Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT

IEC 60335-2-29

Safety of household and similar electrical appliances Part 2-29: Particular requirements for battery chargers

Report Number. .....:	CN21EDLY 001
Date of issue .....:	2022-01-24
Total number of pages.....:	225
Name of Testing Laboratory preparing the Report.....:	**TÜV Rheinland (Shenzhen) Co., Ltd.** 1601-1604, 17-18F, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Shenzhen 518052 Nanshan District, China
Applicant's name.....:	**Dongguan Fuyuan Electronic Co., Ltd.**
Address .....:	1st~3rd Floor No. 23 Estate, Sanjiang Industrial Zone, Hengli Town, Dongguan, 523460 Guangdong, P.R. China
Test specification:	
Standard .....:	IEC 60335-2-29:2016, AMD1:2019 for use in conjunction IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016, COR1:2016
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60335_2_29M
Test Report Form(s) Originator ....:	SIQ
Master TRF.....:	Dated 2020-03-12

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description .....:	Battery Charger
Trade Mark(s).....:	Fuyuang®
Manufacturer.....:	Same as applicant
Model/Type reference .....:	FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to pages 6-12)
Ratings .....:	Input: 100-240V~, 50/60Hz, 5A Max, Class I; Output: See pages 7-12.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	**TÜV Rheinland (Shenzhen) Co., Ltd.**	
Testing location/ address ..... :		1601-1604, 17-18F, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Shenzhen 518052 Nanshan District, China	
Tested by (name, function, signature) ..... :		Lion Tao (Project handler)	Lion Tao
Approved by (name, function, signature) .. :		Jason Fei (Reviewer)	Jason Fei
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature) .. :			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment):

- Attachment 1: National differences. (23 pages);
- Attachment 2: NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010. (34 pages);
- Attachment 3: NDs of J60335-2-29(2019) (JIS C 60335-2-29:2019) for IEC 60335-2-29:2016. (3 pages);
- Attachment 4: J3000 (H25). (3 pages);
- Attachment 5: Annex BB of IEC 61558-2-16. (6 pages);
- Attachment 6: Photo documentation. (12 pages).

Summary of testing:

Tests performed (name of test and test clause):

Based on **General product information**, full tests were carried out on models FY42009500, FY58807000, FY63006500, FY68406000 and FY87004600;
The test of cl.10 was carried out on FY42509000;
Tests of cl.10, cl.11 and cl.13 were carried out on models FY45009000, FY46008500, FY48008000, FY51007500, FY55007000, FY58407000, FY62006500, FY65706000, FY67206000, FY71405500, FY73005500, FY75605400, FY80005000, FY82804800, FY84004800, FY86404600;

Tests of cl.8, cl.10, cl.11, cl.13 and cl.17 were carried out on models FY06020000, FY07520000, FY08420000, FY08520000, FY11420000, FY14320000, FY15020000, FY17020000, FY21618000, FY22517000, FY25515000, FY28013000, FY30012500, FY36010500, FY38010000, FY40009500.

Testing location:

TÜV Rheinland (Shenzhen) Co., Ltd.

1601-1604, 17-18F, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Shenzhen 518052 Nanshan District, China

Summary of compliance with National Differences (List of countries addressed): N/A

