



TEST REPORT

Reference No	: 4	WTX23X11245734S
Applicant	:	GlobTek, Inc.
Address	The.	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer	NITE!	GlobTek, Inc.
Address	×	186 Veterans Dr. Northvale, NJ 07647 USA
Product Name		ICT/ITE Power supply
Model No	٠.	GT*46402-***
		(see general product information for model designation)
Test specification	NALT LIEY	IEC 61558-2-16:2021 used in conjunction with IEC 61558-1:2017 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 supply units and transformers for switch mode power supply units
Date of Receipt sample		2023-11-30
Date of Test	:	2023-11-30 to 2024-03-21
Date of Issue	4	2024-03-22

Test Result..... Pass

Test Report Form No......:

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.

WTX IEC61558 2-16 2021A

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

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Tested by:	Approved by:
John Zhong	tentour
John Zhong	Harvid Wei

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Test item description	ICT/ITE Power supply
Trademark:	GlobTek, Inc.
Model and/or type reference:	GT*46402-*** (see general product information for model designation)
Serial number:	I WE AT THE STEET MITTER MITTER MILITE MARINE M
Rating(s)	Input: 100-240V~ 50-60Hz or 50/60Hz 1.0A
THE WALL MAY AND MY	Output: 5-48Vdc, Max.6A, Max.40W
Remark: Whether parts of tests for the product ☐ Yes ☐ No	have been subcontracted to other labs:
If Yes, list the related test items and lab in	formation:
Test items: Lab information:	
Summary of tooting:	

Summary of testing:

Tests performed (name of test and test clause):

- IEC 61558-1:2017
- IEC 61558-2-16:2021
- AS/NZS 61558.1:2018+A1:2020+A2:2020
- AS/NZS 61558.2.16:2022

The submitted samples were found to comply with the requirements of above specification.

Testing location:

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

Summary of compliance with National Differences:

List of countries addressed: AU

AU=Australia

The product fulfils the requirements of European, Australia and New Zealand National Differences



Copy of marking plate:







Test item	particulars:
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Protection against electric shock.....: Class II

Supply Connection.....: Direct plug-in

Possible test case verdicts:

- 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)

Name and address of factory (ies).....: 1. GlobTek, Inc.

186 Veterans Dr. Northvale, NJ 07647 USA

2. GlobTek (Suzhou) Co., Ltd

Buildng 4, No. 76 JinLing East Road, Suzhou Indust

rial Park, Suzhou, 215021, JiangSu, China

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:

Product covered by this report is power supply module. GT*46402-*** series for Limited Power Source (LPS) application.

Direct plug-in power supplies are provided with suitable external enclosure. The product top enclosure is secured to bottom enclosure by ultrasonic welding.

The power supplies are rated class II equipment.

GT*46402-***:

The 1st "*" part can be 'M' or '-' or 'H' for market identification and not related to safety.

The 2nd "*" denotes the rated output wattage designation, which can be "01" to "40", with interval of 1.

The 3rd "*" denotes the standard rated output voltage designation, which can be "05" to "48" or "5.0" to "48.0", with interval of 0.1.

The last * denote any six character = 0-9 or A-Z or ()[] or - or blank for marketing purposes.

Models GTM46402-3005 and GTM46402-4048 are tested as typical models, model differences were also considered in this report.

Model	Output Voltage	Max. output current	Max. output power
GT*46402-***	5-48VDC	6A	40W

All models were evaluated for maximum manufacturer's recommended ambient of 40 °C.

Reference	E NO WIAZSATIZ457345	Page 5 of 125		
JATES MILLER	White Mur. Mur. Mr.	IEC 61558-2-16	t the tier sites	inlie unit
Clause	Requirement + Test	E RETER WALL MAY	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
•	MARKING AND OTHER INFORMATION		- CLI
8	MARKING AND OTHER INFORMATION		0
8.1	Transformers shall be marked with the following (for symbols see Table 1):	Wiles Miles Mailes Marte	NACP.
LIEK WIL	a) rated supply voltage(s) or the rated supply voltage range(s) (V)	100-240V ~	P
	b) rated output voltage(s) (V or kV):	See marking label	P
and	c) rated output (VA, kVA, or W)	A OLIFE MILLE WALL WA	N/A
, et	d) rated output current(s) (A or mA)	See marking label	P
10 10 1	e) rated supply frequency(ies) (Hz)	50-60Hz or 50/60Hz	₩P
LET .	f) rated power factor (if not 1)	and the state of	N/A
10 ¹² - 10 ¹ 10 ¹² - 10 ¹	g) symbol AC for alternating current, or DC for direct current-output	The symbol ── for DC The symbol ← for AC	Р
k wiek	h) relevant graphical symbols shown in Table 101 that indicate the kind of transformer in addition with the symbol for SMPS. (IEC 61558-2-16: 2021)	For example:	PULLEN
, etc	i) name or trademark of the manufacturer or responsible vendor	See marking label	Р
	j) model or type reference	See marking label	m P
NLTEK MAL	k) vector group in accordance with IEC 60076-1 for three phase transformer	Not a 3-phase transformer.	N/A
et de	I) symbol for class II construction		P
" The	symbol for class III construction	The state of the s	N/A
Intital.	m) indication of the protection index IP	IPX0	Р
Tet.	n) rated maximum ambient temperature <i>t</i> a, if other than 25 °C	40°C	Р
TEK TI	o) rated minimum ambient temperature <i>ta</i> min, if lower than +10 °C and if a temperature sensitive device is used	0°C	P
ex unitex	p) duty cycle, if any, unless the operating time is limited by the construction of the transformer or corresponds to the operating conditions specified in the relevant part of IEC 61558-2.	Anties multes anties and	N/A
MULLE	q) symbol for overvoltage category, if other than OVC II	WILL WILL MULTER MULT	N/A
CLIENT ON	r) transformers used with forced air cooling shall be marked with "AF" in m/s	at let stat state	N/A
	s) Information from the manufacturer to the purchaser (data sheet)	See below.	Р
Muer	- short-circuit voltage (% rated supply voltage) for stationary transformers > 1000 VA	Marite Mile Mile Mile	N/A
	- electrical function of the transformer	The electrical input/output rating is shown.	P

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- 41-	IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict	
White!	- All markings except those under i) and j) may be illustrated as QR Code according ISO/IEC 18004.	White white white wi	P	
Let 5	t) symbol indicating the maximum altitude of installation, if higher than 2 000 m	the same and the	N/A	
8.2	Marking for transformers IP00 or for associated transformers: type and trademark, instruction sheets	the main and the	N/A	
8.3	Adjusted voltage easily and clearly discernible	No adjustable voltage.	N/A	
8.4	For each tapping or winding: rated output voltage and rated output	Single output.	N/A	
	necessary connections clearly indicated	me in m	N/A	
8.5	For non-short-circuit proof transformers or non- inherently short-circuit proof transformers designed to be protected by fuses shall be marked:	Symbol provided on marking plate.	JALL P	
MUTER	Rated current (A or mA) and symbol for time current characteristics of the fuses for non-inherently short-circuit proof transformer with incorporated fuses and non-short-circuit proof transformer:	white mile while w	N/A	
aniter a	For non-short-circuit proof transformers or non- inherently short-circuit proof transformers designed to be protected with protective devices other than fuses shall be marked:	united united united unit	N/A	
ek wille	Manufacturer's models or type reference of the protective device, and/or the ratings of the protective device	THE MELTER WILLIER	N/A	
WALTER	Instruction sheet for transformers with replaceable protective device (other than fuses) information with information about the replacement.	Whitek whitek whitek was	N/A	
8.6	Terminals for neutral: "N"	a at at S	N/A	
11 ² - 40	Terminal for protective earth marked with earthing symbol		N/A	
791	Identification of input terminals:	TEX NITE MALLE MALLE	N/A	
+ 16+	Identification of output terminals:		N/A	
m.r.	Symbol for any point/terminal in connection with frame or core	And we we we	N/A	
8.7	Indication for correct connection	LIFET OLIFET ONLIFET MALE	Р	
8.8	Instruction sheet for type X, Y, Z attachments	m	N/A	
8.9	Transformer for indoor use shall be marked with the relevant symbol.	Contract on the	Р	
8.10	Symbol for Class II construction not confused with manufacturer's name or any other identification	MUNITER MULTER MULTER	Р	
WILLE	Class II transformer with parts to be mounted – delivered with all parts for class II after mounting.	No such parts.	N/A	

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L. Wey	IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict	
Well.	Symbol for class II transformer placed on the part which provides class II.	Mulies white white	W P	
8.11	Correct symbols:	NITE WALTE WALTE VI	Р	
. LEF . J	Volts	V	d dP	
- 711	Amperes	A (mA)	P	
ek white	Volt amperes (or volt-amperes reactive for reactors)	VA or (VAR)	N/A	
Let.	Watts	W	Part Part	
11/2 1	Hertz	Hz	ant and	
Alt .	Input	PRI	N/A	
1. m	Output	SEC	N/A	
7 EF 258	Direct current	d.c. (DC) or ====	P.	
-211	Neutral	N we we was	Р	
e cliff	Single-phase a.c.	~ at let let	P.TE	
1,,	Three-phase a.c.	3~ ~ ~	N/A	
CLIER	Three-phase and neutral a.c.	3N \sim	N/A	
2	Power factor	cos φ	N/A	
NITE WAL	Class II construction	antie un	TE WITTE	
EK NALTE	Class III construction		N/A	
MALIER WALLER	Equipment of overvoltage category I	I THE MITTER	N/A	
	Equipment of overvoltage category II	II The sale	TEL MIT V	
	Equipment of overvoltage category III	III	N/A	
	Equipment of overvoltage category IV	IV	N/A	
	Fuse	The set	NATER PAR	
	Rated max. ambient temperature	ta	Р	
	Rated minimum ambient temperature	t _{amin}	N/A	
	Rated minimum temperature	t _{min}	N/A	
LE MUTTE	Frame or chassis (or core terminal)	S / Marie Marie Marie	N/A	
MALTER	Protective earth (ground)		N/A	
	IP number	IPX0	L P	

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
MULL	Earth (ground or functional earth)	Will unit white	N/A
ines an	For indoor use only		Р
iie _w ni 4 (e)	To indicate that the appliance is intended to be usable up to the maximum altitude 3 000 m.	≤3000m	P. 10
unitek unitek	To indicate that the power supply unit shall not be used, if pins of the plug part are damaged.	F	MILE MALTER
, t	Additional Symbols (IEC 61558-2-16:2021)	The The Th	Р
VII. AL	SMPS (Switch mode power supply unit)	(S)	II P III
NUT.	SMPS incorporating a Fail-safe separating transformer	⊖ _F	N/A
MULIT	SMPS incorporating a Non-short-circuit-proof separating transformer	8	N/A
nurit a	SMPS incorporating a Short-circuit-proof separating transformer (inherently or non-inherently)	8	N/A
EK NATE	SMPS incorporating a Fail-safe isolating transformer	⊖ _F	N/A
MITER	SMPS incorporating a Non-short-circuit-proof isolating transformer		N/A
NITEK W	SMPS incorporating a Short-circuit-proof isolating transformer (inherently or non-inherently)		N/A
TER WAL	SMPS incorporating a Fail-safe safety isolating transformer	F	N/A
WILLER VIII	SMPS incorporating a Non-short-circuit-proof safety isolating transformer		N/A
MUL A	SMPS incorporating a Short-circuit-proof safety isolating transformer (inherently or non-inherently)	0	ALEK DILEK MI
EK WALTE	SMPS incorporating a Fail-safe auto-transformer	O _F	N/A
MALIEK	SMPS incorporating a Non-short-circuit proof auto-transformer	D. 10 10 10 10 10 10 10 10 10 10 10 10 10	N/A

Reference	No.: WTX23X11245734S	Page 9 of 123		
IER WILLE	WHITE MILL MILL MILL	IEC 61558-2-16	all the till of	A WILL WALL
Clause	Requirement + Test	it sites white w	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
MULIEK M	SMPS incorporating a Short-circuit proof auto-transformer (inherently or non-inherently)	Ş	N/A
8.12	Number, letters or other visual means for different positions of regulating devices and switches	Cet liet sliet of	N/A
	OFF position indicated by number 0	411 241 2	N/A
WILL	Greater output, input etc. indicated by higher number	* White White White	N/A
8.13	Marking not on screws or other easily removable parts	antiek whitek whitek	unite un PE
INLTEK W	Marking clearly discernible (transformer ready for use)	Lifet wifet writes w	LIER MIT P
ITEK MALT	Marking for terminals clearly discernible if necessary after removal of the cover	et tret stret mi	N/A
y Rijey	Marking for terminals: no confusion between input and output	with the test	N/A
JO TEX	Marking for interchangeable protective devices positioned adjacent to the base	mer mer me	N/A
aliek ani	Marking for interchangeable protective devices clearly discernible after removal of cover and protective device	mitte mitt with a	N/A
8.14	Visible information (symbols) shall be provided, when it is necessary to take special precautions for installation, transportation or use (in the catalogue, data sheet, instruction sheet or packaging):	White Marks mark	A MULTE
MILIER WILLER	For non-inherently short-circuit proof transformers with non-self-resetting or non-replaceable devices and non-replaceable intentional weak parts: The device cannot be reset or replaced after a short-circuit or an overload	WALTER WALTER WALTER	N/A
	For transformers generating a protective earth conductor current greater than 10 mA and are intended for permanent connection The installation shall be made according to the wiring rules.	THE WALTER WALTER WALTER	N/A
	For stationary transformers exceeding 1000 VA: The short circuit voltage expressed as a percentage of the rated supply voltage	UNLIER WHITER WALTER	N/A
hr m	The electrical function of the transformer	LITER WALTER WALTER WA	P 101
TEX WITE	the limiting temperature of the winding under abnormal conditions which shall be respected when the transformer is built into an appliance as information for appliance design;	A SE LEE	N/A

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	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
Whitek W	For transformers not designed for series and/or parallel connection with more than one output winding, not for series or parallel connection	While while while	N/A
TIEK WILL	For IP00-transformers the test of 27.2 is not performed. The result may be affected by the enclosure in the final application.	TEX WILLER WILLER	N/A
8.15	Marking durable and easily legible		P
8.16	Portable transformers with integrated plugs complying with EN 50075 (IEC plug type C), shall use the symbol IEC 60417-6352:2015-10.	TER STER STER SULL	P
	The instruction sheet of the plug in transformer shall contain the following information, or equivalent:	ties sties wiles writes	JANLIEK W
TEK NITE	if the pins of the plug parts are damaged, the plug- in power supply shall be scrapped.	at let let let	O TEN
9	PROTECTION AGAINST ELECTRIC SHOCK	in mir mir m	Р
9.1	General	- TEX TEX STEX ON	Р
unliek w	Transformers shall be enclosed and provided with adequate protection against contact with hazardous-live-parts and shall have no risk of an electric shock from stored charge on capacitors.	white white white white	P
9.2	Protection against contact with hazardous-live- parts	tit Militar Militar	N IT P
9.2.1	Determination of hazardous-live-parts		J P
9.2.1.1	A live part is not a hazardous-live-part if it is separated from the supply by double or reinforced insulation and the requirements of 9.2.1.2 or 9.2.1.3 are met when the transformer is supplied at rated supply voltage	MULTER MULTER MULTER MULT	PALTER
9.2.1.2	The voltage shall not exceed 35 V AC peak or 60 V ripple free DC.	Measured maximum output voltage: Max. 47.39Vd.c.	Р
9.2.1.3	Where the voltage exceeds 35 V (peak) AC or 60 V ripple free DC, the touch current shall not exceed:	L/N and accessible output terminal / enclosure: max.218Vac.	P
MITE	- for AC. 0,7 mA (peak)	Max. 0.09 mA	Р
7	- for DC. 2,0 mA	111. 111. 111.	N/A
WILLE O	In addition, when a capacitor is connected to live parts:	MILIER WALTER WALTER WALTE	Р
9.2.1.3.1	The discharge shall not exceed 45 µC for stored voltages between 60 V and 15 kV, or	LIER MILIER WHITER WHITER	N/A
9.2.1.3.2	The energy of discharge shall not exceed 350 mJ for stored voltages exceeding 15 kV.	A STEE WITER WATER	N/A
9.2.2	Accessibility to hazardous-live-parts	24, 2, ,	. ← P. Ø

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	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
WALTEX AN	Transformers shall be constructed to provide adequate protection against accessibility to hazardous-live-parts.	White white white	P
iter wit	Class I and II transformers shall be so constructed and enclosed that there is adequate protection against accidental contact with hazardous-live-parts.	The plastic enclosure considered as electrical and mechanical enclosure.	P W
MULTER	For class I transformers, accessible parts shall be separated from hazardous-live-parts by at least basic insulation.	MULTER WILLER WHITE AN	P
UNITER OUT	Class II transformers shall be so constructed and enclosed that there is adequate protection against accessibility to basic insulation and to conductive parts separated from hazardous-live-parts by basic insulation only.	White whitek whitek	WP P
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Only parts separated from hazardous-live parts by double or reinforced insulation may be accessible	MULL WILL WILL W	N/A
MULL	Hazardous-live-parts shall not be accessible after removal of detachable parts except for	No detachable parts.	N/A
CLIFE	- lamps having caps larger B9 and E10	THE THE LITTER SALTER	N/A
2,	- type D fuse holder	no mon m	N/A
nite uni	IP00 transformers shall comply with the end product standard after incorporation in the end product.	THE WILLS	P
WILLER O	The insulating properties of lacquer, enamel, paper, cotton, oxide film on conductive parts and sealing compound shall not be considered as giving the required protection against accidental contact with hazardous-live-parts with the exception of fully insulated winding wire (FIW).	White white white white	P
No The	Shafts, handles, operating levers, knobs and the like shall not be hazardous-live-parts.	the man and an	N/A
ik Tik	Compliance is checked by inspection and by the relevant tests of IEC 60529.	in mil mil a	Р
MUL	Class II transformers and Class II parts of Class I construction are tested with the test pin (fig. 3)	White Milit Will Wil	Р
White A	Hazardous live parts shall not be touchable by test finger (fig. 4) with the exception of fully insulated winding wire (FIW).	No live parts were touched.	P
LEK WILE	for Class II transformers: conductive parts separated by basic insulation from hazardous live parts not touchable by test finger	et cet tet atet	JEK JAL
t stet	hazardous live parts shall not be touchable with the test pin	No live parts were touched.	Р
9.2.3	Accessibility of non-hazardous live parts	WILL WILL MUT, MUT, MUT,	Р

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	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
WALTER W	Non-hazardous live parts of the output circuit isolated from the input circuit by double or reinforced insulation may be accessible under the following conditions:	Whitek Multer Multer Whitek	P
LIER WAL	 for no-load output voltages not exceeding 35 V peak AC or 60 V ripple-free DC, both poles may be accessible; 	The no load output voltage is 47.39Vdc	Р
ek walie Waliek	- for no-load output voltages exceeding 35 V peak AC or 60 V ripple-free DC and not exceeding 250 V AC, only one of the poles may be accessible.	MUNITER WHITER WHITER WAS	N/A
9.3	Protection against hazardous electrical discharge	White wat mad whe	Р
nliek w Tek nit	Transformers with primary supply plug: 1 s after the interruption of the supply the voltage between the pins do not exceed 35 V (peak) AC or 60 V ripple free DC	STEK WHITEK WHITEK	N/A
MUTIEK M	Transformers without a primary supply plug: 5 s after the interruption of the supply the voltage between the input terminals do not exceed 35 V (peak) AC. or 60 V ripple free DC.	whitek mutek mutek mit	N/A
ounliter of	If the nominal capacitance is ≤ 0,1 µF – no test is conducted.	MITER WHITER WHITER WHITER	, P
NITER WAS	10 times switch the supply source on and off, or use a special equipment for to switch off at the most unfavourable electrical angle	THE WALTER WALTER	N/A
MALIE	If the measured voltage is > 60 V ripple free DC, the discharge must be \leq 45 μ C.	WHITE WALLES WA	N/A
10	CHANGE OF INPUT VOLTAGE SETTING		
Writek M	Transformers with more than one rated supply voltage shall be so constructed that the voltage setting cannot be changed without the aid of a tool.	No such devices.	N/A
Jek Jai	Transformers which can be set to different rated supply voltages:	the the state street of	N/A
	The indication of voltage for which the transformer is set is discernible on the transformer.	niter witer whiter	N/A
10.101	A wide range (e.g. 100 V AC to 240 V AC) of supply voltage is allowed (IEC 61558-2-16: 2021)	THE STEE STEET MITTER	P
LITER ON	if the output voltage does not exceed the rated output voltage	and the text item	P
CERT CE	if the no-load output voltage does not exceed the limits of the output voltage deviation	the state of	Р
11 🖑	OUTPUT VOLTAGE AND OUTPUT CURRENT UNDER LOAD		Р
11.1	Difference from rated value (without rectifier; with rectifier):	With rectifier. (see appended table)	P.F.

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	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
WILLER ALL	a) inherently short-circuit proof transformers with one rated output voltage for the output voltage: AC ≤ 10%; DC ≤ 15%	White white white while	N/A
LIEK MIL	b) inherently short-circuit proof transformers with more than one rated output voltage for the highest output voltage: AC≤10%; DC≤15%	TER TER STEEL STEEL S	N/A
ek wattek	c) inherently short-circuit proof transformers with more than one rated output voltage for the other output voltages: AC≤15%; DC≤20%	t stret stret whilet whi	N/A
MATER	d) other transformers for the output voltages: AC ≤ 5%; DC ≤ 10%	(see appended table)	PEK
11.2	If a transformer is marked with the rated output, the rated output voltage, the rated output current, and the rated power factor, these values shall be substantially in agreement with each other.	STEE MALTER WALTER WALTER	P. W
X MUTEX	If no rated output current is assigned to the transformer, the rated output current for the purpose of this specification can be calculated from the rated output and the rated output voltage.	THE WILLS WHITE WHITE WHITE	N/A
12	NO-LOAD OUTPUT VOLTAGE (IEC 61558-2-16:2021)		
Mer M	Remark: with rectifier measuring on both sides of the rectifier if they are accessible to the user	Input terminals of the rectifier are not accessible to user.	JIP P
12.101	The no load output voltage shall not exceed :	THE STATE WALTER A	LIT P.III
iek white	- For SMPS incorporating separating or auto- transformers: 1000V AC. or 1415 V ripple free DC	antik milik milik m	N/A
	For SMPS including isolating transformers:500 V AC. or 708 V ripple-free DC	MITER WHITER WHITER WHITE	N/A
NUTTER W	- For SMPS including safety isolating transformers: 50 V AC. or 120 V ripple-free DC	LIET STEE WITER MITTER	WILL D.
	For independent SMPS incorporating separating transformers, isolating transformers or autotransformers: 50 V AC. or 120 V ripple-free DC	TEK WILLER WILLER WILLER	N/A
ek walter	For independent SMPS, this output voltage limitation applies even when output windings, not for interconnection, are connected in series	Whitek whitek whitek whi	N/A
MUTTE A	The requirement for series connection does not apply to associated or IP 00 SMPS	UNITER WHITER WHITE	N/A
12.202	The difference between no-load output voltage and the output voltage measured in clause 11 does not exceed the values of table 102	LITER WALTER WALTER WALTER	Р

Et July	IEC 61558-2-16	at the title the	JU NI
Clause	Requirement + Test	Result - Remark	Verdict
12.103	Unless otherwise specified by the manufacturer, SMPS shall be tested with 20 cm to 200 cm length of wire connected to the output terminals under the most unfavourable conditions. Twisted wires or cables rated in accordance with IEC 60227-5:2011 (type 60227 IEC 53) may be used. The cross sectional area of the conductors shall be determined in accordance with the rated output current of the SMPS, and the current density shall not exceed 5 A/mm² in normal use.	JEEL WHITE W	P P INTER WA
13	SHORT-CIRCUIT VOLTAGE	e at at	N/A
100	The short-circuit voltage measured shall not deviate by more than 20 % from the value marked.	No marked.	N/A
14	HEATING	THE THE STIEF WIT	P.
14.1	General requirements	to the the	Р
14.1.1	Temperature-rise test	cet crest acrest mare	In Pur
+	No excessive temperature in normal use	14, 14, 2,	Р
ANDER	The manufacturer may choose the simulated load methods according to 14.1.2.1 or 14.1.2.2 instead of the direct load method that may be applied.	White white white	P
The s	Room temperature: rated ambient temperature ta <u>+</u> 5 °C	mile mile mil mi	Р
ik ili	Type X, Y, Z attachments: 1 pull (5 N) to the connection windings	To mil sur	N/A
when	Upri (V): 1,1 times rated supply voltage loaded with rated impedance – for independent transformers	264V (240 x 1.1)	P
	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 independent transformers	Whitek whitek whitek w	N/A
	Max. temperature windings	(see appended table)	N/A
e sk	- Class A: 100 °C	TEX STER STER SOUTH	N/A
	- Class E: 115 °C	711 711 7	N/A
with	- Class B: 120 °C	ALTER WITER WAITE	n' P
, et	- Class F: 140 °C	70 7	N/A
ant a	- Class H: 165 °C	CULTER MALTE MALTE MA	N/A
Att.	- other classes	a at at a	N/A
SV AD			1000

N/A

N/A

N/A

N/A

bare metal: 65 °C

other material: 80 °C

Temperature of external enclosures of stationary transformers:

metal covered by lac or varnish: 70 °C

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Clause	Requirement + Test	Result - Remark	Verdic	
WALTER WI	Temperature of external enclosure of stationary transformer 85 °C (not touchable with the IEC test finger)	White white white white	N/A	
LIEK NI	Temperature of external enclosures, handles, etc. of portable transformers:	at all the text	P	
	- continuously held parts of metal: 48 °C	The Man in a	N/A	
W. Willer	- continuously held parts of other material: 48 °C	t tet tet nites ni	N/A	
	- not continuously held parts of metal: 60 °C	Any Any Any Any	N/A	
White 4	- not continuously held parts of other material: 80 °C	Plastic enclosure.	P	
ALTER WA	Temperature of terminals for external conductors and terminals of switches 70 °C	No switch.	N/A	
CEL CE	Temperature of internal and external wiring:	a of the left	Р	
'M'	- rubber: 65 °C	No rubber.	N/A	
- JEN	- PVC: 70 °C	Internal plug pin lead wire	P	
111	Temperature of parts where safety can be affected:	mer mer mer me	N/A	
JULE .	- rubber: 75 °C	at alt alt are	N/A	
20,	- phenol-formaldehyde: 105 °C	no me me	N/A	
LTER INC	- urea-formaldehyde: 85 °C	at the street	N/A	
	- impregnated paper and fabric: 85 °C	2 / 24 / 24	N/A	
MILLE	- impregnated wood: 85 °C	The Little of the same	N/A	
LIER	- PVC, polystyrene and similar thermoplastic material: 65 °C	fet tet tet stet site	N/A	
n, ,	- varnished cambric: 75 °C	mer, mer me in	N/A	
NETER OF	Temperature rise of supports 85 °C	THE THE LITTER WITH	P	
set si	Temperature of printed boards:	UL approved PCB used, the limit is 130 °C	P	
-2,	- bonded with phenol-formaldehyde: 105 °C	Mus me me	N/A	
NUTER	- melamine-formaldehyde: 105 °C	- TEK TEK TEK KI	N/A	
7,	- phenol-furfural: 105 °C	m. m. m.	N/A	
MITE N	- polyester: 105 °C	TER LIER NITER INTE	N/A	
, t	- bonded with epoxy: 140 °C	PCB rating: 130°C	Р	
TIL MU	Electric strength between input and output windings (18.3, 1 min); test voltage (V)	LIER WALTER WALTER WALTER.	Р	
14.101	Winding temperature measured by thermocouples at the surface of the winding (IEC 61558-2-16: 2021)	MALIER MALIER WALTER ON	Р	
WILL .	- if the internal frequencies is > 500Hz	LIER RUTE WITE WITE WAL	NP	

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1000			
Clause	Requirement + Test	Result - Remark	Verdic
WILL.	- the values of Table 2 for windings temperatures are reduced by 10°C	Class: 120-10=110° C	Р
14.102	SMPS shall be tested at 0,9 times and 1,1 times the rated supply voltage	WILL MULL MULL MULL	NIP P
14.2	Application of 14.1 or 14.3 according to the insulation	n system	Pull
14.2.1	Class of insulation system (classified materials according to IEC 60 085 and IEC 60 216)	Class B	P P
14.2.2	No classified material, or system but the measured temperature does not exceed the value of Class A	at the talk the	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	MULTER MULTER MULTER	N/A
14.3	Accelerated ageing test for undeclared class of insu	lation system	N/A
14.3.1	General Cycling test (10 cycles):	Measured transformer winding within the specified limit on normal heating test.	N/A
14.3.2	Heat run (temperature in table 4)	20 x x x	N/A
14.3.3	Vibration test: 30 min; amplitude 0,35 mm; frequency range: 10 Hz, 55 Hz, 10 Hz	JULIE WALTE WALL WALL	N/A
14.3.4	Moisture treatment (48 h, 17.2)	At A MITE MILE	N/A
14.3.5	Measurements and tests at the beginning and after each test:	The state of	N/A
MALTER	- deviation of the no-load input current, measured at the beginning of the test less than 30%	THE MILES WILLES WILL	N/A
at-	- insulation resistance acc. cl.18.1 and 18.2	The state of	N/A
ine wh	- electric strength, no breakdown (18.3 and 18.4); 2 min; test voltage 35% of specified value	reter white white white	N/A
y varifek varifek	 Transformers (50 or 60 Hz version) are tested after the dielectric strength test as follows: under no load; duration: 5 min; Upri(V):1,2 times rated supply voltage; frequency (Hz): 2 times rated frequency 	whilet whilet whilet whi	N/A
15	SHORT-CIRCUIT AND OVERLOAD PROTECTION	PAULE AME AND AND	Р
15.1	General requirements		P
15.1.1	Short circuit and overload test method	recommendation of the same	Р
er unlie	Tests direct after 14.1 at the same ta and without changing position.	(see appended table)	P
- Let	Supply voltage between 0,9 times and 1,1 times of the rated supply voltage	264V (240 x 1.1)	P

