The WALL MALL WALL	N/A
In which	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)	at white white white y	N/A
19.1.3.5	No connection between output circuit and protective earth, except of associated transformers (allowed by equipment standard) or 19.8 is fulfilled (EN 61558-2-16:09).	WALTER WALTER WALTER WA	N/A
19.1.3.6	No connection between output circuit and body, except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)	at white white	N/A
19.1.3.7	The distance between input and output terminals for the connection of external wiring is 25 mm	ALTE MULT MALTER AN	N/A
19.1.3.8	Portable SMPS having an rated output \leq 630 VA (EN 61558-2-16:09)	Desktop type SMPS	P
19.1.3.9	No connection between input and output circuit, except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)	No connection	P
19.1.3.10	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)	set used wirds milet	N/A
19.2	Fiercely burning material not used	Such substance not used	Р
white	Unimpregnated cotton, silk, paper and fibrous ma- terial not used as insulation	white white white wh	Р
NALTE M	Wax-impregnated, etc. not used	Set wifet wifet whit	P
19.3	Portable transformer: short-circuit proof or fail-safe	Short-circuit proof	Р
19.4	Class II transformers: contact between accessible metal parts and conduits or metal sheaths of supply wiring impossible	LIFE WALTER WALTER WALTER	N/A
19.5	Class II transformers: part of supplementary or re- inforced insulation, during reassembly after routine servicing not omitted	white white where we	P

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in anti-	IEC 61558-2-16	et the site with a	in m
Clause	Requirement + Test	Result - Remark	Verdic
19.6	Class I and II transformers: creepage distances and clearances over supplementary or reinforced insu- lation if wire, screw, nut, etc. become loose or fall out of position not 50% specified values (Cl. 26)	WALTER WALTER WALTER	Р
19.7	Conductive parts connected to accessible metal parts by resistors or capacitors shall be separated from hazardous live parts by double or reinforced insulation	Tet white white white	N/A
19.8	Resistors or capacitors connected between haz- ardous live parts and the body (accessible metal parts) consist of:	white white white white	P
MITEX WA	 components according to IEC 60 065, 14.1 or capacitor Y1 according to IEC 60 384-14 	Tet allet wiret wiret	P
1 1	 at least two separate components 	which which which	N/A
in main	 if one component is short-circuited or opened, values specified in Cl. 9 shall not be exceeded 	White white white w	N/A
WALTE	 if the working voltage is ≤ 250 V, one Y1 capac- itor according 60384-14 is allowed 	Certified Y-capacitor according to IEC 60384-14	Р
19.9	Insulation material input/output and supplementary insulation of rubber resistant to ageing	ALTER WALTER WALTER WALTE	N/A
LIFEK WAL	Creepage distances (if cracks) specified values (Cl. 26)	at white white	N/A
19.10	Protection against accidental contact by insulating coating:	- it with out the same	N/A
- nifet	a) ageing test (section I, IEC 60 068-2-2), test Ba: 168 h; 70 C	when the state with	N/A
Tet	 b) impact test (spring-operated impact hammer according to IEC 60 068-2-63; 0,5 ± 0,05 J) 	and and so the	N/A
nt vi	c) scratch test (hardened steel pin) electric strength test according to Cl. 18	white white white	N/A
19.11	Handles, levers, knobs, etc.:	ret intre white white w	N/A
st fift	 insulating material 	the state of the s	N/A
m	 supplementary insulation covering 	white white sure wh	N/A
WALTER W	 separated from shafts or fixing by supplemen- tary insulation 	suret multity waited would	N/A
19.12	Windings construction	and the state	, P
19.12.1	Undue displacement in all types of transformers not allowed:	are write write write	Р
in more	- of input or output windings or turns thereof	et whet while while w	R.
- Jet	 of internal wiring or wires for external connection 	at at at	e Pe

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Clause	Requirement + Test	Result - Remark	Verdic
J.L.	inter when when with the		and a market
	 of parts of windings or of internal wiring in case of rupture or loosening 	white white white	P
19.12.2	Serrated tape:	nutter white white w	N/A
iset whi	 distance through insulation according to ta- ble 13 	set minet antiet and	N/A
* 1	- one additional layer of serrated tape, and		N/A
me	 one additional layer without serration 	INTE WALT WALT	N/A
WALTER	 in case of cheekless bobbins the end turns of each layer shall be prevented from being dis- placed 	sentiret sentret sentret	N/A
19.12.3 (A1)	Insulated windings wires providing basic, supple- mentary or reinforced insulation, meet the following requirements:	LIEX MALTER MALTER M	JI P
i whit	 Multi-layer extruded or spirally wrapped in- sulation, passed the tests of annex K 	et white white whi	N/A
white	 Basic insulation: two wrapped or one ex- truded wire 	whitek whitek white	N/A
NALTER N	 Supplementary insulation: two layers, wrapped or extruded 	INLIGE WALTER WALTER	N/A
inex whi	 Reinforced insulation: three layers wrapped or extruded 	et initet an	TEK NITEP N
	Spirally wrapped insulation:		N/A
MA	 creepage distances between wrapped lay- ers > cl. 26 _ P1 values 	white white white	N/A
milit	 path between wrapped layers sealed, the test voltage of K2 is multiplied with 1,35 	white white white	N/A
WILTER WI	 test 26.2.3 – Test A, passed for wrapped layers 	NITER MALIER WALTER W	N/A
LAR JUNI	 the finished component pass the electric strength test according to cl. 18.3 	ist unifet whitet whi	N/A
	a) Insulated winding wire used for basic or sup- plementary insulation in a wound part:	whet whet whet	N/A
	 – comply with Annex K 	m m	N/A
	 two layers for supplementary insulation 	stift miller white	N/A
dit.	 one layer for basic insulation 		N/A
EX WALT	 one layer for mechanical separation be- tween the insulated wires of primary and secondary. This layer fulfils the requirement of basic insulation. 	the write write write	N/A
WALTER	b) Winding wire with double or reinforced insula- tion:	uset whet white	WALTE PLE
	 – comply with Annex K 	In In I.	E PF

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IEC	61558-2-16	

Clause	Requirement + Test	Result - Remark	Verdic
A LINE	and and when the set of	the set when	STUTE SOUTH
. fet	 the insulation of the insulated winding wire: three layers 	whe whe w	P
	 dielectric strength test with the values ac- cording 18.3 multiplied by 1,25 	NUT MAIL MILL M	Р
in with	Where the wire is wound:	Jet intret until whi	N PM
t st	 upon metal or ferrite cores 		F P
m	– upon enamelled wire	mile unite white	W P
1th	 under enamelled wire 	1 A A	e P
NUTER MAL	 one layer for mechanical separation be- tween the insulated wires of primary and secondary. This layer fulfils the requirement of basic insulation. 	sentire sentiret sentiret sen	P
Tex MULTE	 both windings shall not touch each other and also not the core. 	et minet whilet whit	P
t WALTER.	100 % Routine test according to Annex K.3 for windings giving double or reinforced insulation	and allet white	N/A
untilet .w	no creepage distances and clearances for insulated winding wirers	ret site wiret	NUTER MUTER
stret whit	for TIW wires values of box 2) c) of table 13, table C.1 and table D.1 of part 1 and of clause 26.106 are not required	and an and an a	Set Street
FIW	Transformers which use FIW wire		N/A
19.12.101 (A1)	Max. class F for transformers which use FIW-wire	when we not	N/A
19.12.102 (A1)	FIW wires comply with IEC 60851-5, Ed.4.1; IEC 60317-0-7 and IEC 60317-56, Ed.1.	which which which	N/A
Tet white	 other nominal diameter as mentioned in ta- ble 19.101 can be calculated with the for- mula after table 19.111 	ser and me and	N/A
A WALTER	FIW wire used for basic or supplementary insulation for transformers according 19.1.2 (separating trans- formers) of IEC 61558-2-16:	Whitek whitek white	N/A
WALTER W	 the test voltage of table 8a – part 1, based on the working voltage of basic or supple- mentary insulation, comply with the min. voltage strength of table 19.111 	MUTER WAITER WAITER	N/A
fet would	 one layer for mechanical separation is lo- cated between the insulated wires of prima- ry and secondary. This layer fulfil the re- quirement of basic insulation 		N/A
WALTER	 between FIW and enamelled wire, no re- quirements of creepage distances and clearances 	whilek whilek whilek	N/A

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IEC	6155	8-2-16

Clause	Requirement + Test	Result - Remark	Verdict
THE .	 no touch of FIW and enamelled wires (grad 1, or grad 2) 	white white white	N/A
inet unit	FIW wire used for double or reinforced insulation for transformers according 19.1.3 (isolating and safety isolating transformers) of IEC 61558-2-16 (PRI and SEC basic insulated FIW-wire):	ALLE WALL WALL WAL	N/A
NNUTER	 the test voltage of table 8a – part 1, based on the working voltage of basic or supple- mentary insulation, comply with the min. voltage strength of table 19.111 	water water water	N/A
Nº V	 for primary and secondary winding FIW-wire for basic insulation is used 	unit whit when	N/A
ner white	 one layer for mechanical separation is lo- cated between the insulated wires of prima- ry and secondary. This layer fulfil the re- quirement of basic insulation 	et white white white	N/A
+ whitek	 no touch between the basic insulated PRI and SEC FIW-wires 	wifet wifet wifet	N/A
WALTER W	 between PRI- and SEC-FIW wires, no re- quirements of creepage distances and clearances 	sourcet would would be	N/A
LIEK WIN	Alternative construction used for reinforced insula- tion (reinforced insulated FIW wire and enamelled wire)	and whitek whi	N/A
whitek	 the test voltage of table 8a – part 1, based on the working voltage reinforced insulation, comply with the min. voltage strength of ta- ble 19.111 	water white water	N/A
Nistek w	 one layer for mechanical separation is lo- cated between the reinforced insulated FIW wire and the enamelled wire. This layer fulfil the requirement of basic insulation 	suret would would all	N/A
- white	 no touch between the FIW wire and the enamelled wire 	White Mult wat	N/A
WINET	 between the reinforced FIW wire and any other parts, no requirements of creepage distances and clearances exist 	white white white	N/A
sunt so lifet sun fet suntre	Alternative construction with FIW wires, basic or supplementary insulated for transformers double or reinforced insulation according to 19.1.3 (basic/ supplementary insulated FIW wire + enamelled wire + creepage distance and clearances for basic insu- lation)	ANTE WATER WATER WA	N/A
whitek	 the test voltage of table 8a – part 1, based on the working voltage of basic or supple- mentary insulation, comply with the min. voltage strength of table 19.111 	WITTER WITTER WITTER	N/A

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
WALTER W	 PRI or SEC basic insulated FIW wire and to the other winding (enamelled wire) re- quirements of supplementary insulation 	WALTER WATER WATER	N/A
inet whi	 creepage distances and clearances be- tween the basic insulated FIW wire and the enamelled wire for basic or supplementary insulation are required. 	The summer summer summer	N/A
me	Where the FIW wire is wound	auter south worth a	N/A
dit.	 upon metal or ferrite cores 	1 A At	N/A
whe when	 one layer for mechanical separation be- tween the insulated wires and the core or the enamelled wires is required. This layer fulfils the requirement of basic insulation. 	WALTER WALTER WALTER WALT	N/A
TEX WALT	 both windings shall not touch each other and also not the core. 	et minet minet aminet	N/A
19.13	Handles, operating levers and the like shall be fixed	Star And	N/A
19.14	Protection against electric shock: covers securely fixed, 2 independent fixing means, one with tool	Rim and screws	P
19.15	Transformer with pins for fixed socket-outlets: no strain on socket-outlet	MUTEX WALTER WALTER WAL	N/A
LITER INT	Additional torque 0,25 Nm	of the steel of	N/A
19.16	Protection index for portable transformers:	a con to	Р
er white	200 VA IP20 and instructions for use	IPX0	Nº RU
A	> 200 VA 2,5 kVA IPX4 (single-phase)	Mr. m. m.	N/A
MALTE	> 200 VA 6,3 kVA IPX4 (polyphase)	strek outer uniter w	N/A
A	> 2,5 VA (single-phase) IP21	m n it	N/A
ne in	> 6,3 VA (polyphase) IP21	where white white white	N/A
19.17	Transformers IPX1 - IPX6 totally enclosed, except for drain hole (diameter 5 mm or 20 mm ² with width 3 mm); drain hole not required for trans- former completely filled with insulating materials	Only one SELV-circuit	N/A
19.18	Transformers IPX1 with a moulded, if any	white white white y	N/A
19.19	Class I transformers with a non-detachable flexible cable or cord with earth conductor and a plug with earth contact	Whitek whitek whitek wh	N/A
19.20	Live parts of SELV and PELV-circuits: separation not less than PRI/SEC of a safety isolating trans- former	LIEK WALLEY WALLEY WALLEY	Р
	 SELV output circuits separated by double or re- inforced insulation from all other than SELV or PELV circuits 	white white white	P P

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Clause	Requirement + Test	Result - Remark	Verdict
- LIV	with white white white way in the second	the set ster is	Ster Martin
	 SELV output circuits separated by basic insula- tion from other SELV or PELV circuits 	white white we want	N/A
19.20.1	SELV circuits and parts not connected to protective earth, to live parts, or protective conductors forming part of other circuits	No protective earth	P
et white	Nominal voltage (V) > 25 V a.c. or 60 V d.c., the re- quired insulation fulfils the high voltage test ac- cording to table 8 a	t milet milet whilet w	N/A
19.20.2	PELV-circuits double or reinforced insulation is necessary	No such circuit was used	N/A
19.21	FELV-circuits: protection against contact fulfils the min, test voltage required for the primary circuit	No such circuit was used	N/A
19.22	Class II transformers shall not be provided with means for protective earth	at at at at	Р
* WILLEX	For fixed transformers an earth conductor with double or reinforced insulation to accessible metal parts is allowed	and which when a	N/A
19.23	Class III transformers shall not be provided with means for protective earth	at at at 5	N/A

20	COMPONENTS		5 P .
Et whit	Components such as switches, plugs, fuses, lamp holders, flexible cables and cords, comply with rel- evant IEC standard	(see appended table 20)	N ^C P
- Muter	Components inside the transformer pass all tests of this standard together with the transformer tests	THE STAR MUTCH WITH	P.P.
Jet	Testing of components separately to the transform- er according the relevant standard:	all sur ret ret stel	N/A
LTEX WAY	 Ratings of the component in line with the trans- former ratings, including inrush current. Com- ponent test according the component standard, based on the component marking (rating). 	set white white white	N/A
white	 Components without markings tested under transformer conditions including inrush current. 	WALTER WALTER WALTER WA	N/A
WALLER	 If no IEC standard exist, the component is test- ed under transformer conditions. 	MITER WAITER WAITER WAIT	N/A
20.1	Appliance couplers for main supply shall comply with:	Tet and write minet	N/A
A	- IEC 60 320 for IPX0	She was set	N/A
m	- IEC 60 309 for other	at out the only of a shall be	N/A
20.2 🦽	Automatic controls shall comply with IEC 60 730-1	the state	- N/A
20.3	Thermal-links comply with IEC 60691	while mile while wh	N/A

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S all	IEC 61558-2-16	the star strain	and an
Clause	Requirement + Test	Result - Remark	Verdic
	white white white white white white white	the file for	NITE MILL
20.4	Switches shall comply with annex F	Switch has approved	N/A
NUTERON	Disconnection from the supply:	let set set a	N/A
tret wat	 by a switch, disconnecting all poles of the sup- ply (full disconnection under the relevant over- voltage category 	and when when where	N/A
	 or a flexible supply cable and cord with plug 	. I A A	N/A
whit	 or an instruction sheet: disconnection by all- poles switches incorporated in fixed wiring 	Mail water water	N/A
20.5	Socket-outlets of the output circuit shall be such that there is no unsafe compatibility to plugs com- plying with input circuit.	white white white w	ur vrP
Let white	Plugs and socket-outlets for SELV systems with both a rated current = 3A and a rated voltage =24 V shall comply with following:	et the state with	P
t stat	SELV plug and socket-outlets shall comply with IEC 60 884-2-4 and IEC 60 906-3	when we get get	Р
. Let	 It is not possible for plugs to enter socket- outlets of other standardised voltage system 	and and with a	N/A
when when when when when when when when	 Socket outlets do not accommodate plugs of other standardised voltage systems 	unite suntil suntil sull	N/A
in whi	 Socket outlets do not have a protective earth contact 	of purity south	N/A
white	PELV plug and socket-outlets shall comply with fol- lowing:	white white white	N/A
WALTER	 It is not possible for plugs to enter socket- outlets of other standardised voltage system 	maret sourcet would be	N/A
INLIEK W	 Socket outlets do not accommodate plugs of other standardised voltage systems 	Tet attet and the and	N/A
JEK MAL	 Socket outlets do not have a protective earth contact 	at that what wand	N/A
* Jiek	FELV plug and socket-outlets shall comply with fol- lowing:	when we set	N/A
NW TEX	 It is not possible for plugs to enter socket- outlets of other standardised voltage system 	which which which is	N/A
un u	 Socket outlets do not accommodate plugs of other standardised voltage systems 	MULT WALL WALL WA	N/A
20.6	Thermal cut-outs, overload releases etc. have ade- quate breaking capacity	LIFE WALTE WALTE WAL	S P ⇒
E white	 Thermal cut outs fulfil the relevant requirements of 20.7 and 20.8 	White white white	N/A
WALTER	 Thermal links fulfil the relevant requirements of 20.8 	whitek whitek whitek w	N/A

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and and	IEC 61558-2-16	et the the stress	n' wi
Clause	Requirement + Test	Result - Remark	Verdict
- NUT	and all all and a set		1 Juni
. et	 The breaking capacity is in accordance with the relevant fuse standard 	when when we we we	P
20.6.1	For Fuses According IEC 60127 and IEC 60269, the fuse current does not exceed 1,1 times of the rated value	name survive survive survey	P
20.7	Thermal cut outs shall meet the requirements of 20.7.1.1 and 20.7.2, or 20.7.1.2 and 20.7.2.	when we we had	N/A
20.7.1	Requirements according to IEC 60730-1	water water water with	N/A
20.7.1.1	Thermal cut-out tested as component shall comply with IEC 60 730-1	martet southet souther south	N/A
20.7.1.2	Thermal cut-out tested as a part of the transformer	s as at at	N/A
it sh	a) Thermal cut outs type 1 or type 2 (IEC 60730- 1)	stre white white white	N/A
t whitek	 b) Thermal cut outs fulfil the requirements of micro-interruption (type 1C or 2 C) or micro-disconnection, (type 1B or 2B) (see IEC 60730-1) 	white white white where wh	N/A
WALTER W	c) Thermal cut outs with manual rest have a trip free mechanism (type 1E and 2E) (see IEC 60730-1)	Multer Mouter Multer Multer	N/A
NUTER WINE	d) The number of cycles of automatic action shall be:	set and anited white	N/A
EX WALTER	 3000 cycles for self resetting thermal cut- outs 	a alter while adulter w	N/A
MALTER	 300 cycles for non self resetting thermal cut-outs resetting by hand 	The suret maret and	N/A
NUTEK IN	 300 cycles for non self resetting thermal cut-outs resetting disconnecting 	with the state with	N/A
10 .5	 30 cycles for non self resetting thermal cut- outs which are only resetable by a tool 	the who who we are	N/A
t set	e) Thermal cut outs fulfil the electrical stress ac- cording IEC 60730-1, 6.14.2	and white white	N/A
m	f) Characteristic of thermal cut-outs:	white white white wh	N/A
1th	 ratings according IEC 60730-1, cl. 5 	a it it i	N/A
when when when when when when when when	 classification according to: 	untit white white white	N/A
	1) nature of supply to IEC 60730-1, cl. 6.1	at at let let	N/A
20	2) type of load controlled to IEC 60730-1, cl. 6.2	the water water water	N/A
IEX WALTE	3) degree of protection IPX0 to IEC 60730-1, cl. 6.5.1	at white white white w	N/A
WALTER	4) degree of protection IP0X to IEC 60730-1, cl. 6.5.2	utet with white way	N/A
4	5) pollution degree to IEC 60730-1, cl. 6.5.3	1 1 1 L	N/A

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Clause	Requirement Test	Booult Bomork	Vordia
Clause	Requirement + Test	Result - Remark	Verdict
	6) comparative tracking index to IEC 60730-1, cl. 6.13		N/A
ner m	7) max. ambient temperature to IEC 60730-1, cl. 6.7	ALTE WALL WALL S	N/A
20.7.1.2	Thermal cut-out tested as a part of the transformer, test with 3 samples:	ret white white wh	N/A
WALT	 at least micro-interruption or micro- disconnection (IEC 60730-1) 	whilet whilet while	N/A
NUTER .	 300 h aged at ta (transformer) + 10°C 	at set set	N/A
Set of	 subjected to a number of cycles for automatic operating according 20.7.1.1 	which which which is	N/A
Tet white	During the test no sustaining arcing shall occur, during and after the test no damage at the thermal cut out and the transformer in the sense of this standard	ex white white whi	N/A
20.7.2	Thermal cut-outs shall have adequate breaking ca- pacity	milet antiet water	N/A
20.7.2.1	The output of the transformer with a non self reset- ting thermal cut out is short circuited at a supply voltage 1, 1 of rated supply voltage. After opening of the cut off, the supply voltage is switched of, until the transformer is cooling down.	white white white	N/A
et united	 3 cycles at 25° C for transformers without ta min 		N/A
	- 3 cycles at ta min for transformers with ta min	and the m	N/A
white	 after the 3 cycles short circuit of the output at 1,1 of rated supply voltage for 48 h. 	whitek whitek white	N/A
untilet wh	During the tests no sustaining arcing shall occur After the test: withstand the test of clause 18, show no damage in sense of this standard, and be opera- tional.	at ret tet a	N/A
20.7.2.2	The output of the transformer with a self resetting thermal cut out is short circuited at a supply voltage 1, 1 of rated supply voltage.	white white white	N/A
det.	- 48 h at 25° C for transformers without ta min	in at at	N/A
mer n	 24 h at ta and 24 h at ta min for transformers with ta min 	white white white	N/A
NUT WALTE	During the tests no sustaining arcing shall occur After the test: withstand the test of clause 18, show no damage in sense of this standard, and be opera- tional.	A STOR MUTCH MATCH MAT	N/A
20.7.3	Test of a PTC resistor:	20 20 20	N/A
white	5 cycles: transformer short-circuited for 48 h by 1,1 times of the input voltage and max. ta	WALTER WALTER WALTER	N/A

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Clause	Requirement + Test	Result - Remark	Verdict	
. It's	white and super when when the set	A A St	alle mart	
Whitek av	5 cycles: transformer short-circuited for 48 h by 0,9 times of the input voltage and min. ta (if de- clared)	sunt sure sure	N/A	
	After the test: withstand the test of clause 18, show no damage in sense of this standard, and be opera- tional.	Tet unifet unifet uni	N/A	
20.8	Thermal links shall be tested in one of the following two ways.	nites whites white	N/A	
20.8.1	Thermal-links shall comply with IEC 60 691 as a separate component.	set super multi	N/A	
de la	- electrical conditions to IEC 60691, cl. 6.1	m m r	N/A	
ner un	- thermal conditions to IEC 60691, cl. 6.2	LIFE NUTE WITE W	N/A	
de de	- ratings to IEC 60691, cl. 8 b		N/A	
when the	 suitability of sealing components, impregnating fluids or cleaning solvents IEC 60691, cl. 8 c 	et white white white	N/A	
20.8.2	Thermal-links tested as a part of the transformer:	Tet stret with	N/A	
A	– ageing test 300 h by 35 ℃or ta + 10 ℃	THE WE WE	N/A	
when w	 After transformer fault condition the thermal link operate without sustaining arcing 	Intife watte watte	N/A	
NUTE WAL	 after opening the thermal-link shall have an in- sulation resistance of at least 0,2 M 	at white wh	N/A	
et intre	 3 cycles for replaceable thermal-links 		N/A	
- Jet	 3 new specimens for not replaceable thermal- links 	white white white	N/A	
20.9	Self-resetting devices not used if mechanical, elec- trical, etc. hazards	white white white	N/A	
20.10	Thermal cut-outs which can be reset by soldering operation are not allowed	NITE WALT WALL W	N/A	
20.9	Overload protection devices do not operate during test (20 times switched on and off, at no load); Upri (V): 1,1 times rated supply voltage.	White white whi	Р	