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	A		K
I		V	
	V	7	

	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
Aneria.	Transformer with rectifier tests of 15.2 and 15.3 at the input and the output terminals of the rectifier.	White white	P
TIEK MUT	Transformers with more than one output winding or tapping, all windings tested with normal load, the winding with the highest temperature is short circuited.	Nete while while w	N/A
	Wining protected inherently (15.2)	L A ST ST	N/A
WITEK.	- Max. temperature of winding protected inherently (insulation class): 150°C (A); 165°C (E); 175°C (B); 190°C (F); 210°C (H)	MILL MILL MILL	N/A
	Winding protected by protective device:	m m	Р
ntie wa	- 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 6 (insulation class): 200 °C (A); 215 °C;(E); 225 °C (B); 240 °C (F); 260 °C (H)	STEK WALTER WALTER WALTE	N/A
	- 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	White Writer
NLIEK WAL	- 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)	and white whi	P
MULTER	- 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)	TEK STEK WITE	P.L.
NATIEK NA	- Test according 15.3.5: max. temperature of winding (insulation class): 175 °C (A); 190 °C (E); 200 °C (B); 215 °C (F); 235 °C (H)	NIET WHIET WHIET W	LIER MILE
ITEK WIT	Max. temperature of external enclosures (accessible by test finger) 105 °C	SEK ALTER MALTER MALT	P
EK MITEK	Max. temperature of insulation of wiring (rubber and PVC) 85 °C	tet lifet siret	nt P
	Temperature rise of supports 105 °C	me in in	Р
15.1.2	Alternative short circuit and overload test method	THE LITTER STEEL	ntil an P
NLTEK WN	The manufacturer may choose to apply any of the following methods described in 14.1.2.1 and 14.1.2.2. These test procedures are according to IEC 60076-11:2004, 23.2.1 and 23.2.2	TILE MULTER MULTER MU	TEX ALTER W
15.2	Inherently short-circuit proof transformers	et let let le	N/A
k nijek	Inherently short-circuit proof transformers are tested by short-circuiting the output windings until steady-state conditions are reached	TEX TEX STEX	N/A
15.3	Non-inherently short-circuit proof transformers	The Me in	Р

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01			\ , , , , , ,
Clause	Requirement + Test	Result - Remark	Verdic
The same	Non-in-housesthy shout singuit new of terms forms on the	Life or the strict while	Р
at the	Non-inherently short-circuit proof transformers are tested as follows	In the set set	TEX
15.3.1	Output terminals short-circuited: protection device operates, test at 0,9 1,1 of the rated supply voltage	Nate white white white	out P
15.3.2	If protected by a fuse accordance with either IEC 60 269-2 or IEC 60 269-3, or a technical equivalent fuse, the transformer is loaded as in table 6.	t whitek whitek whitek whi	N/A
15.3.3	If protected by a fuse accordance with either IEC 60 127(all parts) or ISO 8820(all parts), or a technical equivalent fuse, the transformer is loaded with the current as specified for the longest pre arcing time. If protected by miniature fuses in accordance to IEC 60127(all parts), 1,5 times of the rated fuse, until steady state condition (in addition)	SUNLIER WHITE WHITE WHITE	N/A
15.3.4	If protected by a circuit-breaker according to IEC 60 898(all parts) 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 60 269) test with 0,95 times of operating current	Protected by electronic circuit	ALTE P
	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 5	MULTER WILLER WILLER	N/A
15.4	For non-short-circuit proof transformers: temperature rises values in table 5, tests as indicated in 15.3	WAL WALLEY WALLEY	N/A
15.5	For fail-safe transformers:	a at the life	N/A
15.5.1	Three additional new specimens are used	it write while with an	
y JEN	- Upri (V): 1,1 times rated supply voltage:	at at at 5	ائ . حرا
10,	- Isec (A): 1,5 times rated output current:	while and any and	2
JEK .	- time until steady-state conditions t1 (h):	at let let litt	N. S. F.
21, 2	- time until failure t2 (h): t1; 5 h	mit mit me me	10,
15.5.2	During the test:	et set set stet	N/A
2,1	- no flames, molten material, etc.	ing men and any	N/A
ek olife	- temperature of enclosure 175 °C	it the the tief of	N/A
2),	- temperature of plywood support 125 °C	me me me	N/A
No.	After the test:	Let the the tile	N/A

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The state of	IEC 61558-2-16	the the the wife and	" OL
Clause	Requirement + Test	Result - Remark	Verdict
Whitek W	- electric strength (Cl. 18, 1 min, test voltage: 35% of specified value); no flashover or breakdown for primary-to-secondary only for safety isolating, isolating and separating transformer and for primary-to-body for all kinds of transformer	NICH WALTER WALTER WALTER	N/A
EX STEX	- bare hazardous live parts not accessible by test finger through holes of enclosure	t 1st 1st 1st 1st	N/A
15.101	Electronic circuits shall be so designed and applied that a fault condition within the SMPS will not cause electric shock, or fire hazard, and unintentional operation of the appliance will not impair safety.	(Details see Annex H)	P WILLER TEX
16	MECHANICAL STRENGTH	NITER INTER WAIT WATER	1 P 1
16.1	General		Р
- m	After tests of 16.2, 16.3 and 16.4	er antic motil motil on	Р
t Jest	- no damage	and the state of	P
"Cik	- hazardous live parts not accessible by test pin according to 9.2.2	mult mult mult my	Р
elver 1	- no damage for insulating barriers	ALTER WALTER WALTER WALTER	W. b
de s	- handles, levers, etc. have not moved on shafts		N/A
16.2	Stationary transformers	The partie water w	N/A
er de	3 blows, impact energy 0,5 ±0,05 J		N/A
16.3	Portable transformers (except of direct plug in transformers)	white must must make	N/A
Mr.	For portable transformers: 100 falls, 25 mm	WILL WILL MILL MAN	N/A
16.4	Portable transformers provided with integral pins for of the fixed wiring	introduction in socket outlets	unti Pt
16.4.1	General requirements	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	P
k riek	Portable transformers with integral pins for introduction into fixed socket-outlets shall have adequate mechanical strength.	THE WALL WALL ON	P
MUTIER	Plug in power supply units with integral main plug complying with IEC TR 60083, without plugs complying with EN 50075 (IEC plug type C) shall be tested:	AU plug, complying with AS/NZS 3112: 2017+A1:2021	Р
ALTEK WAS	a) plug-in transformers: tumbling barrel test: 50 times, x ≤ 250 g; 25 times, x > 250 g	155g, 50 times	NITP W
et de	b) torque test of the plug pins with 0,4 Nm	a state of the state of	P
2115	c) pull force according to table 7 for each pin	white mer and an	Р
16.4.2	Portable transformers provided with integral pins according to EN 50075 (IEC plug type C) for introduction in socket-outlets of the fixed wiring	Whitek Whitek Whitek White	N/A

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TER WITE	White Murr Murr An	IEC 61558-2-16
Clause	Requirement + Test	F 16 10 10

IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
ANGEL .	a) The test is carried in a tumbling barrel as described in IEC 60068-2-31.	MILITER	N/A
er, e	- 1000 times: x ≤ 100 g; 500 times: 100 g< x ≤ 200 g; 200 times: g< 100 x	INCIDE MILLE MILLS MINE	N/A
LTE WILL	- pull force according to IEC 60884-1:2002, 24.10 for each pin	LIE WHITE WHITE WHITE	N/A
ER WILLE	b) torque test of the plug pins with 0,4 Nm	of the the state of	N/A
16.5	Additional requirements for transformers to be used applications	l in vehicles and railway	N/A
16.5.1	Transformers to be used in vehicles and railway app	plications	N/A
nites on	An test according IEC 61373 shall be performed with conditions of Table 8 and Table 9 and the frequency values depending on the weight of the specimen are defined in Table 10	NIFER WHITER WHITER WHITER	N/A
16.5.2	Test requirements for the transportation of transform	ners	N/A
WALTER	Shock and vibration testing requirements for transformers subjected to while being transported per IEC 60721-3-2 with conditions according to Table 11 and Figure 8.	Whitek whitek whitek wh	N/A
17	PROTECTION AGAINST HARMFUL INGRESS OF	WATER AND MOISTURE	Р
17.1	Degree of protection (IP code marked on the transfe	ormer)	U.S. P. of
17.1.1	General requirements	IPX0	Р
With	Test according to 17.1.2 and for other IP ratings test according to IEC 60 529:	AMILE ANTIC ANTIC AN	Р
WALTER	- stable operating temperature before starting the test for < IPX8	Whitek whitek whitek whi	N/A
UNLTEK VI	- the water for the test shall be at a temperature of 15±10°C	SITER MILIER WALTER	N/A
ITEK WAL	- transformer mounted and wired as in normal use	fet stret natet invited	N/A
ek mitek	- fixed transformer mounted as in normal use by the tests according to 17.1.2 A to J	of the text state of	N/A
WALTER V	portable transformers placed in the most unfavourable position and wired as in normal use	Whi while while	N/A
NLTEK NIV	- glands tightened with a torque equal to two- thirds of 25.6	Tet Tet Street Water	N/A
4. 2	After the tests:	han in my	N/A
LE MUTTE	- dielectric strength test according to 18.3	CER STEEL STEEL SPITES OF	N/A
	Inspection:	24, 24, 25,	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
whitek wh	a) no access with hazardous-live-parts or hazardous moving parts with the relevant test probe according to the test described in 17.1.2, items A 1), B 1) and C 1). The test finger may penetrate but the stop face (ø 50 x 20 mm) shall not pass through the openings for the number 2 of the first characteristic numeral	JUNETER WHITER WHITER W	N/A
White a	b) no entry into the transformer enclosure by the relevant test probe for solid-object-proof transformers according to test described in 17.1.2, items A 2) and B 2). The protection is satisfactory if the full diameter of the probe does not pass through any openings;	MULTER WALTER WALTER	N/A
	c) no deposit of talcum powder in dust-proof transformers	LIFE WALTER WALL WA	N/A
No. IL	d) no deposit of talcum powder inside dust-tight transformers	EX WHITEX WHITEX WHIT	N/A
	e) 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 reduction of creepage distances	Whitek whitek whitek	N/A
on one	f) no accumulation of water inside the enclosures of drip-proof, spray-proof, splash-proof and jet-proof transformers, which may impair safety	unit unit unit u	N/A
	g) no trace of water entered in any part of water- tight transformer	7 (1) t	N/A
17.1.2	Tests on transformers with enclosure:	ANTI MUT MUT	P
	A) Solid-object-proof transformers:	Et Tet Tet	LIE PIE
Tet .	- 2 IP2X test finger (IEC 60 529) and test pin (fig. 3)	Murral Mar Aug	P
n m	- rigid sphere	WILL WILL MUTT AN	Р
	B) Solid-object-proof transformers:	at the set of	N/A
21,	- IP3X, wire 2,5 mm; force 3 N	the many many many	N/A
y Tiest	- IP4X, wire 1 mm; force 1 N	at all set	N/A
10	C) Dust-proof transformers, IP5X;	me me me	N/A
WALTER W	1) At every possible point with a probe according to test probe D of B 1).	INLIER WHITER WHITER	N/A
Jet s	2) dust chamber according to IEC 60 529, fig. 2:	a at at	N/A
in the	a) transformer has operating temperature	The Will AVE AV	N/A
IEK WALTE	b) transformer, still operating, is placed in the dust chamber	Et NIEK WIEK WITE	N/A
- Let	c) the door of the dust chamber is closed	The state of	N/A
Me	d) fan/blower is switched on	ALTE MITE MALL	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
White TEK	e) after 1 min transformer is switched off for cooling time of 3 h	White Market Market	N/A
المر الم	D) Dust-tight transformers (IP6X) test according with C)	NITE WALTER WHILE A	N/A
ite and	E) Drip-proof transformers (IPX1) test according to fig. 3 of IEC 60 529 for 10 min	TEX WILLER WILLER WAS	N/A
ek white Tek	F) Rain-proof transformers (IPX2) test according to fig. 3 of IEC 60 529 for 10 min in operation, any angle up to 15°	MULTER MULTER WHITE	N/A
MUNITER M	G) 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.	unties unties unties	N/A
TEK WALT	H) 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)	Et unifet unifet unif	N/A
"It	Jet-proof transformer (IPX5) test according to fig. 6 of IEC 60 529 (nozzle 6,3mm)	MILL MILL MILL	N/A
MULTER A	J) Powerful Jet-proof transformer (IPX6) test according to fig. 6 of IEC 60 529 (nozzle 12 mm)	mite white white	N/A
L 70	K) Watertight transformers (IPX7)	a lane an	N/A
Et CLIE	L) Pressure watertight transformers (IPX8)		N/A
17.2	After moisture test (48 h for IP20, 168 h for other transformers):	48h	TE ITE
Mr.	- insulation resistance and electric strength (Cl. 18)	MULL MILL MILL	W P
18	INSULATION RESISTANCE AND ELECTRIC STR	ENGTH	n' u' P
18.2	Insulation resistance between:	1 1	at AP
is the	- live parts and body for basic insulation $\geqslant 2~\text{M}\Omega$	TER WITE WILL AND	N/A
ek whitek whitek w hitek wh	- live parts and body for reinforced insulation \geqslant $7~\text{M}\Omega$	>100ΜΩ	White White
	- input circuits and output circuits for basic insulation $\geqslant 2~M\Omega$	LIEK SLIEK WIEK	N/A
	- input circuits and output circuits for double or reinforced insulation $\geqslant 5~\text{M}\Omega$	>100ΜΩ	LIET PUT P
	- each input circuit and all other input circuits connected together $\geqslant 2~\text{M}\Omega$	at the the	N/A
t set	- each output circuit and all other output circuits connected together $\geqslant 2~\text{M}\Omega$	The the the	N/A

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21/2	IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdic	
ALEK .	- hazardous live parts and metal parts with basic insulation (Class II transformers) $\geqslant 2~M\Omega$	White white white	N/A	
ani an Tek ati	- conductive parts of class II transformers which are separated from hazardous-live parts by basic insulation only, and the body $\geq 5~\text{M}\Omega$	nite mult made on	N/A	
et set	- metal foil in contact with inner and outer surfaces of insulating enclosures $\geqslant 7~\text{M}\Omega$	>100ΜΩ	Р	
18.3	Electric strength test (1 min): no flashover or breakdown:	Murr Aug Aug	P	
21/2 21	Overvoltage category	Hatter with white	U. A.b.	
INLIEK WIN	functional insulation; working voltage (V); test voltage (V)	TEX THEY WHEN IN	N/A	
TEK INTER	basic insulation; working voltage (V); test voltage (V)	(see table 18.3)	E FEL P	
t Jet	3) supplementary insulation; working voltage (V); test voltage (V)	and any an	N/A	
711	4) double or reinforced insulation	(see table 18.3)	Р	
WALTER WA	5) Functional insulation for windings intended to be connected in series or parallel (test voltage = working voltage + 500 V)	JULIER WILLER WILLER W	N/A	
18.3.1	A partial discharge test according to IEC 60664-1, (see test description below) shall be performed, if FIW wires or TIW wires are used and if the recurring peak working voltage Ut across the insulation is greater than 750 V. The relevant recurring peak voltage is the maximum measured voltage between the input and the output circuit, if the secondary side is earthed. The measuring shall be done at 1,0 of the maximum rated input voltage.	white white white	N/A	
18.3.1.101	For transformers incorporated in an SMPS in accordance with Annex BB, a partial discharge type test in accordance with Annex AA shall be performed	HITE WHITE WIFE WALL	N/A	
18.4	Does not apply (IEC 61558-2-16:2021)		J+ - A	
18.101	SMPS shall fulfil the impulse dielectric test in accordance with Annex R of IEC 61558-1:2017	WHITE WHITE WHITE	Aur b	
	After the test of 18.3, the SMPS shall be connected to the impulse test equipment. The impulse dielectric test shall be carried out in accordance with Annex R of IEC 61558-1:2017 between the input and output terminals of the SMPS. The interval between the impulses shall be at least 1 s if the impulses are produced inside the SMPS.	untitle untitle untitle unt	NITE WIN PER	
WINTLE A	During the test, there shall be no breakdown of the insulation between turns of a winding, between input and output circuits, between adjacent input or output circuits, or between the windings and any conductive core	while while while	WINTER WINTER	

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JIER MITE	White Mur Mur Mu	IEC 61558-2-16	ER THE LIER SLIFE	MITERWALT
Clause	Requirement + Test	A CHIEF WHIT WAS	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
18.5	Touch current and protective earthing conducto	r current	Р
18.5.1	General	at at let de	Р
18.5.2	Touch current	week many many many	Р
iret whire	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 10. Measuring network according Figure J.1 (Annex J). If the frequency is >30kHz, measuring across the 500 ohm resistor of J.1 (burn effects).	TEX WHITEK WHITEK WHITEK	P
NITEK UNI	Measurement of the touch current with switch p in both positions and in combination with switches e and n. The measured values are less than the required values of table 15.	Under normal condition: Max. 0.09mA (to output terminals) Max. 0.01 (to accessible enclosure)	P
L st	switches n and e in on position	'u' 'u' '	Р
	switch n: off and switch e: on	LIER WILL WILL M	Р
J. St.	switch n: on and switch e: off	4, 2 × ×	P
18.5.3	Protective earthing conductor current	OLITER WALL WALL WALL	N/A
CH TE	The transformer is connected as in clause 14 Impedance of the ammeter < 0,5 ohm, connected between earthing terminal of the transformer and protective earthing conductor	at a fet	N/A
- Th	The measured values are less than the required values of table 15.	White mer mer a	N/A
19	CONSTRUCTION	CLIEF WILL MILL MY	NP.
19.1	General construction	70 T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Р
19.1.1	General	ALTER MALTER MALTER WALL	Р
19.1.2	Auto-transformers	No auto-transformers	N/A
19.1.2.1	Plug connected auto-transformers where the rated input voltage is higher than the rated output voltage, shall not have any potential to protective earthing at the output socket higher than the rated output voltage.	No polarised input	N/A
19.1.2.2	Polarised input and output plug and socket-outlet system: an instruction shall be given for not using such a transformer with a nonpolarized plug and socket-outlet system.	MATER MATER MATER MATER	N/A
19.1.2.3	A polarity detecting device only energises the output in the case: output potential to earth ≤ rated output voltage, also with reversed input plug.	lest with while and	N/A
, jt	- The contact separation of the device is ≥ 3mm	70. 22.	N/A
WILL	- A current to earth does not exceed 0,75 mA.	THE SITE OF SE	N/A

	IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdic	
MILIER M	- All tests are repeated under fault conditions of H.3.3. The potential to earth does not exceed 1,1 times the max output voltage for more than 5 s.	Milet Milet Milet	N/A	
et get	 for class I transformers, the insulation between the input / output winding and the body shall consist of at least basic insulation (rated for the working voltage) 	TEK WALTER WALTER WAL	N/A	
MULIER	 for class II transformers, the insulation between the input / output winding and the body shall consist of double or reinforced insulation (rated for the working voltage). 	Junice milet unices.	N/A	
19.1.3	Separating transformers	20 2	P	
19.1.3.1	Input and output circuits electrically separated.	LITER WITE WALL W	Р	
19.1.3.2	The insulation between input and output winding(s) consist of basic insulation	et with with and	P	
الحرير الم	Class I transformer	40. 40.	- A	
Mer	Insulation between input windings and body consist of basic insulation	White white white	N/A	
WALTER W	Insulation between output windings and body consist of basic insulation	MILER WHIER WHIER	N/A	
JEK J	Class II transformer	A OF A	P	
et de	Insulation between input windings and body consist of double or reinforced insulation	- I M. M.	N/A	
- 24 Mr.	Insulation between output windings and body consist of double or reinforced insulation	murit muri muri	Р	
19.1.3.3	The insulation between input windings and intermediate conductive parts and the output windings and intermediate part consist of basic insulation	White white white	N/A	
TEK WILT	For class I transformer the insulation between input and output windings via the intermediate conductive parts consist of basic insulation	LEK MUTEK MUTEK MUT	N/A	
WALTER W	For class II transformer 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.	Whilek whilek whilek	P	
19.1.3.4	Parts of output circuits may be connected to protective earthing	Light night might an	N/A	
19.1.3.5	No direct contact between output circuits and the body, unless:	et let let si	N/A	
- JEF	Allowed for associated transformers by the relevant equipment standard	Mr. All Tex	N/A	
19.1.4	Isolating transformers and safety isolating transformers	MULT MULT MULT	WP	

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Clause	Requirement + Test	Result - Remark	Verdict
19.1.4.1	Input and output circuits electrically separated	WALL MALE MALLE MALL	Р
MALTEK WA	No possibility of any connection between these circuits	NITER MILER WHITER WHITE	on P
19.1.4.2	The insulation between input and output winding(s) consist of double or reinforced insulation (exception see 19.1.4.4)	TEX WHITEK WHITEK	P
WALTER	Class I transformers not intended for connection to the mains by a plug:	WALLER WATER WATER WA	N/A
WALTER VI	- Insulation between input windings and body connected to earth consist of basic insulation (rated for the input voltage)	WATER WAITER WATER WAITE	N/A
iek iek	Insulation between output windings and body, connected to earth consist of basic insulation rated (rated for the output voltage)	STEE WILLE WILLE WILLE	N/A
71/2	Class I transformers intended for connection to the mains by a plug:	THAT WILL WAS W	N/A
MUL.	Insulation between input windings and body connected to earth consist of basic insulation (rated to the working voltage)	White white white whi	N/A
ur ur	Insulation between output windings and body, connected to earth consist of supplementary insulation (rated for the working voltage)	inter while while while the street	N/A
4 4	Class II transformers		Р
WEX	- Insulation between input windings and body consist of double or reinforced insulation (rated for the input voltage)	white white wh	Р
while whi	Insulation between output windings and body consist of double or reinforced insulation (rated for the output voltage)	white whit will will	P
19.1.4.3	For transformers with intermediate conductive parts not connected to the body (between input/output):	Iron core was considered as primary circuit	N/A
19.1.4.3.1	For class I and class II transformers the insulation between input and output windings, via intermediate conductive parts, consist of double or reinforced insulation (rated for the working voltage)	MULTER MULTER MULTER MULTER	N/A
unitek unit Lifek unit Ek lifek	- For class II transformers 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 for the input voltage and output voltage), for SELV circuits only basic insulation is required.	UNITER WHITER WHITER WHITER	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
write was	- For transformers, different from independent, the insulation between input and output windings, via intermediate conductive parts, consist of double or reinforced insulation (rated for the working voltage)	Whitek whitek whitek	N/A
19.1.4.3.2	Class I transformers with earthed core, and not allowed for class II equipment	the write mill man a	N/A
UNL .	Insulation between the input winding and the earthed core: basic insulation rated for the input voltage	White white white whi	N/A
MITER WILL	Insulation between the output winding and the earthed core: basic insulation rated for the output voltage	and with any one of	N/A
19.1.4.3.3	Insulation between: input and intermediate conductive parts, and output and intermediate parts consist of at least basic insulation	ex unitex multex unitex on	TEL P
WILLER V	If the insulation from input or output to the intermediate metal part is less than basic insulation, the part is considered to be connected to input or output.	Iron core was considered as primary circuit	PTE WALTE
19.1.4.4	For class I transformers, with protective screen, not connected to the mains by a plug the following conditions comply:	mere unit was war	N/A
EX WITEX	- The insulation between input winding and protective screen consist of basic insulation (rated for the input voltage)	The mile while wh	N/A
WILLIEK W	- The insulation between output winding and protective screen consist of basic insulation (rated for the output voltage)	WALTER WALTER WALTER	N/A
INLTER WAL	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	NITER WAITER WALTER	N/A
X WILLEX	- Where the protective screen does not cover the entire width of the input winding, additional insulation to ensure double insulation in this area, is used.	THE WALLE WALLE WALLE WALLE	N/A
MILIEK W	- If the protective screen is made by a foil, the turns are isolated, overlap at least 3 mm	Tet stet stet stet	N/A
LIFE WALL	The cross-section of the screen and the lead out wire is at least corresponding to the rated current of the overload protective device	TIER WILER WILER	N/A
EX WALTER	- The lead out wire is soldered or fixed to the protective screen.	et stiet street springer	N/A
WILLER	For transformers for connection to the mains by the means of a plug of any type (incorporating or not), the alternative with basic insulation plus protective screening is not allowed.	Whitek whitek whitek white	N/A

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I NICTO	IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict	
19.1.4.5	No connection between output circuit and protective earth, except of associated transformers (allowed by equipment standard) or 19.8 is fulfilled.	While white white	N/A	
19.1.4.6	No connection between output circuit and body, except of associated transformers (allowed by equipment standard) or when 19.8 is fulfilled.	TEX UNITER WAITER WAY	N/A	
19.1.4.7	The distance between input and output terminals for the connection of external wiring is ≥ 25 mm	t street sources source	F PIT	
19.1.4.8	Portable transformers having an rated output ≤ 630 VA shall be class II.	Tet Tet Tet	MITTER PER	
19.1.4.9	No connection between output circuit and body except of associated transformers (allowed by equipment standard)	und will write an	P	
19.1.4.10	Protective screening is not allowed for transformers with plug connection to the mains	et alter niter and	N/A	
19.2	Flammability of materials	4, 4,	Р	
Whi.	Materials known to be highly flammable, such as celluloid, shall not be used in the construction of transformers.	White White White	unti uP	
mere m	Cotton, silk, paper and similar fibrous material shall not be used as insulation, unless impregnated.	UNITED WATER WAITER	n' MP	
ALTER WALT	Wax and similar impregnators shall not be used, unless suitably restrained from migration	ret Milier wh	TEL WITED	
EK WALTER	Wood, even if impregnated, shall not be used as supplementary or reinforced insulation	The State out	N/A	
19.3	Short-circuit characteristics of portable transformers	201 101 2	Р	
"West 1	Portable transformer: short-circuit proof or fail-safe	LIER SLIER MILE	unit UP	
19.4	Class II transformer contact prevention of accessible	conductive parts	A P	
itek antik	There shall be provisions to prevent contact between accessible conductive parts and conduits or metal sheaths of supply wiring for class II transformers.	NITER WHITE WHITE W	nick willist wi	
19.5	Class II transformer insulation reassembling after se	rvice	N/A	
WALTER W	Parts of class II transformers serving as supplementary insulation or reinforced insulation which might be omitted during reassembly after servicing, shall either:	WILL MILL MILLS	N/A	
NLTEK SINL	- be fixed in such a way that they cannot be removed without being seriously damaged; or	alt alt set	N/A	
	- be so designed that they cannot be replaced in an incorrect position and that, if they are omitted, the transformer is rendered inoperable or is manifestly incomplete	at market market	N/A	
MUTIER	Sleeving may, however, be used as supplementary insulation on internal wiring, if it is retained in position by positive means.	MULTER WALTER	N/A	

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Clause	Requirement + Test	Result - Remark	Verdict
19.6	Loosening of wires, screws or similar parts	Marie Marie Marie	Р
uniter w	Class I and II transformers: creepage distances and clearances over supplementary or reinforced insulation if wire, screw, nut, etc. become loose or fall out of position not less than 50% specified values (Cl. 26)	nutek whitek whitek whitek	MILITER WA
19.7	Resistor or capacitor connection with accessible con	nductive parts	N/A
Whitek 4	Conductive parts connected to accessible metal parts by resistors or capacitors shall be separated from hazardous live parts by double or reinforced insulation	No such parts	N/A
19.8	Bridging of separated conductive parts by resistors	or capacitors	Р
TEK WILTE	Resistors or capacitors connected between hazardous live parts and the body (accessible metal parts) consist of:	ter street writer writer	P
k CLIEK	- components according to IEC 60 065, 14.2 or capacitor Y2 according to IEC 60 384-14	the set set was	N/A
Set.	- at least two separate components	Certified Y-capacitor according to IEC 60384-14	Р
TEK T	- if one component is short-circuited or opened, values specified in Cl. 9 shall not be exceeded	WILL MULL MAL WALL	N/A
	- if the working voltage is ≤ 250 V, one Y1 capacitor according 60384-14 is allowed	The function white	N/A
	- For a working voltage above 250 V AC and not exceeding 500 V AC and an overvoltage category III, two Y1 capacitors are required.	White white white w	N/A
19.9	Insulating material separating input and output wind	lings	N/A
Wriek W	Insulation material input/output and supplementary insulation of rubber resistant to ageing	THE MITE MILIER WAITER	N/A
TEK MIT	Creepage distances (if cracks) > specified values (Cl. 26)	the lift with mitter	N/A
19.10	Accidental contact protection against hazardous-live coating	e-parts provided by isolating	N/A
-TEX	Protection against accidental contact by insulating coating:	and who are a	N/A
Mr. 1	a) ageing test (IEC 60068-2-14),b) test Na: 168 h; 70± 2°C	antit unti unti unti	N/A
14 16 15 10	c) impact test (spring-operated impact hammer according to IEC 60 068-2-75; 0,5 ± 0,05 J)	til muit muit muit	N/A
Mer	d) scratch test (hardened steel pin) electric strength test according to Cl. 18.3	THE MALLE WALLE WALLE W	N/A
19.11	Insulating material of handles, operating levers, kno	bs and similar parts	N/A
	Handles, levers, knobs, etc.:	The 20 20 20	N/A

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	MUL	C	
, <u>, , , , , , , , , , , , , , , , , , </u>	rur ,	Verd	lict

100	IEC 61558-2-16	the the time the	They are
Clause	Requirement + Test	Result - Remark	Verdict
VILLE .	- insulating material	CLIER WITER WITER	N/A
LET	- supplementary insulation covering	The state of	N/A
ingr. In	separated from shafts or fixing by supplementary insulation	Will mill mill my	N/A
19.12	Winding construction	LIET WILLER WALLER	P
19.12.1	Undue displacement in all types of transformers not allowed:	t wifet miret whilest	unit Pitt
, et	- of input or output windings or turns thereof	10 A A	P
2112 2	- of internal wiring or wires for external connection	WALTE WALTE WALL W	N. M.B
urie au	of parts of windings or of internal wiring in case of rupture or loosening	LIE WALTER WALTER WAS	P
19.12.2	Serrated tape:	Et JET JET JE	N/A
t lifet	- distance through insulation according to table 22	and the state	N/A
21,	- one additional layer of serrated tape, and	mure me me	N/A
ALTER O	- one additional layer without serration	et et set set	N/A
en v	in case of cheekless bobbins the end turns of each layer shall be prevented from being displaced	THE WITH THE SHIP	N/A
19.12.3	Insulated winding wires, in an insulation system providing basic, supplementary or reinforced insulation, shall meet the following requirements.	Approved TIW used	WALLET WALL
	Multi-layer extruded or spirally wrapped insulation, passed the tests of annex K	THE THE STATE	NITE - PIE
SLIEK IN	Basic insulation: two wrapped or one extruded wire	at the text	N/A
all d	Supplementary insulation: two layers, wrapped or extruded		N/A
ik "Eik	Reinforced insulation: three layers wrapped or extruded	ANT WILL AND	P
Me	Spirally wrapped insulation:	MILE WILL WALL	N/A
MULTER IN	 creepage distances between wrapped layers > cl. 26 _ P1 values 	LIER SLIER SLIER M	N/A
	path between wrapped layers sealed, the test voltage of K2 is multiplied with 1,35	all the step st	N/A
4 2	test 26.2.4 – Test A, passed for wrapped layers	in the man	N/A
MULIE	the finished component pass routine test for the electric strength test according to cl. 18.3	ex writer militer writer	N/A
a)	Insulated winding wire used for basic or supplementary insulation in a wound part:	ALTER MILIER MATER	N/A

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IEC 61558-2-16				
Clause	Requirement + Test	Result - Remark	Verdict	
ner.	comply with annex K	white white white	N/A	
aliek 1	two layers for supplementary insulation	at let let	N/A	
3)	one layer for basic insulation	weit me me me	N/A	
EX MUTER	one layer for mechanical separation between the insulated wires of primary and secondary. This layer fulfils the requirement of basic insulation.	LIET WHITEK WHITE WHITE	N/A	
b)	Insulated winding wire used for reinforced insulation in a wound part:	Approved TIW used	P	
20,	comply with annex K	and any and	Р	
NITE OF	three layers	TEX LIET SLIFE MI	JILL P	
ه بار	relevant dielectric strength test of 18.3		P	
in min	Where the insulated winding wire is wound:	TEK OLIFE MITE MILE	un Bu	
- 15	upon metal or ferrite cores	W 2	+ P	
me	upon enamelled wire	White Mail Wall	In P	
All the	under enamelled wire	* * * * * * * * * * * * * * * * * * * *	P.	
nur a	one layer for mechanical separation between the insulated wires and the core or the enamelled wires is required. This layer fulfils the requirement of basic insulation.	white whit whi wh	W P	
ek white	both windings shall not touch each other and also not the core.	is the writer while	uni FE P. C	
- Let	100 % routine test of Annex K3 is fulfilled	A SH SH	N/A	
Mr.	no creepage distances and clearances for insulated winding wires	White white war w	P WP	
c)	Toroidal cores used with TIW wires for double or reinforced insulation between the primary and secondary circuits shall comply with the following:	ALTER MALTER MATE MAI	N/A	
* "E*	a coating which fulfils the requirements of basic insulation between a winding and the core	and and and	N/A	
MUTER A	2) The primary winding consists of TIW wire with 3 layers (reinforced insulation) and the secondary winding consists of enamelled wire. These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfil the dielectric strength tests for basic insulation.	MALTER MALTER MALTER WA	N/A	

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IEC 61558-2-16			24 14
Clause	Requirement + Test	Result - Remark	Verdic
whitek ou	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding consists of TIW wire with 3 layers and the secondary winding consists of a TIW wire with 1 layer (requirements for primary and secondary windings can be changed). This construction also is allowed for use with EEcores or similar.	White white white was	N/A
d)	Toroidal cores used with FIW wires for double or reinforced insulation between the primary and secondary circuits shall comply with the following:	White white white	N/A
TEK	a coating, which fulfil the requirements of basic insulation.	un un un	N/A
SEK WILLEK	2) The primary winding consists of FIW wire for reinforced insulation and the secondary winding consist of FIW wire – of basic insulation. These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfil the dielectric strength test for basic insulation.	et united united unit	N/A
MULTER WAS	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding and the secondary winding consist of FIW wire for reinforced insulation. This construction also is allowed to use for EEcore or similar.	INLIER MILIER WHILER	N/A
e) which	Toroidal cores used with TIW in combination with FIW wire, for double or reinforced insulation between the primary and secondary circuits shall comply with the following:	MILIER WILLER WHILE	N/A
	a coating, which fulfils the requirements of basic insulation.	Tet Itel State	N/A
TEK WALT K WALTEK	2) The primary winding consists of FIW wire for reinforced insulation, and the secondary winding consists of TIW wire for basic insulation (1 layer). These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfil the dielectric strength tests for basic insulation.	TEX WHITEX WHITEX WHITE	N/A
LIET WA	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding consists of TIW wire for reinforced insulation (3 layer) and the secondary winding consists of FIW wire for reinforced insulation. This construction also is allowed for use with EE-cores or similar.	TEX MUTER MUTER MUTE	N/A

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IEC 61558-2-16				
Clause	Requirement + Test	Result - Remark	Verdict	
f)	Toroidal cores used with TIW in combination with FIW wire, for basic insulation between the primary and secondary circuits shall comply with the following:	while while while	N/A	
	a coating, which fulfils the requirements of basic insulation	JEK WILLER WILLER ON	N/A	
et whitet	2) The primary winding consists of FIW wire for basic insulation, and the secondary winding consists of TIW wire for basic insulation (1 layer). These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfils the dielectric strength tests for basic insulation.	dintifek mittek mittek	N/A	
rek unite Kunitek	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding consists of TIW wire for supplementary insulation (2 layers) and the secondary winding consists of FIW wire for basic insulation. This construction also is allowed for use with EE-cores or similar.	EX WHITEX WHITEX WHITE	N/A	
	 4) Further polyfilar constructions with FIW and TIW wires in combination with enamelled wires for basic insulation only: 4.1) Primary winding consists of enamelled wire, secondary winding consists of FIW wire for reinforced insulation 	unifek whitek whitek w	N/A	
	4.2) Primary winding consists of enamelled wire, secondary winding consists of TIW wire for reinforced insulation	white mit with	TE TEN	
19.12.3.1	Max. class F for transformers which use FIW-wire	write with with	N/A	
19.12.3.2	FIW wires comply with IEC 60851-5:2008, IEC 60317-0-7 and IEC 60317-56.	NITER MILIER MAILER W	N/A	
TEK WALTE	other nominal diameter as mentioned in table 24 can be calculated with the Formula (6) in 26.3.5:	LEK MUTER MUTER MU	N/A	
WALTE	FIW wire used for basic or supplementary insulation for transformers according 19.1.3:	WHITEK WHITEK WHITE	MULL MALL	
White W	the test voltage of table 14, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 24	Whitek whitek whitek	N/A	
	one layer for mechanical separation is located between the insulated wires of primary and secondary. This layer fulfil the requirement of basic insulation	et muret muret mur	N/A	
WALLE .	between FIW and enamelled wire, no requirements of creepage distances and clearances	WALTER WALTER WALTER	N/A	

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Clause	Requirement + Test	Result - Remark	Verdict	
An Ca	no touch of FIW and enamelled wires	white white	N/A	
WALTER W	FIW wire used for double or reinforced insulation for transformers according 19.1.4:	NLIER WALLER WALLER WA	TEF WHITE V	
itek mitek	the test voltage of table 14, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 24	TEX MUTER MUTER MUTE	N/A	
- TEX	for primary and secondary winding FIW-wire for basic insulation is used	mus me m	N/A	
NUTER OL	one layer for mechanical separation is located between the insulated wires of primary and secondary. This layer fulfil the requirement of basic insulation	white white white whi	N/A	
ITEK WALT	no touch between the basic insulated PRI and SEC FIW-wires	Et Nifet Mifet Milited	N/A	
# WALTER	between PRI- and SEC-FIW wires, no requirements of creepage distances and clearances	MULTER MILIER MILIER	N/A	
WALTER O	Alternative construction used for reinforced insulation (reinforced insulated FIW wire and enamelled wire)	JULIER WHITER WHITER WA	N/A	
nis un	the test voltage of table 14, based on the working voltage reinforced insulation, comply with the min. voltage strength of table 24	mile unit	N/A	
MULIER	one layer for mechanical separation is located between the reinforced insulated FIW wire and the enamelled wire. This layer fulfil the requirement of basic insulation	MUTER MUTER MUTER	N/A	
Writer M	no touch between the FIW wire and the enamelled wire	NITER JUNITER WASTER WAS	N/A	
TEK WAY	between the reinforced FIW wire and any other parts, no requirements of creepage distances and clearances exist	LEK WHITEK WHITEK WHITE	N/A	
MULTER	Alternative construction with FIW wires, basic or supplementary insulated for transformers with double or reinforced insulation:	unifer unifer unifer	N/A	
Whitek Miles	the test voltage of table 14, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 24		N/A	
TEK WALTE	PRI or SEC basic insulated FIW wire and to the other winding (enamelled wire) requirements of supplementary insulation	ex writex writer writer	N/A	

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IEC 61558-2-16				
Clause	Requirement + Test	Result - Remark	Verdict	
onliek on	creepage distances and clearances between the basic insulated FIW wire and the enamelled wire for basic or supplementary insulation are required.	Whitek whitek whitek white	N/A	
LIER MI	Where the FIW wire is wound	THE THE STEE STEE	N/A	
	upon metal or ferrite cores	when my m	N/A	
White!	one layer for mechanical separation between the insulated wires and the core or the enamelled wires is required. This layer fulfils the requirement of basic insulation.	MULTER WHITER WALTER WA	N/A	
NITEK N	both windings shall not touch each other and also not the core.	self telf little slitel	N/A	
19.13	Fixing of handles, operating levers and similar parts	ing my my my	N/A	
ie wriek	Handles, operating levers and similar parts shall be fixed in a reliable manner so that they will not become loose as a result of heating, vibration, etc. which may occur in normal use.	et unifer unifer unifer.	N/A	
19.14	Fixing of covers providing protection against electric	shock	P	
White a	Protection against electric shock: covers securely fixed, 2 independent fixing means, one with tool	Enclosure secured by ultrasonic welding	Р	
19.15	Strain on fixed socket-outlets caused by pin-transfor	mers connection	N/A	
ek Jul	Transformer with pins for fixed socket-outlets: no strain on socket-outlet	The late	N/A	
-2,	Additional torque ≤ 0,25 Nm	any my my	N/A	
19.16	Portable transformers for use in irregular or harsh co	onditions	P	
An .	Portable transformers for use in irregular or harsh conditions	white many with the	Р	
iner on t	Portable transformers having a weight not exceeding 18 kg shall have a protection index IPX4 or higher.	IP20 for indoor use only.	Р	
19.17	Drain hole of transformers protected against ingress	of water	N/A	
WALTER	Transformers having a protection index from IPX1 up to and including IPX6 shall have an effective drain hole at least 5 mm in diameter or 20 mm ² in area, with a width of at least 3 mm.	while while while w	N/A	
ALTEX VAL	The drain hole is not required if the transformer, including its windings and core and all uninsulated live parts, are completely embedded in a potting material.	TEE WILE MULTER	N/A	
19.18	Plug connected transformers protected against ingre	ess of water	N/A	
- TEX	Transformers classified for a protection index higher than IPX1 and having a cord provided with a plug; it shall be a moulded-on plug.	MUNITURE WILL WILL A	N/A	
19.19	Flexible cable or flexible cord connection for class I	portable transformers	N/A	

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdic
WALTER VI	Class I transformers with a non-detachable flexible cable or cord with earth conductor and a plug with earth contact	White white with w	N/A
19.20	SELV- and PELV-circuit separation of live parts	in the same	Р
EK TER	Live parts of SELV- and PELV-circuits shall be electrically separated from each other and from other circuits	TER WILLER WILLER	ME PAN
MILIER	- SELV output circuits separated by double or reinforced insulation from all other than SELV or PELV circuits	AND AND AND A	P NALTER
LIEK (- SELV output circuits separated by basic insulation from other SELV or PELV circuits	at alt ist is	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	et riset with white	P
+ WALTER	Nominal voltage (V) > 25 V a.c. or 60 V d.c., the required insulation fulfils the high voltage test according to table 14	White white white	ALT WALTE
19.20.2	PELV-circuits double or reinforced insulation is necessary	THE NATES WHITES WAS	N/A
19.21	Protection against contact for FELV-circuit		N/A
	FELV-circuits: protection against contact fulfils the min. test voltage required for the primary circuit	The state of the s	N/A
19.22	Protective earthing regarding class II transformers	er life nith mit	ni Pri
WLTEK.	Class II transformers shall not be provided with means for protective earth	Tet Tet Tet o	LIE NITE
	A class II transformer intended for looping-in may have an internal terminal for maintaining the electrical continuity of a protective earthing conductor not terminating in the transformer, provided that the terminal is insulated from the accessible conductive parts by class II insulation.	MALE WALTER WALTER WALTER	N/A
19.23	Protective earthing regarding class III transformers	. It is	N/A
W.F.	Class III transformers shall not be provided with means for protective earth	Multip Multip Multi	N/A
20	COMPONENTS	LITER OLITER WITE MA	ALIA P
20.1	Components such as switches, plugs, fuses, lamp holders, capacitor and flexible cables and cords, comply with relevant IEC standard	See appended Critical Component list.	Y WILLER
IEK WALTE	Components inside the transformer pass all tests of this standard together with the transformer tests	ex priex writer arriter	WALL AND
MLIEK	Testing of components separately to the transformer according the relevant standard:	TEL SEL STEL	LIFE PIE

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IEC 61558-2-16				
Clause	Requirement + Test	Result - Remark	Verdic	
MILITER OF	- Ratings of the component in line with the transformer ratings, including inrush current. Component test according the component standard, based on the component marking (rating).	white white white white.	N/A	
	- Components without markings tested under transformer conditions including inrush current.	ite white mit mit w	Р	
MUTER	If no IEC standard exists, the component is tested under transformer conditions.	Components complied with IEC or UL. Components which comply with UL standard only are tested additionally under transformer conditions.	PIL	
20.2	Appliance couplers for main supply shall comply with:	STEE WHITEK WHITE WHITE	N/A	
	- IEC 60 320 for IPX0	et jet jet litet i	N/A	
70	- IEC 60320-2-3 or IEC 60309 for other	mur mr. m. m.	N/A	
20.3	Automatic controls shall comply with IEC 60730-1	- THE THE LITTER OLLY	N/A	
20.4	Thermal-links comply with IEC 60691	Mr. Mr. Mr.	N/A	
20.5	Switches shall comply with annex F	No switch	N/A	
2,	Disconnection from the supply:	14. 24. 24. 24. 24. 24. 24. 24. 24. 24. 2	N/A	
NITE WAS	by a switch, disconnecting all poles of the supply (full disconnection under the relevant overvoltage category)	THE WALLE WALLE	N/A	
24	- or a flexible supply cable and cord with plug	antil mit mit me	N/A	
WALTEK.	or an instruction sheet: disconnection by all- poles switches incorporated in fixed wiring	TIPE MITTER WATER	N/A	
20.6	Socket-outlets of the output circuit shall be such that there is no unsafe compatibility to plugs complying with input circuit.	NIFEK WALLER WALLER	N/A	
LIEK WAL	SELV plug and socket-outlets shall comply with IEC 60 884-2-4 and IEC 60 906-3	FER INCIDER WALTER ON	N/A	
H WALTER	Plugs and socket-outlets for SELV systems with both a rated current ≤3A and a rated voltage ≤ 24 VAC or 60VDC with a power not exceeding 72W are allowed to comply only with following:	MULTER WALTER WALTER WALT	N/A	
74 7 14 7	- It is not possible for plugs to enter socket- outlets of other standardised voltage system	anti anti anti anti	N/A	
	- Socket outlets do not accommodate plugs of other standardised voltage systems	LIFE WALLE WALLE WALLE	N/A	
TER WILLE	- Socket outlets do not have a protective earth contact	White white white and	N/A	
	PELV plug and socket-outlets shall comply with following:	Milet Whilek Whilek While	N/A	

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Clause	Requirement + Test	Result - Remark	Verdic
TEX.	It is not possible for plugs to enter socket- outlets of other standardised voltage system	White white white	N/A
an an	Socket outlets do not accommodate plugs of other standardised voltage systems	nite unite unit v	N/A
in we	- Socket outlets do not have a protective earth contact	TER WITER MITTER MU	N/A
er white	FELV plug and socket-outlets shall comply with following:	t whilek whilek while	N/A
WALTER	It is not possible for plugs to enter socket- outlets of other standardised voltage system	NITEX MALTEX MALTER	N/A
INLIEN VIN	 Socket outlets do not accommodate plugs of other standardised voltage systems 	TEX STEX NUTER OF	N/A
20.7	Thermal cut-outs, thermal links, overload relays, fuses and other overload protective devices shall have adequate breaking capacity	Ex Multex Multex Mult	Et VIII
y Whitek	- Thermal cut outs fulfil the relevant requirements of 20.8 and 20.9	THE WIFE WIFE	N/A
MLTEK N	- Thermal links fulfil the relevant requirements of 20.9	THE STATE STATES	N/A
CER S	- The breaking capacity is in accordance with the relevant fuse standard	of the sure of the	TEK TEEP
EK MUTE	For fuses according IEC 60127 and IEC 60269, the fuse current does not exceed 1,1 times of the rated value	The state and	P
20.8	Thermal cut outs shall meet the requirements of 20.8.1.1 and 20.8.2, or 20.8.1.2 and 20.8.2.	THE TEX LIES	N/A
20.8.1	Requirements according to IEC 60730-1	me me m	N/A
20.8.1.1	Thermal cut-out tested as component shall comply with IEC 60 730-1	NITER WHITER WALTER W	N/A
ITEK WALT	a) Thermal cut outs type 1 or type 2 (see 6.4 of IEC 60730-1:2013)	TEX MITEX MULTER WAY	N/A
	b) Thermal cut outs fulfil the requirements of micro-interruption (type 1.C or 2.C) or micro-disconnection, (type 1.B or 2.B)c) (see IEC 60730-1:2013)	while while while	N/A
NITER WITE	d) Thermal cut outs with manual rest have a trip free mechanism (type 1.E and 2.E) e) (see IEC 60730-1:2013)	unit while while	N/A
TEK MITE	f) The number of cycles of automatic action shall be:	et let let et	N/A
· · · ·	- 3000 cycles for self-resetting thermal cut-outs	Mrs. Mrs. Mr	N/A
white.	- 300 cycles for non-self-resetting thermal cut- outs resetting by hand	UNITER WALTER WAITER	N/A

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	IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict	
March .	- 300 cycles for non-self-resetting thermal cut- outs resetting disconnecting	White white white w	N/A	
aris m	- 30 cycles for non-self-resetting thermal cut-outs which are only resettable by a tool	ALTER WALTER WALTER WALTER	N/A	
The Muni	g) Thermal cut outs fulfil the electrical stress according 6.14.2 of IEC 60730-1:2013	TEX WILLES WILLES WILLES	N/A	
ek nije	h) Characteristic of thermal cut-outs:	t let let liet	N/A	
~ ~	- ratings according IEC 60730-1:2013, cl. 5	my my	N/A	
MITE .	- classification according to:	THE THE NUTER ON	N/A	
	1) nature of supply to IEC 60730-1:2013, cl. 6.1	an an	N/A	
INLIE VIN	2) type of load controlled to IEC 60730-1:2013, cl. 6.2	STEE WHITE WALTE WALTE	N/A	
TER WALTE	3) degree of protection IPX0 to IEC 60730- 1:2013, cl. 6.5.1	EL MILIER MILIER MILIER	N/A	
y White	4) degree of protection IP0X to IEC 60730- 1:2013, cl. 6.5.2	nitet unitet unitet u	N/A	
Let.	5) pollution degree to IEC 60730-1:2013, cl. 6.5.3	1 x 1 x 1 x	N/A	
ant a	6) comparative tracking index to IEC 60730- 1:2013, cl. 6.13	unite white white whi	N/A	
VIII MUT	7) max. ambient temperature to IEC 60730- 1:2013, cl. 6.7	THE WALLE WALLE	N/A	
20.8.1.2	Thermal cut-out tested as a part of the transformer, test with 3 samples:	MALTE WALLES WALTER	N/A	
WALTER.	- at least micro-interruption or micro-disconnection (IEC 60730-1:2013)	NIEK WILEK MITEK WI	N/A	
Let.	- 300 h aged at ta (transformer) + 10°C		N/A	
Mur Mu	- subjected to a number of cycles for automatic operating according 20.8.1.1	ALTE WALL WALL WALL	N/A	
ek whilek	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	SEK WALTER WALTER WALTER	N/A	
20.8.2	Thermal cut-outs shall have adequate breaking capacity	let let let of	N/A	
20.8.2.1	The output of the transformer with a non-self-resetting 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.	and whilet while while The water while The text text	N/A	
10,	- 3 cycles at 25° C for transformers without t _{amin}	Mur Aug Mus	N/A	
F Cler	- 3 cycles at t _{amin} for transformers with t _{amin}	at at at	N/A	

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdic
WALLEY.	- after the 3 cycles short circuit of the output at 1,1 of rated supply voltage for 48 h.	White white white	N/A
oner oner	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 operational.	Net Mariet Mariet Mari	N/A
20.8.2.2	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.	MUNITER WALTER WALTE	N/A
WITE .	- 48 h at 25° C for transformers without t _{amin}	TEK ITEK LITEK	N/A
	- 24 h at ta and 24 h at t _{amin} for transformers with t _{amin}	out out off	N/A
TEX WILL	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 operational.	er murer murer mur	N/A
20.8.3	Test of a PTC resistor:	- TEK STEK SITER	N/A
J. E.	5 cycles: transformer short-circuited for 48 h by 1,1 times of the input voltage and max. ta	MUT MY WITH	N/A
our or	5 cycles: transformer short-circuited for 48 h by 0,9 times of the input voltage and min. ta (if declared)	oner which was a	N/A
EK WALTE	After the test: withstand the test of clause 18, show no damage in sense of this standard, and be operational.	ALIE WILLE WILL	N/A
20.9	Thermal links shall be tested in one of the following two ways.	LIEF STEE WIEK	N/A
20.9.1	Thermal-links shall comply with IEC 60 691 as a separate component.	all the tree	N/A
	- electrical conditions to IEC 60691, cl. 6.1	in my my m	N/A
ier wit	- thermal conditions to IEC 60691, cl. 6.2	CER LIER SLIER OLD	N/A
٠,	- ratings to 8 b) of IEC 60691:2015	m n n	N/A
MULL	- suitability of sealing components, impregnating fluids or cleaning solvents 8 c) of IEC 60691:2015	White white white	N/A
20.9.2	Thermal-links tested as a part of the transformer:	antite mati mati	N/A
JEK J	- ageing test 300 h by 35 °C or ta + 10 °C	A A A	N/A
	- After transformer fault condition the thermal link operate without sustaining arcing	are mer me	N/A
. whe	- after opening the thermal-link shall have an insulation resistance of at least 0,2 $M\Omega$	MULTER WALTER WAL	N/A
alleli	- 3 cycles for replaceable thermal-links	THE STATE STATE	N/A



	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdic
Ang.	- 3 new specimens for not replaceable thermal- links	while while will while	N/A
20.10	Self-resetting devices not used if mechanical, electrical, etc. hazards		N/A
20.11	Thermal cut-outs intended to be reset by soldering operation shall not be used for overload protection.		N/A
20.12	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.		Р
21	INTERNAL WIRING	STEP STEP SOLIE WILL	Р
21.1	Internal wiring and electrical connections protected or enclosed	et set set stet wifet	P
	Wire-ways smooth and free from sharp edges	No sharp edges.	Р
21.2	Openings in sheet metal: edges rounded (radius ≥ 1,5 mm) or bushings of insulating material	EX MITES MITES WITTE WA	N/A
21.3	Uninsulated conductors: distances adequately maintained	- unifek whilek while	Р
21.4	When external wires are connected to terminal, internal wiring shall not loosen up	STEET WIFET WATER WATER	N. P.
21.5	Insulation of heat-resistant and non-hygroscopic material for insulated conductors subject to temperature rise > limiting values given in 14.1	THE WILLER WHITE	Р
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
IFEK WAL	Input and output wiring inlet and outlet openings for flexible cables or cords: insulating material or bushing of insulating material	TEX WALTER WALTER ON	Р
MULTER	Bushings for external wiring: reliably fixed, not of rubber unless part of cord guard	Bushing for output cord.	Р
22.3	Fixed transformer:	Let Tet Jet Jet	N/A
70, 1	- possible to connect after fixing	mr. mr. m. m.	N/A
VILLE AND	inside space for wires allow easy introduction and connection of conductors	LIER WATER WATER WHITE V	N/A
iek jiê	- fitting of cover without damage to conductors	at at at get .	N/A
L STEK	contact between insulation of external supply wires and live parts of different polarity not allowed	whi whi wh wh	N/A

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	IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict	
22.4	Length of power supply cord for portable transformers:	White Mile Mile M	N/A	
in in	- not exceed 2 m for cross-sectional area of 0,5 mm ²	NITE WILL WALL WAS	N/A	
in we	- exceed 2 m for cross-sectional areas greater than 0,5 mm².	THE WALTER WALTER WALTER	N/A	
22.5	Power supply cords for transformers IP20 or higher and transformers for "indoor use only" ≥ IP20:	AUDITER MULIER MULIER	N/A	
MALIER WY	- for transformers with a mass ≤ 3 kg: IEC 60227-5:2011 – type 60227 IEC 52 or ordinary tough rubber sheathed flexible cable or cords according to IEC 60245-4:2011 – type 60245 IEC 53;	united whited whited white	N/A	
TEX WHITE	- for transformers with a mass > 3 kg: IEC 60227-5:2011 – type 60227 IEC 53 or ordinary tough rubber sheathed flexible cable or cords according to IEC 60245-4:2011 – type 60245 IEC 53.	et whitet whitet whitet	N/A	
MULTER W	Power supply cords for transformers for outdoor use: ≥ IPX0: IEC 60245-4:2011 – type 60245 IEC 57	UNITER WAITER WALTER WAT	N/A	
22.6	Power supply cords for single-phase portable transformers with input current ≤ 16A:	THE MINITE	N/A	
EK WALTE	- cord set fitted with an appliance coupler in accordance with IEC 60320(all parts)	The state states	N/A	
22.7	Nominal cross-sectional area (mm²); input current (A) at rated output not less than shown in table 16	THE THE STEEL OF	P	
22.8	Class I transformer with power supply flexible cable: green/yellow core connected to earth terminal	LIFE MITER MITER MALE	N/A	
JEK WIT	Plug for single-phase transformer with input current at rated output ≤16 A shall comply with IEC TR 60083, IEC 60 906-1 or IEC 60 309(all parts)	LEK MULTER MULTER	N/A	
22.9	Type X, Y or Z attachments: see relevant part of IEC 61558-2.	For output cord: type Z	P	
22.9.1	For type Z attachment: moulding enclosure and external flexible cable or cord do not affect insulation of cable	MULTER MULTER MULTER MU	TEX PEX	
22.9.2	Inlet openings or inlet bushing: without risk of damage to protective covering of external flexible cable or cord	LIEK WILLER WILLER WILLER	N/A	
Mer	Insulation between conductor and enclosure:	antie unite unite	N/A	
- MITEK	- for Class I transformer: insulation of conductor plus separate basic insulation	Tet Itet Itet	N/A	

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdic
ANGEL -	for Class II transformer: insulation of conductor plus double or reinforced insulation	White white white	N/A
iter auri	The sheath of an external flexible cable or cord equivalent to at least that of a cord complying with IEC 60227 (all parts) or 60245 (all parts) is regarded as basic insulation.	NIE WHIE WHIE W	N/A
ek whitek	A lining or a bushing of insulating material in a metallic enclosure is only regarded as supplementary insulation	* Whitek muter white	N/A
White 1	An enclosure of insulating material is regarded as reinforced insulation	WALTER WALTER WALTER	N/A
22.9.3	Inlet bushings:	at set set	N/A
. 2,	- no damage to external flexible cable or cord	in me me in	N/A
TER INTE	- reliably fixed	et the the	N/A
, ,	- not removable without tool	me me m	N/A
MALIFE	- not integral with external flexible cable or cord (for type X attachment)	MULTER WILLER	N/A
nnliek w	 not of natural rubber except for Class I transformer with type X, Y and Z attachments 	MITER MITER MINITER	N/A
22.9.4	For transformers which are moved while operating:		N/A
ik (ilu.	- cord guards, if any, of insulating material and fixed	a Gunti wa	N/A
MUST	Compliance is tested by the oscillating test according to fig. 12:	white white white	N/A
antie.	- loaded force during the test according to fig. 12	TEN TEN STEEL	N/A
	- 10 N for a cross-sectional area > 0,75	me me m	N/A
الاي المالي	- 5 N for other cords	TER STER OUTER	N/A
	After the test according to fig. 12:	5. W. W. A.	N/A
ir mei	- no short-circuit between the conductors	THE STIFF WITH WITH	N/A
ek antiek	- no breakage of more than 10% of stands of any conductor	tet liet sie	N/A
LIEK	- no separation of the conductor from the terminal	THE THE TEXT	N/A
21, 2	- no loosening of any cord guards	MULL MULL MULL	N/A
LIFE IN	- no damage of the cord or cord guard	it let tet	N/A
	no broken strands piercing the insulation and not becoming accessible	The state of	N/A
22.9.5	Cord anchorages for type X attachment:	MALIN WALL WALL	P
WALTER.	- glands in portable transformers not used unless possibility for clamping all types and sizes of cable	White Whitek untiek	N/A