21	INTERNAL WIRING		Р	
21.1	Internal wiring and electrical connections protected or enclosed	white white white white	P	
nr n	Wire-ways smooth and free from sharp edges	ite unit white white where y	Р - 1/1	
21.2	Openings in sheet metal: edges rounded (radius 1,5 mm) or bushings of insulating material	at miret miret whiret wh	N/A	
21.3	Bare conductors: distances adequately maintained		- P _e st	
21.4	When external wires are connected to terminal, in- ternal wiring shall not work loose	white whit whit whe	P	

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Clause	Requirement + Test	Result - Remark	Verdict
21.5	Insulation of heat-resistant and non-hygroscopic material for insulated conductors subject to temperature rise > limiting values given in 14.1	et white white white	VIII NI

22	SUPPLY CONNECTION AND EXTERNAL FLEXIB	LE CABLES AND CORDS	P
22.1	All cables, flexible cords etc. shall have appropriate current and voltage ratings	Output cord is suitably used within the current and voltage rating.	P
22.2	Input and output wiring inlet and outlet openings for external wiring: separate entries without damage to protective covering of cable or cord	Output cord with integral bushing	P
ner w	Input and output wiring inlet and outlet openings for flexible cables or cords: insulating material or bush- ing of insulating material	thet wantiet wante wanter w	P
4 .E	Bushings for external wiring: reliably fixed, not of rubber unless part of cord guard	Bushing for output cord.	P
22.3	Fixed transformer:	INTERNATION WALL WALL	N/A
At	 possible to connect after fixing 	a to the tot	N/A
when a	 inside space for wires allow easy introduction and connection of conductors 	METE MALL MALL MALL	N/A
in m	 fitting of cover without damage to conductors 	Test annual working with	N/A
	 contact between insulation of external supply wires and live parts of different polarity not al- lowed 	WALTER WALLY WALLEY WAL	N/A
22.4	Length of power supply cord for portable transformers mm ²	MUTER MALTER WALTER WALTER	N/A
. let	- not exceed 2m for cross-sectional area of 0,5 mm ²	a at at at	N/A
in a	- exceed 2m for cross-sectional area greater than 0,5 mm ²	it white where where we	N/A
22.5	Power supply cords for transformers IPX0 and transformers "for indoor use only" \geq IPX0:	SET WALLEY WALL WALL WA	N/A
white	 for transformers with a mass ≤ 3 kg: 60227 IEC52 (H03VV) (60245 IEC 53) 	white white white white	N/A
WALTER.	 for transformers with a mass > 3 kg: 60227 IEC53 (H05VV) or 60245 IEC 53 	milet while while while	N/A
NUTEK W	Power supply cords for transformers for outdoor use: ≥ IPX0: 60245 IEC57 (H05RN)	The surply sources warried w	N/A
22.6	Power supply cords for single-phase portable transformers with input current \leq 16A:	at the street while whi	N/A
+ 564	 cord set fitted with an appliance coupler in ac- cordance with IEC 60320 	the state of	N/A

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1 and	IEC 61558-2-16				
Clause	Requirement + Test	Result - Remark	Verdict		
22.7	Nominal cross-sectional area (mm ²); input current (A) at rated output not less than shown in table 9	which which which we	P		
22.8	Class I transformer with power supply flexible ca- ble: green/yellow core connected to earth terminal	NITE SHIT SUNT SHIT	N/A		
et une	Plug for single-phase transformer with input current at rated output 16 A according to IEC 60 083, IEC 60 906-1 or IEC 60 309	Let white white white	N/A		
22.9	Type X, Y or Z attachments: see relevant part 2	water water war a	Р		
22.9.1	For type Z attachment: moulding enclosure and power supply cable do not affect insulation of cable	INTER INTER WATER W	Р		
22.9.2	Inlet openings or inlet bushing: without risk of dam- age to protective covering of power supply cord	The state milet which	N/A		
at a	Insulation between conductor and enclosure:		N/A		
in white	 for Class I transformer: insulation of conductor plus separate basic insulation 	antit white anti-	N/A		
WALT	 for Class II transformer: insulation of conductor plus double or reinforced insulation 	WALTER WALTER WALTER W	N/A		
22.9.3	Inlet bushings:	let the the state	P		
n i	 no damage to power supply cord 	we we we we	Р		
NUTE IN	- reliably fixed	at the sure	P		
4 0	- not removable without tool	2 30 20	Р		
white	 not integral with power supply cord (for type X attachment) 	WALTE MALLS WALTE	P		
MALTER	 not of natural rubber except for Class I trans- former with type X, Y and Z attachments 	Mutat waiter waiter wa	N/A		
22.9.4	For portable transformers which are moved while operating:	while while while your	N/A		
LIEK MAL	 cord guards, if any, of insulating material and fixed 	et the maret maret	N/A		
et miret	Compliance is tested by the oscillating test accord- ing to fig. 7:	- let let slet	N/A		
24	 loaded force during the test according to fig. 7 	mer mer mer a	N/A		
White a	 10 N/A for a cross-sectional area > 0,75 	att and when a	N/A		
4	– 5 N/A for a cross-sectional area 0,75	me m. m. m.	N/A		
nut with	After the test according to fig. 7:	THE STEEL MUTER WAITE	N/A		
* 1	 no short-circuit between the conductors 	The second second	N/A		
In White	 no breakage of more than 10% of stands of any conductor 	MULTER MULTE MOLT	N/A		
WALTE	 no separation of the conductor from the termi- nal 	united whited whited al	N/A		

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Clause	Requirement + Test	Result - Remark	Verdict
J.L.	mit whi whe whe we it it	15 5 5 5	and the second
	 no loosening of any cord guards 	when when we	N/A
INLIEN N	 no damage of the cord or cord guard 	the set set	N/A
allt at	 no broken strands piercing the insulation and not becoming accessible 	nt with with s	N/A
22.9.5	Cord anchorages for type X attachment:	it while when whe	P
et white	 glands in portable transformers not used unless possibility for clamping all types and sizes of cable 	waiter waiter waite	N/A
When y	 moulded-on designs, tying the cable into a knot and tying the end with string not allowed 	WALTER WALTER WALTER	N/A
	 labyrinths, if clearly how, permitted 	tet tet ster ster a	Ň/A
4	 replacement of cable easily possible 	in man in in	N/A
It wait	 protection against strain and twisting clearly how 	et whitet whitet whit	N/A
WALTER	 suitable for different types of cable unless only one type of cable for transformer 	whitek whitek whitek	N/A
NULLEX W	 the entire flexible cable or cord with covering can be mounted into the cord anchorage 	whet super sources	N/A
dt .	 if tightened or loosened no damage 		N/A
the work	 no contact between cable or cord and accessi- ble or electrically connected clamping screws 	a mult we	N/A
MULT	- cord clamped by metal screw not allowed	a street with white	N/A
. st	 one part securely fixed to transformer 	All In a	N/A
when .	 for Class I transformer: insulating material or in- sulated from metal parts 	WALTER WALTE WALTE	N/A
untite wi	 for Class II transformers: insulating material or supplementary insulation from metal parts 	NITER WALTER WALTER W	N/A
Tet whit	Cord anchorages for type X, Y, Z attachments: cores of power external flexible cable or cord insu- lated from accessible metal parts by:	SEX WALTER WALTER WAL	N/A
white	 basic insulation (Class I transformers), sepa- rate insulating barrier/cord anchorage 	watter watter watte	N/A
WALTE V	 supplementary insulation (Class II transformers), special lining/cable or cord sheath of cable sheath of cable 	MALTER WALFER WALFER	N/A
in m	Cord anchorages for type X and Y attachments:	LIET INTE WALTE WA	N/A
EX MALTE	 replacement of external flexible cable or cord does not impair compliance with standard 	at street waret with	N/A
NUTER	 the entire flexible cable or cord with covering can be mounted into the cord anchorage 	at at 5th	N/A
1	 if tightened or loosened no damage 	me m m	N/A

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0	IEC 61558-2-16	During District States	
Clause	Requirement + Test	Result - Remark	Verdict
No.	 no contact between cable or cord and accessi- ble or electrically connected clamping screws 	while white white white	N/A
me m	 cord clamped by metal screws not allowed 	NUTE WALL WITH WITH	N/A
1ª .3	 knots in cord not used 	it at let let	N/A
- m	 labyrinths, if clearly how, permitted 	in which whi	N/A
ex white	Tests for type X with special cords, type Y, type Z	Output cord are type Z for all models.	P
WALTER	Test for type X attachments one test with a cord with smallest and one test with a cord with the larg- est cross-sectional area:	whitet southet antifet antifet	N/A
neter wr	 for the test with clamping screws or tightened with torque 2/3 of that specified in table 11 	stret waiter waiter waiter.	P.
fet al	 not possible to push cable into transformer 	at at at at	P
20	– 25 pulls of 1 s	which which will ave	Р
- NUTER	 1 min torque according to table 10 	- let ret are and	Р
-201	– mass (kg); pull (N/A); torque (Nm):	Mass <1kg; 30N; 0.1Nm	
INLIERON	 during test: cable not damaged 	stet stet sufet sufet	P
	 after test: longitudinal displacement 2 mm for cable or cord and 1 mm for conductors in terminals 	and when we write the	P
ex white	 creepage distances and clearances values specified in Cl. 26 	a the mint white we	P P
22.9.6	Space for external cords or cable for fixed wiring and for type X and Y attachments:	set stat with mile	N/A
Just .	 before fitting cover, possibility to check correct connection and position of conductors 	what what we want to	N/A
n. n	 cover fitted without damage to supply cords 	the way was way	N/A
	 for portable transformers: contact with accessible metal parts if conductor becomes loose not allowed unless for type X and Y attachments terminations of cords do not slip free of conductor 	SEX WALTER WALTER WALTER W	N/A
WALTER D	Space for external cords or cable for type X at- tachment and for connection to fixed wiring, in addi- tion:	Whitek whitek whitek white	N/A
LITE MA	 – conductor easily introduced and connected 	the state strate within	N/A
iet white	 possibility of access to terminal for external conductor after removal of covers without spe- cial purpose tool 	at street surfect sources and	N/A

23	TERMINALS FOR EXTERNAL CONDUCTORS	Jun Jun Inb

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IL WILL	IEC 61558-2-16	at the star with	ant wat
Clause	Requirement + Test	Result - Remark	Verdict
23.1	Transformer for connection to fixed wiring and transformer without power supply cords with type Y and Z attachments: only connections by screws, nuts, terminals	NUTER WATER WATER	P
LIER IN	Terminals are integral part of the transformer:	at the set of	N/A
et stel	 comply with IEC 60 999-1 under transformer conditions 	when when we	N/A
- w.	Other terminals:	white white white	N/A
WALTER	 separately checked according to IEC 60 998-2-1, IEC 60 998-2-2 or IEC 60 947-7-1 	watter watter watter	N/A
ne the	 used in accordance with their marking 	with out the south of	N/A
inet unit	 checked according to IEC 60 999-1 under transformer conditions 	at that they are	N/A
WALTER D	Transformer with type X attachments: soldered connection permitted if reliance not placed upon soldering, crimping or welding alone unless by bar- riers, creepage distances and clearances between hazardous live parts and metal parts should con- ductor break away 50% of specified value (Cl. 26)	whitek whitek whitek	N/A
ntit whi ex se	Transformer with type Y and Z attachments for ex- ternal conductors: soldered, welded, crimped, etc. connections allowed	we wanter way	P
whitek an	For Class II transformer: reliance not placed upon soldering, crimping or welding alone unless by bar- riers, creepage distances and clearances between hazardous live parts and metal parts should con- ductor break away 50% of specified value (Cl. 26)	white white white	W P
23.2	Terminals for type X with special cords Y and Z at- tachments shall be suitable for their purpose:	at let let i	et Tet P
20.	- test by inspection according to 23.1 and 23.2	and the super super	Р
er white	 pull of 5 N/A to the connection before test ac- cording to 14.1 	white white white	white Real
23.3	Other terminals than Y and Z attachments shall be so fixed that when the clamping means is tightened or loosened:	UNITER WAITER WAITER	N/A
MUTER NO	- terminal does not work loose	Jet Jet allet in	N/A
+ 1	 internal wiring is not subjected to stress 	. m. m. m.	N/A
ie wall	 creepage distances and clearance are not re- duced below the values specified in Cl. 26 	at white white whit	N/A
23.4	Other terminals than Y and Z attachments shall be so designed that:	milet unifet waitet	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
. It's	and and and and all all all and	. At At 5th	alle mar
and the second s	 they clamp the conductor between metallic sur- faces with sufficient contact pressure 	with with with	N/A
m. m	 without damage to the conductor 	NITE WALT WALL I	N/A
Set of	 test by inspection according to 23.3 and 23.4 	it at let	< <u>N/A</u>
et antres	 10 times fastening and loosening a conductor with the largest cross-sectional area with 2/3 of the torque specified in Cl. 25 	t sund sand san	N/A
23.5	Terminals for fixed wiring and for type X: located near their associated terminals of different polarities and the earth terminal if any	white white white	N/A
23.6	Terminal blocks not accessible without the aid of a tool	Tet writet whitet w	N/A
23.7	Transformer with type X attachments: stranded conductor test (8 mm removed):	at that the of	N/A
+	 Class I transformers: no connection between live parts and accessible metal parts 	when when the state	N/A
. let	 free wire of earth terminal: no touching of live parts 	white white white	N/A
white white	 Class II transformers: no connection between live parts and accessible metal parts, no con- nection between live parts and metal parts sep- arated from accessible metal parts by supple- mentary insulation 	ALTE WALL WALL W	N/A
23.8	Terminals for a current > 25 A:	I INLITE WALL WALL	N/A
- At	 pressure plate, or 	a a th	N/A
me	 two clamping screws 	unite white white	√N/A
23.9	When terminal, other than protective earth con- ductor, screws loosened as far as possible, no con- tact:	NITER WALTER WALTER W	N/A
LIER WAL	 between terminal screws and accessible metal parts 	Set while while whi	N/A
* whitek	 between terminal screws and inaccessible metal parts for Class II transformers 	with with mile	N/A

24	PROVISION FOR PROTECTIVE EARTHING		P
24.1	Class I transformers: accessible conductive parts connected to earth terminal	(Model:GT-81081-6012-T3 and GT-81081-6018-T3)	N.S. P
de la	Class II transformers: no provision for earth	(Model:GT-81081-6024-T2)	
24.2	Protective earth terminal for connection to fixed wir- ing and for type X attachment transformers: comply with Cl. 23, adequately locked, not possible to loos- en without a tool	white white white white	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
- Ju	white	- A A ST	SITE MAT
24.3	No risk of corrosion from contact between metal of earth terminal and other terminal	white white white	N/A
	In case of earth terminal body of AI, no risk of corrosion from contact between Cu and AI	NUE WALL WALL IS	N/A
in we	Body of earth terminal or screws/nuts of brass or other metal resistant to corrosion	ret white while wh	N/A
24.4	Resistance of connection between earth terminal and metal parts 0,1 with a min. 25 A or 1,5 rated input current at 1 min	would would would	N/A
24.5	Class I transformers with external flexible cables or cords:	WALTER WALT WALT	N/A
intra sur	 current-carrying conductors becoming touch before the earth conductor 	LITER MULTER WALTER W	N/A

25	SCREWS AND CONNECTIONS	We su se	N/A
25.1	Screwed connections withstand mechanical stress- es	watter watter waiter wat	N/A
white	Screws transmitting contact pressure or likely to be tightened by the user or having a diameter < 2,8 mm, shall screw into metal	Martiet WAlter Walter White	N/A
ner w	Screws not of metal which is soft or liable to creep (Zn, Al)	S MALL WALL W	N/A
ie whi	Screws of insulating material: not used for electrical connection	WALTER WALTER WALTER WALTER	N/A
WALTER	Screws not of insulating material if their replace- ment by metal screws can impair supplementary or reinforced insulation	MALTER MALTER MALTER MALTER	N/A
suntines Litex wh	Screws to be removed (replacement etc. of power supply cord) not of insulating material if their re- placement by metal screws can impair basic insula- tion	State white white white a	N/A
et mit	No damage after torque test: diameter (mm); torque (Nm); ten times	- The state with with	N/A
Tet	No damage after torque test: diameter (mm); torque (Nm); five times	and the state state	N/A
25.2	Screws in engagement with thread of insulating ma- terial:	white white white white white white	N/A
n n st	 length of engagement 3 mm + 1/2 screw di- ameter or 8 mm 	atte wanter water water water water	N/A
in me	 correct introduction into screw hole 	et allet alle wall was	N/A
25.3	Electrical connections: contact pressure not trans- mitted through insulating material	The state white	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
25.4	In case of use of thread-forming (sheet metal) screws for connection of current-carrying parts: clamping and locking means provided	which which which	N/A
white whi	Thread-cutting (self-tapping) screws used for the connection of current-carrying parts allowed if they generate a full form machine screw thread and if not operated by the user	The while while whi	N/A
whitek	Thread-cutting screws and thread-forming screws used for earth continuity allowed if at least 2 screws for each connection are used and it is not neces- sary to disturb the connection in normal use	water white white	N/A
25.5	Screws for current-carrying mechanical connections locked against loosening	stat stat out at	N/A
LER MI	Rivets for current-carrying connections subject to torsion locked against loosening	at the the	N/A
25.6	Test of screwed glands with a torque according ta- ble 12. After the test no damage at the transformer and the gland.	where we are write	N/A

26	CREEPAGE DISTANCES AND CLEARANCES		ν _α ν Ρ
26.1	See 26.101		dr _dP
26.2	Creepage distances (cr) and clearances (cr)	and when she	√ P [√]
26.2.1	Windings covered with adhesive tape		N/A
-un	- the values of pollution degree 1 are fulfilled	white when when	N/A
WALTER	 all isolating material are classified acc. to IEC 60085 and IEC 60216 	MUTER WALTER WALTER	N/A
. let	- test A of 26.2.3 is fulfilled	a at at	N/A
26.2.2	Uncemented insulating parts pollution degree P2 or P3	Pollution degree 2	Р
a white	 all isolating material are classified acc. to IEC 60085 and IEC 60216 	ART MALIFE MALIF MALL	P
where	- values of pollution degree 1 are not applicable	- Lifet alifet milite	JUN P
26.2.3	Cemented insulating parts	m m t	N/A
MALAN	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	White white white w	N/A
NETER MA	 values of distance through insulation (dti) are fulfilled 	LIEK WALTER WAITER WAI	N/A
sex white	 creepage distances and clearances are not re- quired 	A INTEL WALTER WAITE	N/A
- Set	 test A of this sub clause is fulfilled 	A A A	N/A
-m	Test A	until which which	N/A

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N. M.	IEC 61558-2-16	et aller alle and and	- we
Clause	Requirement + Test	Result - Remark	Verdict
INVER .	– thermal class	NALE WALFER WALF	N/A
J. J. F. C.	– working voltage	at the set set	N/A
at a	 Test with three specially specimens, with unin- sulated wires, without impregnation or potting 	(see appended table)	N/A
- m	Two of the three specimens are subjected to:	re which whi	N/A
ex whitek	 the relevant humidity treatment according to 17.2 (48 h) 	Marter Matriet Matriet Mart	N/A
whitek w	 the relevant dielectric strength test of 18.3 multiplied with factor 1,35 	stret maret maret white	N/A
Mittek white	 One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,35 immediately at the end of the last cycle with high tempera- ture 	aret would would an ited	N/A
	Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see An- nex R of IEC 61558-1	white white white white	N/A
26.2.4	Enclosed parts, by impregnation or potting	Considered (test B) fulfilled by internal construction of approved opto-coupler.	P
26.2.4.1	 The requirements of reduced values as stated for pollution degree 1 (P1) are fulfilled 	of white white white	N/A
EX WALTER	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	and the south and the sunt	N/A
- st	Test B	s at the tot	N/A
mer 1	– thermal class	untite antite antite water	N/A
. Itt	 working voltage 	is at at let	N/A
	 Test with three specially specimens, potted or impregnated. The dielectric strength test is ap- plied directly to the joint. 	(see appended table)	N/A
	Two of the three specimens are subjected to:	me me an a	N/A
where	 the relevant humidity treatment according to 17.2 (48 h) 	WALTER WALTER WALTER WALT	N/A
WALTER N	 the relevant dielectric strength test of 18.3 mul- tiplied with factor 1,25 	WHITEK WALTER WALTER WALTER	N/A
nistek whi rek urei	 One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multi- plied by the factor 1,25 immediately at the end of the last cycle with high temperature 	aret would would would be	N/A
whitek.	The three spacemen pass the Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see Annex R of IEC 61558-1	white white white shife	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
26.2.4.2	 The requirements of distance through insulation (dti) are fulfilled. (P1 values are not required) 	which which which w	N/A
m m	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	NUT WALL WALL WALL	N/A
the wet	Test C	THE NUTER WAITS WAIT	N/A
at at	- thermal class	· · · · ·	N/A
me	 working voltage 	MALTE MALTE WALL	N/A
WALTER V	 Test with three specimens, potted or impreg- nated. (finished components) 	(see appended table)	N/A
INLITEX	 Neither cracks, nor voids in the insulating com- pounds 	and the state state with	N/A
	Two of the three specimens are subjected to:	in me me m	N/A
LIE WALT	 the relevant humidity treatment according to 17.2 (48 h) 	et antifet antifet antife	N/A
NUNLIER .	 the relevant dielectric strength test of 18.3 multiplied with factor 1,35 	white white white	N/A
someret so	 One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,35 immediately at the end of the last cycle with high tempera- ture 	ALTER MALTER MALTER MAL	N/A
	The three spacemen pass the Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see Annex R of IEC 61558-1	water water water	N/A
26.3	Distance through insulation	mile white white w	P
WALTER WA	For double or reinforced insulation, the required values of Tables 13, C1, and D1 – boxes 2b, 2c and 7 are fulfilled	stret whilet whilet whi	P
LIEL WALT	The insulation fulfil the material classification ac- cording IEC 60085 or 60216 or the test of 14.3	Set white white white	NO PON
26.3.1	Reduced values of the thickness of insulation for supplementary or reinforced insulation are allowed if the following conditions are fulfilled:	whitek whitek whitek	N/A
watte w	 the isolating materials are classified acc. to IEC 60085 and IEC 60216 	Intret MALTER WATTER WA	N/A
NITER IN	 the test of 14.3 is fulfilled 	at set set with	N/A
TEX WALTE	 If both requirements are fulfilled, the required values for solid insulation can be multiplied by 0,4 	et whe we we	N/A
* Whitek	 Minimum thickness of reinforced insulation <u>></u>0,2 mm 	the state state	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
NUT	white white white white white white	the set offer	White white
	 Minimum thickness of supplementary insula- tion ≥0,1 mm 	where where we	N/A
26.3.2	Insulation in thin sheet form	MITE WALL WALL W	Р
set s	- If the layers are non separable (glued together):	to at at a	N/A
211	 The requirement of 3 layers is fulfilled 	in which which which	N/A
X WALTER	 The mandrel test according 26.3.3 is fulfilled with 150 N/A 	· ANDER WALTER WALTE	N/A
WALTER	 The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index "e" are ful- filled. 	whitet whitet whitet	N/A
	 If the layers are separated: 	the set stat a	ST NYP
	– The requirement of 2 layers is fulfilled	in m. m. m.	Р
IE WALT	 If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required 	at writer writer write	N/A
when	 The mandrel test according 26.3.3 is fulfilled on each layer with 50 N/A 	white white white	W VP
white w	 The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index "e" are ful- filled. 	ontret wontret wouther w	nti nte
- In-	 If the layers are separated (alternative: 	a funt wh	N/A
A NITE	 The requirement of 3 layers is fulfilled 		N/A
	 If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required 	white white with	N/A
NUTEK UN	 The mandrel test according 26.3.3 is ful- filled on 2/3 of the layers with 100 N/A 	at set set	N/A
set whi	 The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index "e" are ful- filled. 	set white white whi	N/A
whitek	Test according to 14.3 and if the isolating materials are classified acc. to IEC 60085 and IEC 60216 no distances through insulation are required for insula- tion in thin sheet form	white white white	N/A
une v	The figures within square brackets in box 2 and 7 of table 13 (C.1/D.1) are used for insulation in thin sheet form as follows:	WILL WILL WILL Y	P
et ji	 rated output > 100 VA values in square brack- ets apply 	et the the the	N/A
NI TEX	- rated output \geq 25 VA \leq 100 VA 2/3 of the value in square brackets apply	wall wat we	P AF
m	 rated output < 25 VA 1/3 of the value in square brackets apply 	WALTE WALT WAL	N/A