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Clause	lause Requirement + Test Result - Remark				
THE THE	- moulded-on designs, tying the cable into a knot and tying the end with string not allowed	White white white white	N/A		
me in	- labyrinths, if clearly how, permitted	ALTER WALTE WALT WALT	N/A		
de ^t d	- replacement of cable easily possible	a at at at	N/A		
* "E#	- protection against strain and twisting clearly how	the mer me of	N/A		
me	 suitable for different types of cable unless only one type of cable for transformer 	MULTER MILITER MILL WAS	N/A		
White 1	the entire flexible cable or cord with covering can be mounted into the cord anchorage	WALTER WALTER WALTER WALTER	N/A		
STEE SU	- if tightened or loosened no damage	Let Let Liet Willet	N/A		
IEH WILLE	no contact between cable or cord and accessible or electrically connected clamping screws	Et Wilet Wilet Multer	N/A		
- 164	- cord clamped by metal screw not allowed	10° 1 1 1	N/A		
mr	- one part securely fixed to transformer	" NITER WALTER WALTER WALL	N/A		
UNLIEK W	for Class I transformer: insulating material or insulated from metal parts	THE STEE STEE MITTER	N/A		
LIEN ME	for Class II transformers: insulating material or supplementary insulation from metal parts	at the lifet street	N/A		
ik white	Cord anchorages for type X, Y, Z attachments: cores of power external flexible cable or cord insulated from accessible metal parts by:	The mark matter and	N/A		
MUTER	- basic insulation (Class I transformers), separate insulating barrier/cord anchorage	THE LIFE SLIEF MITTE	N/A		
uriek au	- supplementary insulation (Class II transformers), special lining/cable or cord sheath of cable sheath of cable	SIFE WIFE WILLEY	N/A		
e* 1	Cord anchorages for type X and Y attachments:		N/A		
r 24	- replacement of external flexible cable or cord does not impair compliance with standard	The Multiply Multiply And	N/A		
MULL	the entire flexible cable or cord with covering can be mounted into the cord anchorage	White white white whi	N/A		
MITE	- if tightened or loosened no damage	TEL STEE STEEL MITE	N/A		
LIEK MY	no contact between cable or cord and accessible or electrically connected clamping screws	TER WILER MUTER MUTER	N/A		
et de	- cord clamped by metal screws not allowed	and the state of	N/A		
Me	- knots in cord not used	anite white were we	N/A		
CEX	- labyrinths, if clearly how, permitted	A ST ST ST	N/A		
Mr.	Tests for type X with special cords, type Y, type Z	Output cord are type Z for all models.	Р		

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IEC 61558-2-16				
Clause	Requirement + Test	Result - Remark	Verdic	
WILLER WI	Test for type X attachments one test with a cord with smallest and one test with a cord with the largest cross-sectional area:	White white while	P	
li ^{eje} mi	- for the test with clamping screws or tightened with torque 2/3 of that specified in table 18	at set set state	P	
	- not possible to push cable into transformer	me me	Р	
IL OLIE	- 25 pulls of 1 s	t tet tet stet w	P	
~"	- 1 min torque according to table 17	my my my	Р	
all Ite	- mass (kg); pull (N); torque (Nm)	Mass <1kg; 30N; 0.1Nm	NI CIT	
	- during test: cable not damaged	Mr. Mr. Mr. A.	Р	
VEK VILL VILL AN	- after test: longitudinal displacement ≤ 2 mm for cable or cord and ≤ 1 mm for conductors in terminals	LIFE WHITE WHITE WHITE	P	
t let	- creepage distances and clearances values specified in Cl. 26	Must All All All	Р	
22.9.6	Space for external cords or cable for fixed wiring and for type X and Y attachments:	MILL MULL MULL AND	N/A	
NUTT N	- before fitting cover, possibility to check correct connection and position of conductors	UNLIE WALLE WHILE WALL	N/A	
LIE WAL	- cover fitted without damage to supply cords	ALL MITE MITE	N/A	
ek white	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	white white white wh	N/A	
UNITEK VIL	Space for external cords or cable for type X attachment and for connection to fixed wiring, in addition:	LIET WILET WILET WILLEY	N/A	
at a	- conductor easily introduced and connected	t et	N/A	
it itek	possibility of access to terminal for external conductor after removal of covers without special purpose tool	iet onlie while while a	N/A	
23	TERMINALS FOR EXTERNAL CONDUCTORS	min min me m	N/A	
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 or equally effective devices.	Writer writer writer writer	N/A	
	Terminals are integral part of the transformer:	in my my	N/A	
iek vinlie	- comply with IEC 60 999-1 under transformer conditions	Et MITEL MILIER WALTER M	N/A	
- 15	Other terminals:	1 1 1	N/A	

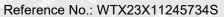
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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
WALTER WI	- separately checked according to - IEC 60 998-2-1, IEC 60 998-2-2 or - IEC 60 947-7-1	White white white	N/A
det 3	- used in accordance with their marking	1 + 3	N/A
c+ .64	- checked according to IEC 60 999-1 under transformer conditions	The mile mile and	N/A
WALTER WA	Transformer with type X attachments: soldered connection permitted if reliance not placed upon soldering, crimping or welding alone unless by barriers, creepage distances and clearances between hazardous live parts and other conductive part cannot be reduced to less than 50% of specified value (Cl.26) should conductor break away	White white white	N/A
H TEX	Transformer with type Y and Z attachments for external conductors: soldered, welded, crimped, etc. connections allowed	EX MITEX MITER WILL	N/A
Whitek w	For Class II transformer: reliance not placed upon soldering, crimping or welding alone unless by barriers, creepage distances and clearances between hazardous live parts and other conductive parts cannot be reduced to less than 50% of specified value (Cl.26) should conductor break away	White while while while white	N/A
23.2	Terminals for type X with special cords Y and Z attachments shall be suitable for their purpose:	Circ with anti	N/A
- 124	- test by inspection according to 23.1 and 23.2	70 x x	N/A
MUT.	- pull of 5 N to the connection before test according to 14.1	WHITE WHITE WHITE	N/A
23.3	Other terminals than Y and Z attachments shall be so fixed that when the clamping means is tightened or loosened:	NITE WATER WAITER OF	N/A
211	- terminal does not work loose	in with mir and	N/A
it cless	- internal wiring is not subjected to stress	at at R	N/A
ZII.	creepage distances and clearance are not reduced below the values specified in Cl. 26	Murr Aug Aug	N/A
23.4	Other terminals than Y and Z attachments shall be so designed that:	Marie Marie Milie.	N/A
VILE MU	they clamp the conductor between metallic surfaces with sufficient contact pressure	LIEK WILLER WILLER WI	N/A
IER OLIE	- without damage to the conductor	et let let is	N/A
7,	- test by inspection according to 23.3 and 23.4	me me m	N/A
WALTE	- 10 times fastening and loosening a conductor with the largest cross-sectional area with 2/3 of the torque specified in Cl. 25	Whitek Whitek Whitek	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
23.5	Terminals for fixed wiring and for type X: located near their associated terminals of different polarities and the earth terminal if any	Junited white waite of	N/A
23.6	Terminal blocks not accessible without the aid of a tool	at tet the ste	N/A
23.7	Transformer with type X attachments: stranded conductor test (8 mm removed):	THE ME THE	N/A
111 ESF	- Class I transformers: no connection between live parts and accessible metal parts	with the think	N/A
AUG. A	- free wire of earth terminal: no touching of live parts	WALTER WALTE WALTE OF	N/A
ULLE MULL	- Class II transformers: no connection between live parts and accessible metal parts, no connection between live parts and metal parts separated from accessible metal parts by supplementary insulation	stek untek untek untek	N/A
23.8	Terminals for a current > 25 A:	- LET STEP STEP	N/A
7	- pressure plate, or	me me me	N/A
WITE O	- two clamping screws	TEX STEX STEEL IN	N/A
23.9	When terminal, other than protective earth conductor, screws loosened as far as possible, no contact:	THE MILES WHITE	N/A
EK MALTE	- between terminal screws and accessible metal parts	The Milk Miller	N/A
Whitek.	between terminal screws and accessible metal parts separated only by basic or supplementary insulation for Class II transformers	whitek whitek whitek w	N/A
24	PROVISION FOR PROTECTIVE EARTHING	LITER MITER MITER AUNI	Р
24.1	Class I transformers: accessible conductive parts connected to earth terminal	Class II transformers	N/A
ek altek	Class II transformers: no provision for protective earth	- et 1st itet	P
24.2	Protective earth terminal for connection to fixed wiring and for type X attachment transformers: comply with Cl. 23, adequately locked, not possible to loosen without a tool	united united united un	N/A
24.3	No risk of corrosion from contact between metal of earth terminal and other terminal	LIEK WALTER WALTER WALT	N/A
LEK MUTLE	In case of earth terminal body of Al, no risk of corrosion from contact between Cu and Al	et night majest majest	N/A
LILEK	Body of earth terminal or screws/nuts of brass or other metal resistant to corrosion	fet fet fet	N/A

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Clause	Requirement + Test	Result - Remark	Verdic
24.4	Resistance of connection between earth terminal and metal parts $\leq 0.1\Omega$ with a min. 25 A or 1,5 times rated input current at 1 min	while white with	N/A
24.5	Class I transformers with external flexible cables or cords:	et get get s	N/A
EK JEK	- current-carrying conductors becoming touch before the earth conductor	- C+ C+ C	N/A
25	SCREWS AND CONNECTIONS	White Aut Au	N/A
25.1	Screwed connections withstand mechanical stresses	No screw	N/A
INTEK ON	Screws transmitting contact pressure or likely to be tightened by the user or having a diameter < 2,8 mm, shall screw into metal	SLIER WHITER WHITER W	N/A
TER WILL	Screws not of metal which is soft or liable to creep (Zn, Al)	Et whilet while whi	N/A
k whitek	Screws of insulating material: not used for electrical connection	- NIEK MIEK MUIEK	N/A
WILLIEM W	Screws not of insulating material if their replacement by metal screws can impair supplementary or reinforced insulation	MILIER WHITER WHITER	N/A
ALTER WATE	Screws to be removed (replacement etc. of power supply cord) not of insulating material if their replacement by metal screws can impair basic insulation	THE NUMBER OF	N/A
	For a screw in engagement with the threads of insulating material: No damage after torque test: diameter (mm); torque (Nm); ten times	with with white	N/A
UNLTEK M	For nuts and other screws: No damage after torque test: diameter (mm); torque (Nm); five times	TEL LIER NITER	N/A
25.2	Screws in engagement with thread of insulating material:	et let let l	N/A
	- length of engagement ≥ 3 mm + 1/3 screw diameter or 8 mm whichever is shorter	the text of	N/A
14.	- correct introduction into screw hole	MULL MULL MULL	N/A
25.3	Electrical connections: contact pressure not transmitted through insulating material	NITER MALTER MALTER	N/A
25.4	In case of use of thread-forming (sheet metal) screws for connection of current-carrying parts: clamping and locking means provided	LIEK WILLER WHITEK W	N/A
TER MUTE	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	A MULTER WALTER WAL	N/A

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100	IEC 61558-2-16	the the the street	we are
Clause	Requirement + Test	Result - Remark	Verdic
MALTER VI	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 necessary to disturb the connection in normal use	White white white wh	N/A
25.5	Screws for current-carrying mechanical connections locked against loosening	TEX WITER WHITE	N/A
ik writer	Rivets for current-carrying connections subject to torsion locked against loosening	t wifet wifet whiles	N/A
25.6	Test of screwed glands with a torque according table 19. After the test no damage at the transformer and the gland.	MALTER MALTER MALTER M	N/A
26	CREEPAGE DISTANCES, CLEARANCES AND DI INSULATION	STANCES THROUGH	Р
26.2	Creepage distances and clearances	the state of	Р
26.2.1	General	EL WILL MULL MULL	An by
* WALTER	The creepage distance and clearance values are shown in Table 20 and Table 21.	- Lifet Mitel Military	P.T.
26.2.2	Windings covered with adhesive tape	70 7 4	P.
NUC N	- all insulating materials are classified according to IEC 60085 and IEC 60216 (all parts);	JATES VINCTE WALL WA	N/A
TILE MUL	- the impulse voltage dielectric test of 6.1.2.2.1 of IEC 60664-1:2007 is fulfilled; and	THE MILITER MINITER	Р
EK NITE	- test A of 26.2.4 is fulfilled	THE THE	N/A
26.2.3	Uncemented insulating parts pollution degree P2 or P3	Pollution degree 2	Р
AL.	- all isolating material are classified acc. to IEC 60085 and IEC 60216(all parts)	Murit Murit Murit M	Р
ing an	- values of pollution degree 1 are not applicable	ALTER WHITE WALL WAL	Р
26.2.4	Cemented insulating parts		N/A
	- all isolating materials are classified acc. to IEC 60085 and IEC 60216(all parts)	ite water water water	N/A
Mer	- values of distance through insulation (dti) are fulfilled	White white white	N/A
WILLE V	creepage distances and clearances are not required	WILLER WHITER WHITER WIT	N/A
JEK . (1	- test A of this sub clause is fulfilled	at at the de	N/A
20,	Test A	The Mary Mary Mary	N/A
ER RITE	- thermal class	it let like like	N/A
200	- working voltage	Mer Mer M	N/A
WALTER	Test with three specially specimens, with uninsulated wires, without impregnation or potting	(see appended table)	N/A

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. W.	IEC 61558-2-16	the start start with	The are
Clause	Requirement + Test	Result - Remark	Verdic
men.	Two of the three specimens are subjected to:	WHITE MATER ANTE A	N/A
NUTTER ON	- the relevant humidity treatment according to 17.2 (48 h)	NITER WALTER WAITER WA	N/A
LIEK WAL	- the relevant dielectric strength test of 18.3 multiplied with factor 1,35	TEX MITER MATER MATE	N/A
ek waltek waltek	- 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 temperature	t multest unitest unitest.	N/A
MUE. A	Impulse dielectric test according to 6.1.2.2.1 of IEC 60664-1:2007 – see Annex R of IEC 61558-1	MALIE WALTE WALL OF	N/A
26.2.5	Enclosed parts (e.g. by impregnation or potting)	THE STEE OUTER AND	N/A
26.2.5.1	- The requirements of reduced values as stated for pollution degree 1 (P1) are fulfilled	et tet tet stet stet	N/A
t Jet	- all isolating materials are classified acc. to IEC 60085 and IEC 60216(all parts)	The text text	N/A
m.	Test B	MULL MULL MULL	N/A
THE .	- thermal class	Let Let Let .	N/A
in in	- test voltage of 500 V or the working voltage	ner and any	N/A
	Test with three specially specimens, potted or impregnated. The dielectric strength test is applied directly to the joint.	(see appended table)	N/A
Will	Two of the three specimens are subjected to:	a life dita nite	N/A
· MALTER	- the relevant humidity treatment according to 17.2 (48 h)	THE THE STREET	N/A
LITEH IN	- the relevant dielectric strength test of 18.3 multiplied with factor 1,25	and the lift of	N/A
TEX ANTI	- One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,25 immediately at the end of the last cycle with high temperature	TEK WILLER WATER WATER	N/A
MUNITER	The three spacemen pass the Impulse dielectric test according to 6.1.2.2.1 of IEC 60664-1:2007–see Annex R of IEC 61558-1	WALLER WALLER	N/A
26.2.5.2	The requirements of distance through insulation (dti) are fulfilled. (P1 values are not required)	united white white wh	N/A
	all isolating materials are classified acc. toIEC 60085 and IEC 60216(all parts)	Lite with white white	N/A
Me	Test C	"White Murit whi	N/A
- Jet	- thermal class	the state of	N/A
20, -	- test voltage of 500 V or the working voltage	WELL WILL ME A	N/A

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in all in	IEC 61558-2-16	the other other solder	They were
Clause	Requirement + Test	Result - Remark	Verdict
White Tex	- Test with three specimens, potted or impregnated. (finished components)	(see appended table)	N/A
W. M	- Neither cracks, nor voids in the insulating compounds	NITE WALL WALL WALL WALL	N/A
ille alle	Two of the three specimens are subjected to:	TEX NITER WITER MITE	N/A
EX INITEX	- the relevant humidity treatment according to 17.2 (48 h)	t TEK STEK NITEK	N/A
LITER	- the relevant dielectric strength test of 18.3 multiplied with factor 1,35	THE THE TEXT	N/A
WILLER ON	- 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 temperature	STEET WHITE WHITE SHITE	N/A
TER WALT	The three spacemen pass the Impulse dielectric test according to 6.1.2.2.1 of IEC 60664-1:2007 – see Annex R of IEC 61558-1	EX WHITEX WHITES WHITES	N/A
26.3	Distance through insulation	" TIER WITE WITE A	Р
26.3.1	For supplementary, double or reinforced insulation, the required values of Tables 22 are fulfilled	THE SHEET ALTHER IN	P
NITEH WAT	The insulation fulfil the material classification according IEC 60085 and 60216(all parts) or the test of 14.3	antiet mit	Y NATE P
26.3.2	Reduced values of the thickness of insulation for supplementary or reinforced insulation are allowed if the following conditions are fulfilled:	multiple white	N/A
WILLER.	- the isolating materials are classified acc. to - IEC 60085 and IEC 60216(all parts)	Whitek Whitek Whitek W	N/A
CLIEN IS	- the test of 14.3 is fulfilled	at the title of	N/A
ILEX MUT	- If both requirements are fulfilled, the required values for solid insulation can be multiplied by 0,4	tek sitek sitek mitek	N/A
J. MITES	 Minimum thickness of reinforced insulation ≥0,2 mm 	- TEX STEX MATER	N/A
NIFE	- Minimum thickness of supplementary insulation ≥0,1 mm	the the state of	N/A
26.3.3	Insulation in thin sheet form	our me me	Р
NLTER WIN	If the layers are non-separable (glued together):	LIET WHITE WHITE WHITE	N/A
TEN SITE	The requirement of 3 layers is fulfilled	at the tipt	N/A
t Tex	The mandrel test according 26.3.4 is fulfilled with 150±10 N	MUT AUT AUT	N/A
M	The required values for d.t.i. of thin layers in Tables 22 is fulfilled.	MULL MULL MULL A	N/A

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, arr	IEC 61558-2-16	the the the state of	r ar
Clause	Requirement + Test	Result - Remark	Verdict
WELLE.	and the the	THE REPORT OF THE PARTY	1 2 L
	- If the layers are separated:	Mr. M. A.	Р
nutie m	The requirement of 2 layers is fulfilled	Insulation tape wrap around external of switch mode transformer	P
	If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required	Tex united mate mail of	N/A
All A	The mandrel test according 26.3.4 is fulfilled on each layer with 50±5 N	must mer and an	Р
21/2 Z	The required values for d.t.i. of thin layers in Tale 22 is fulfilled.	murity mail mail many	Р
VILL ON	- If the layers are separated (alternative):	LIER ALIER MILE WALL	N/A
et e	The requirement of 3 layers is fulfilled	700	N/A
t STER	If serrated tape is used, 1 additional layer (serrated) and one additional layer without serration is required	et muit muit muit m	N/A
The second	The mandrel test according 26.3.4 is fulfilled on 2/3 of the layers with 100±5 N	with the text to	N/A
ne n	The required values for d.t.i. of thin layers in Tale 22 is fulfilled.	mere must will will will	N/A
ek water	Test according to 14.3 and if the isolating materials are classified acc. to IEC 60085 and IEC 60216(all parts) no distances through insulation are required for insulation in thin sheet form	THE WALL WHILL WAS	N/A
WALTER	The values for thin layers are used for insulation in thin sheet form as follows:	LIER SLIER WILLY	PE
nitex an	- rated output > 100 VA values for thin layers apply	TEX TEX STEX STEX	N/A
	- rated output ≥ 25 VA and ≤ 100 VA 2/3 of the values for thin layers apply	at at the the	Р
it Tex	- rated output < 25 VA 1/3 of the values for thin layers apply	Who we will a	N/A
26.3.4	Mandrel test of insulation in thin sheet form (specimen of 70±0,5 mm width are necessary):	white mer wat war	P
Mrs. N	If the layers are non-separable – at least 3 layers glued together fulfil the test:	WALLER WHITE WHITE WHITE	N/A
LIFER MAY	- pull force of 150±10 N	TEX LIEX NITER MITES	N/A
EK WALTE	 high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,35 whatever is the greater. No flashover, no breakdown. 	et incret ancret ancret an	N/A
- WALTER	- If the layers are separable and 2/3 of at least 3 layers fulfil the test.	Tet liter witer war	N/A
.4.	- pull force of 100±5 N	41, 4, 4,	N/A



	IEC 61558-2-16		WITE WI
Clause	Requirement + Test	Result - Remark	Verdic
WILLER AND	- high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdowns.	White white white	N/A
TEX ST	- If the layers are separable 1 of at least 2 layers fulfil the test:	at the the the	P
2,	- pull force of 50±5 N	in we will	Р
ynite ^s ynite ^s 7EX	- high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown.	MALIER WALTER WALTER	MALL OF BALL
26.3.5	For transformers with FIW wires	ALTER MALTE MALTE W	N/A
æt.	- thermal cycles	2, 7	N/A
in a	- test voltage of 500 V or the working voltage	LITE WILL WALL WALL	N/A
CENT SE	- Test with three specimens	(see appended table)	N/A
20,	Two of the three specimens are subjected to:	The Marie Walter	N/A
WALTER	- the relevant humidity treatment according to 17.2 (48 h)	- NITER WIFER WITER	N/A
11	- the relevant dielectric strength test of 18.3	The state of	N/A
irek mur irek	- One of the three specimens is subjected to the relevant dielectric strength test of 18.3 immediately at the end of the last cycle with high temperature	Intitle unit white white	N/A
ek white	The partial discharge test shall be done at the end of the cycling test at normal room temperature as performed in 18.3.1.	white while while	N/A
White.	The values of allowed voltage strength for other FIW dimensions than defined in Table 24 are calculated	Whitek whitek whitek w	N/A
26.101	Creepage distances and distances through insulation given in Table 21, Table 22 and Table 23 of IEC 61558-1:2017 are generally applicable (IEC 61558-2-16: 2021)	(see appended table)	IN TELL
26.102	In compliance with IEC 60664-4:2005, the requirements of 26.103 to 26.106 for creepage distances, clearances and solid insulation are required above 30 kHz and up to the frequency of 3 MHz. For frequencies above 3 MHz, the tests in accordance with 7.4 and 7.5 of IEC 60664-4:2005, high-frequency testing (high-frequency high-voltage test and high-frequency partial discharge test) shall be carried out.	STEK STEK STIEF SW	P white white
26.103	Clearance (IEC 61558-2-16:2021)	. 10, 2	P P
MULL	a) Clearance for frequency ≥ 30 kHz according figure 101 two determinations are necessary:	MULTER MULTER MULTER	N/A
WALTE.	determination based on the rated impulse voltage of the rated supply voltage in accordance with Table 103 and Table 104.	Whitek whitek whiteh w	N/A

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdic
W.C.	determination based on the measured peak working voltage in accordance with Table 106.	Juniter Martier Marie	N/A
	b) Clearance for frequency ≤ 30 kHz according figure 101 two determinations are necessary:	ALIEK WALTER WALTER V	Р
ii wati	determination based on the rated impulse voltage of the rated supply voltage in accordance with Table 103 and Table 104.	TEK WHITEK WHITEK WH	P
MILLER	determination based on the measured peak working voltage in accordance with Table 105.	t nifet unifet unife	P.L.
26.104	The working voltages of Table 105 and Table 106 for determination of clearances are peak working voltages. (IEC 61558-2-16: 2021)	MUTER MILIER MILIER	until pri
	All peak working voltages including µs-peaks shall be used to determine clearances in accordance with Table 105 and Table 106.	LITER MILIER MILIER M	LIET INLIP
26.105	Creepage distances (IEC 61558-2-16: 2021)	2 2 2 2	d P
- 711.	Two determinations of creepage distances are necessary (see Figure 102)	white mer me	P P
WILL	 determination based on the measured RMS working voltage in accordance with Table 21 of IEC 61558-1:2017; 	White while while	WILL VP
iriek mur iriek	determination based on the measured peak working voltage in accordance with Table 107 to Table 112 and the fundamental frequency shall be considered	unite unite whi w	ITEX WITEX
	A high-frequency RMS ripple voltage content not more than 10% can be neglected.		A THE P
MITER	The values in Table 107 to Table 112 do not take into account the effects of tracking phenomena for frequencies above 30 kHz.	WAL AND AND	P NATE
wriek on	The most severe value of the required creepage distances in accordance with Table 107 to Table 112 for frequencies above 30 kHz and the relevant values in Table 21 of IEC 61558-1:2017 shall take precedence.	NIFE WAITER WAITER W	P
Y WITEK	If the value of the creepage distance is lower than the value of the clearance, the value of the clearance shall be applicable for the creepage distance.	THE WILL WALL WALL	Puritity white
MALTEK V	The peak working voltage also includes any DC voltage and any repetitive peak impulse generated by the SMPS (see 26.105). A determination based on RMS values is also required (see 26.104 and Table 112).	united whites whites,	N/A
26.106	Distance through insulation (IEC 61558-2-16:2021)	The Mile Mile Mile	Р
EX WALTE	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 whitek whitek whit	Et NIN SITE
1/2 .	- the max. frequency is < 10 MHz	THE WALL WALL	A P

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ie. Wile	IEC 61558-2-16	EX TEX LIER LIER	WILL WILL
Clause	Requirement + Test	Result - Remark	Verdict
WALTE.	- the field strength approximately comply with Figure 103	White white white	P
mr m	- no voids or gaps are present in between the solid insulation	nette white white whi	Р
rie Alle	For thick layers d1 ≥ 0,75 the peak value of the field strength is ≤ 2 kV/mm	TER WILLEY WILLE MUTE	N/A
WALTER	For thin layers d2 \leq 30 μ m the peak value of the field strength is \leq 10 kV/mm	MILIER WALTER WALTER	N/A
WALTER	For d1 > d > d2 formula (2) is used for calculation the field strength	OLIEK MILIEK MILIEK MI	N/A
27	RESISTANCE TO HEAT, FIRE AND TRACKING		y P
27.1	General	LIFE WILLE WALL VINE	P
27.2	Resistance to heat	a at at at	Р
27.2.1	All insulating parts are resistant to heat	MULL MULL MULL	Р
MULIER	For parts of rubber, which passed the test of 19.9, no additional test is required.	No rubber used	N/A
MULTER M	The tests are not required for cables and small connectors with a rated current ≤ 3 A, a rated voltage ≤ 24 V AC or 60 V DC and a power ≤ 72 W	Miller Miller Miller Mil	TEX DX
27.2.2	External accessible parts	et a str	Р
EK WALTE	The Ball-pressure test: diameter of impression ≤ 2 mm; heating cabinet temperature (°C) at 70±2 °C or the temperature T of 14.1 (T+15±2) is fulfilled.	(See appended table)	un Ek P
27.2.3	Internal parts	THE THE STIFF O	J. P
grest out	For insulating material retaining current carrying parts in position, the ball-pressure test -: diameter of impression ≤ 2 mm; heating cabinet temperature (°C) at 125±2 °C or the temperature T of 14.1 (T + 15±2) is fulfilled	(See appended table)	Et P.
27.3	Resistance to abnormal heat under fault conditions	we me in	N/A
27.4	Resistance to fire	- TEK TEK STER	P.
27.4.1	All isolating parts of the transformer shall be resistant to ignition and spread of fire. The test according to IEC 60695-2-10 is required	NIFE WIFE WIFE	TEK WILTER
27.4.2	External accessible parts (glow wire tests)		P
r. m	- 650°C for enclosures	LIFE WALLE WALL MALL	Р
IEK WUTE	- 650 °C for parts retaining current carrying parts in position and terminals for external conductors Current ≤ 0,2 A	EX WALLEY WALLEY WALLEY	un felt P
WALTE.	- 750° C for parts retaining current carrying parts in position and terminals for external conductors with fixed wiring. Current > 0,2 A	Whitek Whitek Whitek W	N/A

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The Market	IEC 61558-2-16	Et TEX LIER LIER	west with
Clause	Requirement + Test	Result - Remark	Verdict
JUNITER WAS	- 850° C for parts retaining current carrying parts in position and terminals for external conductors with non-fixed wiring. Current > 0,2 A	MULTER WHITE WHITE WHI	N/A
27.4.3	Internal parts	let let liet liet liet	LITE P IN
t Till	- 550 °C for internal insulating material – not retaining current carrying parts in position	the sur sur	N/A
2/1	- 650 °C for coil formers (bobbins)	T1	P
MUTER M	- 650 °C for parts retaining current carrying parts in position and terminals for external conductors. Current ≤ 0,2 A	JUNETER WALTER WASTER WA	N/A
NITE WAS SELF STEA	- 750 °C for parts retaining current carrying parts in position and terminals for external conductors with fixed wiring. Current > 0,2 A	Bobbin, PCB	IN P
yunitek Yunitek	- 850 °C for parts retaining current carrying parts in position and terminals for external conductors with non-fixed wiring. Current > 0,2 A	amifex while while	N/A
27.5	For IP other than IPX0: If insulating parts retaining current carrying parts in position and under P3 conditions, the material resistance to tracking is at least material of group IIIb	JULIER WILLER WILLER WILL	N/A
EK MITEK	Material group IIIb (100≤CTI≤175) is not recommended for application in pollution degree 3 above 630V	The state with	N/A
NITER A	Test (175 V): no flashover or breakdown before 50 drops	THE THE LITTLE OF	N/A
28	RESISTANCE TO RUSTING	mr. mr. m. m.	N/A
nliet inl	Ferrous parts protected against rusting	TER TER TER OUT	N/A
ANNEX E	GLOW WIRE TEST	hr, Mr. Mr. An.	Р
E.1 white	The test is required according to IEC 60695-2-10 and IEC 60695-2-11 with the following additions:	Considered.	W. C. Pur
E.2	The requirements of 8.2, "Test temperatures" of IEC 60695-2-11:2014, apply with the temperature stated in 27.4 of IEC 61558-1	Whitek whitek whitek w	P
E.3	Clause 7, "Conditioning", of IEC 60695-2-11:2014 apply, preconditioning is required	WATER WATER WATER WAS	N/P
≣.4	Clause 8, "Test procedure", of IEC 60695-2-11:2014 apply, the tip of the glow wire is applied to the flat side of the surface.	LIFE WHITEK WHITEK WHITE	P
ANNEX F	REQUIREMENTS FOR MANUALLY OPERATED S PARTS OF THE TRANSFORMER	WITCHES WHICH ARE	N/A
F.2	Manually operated mechanical switches, tested as separate component, shall comply with IEC 61058:2016 under the conditions of F.2.	WHITEK WHITEK WHITEK W	N/A
	ILG 01000.2010 under the conditions of F.Z.		٠. ا

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, U.S.	IEC 61558-2-16	the other site and all	r. "11.
Clause	Requirement + Test	Result - Remark	Verdic
F.3	Manually operated mechanical switches tested as part of the transformer shall comply with the conditions specified under F.3	White white write writer	N/A
ANNEX H	ELECTRONIC CIRCUITS	he she she	Р
H.1 JINL	For transformers including electronic circuits, the following requirements apply additionally to Clauses 5, 15, 26. This annex is not required for associated transformers	TEK WALTER WALTER WALTER W	EX PUR
H.2	General notes on tests (addition to clause 5)	141, 141, 1	P
H.3	SHORT-CIRCUIT AND OVERLOAD PROTECTION	(ADDITION TO CLAUSE 15)	U.P
H.3.1	Circuits designed and applied so that fault conditions do not render the appliance unsafe	cet set set set	P.
	During and after each test:	in my minimi	Р
TER WALTER	- temperatures do not exceed values specified in table 5	EX MILIER WHITER WHITER WE	Pur
Y WALTER	- transformer complies with conditions specified in sub-clause 15.1	NITER WILLER WALTER WILL	P
	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	Unifer whiles whiles	N/A
H.3.2	Fault conditions a) to f) of sub-clause H.3.3 are not tested if the following conditions are met:	a function of	P
E WILL	- electronic circuit is a low-power circuit as specified	WHITE WALLS MALTE WA	P
WALTER W	- safety of the appliance as specified does not rely on correct functioning of the electronic circuit	MILIER WALTER WALTER WHITE	P
H.3.3	Fault conditions tested as specified when relevant:	THE STEE MITE SMITE	Jr ² P ↓
TEK KLIE	a) short-circuit of creepage distances and clearances, if less than specified in Cl. 26	at let get state	N/A
7,	b) open circuit at the terminals of any component	y me me me	Р
WILLE.	c) short-circuit of capacitors, unless they comply with IEC 60 384-14	UNLIER WALTER WALTER WAL	Р
WALTEK WA	d) short-circuit of any two terminals of an electronic component as specified	THE STEET INTER WATER	P
.t .	e) any failure of an integrated circuit as specified	24. 24. T	N/A
ALL MAL	f) low-power circuit: low-power points are connected to the supply source	THE MUTE MUTE MUTE	Р
o white	Cl. 15 is repeated with a simulated fault as indicated in a) to e), if the transformer incorporates an electronic circuit to ensure compliance with Cl. 15	White white white wh	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Mr. 2	Fault condition e) is applied for encapsulated and similar components	White white white	N/A
ane an	PTC's and NTC's are not short-circuited if they are used as specified	NITE WALLE WHILE WAS	N/A
H.3.4	If for a fuse-link complying with IEC 60 127-3 rated fuse current I1 is used, current I2 is measured as specified:	Tex White Militer Militer	Pur
n.	- if I2 < 2,1 x I1 test of 15.8 is repeated with fuse- link short-circuited	murit murit muri	N/A
White M	- if I2 > 2,75 x I1, no other tests are necessary	THE STEE STEE STEE	N/A
ALTER MAL	If I2 > 2,1 x I1 and I2 < 2,75 x I1 test of 15.8 is repeated as specified	all the state at	N/A
TEX MUTER	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	EX NITEX WITEX WITE	P FEE ONE
H.4	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES (ADDITION TO CLAUSE 26)	STANCES THROUGH	N/A
H.4.1	For live parts separated by basic insulation smaller cr and cl as in 26 are allowed, if H.3 is fulfilled.	un un un	N/A
111 111	In optocouplers no requirements of cr and cl	WILL MULL MULL AND	N/A
NITER WALF	For coatings annex W applies. Smaller distances as required in IEC 60664-3:2016, clause 4 are applicable,	anifet white	N/A
WALTE	For potted transformers cycling tests according to 26.2. are applicable	WALTER WALTER WALTER	N/A
H.4.2	The ma. surface temperature of optocouplers is 50 K	DITER MILIER MILIER W	N/A
ANNEX K	INSULATED WINDING WIRES	7" L St	M/A
K.1	Wire construction:	LITE WITE WALL WALL	N/A
LIEK WALTE	insulated winding wire for basic or supplementary insulation (see 19.12.3)	TER SLIER MATER SMITH	N/A
ek antifek	insulated winding wire for reinforced insulation (see 19.12.3)	- Tet ITET NITE	N/A
JER S	splid circular winding wires and stranded winding wires with 0,05 to 5,0 mm diameter	of the set	N/A
14, 14,	spirally wrapped insulation – overlapping	Merican Merican	N/A
K.2	Type tests	et et et o	N/A
K.2.1	General	ice must me, me,	N/A
TER MUTTER	Tests between ambient temperature between 15°C and 35°C and at a humidity between 25% and 75 %	of matter water water	white whi
K.2.2	Electric strength test	TEK TEK TEK	N/A

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IEC 61558-2-16							
Clause	Requirement + Test	Result - Remark	Verdict				
K.2.2.1	Solid circular winding wires and stranded winding wires	While while while	N/A				
ne m	Test samples prepared according to clause 4.4.1 of IEC 60851-5:2008 (twisted pair)	Mile White White	N/A				
The Man	Dielectric strength test: 6 kV for reinforced insulation	TEX MITER MITER ON	N/A				
MALTER	Dielectric strength test: 3 kV for basic or supplementary insulation	t antiest matter matte	N/A				
K.2.2.2	Square or rectangular wires.	at at at	N/A				
7/12 1	Test samples prepared according to clause 4.7.1 of IEC 60851-5:2008	MUTTE MUTT MUTT	N/A				
ur an	Dielectric strength test: 5,5 kV for reinforced insulation	HIER WALTER WALTE W	N/A				
IE WALTE	Dielectric strength test: 2,75 kV for basic or supplementary insulation	ex writer writer wri	N/A				
K.2.3	Flexibility and adherence	and the state	N/A				
711.	Claus 5.1 in Test 8 of IEC 60851-3:2009 shall be used	MUT MUT MUT	N/A				
nur n	Test samples prepared according to clause 5.1.1.4 of IEC 60851-3:2009	United White White	N/A				
THE WAL	Dielectric strength test: 5,5 kV for reinforced insulation	TEX NUMBER OF	N/A				
EK WALTE	Dielectric strength test: 2,75 kV for basic or supplementary insulation	INTE WILL WHIT	N/A				
- Jest	Mandrel diameter according table K.1	in a state	N/A				
Mrs.	The tension to the wire during winding on mandrel is 118 N/mm² (118 MPa)	white white whi	N/A				
K.2.4	Heat shock	LIER WILL WILL W	N/A				
TEK MIT	Test samples prepared according to 3.2.1 (in Test 9) of IEC 60851-6:2012	cet tet tet of	N/A				
	high voltage test immediately after this test	ne ne n	N/A				
MULIE	Dielectric strength test: 5,5 kV for reinforced insulation	WALTER WALTER WALTE	N/A				
WILLER W	Dielectric strength test: 2,75 kV for basic or supplementary insulation	WITEL WITEL WHITEL	N/A				
K.2.5	Retention of dielectric strength after bending (test as specified under test 13 of 4.6.1 c) of IEC 60 851-5)	TIEK WALTER WALTER ON	N/A				
EK OLIE	high voltage test immediately after this test	et let liet li	N/A				
- CER	Dielectric strength test: 5,5 kV for reinforced insulation	The Aug and	N/A				
all.	Dielectric strength test: 2,75 kV for basic or supplementary insulation	MUTT MUT MUT	N/A				

IEC 61558-2-16							
Clause	Requirement + Test	Result - Remark	Verdict				
K.3	Testing during manufacturing	MITTER WATER	N/A				
K.3.1	General Tests as subjected in K.3.2 and K.3.3	Whitek Muriek Muriek M	N/A				
K.3.2	Routine test	at at at a	N/A				
et set	Dielectric strength test: 4,2 kV for reinforced insulation	in my my my	N/A				
M	Dielectric strength test: 2,1 kV for basic or supplementary insulation	MULTER WALTER WALE	N/A				
K.3.3	Sampling test	LIER STEE WITE	N/A				
K.3.3.1	Solid circular winding wires and stranded winding wires	all tet stet .	N/A				
all d	Test with a twisted pair, prepared according clause 4.4.1 of IEC 60851-5:2008	t of let is	N/A				
* \[\frac{1}{2}\]	Dielectric strength test: 6 kV for reinforced insulation	while with my	N/A				
mr	Dielectric strength test: 3 kV for basic or supplementary insulation	WHITE WHITE WALL	N/A				
K.3.3.2	Square or rectangular wire	TEX TEX STER	N/A				
LITER SE	Samples prepared according to clause 4.7.1 of IEC 60851-5:2008	of the sure of	N/A				
20	Dielectric strength test: 5,5 kV for reinforced	2 24 24	N/A				

N/A

insulation

Dielectric strength test: 3 kV for basic or supplementary insulation

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5E* . 15E	MITER WILL MILE M	IEC 61558-2-16	at at all of	ALIE MIT
Clause	Requirement + Test	H NITER WHITE WHI	Result - Remark	Verdict

ANNEX V	ANNEX V, SYMBOLS TO BE USED FOR THERMAL CUT-OUTS	N/A
Figure V.1	Restored by manual operation	N/A
Figure V.2	Restored by disconnection of the supply	N/A
Figure V.3	Thermal link	N/A
Figure V.4	Self-resetting thermal cut-out	N/A

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11 and 12	ABLE: OUT O-LOAD O			OUTPUT CUI	RRENT UNDE	R LOAD;
Clause		1	1		12	
type/rated output/	rated voltage (V)	sec. voltage (V)	delta Usec (%)	Usec V no-load output	delta Usec no-load output %	further information
14. 14	5.0	4.92	1.60	5.10	3.66	100V/50Hz
GTM46402-	0.0	4.92	1.60	5.10	3.66	100V/60Hz
3005 / 5.0VD0 6.0A	5.0	4.93	1.40	5.10	3.45	240V/50Hz
	5.0	4.93	1.40	5.10	3.45	240V/60Hz
ir ar	48.0	47.28	1.50	47.39	0.23	100V/50Hz
GTM46402- 4048 / 48.0VD	1 40 0	47.29	1.48	47.39	0.21	100V/60Hz
0.83A	48.0	47.18	1.71	47.39	0.45	240V/50Hz
	48.0	47.16	1.75	47.39	0.49	240V/60Hz
Limits	2/1	20, 2,	±10	,#	±20	LIE WILL THE MAN

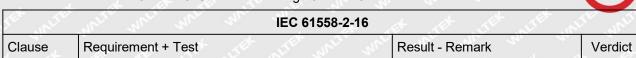
14	TABLE: Heating Test					Р
VILLER IN	Supply voltage (V)	90V/ 60Hz	90V/ 60Hz	264V/ 50Hz	264V/ 50Hz	_
IEK WY	Ambient (°C)	See below	See below	See below	See below	_
Maximu	m measured temperature T of part/at:	T (°C)				max. temperature limit, (°C)
WILLEK.	MULTER MILITE MILITE MINEY WILL	Vertical	Horizont al	Vertical	Horizont al	TEK WITTER W
Model:	GTM46402-3005	r 140	200	7, ,		+ 2+ .
Enclosu	ıre inside near plug holder	73.9	70.9	73.7	70.7	80
Enclosu	ıre outside near plug holder	64.0	62.2	63.9	62.1	80
MOV1 b	oody	71.8	67.5	71.4	67.3	85
LF1 win	iding + Alt	77.6	72.5	77.4	72.2	120
CX1 bo	dy new transfer to	73.2	68.9	72.9	68.8	100
LF2 win	ding	88.3	81.2	88.0	80.8	120
C1 body	Arra Maria	91.1	86.3	90.8	86.0	105
PCB ne	ar DB1	102.9	94.1	102.7	93.9	130
T1 core	it with the same	97.4	99.8	97.2	99.5	110
T1 wind	ling	99.5	94.6	99.4	94.4	110
PCB ne	ar Q1 and T1	86.2	85.4	86.1	85.3	130
CY1 bo	dy	72.7	72.8	72.3	72.7	125

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in min	The Alexander	-2,	IEC 615	58-2-1	6	ot	164	ی	er alle	1.	ir, we
Clause	Requirement + Test	+ 11 ⁻¹⁵¹⁶ 114	ALTER AN	N. C.	ane	Resi	ult - R	emark	(()		Verdict
CY2 body		at a	O 8	33.7	82	2.1	8	3.3	81.8	41	125
US2 body	THE STEE WITE	West with	8	34.1	83	3.6	8:	3.8	83.2	16th	100
C3 body	7, 2,	اد ب	- 26t	76.3	7	5.8	70	6.0	75.6		105
Output wire	er liet alter in	in min	an -	78.9	78	8.8	78	8.5	78.5	· ·	80
Enclosure	inside near T1	٠, ٠		66.9	66	6.0	60	6.7	65.9	-3	Ref.
Enclosure	outside near T1	and a	JAC Z	19.8	48	8.7	49	9.5	48.5		80
Support ne	ear pin		A 4	11.1	4	1.0	40	0.8	40.6	2/1/2	85
Model: G1	M46402-4048	WITE WY	12 11		20	-0.	- 10	٠.	J.L.	A	t Let
Enclosure	inside near plug holde	r	. 4	8.1	47	7.9	5′	1.5	50.0		80
Enclosure	outside near plug hold	er	5	52.2	51	1.9	54	1.2	53.8		80
MOV1 bod	y 1/11		8	32.1	81	1.9	74	1.7	73.7		85
LF1 windir	ig (if (if	TER WITE	<i>a</i> 6	1.9	91.6		8′	1.1	81.5	è	120
CX1 body	me me m			32.5	82.1		73	3.7	73.8	10	100
LF2 windir	ig at the st	e street	9	8.8	98.3		8′	1.2	84.0		120
C1 body		10	02.5	102.4		93	3.8	88.4	"Urr	105	
PCB near	DB1	LITER OF	SE 2111	10.7	11	0.5	92	2.0	88.4		130
T1 core	in min min	211. 20.	10	02.0	10	1.8	96	5.7	101.7	1	110
T1 winding			10	07.2	10	7.9	10	3.3	105.7		110
PCB near	Q1 and T1	$\sqrt{-z_n}$	10	04.1	10	4.0	97	7.1	108.0		130
CY1 body		E14 46	7	4.2	74	1.6	72	2.3	76.8		125
CY2 body			9	0.6	90	8.0	85	5.2	87.5		125
US2 body	in the side	- Let .		88.2	88	3.1	85	5.9	89.7	200	100
C3 body	WILL WALL MALL	41/2 2	8	34.0	83	3.9	85	5.1	90.3	15	105
Output wire	е	jek si	6	9.1	69	9.3	69	9.8	73.6		80
Enclosure	inside near T1	Mr. M.	9	3.4	93	3.6	92	2.1-	93.2	JEN.	Ref.
Enclosure	outside near T1	at de	567	75.7	76	8.8	77	7.3	77.4		80
Support near pin		5	51.1	50	0.9	53	3.2	53.6	3.6 85		
Ambient	30	* #	4	10.0	40	0.0	40	0.0	40.0	0	- 20,
Suppleme	ntary information:	Whi.	21, 1	<i>3</i> *			٠,	.0	t let		EF J
Temperatu	re T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ ((Ω)	T (°C	C) Allov		Insulation n class
July a	U. M. M.			4	J.	.4	7	JV		4	15-

15	TABL	E: SHORT-	CIRCUIT AN	D OVERLO	AD PROT	ECTION	TEN LIER	Politi
	ambie	ent temperati	ıre (°C)		:	40.0		
type/rated o	output	r-cold Ω	r-warm Ω	temp. °C	ext. enc	l. support	int. + ext. wire	urther rmation

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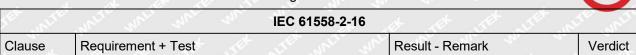
15	TABL	TABLE: SHORT-CIRCUIT AND OVERLOAD PROTECTION									
	ambie	ent temperati	ure (°C)		:	40.0					
type/rate	d output	r-cold Ω	r-warm Ω	temp. °C	ext. enc	sl. support	int. + ext. wire	1	further ormation		
GTM4640 / 5.0Vdc,		- 10t	JEK JEK	110.2	50.6	41.1	85.9	m	* - 411°		
GTM4640 / 48.0Vdd	CA ()	me m	* 70x	142.3	51.9	41.4	99.4	e In Lit	-July		

Note:

- 1. The model of GTM46402-3005 that output overload to 7.52A, the unit protected, T1 winding max. temp.: 110.2°C no hazards.
- 2. The model of GTM46402-4048 that output overload to 1.07A, the unit protected, T1 winding max. temp.: 101.9°C no hazards.
- 3. Rated ambient temperature ta: 40°C

18.2	TABLE: insulation resistance measuremen	nts	Р.
Insulation re	esistance R between:	R (MΩ)	Required R (MΩ)
Model: GTI	M46402-3005	711. 721. 2.	e at at a
Different po	larity of Live part after open fuse (L/N)	>100	2
Live part (L/	/N) to enclosure (rounded with metal foil)	>100	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Live part (L/	/N) to output terminal	>100	5
1 layer insu	lation tape	>100	5
T1: primary	and secondary	>100	5
T1: core an	d secondary	>100	5
metal foil in contact with inner and outer surfaces of enclosures		>100	7- 5
Model: GTI	M46402-4048	rie nur mer	211 211 21
Different po	larity of Live part after open fuse (L/N)	>100	2
Live part (L/	/N) to enclosure (rounded with metal foil)	>100	7
Live part (L/	/N) to output terminal	>100	5 1
1 layer insu	lation tape	>100	5
T1: primary	and secondary	>100	an 11 5
T1: core an	d secondary	>100	70° 50° 5
metal foil in enclosures	contact with inner and outer surfaces of	>100	7

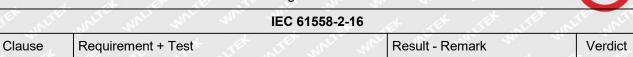
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Test voltage applied between:	Test potential applied (V)	Breakdown / flashove (Yes/No)
Model: GTM46402-3005	white was made	No. In In
Different polarity of Live part after open fuse (L/N)	1820 AC	No
Live part (L/N) to enclosure (rounded with metal foil)	3640 AC	No
Live part (L/N) to output terminal	3640 AC	No
T1: primary and secondary	3640 AC	No
T1: core and secondary	3640 AC	No No
3 layers of insulating tape	3640 AC	No
metal foil in contact with inner and outer surfaces of enclosures	3640 AC	No
Model: GTM46402-4048	LIER WILLER WILLER	The war we
Different polarity of Live part after open fuse (L/N)	1820 AC	No of
Live part (L/N) to enclosure (rounded with metal foil)	3640 AC	No
Live part (L/N) to output terminal	3640 AC	No
T1: primary and secondary	3640 AC	No
T1: core and secondary	3640 AC	No No
3 layers of insulating tape	3640 AC	No
metal foil in contact with inner and outer surfaces of enclosures	3640 AC	No
Supplementary information:	at the the	SLIFE REFE SIVER

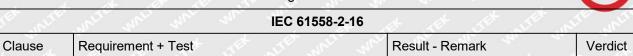
ANNEX H	Electronic circuits fault test								JP J
20, 20,	ambie	ambient temperature (°C): 25.0						in in	
JEK JE	Test vo	oltage(V)			:	26	64V	Let Let .	JEE 10
Componer	nt No.	fault	Test voltage	Test time	Fuse N	0.	Fuse current(A)	Resul	t
Model: GT	M46402	-3005							
BD1	LIEK	SC	264V	1s	F1		0	Fuse (F1) open immediately, no	
C1 Junes	ex uni	SC TEL	264V	1s	F1	الله الله	0	Fuse (F1) opened immediately and repeten times, no hazard.	
T1 (pin2-3)	MALTE	SC	264V	10min	F1	E. P.	0.002	Unit shut down immediately, recoverable, no no hazard.	o damage

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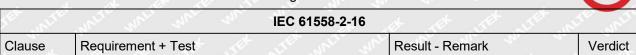
T1 (pin4-5)	SC	264V	10min	yn F1	0.004	Unit shut down immediately, recoverable, no damage, no hazard.
T1 (pin CT1-CT2)	SC	264V	10min	F1	0.004	Unit shut down immediately, recoverable, no damage, no hazard.
Q1 pin S-D	SC	264V	10min	nF1	0.003	Unit shut down immediately, recoverable, no damage, no hazard.
Q1 pin S-G	SC	264V	10min	F1	0.002	Unit shut down immediately, recoverable, no damage, no hazard.
Q1 pin D-G	SC	264V	10min	F1	0.004	Unit shut down immediately, recoverable, no damage, no hazard.
D1	SC	264V	10min	F1	0.002	Unit shut down immediately, recoverable, no damage, no hazard.
US2 pin 1	OC	264V	10min	F1	0.004	Unit shut down immediately, recoverable, no damage, no hazard.
US2 pin 3	OC VI	264V	10min	F1-	0.004	Unit shut down immediately, recoverable, no damage, no hazard.
US2 pin 1-2	SC	264V	10min	F1.VIII	0.002	Unit shut down immediately, recoverable, no damage, no hazard.
US2 pin 3-4	W SC W	264V	10min	F12F	0.002	Unit shut down immediately, recoverable, no damage, no hazard.
C3	SC SC	264V	10min	WA F1 W	0.003	Unit shut down immediately, recoverable, no damage, no hazard.
Q2 pin S-D	WSC W	264V	10min	et F1, et was	0.002	Unit shut down immediately, recoverable, no damage, no hazard.

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ANNEX H Elec	tronic circui	ts fault test	TEN RUTE	West of	in an	, P	
Q2 pin S-G	SC	264V	10min	F1	0.002	Unit shut down immediately, recoverable, no damage no hazard.	
Q2 pin D-G	SC	264V	10min	F1V	0.001	Unit shut down immediately, recoverable, no damage no hazard.	
Output	SC	264V	10min	F1.	TEX OUT	Unit shut down immediately, recoverable, no damage no hazard.	
Model: GTM4640	2-4048						
BD1	SC	264V	1s	TEX F1 TEX	uni O w	Fuse (F1) opened immediately, no hazard.	
C1 mil mil	SC SC	264V	1s	F1.F	TITE O TINI	Fuse (F1) opened immediately and repeat ten times, no hazard.	
T1 (pin2-3)	SC	264V	10min	F1	0.009	Unit shut down immediately, recoverable, no damage no hazard.	
T1 (pin4-5)	SC	264V	10min	F1 WALTER	0.009	Unit shut down immediately, recoverable, no damage no hazard.	
T1 (pin CT1- CT2)	SC	264V	10min	F1	0.009	Unit shut down immediately, recoverable, no damage no hazard.	
Q1 pin S-D	SC	264V	10min	F1	0.004	Unit shut down immediately, recoverable, no damage no hazard.	
Q1 pin S-G	SC	264V	10min	F1	0.004	Unit shut down immediately, recoverable, no damage no hazard.	
Q1 pin D-G	SC	264V	10min	F1	0.005	Unit shut down immediately, recoverable, no damagno hazard.	
D1 W	SC	264V	10min	F11E	0.002	Unit shut down immediately, recoverable, no damage no hazard.	

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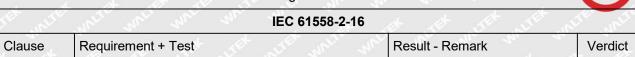


ANNEX H	Electr	onic circui	ts fault test				Z _{III} Z _{III} D
US2 pin 1	. [E. W.] 	OC	264V	10min	F1	0.002	Unit shut down immediately, recoverable, no damage no hazard.
US2 pin 3	MULTER	OC	264V	10min	F1.	0.001	Unit shut down immediately, recoverable, no damage no hazard.
US2 pin 1-2	cie vi ex ni	SC N	264V	10min	F1.	0.008	Unit shut down immediately, recoverable, no damage no hazard.
US2 pin 3-4	wnife •	SC	264V	10min	PET FINE	0.009	Unit shut down immediately, recoverable, no damage no hazard.
C3	INLIE ITEK	SC U	264V	10min	F1.K	0.011	Unit shut down immediately, recoverable, no damage no hazard.
Q2 pin S-D		SC	264V	10min	F1 w	0.002	Unit shut down immediately, recoverable, no damage no hazard.
Q2 pin S-G	NITER .	ALTER AND	264V	10min	F1 F1	0.003	Unit shut down immediately, recoverable, no damage no hazard.
Q2 pin D-G		SC	264V	10min	F1 W	0.002	Unit shut down immediately, recoverable, no damage no hazard.
Output	WALTER	SC	264V	10min	F1	0	Unit shut down immediately, recoverable, no damage no hazard.

20		TABLE: Component	Р			
Obj No.	ject / part	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
9 2/0	g unit AU type	GlobTek, Inc.	Q-SAA	on street our	AS/NZS 3112: 2017+A1:2021	Refer Report No. : WTX23D1123

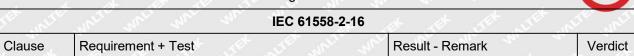
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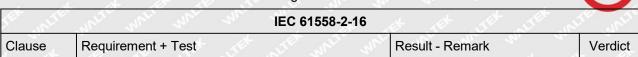
20	TABLE: Comp	onents			20,	Р
Object / part No.	Manufact trademar	· ·	el Technical data	Standard		(s) of ormity ¹⁾
Plug holder & Enclosure	SABIC INNOVAT PLASTICS		1), PPE+PS, Min. V-1, Min. thickness: 2.0mm, 105°C	UL 94 UL 746 A/B/C/D	UL E	45329
Plug holder & Enclosure	SABIC INNOVAT PLASTICS L L C	N. J	Min. V-0, Min. 120°C, Min. 2.0mm thickness	UL 94	UL E	121562
Alternate	LG Chem (Guangzh Engineerii Plastics C	ng	Min. V-0, Min. 120°C, Min. 2.0mm thickness	UL 94	ULE	248280
Alternate	Covestro Deutschla AG [PC R		Min. V-0, Min. 105°C, Min. 2.0mm thickness	UL 94	ULE	41613
Alternate	SILVER A ENGINEE PLASTICS (DONGGI CO LTD	RING S	Min. V-0, Min. 115°C, Min. 2.0mm thickness	UL 94	ULE	225348
Alternate	SABIC INNOVAT PLASTIC		Min. V-0, Min. 120°C, Min. 2.0mm thickness	UL 94	UL E	E45329
Alternate	SABIC INNOVAT PLASTIC		Min. V-0, Min. 125°C, Min. 2.0mm thickness	UL 94	UL E	45329
Alternate	SABIC JA	PAN 945(GG)	Min. V-0, Min. 120°C, Min. 2.0mm thickness	UL 94	UL E	207780
Alternate	SABIC INNOVAT PLASTICS L L C		Min. V-0, Min. 120°C, Min. 2.0mm thickness	UL 94	UL E	121562

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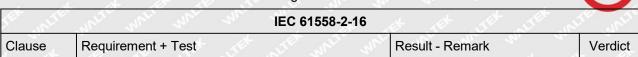
20 1	ABLE: Component	S At At a	ite white white	we we	P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2, T2A, T2B, T4	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E154355
Alt.	DONGGUAN HE TONG ELECTRONIC S CO LTD	CEM1, 2V0, FR4	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E243157
Alt.	CHEERFUL ELECTRONIC	02, 03, 03A	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E199724
Alt.	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E251754
Alt.	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0, 03V0, 04V0	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E186016
Alt.	SHENZHEN TONGCHUAN GXIN ELECTRONIC S CO LTD	TCX	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E250336
Alt.	PACIFIC WIN INDUSTRIAL LTD	PW-02, PW-03	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E228070
Alt.	GOLDEN TRIANGLE PCB & TECHNOLOGI ES LTD	GT-D	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E340752
Alt.	KUOTIANG ENT LTD	C-2, C-2A, C-4	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E227299
Alt.	KINGBOARD LAMINATES HOLDINGS LTD	KB-3151C, KB-5150	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E123995

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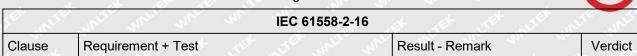
20 T	ABLE: Component	Р				
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Alt. White wa	SHENZHEN JINDIAN PRECISION CIRCUIT CO LTD	JD-1, JD-1A	V-0, 130°C, Min. 1.2 mm thickness	UL 796	UL E347010	
Fuse (FS1) (Optional)	CONQUER ELECTRONIC S CO LTD	MST PTU	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 40017118 VDE 40001462 UL E82636	
Alternate	SUZHOU WALTER ELECTRONIC CO LTD	ICP 2010	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 40012824 VDE 40018781 UL E56092	
Alternate	Bel Fuse Ltd.	RST(For VDE), RSTA(For UL)	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 40011144 UL E506667	
Alternate	Bel Fuse Ltd.	MRT	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 139937 UL E506667	
Alternate	COOPER BUSSMANN LLC	SS-5	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 4001551 3 UL E19180	
Alternate	DONGGUAN BETTER ELECTRONIC S TECHNOLOGY CO LTD	932	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 40033369 UL E300003	
Alternate	HOLLYLAND CO LTD	5ET	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 40015669 UL E156471	

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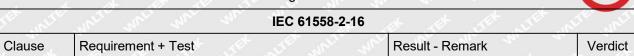
20 T	ABLE: Component	Р			
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alternate	CONQUER ELECTRONIC S CO LTD	MET	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 4001715 7 UL E82636
Alternate	SHENZHEN LANSON ELECTRONI CS CO LTD	SMT	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 4001259 2 UL E221465
Alternate	ZHONG LHAN LANBAO ELECTRICAL APPLIANCES CO LTD	RTI-10 (for UL) RTI-10 Serie(s) (for VDE)	T2AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14,	VDE 40017009 UL E213695
Transformer (T1)	GlobTek/ENG	XF01032(5-8.9V) XF01033(9-14.9V) XF01034(15-24V) XF01035(24.1-48V)	Class B	IEC 61558-1 IEC 61558-2-16	Tested in equipment
- Bobbin	CHANG CHUN PLASTICS CO LTD	T375J(G5)(G6) T373J, T375HF	Phenolic, V-0, 150°C, Min. 0.45mm thickness	UL 94	UL E59481
Alternate	CHANG CHUN PLASTICS CO LTD	4130	V-0, 140°C, thickness 0.74 mm min.	UL 94	UL E59481
Alternate	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9823, PM-9630	Phenolic, V-0, 150°C, Min. 0.45mm thickness	UL 94	UL E41429
Alternate	SHOWA DENKO MATERIALS TECHNO SERVICE CO., LTD.	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	UL 94	UL E514814