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N/A

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Clause	Requirement + Test	Result - Remark	Verdict
26.3.3	Mandrel test of insulation in thin sheet form (speci- men 0f 70 mm width are necessary):	All material listed in table 20 have been evaluated.	Р
Mr. M	 If the layers are non separable – at least 3 layers glued together fulfil the test: 	ALTE WALLE WALL WALL	N/A
re me	– pull force of 150 N/A	Tel NITE WATE WATE	N/A
et whitet	 high voltage test of 5,0 kV or the test volt- age of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown. 	t would would would an	N/A
whiter y	 If the layers are separable and 2/3 of at least 3 layers fulfil the test. 	untret watter watter wat	N/A
Set a	– pull force of 100 N/A	at at at at	N/A
Tet white	 high voltage test of 5,0 kV or the test volt- age of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdowns. 	et set sist and whe	N/A
t stret	 If the layers are separable 1 of at least 2 layers fulfil the test: 	- let sit sit	P
20.	– pull force of 50 N/A	mur mu mu m	Р
WALTE W	 high voltage test of 5,0 kV or the test volt- age of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown. 	MILEY MALTER WALTER WALTE	WN P
26.101	Creepage distances, clearances and distances through insulation, specified values according to (EN 61558-2-16:09):	and and a ret	P M
- 24	- table 13, material group IIIa (part 1)	mer mer mer n	Р
NUTER	- table C, material group II (part 1)	let set set at	N/A
	- table D, material group I (part 1)	me me me	N/A
Intre M	 working voltage 	259Vrms max.	P S
	 rated supply frequency 50/60 Hz 	50 Hz	Р
The WALL	 rated internal frequency 	let sheet white white s	N RU
* INLIEK	1. Insulation between input and output circuits (basic insulation):	- Tet stet with a	STE P
Liet	a) measured values specified values (mm):	when when we we want	P
M. N	2. Insulation between input and output circuits (double or reinforced insulation):	white white white white	N/A
et un	a) measured values specified values (mm):	Input to output: CI/Cr: Min.8.0> 5.5mm	P

specified values

(mm)

b) measured values

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Clause	Requirement + Test Result - Remark	Verdic
J.J.	and and and and and a star at at a star and	No. A. C.
whitek w	c) measured values specified values (mm) TIW used as secondary wind- ing and 2 layers of insulation tape between Pri. and Sec. windings	P
LIER WALT	3. Insulation between adjacent input circuits: measured values specified values (mm)	N/A
	Insulation between adjacent output circuits: measured values specified values (mm) :	N/A
MALTER	4. Insulation between terminals for external connection:	N/A
uter a	a) measured values specified values (mm)	N/A
et 54	b) measured values specified values (mm)	N/A
- vil-	c) measured values specified values (mm):	N/A
m	5. Basic or supplementary insulation:	_ P
WILLEX W	a) measured values specified values (mm): L/N/A before fuse: Cl/Cr: 3.8mm> 2.40mm Fuse: Cl/Cr: 3.0mm> 2.40mm	P.
8	b) measured values specified values (mm)	N/A
Jet	c) measured values specified values (mm):	N/A
where w	d) measured values specified values (mm):	N/A
ne sin	e) measured values specified values (mm):	N/A
SE WALL	6. Reinforced or double insulation: measured values specified values (mm):	N/A
	7. Distance through insulation:	P
Jet	a) measured values specified values 2-layer insulating tape used (mm):	P
who who	b) measured values specified values (mm):	N/A
er yn	c) measured values specified values (mm):	N/A
26.102	Values of IEC 61558-2-16 applicable for frequency up to 3 MHz (EN 61558-2-16:09)	P.
WALTE	For frequency above 3 MHz clause 7 of IEC 60664-4 is applicable (high frequency testing)	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
00.400		with with with	Will Wh
26.103	Clearance (EN 61558-2-16:09)	- and	P
Where w	 a) Clearance for frequency <u>></u> 30 kHz according figure 101 two determinations are necessary: 	MITER WAITER WAITER W	NUC INCP
LIEK WINL	 determination based on peak working volt- age according Table 104 : 	Tet minet whitet whi	THE TREE
* 1	Peak working voltage	1.	F P
m	Basic insulation: required / measured	white white white	Jun P
MALTER	Double or reinforced insulation: required / measured value	uset wret muset	NUT NUT P
NUTEX MA	 and alternative if applicable for approxi- mately homogeneous field according to Ta- ble 102 	whet whilet whilet wh	N/A
Tet all	Peak working voltage	at at at a	N/A
20	Basic insulation: required / measured	which which which	N/A
WALTER	Double or reinforced insulation: required / measured value	aniset anniet aniset	N/A
WALLEK W	 determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101) 	See 26.101	P
the way	The minimum clearance is the greater of the two values.	See 26.101	P
et white	 b) Clearance for frequency < 30 kHz according figure 101 two determinations are necessary: 	antie weine wate	N/A
WALTER	 determination based on peak working volt- age with recurring peak voltages according Table 103 : 	MALTER MALTER MALTER	N/A
INLIE M	 determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101) 	stret white white w	N/A
with	The minimum clearance is the greater of the two values.	ver white white whi	N/A
26.104	The working voltages of Table 102, 103 and 104 are peak voltages including µsec peaks EN 61558-2-16:09)	WALTER WALTER WALTE	JUNIT P
un un	The working voltage according to Table 13 of part 1 are r.m.s. voltages	MULTE MALL WALLY	Р
26.105	Creepage distances	LIEK MUTER MALTE MA	S P S
EK NALTE	Two determinations of creepage distances are nec- essary (see Figure 102)	at and and with	P P
Jet	 determination based on measured peak work- ing voltage according Tables 105 to 110 	when we will will	P
24	Peak working voltage	into more more	Р

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Clause	Requirement + Test	Result - Remark	Verdict
WALTE	The second secon	a star star star	Martin Martin
	Pollution degree	2	P
WULLE M	Basic or supplementary insulation: required / measured	MITEL MAITER MAILTER W	NUTE IN P
	Double or reinforced insulation: required / measured value	set minet aniret and	ST ST P
et white	 determination based on measured r.m.s. work- ing voltage according Tables 13, C1 and D1 (see clause 26.101) 	watter watter watte	SUNT SUNT
white y	If the values based on table 105 to 110 are lower than the relevant values in Tables 13, C.1 or D.1, the higher values shall be applicable	watter watter watter	SULLER SUNP
26.106	Distance through insulation (EN 61558-2-16:09)	LIEK NUTER WITE W	بر المراجع (P م
Tex white	Instead of partial discharge with high frequency voltage the test of the distance and the calculation of the electric field is applicable under the following conditions:	et would would would	
me	 the max. frequency is < 10 MHz 	Intreason in the substance	NP P
	 the field strength approximately comply with Figure 103 	unet much much	NUT NUL
NITEX INT	 no voids or gaps are present in between the sol- id insulation 	at we used	TOT TOP
et un	For thick layers d1 \geq 0,75 the peak value of the field strength is \leq 2 kV/mm		Р
- Let	For thin layers d2 \leq 30 µm the peak value of the field strength is \leq 10 kV/mm	white white white	Р
when .	For $d1 > d > d2$ equation (1) is used for calculation the field strength	white white white	W P
26.107 (A1)	For transformers with FIW wires the following test is required	white white white w	N/A
The MULT	- 10 cycles are required	TEX STEX NUTER INT	N/A
et white	 68 h test at max heating temperature +10°C or test at max. allowed winding temperature based on the insulation class (required in table 1) + 10°C 	WALTER WALTER WALTER	N/A
mer n	– 1 h at 25° C	NUTER INTER WATER	√ [№] №/А
dt.	– 2 h at 0° C		N/A
in m	 h at 25° C – (next cycle start again with 68 h max winding temp + 10) 	LIER WHITE WHITE WH	N/A
I'M WAL	 during the 10 cycles test 2 x working voltage is connected between PRI and SEC 	at white white white	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
WALTER W	 after 10 cycle test 2 transformers are subjected to the 17.2 test for 48 h and direct after the 48 h the dielectric strength test of 18.3 (100 % test voltage) is done 	WINE WILLEY WILLEY WILL	N/A
LIET WINT	 after the 10 cycle test the third sample is tested at the end of the last cycle in the hot position with the dielectric strength test of 18.3 (100 % test voltage) 	Tet while while while	N/A
MALTER	 the partial discharge test according to 18.101 is done after the cycling test and after the high voltage test, if the peak working voltage is >750 V 	antifet antifet antifet an	N/A

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S/WI

27	RESISTANCE TO HEAT, FIRE AND TRACKING		P
27.1	Resistance to heat	et when when which w	P B
+ 1	All insulating parts are resistant to heat	The second secon	P
whit	For parts of rubber, which passed the test of 19.9, no additional test is required.	water water water water	N/A
MALT V	The tests are not required for cables and small connectors with a rated current \leq 3 A, a rated voltage \leq 24 V a.c. or 60 V d.c. and a power \leq 72 W	intret water water water	NN P
27.1.1	External accessible parts	the works when a	N P
FEK WALTS	The Ball-pressure test -: diameter of impression 2 mm; heating cabinet temperature (C) at 70 ° C or the temperature T of 14.1 (T + 15) - is fulfilled.	watter watter watter wa	Р
27.1.2	Internal parts	the state outer outer only	P
Notifet al	For insulating material retaining current carrying parts in position , the ball-pressure test -: diameter of impression 2 mm; heating cabinet tempera- ture (C) at 125 °C or the temperature T of 14.1 (T + 15) - is fulfilled	(see appended table 27.2)	P
27.2	Resistance to abnormal heat under fault conditions	me m m m	N/A
27.3	Resistance to fire	. Let we with a	P
MALTER	All isolating parts of the transformer shall be re- sistant to ignition and spread of fire. The test ac- cording to IEC 60696-2-10 is required	white white white white	P
27.3.1	External accessible parts (glow wire tests)	s at at at	P
in m	– 650° C for enclosures	ere white white white	N/A
JEK WALT	- 650 ° C for parts retaining current carrying parts in position and terminals for external conductors Current \leq 0,2 A	anitek whitek whitek w	N/A
	 750° C for parts retaining current carrying parts in position and terminals for external conductors with fixed wiring. Current > 0,2 A 	white white white whi	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Whitek W	 850° C for parts retaining current carrying parts in position and terminals for external conductors with non fixed wiring. Current > 0,2 A 	which which which which	Р
27.3.2	Internal parts		P
the wat	 550° C for internal insulating material – not re- taining current carrying parts in position 	THE WALTER WALTE WALT W	N/A
er white	 650° C for coil formers (bobbins) 	T1 Bobbin (See appended table)	Ρ
white v	 650 ° C for parts retaining current carrying parts in position and terminals for external conduc- tors. Current ≤ 0,2 A 	watter watter watter watter	N/A
into sun stet suit	 750° C for parts retaining current carrying parts in position and terminals for external conductors with fixed wiring. Current > 0,2 A 	at the set the states	N/A
* wnitet	 850° C for parts retaining current carrying parts in position and terminals for external conductors with non fixed wiring. Current > 0,2 A 	PCB Tested with all materials. (See appended table)	P
27.4	For IP other than IPX0:If insulating parts retaining current carrying parts in position and under P3 con- ditions, the material resistance to tracking is at least material of group IIIa	IPX0	N/A
nt wh	Test (175 V): no flashover or breakdown before 50 drops	a south and a	N/A

28	28 RESISTANCE TO RUSTING	
m	Ferrous parts protected against rusting	N/A

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IEC 61558-2-16		LIE WALL
Requirement + Test	Result - Remark	Verdict
ANNEX E , GLOW WIRE TEST	MULTER WATER WATER WATER	P
The test is required according to IEC 60695-2-10 and IEC 60695-2-11 with the following additions:	stret millet whilet while	WILL B
	Requirement + Test ANNEX E , GLOW WIRE TEST The test is required according to IEC 60695-2-10	Requirement + Test Result - Remark ANNEX E , GLOW WIRE TEST

E.1 Junite	Clause 6, "Severities" of IEC 6095-2-11, apply with the temperature stated in 27.3 of IEC 61558-1	Jet milet unifer whilet w	
E2	Clause 8, "Conditioning", of IEC 60695-2-11 apply, preconditioning is required	t stat suitet minet and	P P
E3	Clause 10, "Test Procedure", of IEC 60695-2- 11apply, The tip of the glow wire is applied to the flat side of the surface.	white white white white	P

F	ANNEX F, REQUIREMENTS FOR MANUALLY OPERATED SWITCHES WHICH ARE PARTS OF THE TRANSFORMER		N/A
F.2	Manually operated mechanical switches, tested as separate component, shall comply with IEC 61058 under the conditions of F2.	et would would would wo	N/A
F.§	Manually operated mechanical switches tested as part of the transformer shall comply with the condi- tions specified under F.3	white white white white	N/A

r

H w	ANNEX H, ELECTRONIC CIRCUITS (IEC 61558- 1)	P
Ĥ1	General notes on tests (addition to clause 5)	P
	Let ret ret with whit whit with all all all and	Р
H.2	SHORT-CIRCUIT AND OVERLOAD PROTECTION (ADDITION TO CLAUSE 15)	JUP.
H.2.1	Circuits designed and applied so that fault condi- tions do not render the appliance unsafe	P
	During and after each test:	Р
LIE WAL	 temperatures do not exceed values specified in table 3 of Cl. 15.1 	Por
et white	 transformer complies with conditions specified in sub-clause 15.1 	P
WALTER	If a conductor of a pcb becomes open circuited, the transformer is considered to have withstood the particular test, provided that all six conditions as specified are met	N/A
H.2.2	Fault conditions a) to f) of sub-clause H.2.3 are not tested if the following conditions are met:	N/A
MAL	 electronic circuit is a low-power circuit as speci- fied 	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	the second secon	- 10 10 50°	alle min
W. TEK	 safety of the appliance as specified does not rely on correct functioning of the electronic cir- cuit 	surer surer surer	N/A
H.2.3	Fault conditions tested as specified when relevant:		P
in white	a) short-circuit of creepage distances and clear- ances, if less than specified in Cl. 26	set antiset antise and	N/A
MALTE	b) open circuit at the terminals of any component	t wet wret white	P ¹
with	c) short-circuit of capacitors, unless they comply with IEC 60 384-14	set net net	PA
	d) short-circuit of any two terminals of an electron- ic component as specified	white white white	P
the an	e) any failure of an integrated circuit as specified	with white white w	Р
Tex white	f) low-power circuit: low-power points are con- nected to the supply source	et instet and and	N/A
* WALTER	Cl. 15 is repeated with a simulated fault as indicat- ed in a) to e), if the transformer incorporates an electronic circuit to ensure compliance with Cl. 15	watter watter watter	STATES P
	Fault condition e) is applied for encapsulated and similar components	milet whilet while y	INTER ON P
NITEK WAY	PTC's and NTC's are not short-circuited if they are used as specified	et white w	N/A
H.2.4	If for a fuse-link complying with IEC 60 127-3 rated fuse current I1 is used, current I2 is measured as specified:	a south which which	surf et P
	 if I2 < 2,1 x I1 test of 15.8 is repeated with fuse-link short-circuited 	whitek whitek whitek	N/A
. fet	- if $l_2 > 2,75 \times l_1$, no other tests are necessary	s at the	, dr P
in an	If $I2 > 2,1 \times I1$ and $I2 < 2,75 \times I1$ test of 15.8 is repeated as specified	itt whit whit w	N/A
at the	For fuses other than those complying with IEC 60 127-3, the test is carried out as specified 15.3.2 to 15.3.5	white white white	N/A

H.3	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		P
H.3.1	For live parts separated by basic insulation smaller cr and cl as in 26 are allowed, if H2 is fulfilled.	LIEK MUTER WALTER WALTER W	NUTER W
de la	In optocouplers no requirements of cr and cl	the the	<i>⊘</i> + P _<
yn L nifel	For coatings annex W applies. Smaller distances as required in IEC 60664-3, clause 4 are applica- ble,	white white white white	N/A

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JIE MUT	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
SWILL THE	For potted transformers cycling tests acc, 26.2. are applicable	white white white white	N/A
H.3.2	The ma. surface temperature of optocouplers is 50 K	ALL WALL WALL WALL	Р

K. Juliel	ANNEX K, INSULATED WINDING WIRES FOR US INSULATION	E AS MULTIPLE LAYER	P
K.1	Wire construction:	The and the second	Р
min	 insulated winding wire with min. two layers for basic or supplementary insulation 	SPITT MATE MALE MALE	N/A
NUTER WY	 insulated winding wire with min. three layers for reinforced insulation 	VDE approved triple insulated wire	n ^{LT} P
set of	– winding insulation material:	t at at at a	er کې
K.2	Conformance test	which which we we	N/A
K.2.1	Test 13 of IEC 60 851-5 nominal conductor diame- ter 0,018 mm 0,1 mm, test as specified in 4.2.1 and 4.2.2 of IEC 60 851-5	watter watter watter watte	N/A
white w	Nominal conductor diameter > 0,1 mm, 2,5 mm, test as specified in 4.3.1 and 4.3.2 of IEC 60 851-5	ontret wontret wontre wontre	N/A
et el	Nominal conductor diameter < 2,5 mm, test as specified in 4.4.1 and 4.4.2 of IEC 60 851-5	a funt she s	N/A
MAL	High voltage test immediately after the above spec- ified tests:	MALTE MALT MALL MAL	N/A
White	 test voltage for two layers 3 kV 	stret atter mare white	N/A
at-	 test voltage for three layers 5,5 kV 	m m t	N/A
K.2.2	Adherence and flexibility, test as specified under 5.1.4 of IEC 60 851-3	MITER WALTE WAITE WALT	N/A
JE WAL	- high voltage test immediately after this test	et set when when a	N/A
s. A	 test voltage for two layers 3 kV 	M IN I	N/A
WILL	 test voltage for three layers 5,5 kV 	- white white white white	N/A
K.2.3	Heat shock, test as specified under 3.1 or 3.2 of IEC 60 851-6:	The state state with	N/A
	 high voltage test immediately after this test 	me me m	N/A
NUTE MA	 test voltage for two layers 3 kV 	THE LIFE NUEL MUTER	N/A
A- 1	 test voltage for three layers 5,5 kV 	The second second	N/A
K.2.4	Retention of dielectric strength after bending, test as specified under test 13 of 4.6.1 c) of IEC 60 851-5	while while while wh	N/A
- aux	1. high voltage test immediately after this test	white white white white	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Martin -	2. test voltage for two layers 3 kV	White White White	N/A
S.J.E.	3. test voltage for three layers 5,5 kV	. It let bet	N/A
K.2.5	Resistance to abrasion, test 11 of IEC 60851-3	and me me	N/A

U	ANNEX U – INFORMATIVE – OPTIONAL TW – MARKING FOR TRANSFORMERS		
whit	The tests of Annex U are based on constant S = 4500. Other constants are possible, if the test of U.5.2 is done with positive result.	N/A	
U1	General notes and tests	N/A	
MITEK W	8 transformers of one type are necessary for the test. Tests according U5.	N/A	
U.2	Heating (addition to clause 14)	_⊘N/A	
14.4	Thermal endurance test	N/A	
+ WALTE	Test according U5 and measurements according 11.1	N/A	
MUTER	Transformers tested as a integral part of the equipment (option), assigned with tw	N/A	
unter a	The thermal conditions are so adjusted, that the duration of test is as indicated by the manufacturer.	N/A	
et s	If no indications are given, the test period is 30 days	N/A	
whe	After the test, when the transformers have returned to room temperature, they fulfil the following re- quirements:	N/A	
WALTER D	a) The output voltage has not changed from the measured value at the beginning by more than allowed value of clause 11.1	N/A	
Tex whi y	b) The insulation resistance between input and output winding and between windings and body is, measured with 500 V d.c. , not less than 1 MOhm	N/A	
when	c) The transformer fulfil the dielectric strength test with 35% of the values in Clause 18, Table 8.a.	N/A	
white	The test result is positive, is min. 6 of the 7 sam- ples have passed the test.	N/A	
NUTE W	The test result is negative, if 2 or more samples fail the test	N/A	
iek whi	If the result is negative, the test can be repeated with 7 new samples	N/A	
U.3	Short circuit and overload protection (addition to clause 15)	N/A	

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	IEC 61558-2-16	and all have	the th
Clause	Requirement + Test	Result - Remark	Verdict
. APLA	and all all all and an		Will wall
	At short circuit and overload tests the winding tem- perature if less than the required value of table U.1	when when when	N/A
U.5	General requirements and information about ther- mal endurance test on windings	nere smith when a	N/A
U.5.1	Thermal endurance test	Tex surface source was	N/A
* 1	Transformers tested at rated output		N/A
m	Loads outside of the oven	mill while white	N/A
1th	7 transformers are placed in the oven	s at at	N/A
NAL V	The temperature of the hottest winding of each of the 7 transformers is-together with the oven tem- perature, at the applicable temperature of table U.2	white white white	N/A
Tex white	After 4 hours measuring of the actual winding tem- peratures. Regulation of the oven temperature if necessary	et milet antiet and	N/A
	After 24 hours again measuring of the winding temperature. The temperatures of the 7 samples are very near to the required temperature of the values of table U.2. The test time of the coldest winding is not longer than twice the theoretical test time based on table U.2	water water water	N/A
U.5.2	The use of constant S other than 4500 in tw tests	10 1 5th 1	N/A
U.5.2.1	Procedure a)		N/A
WALTE	The manufacturer prepares test results with a min- imum of samples of 30.	MALITE MALINE MALIT	N/A
- Jiek	T and log L are calculated from the dates	at at set	N/A
Set .	The diagram according to Figure U.2 will be found- ed.	white white white	N/A
U.5.2.3	Procedure b)	stre white white w	N/A
5t 5	The testing authority shall test 14 new transformers	A A A A	́ N/А
at white	Test 1, based on clause U.5.1 but at the calculated test room temperature for 10 days. The test is continued until all transformer fail.	WITT WITT WITT	N/A
NUTER	Calculation of the mean life L2 at temperature T2 according to U4	At fit fit	N/A
NITEK WA	Test 2, based on clause U.5.1 but at a calculated room temperature T ₂ (for 120 days).The test time with T ₂ exceeds L ₂ .	and and and and an	N/A
fet 5t	If all transformers fail before L2, the result is nega- tive.	s at at a	N/A

٧

ANNEX V, SYMBOLS TO BE USED FOR THERMAL CUT-OUTS

N/A

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	05	-	
			7

IEC 61558-2-16				
Clause	Requirement + Test	Result - Remark	Verdict	
S. S. S.	white and the second second	at the set of	all' solli	
V.2.1.1	Restored by manual operation	The second second second se	N/A	
V.2.1.2	Restored by disconnection of the supply	WAS TON WALLOW WALLOW WALL	N/A	
V.2.1.3	Thermal link IEC 491/98	and marter and and	N/A	
V.2.2	Self-resetting thermal cut-out	at an estimate and and and and	N/A	

K / W

101

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C	lo.	110	20

Limits

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De

D. NI

±20

-	Remark	

Clause	Requirem	ent + Te	st	LICE MAL	WILL	Result - R	lemark	Verdic
	TABLE: (NO-LOAI				OUTPUT C	URRENT UND	ER LOAD;	Р
Clause			1	1		12		
type/rated output/	l rate volta (V	ige vo	sec. Itage (V)	delta Usec (%)	Usec V no-load output	delta Usec no-load output %	further informatio	n
IN IT IN	12	0 1	1.87	-1.08%	12.45	+4.89%	100V/50H	ž "N
Model: GT-	12	0 1	1.87	-1.08%	12.45	+4.89%	100V/60H	z
01001-0012-	12	0 1	1.88	-1.0%	12.45	+4.8%	240V/50Hz	
	12	0 1	1.88	-1.0%	12.45	+4.8%	240V/60H	z
JIE MITE	24.	0 2	4.03	0.13%	24.36	+1.37%	100V/50H	z,Ś
GT-81081	- 24	0 2	4.03	0.13%	24.36	+1.37%	100V/60H	z
6024-T2	24	0 2	4.01	0.04%	24.36	+1.46%	240V/50H	z
81081-6012-T3 GT-81081- 6024-T2	24.	.0 24	4.01	0.04%	24.36	+1.46%	240V/60H	z
- Jer .	<u> </u>	0 1	7.51	-2.72%	17.89	+2.17%	100V/50H	ž "Ś
GT-81081	- 18	0 1	7.51	-2.72%	17.89	+2.17%	100V/60H	z
6018-T3	18	0 1	7.49	-2.83%	17.89	+2.29%	240V/50H	z
	18	.0 1	7.49	-2.83%	17.89	+2.29%	240V/60H	z

14 5	TABLE: Heating Test					White Punt
* Intret	Supply voltage (V):	110V/60 Hz	110V/60 Hz	264V/50 Hz	264V/50 Hz	
Set	Ambient (°C):	See be- low	See be- low	See be- low	See be- low	
Maximur	m measured temperature T of part/at:		Т ((°C)		max. temper- ature limit, (°C)
et	A writer white white white white	Label up	Label down	Label up	Label down	TEK NIE
Model: 0	GT-81081-6012-T3	INLIE	men m	in min	m	In in
AC Inlet	white white white where we	69.5	68.7	61.1	58.7	70
TR1 boo	ly A A	118.2	120.8	97.9	97.0	Ref.
X capac	itor (CX1)	106.5	104.9	96.7	93.9	110
Varistor	(VR1)	106.7	106.5	93.7 📣	92.0	125
Choke w	vinding (LF3)	108.4	108.2	93.9	92.4	130
X capac	itor (CX2)	108.6	108.6	91.2	89.9	110
Choke w	vinding (LF1)	115.4	114.4	94.4	92.9	130
PCB und	der BD1	101.3	101.2	87.6	85.9	130
Y capac	itor (CY1)	82.6	82.9	72.8	71.3	125

	white white white wh	IEC 61558-2-1	6	de la		NUTE IN
Clause	Requirement + Test	* NITER WALTER	Resi	ult - Remar	k	Verdic
	winth with with with	10	1 A.	at de		LIN MIL
E-Cap (C		99.6	98.7	90.3	88.2	105
Heat sink		98.2	98.0	89.4	87.8	Ref.
	ner (T1) core	96.7	95.4	92.6	90.1	110
<u> </u>	ner (T1) winding	105.4	104.2	100.1	97.8	110
PCB near		97.6	97.1	93.8	92.1	130
Y capacito	or (CY3)	101.5	101.1	95.1	93.5	125
Optocoup	ler (U4)	105.2	104.6	101.0	99.4	115
E-Cap (C	9)	97.1	96.2	93.0	90.9	105
Heat sink	(HS2)	101.5	100.5	96.2	94.0	Ref.
Output wi	real set set set	87.0	86.9	83.1	81.7	105
Enclosure	e inside above T1	87.7	88.9	84.4	84.0	Ref.
Enclosure	e inside under T1	93.5	91.7	88.7	86.8	Ref.
Enclosure	e outside above T1	76.6	68.0	70.3	64.1	80 08
Enclosure	e outside under T1	69.3	75.4	64.0	70.3	80
Support n	ear pin	64.7	71.5	70.6	67.0	85
Ambient	at at at at	40.0	40.0	40.0	40.0	1 - 1
Model: G	Г-81081-6024-Т2	IN AL	1 1	+ Jet		IL WALL
AC Inlet		68.6	69.3	61.3	62.1	70
TR1 body		122.9	126.4	106.5	108.2	Ref.
X capacito	or (CX1)	108.1	109.0	99.1	101.2	110
Varistor (\	/R1)	110.8	113.1	98.3	101.0	125
Choke wir	nding (LF3)	115.9	118.9	100.7	104.0	130
X capacito	or (CX2)	106.4	106.3	100.9	103.0	110
Choke wir	nding (LF1)	117.2	119.3	92.9	95.3	130
PCB unde	er BD1	115.7	118.4	96.3	99.4	130
E-Cap (C	1)	103.0	104.2	93.3	95.7	105
Heat sink	(HS1)	104.2	106.7	98.3	100.5	Ref.
Transform	ner (T1) core	106.4	108.4	105.1	106.7	s ⁴⁰ 110 s ⁴⁰
Transform	ner (T1) winding	109.1	108.0	107.4	109.2	<u></u> 110 <
PCB near	T1	107.4	109.6	106.2	108.5	130
Y capacito	or (CY3)	95.8	101.4	95.5	93.6	A- 125 A-
Optocoup	ler (U4)	104.5	108.3	104.4	106.4	115
E-Cap (C	9)	95.0	97.1	95.0	96.6	105
Heat sink	(HS2)	102.9	105.0	99.0	100.9	Ref.
Output wi	re de de de de	83.9	87.1	82.1	85.0	105
Enclosure	e inside above T1	84.7	86.8	81.5	82.4	Ref.
Enclosure	e inside under T1	81.4	84.5	78.2	82.1	Ref.
	e outside above T1	75.1	75.5	71.2	69.7	80
	outside under T1	64.9	70.8	61.9	68.3	80

Reference	No.: W	/TX21X12149580S
I/GIGIGIICG	110 11	17217121493003

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Clause Requirement + Tes	the states			me	Rest	ult - Rer	nark			Verdict
and and and and and	m. n		4	d.		de la	ð	55	5	and the
Support near pin	the second	6	6.8	67	7.0	59.0		67.0		85
Ambient	mer mer	4(40.0 40.0		40.0	÷ .	40.0	1th	-There	
Model: GT-81081-6018-T3	1 10	- st	<u></u>	() 	NIT'	and the	- ar	- m		241 1
AC Inlet	NUT WALL	6	7.6	67	7.3	61.5		61.7	*	70
TR1 body	4	12	5.4	12	5.6	103.9	9	104.9	5	rRef. 📣
X capacitor (CX1)	<u>ر</u> 10	0.3	10	0.3	95.8		95.3		110	
Varistor (VR1)	10	3.4	10	4.5	95.0	5	95.8	an'	125	
Choke winding (LF3)	LIEF N	10	5.5	10	6.6	95.1		95.9		130
X capacitor (CX2)		10	6.2	_10	6.7	99.0		99.5		110
Choke winding (LF1)	JER NI	12	8.4	12	8.3	103.	5	104.1	4	130
PCB under BD1	24 - 24.	10	1.2	10	1.8	93.1	1	93.9	~	130
E-Cap (C1)	Set Set	9	5.4	94	4.5	89.9	2.	89.9		105
Heat sink (HS1)	n m	10	0.9	10	1.3	98.1	1	98.6	5	Ref.
Transformer (T1) core	the state	10	4.0	10	3.0 📣	104.9)	104.9	4	110
Transformer (T1) winding	m n	97	7.8	96	6.8	<u>_101.</u>	5,6	101.4	5	110
PCB near T1	at i		7.5	97	7.2	93.6		92.4	5	130
Y capacitor (CY3)	me m	97	7.6	97	7.4	96.6	*	97.0	S.	125
Optocoupler (U4)	15 18	- 99	9.6	99	9.5	98.5	- 54	99.1		115
E-Cap (C9)	Jul'	9	5.4	95	5.1	96.8		97.2	it.	105
Heat sink (HS2)	A	10	2.7	10	2.3	102.	25	102.0	4	Ref.
Output wire		78	3.8	79	9.6	70.8	N.A.	79.0		105 <
Enclosure inside above T1	e de		4.4	93	3.7	93.0	2	91.7	- m	Ref.
Enclosure inside under T1	and a	70	5.0	77	7.4	75.1		77.2	1	Ref. 🖉
Enclosure outside above T1	4	6	9.9	64	م.4	67.7		65.3	12	80
Enclosure outside under T1	white whit	63	3.5 🔊	66	6.9	61.7		66.9	d.	80
Support near pin	500	64	4.0 <	62	2.1	60.6	1	56.8		85
Ambient			0.0	4(0.0	40.0		40.0	Έ.	
Supplementary information:		d.	At		Set.	J.	NUT	JAL S	4	in m
Temperature T of winding:	t1 (°C)	R ₁ (Ω)	t2 (°C)	R2 ((Ω)]	- (°C)	Allow T _{max} (Insula- tion clas
- , s s s	·	ST		10	su.	50				3

The heating test performed at unit continuous operation.

ſ	15 TABLE: SHORT-CIRCUIT AND OVERLOAD PROTECTION								
Ś	ambient temperature (°C): 24.9								
1	type/rated c	output	r-cold Ω	r-warm Ω	temp. °C	ext. encl. °C	. support °C	int. + ext. wire	further information

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Clause	Requirement + Test

Result - Remark

Verdict

15	TABLE	E: SHORT-	CIRCUIT AN	D OVERLO	AD PROT	ECTION		P
	ambier	nt temperat	ure (°C)		:	24.9		
type/rated	d output	r-cold Ω	r-warm Ω	temp. °C	ext. enc °C	l. support °C	int. + ext. wire	further information
GT-81081 T3 / 12.0Vdc, 4	- 18	M	Tek whitek	124.6	LIFEK	Te white w	or iter	wht- wh
GT-81081 T2 / 24.0Vdc, :	Set .	NITES WALT	* Tret	101.7	NIT I	504 100	Whitek of	Tet white
GT-81081 T3 / 18.0Vdc, :	LIE NNS	ret - united	white wh	107.4	un-		INLIEK WALT	t trainer w

Note:

1. The model of GT-81081-6012-T3 that output overload to 6.0A, the unit protected, T1 winding max. temp.: 124.6°C no hazards.

2. The model of GT-81081-6024-T2 that output overload to 3.0A, the unit protected, T1 winding max. temp.: 101.7°C no hazards.

3. The model of GT-81081-6018-T3 that output overload to 4.0A, the unit protected, T1 winding max. temp.: 107.4°C no hazards.

4. Short circuit at the output terminal and secondary winding, the unit protected immediately, no temp. rising, no hazards.

5. Rated ambient temperature ta: 40°C

18.2	TABLE: insulation resistance measurement	ts	AT ALTER ALT PAR
Insulation	n resistance R between:	R (MΩ)	Required R (MΩ)
Between	mains poles (primary F1 disconnected)	>100	2
Between were con	primary and enclosure* (All type of enclosure sidered)	>100	NUTEX MUTEX
Between	input and output	>100	5
	primary and secondary of T1 (All source of er were considered)	>100	5
	core and secondary of T1 (All source of er were considered)	>100	5
	enclosure inside and outside* (All type of en- /ere considered)	>100	united un 7 unit
Supplem	entary information:	at at at	LIEK NITEK MITEK

*: All sources of materials were considered, tested according to the client's required.

18.3	TABLE: Dielectric Strength	LIFE WALTER WALTER WAL	me m	Р
Test volta	age applied between:	Test potential applied (V)	Breakdown / f (Yes/N	

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Clause	Requirement + Test	Result - Remark	Verdic
- LIV	white when when we are	the state	aller alle all
Between	mains poles (primary F1 disconnected)	2100 AC	No
	primary and enclosure* (All type of enclo- e considered)	4200 AC	No white
Between	input and output	4200 AC	At No Set
	primary and secondary of T1 (All source of er were considered)	4200AC	No
	core and secondary of T1(All source of er were considered)	4200 AC	No
	enclosure inside and outside (All type of en-	4200 AC	No
Suppleme	entary information:	the state state of	in which we a

ANNEX H	Electr	onic circui	ts fault test				n m n	Р
* 55	ambie	nt temperat	ure (°C)	- 10	:	25.1	et 15 5	110
m i	Test v	oltage(V)				264V	m m	14
Component No.		fault	Test voltage	Test time	Fuse N	o. Fuse current(A)	Result	
Model teste	ed: GT-8	1081-6024	-T2	5 5100	10	a	V a st	A
BD1	wit	S-C	264V/ 50Hz	1s	F1	0.45→0	Fuse (F1) open immediately and ten times, BD1 damaged, no ha Output : 24.01V	d repeat azard.
C1	Tet wr	S-C	264V/ 50Hz	15	5 F1	0.45→0	Fuse (F1) open immediately and ten times, no ha Output : 24.01V	d repeat azard.
Q1 (G-S)	* whit	S-C	264V/ 50Hz	10min	F1	0.05	Unit shut down, age, no hazard. 24.01V→0V	
Q1 (D-S)	unitek Stek	S-C	264V/ 50Hz	1s	F1	0.45→0	Q1 damaged, F opened immedi repeat ten times hazard. Output 24.01V→0V	ately and s, no
Q1 (D-G)	EX WAY	S-C	264V/ 50Hz	1s	F1	0	Q1 damaged, F opened immedia repeat ten times hazard. Output 24.01V→0V	ately and s, no
T1 (pin1-2)	MUTER	S-C	264V/ 50Hz	10min	F1	0.05	Unit shut down, age, no hazard. 24.01V→0V	

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AL MAL				IEC 61558	5-2-16				
Clause	Requ	irement + Te	st 🦯	NUTER WAY	in me	R	esult - Rema	rk	Verdict
J.J.	N. S. S.	our m	- 2hr	-10-	1 10		de de	e site site	. and
ANNEX H	ANNEX H Electronic circuits fault test					In In	Р		
JER N	ambie	ent temperat	ure (°C)	<u> </u>		25	5.1 /	Let Jet	STER.
m. m	Test	voltage(V)	·····			26	64V	me me.	20 20
Componer	nt No.	fault	Test voltage	Test time	Fuse N	0.	Fuse current(A)	Result	
T1 (pin4-5)	WALTER	S-C	264V/ 50Hz	10min	F1	*	0.05	Unit shut down, age, no hazard 24.01V→0V	
T1 (pin A-B	3)	S-C	264V/ 50Hz	10min	F1	-Ju	0.05	Unit shut down, age, no hazard 24.01V→0V	
D5	who who	S-C	264V/ 50Hz	1s	F1 ^{SI}	nui	0	Q1 damaged, F opened immedi repeat ten times	ately and s, no

D5	S-C	264V/ 50Hz	1s	F1 M	0	Q1 damaged, Fuse (F1) opened immediately and repeat ten times, no hazard. Output : 24.01V→0V
U4 (pin3-4)	SC	264V/ 50Hz	10min	F1	0.05	Unit shut down, no dam- age, no hazard. Output : 24.01V→0V
U4 (pin1-2)	SC	264V/ 50Hz	10min	⁴ F1	0.05	Unit shut down, no dam- age, no hazard. Output : 24.01V→0V
U4 (pin1)	ос	264V/ 50Hz	10min	F1	0.05	Unit shut down, no dam- age, no hazard. Output : 24.01V→0V
U4 (pin3)	OC ST	264V/ 50Hz	10min	F1	0.05	Unit shut down, no dam- age, no hazard. Output : 24.01V→0V
Output	S-C	264V/ 50Hz	10min	F1	0.05	Unit shut down, no dam- age, no hazard. Output : 24.01V→0V
Model tested: GT-	81081-6012-	T3	m	N	t at	at at all all the
Output	S-C	264V/ 50Hz	10min	F1	0.05	Unit shut down, no dam- age, no hazard. Output : 11.88V→0V
Model tested: GT-	81081-6018-	ТЗ	unti unt	m	m. m.	1 A A A
which which y		264V/	de la lat	1		Unit shut down, no dam-

F1

0.05

age, no hazard. Output :

17.49V→0V

Note: S-C: Shout circuit, O-C: Open circuit

S-C

Output

50Hz

	20	TAE	LE: Components	A A	the set of	TER INUTE MALT	su'	P.
0	Object/part	No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)		ırk(s) of formity1)

10min

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Verdict

141

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Result - Remark

UL 796

UL 796

UL 796

UL 796

UL E228070

UL E74757

UL E231590

UL E213009

Min. 1,6 mm

Min. 1,6 mm

Min. 1,6 mm

Min. 1,6 mm

0, 130°C

0, 130°C

0, 130°C

0, 130°C

thickness, min. V-

thickness, min. V-

thickness, min. V-

thickness, min. V-

Clause	Requirement + Test
--------	--------------------

20 T	ABLE: Components						
Object/part No	o. Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)		
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2, T2A, T2B T4	Min.V-0, Min. 130°C	UL 796	UL E154355		
-Alternative	GUANGDONG HETONG TECHNOLOGY CO LTD	CEM1, 2V0, FR4	Min.V-0, Min. 130°C	UL 796	UL E243157		
-Alternative	CHEERFUL PLASTIC ELECTRONIC PRODUCTS	02, 03, 03A	Min.V-0, Min. 130°C	UL 796	UL E199724		
-Alternative	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min.V-0, Min. 130°C	UL 796	UL E251754		
-Alternative	SUZHOU CITY YILIHUA ELECTRONICS CO LTD	YLH-1	Min.V-0, Min. 130℃	UL 796	UL E251781		
-Alternative	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0, 03V0, 04V0	Min.V-0, Min. 130°C	UL 796	UL E186016		
-Alternative	BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A, DGV0-3A	Min.V-0, Min. 130℃	UL 796	UL E177671		
-Alternative	KUOTIANG ENT LTD	C-2, C-2A	-2A Min.V-0, UL 796 Min. 130°C		UL E227299		
-Alternative	SHENZHEN TONGCHUANGXI N ELECTRONICS CO LTD	тсх	Min. 1,6 mm thickness, min. V- 0, 130°C	UL 796	UL E250336		

Waltek Testing Group (Shenzhen) Co., Ltd. http://www.waltek.com.cn

PACIFIC WIN

YUANMAN

PRINTED

CO LTD

CO LTD

INDUSTRIAL LTD

CIRCUIT CO LTD

SUZHOU XINKE

ELECTRONICS

ELECTRONICS

JIANGSU DIFEIDA

-Alternative

-Alternative

-Alternative

-Alternative

PW-02

PW-03

XK-2, XK-3

DFD-1

1V0

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Verdict

1.200

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Clause	Requirement + Test	Result - Remark

20 TABLE: Components					In.	Р	
Object/part	No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)		rk(s) of ormity1)
-Alternative		SHANGHAI H- FAST ELECTRONIC CO LTD	211001, 211002	Min. 1,6 mm thickness, min. V- 0, 130°C	UL 796	UL E337862	
-Alternative	NI- ITEX	KUNSHAN CITY QIANDENG WUQIAO ELECTRICAL APPLIANCE FACTORY	WQ-A WQ-B WQ-C	Min. 1,6 mm thickness, min. V- 0, 130°C	UL 796	UL E	492425
-Alternative	JUN	JIANGXI ZHONG XIN HUA ELECTRONICS INDUSTRY CO LTD	ZXH-2	Min. 1,6 mm thickness, min. V- 0, 130°C	UL 796	UL E	331298
-Alternative		SHENZHEN JIA LI CHUANG TECHNOLOGY DEVELOPMENT CO LTD	JLC-2	Min. 1,6 mm thickness, min. V- 0, 130°C	UL 796	UL E	479892
Enclosure		SABIC INNOVATIVE PLASTICS B V	SE1X, SE1	Min. V-1, Min. thickness: 2.0mm, 105°C	UL 94 UL 746	Tested with appliance UL E45329	
-Alternative	NUTER	SABIC INNOVATIVE PLASTICS B V	SE100	Min. V-1, Min. thickness: 2.0mm, 95°C	UL 94 UL 746	applia	ed with ance 45329
-Alternative	INNOVATIVE thickness:		Min. V-0, Min. thickness: 2.0mm, 85°C	UL 94 UL 746	applia	d with ance 45329	
-Alternative	nur.	SABIC INNOVATIVE PLASTICS B V	CX7211 EXCY0098	Min. V-1, Min. thickness: 2.0mm, 90°C	UL 94 UL 746	applia	d with ance 45329
-Alternative	MAR	SABIC INNOVATIVE PLASTICS B V	945, 940	Min. V-1, Min. UL 94 thickness: UL 746 2.0mm, 120°C		applia	ed with ance 45329
-Alternative	native SABIC HF500R Min. V-0, Min. INNOVATIVE PLASTICS B V 2.0mm, 125°C		thickness:	UL 94 Tested UL 746 appliant UL E45		ance 🚽	
-Alternative	White M	SABIC INNOVATIVE PLASTICS B V	SE1X, SE1	Min. V-1, Min. thickness: 2.0mm, 105°C	UL 94 UL 746	applia	d with ance 207780

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20	TABLE: Components	the second	LIET MITH	MALIER	UNLIFE WALTER	mur	P
Object/part N	A 100	Type/model	Technical		Standard (Edition / year)		rk(s) of ormity1)
-Alternative	SABIC INNOVATIVE PLASTICS B V	SE100	Min. V-1, M thickness: 2.0mm, 95°	<u>ن</u> ال	L 94 L 746	applia	ed with ance 207780
-Alternative	SABIC INNOVATIVE PLASTICS B V	C2950	Min. V-0, M thickness: 2.0mm, 85°	U	L 94 L 746	applia	ed with ance 207780
-Alternative	SABIC INNOVATIVE PLASTICS B V	CX7211 EXCY0098	Min. V-1, M thickness: 2.0mm, 90°	v ¹ U	L 94 L 746	applia	ed with ance 207780
-Alternative	SABIC INNOVATIVE PLASTICS B V	945, 940	Min. V-1, M thickness: 2.0mm, 120	U	L 94 L 746	applia	ed with ance 207780
-Alternative	SABIC INNOVATIVE PLASTICS B V	HF500R	Min. V-0, M thickness: 2.0mm, 125	U	L 94 L 746	applia	ed with ance 207780
-Alternative	TEIJIN CHEMICALS LTD	LN-1250P LN-1250G	Min. V-0, M thickness: 2.0mm, 115	U	L 94 L 746	applia	ed with ance 50075
-Alternative	CHI MEI CORPORATION	PA-765A	Min. V-0, M thickness: 2.0mm, 85°	U	L 94 L 746	applia	ed with ance 56070
Appliance inl (for GT-8108 60x-y-T3)		R-301SN	10A, 250Va		:C60320-1, UL 98	8 🦽	1003022 184638
-Alternative	Sun Fair	S-03 series	10A, 250Vac		EC60320-1, UL 98	7	1003444 226643
-Alternative	TECX	TU-301, TU- 301-SP	10A, 250Vac				200647 220004
-Alternative	Inalways Corpora- tion	0711	10A, 250Vac		EC60320-1, UL 98	4	C201008 94191
-Alternative	Leci	DB-14	10A, 250Vac		C60320-1, UL 98	VDE 40032137 UL E302229	
-Alternative	Rong Feng Indus- trialCo., Ltd.	SS-120	10A, 250Va		C60320-1, UL 98	VDE 4002	8101

121

N/K

UL E102641

UL E225980

VDE 40013388

IEC60320-1, UL

498

10A, 250Vac

ST-A01-003J

Zhe Jiang BeiErjia

-Alternative

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Clause F	Requirement + Test	Result - Remark
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20	TABLE: Components	at the a	LIE WALL WALL	with with	Р	
Object/part N	lo. Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)	
Appliance inle (for GT-8108 60x-y-T3A)		TU-333	2.5A, 250Vac	IEC60320-1, UL 498	ENEC-00633 UL E220004	
-Alternative	Sun Fair	S-02	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40034448 UL E226643	
-Alternative	Leci	DB-6	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40032465 UL E302229	
-Alternative	Richbay	R-30790	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40030381 UL E184638	
-Alternative	Inalways Corpora- tion	0724	2.5A, 250Vac	IEC60320-1, UL 498	ENEC/FI 2010080 UL E94191	
-Alternative	DLK Electronics Technology Co Ltd	CDJ-2	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40015580 UL E217394	
-Alternative	Zhe Jiang BeiErjia	ST-A04-002	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40016045 UL E225980	
-Alternative	Rong Feng Indus- trialCo., Ltd.	RF-190	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40030379 UL E102641	
Appliance inle (for GT-8108 60x-y-T2)		SO-222	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40020337 UL E220004	
-Alternative	Sun Fair	S-01	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40034449 UL E226643	
-Alternative	Rich Bay	R-201SN90	2.5A, 250Vac	IEC60320-1, UL 498	-1, UL VDE 40030384 UL E184638	
-Alternative	LECI	DB-8	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40032028 UL E302229	
-Alternative	Inalways Corpora- tion	0721	2.5A, 250Vac	IEC60320-1, UL 498	ENEC/FI 2010087 UL E94191	
-Alternative	Delikang Electron- ics Technology Co Ltd	CDJ-8	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40025531 UL E217394	