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20 T	ABLE: Component	s it it	life onlife white	Mrs. Mrs.	Р
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
- Triple- insulated wire (Secondary)	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B) Series	130°C	IEC 62368-1 UL 2353 IEC 61558-1	VDE 136581 UL E211989 and tested in equipment
WALTER WALTER	Furukawa Electric Co., Ltd.Electronics & Automotive Systems CompanyGloba I Business Development Division	TEX-E	Class B, reinforced insulation	IEC 62368-1 UL 2353 IEC 61558-1	VDE 006735 UL E206440 and tested in equipment
- Insulating tap	e 3M COMPANY	1350F-1 (b) 1350T-1 (b) 44 (a)	130°C	UL 510	UL E17385
Alternate	BONDTEC PACIFIC CO LTD	370S (b)	130°C	UL 510	UL E175868
Alternate	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b) CT* (b)(g) WF* (c)(h)	130°C	UL 510	UL E165111
Alternate	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A (b)	130°C	UL 510	UL E246950
Alternate	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	130°C	UL 510	UL E246820
Tube	GREAT HOLDING INDUSTRIAL CO LTD	TFT TFS TFL	200°C, VW-1	UL 224	UL E156256
Alternate	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	WF	200°C, VW-1	UL 224	UL E203950

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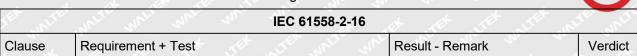
20	TAE	BLE: Component	s at at a	I'E WILL WILL	Mrr. Mr.	10,	Р
Object / par No.	rt	Manufacturer/ trademark	Type / model	Technical data	Standard		(s) of ormity ¹⁾
X capacitor (CX1) (option	onal)	Cheng Tung Industrial Co., Ltd.	CTX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	M1	C-02671- 193049
Alt.	EK	TENTA ELECTRIC INDUSTRIAL CO LTD	MEX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	100	119119 222911
Alt.	.wn.i	JOEY ELECTRONIC S (DONG GUAN) CO LTD	MPX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 4003: UL E:	2481 216807
Alt.	TEN.	ULTRA TECH XIPHI ENTERPRISE CO LTD	HQX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 4002 UL E	4534 183780
Alt.	211.	DONGGUAN EASY- GATHER ELECTRONIC CO LTD	MKP-X2	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 4002 UL E	2258 252221
Alt.	ALIA SEL	Xiangtai Electronic (Shenzhen) Co., Ltd.	MKP/MPX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 4003 UL E	6065 357475
Alt.	wali.	CARLI ELECTRONIC S CO LTD	MPX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 4000 UL E	8520 120045
Alt.	er Er	Dain Electronics Co., Ltd.	MEX, MPX, NPX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 4001 UL E	8798 147776
Alt.	W.	Yuon Yu Electronics Co. Ltd.	MPX Series(for UL) MPX(for VDE)	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 4003 UL E	2392 200119

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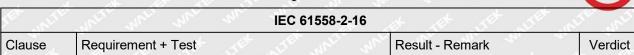
20	TABLE: Componen	ts at at a			Р
Object / par No.	t Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
Alt.	Sinhua Electronics (Huzhou) Co., Ltd	MPX	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 40014686 UL E237560
Alt.	Jiangsu Xinghua Huayu Electronics Co. Ltd.	20 UK in 197	Max 0.33µF, Min.250V, min. 100℃ Min. X2 type	IEC/EN 60384- 14, UL 60384-14	VDE 40022417 UL E311166
Y capacitor (CY1,CY2) (optional)	TDK CORPORATIO N	CD FEET WALTEST	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40029780 UL E37861
Alt. use	SUCCESS ELECTRONIC S CO LTD	SEX WHITE WAS	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40037211 VDE 40020002 UL E114280
Alt. use	Success Electronics Co. Ltd.	SB TE WILLER W	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40037221 VDE 40020001 UL E114280
Alt.	Walsin Technology Corp	AH	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40001804 UL E146544
Alt.	Haohua Electronic Co.	CT7 Et White	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40003902 UL E233106
Alt.	Xiangtai Electronic (Shenzhen) Co., Ltd.	YO-series	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40036880 UL E319473
Alt.	MURATA MFG CO LTD	KX	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40002831 UL E37921

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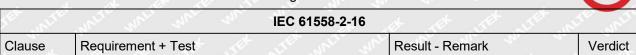
20	TABLE: Componer	nts de la	NLIE MALIE WAL	me me.	Р
Object / pa No.	rt Manufacturer/	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt. White	JYH CHUNG ELECTRONIC S CO LTD	JD WE WATER	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 137027 UL E187963
Alt.	WELSON INDUSTRIAL CO LTD	WD	Min.250V Min.125℃ Max.2200pF Y1 type	IEC/EN 60384- 14, UL 60384-14	VDE 40016157 UL E104572
Alt.	Walsin Technology Corp	AC	Min.250V Min.125℃ Max.2200pF Y2 type	IEC/EN 60384- 14, UL 60384-14	VDE 40001829 UL E146544
Alt.	TDK-EPC Corporation, Capacitors Group Circuit Devices Business Group	CS	Min.250V Min.125℃ Max.2200pF Y2 type	IEC/EN 60384- 14, UL 60384-14	VDE 40029781 UL E37861
Alt. White	Murata Mfg. Co., Ltd.	KY	Min.250V Min.125℃ Max.2200pF Y2 type	IEC/EN 60384- 14, UL 60384-14	VDE 40006273 UL E37921
Alt.	SUCCESS ELECTRONIC S CO LTD	SF WILLEY WILL	Min.250V Min.125℃ Max.2200pF Y2 type	IEC/EN 60384- 14, UL 60384-14	VDE 40016665 UL E114280
Varistor MOV1 (Optional)	Thinking Electronic Industrial Co., Ltd.	TVR10471K, TVR14471K, TVR10621	Min. 385Vac, 105°C, Coating V-0	IEC/EN 61051-1, IEC/EN 61051-2, UL 1449 IEC 60950-1 Annex Q	VDE 005944 UL E314979
Alt. whitek	Shantou High- New Technology Dev. Zone Songtian Enterprise Co. Ltd.	10D621K	Min. 385Vac, 125°C, Coating V-0	IEC/EN 61051-1, IEC/EN 61051-2, UL 1449 IEC 60950-1 Annex Q	VDE 40023049 UL E330837

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20 T/	ABLE: Component	s at the	LIE WALLE WALL	were and	Р Р
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.	Xiamen Set Electronics Co., Ltd.	TFV8S471K TFV10S471K	Min. 250Vac, 105°C, Coating V-0, Rated function Temp: 145°C Fuse Temp: (140±2) °C	IEC/EN 61051-1, IEC/EN 61051-2, UL 1449 IEC 60950-1 Annex Q	UL E322662 TUV RH J50554061
Alt.	Guangdong Huiwan Electronics Technology Co Ltd	V-621K-10D V-621K-14D V-621K-10 EH V-621K-14 EH	Min. 385Vac, Min.85°C, Coating V-0	IEC/EN 61051-1, IEC/EN 61051-2, UL 1449 IEC 60950-1 Annex Q	VDE 40043880 UL E480104
Alt. White	Success Electronics Co., Ltd.	SVR10D471K, SVR14D471K SVR10D621K, SVR14D621K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2	VDE 40030401 UL E330256
Photo coupler (US2)	Everlight Electronics Co., Ltd.	EL1018	Ext. Cr&Cl: ≥8.0mm, DTl: ≥0.4mm Thermal cycling test, Min. 110°C	IEC/EN 60747-5-5, IEC/EN 62368-1 UL 1577	UL E214129 VDE 40028391
Alt. use	Shenzhen Orient Components Co. Ltd.	OR10xx	Ext. Cr&Cl: ≥8.0mm, DTI: ≥0.4mm Thermal cycling test, Min. 110°C	IEC/EN 60747-5-5, IEC/EN 62368-1 UL 1577	VDE 40029733 UL E323844
Alt. use	COSMO Electronics Corporation	KT1018	Ext. Cr&Cl: ≥8.0mm, DTI: ≥0.4mm Thermal cycling test, Min. 115°C	IEC/EN 60747-5-5, IEC/EN 62368-1 UL 1577	UL E169586 VDE 40031267

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20	ABLE: Component	ts at the			Р
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt. use	Lite-On Technology Corporation	LTV-1004	Ext. Cr&Cl: ≥8.0mm, DTI: ≥0.4mm Thermal cycling test, Min. 100°C	IEC/EN 60747-5-5, IEC/EN 62368-1 UL 1577	UL E113898 VDE 138213
LF1	GlobTek/ENG	NF00025	Min. 130°C	IEC 62368-1	Tested in equipment
LF2	GlobTek/ENG	NF00131	Min. 130°C	IEC 62368-1	Tested in equipment
DC output cor	d Interchangeabl e	Interchangeable	VW-1 or FT-1, Min.80°C Min. 16AWG	UL 758,	UL ⁿ unit

26	TABLE: W	orking voltage meas	surement.	The sure of P
Location	10. 10	RMS voltage (V)	Peak voltage (V)	Comments
Model: GT	ΓM46402-300		miter uniter whi	Mr. Mr. Mr. Mr.
T1 Pin 2 to	o pin CT1	189	314	THE THE STIEF BUTTER STATE
T1 Pin 2 to	pin CT2	234	462	Max. RMS voltage
T1 Pin 2 to	o pin Earth	206	386	TEX SIER SLIER WITE SURE
T1 Pin 3 to	o pin CT1	205	332	
T1 Pin 3 to	pin CT2	190	314	THE LIEF OLIEF WILL MALL MA
T1 Pin 3 to	o pin Earth	230	464	Max. Peak voltage
T1 Pin 4 to	o pin CT1	206	384	ALTER MITE MILL WALL WALL
T1 Pin 4 to	pin CT2	205	334	St. St. At. At. At.
T1 Pin 5 to	o pin CT1	194	396	NITER WITE WHITE WHITE WHITE
T1 Pin 5 to	pin CT2	214	434	at the fifth that
Between t	wo pin CY1	203	334	Will Muli Muli Muli August
Between t	wo pin CY2	207	354	A St. Set 1st 1set 1
CY1 pri. a	nd CY2 sec.	193	404	anti mit me me m
US2 pin 1	to pin 3	214	366	- at the text of the state of the
US2 pin 1	to pin 4	203	338	mer any any any

Supplementary information: N/A

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			IEC 61558-2-16		
Clause	Requirement	+ Test	ALTER WALTER	Result - Remark	Verdict
The state of	Will Will	me in a	Ş.	at at all set	ALTE MALTE
US2 pin 2	to pin 3	206	352	in mer mer me	77, 7,
US2 pin 2	to pin 4	220	352	t let let liet	ALTER MITER
Model: GT	M46402-4048		ALTER WALL	me me me n	, , ,
T1 Pin 2 to	pin CT1	221	408	let get get in	TER WITE ON
T1 Pin 2 to	pin CT2	196	386	me me me	
T1 Pin 2 to	pin Earth	224	457	THE THE STEE STEE	INLIE MALI
T1 Pin 3 to	pin CT1	209	394	11/2 11/2 11/2	, , , , t
T1 Pin 3 to	pin CT2	210	348	Et JEK JEK NIE	WALTER WALTER
T1 Pin 3 to	pin Earth	196	319	11, 21, 2,	
T1 Pin 4 to	pin CT1	228	461	Max. RMS voltage , Max	x. Peak voltage
T1 Pin 4 to	pin CT2	201	389	411 411 4	at at a
T1 Pin 5 to	pin CT1	205	334	LIFE MILE MILE WAL	mer me
T1 Pin 5 to	pin CT2	187	374	in the state of	et de
Between to	wo pin CY1	205	421	ITE WALL WALL	mir m
Between to	wo pin CY2	224	457	. L A A	TEN STEN
CY1 pri. ar	nd CY2 sec.	209	394	The Will Will A	re in
US2 pin 1	to pin 3	228	386		TEN LIER O
US2 pin 1	to pin 4	226	388	" " " " " " " " " " " " " " " " " " "	- 11, -1,
US2 pin 2	to pin 3	220	380	The state of	A NITER OUT
US2 pin 2	to pin 4	220	380	VEL ANT ANT AND	70, 7,
NIata/a\.	- CV - CV	10 10 10 10 10 10 10 10 10 10 10 10 10 1		1 4 2	16th 15th

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	oti
	Insulation	Measured (mm)	Required (mm)	Measured (mm)	Required (mm)	Measured (mm)	Required (mm)	
Model: GTM4	6402-300)5	Life while	me 1	11. 14.	7.	J+ J0	t let
L & N trace be fuse	efore	BI	3.5	2.4	4.0	2.5	re -ur	71/2.
Two terminals	s of fuse	BI	3.0	2.4	3.8	2.5	er ale	write- w
Between two CY1	pin	BI THE	5.4	2.4	4.6	2.5	16th	(1814 – 12)
Between two CY2	pin	BI	5.0	2.4	4.3	4.8	21/2- 21/	7 7 EA
CY1 pri. And sec.	CY2	RI	10.4	4.5	8.9	4.8	NITE - WILL	No.

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1, 20,	11/2 1/1	-21,	IE	C 61558-2-1	0			vr. av.
Clause	Requireme	ent + Test	CIER NIL	WALL	Result	- Remark	7,	Verdict
Live parts t		RI	5.7	4.5	7.8	4.8	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Primary cir secondary (PCB trace US2)	cuits to	RI	7.5	4.5	White .	4.8	L WALTER	Whitek wh
Primary cir secondary (PCB trace		RI	6.0	4.5	7.5	4.8	WALTER OF	arek - Marik
Transforme winding to winding		RI	6.0	4.5	7.5	4.8	TIEK MULL	WINTER OF
Transforme secondary core		RI	7.0	4.5	7.5	4.8	EK WITE	MULIE W
Enclosure	Mr. N	RI	-	x - x =	State S	TEX - TIE	2.5	2.0
Model: GT	M46402-404	8	OLITE NAL	- m	211 211			A 18
L & N trace fuse	e before	ВІ	3.5	2.4	3.5	2.5	Inlike Juni	"Att.
Two termin	nals of fuse	BI	3.0	2.4	3.0	2.5	16th 17th	4
Between to CY1	wo pin	BI	5.4	2.4	5.4	2.5	t 75.4	7 EF
Between to CY2	wo pin	BI	5.0	2.4	5.0	4.8	White.	an an
CY1 pri. ar sec.	nd CY2	RI	10.4	4.5	10.4	4.8	on I fee	The White
Live parts taccessible		RI	5.7	4.5	5.7	4.8	ALTER MALT	EK WILLER
Primary cir secondary (PCB trace US2)	circuits	RI MILITER	7.5	4.5	7.5	4.8	ek water	MULITER A
Primary cir secondary (PCB trace		RI	6.0	4.5	7.05	4.8	un <u>u</u> r	
Transforme winding to winding	er primary secondary	RI	6.0	4.5	7.05	4.8	uni vin	- NITER
Transforme secondary core	er winding to	NATE WALE	7.0	4.5	7.0	4.8	et mitet	MULLER MI
Enclosure	,t	A RI	- NI	10 - 10 to	21/2 3	1. Tap.	2.5	2.0

Remark:

B = basic insulation S = supplementary insulation R = reinforced insulation

- 1. The core of transformer (T1) is considered as primary.
- 2. CY1 consider supplement insulation.

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11010101100	110.11 11 17 12 10 10 10	1 age 61 61 126	200	
TER WILLER		IEC 61558-2-16		MITE MILIE
Clause	Requirement + Test	TER SITER WALL WAL	Result - Remark	Verdict

27.2 TABLE: BALL-PRESSURE TEST FOR ENCLOSURE					
Material	- 14	Temperature (°C)	Result (mm)	Comments	ele-
Plastic en	closure	125	1.43	See table 20	. Cet
Remark: -	- 45		et aliet aliet and	White their M	

27.4	TABLE:	TABLE: GLOW-WIRE TEST FOR ENCLOSURE							
Material		Temperature (°C)	Result (mm)	Comments					
Plastic enclosure		650	No flame	See table 20					
Remark: -	LET LET	TEN STEE SMITH	Mr. Mr. My	. L A A					

27.2	TABLE: BALL-PRESSURE TEST FOR INSULATION MATERIAL RETAINING CURRENT CARRYING PART							
Material	Temperature (°C)	Result (mm)	Comments					
T1 bobbin	125	1.22	See table 20					
PCB 125		0.94	See table 20					
Remark: -	the way we are an	at at let	THE STEE STEE	WELL				

		OW-WIRE TEST FOR INSULATION MATERIAL RETAINING CARRYING PART							
Material	1 ' A '	Temperature (°C)	Result (mm)	Comments					
PCB		750 / 850	No flame / No flame	See table 20					
T1 bobbin		650 / 750	No flame / No flame	See table 20					
Enclosure	, ,c	650 / 750	No flame / No flame	See table 20					
Plug portion	MILLE	850	No flame	See table 20					
Output conne	ector	850	No flame	See table 20					
Remark:	mile mi	Ange the second	t et let let	alier alier waller					

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 2 x working betwe	g voltage	68 h at the temperature acc.	1 hour	2 hc	our	1 hour		·		
pri / s		(min. 85 °C)	25 °C	0 °	С	25 °C				
in Mer.	The .	n 2n	18 X	, L	¢* ,	I'm alle	orci.	are.	2/1/2	
. ,+		TEX SEX SOLIT	were mer	60		3				

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1	4 4			
S	TEL STATE	IEC 6	1558-2-16	
2	Clause	Requirement + Test	Result - Remark	Verdict

26.2 TEST B	TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION									
		h three specially prepa or impregnation (P1)	ared specimens	s with						
cycles with 2 x working voltage between		68 h at the temperature acc.	1 hour	2 hour		1 hour				
pri / s		(min. 85 °C)	25 °C	0°	С	25 °C				
Mrs. M	10 11/2	24 2.	L SET	100	TE.	CALLER MAL	Will	Mer		
*	et de	t TEX TEX O	The Marie	ar .	20,	200		24		

26.2 TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION											
	Test with three specially prepared specimens with potting (only dti is required)										
cycles with 2 x working voltage between		68 h at the temperature acc.	1 hour	2 hour		1 hour					
pri / s		(min. 85 °C)	25 °C	0 °	С	25 °C					
it is			3,0		(2).	1 1 1 x	e.t	LE .			
ver and		YFA	, Eth	4E	.45	CINLIL	are s	100 11			

Annex U	U.5.1 THERMAL ENDURANCE TEST
Type ref.	White and and the it is that the ite
Rated PRI-Voltage	THE TIEF STIFF STREET WHILE WALL WALL THE
Rated SEC- Voltage	WILL WILL THE TEX STEE STEET WILLER WILLER WILLER
Material of Winding	NUTE WILL WILL WILL WILL WILL THE TEXT
Material of bobbin	A SK ITEK LIFE MITER WILL WILL WILL WILL WILL WILL
Material of resin	The wall was all the text of
Material of potting	* If the still out will write the same
Material of foil	while the test that the title still
Components removed for test	MITER WHITE WHITE WHITE WHITE WAS THE TEX
tw	THE THE STIFF MITTE WALL WALL WALL WALL WALL WALL WALL WAL
St get age mater of	THE THE THE THE THE
Objective test duration (days)	EX WILLEX WILLEY WILLEY WILL WILL WILL WILL WILL WILL WILL WIL
Theoretical test temperature	TEX UNLIER WILLER WILLIAM WILLIAM WILL WILL WILL WILL WILL WILL

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

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1 (01010110)	7110 1717.1207.1112.107.010	1 ago 00 01 120		
THE WIFE	" Write Mure Mure Au	IEC 61558-2-16	LET THE THE ALT	INLIE WALT
Clause	Requirement + Test	it will an	Result - Remark	Verdict

26.2 TEST A	TABLE THROU					CES A	ND CL	EARA	NCES	AND	DISTA	ANCE	S 4 th	*	N/A
	Test wit														
cycles 2 x working betwe pri / s	g voltage een	te	68 h a mperat Cl. (min. 8	ure ad 14		1 ho			hour) °C		1 hour 25 °C			·	
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	et 5	<i>y</i> .	J.E.	NITE.	JA C	17		211.	10,	7					et-
After 4 h –	Rw	- 0					et .	JEK	NLTE	100	10		N.C.	m	'aj
After 4 h – temperature		WAL	211	5	mer	200	i,	<i>*</i>	C. E. F.	. LT E	, ali	*	LIEN .	NLT EN	MAL
After 4 h - c	100 St. 200 St	NLTEN	WILL	1/1/ *	ue,	N. C.C.	71/2	711	, 	A EX	TEN	3	est of	set.	JALTEN
After 24 h -	- Rw	et.	1et	- (1	۶ .	ď.	N. L.	Mic	211		11	21/	2,,		٠,٠
After 24 h - winding temperature				an.	.ur ^{y2}	,	LIEK	ALTER	MALI	1 2/1 14	TEK V	ALTER	MULT	JUN.	? .
After 24 h - temperature	- v	N	7	(a)	146	مار <i>ا</i> لة		TE.	.00	7	(an)		ine.	"Lik	701
Final test po (days)	eriod	UI.	- K-		TEX-	ALTER	MALT	it and	ITER V	Live	MULL	in	7/	,	"ALE
Output volta (11.1) unde			nu.	711°		EF	OLITEK.	NILTE SINLTE	+ _{,u} r	EK J	VILLER.	MIT	MUL	2	VET.
Insulating resistance	IER WY	, Ju	NO.	NIL.	-201	,	TEK	LIFE	_{(NLTE}	. ari	IEK W	TER	WALTE	wi	TER V
High voltag (35% of the in Table 8.a	values	Whi	ie. m	S.	AUT.	ماري مرياري		e. 1	ALTEK.	MLTE	y whi	"h	ALTER .	MLTE	t with

Annex U	U.5.2 The use of an other constant S other than 4500 in tw tests Test1:10 days
Type ref.	A CH LIER WITER WITER WALL WALL WALL WALL WITE
Rated PRI-Voltage	mer was all the text step attention
Rated SEC- Voltage	TEX WITER WHITE WHITE WHITE WHITE WALL WAS MADE WAS THE LIFE
Material of Winding	THE THE STIFF BUTTER WHITE WALL WHITE WAS THE
Material of bobbin	MILE WE WE WE WE THE LIFE LIFE
Material of resin	A LEX LIFE STILL STATE MALL MALL MALL MALL MALL MALL MALL MAL

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TER WITE	MALL MALL WALL WALL	C 61558-2-16	ik wife wil
Clause	Requirement + Test	Result - Remark	Verdict

	180	C1,	227			100	0	4	.05	16	- 250			100
Material of potting	∠ +	24		٠,	Et .	WITE	الالتر	in	,	n.	In.	-11		
Material of foil	·	Ver.	Mr	"In		M	.+	.4	Ļ	LEK.	JEK	ZITE.	,,,,	ie. "
Components removed for test	٠,,	JEK N	LIEX	WALTER	whi	CERT VI	N.C.	me.	m	, , ,,		16k	16	ب ای
tw		۷	٠	,et	. (6)	کی ا		NET .	Wei.	are	, 4	0	in.	10,
S THE STEE	Wille	with	الۍ	٧,	11/6	-0.		J.		26		CENT .	JEK	RETE
Objective test duration (days)	ITEX.	THE WITH WHITE WHITE WHITE WHITE WHE WHO WHE WAS THE												
Theoretical test temperature	THE THE NITER WITTER WALTER WA				et e									
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	-60,		2	<i>A</i>	10		٠, ب	CLEE .	10-17-6	WILL	Ju.	, '	100	In.
After 4 h – Rw	NET E	antist.	, an	, ,		24	20		٠,	e t		٫٠	16th	JEK
After 4 h – winding temperature	(EF	TEX	nLT.	, n	et.	MITER	wit	nu,	١.	ine.	W.F	711	ų į	
After 4 h - oven temperature	4	er Lite		, sel	,	LIEK	NITER	MALT	211	LIFE	VILLE	WILL	411	, ,,
After 24 h – Rw	1 20	1	Α,	20,		ķ	. E ^V	11				NUTE	anite.	in
After 24 h – winding temperature	n'		Ø*\ 	Tie T	amili TEX		7. (T.)	JE.		unii	t mi	ZEX JY	LIEK	MALTE
After 24 h - oven temperature	UTER	WILLE	Mer	, ,		7614 701	~ (~ (°	٠ ,	et .	LIEK	NALTE	به نامان	Elf Of	ALTEK.
Final test period (days)	ER W	ALTER.	unite	775	, ,	n.	VIL.	70 (E)		JEK ,	TEX	MITE	نامان	ieję An
Output voltage (11.1) under load	. WE	LEIK AU	TEK	write	41/4	, ,,,		n.	111	t '	e.t	JEH.	, LITE	الماري
Insulating resistance	(NITE)	NI	en. Er	LIEK.	MULTE	, whi	11/2	NO.	ine.	ان مارد	3)	et .	ZE#	TER
High voltage test (35% of the values in Table 8.a	TEK.	NNLTEX	unii	ex on	TEK.	WALTE TEX	المالي العالم		it.	oner TEX	WAL WALL	الله المالي	ik ik	on.

Annex U	U.5.2 The use of an other constant S other than 4500 in tw tests Test2:120 days
Type ref.	unite while war war and the feet feet steet street and
Rated PRI-Voltage	It let lifet with while while whe we will the
Rated SEC- Voltage	CIL WILL WILLER TEX STEEL STEEL SUITER WHITE WHITE WHITE

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1976		The state of the s					
IEC 61558-2-16							
Clause	Requirement + Test	Result - Remark	Verdict				

	182	(0)	400	25,00						100	163			œ_
Material of Winding	.+	j.t		۶ ر	Et .	WITE	المارات	" sur		n.	The.	211	3	
Material of bobbin	7					M	٠,		£ .	45t	JEK	. KLIFE		JE . 11
Material of resin		et.	18th	J. (5 th)		SEE TO	VII.	Mr	n	, 2 ₁		20,		
Material of potting	275	11/		in.	1,		et	Let.	(\(\lambda \)	ن. ب	SEE .	ALTEE .	MILLE	"will
Material of foil	1	ر ان	CENT .	LITER	WITE.	" un	, ,	r .	n.	20	- 27		٠,٠	
Components removed for test	in.	-71/2 -71/2	,		CEX.	MITE	, whi	LEK W	NITEK.	WALTE	uni	ie. m	ur .	aner.
tw	· .	Mr.	11/2	7/1		. AL		ر با	E.F	TEX	JE	المام الم	1	The s
S	,±	ZE*	(KE)	کی ا	ip "01	N.C.	all Fre	me	4		a,	2,		٠.
Objective test duration (days)	Whit was with allest whites white			iek 'ek	LIFET.	Mile	wei	'un						
Theoretical test temperature	wi	211	٧ س	in.	-10°		et .	LIEK	المنتالة	الماس	n Fr	TER 2	INLTER	uner
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		In Little	Whi.	m			,		£	, E. T.	TEN	56). 3).	IER .
After 4 h – Rw	4_	×		36	.	CIE.	DITE	MILL	1/2	` <u>\</u>		24	7	,
After 4 h – winding temperature	10		A	2110	7 7	, t	3 EV			120	iest 1	nliek.	MALTE	runs.
After 4 h - oven temperature	21	/(1	3	1 E.A.			3 P		The state of	t on	7.E.K. W	LIEN	WALTE
After 24 h – Rw	JEX	, LITE	101	1		21/2	10.	2		7		ŧ.	٠	16th
After 24 h – winding temperature	E.A.	LIEK.	MILIE	- uni	SEP 3	ALTER	مامانة ب	ر المال ا	, E	NITE.	oni. Tex	VINE LIE	ال ناء	Elik III
After 24 h - oven temperature	ناء.	. E. P	CLER	WALTE!	امالا	ie. "	LTV.	Mer	"In	- 'n ₁	.t	10 K	10°	L 5
Final test period (days)	TE.	٠.	et u	LTEK .	MALTE	بالمالة	17	ALTE.	MILTE	MULL	21/	, t	in.	TEK U
Output voltage (11.1) under load	TEX III	100 100	- S	Ex VII	UEL	MALTE	- MILE	E.k.	STEET,	MITE	wi	, m		in.
Insulating resistance		¹ / ₄	-211-	٠	est of	LIFE	JNLTE!	Whit	.y. -	LITER	INLIER	whit	, an	U ,
High voltage test (35% of the values in Table 8.a	_s/r	et s	TEK TEK	on tiek	WAL	in on	JEK.	MALTER	whit	ek w	71EK 1	JALTEK JALTEK	WY.I.Y	

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11010101100	110 111/20/11/2401040	1 age 00 01 120		
TER WITE	White whi with all	IEC 61558-2-16	ART THE STEEL STEEL	INLIE WALTE
Clause	Requirement + Test	EX LIFE WALL W	Result - Remark	Verdict

AA	ANNEX AA		N/A
INLITER INL	PARTIAL DISCHARGE (PD) TEST	TEX TEX TEX MITES	N/A
25. 1	L at let that the wife will a	mr. mr. m. m.	, ,
ВВ	ANNEX BB	THE THE STEEL WITHER	N/A
ex whet	Particular requirements for associated transforme supplies with internal frequencies > 500 Hz	ers for switch mode power	N/A
	See separate test report-form for these Annex.	mr mr m m	N/A
3B.8	MARKING AND OTHER INFORMATION	THE THE STEEL PLIT	N/A
3B.8.2	Marking for transformers IP00 or for associated transformers: type and trademark, instruction sheets	TEX MITEX MATER WALTER	N/A
3B.8.11	Correct symbols:	a state	N/A
2 m	Volts	V mill mill m	N/A
ek rek vini vi	Amperes	A (mA)	N/A
	Volt amperes (or volt-amperes reactive for reactors)	VA or (VAR)	N/A
mer, m	Watts	Wet with white white	N/A
all di	Hertz	Hz	N/A
ir m	Input	PRI	N/A
Et JEH	Output	SEC	N/A
24,	Direct current	d.c. (DC) or	N/A
LIER (Neutral	N A A A A	N/A
10 1	Single-phase a.c.		N/A
اران ^{العا} ليان	Three-phase a.c.	$3\sim$ 1 1 1	N/A
	Three-phase and neutral a.c.	utral a.c. 3N ~	
	Power factor	cos φ	N/A
y Jek	Class II construction		N/A
140.	Class III construction	in an an	N/A
white wh	Equipment of overvoltage category I	I white white white	N/A
LITER WALF	Equipment of overvoltage category II	II white white	N/A
MULLE	Equipment of overvoltage category III	III MILITE WILLE AN	N/A
MULLEY W	Equipment of overvoltage category IV	IV and and and	N/A