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Clause Requirement + Test	Result - Remark
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20	TAI	BLE: Components				20	Р
Object/part No.		Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)		rk(s) of ormity1)
-Alternative		Zhe Jiang BeiErjia	ST-A03-005	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40014833 UL E225980	
-Alternative		Rong Feng Indus- trialCo., Ltd.	RF-180	2.5A, 250Vac	IEC60320-1, UL 498	VDE 40030168 UL E102641	
Earthing wire (for Class I on- ly)		KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1015, 1007, 1185	Min. 18AWG, Min. 300V, Min. 80°C	UL 758	Tested with appliance UL E237831	
-Alternative		ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1015, 1007, 1185	Min. 18AWG, Min. 300V, Min. 80°C	UL 758	applia	ed with ance 333601
-Alternative		DONGGUAN CHUANTAI WIRE PRODUCTS CO LTD	1015, 1007, 1185	Min. 18AWG, Min. 300V, Min. 80°C	UL 758	applia	ed with ance 315628
-Alternative		YONG HAO ELECTRICAL INDUSTRY CO LTD	1015, 1007, 1185	Min. 18AWG, Min. 300V, Min. 80°C	UL 758	applia	ed with ance 240426
-Alternative		DONGGUAN GUNEETAL WIRE & CABLE CO LTD	1015, 1007, 1185	Min. 18AWG, Min. 300V, Min. 80°C	UL 758	applia	ed with ance 204204
-Alternative		SHENG YU ENTERPRISE CO LTD	1015, 1007, 1185	Min. 18AWG, Min. 300V, Min. 80°C	UL 758	applia	ed with ance 219726
-Alternative		KUNSHAN XINGHONGMENG ELECTRONIC CO LTD	1015, 1007, 1185	Min. 18AWG, Min. 300V, Min. 80°C	UL 758	applia	ed with ance 315421
-Alternative	et N	SUZHOU YEMAO ELECTRONIC CO LTD	1015, 1007, 1185	Min.18AWG, Min. 300V, Min. 80°C			ance
-Alternative		Interchangeable	Interchangea- ble	Min.18AWG, Min.300V, 105°C or better	UL 758	UL	rek whi

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Clause Requirement + Test	Result - Remark
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20	TAE	BLE: Components				S P	
Object/part No.		Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) o conformity	
Insulating Tube		SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	RSFR RSFR-H RSFR-HPF	600V, 125°C	UL 224	Tested within appliance UL E203950	
-Alternative		QIFURUI ELECTRONICS CO	QFR-h	600V, 125°C	UL 224	Tested within appliance UL E225897	
-Alternative		DONGGUAN SALIPT CO LTD	SALIPT S- 901-300 SALIPT S- 901-600	Min. 300V, 125°C	UL 224	Tested within appliance UL E209436	
-Alternative		GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2 (+) K-2 (CB)	Min. 300V, 125°C	UL 224	Tested with appliance UL E21417	
-Alternative		CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	Min. 300V, 125°C	UL 224	Tested with appliance UL E180908	
Fuse (F1)	- Ne	Conquer Electron- ics Co., Ltd.	MST	T3.15A, 250V	IEC 60127	VDE 40017118 UL E82636	
-Alternative	NUTER	Ever Island Electric Co., Ltd. And Wal- ter Electric	2010, ICP	T3.15A, 250V	UL 248	VDE 40018781 UL E22018 ⁻	
-Alternative	ет . -	Suzhou Walter Electronic Co. Ltd.	ICP	T3.15A, 250V	IEC 60127	VDE 40012824 UL E56092	
-Alternative		Bel Fuse Ltd.	RST	T3.15A, 250V	UL 248	VDE 40011144 UL E20624	
Alternative		Bel Fuse Ltd.	MRT	T3.15A, 250V	UL 248	VDE 40011000 UL E20624	
-Alternative	14 14	Cooper Bussmann LLC	SS-5	T3.15A, 250V	IEC 60127	VDE 40015513 UL E19180	
-Alternative	VINE VINE	Save Fusetech	SS-5	T3.15A, 250V	Et whitet white	VDE 40017009 UL E213699	

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Clause	Requirement + Test	Result - Remark
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20 TA	BLE: Components	at the w	iter white white	me me	P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
-Alternative	Shenzhen Lanson Electronics Co. Ltd.	SMT	T3.15A, 250V	UL 248	VDE 40012592 UL E221465
-Alternative	Sunny East Enter- prise Co. Ltd.	CFD	T3.15A, 250V	IEC 60127	VDE 40030246 UL E133774
-Alternative	Conquer Electron- ics Co., Ltd.	MET	T3.15A, 250V	UL 248	VDE 40017157 UL E82636
-Alternative	Zhongshan Lanbao Electrical Appliances Co., Ltd.	RTI-10	T3.15A, 250V	IEC 60127	VDE 40017009 UL E213695
Varistor, (VR1) (optional)	SUCCESS ELECTRONICS CO LTD	SVR10D471K SVR14D471K	Max. Continuous voltage: min 300Vac(rms), 125°C	IEC 61051-1 IEC 61051-2	VDE 123677
-Alternative	Thinking Electronic Industrial Co., Ltd.	TVR10471K- M TVR14471K- M	Max. Continuous voltage: min 300Vac(rms), 125°C	IEC 61051-1 IEC 61051-2	VDE 40036061 UL E314979
-Alternative	CENTRA SCIENCE CORP	CNR- 14N471K CNR- 10N471K	Max. Continuous voltage: min 300Vac(rms), 125°C	IEC 61051-1 IEC 61051-2	VDE 40044872 UL E316325
-Alternative	BRIGHTKING (SHENZHEN) CO LTD	10H471K-(+)	Max. Continuous voltage: min 300Vac(rms), 125°C	IEC 61051-1 IEC 61051-2	VDE 40027827 UL E327997
-Alternative	JOYIN CO LTD	JVT10N471K JVT14N471K	Max. Continuous voltage: min 300Vac(rms), 125°C	IEC 61051-1 IEC 61051-2	VDE 005937 UL E325508
-Alternative	Shantou High-New Technology Dev. Zone Song- tian Enterprise Co., Ltd.	07D471K 10D471K 14D471K	Max. Continuous voltage: min 300Vac(rms), 125°C	IEC 61051-1 IEC 61051-2	VDE 40023049 UL E330837
-Alternative	Guangdong Hui- wan Electronics Technology Co., LTD.	V-471K-10D, V-471K-10E V-471K-14D, V-471-14E	Max. Continuous voltage: min 300Vac(rms), 125°C	IEC 61051-1 IEC 61051-2	VDE 40043880 UL E480104

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Clause	Requirement + Test
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20 TA	BLE: Components	et let a	LIE WALL WALL	when when	P	
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)	
Choke (LF1) (optional)	GlobTek/BOAM/ HAOPUWEI/HEJIA	30R022058- 00F	130°C Min. 22mH	IEC 61558-1 IEC 61558-2-16	Test with equipment	
Choke (LF3) (optional)	GlobTek/BOAM/ HAOPUWEI /HEJIA	30R200010- 00F	130°C Min. 350UH	IEC 61558-1 IEC 61558-2-16	Test with equipment	
NTC thermistor (TR1)	Interchangeable	Interchangea- ble	5Ω at 25°C, after fuse	IEC 61558-1 IEC 61558-2-16	Test with equipment	
X-Capacitor (CX1) (CX2) (optional)	Cheng Tung Indus- trial Co., Ltd.	СТХ	CX1=Max.0.47uF CX2=Max.0.15uF Min. 250 Vac Min. X2 Min. 110°C	IEC 60601-1 UL 60384-14 UL 1414	ENEC-02671 UL E193049	
-Alternative	Tenta Electric In- dustrial Co. Ltd.	MEX	CX1=Max.0.47uF CX2=Max.0.15uF Min. 250 Vac Min. X2 Min. 110°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 119119 UL E222911	
-Alternative	Joey Electronics (Dong Guan) Co., Ltd.	MPX	CX1=Max.0.47uF CX2=Max.0.15uF Min. 250 Vac Min. X2 Min. 110°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	40032481	
Enterprise Co. Ltd. CX2=Max.0.15uF 14 Min. 250 Vac UL 6038		IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40015608 UL E183780			
-Alternative	Yuon Yu Electron- ics Co. Ltd.	MPX	CX1=Max.0.47uF CX2=Max.0.15uF Min. 250 Vac Min. X2 Min. 110°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40032392 UL E200119	
-Alternative	Sinhua Electronics (Huzhou) Co., Ltd.	МРХ	CX1=Max.0.47uF CX2=Max.0.15uF Min. 250 Vac Min. X2 Min. 110°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40014686 UL E237560	
-Alternative	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX	CX1=Max.0.47uF CX2=Max.0.15uF Min. 250 Vac Min. X2 Min. 110°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40022417 UL E311166	

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Clause	Requirement + Test

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20	TAR	BLE: Components	d dt	Set 5th		t set street	white	Р	
Object/part		Manufacturer/ trademark	Type/model	Technical	data	Standard (Edition / year)		rk(s) of ormity1)	
-Alternative	t vin vintr	Dain Electronics Co., Ltd.	MEX, MPX, NPX	CX1=Max.0. CX2=Max.0. Min. 250 Va Min. X2 Min. 110°C	15uF	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 4001		
-Alternative Shenzhen Jinghao Capacitor Co., Ltd. CBB62B CX1=Max.0.47uF IEC/EN 60384-14 Min. 250 Vac UL 60384-14 Min. X2 UL 1414		VDE 40018690 UL E252286							
Resistor Be- tween L/N, after fuse (R1A,R1B,R1C) RM series (SU ZHOU) CO., LTD.		Max.470KΩ	vn vn	IEC 60950-1	VDE 40030403				
-Alternative	5 Et	Yageo Compo- nents (Suzhou)	HHV	Max.470KΩ I		IEC 60950-1	VDE 40031974		
Y-Capacitor (CY1,CY2,fo Class I only	Capacitor (1,CY2,for ss I only) TDK CORPORATION CD Max.2200pF Min 250Vac Min.Y1 Min 125°C IEC/EN 60384- 14 UL 60384-14		14	VDE 4002 UL E	9780 37861				
-Alternative Success Electron- ics Co., Ltd. SE Max.2200pF Mi 250Vac Min.Y1 Min 125°C			IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 4003 VDE 4002 UL E					
-Alternative	-ver	Success Electron- ics Co., Ltd.	SB	Max.2200pF 250Vac Min Min 125°C		IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40037221 VDE 40020001 UL E114280		
-Alternative	until LIEK	Murata Mfg. Co., Ltd.	кх	Max.2200pF 250Vac Min Min 125°C		IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 4000 UL E	2831 37921	
		1 1 0				10 IV			

Max.2200pF Min

Max.2200pF Min

250Vac Min.Y1

250Vac Min.Y1

Min 125°C

Min 125°C

IEC/EN 60384-

UL 60384-14

IEC/EN 60384-

UL 60384-14

UL 1414

UL 1414

14

14

VDE

TUV

40001804

69242987

UL E201384

UL E146544

Waltek Testing Group (Shenzhen) Co., Ltd. http://www.waltek.com.cn

Corp.

Walsin Technology

JYA-NAY Co., Ltd.

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JN

-Alternative

-Alternative

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20 TA	BLE: Components	at the s	LIE WALL WALL	mer mer	Р
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
-Alternative	Haohua Electronic Co.	CT 7	Max.2200pF Min 250Vac Min.Y1 Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40003902 UL E233106
-Alternative	CAPATRONICS	Y5V	Max.2200pF Min 250Vac Min.Y1 Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40013317 UL E252212
-Alternative	Jerro Electronics Corp.	JX-series	Max.2200pF Min 250Vac Min.Y1 Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40032158 UL E333001
-Alternative	WELSON INDUSTRIAL CO LT D	WD	Max.2200pF Min 250Vac Min.Y1 Min 125°C	IEC/EN 60384- 14	VDE 40016157
Bridging capac- itor (CY3,CY4, two in se- ries)(CY4 is op- tional)	CORPORATION	CD	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40029780 UL E37861
-Alternative	ics Co., Ltd. 250Vac, Y1 type 14 4 Min 125°C UL 60384-14 4 UL 1414 4		VDE 40037211 VDE 40020002 UL E114280		
-Alternative	Success Electron- ics Co., Ltd.	SB	Min 125°C UL 60384-14 VDE UL 1414 4002000		40037221
-Alternative	Murata Mfg. Co., Ltd.	кх	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40002831 UL E37921
-Alternative	Walsin Technology Corp.	AH	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40001804 UL E146544
-Alternative	JYA-NAY Co., Ltd.	JN	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	TUV 69242987 UL E201384

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Result - Remark

20	TAE	BLE: Components				20	Р
Object/part	No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)		rk(s) of ormity1)
Alternative	+ vn	Haohua Electronic Co.	CT 7	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40003 UL E2	3902 233106
Alternative	ister ister	CAPATRONICS	Y5V	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 4001: UL E2	3317 252212
-Alternative	n inur	Jerro Electronics Corp.	JX-series	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14 UL 60384-14 UL 1414	VDE 40032158 UL E333001	
-Alternative	NUTE	WELSON INDUSTRIAL CO LT D	WD	Max.3300pF Min 250Vac, Y1 type Min 125°C	IEC/EN 60384- 14	VDE 4001	6157
Optocoupler (U4)		Everlight Electron- ics Co., Ltd.	EL817	Isolation voltage 5000Vrms	IEC 60747-5-5 UL 1577		132249 214129
-Alternative		COSMO	K1010/KP101 0	Dti=0.6mm Int, dcr=4.0mm, EXT.dcr=5.0mm , thermal cycling test, 115°C	DIN VDE 0603-2	VDE	101347
-Alternative		Fairchild Semicon- ductor Pte Ltd	H11A817B/F OD817B	Isulation volt- age : 850V; Transient over- voltage; 6000V; CTI175; Int.Cr/Ext.Cr: ≥7.0/7.0mm; 30/110/21;	IEC/EN 60747	VDE 40020	5857
-Alternative		Toshiba Electronic Devices & Storage Corpo- ration	TLP781F	ti>0.4mm Int, EXT.ci> r8.0mm, Isolation 3000Vac min., 110°C;thermal cycling test	EN 60747	VDE 4002	1173
-Alternative		Lite-On Technolo- gy Corporation	LTV-817	Isolation voltage 5300Vrms	IEC 60747-5-5 UL 1577	VDE 4001: UL E ⁻	5248 113898

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20 1	ABLE: Components	at at a	LIE WALL WALL	me me	° P
Object/part N	o. Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
-Alternative	Sharp Corporation Electronic Compo- nents and Devices Group	PC817	Insulation volt- age: 890V; Tran- sient overvoltage: 9000V Int. Cr/ Ext. Cr: 7,62/ 7,62 mm; 30/100/21	IEC/EN 60747-5- 2	VDE 40008087
-Alternative	Bright Led Elec- tronics Corp.	BPC-817 A/B/C/D/L BPC-817 M BPC-817 S	Dti=0.4mm EXT. dcr=7.0mm,therm al cycling test,100oC	IEC/EN 60747-5- 2	VDE 40007240
Transformer (T1) For outpu voltage is less than 14 Vdc		90E266012- 00F	Class B	IEC 61558-1 IEC 61558-2-16	Test with equipment
Transformer (T1) For outpu voltage is 14- 19Vdc	GlobTek, /BOAM/ HAOPUWEI /HEJIA/ DeeVan Enterprise Co., Ltd.	90E266016- 00F	Class B	IEC 61558-1 IEC 61558-2-16	Test with equipment
Transformer (T1) For outpu voltage is 19. 24Vdc		90E266020- 00F	Class B	IEC 61558-1 IEC 61558-2-16	Test with equipment
- Bobbin	Sumitomo	PM-9820 PM- 9830	Phenolic,V- 0.150°C,min. thickness 0.45mm	UL94	UL E41429
-Alternative	Changchun Plas- tics	T375J T373J T375HF	Phenolic,V- 0.150°C,min. thickness 0.45mm	UL94	UL E59481
-Alternative	Hitachi	CP-J-8800	Phenolic,V- 0.150°C,min. thickness 0.45mm	UL94	UL E42956
Insulation tape	3M	1350F-1, 1350T-1, 44	130°C	UL 510	ULE17385
-Alternative	Bondtec	370S	130°C	UL 510	UL E175868
-Alternative	YAHUA	PZ series CT series WF series	130°C	UL 510	UL E165111

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Clause	Requirement + Test	Result - Remark
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20 T	ABLE: Components	et tet in	LIE NALIE MALL	mer mer	P	
Object/part N	o. Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)	
-Alternative	SYMBIO INC	35660Y	130°C	UL 510	UL E50292	
-Alternative	JINGJIANG JINGYI	JY25-A	130°C	UL 510	UL E246950	
-Alternative	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX(a)(b)	130°C	UL 510	UL E246820	
-Alternative	HUIZHOU YAHUA ELECTRONIC TECHNOLOGY CO LTD	СТ	130°C	UL 510	UL E495875	
Triple windin	g Great Leoflon	TRW(B)	130℃	UL 1446	VDE 136581 UL E211989	
-Alternative	Furukawa	TEX-E TEX-B	130℃	UL 1446	VDE 006735 UL E206440	
-Alternative	Totoku	TIW-E, TIW-2	130°C	UL 1446	VDE 40005152 UL E249037	
-Alternative	COSMOLINK	TIW-M	130℃	UL 1446	VDE 138053 UL E213764	
-Alternative	E&B TECHNOLOGY CO LTD	E&B-XXXB E&B-XXXB-1	130°C	UL 1446	VDE 40023473 UL E315265	
-Alternative	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TIW	130°C	UL 1446	VDE 40037495 UL E357999	
-Alternative	SHENZHEN JIUDING NEW MATERIAL CO LTD	DTIW-B	130°C	UL 1446	VDE 40037495 UL E357999	
Magnet wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U	MW28-C, 130oC	IEC/EN 60601-1 UL 1446	Tested with appliance UL E201757	

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Verdict

Clause Requirement + Test	Result - Remark
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20	TAE	BLE: Components	at let is	LIE WALL WALL	mer mer.	20	Р
Object/part No.		Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)		k(s) of rmity1)
-Alternative	- white	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U	MW75-C, 130oC	IEC/EN 60601-1 UL 1446	Testec appliar UL E2	nce 🧬
-Alternative	L.E.K	JUNG SHING WIRE CO LTD	UEW-4	MW75C, 130oC	IEC/EN 60601-1 UL 1446	Tested with appliance UL E174837	
-Alternative	-14	JUNG SHING WIRE CO LTD	UEY-2	MW28-C, 130oC	IEC/EN 60601-1 UL 1446	Tested with appliance UL E174837	
-Alternative	NIN NITE	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	2UEW/130	MW75-C, 130oC	IEC/EN 60601-1 UL 1446	Testec appliar UL E3	nce
-Alternative		CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130	MW75-C, 130oC	IEC/EN 60601-1 UL 1446	Testec appliar UL E1	nce
-Alternative		WUXI JUFENG COMPOUND LINE CO LTD	2UEWB	MW75#, 130oC	IEC/EN 60601-1 UL 1446	Testec appliar UL E2	nce
-Alternative		JIANGSU DARTONG M & E CO LTD	UEW	MW 75-C, 130oC	IEC/EN 60601-1 UL 1446	Testec appliar UL E2	nce
-Alternative	ert s	SHANDONG SAINT ELECTRIC CO LTD	UEW/130	MW75#, 130oC	IEC/EN 60601-1 UL 1446	Testec appliar UL E1	nce
-Alternative	white	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW	MW 79#, 130oC	IEC/EN 60601-1 UL 1446	Testec appliar UL E2	nce
Output cord	ster N	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1015	Min. 20AWG, min. 300Vac, min. 105°C	UL 758	UL E2	37831
-Alternative	whi Nifes	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1015	Min. 20AWG, min. 300Vac, min. 105°C	UL 758	UL E3	33601

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Verdict

lt -	Remark	
IL -	Remain	

emark	
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mark	

20	TAE	BLE: Components	at the se	it white white	m. m.	P
Object/part	No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
-Alternative	t sunit	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	SPT-1, SPT-2	Min. 20AWG, min. 300Vac, min. 105°C	UL 758	UL E333536
-Alternative		SUZHOU JIAHUISHU ELECTRONIC CO LTD	1015	Min. 20AWG, min. 300Vac, min. 105°C	UL 758	UL E353532
-Alternative	wi	SUZHOU DIOUDE ELECTRONICS CO LTD	SPT-1, SPT-2	Min. 20AWG, min. 300Vac, min. 105°C	UL 758	UL E336192
-Alternative	INLIE	Interchangeable	Interchange- able	Min.24AWG, Min.300V, 105°C or better	UL 758	UL
Mylar sheet	Jer-	TORAY INDUSTRIES INC	Lumirror H10	VTM-2, min. 0.4 mm thickness, 105°C	IEC/EN 60601-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E86511
-Alternative		SKC CO LTD	SH71S	VTM-2, min. 0.4 mm thickness, 105°C	IEC/EN 60601-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E74359
-Alternative	Ni fek	FORMEX,DIV OF IL TOOL WORKS INC, FRMRLY FASTEX, DIV OF IL TOOL WORKS INC	FORMEX GK series	V-0, min. 0.4 mm thickness, 115°C	IEC/EN 60601-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E121855
-Alternative	- win Nun	SABIC INNOVATIVE PLASTICS US L L C	FR60 series FR63 series FR65 series FR7 series FR700 series	V-0, min. 0.4 mm thickness, 130°C	IEC/EN 60601-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E121562
-Alternative	,SEX	MIANYANG LONGHUA FILM CO LTD	PP-BK-20 PP-BK-17 PP-BK-18	VTM-0, min. 0.4 mm thickness, 80°C	IEC/EN 60601-1 UL 94 UL 746 A/B/C/D	Tested within appliance UL E254551
-Alternative	24 - W	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP WT- 10 series	VTM-0, min. 0.4 mm thickness, 110°C	IEC/EN 60601-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E315185
-Alternative	NITEX	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1860B	VTM-0, Min. 0.4mm thickness, 80°C	IEC/EN 60601-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E315185

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Clause Requirement + Test	Result - Remark	Verdict
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20	TAE	BLE: Components	at the w	ite white white	me me	Un.	Р
Object/part I	No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)		ark(s) of formity1)
Supplement	arv ir	nformation: N/A	and and	In In		d.	1

26 TABLE: V	Vorking voltage meas	surement.	P
Location	RMS voltage (V)	Peak voltage (V)	Comments
Model: GT-81081-6012	2-T3	the num num	when the state of
T1 Pin 1 to pin A	230	412	ALTER MAILS MALL MALL MALL
T1 Pin 2 to pin A	231	372	a a a at at at
T1 Pin 3 to pin A	259	408	Max. RMS voltage
T1 Pin 4 to pin A	258	476	Peak voltage
T1 Pin 1 to pin B	232	372	is white white white where a
T1 Pin 2 to pin B	231	376	- at set set set
T1 Pin 3 to pin B	258	460	main white white sure and
T1 Pin 4 to pin B	258	464	at at at and with
CY1 between two pin	231	372	and which wh
U4 Pin 1 to Pin 3	251	399	st lifet suret suret
U4 Pin 1 to Pin 4	250	397	a chi su a
U4 Pin 2 to Pin 3	248	397	e the still other would be
U4 Pin 2 to Pin 4	250	396	when the second second
Model: GT-81081-6024	4-T2	at at at	iter wifet interimeter white wh
T1 Pin 1 to pin A	232	432	an an at the
T1 Pin 1 to pin B	232	376	The miner white white white
T1 Pin 2 to pin A	257	408	i i it it it
T1 Pin 2 to pin B	257	496	Tet Miller while while while
T1 Pin 4 to pin A	232	376	. I A A A
T1 Pin 4 to pin B	233	396	WALTE WALT WALL WALL WALL
T1 Pin 5 to pin A	257	512	Max. RMS voltage & Peak voltage
T1 Pin 5 to pin B	257	468	white white white white white
CY1 between two pin	232	376	at at let bet be
U4 Pin 1 to Pin 3	250	400	Net WALL WALL WALL WALL
U4 Pin 1 to Pin 4	250	396	of let let set site
U4 Pin 2 to Pin 3	249	396	white white white white
U4 Pin 2 to Pin 4	249	396	- it it it is all to

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Clause	Requirement	+ Test	ren wat wa	Result - Remark	Verdict
LIL .	mit ant	me m. m.		the state state	mile mui
T1 Pin 1 to	pin A	220	352	and an in	2.
T1 Pin 2 to	pin A	219	356	at set set	STEEL NITE .
T1 Pin 3 to	pin A	226	420	Mer me me n	
T1 Pin 4 to pin A		220	412	at the state of	in white wh
T1 Pin 1 to	pin B	217	388	up mu m m	
T1 Pin 2 to pin B		217	348	et the the other	white white
T1 Pin 3 to	pin B	226	364	m. m. m.	A A
T1 Pin 4 to	pin B	226	428	Max. RMS voltage & Pea	ak voltage
CY3 betwee	en two pin	227	360	the second second	t it
U4 Pin 1 to	Pin 3	219	352	Tet outer wouter wo	in men w
U4 Pin 1 to	Pin 4	217	348	24 1.	t it i
U4 Pin 2 to	Pin 3	218	348	in a white white white	me m
U4 Pin 2 to	Pin 4	216	348	1 A A A	10 50
m. 1	m m	a de de	at the way	er untre white white	me m

21

Note(s):

Operating conditions: Input voltage: = AC 240V (rated voltage)

Used to determine the test voltage of dielectric strength and clearance, creepage distance and Dti.

26 Table: cr	eepage dista	ances and cl	earances a	and distance	es through	insulation	P
Insulation	Required	Clear	ance	Cree	page	D	ti
	Insulation	Measured (mm)	Required (mm)	Measured (mm)	Required (mm)	Measured (mm)	Required (mm)
L & N trace before fuse F1	BI	5.0	2.4	5.0	2.5		- tet
Two terminals of fuse F1	BI	3.0	2.4	3.0	2.5	4	1917 - 19
CY1 primary pin to earth trace	BI	8.0	2.4	8.0	2.5	muse n	ne - un
CY2 primary pin to earth trace	BI	8.0	2.4	8.0	2.5	unitet uni	ier white
Transformer core to Sec. HS2	RI	6.0	4.6	10.0	5.5	Let nie	- Intret
PCB: primary to secondary traces under CY3	NILL RI	6.0	4.6	6.0	5.5	et muinet	WALTER WA
PCB: primary to secondary	RI	6.0	4.6	7.0	5.5	auter 10	LIEK - MIT
T1: Core to secondary winding	RI	6.0	4.6	7.0	5.5	NN N	et - 50t
Remark: B = basic insulation	S = supple	mentary ins	ulation R	= reinforce	d insulatio	n vn	W.

15 50

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St at	1		The all
Clause	Requirement + Test	Result - Remark	Verdict

1. The core of transformer (T1) is considered as primary.

2. CY1 consider supplement insulation.

27.1 TABLE: B		Il Pressure Test of Thermoplastics								
Material	mer me	Temperature (°C)	Result (mm)	Comments						
Enclosure		125	1.2	See table 20	st-					
T1 bobbin	me me	125	1.10	See table 20	m					
PCB	3 125		0.80	See table 20						
Appliance in	let	125	1.2	See table 20	m					

sistance to heat and fire - Glow wire tests									
Temperature (°C)	Result (mm)	Comments	-5						
650/850	No flame / No flame	See table 20							
750 / 850	No flame / No flame	flame See table 20							
650 / 750	No flame / No flame	See table 20							
xet material 850 No flame See table 20									
	650/850 750 / 850 650 / 750	650/850No flame / No flame750 / 850No flame / No flame650 / 750No flame / No flame	650/850No flame / No flameSee table 20750 / 850No flame / No flameSee table 20650 / 750No flame / No flameSee table 20						

1.200

26.2 TEST A		TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION									
Test with three special prepared specimens with uninsulated wires, without potting or impregnation											
cycles with 2 x working voltage between pri / sec		king voltage temperature acc. etween Cl. 14		2 hc 0 °		1 hour 25 °C					
LIFE WALT	NATI	and when we want	NITE OF	ert	et	aret white	W LIFE W	ute sur			

26.2 TEST B		CREEPAGE DISTAN	ICES AND CL	EARAN	CES A	ND DISTANC	ES	N/A			
		t with three specially prepared specimens with ing or impregnation (P1)									
cycles with 2 x working voltage between pri / sec		68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C			1 hour 25 °C					
6 <i>it</i>	jet-	Tet stret white	mer mer	in the	-2n		1 1	t st			
with a	mr m	-24	at at			A SUTE OF	the water	with			

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TER INTE	white white white w	IEC 61558-2-16	et set set all	an untile white
Clause	Requirement + Test	et aller while whi	Result - Remark	Verdict

26.2 TEST C		TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION											
		est with three specially prepared specimens with otting (only dti is required)											
cycles with 2 x working voltage between pri / sec		68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C			1 hour 25 °C							
INLITER AN	inst	at the will the	INLIE WAL	ment	W.		1 at and						

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N/K

Annex U	-21		u.	20	U.5.1	THER	MALE		ANC	E TES	L' ^{er}	INLIE	. and	n.
Type ref.		at .	JEt	NUTER	in.	lu.		2Mar	in	-24		.st-		-
Rated PRI-Voltage	m	-2n		с. 		L	et.	Set	. Ste	Trans.		55 3	Nº12	me
Rated SEC- Voltage	NITE	whit	in m	110 3	With	Jun	-14	d.	, et	500	.5	et	J.Et	UNITER
Material of Winding	at-	. Alt	.5	1×	5 ⁶⁷ .	WALL	m	m		an.	200		L	A
Material of bobbin		the state	- n.	20		t	,d	- 5	t.	JER .	NUTE	MALT	Ju.	y 3
Material of resin	÷ .	Story .			4	S .	10° -	an.	20			4		st-
Material of potting	1. 1		A	1	2	ð.	100	15		1	50 3	mer	me	- m
Material of foil			18	14	all'				~		4	A	de-	
Components re- moved for test	St.		*	fet .	NUTER	WALT	t m	LIEF W	NUTE	mouth	m	4	n de la compañía de	mart
two w	1	Ju.	-200		A	j.t.		* .	git.	J.C.	NIT!	Jr.		In the
S	et.	J.F.	۹۲L.	in an	2	Nr.	m	in	- 2				L.	it.
Objective test dura- tion (days)		et.	jet.		* In	Jet W	NUTER	WALTE	e un	Ter W	N. T.	min	me	_ ~\ _
Theoretical test temperature	m	14	d.	at .	5		et	NUTEX.	MILLE	t uni	ine w	ure .	WILLE	wi
Sample		1		2		3		4		5		6		7
Winding	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC
Start – Rk	× .	m	m	~		A	10	- ~	et -	Set	.5 ⁶⁸		110	5
After 4 h – Rw	*	1st	Set	J. L.		S	m	m	-21					,t
After 4 h – winding temperature	- Jur	4	.tr			et	J.et	WALTER	whit	et m	J.C.	MUTE	main	m
After 4 h - oven temperature	mi	m		SN	50	5	*	Lifet .	NUTER	white	t wi	LIEK V	NUTER	whit
After 24 h – Rw	15°	MALT	-24	~ ~	1.	- in		4	A	100	4	*	at the	SIL
After 24 h – wind- ing temperature	et	NITEK	MUTE	t w	Set	MUTER	whit	m		me	Jun .	-July	1	Let.

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Verdict

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Clause	Requirement + Test	Result - Remark

26.2 TEST C		CREEPAG GH INSUL		ICES AND CL	EARAN	CES A	AND DISTA	NCI	ES	N/A
		n three spec only dti is re		ared specimen	s with					
cycles 2 x working betwe pri / s	voltage en	68 h a temperat Cl. (min. 8	ure acc. 14	1 hour 25 °C	2 hc 0 °		1 hour 25 °C			
After 24 h - o temperature		Tex white	WALTER	white white	max	14	t set	ۍ ک	1. 1.	et mire
Final test pe (days)	riod	t united	INLIEX WIN	ister white	suntite .	unt	where .		1. 1. 1. 1.	Jet
Output volta (11.1) under		wifet in	TEX MUT	et whiter w	LIEN W	June .	white we	У 4-	the star	- Sult
Insulating re sistance	- W	16t 55	* Just	NUTEX WAL	ex whi	61 - N	Marter Wall	4	with 1	In' vi
High voltage (35% of the in Table 8.a		et autet	Whitek an	N TEX WALTER	WINLIE	. un I	et white	m	it wh	t re

Annex U	in .	U.	5.2 Th	ie use	of an	other T		ant S 10 day		than 4	500 ir	n tw te	sts	* m
Type ref.			Ser 1	15	JAN ST	Š.			-5	20				
Rated PRI-Voltage	10	5.0			Å	- 1	÷ .	10	5	3	1. A	50	NUL	man
Rated SEC- Voltage	LIEK	WALTE	in t	Let N	ner.	white	-m	* 1	.et		5.54	*	et .	NUTEX
Material of Winding	at .	At	J.	÷	\$ ⁶ .	MITE.	MALA	m	4	h.	m	20.		.sh
Material of bobbin	4	r	w.			A	j.	, A	Ļ .	Set .	J.F.	INLIE	in.	1 N
Material of resin	- · · ·	at .	JEt	NUTE	in.	W		m	- n.	20				L J
Material of potting	m	211				* *	it.	Set	.5ª	نده *	er al	LITE .	MER	me
Material of foil	50	5	1. A.	J.E.	me	m	11		en .	2.		A	st	10
Components re- moved for test	en. Lex	- SN		et "s	J.Et	WALTER	whit	LEX W	LIFER.	WALTE	mai			nn.r
tw	× .	m	-m.		A	A	j.	6	et .	JEX	. SILE	June 1	. dl	£1. ,
S	<i>*</i>	St.	SIE	MAL	In .	N. 1	m	m	-24					ð
Objective test dura- tion (days)	- 201	et s	,et	NUTER	. NI	iet .wr	JEX.	NULLEX	whit	Ex m	JE- V	WALTE	main	m
Theoretical test temperature	mi	m	4	SN.	5.67		×	UEK J	INLIE	white	in th	LIER N	NUE	whit
Sample		1		2		3		4		5		6		7
Winding	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC

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Clause	Require	ment	+ Test	t'					Re	sult - F	Remark	(Ve	erdict
ST. M	Ser al	Y	an.	- 2m			4		A	A	J.		1 S	Y .	S.
Start – Rk		A	st		÷ .	et.	NUTER	UN ^L	ne.	s .	n.	m	m	3	
After 4 h – R	w s		N	m	m				-	t .	at the	JEK	1. TE	in i	
After 4 h – w temperature	inding	in	let N	LIEX	WALTE	inn.	1	Nº1	mit	m	4	et.	. Tet	116	t i
After 4 h - ov temperature	ren	56	+	et	NITEX.	WNLTE	ine.		Intre	main	-ne	- 1	at .	ni Let	20
After 24 h – I	Rw	N	1		A	at	.54	-	100	N.J.T.	WILL	m	. m		m
After 24 h – v ing temperat		J.E.	MULTE	mi	. m		NI ANT	20.	t i	sex.	LIEK	NUTE	- which	ert M	JIEX.
After 24 h - c temperature	oven	y m	inet.	INTLE	whit	- 11	n .	on-	-141- 2.6	*	(et	Jet	NUTER	- NLT	1
Final test per (days)	riod	NINES	et w	J.ek.	WALTER	whi	in m		m	me	1 ¹	*	Jet	Jet	
Output voltag (11.1) under		LIEK		at all	LIEK S	MITER	whit	17	NET .	unti	whit	-111	4	,et	-54 -54
Insulating re- sistance		et.	JEX		*	set .	NUTER	mi	LET W	STE .	mitt	white	m	4 4	,et
High voltage (35% of the v in Table 8.a	test /alues	4	ant.	- 44 201	- PAC		LIEK .	NUTE	whit	in In	LIE	nute	mult	Jun'	¥

Annex U	U.5.2 The use of an other constant S other than 4500 in tw tests Test2:120 days
Type ref.	tet with with work work work with the state
Rated PRI-Voltage	with an est ret ret with miter white white white
Rated SEC- Voltage	ex white white white white white white the ret stret white white white
Material of Winding	Tex ster outer work work with all all at the
Material of bobbin	white white any set set state with mile while white
Material of resin	Tex atter with white white with all and the set
Material of potting	and the set that the state with anythe water water water
Material of foil	The wife with with with with the state of the
Components re- moved for test	to tet stek while while while while while while while while while
tw	when when it get get get allet while while while while
S. A. A.	The site white white whe will be a set of the
Objective test dura- tion (days)	where we will an it white white white white white white white
Theoretical test temperature	at white the with milet white white white white white

After 4 h - Rw

After 4 h - oven temperature After 24 h – Rw After 24 h – winding temperature After 24 h - oven temperature

Final test period

Output voltage (11.1) under load

Insulating resistance

High voltage test (35% of the values in Table 8.a

(days)

After 4 h – winding temperature

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Clause	Require	ement	+ Test	*	Set .	ST.	white	n.	Res	ult - R	emark	2n		V	erdict
Sample	INC. N		1	211-	2		3		4	1. Art	5	<u>.</u>	6		7
Winding		PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC	PRI	SEC
Start – Rk	4 1	5	dt.	A	10		1	1917 1917	m	- m	20		2.		2

c		
		l
	2	2
1		
١	l	
Ì		
l	5	٢

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Clause	Requirement + Test	Result - Remark	Verdic

AA	Annex AA	white white white the	N/A
NUTER I	Partial discharge (PD) test	at all all all	N/A
вв	Annex BB	up my my my	N/A
LIE WAL	Particular requirements for associated transform supplies with internal frequencies > 500 Hz	ers for switch mode power	N/A
et sufet	See separate test report-form for these Annex.	t at at at at	N/A
BB.8	MARKING AND OTHER INFORMATION	me me me m	N/A
BB.8.2	Marking for transformers IP00 or for associated transformers: type and trademark, instruction sheets	whitet whitet whitet white	N/A
BB.8.11	Correct symbols:	LIEF INTER MALL MALL	N/A
de de	Volts	V	N/A
m	Amperes	A (mA)	N/A
t set	Volt amperes (or volt-amperes reactive for reactors)	VA or (VAR)	N/A
-an-	Watts	Work we we we	N/A
STER .	Hertz	Hz , , , , , , , , , , , , , , , , , , ,	N/A
in is	Input	PRI M	N/A
LIEK IN	Output	SEC	N/A
	Direct current	d.c. (DC) or ====	N/A
er antie	Neutral	N/A	N/A
A	Single-phase a.c.	1 752	N/A
white	Three-phase a.c.	3×55	N/A
A	Three-phase and neutral a.c.	3NKS-2	N/A
ne in	Power factor	cosφ	N/A
5 ⁴⁴ . 55	Class II construction		N/A
* #	Class III construction		N/A
when	Fuse-link	FALLE WALTE WALL WAL	N/A
When any	Rated max. ambient temperature	ta set as an and a set	N/A
dt.	Frame or core terminal		N/A
in m	Protective earth		N/A
IET NALTE	IP number	IPXX	N/A
- 15	Earth (ground for functional earth)		N/A
me	For indoor use only	A while while when	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
min	tw5 YYY	Martin Martin	N/A
State .	tw10 YYY	a at at	N/A
nor en	twx YYY	NET MAIL MILLING	N/A
5 th .5	Additional Symbols (IEC 61558-2-16:09)	A at at a	N/A
et miret	SMPS incorporating a Fail-safe separating transformer		N/A
BB.8.2	Marking for transformers IP00 or for associated transformers: type and trademark, instruction sheets	WITH WALTER WALTER	N/A
BB.8.11	Correct symbols:	A A A	N/A
	Volts	V me in in	N/A
	Amperes	A (mA)	N/A
	Volt amperes (or volt-amperes reactive for reactors)	VA or (VAR)	N/A
	Watts	W / /	N/A
	Hertz	Hz	N/A
	Input	PRI	
	Output	SEC	N/A
ine whi	Direct current	d.c. (DC) or ===	N/A
1. 10	Neutral	N/A	N/A
me	Single-phase a.c.	RANGE STREET	N/A
. st	Three-phase a.c.	3 ~~~	N/A
me	Three-phase and neutral a.c.	3NKSZ JOŚ	√N/A
. Tet	Power factor	cosφ	N/A
w. w	Class II construction	10 min min 1	N/A
JET WALT	Class III construction		N/A
* whitek	Fuse-link	First and mind	N/A
dt.	Rated max. ambient temperature	ta	N/A
me s	Frame or core terminal	the second second	N/A
LIFEK WA	Protective earth		N/A
8 B	IP number	IPXX	N/A
when	Earth (ground for functional earth)	- LITE WALTE WALT	N/A
WALTER	For indoor use only		N/A
4	tw5 YYY	And And And	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
J.T.	white appression where where where and the second s	t at at a	alle alle
20.	tw10 YYY	mur mur mur n	N/A
	twx YYY	wet ster ster of	N/A
54	Additional Symbols (IEC 61558-2-16:09)	alver mur me in	N/A
LIE WAL	SMPS incorporating a Fail-safe separating transformer		N/A
WALTE	SMPS incorporating a Non-short-circuit-proof separating transformer		N/A
WAL V	SMPS incorporating a Short-circuit-proof separating transformer (inherently or non-inherently)		N/A
et .6	SMPS incorporating a Fail-safe isolating transformer		N/A
un t tet	SMPS incorporating a Non-short-circuit-proof isolating transformer		N/A
WAL	SMPS incorporating a Short-circuit-proof isolating transformer (inherently or non-inherently)		N/A
nt s	SMPS incorporating a Fail-safe safety isolating transformer		N/A
i m	SMPS incorporating a Non-short-circuit-proof safety isolating transformer		N/A
white	SMPS incorporating a Short-circuit-proof safety isolating transformer (inherently or non-inherently)		N/A
min	SMPS (Switch mode power supply unit)		N/A

BB.9	PROTECTION AGAINST ELECTRIC SHOCK	N/A
in ani	white white white the state state with the second and the second state of the second s	MUTT N
BB.10	CHANGE OF INPUT VOLTAGE SETTING	N/A
white	which which which the test state white which which which	in me
BB.11	OUTPUT VOLTAGE AND OUTPUT CURRENT UNDER LOAD	N/A
me	when when when the test state white white white white	m
BB.12	NO-LOAD OUTPUT VOLTAGE (see supplementary requirements in Part 2)	N/A
in m	We are at the state with mile white white white	m. 1
BB.13 🧹	SHORT-CIRCUIT VOLTAGE	/N/A
Jr.	he was the star of the second and and	S 24

BB.14	HEATING	- at at at all	N/A
BB.14.2	Application of 14.1 or 14.3 according to the insula- tion system	white white white set	N/A

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Clause	Requirement + Test	Result - Remark	Verdict		
<u> </u>	with some some som som the so	- At At St	alle milt		
BB.14.2.1	Class of isolating system (classified materials ac- cording to IEC 60 085 and IEC 60 216)	white white white	N/A		
BB.14.2.2	No classified material, or system but the measured temperature does not exceed the value of Class A	ALTE MALL WALL W	N/A		
BB.14.2.3	No classified material or system but the measured temperature exceeds the value for Class A, the live parts of the transformers are submitted to the test of 14.3	ret white white whi	N/A		
BB.14.3	Accelerated ageing test for undeclared class of iso- lating system	Tet wet with	N/A		
	Cycling test (10 cycles):	me m m	N/A		
intre whit	 measuring of the no-load input current (mA) 	ster stree south south and	N/A S		
BB.14.3.1	 heat run (temperature in table 2) 		N/A		
BB.14.3.2	 vibration test: 30 min; amplitude 0,35 mm; fre- quency range: 10 Hz, 55 Hz, 10 Hz 	et watter watter wat	N/A		
BB.14.3.3	- moisture treatment (48 h, 17.2)	The street white	N/A		
BB.14.3.4	Measurements and tests at the beginning and after each test:	when the the	N/A		
50 - 50 510 - 55	 deviation of the no-load input current, measured at the beginning of the test is 30% 	and sure with a	N/A		
in the	- insulation resistance acc. cl.18.1 and 18.2	S Sunt sun	N/A		
EK WALTER	 electric strength, no breakdown (18.3); 2 min; test voltage 35% of specified value (table VI) 	antite antite would	N/A		
whitek w	 Transformers (50 or 60 Hz version) are tested after the dielectric strength test as follows: under no load; duration: 5 min; Up- ri(V):1,2 times rated supply voltage; frequency (Hz): 2 times rated frequency 	WALTER WALTER WALTER	N/A		

BB.15	SHORT-CIRCUIT AND OVERLOAD PROTECTION	N/A

BB.16 MECHANICAL STRENGTH

BB.17 PROTECTION AGAINST HARMFUL INGRESS OF WATER AND MOISTURE N/A

BB.18	INSULATION RESISTANCE AND ELECTRIC ST	RENGTH	N/A
BB.18.2	Insulation resistance between:	to the the star	N/A
t set	 live parts and body for basic insulation 2 M 	e whe whe whe	N/A
- Min -	 live parts and body for reinforced insulation 7 M 	white white white	N/A