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y and	IEC 61558-2-16	the the street	arr. arr
Clause	Requirement + Test	Result - Remark	Verdict
AN CO	Fuse-link		N/A
m m	Rated max. ambient temperature	ta	N/A
.5EX .5	Rated minimum ambient temperature	t _{amin}	N/A
	Rated minimum temperature	t _{min}	N/A
EK WALTER	Frame or core terminal	The milet white	N/A
NITEK.	Protective earth		N/A
	IP number	IPXX	N/A
Mrte an	Earth (ground for functional earth)	The white white white	N/A
LIEK WALTE	For indoor use only	Charles with	N/A
ek watek	To indicate that the appliance is intended to be usable up to the maximum altitude 3 000 m.	≤3000m	N/A
MUTTER W	To indicate that the power supply unit shall not be used, if pins of the plug part are damaged.	The same of the sa	N/A
Viz. My	Additional Symbols (IEC 61558-2-16:09)	White white	N/A
IEK WALTER	SMPS incorporating a Fail-safe separating transformer	F OF F	N/A
MALTER	SMPS incorporating a Non-short-circuit-proof separating transformer	9 or ①	N/A
WALTER WA	SMPS incorporating a Short-circuit-proof separating transformer (inherently or non-inherently)	e or O	N/A
Et JEX	SMPS incorporating a Fail-safe isolating transformer	F or DF	N/A
- TEX	SMPS incorporating a Non-short-circuit-proof isolating transformer	or D	N/A
WILLER MY	SMPS incorporating a Short-circuit-proof isolating transformer (inherently or non-inherently)	e or the	N/A
IEK WALTE	SMPS incorporating a Fail-safe safety isolating transformer	F.	N/A
WALTEX.	SMPS incorporating a Non-short-circuit-proof safety isolating transformer		N/A

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	IEC	61558-2-16	INLIE WALT
Clause	Requirement + Test	Result - Remark	Verdict

÷ 20		1 + 3	₹ -		
WALLER WALL	SMPS incorporating a Short-circuit-proof safety isolating transformer (inherently or non-inherently)		N/A		
LIEK WALTER	SMPS incorporating a Fail-safe auto-transformer	OF OF	N/A		
EX WILLEX	SMPS incorporating a Non-short-circuit proof auto-transformer	or -O	N/A		
WHITEK WA	SMPS incorporating a Short-circuit proof auto-transformer (inherently or non-inherently)	\$ or -⊙	N/A		
ing and	SMPS (Switch mode power supply unit)	S N	N/A		
BB.9	PROTECTION AGAINST ELECTRIC SHOCK		N/A		
BB.10	CHANGE OF INPUT VOLTAGE SETTING		N/A		
BB.11	OUTPUT VOLTAGE AND OUTPUT CURRENT UI	NDER LOAD	N/A		
BB.12	NO-LOAD OUTPUT VOLTAGE (see supplemental	ry requirements in Part 2)	N/A		
BB.13	SHORT-CIRCUIT VOLTAGE				
BB.14	HEATING		N/A		
BB.14.2	Application of 14.1 or 14.3 according to the insulation system	a functional	N/A		
BB.14.2.1	Class of isolating system (classified materials according to IEC 60 085 and IEC 60 216)	MULTE WILL WILL M	N/A		
BB.14.2.2	No classified material, or system but the measured temperature does not exceed the value of Class A	untiek untiek white unti	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	ex unifer white white	N/A		
BB.14.3	Accelerated ageing test for undeclared class of isolating system	THE STIET WIFE ON	N/A		
d	Cycling test (10 cycles):	M. M. S.	N/A		
Murry Mur	measuring of the no-load input current (mA)	ALTER MALTER MALTER MALTE	N/A		
BB.14.3.1	heat run (temperature in table 2)		N/A		
BB.14.3.2	 vibration test: 30 min; amplitude 0,35 mm; frequency range: 10 Hz, 55 Hz, 10 Hz 	TEL WALLE WALL WALL	N/A		
BB.14.3.3	- moisture treatment (48 h, 17.2)	t alter alter arter a	N/A		
BB.14.3.4	Measurements and tests at the beginning and after each test:	the set set is	N/A		

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	IEC IEC	61558-2-16	INLIES WALT
Clause	Requirement + Test	Result - Remark	Verdict

Clause	Requirement + Test Result - Remark	Verdict
100	mil and and and and a state of	The Walter
	deviation of the no-load input current, measured at the beginning of the test is 30%	N/A
- t	- insulation resistance acc. cl.18.1 and 18.2	N/A
VIII MUE	electric strength, no breakdown (18.3); 2 min; test voltage 35% of specified value (table VI)	N/A
TE WHITE	 Transformers (50 or 60 Hz version) are tested after the dielectric strength test as follows: under no load; duration: 5 min; Upri(V):1,2 times rated supply voltage; frequency (Hz): 2 times rated frequency 	N/A
BB.15	SHORT-CIRCUIT AND OVERLOAD PROTECTION	N/A
BB.16	MECHANICAL STRENGTH	N/A
BB.17	PROTECTION AGAINST HARMFUL INGRESS OF WATER AND MOIST	TURE N/A
BB.18	INSULATION RESISTANCE AND ELECTRIC STRENGTH	N/A
BB.18.2	Insulation resistance between:	N/A
WALTER	live parts and body for basic insulation 2 M	N/A
NITER AIRE	live parts and body for reinforced insulation 7 M	N/A
SER STE	input circuits and output circuits for basic insulation 2 M	N/A
k Zest	input circuits and output circuits for double or reinforced insulation 5 M	N/A
un.	each input circuit and all other input circuits connected together 2 M	N/A
mer m	each output circuit and all other output circuits connected together 2 M	N/A
	hazardous live parts and metal parts with basic insulation (Class II transformers) 2 M	N/A
Me	body and metal parts with basic insulation (Class II transformers) 5 M	N/A
MULLEY V	metal foil in contact with inner and outer surfaces of enclosures 2 M	N/A
BB.18.3	Electric strength test (1 min): no flashover or breakdown:	N/A
TEX WALTE	basic insulation between input circuits and output circuits; working voltage (V); test voltage (V):	N/A
MUTT.	double or reinforced insulation between input circuits and output circuits; working voltage (V); test voltage (V): :	N/A

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V	

The state of	IEC 61558-2-16	the the tipe with the	a we
Clause	Requirement + Test	Result - Remark	Verdict
· Walter A	NI WE WE SHE SHE	Life of the other of the	NI/A
	3) basic or supplementary insulation between:	Mr. Mr. Mr. A.	N/A
MUTTER MUT	a) live parts of different polarity; working voltage (V); test voltage (V)	LIET WILLER WHITE	N/A
	b) live parts and the body if intended to be connected to protective earth:	Et NIFET MITET MITET W	N/A
EK MITEK	c) inlet bushings and cord guards and anchorages	THE THE STATE OF	N/A
TEX.	d) live parts and an intermediate conductive part	AN THE THE TE	N/A
71, 21,	e) intermediate conductive parts and body .:	With Mily My My	N/A
INLIER WILL	4) Reinforced insulation between the body and live parts; working voltage (V); test voltage (V)	TEK WALTER WALTER	N/A
A MUTER	 5) Functional insulation for windings intended to be connected in series or parallel (test voltage = working voltage + 500 V) 6) (IEC 61558-2-16:2009) 	MALIE MALIE MALIER MALE	N/A
18.102 (A1)	Partial discharge tests according IEC 60664-1 , if the working voltage is > 750 V peak	HITEK WHITEK WHITEK WHITEK	N/A
NITER WALTE	Partial discharge is ≤ 10 pC at time P2 See Fig. 19.101	ES MILITER MILITER OF	N/A
BB.19	CONSTRUCTION	,	N/A
BB.19.1	General construction	were the the the	N/A
BB.19.1.1	General	A A A A S	N/A
BB.19.1.2	Auto-transformers	mer mer mer mer	N/A
BB.19.1.2.1	For plug connected auto-transformers with rated input voltage > rated output voltage the potential to earth shall not exceed the rated output voltage.	TEX WHITEK WHITEK	N/A
BB.19.1.2.2	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 system.	MULTER WILLER WHITE	N/A
BB.19.1.2.3	A polarity detecting device only energises the output in the case: output potential to earth ≤ rated output voltage, also with reversed input plug.	NUTER WHITER WHITER	N/A
The Tills	 The contact separation of the device is ≥ 3mm 	it with any war w	N/A
Miller	 A current to earth does not exceed 0,75 mA. 	ALTER OLITER SOLITE SUN	N/A
MILIER W	All tests are repeated under fault conditions of H.3.3 of annex H of part 1. The potential to earth does not exceed the max output voltage for more than 5 s.	MULTER MULTER MULTER MULT	N/A

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IEC 61558-2-16		Write White
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Clause	Requirement + Test	Result - Remark	Verdict
BB.19.1.3	Separating transformers	WALLEY WALTER WALTER	N/A
BB.19.1.3.1	Input and output circuits electrically separated.	at let let	N/A
BB.19.1.3.2	The insulation between input and output winding(s) consist of basic insulation	of the same	N/A
2, 20	Class I SMPS	white and any	N/A
IEK WILTER W	Insulation between input windings and body consist of basic insulation	Multer Whiter White	N/A
WALTER WAL	Insulation between output windings and body consist of basic insulation	street street smarket	N/A
at all	Class II SMPS	, ,,,,,	N/A
ine and	Insulation between input windings and body consist of double or reinforced insulation	LIER MILLER MILLE AN	N/A
LIE WALTE.	Insulation between output windings and body consist of double or reinforced insulation	ex united united unit	N/A
BB.19.1.3.3	The insulation between input windings and intermediate conductive parts and the output windings and intermediate part consist of basic insulation	Whitek whitek whitek	N/A
	For class I SMPS the insulation between input and output windings via the intermediate conductive parts consist of basic insulation	et vince vince	N/A
TEX WITEX	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.	TEK TEK WITEK	N/A
BB.19.1.3.4	Parts of output circuits may be connected to protective earth	et let let	N/A
BB.19.1.3.5	No direct contact between output circuits and the body, unless:	at the tipe of	N/A
er an .	Allowed for associated transformers by the equipment standard		N/A
BB.19.1.4	Isolating transformers and safety isolating transformers	MILLE MILLE MILL	N/A
BB.19.1.4.1	Input and output circuits electrically separated	LIER SLIER WILLEY	N/A
aliek arliek	No possibility of any connection between these circuits	at the the	N/A
BB.19.1.4.2	The insulation between input and output winding(s) consist of double or reinforced insulation (exception see 19.1.4.4)		N/A
y antiek wh	Class I transformers not intended for connection to the mains by a plug:	TER LIER LIER	MILT -

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ant .	IEC 61558-2-16	of the other air	with the
Clause	Requirement + Test	Result - Remark	Verdict
e white and	Insulation between input windings and body connected to earth consist of basic insulation rated to the input voltage	and and and	N/A
LIEK WALTER	Insulation between output windings and body, connected to earth consist of basic insulation rated for the output voltage	EX MULTER MULTER MAL	N/A
EK WITEK V	Class I transformers intended for connection to the mains by a plug:	STEEL WITER WITE	N/A
WHITEK WH	 Insulation between input windings and body connected to earth consist of basic insulation rated to the working voltage 	MITEL WAITER WAITER	N/A
UNITER VANITE	 Insulation between output windings and body, connected to earth consist of supplementary insulation rated for the working voltage 	TEX MUTER MUTER M	N/A
ite with	Class II transformers	et allet milet and	N/A
H WALTER W	 Insulation between input windings and body consist of double or reinforced insulation rated to the input voltage 	MILIER WILLER WILLER	N/A
WALLER WAL	 Insulation between output windings and body consist of double or reinforced insulation, rated to the output voltage 	NATER WALTER WALTER W	N/A
BB.19.1.4.3	For transformers with intermediate conductive parts not connected to the body (between input/output):	thrift was	t get ii
BB.19.1.4.3.1	For class I and class II transformers the insulation between input and output windings, via intermediate conductive parts, consist of double or reinforced insulation, rated to the working voltage.	MUTER MUTER MUTER	N/A
ONLY WATER	For class II transformers 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)	Lies while while while	N/A
Whitek White	 For transformers, different from independent, the insulation between input and output windings, via intermediate conductive parts, consist of double or reinforced insulation, rated to the working voltage. 	ALIER MULTER MULTER	N/A
BB.19.1.4.3.2	Class I transformers with earthed core, and not allowed for class II equipment	t Tet Tet St	N/A
+ let	Insulation from the input to the earthed core: basic insulation rated for the input voltage	me me m	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
White wh	Insulation from the output voltage to the earthed core: basic insulation rated for the output voltage	TEX STEX STEX	N/A
3B.19.1.4.3	Insulation between : input to intermediate conductive parts and output and intermediate parts consist of at least basic insulation	CEX WITER WATER WAY	N/A
ek whitek	If the insulation from input or output to the intermediate metal part is less than basic insulation, the part is considered to be connected to input or output.	WALTER WALTER WALTE	N/A
3B.19.1.4.4	For class I transformers, with protective screen, no t connected to the mains by a plug the following conditions comply:	TEX SITEX WITEX IN	N/A
TEX WALTER	The insulation between input winding and protective screen consist of basic insulation (rated input voltage)	The source white whit	N/A
* WALTER .	The insulation between output winding and protective screen consist of basic insulation (rated output voltage)	WALTER WALTER WALTER	N/A
NUTTE OF	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	NATER MILITER WHITE A	N/A
EK WATER	Where the protective screen does not cover the entire width of the input winding, additional insulation to ensure double insulation in this area, is used.	Merit white white	N/A
WALTER	If the screen is made by a foil, the turns are isolated, overlap at least 3 mm	TIET WIFE WITER	N/A
unliek vini	The cross-section of the screen and the lead out wire is at least corresponding to the rated current of the overload device	STEE MILIER WHITER W	N/A
TEK WALTE	The lead out wire is soldered or fixed to the protective screen.	SEK NITEK MAITEK MAI	N/A
K WALTER	Protective screening is not allowed for transformers with plug connection to the mains	t TEX STER WITE	N/A
3B.19.1.4.5	No connection between output circuit and protective earth, except of associated transformers (allowed by equipment standard) or 19.8 is fulfilled.	Whitek mutek mutek	N/A
3B.19.1.4.6	No connection between output circuit and body, except of associated transformers (allowed by equipment standard)	TER WITE MATER AN	N/A
3B.19.1.4.7	The distance between input and output terminals for the connection of external wiring is ≥ 25 mm	MULL MULL MULL	N/A
3B.19.1.4.8	Portable transformers having an rated output ≤ 630 VA shall be class II.	MULTER MALTE MALL	N/A

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NITE MIT	WILL AUT. AUT. AUT. AU.	IEC 61558-2-16	THE THE STEE ALT	A NITE WALTE
Clause	Requirement + Test	ALTER WALL ON	Result - Remark	Verdict

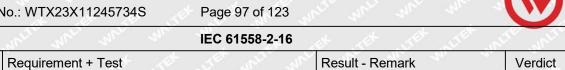
Clause	Requirement + Test	Result - Remark	Verdict
BB.19.1.4.9	No connection between cutout circuit and hady	THE THE SHOP	N/A
BB. 19. 1.4.9	No connection between output circuit and body except of associated transformers (allowed by equipment standard)	out with thirty	INLIER WALTER
BB.19.1.4.10	Protective screening is not allowed for transformers with plug connection to the mains	et tet tet v	N/A
BB.19.12	Windings construction	Mr. Mr. M.	N/A
BB.19.12.1	Undue displacement in all types of transformers not allowed:	WALTER WALTER WALTE	N/A
المان المانات	of input or output windings or turns thereof	LET TEX STEX	N/A
16t 15	of internal wiring or wires for external connection	ing my my	N/A
	of parts of windings or of internal wiring in case of rupture or loosening	The Maria Maria M	N/A
BB.19.12.2	Serrated tape:	A WILL WILL MAN	N/A
y Whiley	distance through insulation according to table 13	Liet Niet Miles	N/A
MITEL WALTE	 one additional layer of serrated tape, and 	my m	N/A
	one additional layer without serration	ALIER OLIFER WOLLE	N/A
	 in case of cheek less bobbins the end turns of each layer shall be prevented from being displaced 	EX MATER WA	N/A
BB.19.12.3	Insulated windings wires providing basic, supplementary or reinforced insulation, meet the following requirements:	white white white	N/A
Merry M	Multi-layer extruded or spirally wrapped insulation, passed the tests of annex K	untile watter watter	N/A
White Whit	Basic insulation: two wrapped or one extruded wire	LIEK WALTER WALTER W	N/A
LIEK WALTER	Supplementary insulation: two layers, wrapped or extruded	ek unitek whitek whi	N/A
EK WILTER V	Reinforced insulation: three layers wrapped or extruded	NIE MIEL MIE	N/A
at .	Spirally wrapped insulation:	20 T	N/A
MUT WA	creepage distances between wrapped layers > cl. 26 _ P1 values	NITE WILL WALL	N/A
Will Allie	path between wrapped layers sealed, the test voltage of K2 is multiplied with 1,35	TEX MUTTER MUTTER ME	N/A
TENNITE	test 26.2.4 – Test A, passed for wrapped layers	t writer writer with	N/A
WALTER W	the finished component pass the electric strength test according to cl. 18.3	WIEL WIEL WILLER	N/A

TE WILL	IEC 61558-2-16	- SLIFE WALLE WAL
Clause	Requirement + Test Result - Remark	Verdict
a)	Insulated winding wire used for basic or supplementary insulation in a wound part:	N/A
me m	comply with annex K	N/A
Set S	two layers for supplementary insulation	N/A
- 4	one layer for basic insulation	N/A
Whites	one layer for mechanical separation between the insulated wires of primary and secondary. This layer fulfils the requirement of basic insulation.	N/A
b)	Insulated winding wire used for reinforced insulation in a wound part:	N/A
1. 2.	comply with annex K	N/A
TER MITE	three layers	N/A
, ,,,	relevant dielectric strength test of 18.3	N/A
JALIE .	Where the insulated winding wire is wound:	N/A
	upon metal or ferrite cores	N/A
aner an	upon enamelled wire	N/A
alt is	under enamelled wire	N/A
iek whitek	one layer for mechanical separation between the insulated wires and the core or the enamelled wires is required. This layer fulfils the requirement of basic insulation.	N/A
MULL A	both windings shall not touch each other and also not the core.	N/A
NULTER WA	100 % routine test of Annex K3 of part 1 is fulfilled	N/A
LIER WALTE	no creepage distances and clearances for insulated winding wires	N/A
c) white	Toroidal cores used with TIW wires for double or reinforced insulation between the primary and secondary circuits shall comply with the following:	N/A
White W	a coating which fulfils the requirements of basic insulation between a winding and the core	N/A
THE THE THE	2) The primary winding consists of TIW wire with 3 layers (reinforced insulation) and the secondary winding consists of enamelled wire. These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfil the dielectric strength tests for basic insulation.	N/A

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کی	ili Mili
	Verdict

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Clause	Requirement + Test	Result - Remark	Verdict
Whitek whi	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding consists of TIW wire with 3 layers and the secondary winding consists of a TIW wire with 1 layer (requirements for primary and secondary windings can be changed). This construction also is allowed for use with EE-cores or similar.	White	N/A
d)	Toroidal cores used with FIW wires for double or reinforced insulation between the primary and secondary circuits shall comply with the following:	mitet united united a	N/A
UNLIEK VIN	a coating, which fulfil the requirements of basic insulation.	TEX SITEX MITEX MAI	N/A
ETEK WILLES	2) The primary winding consists of FIW wire for reinforced insulation and the secondary winding consist of FIW wire – of basic insulation. These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfil the dielectric strength test for basic insulation.	Whitek whitek whitek	N/A
MITEK WATE	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding and the secondary winding consist of FIW wire for reinforced insulation. This construction also is allowed to use for EE-core or similar.	reference until until until	N/A
e)	Toroidal cores used with TIW in combination with FIW wire, for double or reinforced insulation between the primary and secondary circuits shall comply with the following:	MILIER WALLER WHILEY	N/A
mrtir m	a coating, which fulfils the requirements of basic insulation.	PLIER MULLER MULLER MY	N/A
STER WHITEK	2) The primary winding consists of FIW wire for reinforced insulation, and the secondary winding consists of TIW wire for basic insulation (1 layer). These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfil the dielectric strength tests for basic insulation.	TEX WHITEK WHITEK WHITEK	N/A
mirek un itek _{un} itek	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding consists of TIW wire for reinforced insulation (3 layer) and the secondary winding consists of FIW wire for reinforced insulation. This construction also is allowed for use with EE-cores or similar.	er alite with wall	N/A



Clause	Requirement + Test	Result - Remark	Verdict
f)	Toroidal cores used with TIW in combination with FIW wire, for basic insulation between the primary and secondary circuits shall comply with the following:	WHITE WHITE WHITE	N/A
HITEK WALTE	a coating, which fulfils the requirements of basic insulation	EX WHITEK WHITEK WH	N/A
iek whitek whitek w	2) The primary winding consists of FIW wire for basic insulation, and the secondary winding consists of TIW wire for basic insulation (1 layer). These independent windings shall not be able to contact each other either by mechanical separation or a gap which fulfils the dielectric strength tests for basic insulation.	MILIER WHITER WHITER	SUPERIOR STATES
TEX MUTTER	3) For polyfilar windings (primary and secondary windings in contact with each other), the primary winding consists of TIW wire for supplementary insulation (2 layers) and the secondary winding consists of FIW wire for basic insulation. This construction also is allowed for use with EE-cores or similar.	AND AND AND THE AND THE	N/A
JUNITER WATER	4) Further polyfilar constructions with FIW and TIW wires in combination with enamelled wires for basic insulation only: 4.1) Primary winding consists of enamelled wire, secondary winding consists of FIW wire for reinforced insulation 4.2) Primary winding consists of enamelled wire, secondary winding consists of TIW wire for reinforced insulation	ALTER WALTER WAL	N/A
BB.19.12.3.	1 Max. class F for transformers which use FIW-wire	mis mis min	N/A
BB.19.12.3.	2 FIW wires comply with IEC 60851-5:2008, IEC 60317-0-7 and IEC 60317-56.	LIER WHITE WHITE W	N/A
er ler	other nominal diameter as mentioned in table 24 can be calculated with the Formula (6) in 26.3.5:	Et whitet whitet whi	N/A
Mr.	FIW wire used for basic or supplementary insulation for transformers according 19.1.3:	MILL MILL MILL	Aug Aug
Muric Au	the test voltage of table 14, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 24	ALIER WHITE WHITE	N/A
TEK MITEK K	one layer for mechanical separation is located between the insulated wires of primary and secondary. This layer fulfil the requirement of basic insulation	t whilet whilet while	N/A

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are	IEC 61558-2-16		
Clause	Requirement + Test	Result - Remark	Verdict
Writek Writek	between FIW and enamelled wire, no requirements of creepage distances and clearances	White white white	N/A
. A	no touch of FIW and enamelled wires		N/A
* "*	FIW wire used for double or reinforced insulation for transformers according 19.1.4:	TER WILLE MULTINA	N/A
WALTER V	the test voltage of table 14, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 24	Whitek whitek white	N/A
LIEK NY	for primary and secondary winding FIW- wire for basic insulation is used	TEX TEX STEEL	N/A
TEK MILTE	one layer for mechanical separation is located between the insulated wires of primary and secondary. This layer fulfil the requirement of basic insulation	ex united untited unit	N/A
weir	no touch between the basic insulated PRI and SEC FIW-wires	White white white	N/A
NULTE N	between PRI- and SEC-FIW wires, no requirements of creepage distances and clearances	ALTER WALTER WALTER	N/A
EK VILER	Alternative construction used for reinforced insulation (reinforced insulated FIW wire and enamelled wire)	The Court of	N/A
WILLEY.	the test voltage of table 14, based on the working voltage reinforced insulation, comply with the min. voltage strength of table 24	Whitek Whitek Whitek	N/A
Wiley Mult	one layer for mechanical separation is located between the reinforced insulated FIW wire and the enamelled wire. This layer fulfil the requirement of basic insulation	LIEK WHITEK WHITEK W	N/A
WALTER	no touch between the FIW wire and the enamelled wire	MULTER MULTER MULTER	N/A
MULTER O	between the reinforced FIW wire and any other parts, no requirements of creepage distances and clearances exist	ALTER WALLER WALLER	N/A
ite wa	Alternative construction with FIW wires, basic or supplementary insulated for transformers with double or reinforced insulation:	LEK WHITEK WHITEK W	LIFE JULIE - 40
WALTER	the test voltage of table 14, based on the working voltage of basic or supplementary insulation, comply with the min. voltage strength of table 24	White while while	N/A

	IEC 61558-2-16		
Clause	Requirement + Test	esult - Remark	Verdict
WALLER AND	PRI or SEC basic insulated FIW wire and to the other winding (enamelled wire) requirements of supplementary insulation	Tex sites write mile	N/A
ek lek	creepage distances and clearances between the basic insulated FIW wire and the enamelled wire for basic or supplementary insulation are required.	MULTER WHITER WHITER A	N/A
Chr.	Where the FIW wire is wound	INLIER MILLER WILLER WAL	N/A
- LEF	upon metal or ferrite cores	i se st st	N/A
WILER AN	one layer for mechanical separation between the insulated wires and the core or the enamelled wires is required. This layer fulfils the requirement of basic insulation.	EX MUTEX MUTEX MUTEX	N/A
r ne	both windings shall not touch each other and also not the core.	white write whit we	N/A
BB.20	COMPONENTS		N/A
BB.21	INTERNAL WIRING		N/A
BB.22	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CABLES AND CORDS		N/A
BB.23	3.23 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		N/A
BB.26.1	See 26.101	at let tet the	N/A
BB.26.2	Creepage distances (cr) and clearances (cr)	ur, aur au au	N/A
BB.26.2.1	Windings covered with adhesive tape	et the the atter	N/A
	the values of pollution degree 1 are fulfilled	The the sail	N/A
	 all isolating material are classified acc. to IEC 60085 and IEC 60216 		N/A
ek NIEK	- test A of 26.2.3 is fulfilled	let let liet al	N/A
BB.26.2.2	Uncemented insulating parts pollution degree P2 or P3	and an an	N/A
24 2	 all isolating material are classified acc. to IEC 60085 and IEC 60216 	LITE WALL WALL WALL	N/A
VII. MU	values of pollution degree 1 are not applicable	MILITE WILL WILL	N/A
BB.26.2.3	Cemented insulating parts	Let Let Jet S	N/A

N/A

all isolating materials are classified acc. to IEC 60085 and IEC 60216

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Clause	Requirement + Test	Result - Remark	Verdict
· Wille	ing any my my m	I SEE SEE WITH A	NI/A
, lit	values of distance through insulation (dti) are fulfilled	Mr. M. M. M.	N/A
	 creepage distances and clearances are not required 	etile white with whi	N/A
ris Mur	test A of this sub clause is fulfilled	EX WILL WILLE	N/A
et let	Test A	a de dit	N/A
and a	- thermal class	WILL MULL MULL	N/A
State .	working voltage	at the left .	N/A
NI EX WY	Test with three specially specimens, with uninsulated wires, without impregnation or potting	(see appended table)	N/A
, t	Two of the three specimens are subjected to:	111 12, 1	N/A
MUTI	the relevant humidity treatment according to 17.2 (48 h)	White white white	N/A
MUTTER.	the relevant dielectric strength test of 18.3 multiplied with factor 1,35	Whitek Whitek Whitek W	N/A
	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 temperature	RUFER WHITER WHITER WHITE	N/A
ek walter	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	while while while	N/A
3B.26.2.4	Enclosed parts, by impregnation or potting	Let Let Little	N/A
BB.26.2.4.1	The requirements of reduced values as stated for pollution degree 1 (P1) are fulfilled	A THE THE THE	N/A
ar all	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	The many was and	N/A
71/2	Test B	E WILL WILL WILL	N/A
y Jet	- thermal class	at at at	N/A
m	working voltage	MULL MULL MULL A	N/A
WALTER W	 Test with three specially specimens, potted or impregnated. The dielectric strength test is applied directly to the joint. 	(see appended table)	N/A
rete whe	Two of the three specimens are subjected to:	TER STEE STEE WITE	N/A
LEA WILLER	the relevant humidity treatment according to 17.2 (48 h)	t the the the	N/A
- 11	the relevant dielectric strength test of 18.3 multiplied with factor 1,25	Mer Mr An	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
MUTER AN	One of the three specimens is subjected to the relevant dielectric strength test of 18.3 multiplied by the factor 1,25 immediately at the end of the last cycle with high temperature	While while while whi	N/A
EK WILLEK WILLEK	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	Muliter Muliter Muliter	N/A
BB.26.2.4.2	The requirements of distance through insulation (dti) are fulfilled. (P1 values are not required)	THE THE LIFE MALE	N/A
ret sire	 all isolating materials are classified acc. to IEC 60085 and IEC 60216 	t tex tex tex	N/A N/A
7,	Test C	Mer Mer M	N/A
N. ITE.	- thermal class	TEX STEX STEELS	N/A
	working voltage	m m m	N/A
anerie an	Test with three specimens, potted or impregnated. (finished components)	(see appended table)	N/A
NITER WALT	 Neither cracks, nor voids in the insulating compounds 	Et MITE WITE	N/A
Et JEK	Two of the three specimens are subjected to:	the set	N/A
ON THE	the relevant humidity treatment according to 17.2 (48 h)	must mer men	N/A
7111° 7	the relevant dielectric strength test of 18.3 multiplied with factor 1,35	untile untile until un	N/A
	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 temperature	Tex united mutes mute	N/A
WALTEK W	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	NITER WALTER WALTER WA	N/A
BB.26.3	Distance through insulation	cet tet tet ti	N/A
TEX MITER	For double or reinforced insulation, the required values of Tables 13, C1, and D1 – boxes 2b, 2c and 7 are fulfilled	t nitet mitet unitet	N/A
t Street	The insulation fulfil the material classification according IEC 60085 or 60216 or the test of 14.3	et let let	N/A