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N/A

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Clause	Requirement + Test	Result - Remark	Verdic
J.L.	the second secon	1 1 1 5 5 T	ALL MALL
fet	 input circuits and output circuits for basic insu- lation 2 M 	white white white	N/A
in w	 input circuits and output circuits for double or reinforced insulation 5 M 	MITE MAIL WALK W	N/A
Str. WAL	 each input circuit and all other input circuits connected together 2 M 	JEt while while whi	N/A
WALTE	 each output circuit and all other output circuits connected together 2 M 	t whilet whilet while	N/A
WALTER	 hazardous live parts and metal parts with basic insulation (Class II transformers) 2 M 	Intrest would white	N/A
NLIEK WA	 body and metal parts with basic insulation (Class II transformers) 5 M 	The suret whilet we	N/A
Tex min	 metal foil in contact with inner and outer sur- faces of enclosures 2 M 	et the the	N/A
BB.18.3	Electric strength test (1 min): no flashover or break- down:	when when the state	N/A
WALTER N	 basic insulation between input circuits and output circuits; working voltage (V); test voltage (V) : 	white white white	N/A
LIEK WAL	 2) double or reinforced insulation between input circuits and output circuits; working voltage (V); test voltage (V) 	at an white wh	N/A
et 50	3) basic or supplementary insulation between:		N/A
NIT ALEX	a) live parts of different polarity; working volt- age (V); test voltage (V):	which which which	N/A
when .	 b) live parts and the body if intended to be connected to protective earth 	white white white	N/A
min m	c) inlet bushings and cord guards and an- chorages	NUTER WALTER WALTER W	N/A
TEL WALT	d) live parts and an intermediate conductive part	set water water wat	N/A
* Jiet	e) intermediate conductive parts and body:	- 10 10t 50t	N/A
Nº CER	1) Reinforced insulation between the body and live parts; working voltage (V); test voltage (V) .:	wat wat when	N/A
une so	 2) Functional insulation for windings intended to be connected in series or parallel (test voltage = working voltage + 500 V) (IEC 61558-2- 16:2009) 	unite surfice surfice sur	N/A

r	BB.19	CONSTRUCTION	N/A
Ś	BB.19.1	Separation of input and output circuits	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
BB.19.1.1	SMPS incorporating auto-transformers (IEC 61558-2-16:2009)	WALLEY WALTER WALTE	N/A
BB.19.1.2	SMPS incorporating separating transformers (IEC 61558-2-16:2009)	ALTE WALL WALL W	N/A
BB.19.1.2. 1	Input and output circuits electrically separated. (IEC 61558-2-16:09)	ret white white whi	N/A
BB.19.1.2. 2	The insulation between input and output winding(s) consist of basic insulation (IEC 61558-2-16:09)	t whilet whilet while	N/A
NUTER II	Class I SMPS	et set set	N/A
Set 1	 Insulation between input windings and body consist of basic insulation 	white white white	N/A
it it	 Insulation between output windings and body consist of basic insulation 	the subtle subtle sub	N/A
when	Class II SMPS (IEC 61558-2-16:09)	et intre intre mil	N/A
t whitek	 Insulation between input windings and body consist of double or reinforced insulation 	with might might	N/A
NUTER NO	 Insulation between output windings and body consist of double or reinforced insulation 	when we used	N/A
BB.19.1.2. 3	The insulation between input windings and inter- mediate conductive parts and the output windings and intermediate part consist of basic insulation (IEC 61558-2-16:09)	and anne and an a	N/A
WALLEY W	For class I SMPS the insulation between input and output windings via the intermediate conductive parts consist of basic insulation (IEC 61558-2-16:09)	WALLER WALLER WALLER	N/A
WITEK WITE	For class II SMPS the insulation between input winding and the body and between the output wind- ings and the body via the intermediate conductive parts consist of double or reinforced insulation (IEC 61558-2-16:09)	and an and a set	N/A
BB.19.1.2. 4	Parts of output circuits may be connected to protec- tive earth (IEC 61558-2-16:09)	when when we	N/A
BB.19.1.2. 5	No direct contact between output circuits and the body, unless: (IEC 61558-2-16:2009)	water water water	N/A
me m	 Allowed for associated transformers by the equipment standard 	white white white	N/A
NET WAL	 Clause 19.8 of part 1 is fulfilled 	TEX STER MITE W	N/A
BB.19.1.3	SMPS incorporating isolating transformers and safety isolating transformers (IEC 61558-2-16:09)	at that that will	N/A
BB.19.1.3. 1	Input and output circuits electrically separated (IEC 61558-2-16:09)	when we we we	N/A
111 J	No possibility of any connection between these cir- cuits	white white white	N/A

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ant.	IEC 61558-2-16	at the the st	The same
Clause	Requirement + Test	Result - Remark	Verdic
J.F.	put whi whi whi w	. It It It	alle mit
BB.19.1.3. 2	The insulation between input and output winding(s) consist of double or reinforced insulation (exception see 19.1.3.4) (IEC 61558-2-16:09)	SUNT SUNT SUITER	N/A
inst white	Class I SMPS not intended for connection to the mains by a plug:	at the the	Tet White
et whitet	 Insulation between input windings and body connected to earth consist of basic insulation rated to the input voltage 	e white white white	N/A
whitek w	 Insulation between output windings and body, connected to earth consist of basic insulation rated for the output voltage 	whitet whitet whitet	N/A
ntifet whi	Class I SMPS intended for connection to the mains by a plug (EN 61558-2-16:09):	LIEK MILIEK WALTER W	N/A
Tex white	 Insulation between input windings and body connected to earth consist of basic insulation rated to the working voltage 	et wattet wattet wat	N/A
white y	 Insulation between output windings and body, connected to earth consist of supplementary insulation rated for the working voltage 	watter watter watter	N/A
m. m	Class II SMPS (IEC 61558-2-16:09)	INTER MUTE MALL	N/A
LIEK WALT	 Insulation between input windings and body consist of double or reinforced insulation rated to the input voltage 	et a white wh	N/A
er white	 Insulation between output windings and body consist of double or reinforced insulation, rated to the output voltage 	worther worther would	N/A
BB.19.1.3. 3	SMPS with intermediate conductive parts not con- nected to the body (between input/output) (EN 61558-2-16:09):	MALTER MALTE MALT	N/A
19.1.3.3.1	For class I and class II SMPS the insulation be- tween input and output windings, via intermediate conductive parts, consist of double or reinforced in- sulation, rated to the working voltage (EN 61558-2-16:09)	Set and and and and	N/A
whitek w	 For class II SMPS the insulation between input winding and the body and between the output windings and the body via the intermediate conductive parts consist of double or reinforced insulation. (rated to the input voltage, for SELV circuits only basic insulation to the body)) 	while while while	N/A
et warret	 For transformers, different from independent, the insulation between input and output wind- ings, via intermediate conductive parts, consist of double or reinforced insulation, rated to the working voltage. 	et unifet unifet unif	N/A
BB.19.1.3. 3.2	Class I transformers with earthed core, and not al- lowed for class II equipment (EN 61558-2-16:09)	white white white	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
	with white white white white white	the set is the	alle galle
, fit	 Insulation from the input to the earthed core: basic insulation rated for the input voltage 	when when wh	N/A
olar was	 Insulation from the output voltage to the earthed core: basic insulation rated for the out- put voltage 	NUT WHIT WALL W	N/A
3B.19.1.3. 3.3	Insulation between : input to intermediate conduc- tive parts and output and intermediate parts consist of at least basic insulation (EN 61558-2-16:09)	AND AND AND AND	N/A
whitek w	 If the insulation from input or output to the in- termediate metal part is less than basic insula- tion, the part is considered to be connected to input or output. 	white white white	N/A
BB.19.1.3. 4	For class I SMPS, with protective screen, no t con- nected to the mains by a plug the following condi- tions comply (EN 61558-2-16:09):	at the the	N/A
t whitek	 The insulation between input winding and pro- tective screen consist of basic insulation (rated input voltage) 	white white white	N/A
whitek wh	 The insulation between output winding and pro- tective screen consist of basic insulation (rated output voltage) 	multer anurer amore a	N/A
LIEL WALT	 The protective screen consist of metal foil or a wire wound screen extending the full width of the windings and has no gaps or holes 	est on white wh	N/A
whitek w	 Where the protective screen does not cover the entire width of the input winding, additional in- sulation to ensure double insulation in this area, is used. 	South and another	N/A
INLITEX MINI	 If the screen is made by a foil, the turns are isolated, overlap at least 3 mm 	and the the	N/A
TEK MALTE	 The cross-section of the screen and the lead out wire is at least corresponding to the rated current of the overload device 	The second second second	N/A
A WALTER	 The lead our wire is soldered or fixed to the protective screen. 	- whet whet while	N/A
INLIEK M	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)	tet stat stat	N/A
BB.19.1.3. 5	No connection between output circuit and protective earth, except of associated transformers (allowed by equipment standard) or 19.8 is fulfilled (EN 61558-2-16:09)	and when white wh	N/A
BB.19.1.3. 6	No connection between output circuit and body, except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)	A WALLER WALLER WALL	N/A
BB.19.1.3. 7	The distance between input and output terminals for the connection of external wiring is 25 mm	watthe water water	N/A

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S. M.	IEC 61558-2-16	et of our of	in in
Clause	Requirement + Test	Result - Remark	Verdic
STV.	net whe whe with the	. 15 15 5 ⁶	alle and
BB.19.1.3. 8	Portable SMPS having an rated output \leq 630 VA (EN 61558-2-16:09)	white white white	N/A
BB.19.1.3. 9	No connection between input and output circuit, except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)	AND WALL WALL IN	N/A
BB.19.1.3. 10	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)	L at at at	N/A
BB.19.11	Handles, levers, knobs, etc.:	white white where	N/A
J. Link o	 insulating material 	at at at	N/A
the co	 supplementary insulation covering 	mer mer mer	N/A
INTER WALT	 separated from shafts or fixing by supplemen- tary insulation 	with anited antited an	N/A
BB.19.12	Windings construction	it at at it	́ N/А_
BB.19.12.1	Undue displacement in all types of transformers not allowed:	which which which	N/A
men 1	 of input or output windings or turns thereof 	intre white white	-N/A
Whitek wh	 of internal wiring or wires for external connection 	tret stret white	N/A
NITEX WITH	 of parts of windings or of internal wiring in case of rupture or loosening 	at the state of	N/A
BB.19.12.2	Serrated tape:	2 2 2	N/A
white	 distance through insulation according to ta- ble 13 	white white white	N/A
NITE N	 one additional layer of serrated tape, and 	at at all	N/A
	 one additional layer without serration 	me me m	N/A
NALLE MAL	 in case of cheek less bobbins the end turns of each layer shall be prevented from being dis- placed 	street wanter wanter w	N/A
BB.19.12.3	Insulated windings wires:	iter intre-water wat	N/A
et whitet	 to all types of transformers for basic or supple- mentary insulation taken separately 	whet what white	N/A
multer wo	 Winding wire with basic or supplementary insu- lation: 	Tet 5th stat	N/A
×	- comply with Annex K	me me	N/A
NUTE MALT	the insulation of the conductor: two layers	alt alt alter of	N/A
Jet miret	 b) Winding wire with double or reinforced insula- tion: 	of the set of	N/A
	 – comply with Annex K 	mer mer m	N/A
white w	 the insulation of the insulated winding wire: three layers 	united white white	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
. Str	inter when when when the state	- 10 10 5°	alle mur
	 dielectric strength test with the values ac- cording 18.3 multiplied by 1,25 	white and sure	N/A
n. n	Where the wire is wound:	NUTE WALT WALL W	N/A
Set S	 upon metal or ferrite cores 	A A A .	مان
24	 upon enamelled wire 	it with with with	N/A
A NITE	 under enamelled wire 	t at at 5th	N/A
WALTER V	An additional insulation with a dti of supplementary insulation provided between insulated an enamelled wires	white white white	N/A
NUTEK NO	100 % Routine test according to Annex K.3 for windings giving double or reinforced insulation	set set set	N/A
Set MALT	For windings providing reinforced insulation the values in table 13, table C.1 and table D1, box 2) c), are not required	et minet minet whit	N/A

BB.20	COMPONENTS

BB.21	INTERNAL WIRING	N/A
BB.22	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CABLES AND CORDS	N/A
BB.23	TERMINALS FOR EXTERNAL CONDUCTORS	N/A

BB.24	PROVISION FOR PROTECTIVE EARTHING	N/A

BB.25 SCREWS AND CONNECTIONS N/A

BB.26	CREEPAGE DISTANCES AND CLEARANCES	ret outer white white we	N/A
BB.26.1	See 26.101	a state	N/A
BB.26.2	Creepage distances (cr) and clearances (cr)	white white white white	N/A
BB.26.2.1	Windings covered with adhesive tape	a at the tot	N/A
m. m	- the values of pollution degree 1 are fulfilled	mit wat was and	N/A
NUTEX WAL	 all isolating material are classified acc. to IEC 60085 and IEC 60216 	Tex milet anifek anifek w	N/A
at at	- test A of 26.2.3 is fulfilled	· · · · · · · ·	⊘ N/A
BB.26.2.2	Uncemented insulating parts pollution degree P2 or P3	white white where where	N/A
main	 all isolating material are classified acc. to IEC 60085 and IEC 60216 	watter waite wate wate	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Clause	Requirement + Test	Result - Remark	verdici
m. 1	 values of pollution degree 1 are not applicable 	INTERNATE WAY	N/A
3B.26.2.3	Cemented insulating parts	a at at a	N/A
30.20.2.0	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	No. AND	N/A
st at	 values of distance through insulation (dti) are fulfilled 	Not white white white	N/A
White	 creepage distances and clearances are not re- quired 	WALTE WALTE WALTE	N/A
WALLEN W	 test A of this sub clause is fulfilled 	with aller and an	N/A
de la	Test A	and an an a	N/A
in my	- thermal class	LIE INTE WALL WAL	N/A
dt 5ª	 working voltage 	e at at at	N/A
with the set	 Test with three specially specimens, with unin- sulated wires, without impregnation or potting 	(see appended table)	N/A
me 1	Two of the three specimens are subjected to:	white white white y	N/A
UNLIEK WA	 the relevant humidity treatment according to 17.2 (48 h) 	Tet wiret miret and	N/A
LIEK INLIK	 the relevant dielectric strength test of 18.3 multiplied with factor 1,35 	at the sur	N/A
et whitet	 One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,35 immediately at the end of the last cycle with high tempera- ture 	white white	N/A
When when	Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see An- nex R of IEC 61558-1	and and and an	N/A
3B.26.2.4	Enclosed parts, by impregnation or potting	in the second second	N/A
3B.26.2.4.	 The requirements of reduced values as stated for pollution degree 1 (P1) are fulfilled 	VER WALTER WALTER WALTER	N/A
WALTE	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	white white white	N/A
STER .	Test B	at at set	N/A
n	- thermal class	hur mur mur m	N/A
LIER WIT	 working voltage 	let tet utet with	N/A
et waitet	 Test with three specially specimens, potted or impregnated. The dielectric strength test is ap- plied directly to the joint. 	(see appended table)	N/A
. At	Two of the three specimens are subjected to:	the state of the s	N/A
sure s	 the relevant humidity treatment according to 17.2 (48 h) 	WATE WATE WATE W	N/A
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IEC 61558-2-16			me in
Clause	Requirement + Test	Result - Remark	Verdic
WILL Y	 the relevant dielectric strength test of 18.3 mul- tiplied with factor 1,25 	WALTER WALTER WATER W	N/A
unit white	 One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multi- plied by the factor 1,25 immediately at the end of the last cycle with high temperature 	ALTE WATER WATER WATE	N/A
A WALTER	The three spacemen pass the Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see Annex R of IEC 61558-1	watter water watter	N/A
3B.26.2.4. 2	 The requirements of distance through insulation (dti) are fulfilled. (P1 values are not required) 	unit with with all	N/A
nt with	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	the water water water	N/A
I water	Test C	et allet and and and	N/A
t st	- thermal class	w w at	N/A
me	 working voltage 	white white white	N/A
NULTER W	 Test with three specimens, potted or impreg- nated. (finished components) 	(see appended table)	N/A
LIEX MIL	 Neither cracks, nor voids in the insulating com- pounds 		N/A
4	Two of the three specimens are subjected to:	a lan an	N/A
WALTE	 the relevant humidity treatment according to 17.2 (48 h) 	wintite winther watter	N/A
WALTER V	 the relevant dielectric strength test of 18.3 multiplied with factor 1,35 	Intret whitek whitek w	N/A
INTER SIN	 One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,35 immediately at the end of the last cycle with high tempera- ture 	stret while while whi	N/A
* whitek	The three spacemen pass the Impulse dielectric test according to 4.1.1.2.1 of IEC 60 664-1 (1,2 / 50 s waveform) – see Annex R of IEC 61558-1	whitek whitek whitek	N/A
3B.26.3	Distance through insulation	NUTER WALTE WALT W	N/A
lifet your	For double or reinforced insulation, the required values of Tables 13, C1, and D1 – boxes 2b, 2c and 7 are fulfilled	while while while while	N/A
ER WALTE	The insulation fulfil the material classification ac- cording IEC 60085 or 60216 or the test of 14.3	of white white white	N/A
BB.26.3.1	Reduced values of the thickness of insulation for supplementary or reinforced insulation are allowed if the following conditions are fulfilled:	WALTER WALTER WALTER W	N/A

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IEC	C 4	EEC	2	16
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Clause	Requirement + Test	Result - Remark	Verdict
J.	with which will will be at all	- 15 ST ST	and and
, et .	 the isolating materials are classified acc. to IEC 60085 and IEC 60216 	white white white	N/A
her an	- the test of 14.3 is fulfilled	neiter main main w	N/A
TEX WALT	 If both requirements are fulfilled, the required values for solid insulation can be multiplied by 0,4 	set sources unifet and	N/A
WALTE	 Minimum thickness of reinforced insulation ≥0,2 mm 	whitek whitek white	N/A
WALTER N	 Minimum thickness of supplementary insula- tion <u>></u>0,1 mm 	milet whilet whilet	N/A
3B.26.3.2	Insulation in thin sheet form	s st st	N/A
in m	- If the layers are non separable (glued together):	LITE WALT WALL WA	N/A
et se	- The requirement of 3 layers is fulfilled	it at at at	N/A
- set	 The mandrel test according 26.3.3 is fulfilled with 150 N/A 	white white white	N/A
when when we	 The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index "e" are ful- filled. 	white white white	N/A
	 If the layers are separated: 	ner mer min m	N/A
LIE MALT	- The requirement of 2 layers is fulfilled	the suffer out	N/A
et white	 If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required 	ANTE MATTA MATTA	N/A
whitek w	 The mandrel test according 26.3.3 is fulfilled on each layer with 50 N/A 	what while while	N/A
INLIEK JUNI	 The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index "e" are ful- filled. 	with whitek whitek we	N/A
Jet	 If the layers are separated (alternative: 	at at at a	N/A
20	- The requirement of 3 layers is fulfilled	white white white	N/A
whiter	 If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required 	whitek whitek whitek	N/A
mer m	 The mandrel test according 26.3.3 is fulfilled on 2/3 of the layers with 100 N/A 	white white white a	N/A
et ret	 The required values for d.t.i. of Tables 13, C.1 and D.1 – marked by index "e" are ful- filled. 	white white white wh	N/A
	Test according to 14.3 and if the isolating materials are classified acc. to IEC 60085 and IEC 60216 no distances through insulation are required for insulation in thin sheet form	white white white	N/A

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
White whi	The figures within square brackets in box 2 and 7 of table 13 (C.1/D.1) are used for insulation in thin sheet form as follows:	White white white	N/A
inthe mint	 rated output > 100 VA values in square brack- ets apply 	at all all a	N/A
et jet	 rated output 25 VA 100 VA 2/3 of the value in square brackets apply 	when the state	N/A
- With	 rated output <u>25 VA 1/3 of the value in</u> square brackets apply 	water water water	N/A
BB.26.3.3	Mandrel test of insulation in thin sheet form (speci- men 0f 70 mm width are necessary):	watte watte water	N/A
mit wat	 If the layers are non separable – at least 3 layers glued together fulfil the test: 	stret waiter waiter w	N/A
Jet Intre	– pull force of 150 N/A	at let bet as	N/A
* whitek	 high voltage test of 5,0 kV or the test volt- age of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown. 	where while shire	N/A
Whitek wh	 If the layers are separable and 2/3 of at least 3 layers fulfil the test. 	set shet whet	N/A
A 2	– pull force of 100 N/A	n. m. m.	N/A
NIT WAL	 high voltage test of 5,0 kV or the test volt- age of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdowns. 	ART S NOTIFE WAY	N/A
w.	 If the layers are separable 1 of at least 2 layers fulfil the test: 	white white white	N/A
me n	– pull force of 50 N/A	INTER WALTE WALT	N/A
untiet wat	 high voltage test of 5,0 kV or the test volt- age of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown. 	NUTER WILLER WILLER W	N/A
BB.26.101	Creepage distances, clearances and distances through insulation, specified values according to (EN 61558-2-16:09):	Set white white whi	N/A
m	 table 13, material group IIIa (part 1) 	muter units white	N/A
1th	- table C, material group II (part 1)	a at the	N/A
mer m	 table D, material group I (part 1) 	WALTE WALT WALL	N/A
5th 5	 working voltage 	A A A	N/A
te an	 rated supply frequency 50/60 Hz 	is white white wh	N/A
let allet	 rated internal frequency 	at the set of	N/A
t stat	1. Insulation between input and output circuits (basic insulation):	wat was all	N/A
m 1	a) measured values specified values (mm)	white white white	N/A

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IEC	61	55	8-2	-1
	υı	55	U-2	

- Ale	IEC 61558-2-16	the the the
Clause	Requirement + Test Result - Remark	Verdic
WELL		and and and
. et	2. Insulation between input and output circuits (double or reinforced insulation):	N/A
	a) measured values specified values (mm):	N/A
in white	b) measured values specified values (mm)	N/A
WALTE	c) measured values specified values (mm)	N/A
WALTER D	3. Insulation between adjacent input circuits: measured values specified values (mm) :	N/A
nitet wh	Insulation between adjacent output circuits: measured values specified values (mm) :	N/A
Tex white	4. Insulation between terminals for external connection:	N/A
t stret	a) measured values specified values (mm):	N/A
	b) measured values specified values (mm)	N/A
we w	c) measured values specified values (mm)	N/A
in me	5. Basic or supplementary insulation:	N/A
et united	a) measured values specified values (mm)	N/A
Tret	b) measured values specified values (mm)	N/A
. let	c) measured values specified values (mm)	N/A
in m	d) measured values specified values (mm)	N/A
x wh	e) measured values specified values (mm)	N/A
WALT	6. Reinforced or double insulation: measured values specified values (mm)	N/A
NITER OF	7. Distance through insulation:	N/A
and a	a) measured values specified values (mm)	N/A
et et	b) measured values specified values (mm)	N/A
with	c) measured values specified values (mm)	N/A
BB.26.102	Values of IEC 61558-2-16 applicable for frequency up to 3 MHz (EN 61558-2-16:09)	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
WALLY V			
dit.	For frequency above 3 MHz clause 7 of IEC 60664-4 is applicable (high frequency testing)	when we at the	N/A
BB.26.103	Clearance (EN 61558-2-16:09)	NUTE WALL WALL W	N/A
	 a.) Clearance for frequency ≥ 30 kHz according figure 101 two determinations are necessary: 	set allet inter whi	N/A
et whitet	 determination based on peak working voltage according Table 104 : 	t set set and	N/A
×	Peak working voltage	m. m. m.	N/A
where we	Basic insulation: required / measured	Tet street with	N/A
NUTER AND	Double or reinforced insulation: required / measured value	set set set	N/A
Jet Jet	 and alternative if applicable for approximately homogeneous field according to Table 102 	at the left of	N/A
20	Peak working voltage	white white white	N/A
t suffer	Basic insulation: required / measured	. at the set	N/A
Set	Double or reinforced insulation: required / measured value	which which will	N/A
where which	 determination based on measured r.m.s. work- ing voltage according Tables 13, C1 and D1 (see clause 26.101) 	inter worth when we	N/A
iet untiet	The minimum clearance is the greater of the two values.		N/A
	 b.) Clearance for frequency ≤ 30 kHz according figure 101 two determinations are necessary: 	white white white	N/A
whe w	 determination based on peak working volt- age with recurring peak voltages according Table 103 : 	white white white	N/A
Tex WALTE	 determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101) 	Set outet and some	N/A
et whitet	The minimum clearance is the greater of the two values.	whet whet white	N/A
BB.26.104	The working voltages of Table 102, 103 and 104 are peak voltages including µsec peaks EN 61558-2-16:09)	MATER MALTER WALLER	N/A-
NUTEX WALT	The working voltage according to Table 13 of part 1 are r.m.s. voltages	Jet suret whitet wh	N/A
BB.26.105	Creepage distances		N/A
white	Two determinations of creepage distances are nec- essary (see Figure 102)	white white whi	N/A
men y	 determination based on measured peak work- ing voltage according Tables 105 to 110 	united white white	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
J.T.C.	with approximation of the second s	the set set	STE MIL
24. 1	Peak working voltage	when when when	N/A
INLIER IN	Pollution degree	let the tree	N/A
and all	Basic or supplementary insulation: required / measured	int with with a	N/A
t st	Double or reinforced insulation: required / measured value	and and and	N/A
whitek a	 determination based on measured r.m.s. work- ing voltage according Tables 13, C1 and D1 (see clause 26.101) 	white white white	N/A
nifet sint	If the values based on table 105 to 110 are lower than the relevant values in Tables 13, C.1 or D.1, the higher values shall be applicable	unt whe whe where	N/A
BB.26.106	Distance through insulation (EN 61558-2-16:09)		N/A
- whitek	Instead of partial discharge with high frequency voltage the test of the distance and the calculation of the electric field is applicable under the following conditions:	white white white	N/A
dt .	 the max. frequency is < 10 MHz 	1 A A	N/A
when wh	 the field strength approximately comply with Figure 103 	UNLITE WALT WALT V	N/A
in white	 no voids or gaps are present in between the sol- id insulation 	at a white wh	N/A
WALTE	For thick layers d1 \ge 0,75 the peak value of the field strength is \le 2 kV/mm	MALIE MALIE MALIE	N/A
WALTER W	For thin layers d2 \leq 30 µm the peak value of the field strength is \leq 10 kV/mm	MUTER MALTER MALTER	N/A
INLIEK INI	For $d1 > d > d2$ equation (1) is used for calculation the field strength	tet stet stet	N/A

s	BB.27	RESISTANCE TO HEAT, FIRE AND TRACKING	N/A	
0				

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IEC 61558-2-16					
	Clause	Requirement + Test	TEX STER WALL WAL	Result - Remark	Verdict