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Clause	Clause Requirement + Test Result - Remark		Verdict		
BB.26.3.1	Reduced values of the thickness of insulation for supplementary or reinforced insulation are allowed if the following conditions are fulfilled:	JET STEET WITE AND	N/A		
NITER MILIE	 the isolating materials are classified acc. to IEC 60085 and IEC 60216 	et liet sliet slie	N/A		
	- the test of 14.3 is fulfilled	2 14, 24, 24,	N/A		

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Clause	Requirement + Test	Result - Remark	Verdict
MUTER M	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	WILLER WATER WATER	N/A
ilier 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:	EX WHITEK WHITEK WA	N/A
MULL	 rated output > 100 VA values in square brackets apply 	WALTER WALTER WALTE	N/A
MULLE	 rated output 25 VA 100 VA 2/3 of the value in square brackets apply 	UNLIER WALTER WALLER	N/A
UNLIEF WA	 rated output 25 VA 1/3 of the value in square brackets apply 	LIET MILET MALIET M	N/A
BB.26.3.3	Mandrel test of insulation in thin sheet form (specimen of 70 mm width are necessary):	of alter outer and	N/A
y Wiley	If the layers are non-separable – at least 3 layers glued together fulfil the test:	Tek ITEK AITEK	N/A
	– pull force of 150 N	my my m	N/A
White M	 high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown. 	ALTER WALTER WALTER	N/A
SEE MITE	 If the layers are separable and 2/3 of at least 3 layers fulfil the test. 		N/A
, ,,	– pull force of 100 N	m. m. m.	N/A
White .	 high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdowns. 	anties united united	N/A
TEX ST	If the layers are separable 1 of at least 2 layers fulfil the test:	et let let	N/A
	pull force of 50 N	Mrs. Aug. Mrs.	N/A
er whiter	 high voltage test of 5,0 kV or the test voltage of 18.3 multiplied by 1,25 whatever is the greater. No flashover, no breakdown. 	Whitek whitek white	N/A
BB.26.101	Creepage distances, clearances and distances through insulation, specified values according to (IEC 61558-2-16:09):	TEX WILLEX WATER ON	N/A
TEX STE	- table 13, material group IIIa (part 1)	1 pt set s	N/A
24	- table C, material group II (part 1)	MUS. MUS. MUS.	N/A
NITER OF	- table D, material group I (part 1)	THE THE LITTER	N/A
70,	working voltage	Wer Ave Ave	N/A

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	IEC 61558-2-16		
Clause	Requirement + Test Result - Remark	Verdic	
M. C.	rated supply frequency 50/60 Hz	N/A	
Zet .	rated internal frequency	N/A	
,	Insulation between input and output	N/A	
ie wit	circuits (basic insulation): a) measured values specified values	N/A	
t jet	(mm)	N/0	
211-	Insulation between input and output circuits (double or reinforced insulation):	N/A	
Murry 1	a) measured values specified values (mm):	N/A	
Tier and	b) measured values specified values (mm)	N/A	
EK WALTE	c) measured values specified values (mm):	N/A	
WALTER	Insulation between adjacent input circuits: 4. measured values specified values (mm)	N/A	
UNLTER WI	Insulation between adjacent output circuits: measured values specified values (mm)	N/A	
r 2402	Insulation between terminals for external connection:	N/A	
MULL	a) measured values specified values (mm):	N/A	
JUNITES V	b) measured values specified values (mm):	N/A	
LIEK WY	c) measured values specified values (mm)	N/A	
at as	5. Basic or supplementary insulation:	N/A	
7115	a) measured values specified values (mm):	N/A	
MULLE	b) measured values specified values (mm):	N/A	
NNITEK N	c) measured values specified values (mm)	N/A	
LIER MY	d) measured values specified values (mm)	N/A	
EN OLIEN	e) measured values specified values (mm)	N/A	
WALTER.	6. Reinforced or double insulation: measured values specified values (mm)	N/A	

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1			7	,
	~	v	Ø.	١
L		W	A	,
		V		A

at di	IEC 61558-2-16	1 1 1 1	J 10 3
Clause		Result - Remark V	
Clause	requirement rest	result - Remark	Verdict
The s	7. Distance through insulation:	Will Mile Miles	N/A
NUTTER VI	a) measured values specified values (mm):	LIEK WALTER WALTER W	N/A
LTEK WALT	b) measured values specified values (mm)	ek nifek unifek uni	N/A
ek unitek	c) measured values specified values (mm)	TEN STER WITE	N/A
3B.26.102	Values of IEC 61558-2-16 applicable for frequency up to 3 MHz (IEC 61558-2-16:09)	one on w	N/A
	For frequency above 3 MHz clause 7 of IEC 60664-4 is applicable (high frequency testing)	inci sunt sunt .	N/A
3B.26.103	Clearance (IEC 61558-2-16:09)	in me me m	N/A
TER MUTLE	a.) Clearance for frequency ≥ 30 kHz according figure 101 two determinations are necessary:	* Writek Writek whi	N/A
MALTER.	determination based on peak working voltage according Table 104 :	SLIEK WITER SWITER	N/A
WALLER WA	Peak working voltage	70 J	N/A
	Basic insulation: required / measured	ALTER MALTE MALTE	N/A
LIFEK WALT	Double or reinforced insulation: required / measured value	et night an	N/A
EK MITEN	and alternative if applicable for approximately homogeneous field according to Table 102		N/A
- 2	Peak working voltage	me me m	N/A
MITE.	Basic insulation: required / measured	TEK TEK STER	N/A
SLIEF W	Double or reinforced insulation: required / measured value	or let let	N/A
illek avrile	determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101)	et wifet wites and	N/A
K WITEK	The minimum clearance is the greater of the two values.	TET STER STER	N/A
JEH .	b.) Clearance for frequency ≤ 30 kHz according figure 101 two determinations are necessary:	The tex tex	N/A
sur sur	determination based on peak working voltage with recurring peak voltages according Table 103 :	NE WAL WEEK W	N/A
EK WALTE	determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101)	t whitek whitek white	N/A
- JEK	The minimum clearance is the greater of	at at at	N/A

the two values.

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IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict
BB.26.104	The working voltages of Table 102, 103 and 104 are peak voltages including µsec peaks IEC 61558-2-16:09)	antifet unifet unifet	N/A
LIEK WILE	The working voltage according to Table 13 of part 1 are r.m.s. voltages	et jet sijet mi	N/A
BB.26.105	Creepage distances	211. 211. 21.	N/A
MULL	Two determinations of creepage distances are necessary (see Figure 102)	WALTER WALTER WALTE	N/A
White W	determination based on measured peak working voltage according Tables 105 to 110	MITER WHITER WHITER	N/A
LIEN NI	Peak working voltage	at at the	N/A
1. 2.	Pollution degree	is me me m	N/A
TER WALTER	Basic or supplementary insulation: required / measured	* WHITE WHITEK WHI	N/A
MUTIEK A	Double or reinforced insulation: required / measured value	SLIEF WITH WALTER	N/A
whitek wh	determination based on measured r.m.s. working voltage according Tables 13, C1 and D1 (see clause 26.101)	NITER WALTER WHITER	N/A
NITER WALTE	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	THE WALLEST WAS	N/A
BB.26.106	Distance through insulation (IEC 61558-2-16:09)	mr. m. m	N/A
JUNITE OUT	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:	Whitek whitek whitek	N/A
	- the max. frequency is < 10 MHz	s m m m	N/A
ife white	 the field strength approximately comply with Figure 103 	it unifer unifer uni	N/A
White wh	no voids or gaps are present in between the solid insulation	JUNITER WHITER WHITE	N/A
	For thick layers d1 \geq 0,75 the peak value of the field strength is \leq 2 kV/mm	STEET INSTEET MISSEL	N/A
NLTEX NALT	For thin layers d2 \leq 30 μ m the peak value of the field strength is \leq 10 kV/mm	TER STEP STEP	N/A
TER OUTER	For d1 > d > d2 equation (1) is used for calculation the field strength	t get get s	N/A
BB.26.107 (A1)	For transformers with FIW wires the following test is required	Mar Mar M	N/A
2115 211	10 cycles are required	CITY STATE STATE	N/A

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	4	K.
8		

it will	IEC 61558-2-16	EX TEX STEX ST	" WITH WAL
Clause	Requirement + Test	Result - Remark	Verdic
	the me and the the	The state state	1 21/2
NATER NA	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	STEE MUTTER MUTER OF	N/A
المالية المالية	• 1 h at 25° C	et tet liet ni	N/A
	• 2 h at 0° C	m m n	N/A
MULL	1 h at 25° C – (next cycle start again with 68 h max winding temp + 10)	WALTER WALTER WALTE	N/A
White o	during the 10 cycles test 2 x working voltage is connected between PRI and SEC	MITEL WALTER WALTER	N/A
iner van Tex vantte	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	TER MULTER MULTER ON	N/A
MUTEK MUTEK	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)	Whitek whitek whitek	N/A
MULTER MULT	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	ALTE WALLE WALLEY WA	N/A
BB.27	RESISTANCE TO HEAT, FIRE AND TRACKING		N/A
вв.Е	ANNEX E , GLOW WIRE TEST	and my me	N/A
WALTER	The test is required according to IEC 60695-2-10 and IEC 60695-2-11 with the following additions:		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	N/A	
BB.E2	Clause 8, "Conditioning", of IEC 60695-2-11 apply, preconditioning is required	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.	MULTER MULTER	N/A

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

вв.н	ANNEX H, ELECTRONIC CIRCUITS (IEC	
3	61558-1)	

Reference No.: WTX23X11245734S Page 108 of 123

1 (010101101	- 110.11 W 17.1207 C 17.12 10.10 10	1 ago 100 of 120	
IEC 61558-2-16			TEX STEE WITE WITE
Clause	Requirement + Test	Result - Remar	k Verdict

BB.K	ANNEX K, INSULATED WINDING WIRES FOR USE AS MULTIPLE INSULATION	LAYER N/A
BB.K.1	Wire construction:	N/A
LIEK WALTER	insulated winding wire for basic or supplementary insulation (see 19.12.3)	N/A
EK WALTEK V	insulated winding wire for reinforced insulation (see 19.12.3)	N/A
INLIEK MINI	splid circular winding wires and stranded winding wires with 0,05 to 5 mm diameter	N/A
4 /	spirally wrapped insulation - overlapping	N/A
BB.K.2	Type tests	N/A
BB.K.2.1	General Tests between ambient temperature between 15° C and 35° C and at an humidity between 45% and 75 %	N/A
BB K.2.2	Electric strength test	N/A
BB K.2.2.1	Solid circular winding wires and stranded winding wires	N/A
NITER MITE	Test samples prepared according to clause 4.4.1 of IEC 60851-5:2008 (twisted pair)	N/A
EK STEK	Dielectric strength test: 6 kV for reinforced insulation	N/A
- 184 201 - 2	Dielectric strength test: 3 kV for basic or supplementary insulation	N/A
BB K.2.2.2	Square or rectangular wires .	N/A
NALTEK WALTE	Test samples prepared according to clause 4.7.1 of IEC 60851-5:2008	N/A
ITEK WALTER	Dielectric strength test: 5,5 kV for reinforced insulation	N/A
ek süfek s	Dielectric strength test: 2,75 kV for basic or supplementary insulation	N/A
BB K.2.3	Flexibility and adherence	N/A
White Whi	Claus 5.1 in Test 8 of IEC 60851-3:2009 shall be used	N/A
nliek white	Test samples prepared according to clause 5.1.1.4 of IEC 60851-3:2009	N/A
TEX WITEK	Dielectric strength test: 5,5 kV for reinforced insulation	N/A
t nitet an	Dielectric strength test: 2,75 kV for basic or supplementary insulation	N/A
70, 0,	Mandrel diameter according table K.1	N/A

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TCICICIOC	110 W 17/20// 1/240/ 040	1 age 105 of 125		
THE WITE	White Mur Mur M	IEC 61558-2-16	CER TER STER STE	nite wit
Clause	Requirement + Test	EK RITER WALL WAS	Result - Remark	Verdict

Clause	Requirement + Test	Result - Remark	Verdict
THE C	The tension to the wire during winding on mandrel is 118 N/mm² (118 MPa)	white write write	N/A
BB.K.2.4	Heat shock	LIFE WILL WILL V	N/A
NITEK WALTE	Test samples prepared according to 3.1.1 (in Test 9) of IEC 60851-6:1996	et outer uniter and	N/A
et et	high voltage test immediately after this test	70 7	N/A
- Aug -	Dielectric strength test: 5,5 kV for reinforced insulation	White White Whit	N/A
murr m	Dielectric strength test: 2,75 kV for basic or supplementary insulation	UNLIER WHITE WHITE	N/A
BB.K.2.5	Retention of dielectric strength after bending (test as specified under test 13 of 4.6.1 c) of IEC 60 851-5)	TER MITTER MITTER M	N/A
	high voltage test immediately after this test	me me m	N/A
	Dielectric strength test: 5,5 kV for reinforced insulation	WHITEK WHITEK WHITEK	White White
	Dielectric strength test: 2,75 kV for basic or supplementary insulation	RUFEY MALTER WALTER	MULTER MULTER
BB.K.3	Testing during manufacturing		N/A
BB.K.3.1	General Tests as subjected in K.3.2 and K.3.3	a funci sur	N/A
BB K.3.2	Routine test	WITE WALL WAL	N/A
K WATER W	Dielectric strength test: 4,2 kV for reinforced insulation	THE MILES SMITH	N/A
NALTEK WALT	Dielectric strength test: 2,1 kV for basic or supplementary insulation	THE SITES STIES IN	N/A
BB K.3.3	Sampling test		N/A
BB K.3.3.1	Solid circular winding wires and stranded winding wires	er mories mories and	N/A
EL WALTE	Test with a twisted pair, prepared according clause 4.4.1 of IEC 60851-5:2008	Whitek whitek white	N/A
WALTER WA	Dielectric strength test: 6 kV for reinforced insulation	RIFE MILES MILES.	N/A
UNLIEK WINLIS	Dielectric strength test: 3 kV for basic or supplementary insulation	TEX STEEL STEEL ST	N/A
BB K.3.3.2	Square rectangular wire	70 7	N/A
a at	Samples prepared according to clause 4.7.1 of IEC 60851-5:2008	WALTE WALTE WALT	N/A
MULLE W	Dielectric strength test: 5,5 kV for reinforced insulation	Writer Mriter Writer	N/A

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Reference No.: WTX23X11245734S		Page 110 of 123		
TER SOLT	write with me w	IEC 61558-2-16	CER TER STER NIT	INLIE WALTE
Clause	Requirement + Test	EK ALTER WALL WAL	Result - Remark	Verdict
MILIE	- Dialogtria strong	th toot: 2 kV for boois or	Child Will Mills	N/A
	Dielectric streng supplementary	th test: 3 kV for basic or insulation	20, 20,	at the

BB.U	ANNEX U – INFORMATIVE – OPTIONAL TW – MARKING FOR TRANSFORMERS	N/A
V- J	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						
		h three special prepare ted wires, without pot						
cycles 2 x workin betw pri /	g voltage een	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 ho		1 hour 25 °C		
1.	CLIER .	LITE WILL WALL	m. n			et et	all s	et it
2.	n - r		Let LITER	NUTE	ALL!	ance an	70	24
3.	JEK N	er with white	7	7		<i>*</i>	the set	JEH
4.		, ,	at the		NITE	will will	7h	m
5.			9				. Lit	NEX.
6.		Y/A	A little	5 EV	105	CONLIN	Mr. 2	10, 1
7.	- \ ' /	1 / 10 / 12	16.		1	1	J+	£ .
8.	m !		at de	ال ا		The same of	Mr. Mr.	100
9.	it .	TER TIER WITE	me me	10	10,		A- 6	+ ,4
10.	no m	20, 20	x+ ,c+	- EF	S.	Life" (N	The state of the s	an

BB.26.2 TEST B	TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION						N/A
74 - 124 2011	Test with potted –	n three specially prepa P1 values are require	red specimen d	s with	iver Aires	m, n	, k . Li
cycles 2 x working betwee 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	ik murik	MULTER
1. 1.	er se	TET STEE W	ic are	14. 14.			,et
2.	24	211 . 111	+ 11+	the time	ALTER MITE	all la	no m
3. +	- At	TER STER WILL	me m	14.	1		J+ 1
4.	mr.	12. 24	J+ 2	it let	THE STEE	Will W	21/2
5.	et.	TER TER MITT	were were	21/2 21	7		+ 24
6.	ner on	2 m	* #	A ST A	St. Little Co	LE WILL	Wille
7.	+	et jet jet	Will Will	The Mer	20, 20,		

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	3 No.: W17(26)(112167616	1 ago 111 01 120	20, 7	
JIEN MITE	white mit me w	IEC 61558-2-16	et let liet liet	WITE WITE
Clause	Requirement + Test	ilk aith mair and	Result - Remark	Verdict

BB.26.2 TEST B	TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION							
me m	Test with three specially prepared specimens with potted – P1 values are required							
cycles with 2 x working voltage between		68 h at the temperature acc.	1 hour	2 hour	1 hour	JINLIE W	ir "N	
pri / s		(min. 85 °C)	25 °C	0 °C	25 °C	WILLE WALL		
8.	ut.	CER JUST RUSE	WILL MUE	14. 14		الر ل	المر ا	
9.	er in			All St	ALTER OF		Mer	
10.	.4. 0	t let let	TE JALL	in in	20, 20,			

BB.26.2 TEST C		CREEPAGE DISTAN GH INSULATION	CES AND CL	EARANCES A	AND DISTAN	CES	N/A
y writer	Test with potting (n three specially prepa only dti is required)	red specimen	s with	ek strek	NITER WALT	WALTE
cycles 2 x working betwe pri / s	y 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	Y WILLEY	WALTER
1. 31	100	A & V E	, E. P.	All Little	NLTE	. with a	Vr. 11
2		J. J. G. L.	Wer.		N. Y.		+
3.	and i				The State of	INLIE WA	J. Who
4.	24	TEK ITEK LITER	wer where	mr m	27		t i
5.	ver an	in in	- t- t-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	t the a	Siller Wille	west
6.	.+ .	of the state of	LIE MALI	any and	24. 24	7	.4
7.	Will	ar ar a		it it	JEN J	er alle	With.
8.	L .+	at at si	EF WITE W	reit while	21/2 - 21/2	20	· .
9.	MALTE	mer mer m		A 184	Let Set	- LIEB I	Sec. 10
10.		at at all		anti W	in m	20, 20	

BB.26.3.5	TABLE: CREEPAGE DISTANCES AND CLEARANCES AND DISTANCES THROUGH INSULATION						
	Test for	transformers, use FIV	V-wire	21/2 - 21/	s. 14 . 15	_ Jt	
cycles 2 x working betwe pri / s	y voltage en	68 h at the temperature acc. Cl. 14 (min. 85 °C)	1 hour 25 °C	2 hou	r 1 hour 25 °C	Whi. w	
1.	aliek is	ITER WITER WITE	wer we	71/2	11 A. S.	TEE TEE	
3.	1 2	at the test	NITE AND THE	- WEET V	mil mil m	12 - 12 - 12 - 12 - 12 - 12 - 12 - 12 -	

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1 (010101100 1	10:: 111/120/11/2 10/010	1 ago 112 of 120		
TER WITE	white with much when	IEC 61558-2-16	et the the	ex write writ
Clause	Requirement + Test	TEK NITER WALL WAL	Result - Remark	Verdict

BB.26.3.5		CREEPAGE DISTAN GH INSULATION	CES AND CL	EARANCES A	AND DISTANC	CES	N/A
ne ne	Test for	transformers, use FIW	-wire	JEK JEK	white white	The.	21/2
cycles 2 x working betwe pri / s	y 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	MULTER OF	NITEK V EK V
4.	21, 2		A 16	LIFE W	The same of	are and	" the
5.	Tex .	THE DITE WITE	With My	10, 20		+ 1	+ 20
6.	14	70, 7	A LET	JEK JE	California (1)	" WE	Me
7.	et de	L LIER NITER OF	in me	211 211		٠, ٠	200
8.	"In	24. 24. 1		THE THE	CITE OLIT	WITE.	arr.
9.	- 264	THE LITTER SUIT	in in	- m .			24-
10.	"We"	21/2 21/2 20		et et	TEN TEN	10 TE	in "9,

BB 18.2	TABLE: insulation resistance measure	ements	24 24	N/A
Insulation re	esistance R between:	R (MΩ)	Required R (N	ИΩ)
,	a start set set	Mr. Mer Mur	11, 12,	
The water	E 16 1 20		of the title	CLIFE ON
Cupplement	ton / information /	The same	(n) (n)	za
Supplement	tary information:			

BB 18.3	TABLE: Dielectric Strength	in an an	N/A
Test voltag	ge applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)
TEX .	THE RESERVANCE WILL WAS AN	The state of	let let liet.
11. 11.	A A A STA	OLITE WALL WALL	Wer The The The
JEK JIK	THE MALL WALL WALL THE THE		Et JET JEET KI
(4)	and the second	With Mulit Muli M	2 24 24 24
Supplemer	ntary information:	a at at a	ek itek altek mite

BB 26	TABLE: Clearan	ce And Cree	page Distan	ce Measuren	nents		N/A
clearance cl distance dcr	and creepage at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
- 'cu.	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	JH 58	LIEN .	RITER WALTER	white w	in the	n 1
EK JEK	WITE WALTER OF	Very Mar	20, 2		at a	et set	TEK N
-1,,	, , , , , , , , , , , , , , , , , , ,	at wet	ALTER AND	Ser Write	New Mer	21/2, 21,	2,
		211	·21			LEF S	

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110101011001	140:: W 17(20)(112 107010	1 age 116 61 126	200	
THE WITE	with mit me w	IEC 61558-2-16	ek fek jilêk ajilê	MILIE WALTE
Clause	Requirement + Test	TEK NITER WALL WAL	Result - Remark	Verdict

BB 26	TABLE: Distance Through Ir	sulation Measur	ements		N/A
Distance t	through insulation di at/of:	U r.m.s. (V)	Test voltage (V)	Required di (mm)	di (mm)
n and	24. 24. A	- 15th July	NITER WALTER	White Murr	21/2 1
y Jet	- ILLER WILLER WILL WINE	Mr. m		at at	JEK S
21/2	The state of the s	LET STEET	With Write a	her when a	1, 20,
		We was		t it.	All IN

WATE E.



in mi	IEC61558_2_16	6E ATTACHMENT	mr m
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 61558-2-16

AUSTRALIA/NEW ZEALAND NATIONAL DIFFERENCES

(Safety of power transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Safety -

Part 2-16: Particular requirements and tests switch mode power supply units and transformers for switch mode power supply units)

AS/NZS 61558.2.16:2022

Differences according to.....

AS/NZS 61558.1:2018 +A1:2020 + A2:2020

TRF template used:..... IECEE OD-2020-F3, Ed. 1.1

Attachment Form No...... AU_NZ_ND_IEC61558_2_16H

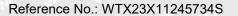
Master Attachment.....: Date 2022-07-08

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no m	National Differences	mr. mm.
5,4	GENERAL CONDITIONS FOR THE TESTS	P.C
5.2	Add the following variation:	Р
WALTER WALTER	If the tests of AZ.19.201 need to be performed they are carried out on separate specimens, the number of specimens is that required by AS/NZS 3112. (AS/NZS 61558.1:2018/A2:2020)	PL NATED NATED
5.5	Replace the text with the following variation:	Mar Ban
ster whi	For a.c., test voltages are of substantially sinusoidal wave form, and, if not otherwise specified, have a frequency of 50 Hz. (AS/NZS 61558.1:2018)	INTER VIN
16	MECHANICAL STRENGTH	N/A
16.4	Replace the text with the following variation:	N/A
TEK .	VOID (AS/NZS 61558.1:2018/A2:2020)	N/A
19	CONSTRUCTION	Р
19.15	Replace the test specification with the following variation:	N/A
H TIEK	VOID (AS/NZS 61558.1:2018/A2:2020)	N/A



19.201	Transformers having integral pins for insertion into socket outlets shall comply with the appropriate requirements of AS/NZS 3112.	See AU plug test report: WTX23D11235574Z	P
MALTEK W	Compliance is checked as specified in Appendix J of AS/NZS 3112 (AS/NZS 61558.1:2018)	STEEL WITER WITER SUNTER	P
20	COMPONENTS	1 1 st st	Р
ti m	Replace the first paragraph with the following variati	ion: John Julius Julius	Р
EK WALTER	Components shall comply with the safety requirements specified in the relevant IEC or Australian/New Zealand Standards as far as they reasonably apply. (AS/NZS 61558.1:2018)	MRITER WHITER WHITER WHI	F P.T.
	Replace the third paragraph with the following variate	tion:	Р
nuric on	Compliance with the IEC or Australian/New Zealand Standards for the relevant component does not necessarily ensure compliance with the requirements of this Standard (AS/NZS 61558.1:2018)	TEX WHITEK WHITEK WHITEK	y P.V
20.6	Insert the following variation:		P
WILLER W	Plugs and socket-outlets for SELV systems may also comply with the requirements of Appendix E in AS/NZS 3112	Whit whi while	P
	(AS/NZS 61558.1:2018/A2:2020)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
22	SUPPLY CONNECTION AND OTHER EXTERNAL CORDS	FLEXIBLE CABLES OR	Pur
22.4	Replace the text by the following variation:		N/A
t ctest	VOID. (AS/NZS 61558.1:2018)	Whit was war on	N/A
22.6	Replace the text by the following variation	while mir mer me	Р
unliek wh	Power supply cords may be cord sets fitted with appliance couplers in accordance with IEC 60320, provided the transformers are single-phase portable transformers with input current not exceeding 10 A at the rated output (AS/NZS 61558.1:2018)	LIER WHITER WHITER WHITER	P WALL
22.8	Replace the second paragraph in the requirement, v	with the following variation:	N/A
WHITEK W	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 61558.1:2018)	NATER WALTER WALTER	N/A



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	IEC61558_2_16E ATTACHM	ENT	
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX H	ELECTRONIC CIRCUITS	WILL MILL MILL MILL	Р
H.3.1	Add the following to the test specification after the e	xisting third paragraph	Р
NITER WALTE	During and after the tests the no-load output voltage of an accessible safety extra-low voltage outlet or connector or Universal Serial Bus (USB) outlet shall not have increased by more than 3 V or 10% of its no-load output voltage in normal use, whichever is higher. (AS/NZS 61558.1:2018)	Max. 0.1V or 2% (for model GTM46402-3005) Max. 0.61V or 1.6%(for model GTM46402-4048)	P
NALTER IN	Special national conditions (if any)	TEX STEE NITER MITTER	N/A
	Australia	the the the	N/A
8	MARKING AND OTHER INFORMATION		P
8.1	After Item a) insert the following variation:		A-P
ere united	The marking of rated supply voltage or rated supply voltage range of single-phase transformers shall cover 240 V and for poly-phase transformers, 415 V (AS/NZS 61558.1:2018/A2:2020)	White while while while	Р
State S	New Zealand	at at the set	νP
8	MARKING AND OTHER INFORMATION	urit muri muri muri	Р
8.1	After Item a) insert the following variation:		Р
iek mutiek	The marking of rated supply voltage of single- phase transformers shall be 230 V and for poly-phase transformers shall be 400 V. (AS/NZS 61558.1:2018/A2:2020)	The line with while whi	Par
MINITER W	The marking of rated supply voltage range of single-phase transformers shall cover 230 V and for poly-phase transformers, 400 V (AS/NZS 61558.1:2018/A2:2020)	WALTER WALTER WALTER	PEK

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PHOTO:

GTM46402-3005



Photo 1



Photo 2





Photo 3



Photo 4





Photo 5



Photo 6



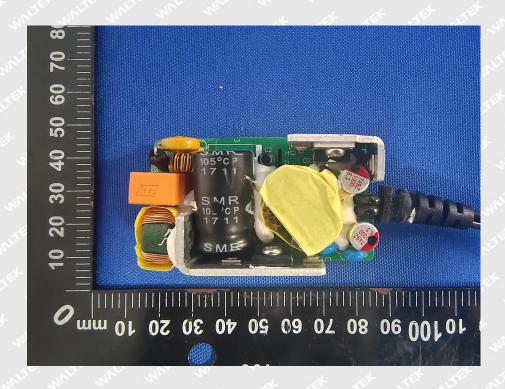


Photo 7

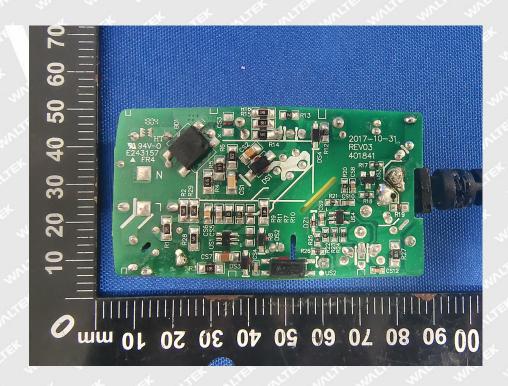


Photo 8



GTM46402-4048



Photo 9



Photo 10





Photo 11



Photo 12



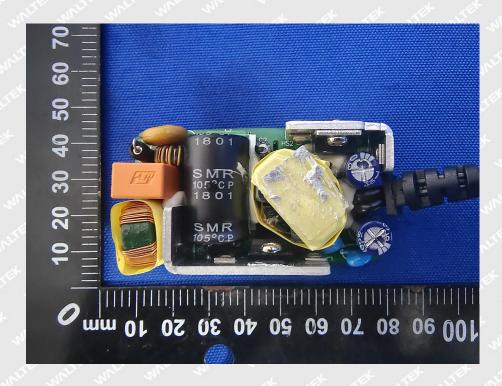


Photo 13

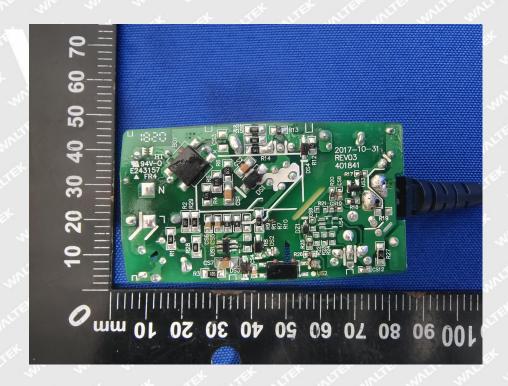


Photo 14

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