BB.E	ANNEX E , GLOW WIRE TEST		
WALTER W	The test is required according to IEC 60695-2-10 and IEC 60695-2-11 with the following additions:	NITER MAITER MAILER MAILER	N/A
BB.E.1	Clause 6, "Severities" of IEC 6095-2-11, apply with the temperature stated in 27.3 of IEC 61558-1	ret wret while while y	N/A
BB.E2	Clause 8, "Conditioning", of IEC 60695-2-11 apply, preconditioning is required	+ set sint wint wi	N/A
BB.E3	Clause 10, "Test Procedure", of IEC 60695-2- 11apply, The tip of the glow wire is applied to the flat side of the surface.	whet white white white	N/A

BB.F	ANNEX F, REQUIREMENTS FOR MANUALLY OPERATED SWITCHES WHICH	N/A
10 10	ARE PARTS OF THE TRANSFORMER	de d

BB.H	ANNEX H, ELECTRONIC CIRCUITS (IEC 61558-	
e when a	1) when we are get the total with which	with

BB.K	ANNEX K, INSULATED WINDING WIRES FOR USE AS MULTIPLE LAYER INSULATION		
BB.K.1	Wire construction:	the state with	N/A
et set	 insulated winding wire with min. two layers for basic or supplementary insulation 	a set	N/A
	 insulated winding wire with min. three layers for reinforced insulation 	which which which we	N/A
me a	- winding insulation material	white white white white	N/A
BB.K.2	Conformance test	A St St St	N/A
BB.K.2.1	Test 13 of IEC 60 851-5 nominal conductor diame- ter 0,018 mm 0,1 mm, test as specified in 4.2.1 and 4.2.2 of IEC 60 851-5	set whe want whe	N/A
et whitet	Nominal conductor diameter > 0,1 mm, 2,5 mm, test as specified in 4.3.1 and 4.3.2 of IEC 60 851-5	whitek whitek whitek whi	N/A
WALTER W	Nominal conductor diameter < 2,5 mm, test as specified in 4.4.1 and 4.4.2 of IEC 60 851-5	stret suret souret white	N/A
NUTEX MAL	High voltage test immediately after the above spec- ified tests:	net the winet winet	N/A
1. A	 test voltage for two layers 3 kV 	m m m m	N/A
in white	 test voltage for three layers 5,5 kV 	et allet aller antier an	N/A
BB.K.2.2	Adherence and flexibility, test as specified under 5.1.4 of IEC 60 851-3	the tit the and	N/A
	 high voltage test immediately after this test 	mer me m m	N/A



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	010	JQ-	2-16

Clause	Requirement + Test	Result - Remark	Verdict
. Je	and white where where we are	t at at 5th	alle mille
20.	 test voltage for two layers 3 kV 	white white white	N/A
NUTER	 test voltage for three layers 5,5 kV 	at the set	N/A
BB.K.2.3	Heat shock, test as specified under 3.1 or 3.2 of IEC 60 851-6:	A st st	N/A
- an	 high voltage test immediately after this test 	N'IL WILL WILL WILL	N/A
et stift	 test voltage for two layers 3 kV 	at at at 50	N/A
4	 test voltage for three layers 5,5 kV 	in me me me	N/A
BB.K.2.4	Retention of dielectric strength after bending, test as specified under test 13 of 4.6.1 c) of IEC 60 851-5	whitet whitet whitet	N/A
we we	1. high voltage test immediately after this test	steet mile white w	N/A
15 18	2. test voltage for two layers 3 kV	s at it	N/A
me	3. test voltage for three layers 5,5 kV	eter intre white white	N/A
BB.K.2.5	Resistance to abrasion, test 11 of IEC 60851-3	a st st	N/A

BB.U	ANNEX U – INFORMATIVE – OPTIONAL TW – MARKING FOR TRANSFORMERS	N/A
V	ANNEX V, SYMBOLS TO BE USED FOR THERMAL CUT-OUTS	N/A

BB.26.2 TEST A	TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION Test with three special prepared specimens with uninsulated wires, without potting or impregnation						
white							
cycles 2 x working betwe pri / s	g voltage een	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 hour 0 °C	1 hour 25 °C	WALTER WALT	
LIEN MITE	* NUTEX	white white wit	FEE WALTE	it was	and and	int allet a	

BB.26.2 TEST B	TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION						N/A
millet an		h three specially prepa or impregnation (P1)	red specimer	ns with	of set	JEX SUEX	INLIEK
cycles 2 x working betwe pri / s	voltage en	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 hour 0 °C	1 hour 25 °C	A WINITER M	ALIEK W
Jet woulder	white .	and and an	MUTEX MIL	et est	IN WALLEY	souther work	ier uni

BB.26.2	TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES	N/A
TEST C	THROUGH INSULATION	t st



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	-		-

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K / W

IEC 61558-2-16

Clause	Requirer	ment + Test	WALTER WAL	m	Result - Remark			Verdict
NUL .		n three specially prepa only dti is required)	red specimer	ns with	m	White wh	t jet	
cycles with 2 x working voltage between pri / sec		68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C		our °C	1 hour 25 °C	whitek wh	Tek yan
ex ret	wherek v	and the second	white wh	1 - 1 ¹¹	*	int suret	the spect	t sinit



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1

Clause	Requirement + Test	Result -Remark	Verdict
18	Insulation resistance, dielectric strength and leakage current	white white white white	Р
18.3	Replacement of the text in footnote a of Table 8a: a For construction according to 26.2.4.1, test B the voltage is multiplied by the factor 1,25. For the construction according to 26.2.4.2 the voltage is multiplied by the factor 1,35.	Tet white white white	N/A
18.102	A partial discharge test according to IEC 60664-1, (test description see below) shall be performed, if FIW wires are used and if the re- curring peak working voltage Ut across the in- sulation is greater than 750 V. The relevant re- curring peak voltage is the maximum measured voltage between the input and the output circuit of the SMPS, if the secondary side is earthed. The measuring shall be done at 1,0 of the max- imum rated input voltage.	A MATER MATER MATER MATER	N/A
19	Construction	the state of the	P
19.12.3	Replacement: Insulated winding wires, in an in- sulation system providing basic, supplementary or reinforced insulation, shall meet the following requirements.	white white white	NP MILTER
eret where	Wire that has multi-layer extruded or spirally wrapped insulation (where only the finished wire can be tested) and passes the tests of An- nex K.	Certified triple insulation wind- ing	N/A
When	-BASIC INSULATION: two wrapped layers or one extruded layer;	white white white with	N/A
with a	-SUPPLEMENTARY INSULATION: two layers, wrapped or extruded;	watter watter watter water	N/A
MITE WAT	-REINFORCED INSULATION: three layers wrapped or extruded.	NITER MAILER MALTER MAILE	P
Per yourse	For spirally wrapped insulation where the CREEPAGE DISTANCES between layers, as wrapped, are less than those given in Clause 26	Tex watter watter watter w	N/A
	The finished component shall pass ROUTINE TEST for electric strength using the appropriate value of test voltages in 18.3.	which which which which	N/A
	a) Where the insulation on the winding wire is used to provide basic-or supplementary insula- tion in a wound part:	whitek whitek whitek whitek	N/A
	b) Where the insulation on the winding wire is used to provide reinforced insulation in a wound part:	Certified triple insulation wind- ing	Р
	an insulation for mechanical separation which fulfil the electric strength test for basic insula- tion shall be provided between the insulated	Separate with tape	P



Clause	Requirement + Test	Result -Remark	Verdic
WI WALT	wires and the core or between the insulated wires and the enamelled wires. The both wind- ings shall not touch each other and both wires shall not touch the core.	white white white	MITER WATTER
19.12.101	The transformer which use fully insulated wind- ing wires (FIW), shall only be used up and in- cluding insulation class F.	Tet anitet antiet an	N/A
19.12.102	Fully insulated winding wires (FIW) shall comply with IEC 60851-5:2008, IEC 60317-0-7 and IEC 60317-56.	Whitek whitek white	N/A
26	Creepage distances, clearances and distances through insulation	WALTER WALTE WALT	SUP P
26.107	For transformers with FIW wires the following test is required:	MITER MALIER MALIE W	N/A
IEN WALTER	Three specimens shall be used. The specimens shall be subjected 10 times	set white white whi	N/A
Mainet Main	During each thermal cycling test, a voltage of twice the value of the working voltage at 50 Hz or 60 Hz shall be applied to the specimens be- tween the windings where the reduced values apply.	whitek whitek white	N/A
er ret	Two of the three specimens are then subjected to the humidity treatment of 17.2 (48 h treatment) and the relevant dielectric strength test of 18.3.	at a function we	N/A
whitek wh	One of the three specimens shall be subjected to the relevant dielectric strength test of 18.3 immediately at the end of the last period at highest temperature during the thermal cycling test.	WALTER WALTER WALTER	N/A
net whe	The partial discharge test shall be done at the end of the cycling test at normal room tempera- ture as performed in 18.101.	MITER MAILER MAILE S	N/A
Annex K	Insulated winding wires	The water water was	N/A
K.1	General	t ret wet with	N/A
K.2	Type tests	me me me	N/A
K.2.1	General Carried out at a temperature between 15 °C and 35 °C and a relative humidity be- tween 25 % and 75 %, unless otherwise speci- fied.	whitek whitek whitek	N/A
K.2.2	Electric strength	- w	N/A
K.2.2.1	Solid circular winding wires and stranded wind- ing wires	et white white whi	N/A
K.2.2.2	Square or rectangular wires	- whet whet white	N/A
K.2.3	Flexibility and adherence	20 20 2	N/A



Appendix No. 1: IEC 61558-2-16 / A1: 2013			
Clause	Requirement + Test	Result -Remark	Verdict
K.2.4	Heat shock	white white white	N/A
K.2.5	Retention of electric strength after bending	let set set	N/A
K.3	Testing during manufacturing	me me me	N/A
K.3.2	Routine test	TEX NUTEX INTERIOR	N/A
et whitet	- 4,2 kV r.m.s. for reinforced insulation, or - 2,1 kV r.m.s. for basic insulation or supplementary insulation.	A WALFER WALFER WALF	N/A
K.3.3	Sampling test	et set set	N/A
K.3.3.1	Solid circular winding wires and stranded wind- ing wires	which which which	N/A
K.3.3.2	Square or rectangular wire	per white when w	N/A

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Appendix	No. 2: National deviation for Australia and Nev			
AS/NZS 61558.2.16:2010 +A1:2010 + A2:2012 + A3:2014 AS/NZS 61558.1:2008 + A1:2009 + A2:2015				
Clause	Requirement + Test	Result -Remark	Verdict	
in m	No No No No No No No No	et aller pulle palle	sure mar	
. A.	Australia and New Zealand Nat		at at	
This an	nex sets out the variations between this standa and New Zealand		For Australia	
5.5	For a.c., test voltages are of substantially si- nusoidal wave form, and, if not otherwise specified, have a frequency of 50 Hz. (AS/NZS 61558.1:2008)	See marking plate	S P	
14	HEATING	when my m	N/A	
Table 1	The temperature of insulated pins of trans- formers having integral pins for insertion into socket-outlets shall not exceed 70 °C: (AS/NZS 61558.1:2008)	while while while w	N/A	
	Temperature (°C)	Mr. with with the	N/A	
19.15	Compliance is checked by inserting the trans- former, as in normal use into a socket-outlet capable of accepting a 10 A plug complying with Figure 2.1(a) of AS/NZS 3112. The sock- et-outlet has a horizontal pivot at a distance of 8 mm behind the engagement face of the socket-outlet and in the plane of the lower in- tersection of the centre lines of the contact ap- ertures. The additional torque which has to be applied to the socket-outlet to maintain the en- gagement face in the vertical plane shall not exceed 0,25 Nm. (AS/NZS 61558.1:2008)		N/A	
m	Additional torque (Nm)	TER INTE NATE WAL	N/A	
19.201	Transformers having integral pins for insertion into socket outlets shall comply with the appropriate requirements of AS/NZS 3112. Compliance is checked as specified in Appen- dix J of AS/NZS 3112 NOTE 1 Clause J.2.2.3 (Internal connections for plug portions) of AS/NZS 3112 is covered by clause 19.6 and clause 21 of this standard.	AND THE WALLEY WALLEY	N/A	
	NOTE 2 Clause J.2.2.6.2 (High voltage test) of AS/NZS 3112, except for the test of the insulation of the insulated pins, is covered by clause 18 of this standard. NOTE 3 Clause J.2.2.6.4 (Temperature rise test) of AS/NZS 3112 is covered by clause 14 of this standard NOTE 4 Clause J.2.2.6.7 (Equipment with integral pins	whitek whitek whitek	WALTER WALTER	
	NOTE 4 Clause J.2.2.6.7 (Equipment with integral pins intended to be supported by the contacts of a socket-outlet) of AS/NZS 3112 is covered by clause 19.15 of this stand- ard.	and white white white	t miet ou	

(AS/NZS 61558.1:2008)



1	No. 2: National deviation for Australia and Nev AS/NZS 61558.2.16:2010 +A1:2010		A
	AS/NZS 61558.1:2010 + A1:2010 AS/NZS 61558.1:2008 + A1:2		
Clause	Requirement + Test	Result -Remark	Verdic
22	SUPPLY CONNECTION AND OTHER EXTERNAL FLEXIBLE CABLES OR CORDS		N P
22.6	Rating of the transformer shall not exceed 10 A. (AS/NZS 61558.1:2008)	white white white white	Р
22.8	Power supply cords of portable transformers shall be fitted with an appropriately rated plug complying with AS/NZS 3112 or AS/NZS 3123 or IEC 60309. (AS/NZS 61558.1:2008)	NET WALTER WALTER WALTER WALTER	N/A
Annex H	ELECTRONIC CIRCUITS	et the the with a set	P
H.2.1	The no-load output voltage at an SELV appli- ance outlet or connector shall not increase by more than 10% of its no-load output voltage in normal use. (AS/NZS 61558.1:2008/A2:2015)	Max. 2.89% (for model GT- 81081-6012-T3) Max. 1.46% (for model GT- 81081-6024-T2) Max. 2.29% (for model GT- 81081-6018-T3)	P
whites whi	The no-load output voltage of a USB outlet or connector shall not increase by more than 3 V or 10% of its no-load output voltage in normal use, whichever is higher. (AS/NZS 61558.1:2008/A2:2015)	Set whitet whitet whitet white	N/A
et .50	SPECIAL NATIONAL CONDITIONS		N/A
m	Australia	INITE WALL WALL WALL	N/A
8	MARKING AND OTHER INFORMATION	it at at set	N/A
8.1	The marking of rated voltage or rated voltage range of single-phase transformers shall cover 240V and 415 V for poly-phase transformers. (AS/NZS 61558.1:2008)	et white white white white	N/A
1 5	New Zealand	a at at at	N/A
8	MARKING AND OTHER INFORMATION	intit antit wat wat	N/A
	The marking of rated voltage or rated voltage range of single-phase transformers shall cover 230V and 400 V for poly-phase transformers. (AS/NZS 61558.1:2008)	white watter white watter	N/A

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WALTEL

PHOTO:

Model: GT-81081-6012-T3



Photo 1



Photo 2

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Photo 3



Photo 4

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Photo 5

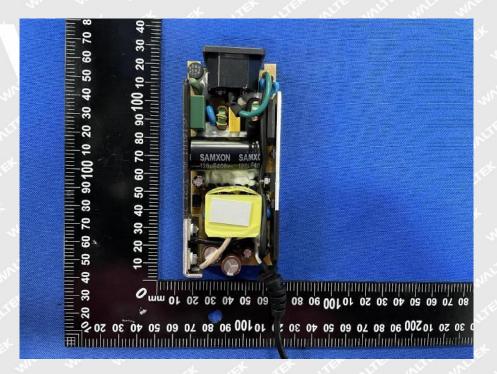


Photo 6

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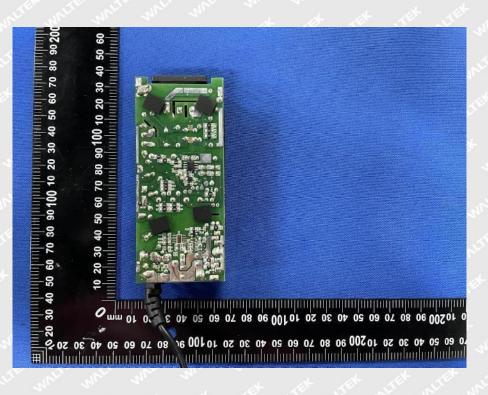
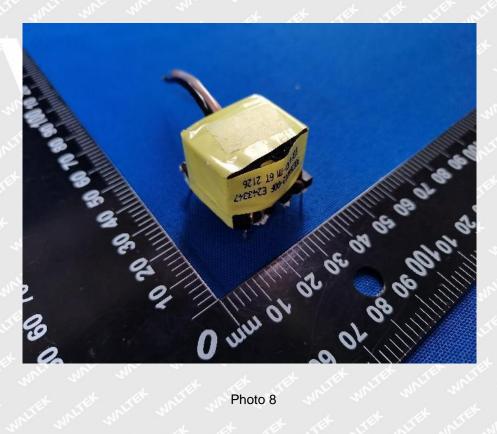


Photo 7

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121

Reference No.: WTX21X12149580S

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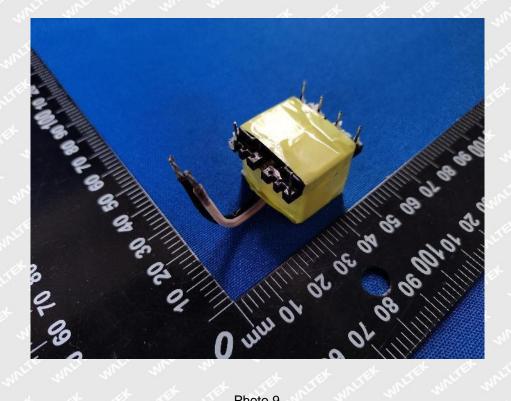


Photo 9

Model: GT-81081-6024-T2



Photo 10

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Photo 11



Photo 12

9

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Photo 13



Photo 14

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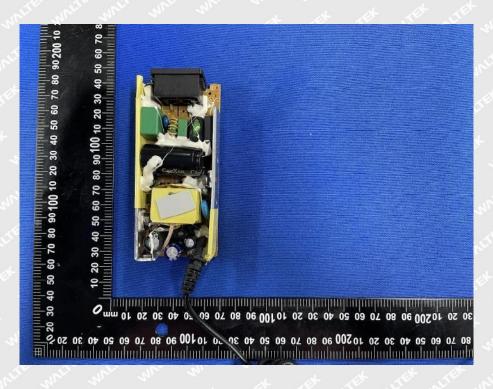


Photo 15

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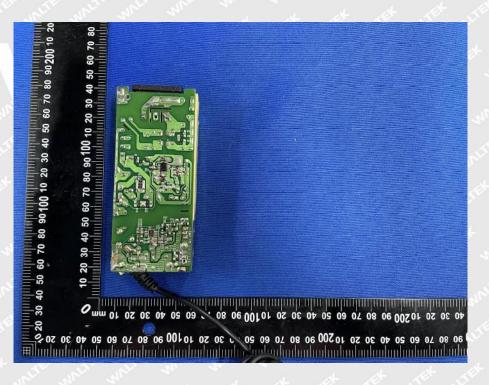


Photo 16

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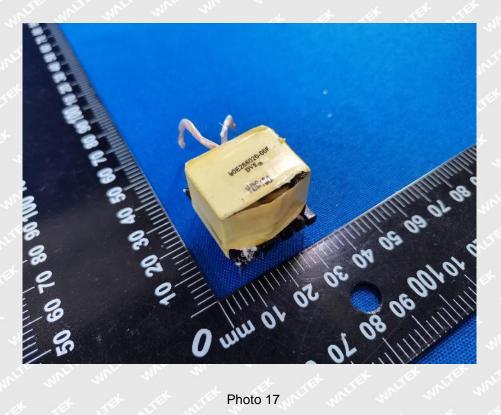


Photo 17

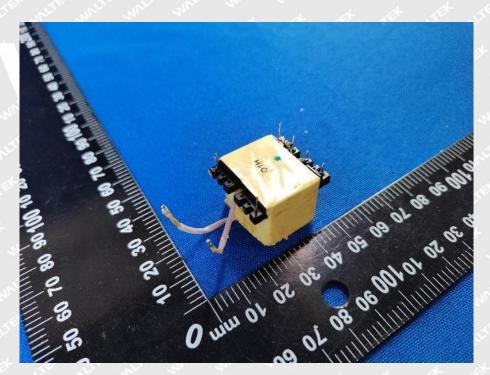


Photo 18

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Model: GT-81081-6018-T3



Photo 19



Photo 20

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Photo 21



Photo 22

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Photo 23

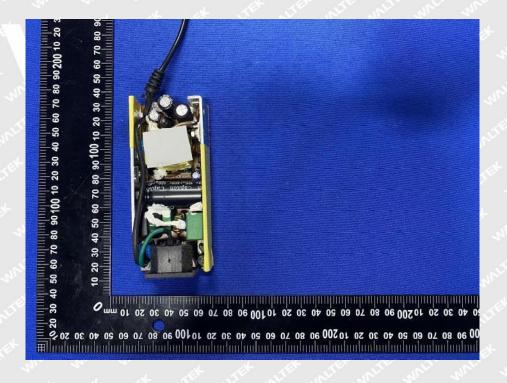


Photo 24

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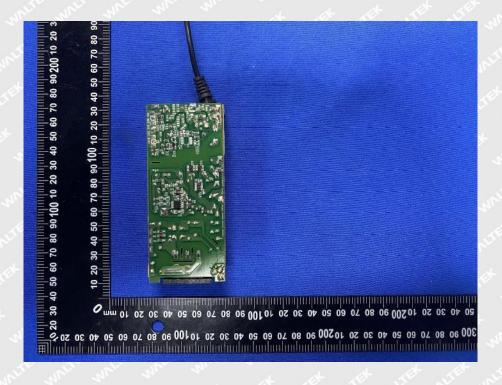
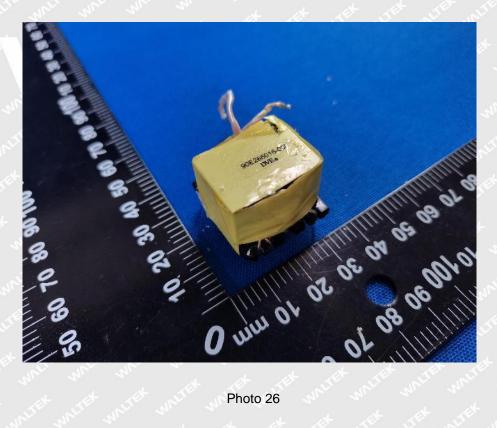


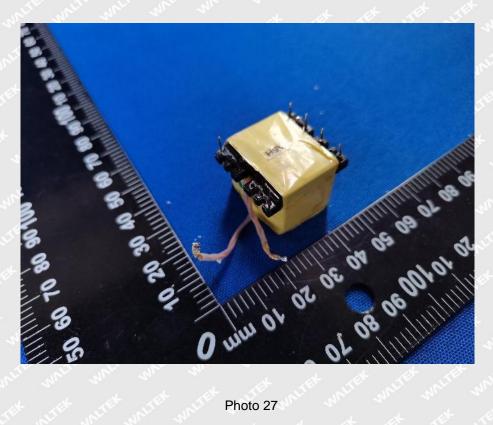
Photo 25

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