☐ **The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)**

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

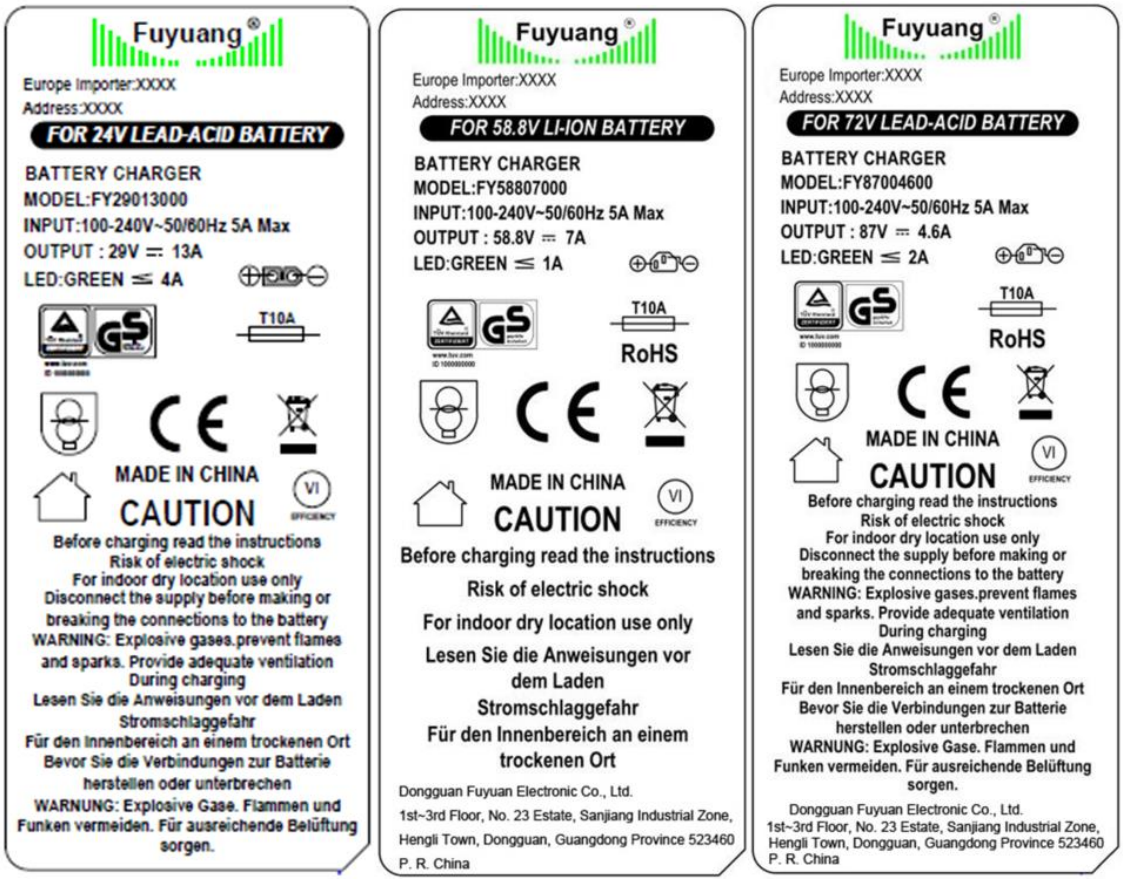
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☐ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

Copy of marking plate:

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



Remark:

1.The rating label of other models are identical, except the model name, output rating and symbol of output connector.
2.The name and address of manufacturer and importer will be mark on product.
3.The generic ID of GS-mark should be replaced by individual ID in GS certificate.

Test item particulars ..... :	Battery Charger
Classification of installation and use ..... :	Portable appliance
Supply Connection ..... :	Appliance inlet
..... :	
Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item .....:	2021-11-15
Date (s) of performance of tests .....:	2020-11-15 to 2021-12-24

General remarks:

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

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :	**Dongguan Fuyuan Electronic Co., Ltd.** 1st~3rd Floor No. 23 Estate, Sanjiang Industrial Zone, Hengli Town, Dongguan, 523460 Guangdong, P.R. China

General product information and other remarks:

- The appliance is battery charger for indoor and household used.
- The appliance can be used in ambient not exceeding 30°C.
- Bottom enclosure is fixed to top enclosure by ultrasonic welding for all models.
- This report also considered the requirements of EU group differences, United Kingdom, Japan, Korea, Australia and New Zealand.
- All models are identical to each other except model name, rating, output connector and electrical rating of components, see table 2 for detail:
- There are two types of output connector (A, B) for different output voltages as below, please see photo documents for more details:

Output connector type	Output voltage
A	6.0-40.0V
B	42.5-87.0V

Table 1: Definition of variables:

Variable:	Range of variable:	Content:
xxx	060, 073, 075, 084, 085, 110, 114, 126, 138, 143, 146, 150, 166, 168, 170, 180, 200, 210, 216, 225, 252, 255, 280, 290, 292, 294, 300, 320, 336, 340, 360, 380, 400, 420, 425, 430, 438, 440, 450, 460, 470, 480, 504, 510, 520, 546, 550, 580, 584, 588, 612, 620, 630, 648, 650, 657, 670, 672, 684, 714, 720, 725, 730, 750, 756, 800, 828, 840, 864, 870	3 digit number which represents the output voltage in volt when divided by 10, for example, 060 represents the output voltage is 6.0V, 870 represents the output voltage is 87.0V.
yyyyy	01000-20000	5 digits number indicates of output current in mA. Step by 100mA. For example, 01000 represents the output current is 1000mA, 20000 represents the output current is 20000mA.

Table 2: Model difference list

MODEL	Output			Difference							
	Voltage (V)	Current (mA)	Power (W)	T1 PRI Winding	T1 SEC Winding	DIODE D6, D7	E.CAP. C12-C17	R39 (Ω)	R35 (Ω)	R29 (Ω)	Battery Information
FY060yyyyy (yyyyy=08000-20000)	6	8000-20000	48-120	80X0.12 MM 17T	16X0.5 MM 1T	20A, 100V	10V 1000μF	10-730	3.6K	5.1K	Lithium titanate battery: 4.8V, 20Ah
FY073yyyyy (yyyyy=08000-20000)	7.3	8000-20000	58.4-146					10-730	2.56 K	5.1K	Lead-acid battery: 6V, 40Ah; Phosphoric acid iron Li-ion battery: 6.4V, 40Ah
FY075yyyyy (yyyyy=08000-20000)	7.5	8000-20000	57.6-150					10-730	2.5K	5.1K	Lead-acid battery: 6V, 40Ah; Phosphoric acid iron Li-ion battery: 6.4V, 40Ah
FY084yyyyy (yyyyy=08000-20000)	8.4	8000-20000	67.2-168				16V 1000μF	10-730	2.14K	5.1K	Li-ion battery: 7.4V, 40Ah; Ni-MH battery: 7.2V, 40Ah
FY085yyyyy (yyyyy=08000-20000)	8.5	8000-20000	68-170					10-730	2.1K	5.1K	Li-ion battery: 7.4V, 40Ah; Lithium titanate battery: 7.2V, 20Ah
FY110yyyyy (yyyyy=08000-20000)	11	8000-20000	88-220	80X0.12 MM 23T	16X0.5 MM 2T			10-730	2.91K	10K	Phosphoric acid iron Li-ion battery: 9.6V, 40Ah; Ni-MH battery: 10.8V, 40Ah
FY114yyyyy (yyyyy=08000-20000)	11.4	8000-20000	91.2-228					10-730	2.78K	10K	Lithium titanate battery: 9.6V, 20Ah
FY126yyyyy (yyyyy=08000-20000)	12.6	8000-20000	100.8-252					10-730	2.46K	10K	Li-ion battery: 11.1V, 40Ah
FY138yyyyy (yyyyy=08000-20000)	13.8	8000-20000	110.4-276					10-730	2.06K	10K	Lead-acid battery: 12V, 40Ah
FY143yyyyy (yyyyy=08000-20000)	14.3	8000-20000	114.4-286					10-730	2.06K	10K	Ni-MH battery: 12V, 40Ah
FY146yyyyy (yyyyy=08000-20000)	14.6	8000-20000	116.8-292					10-730	2.06K	10K	Lead-acid battery: 12V, 40Ah; Phosphoric acid iron Li-ion battery: 12.8V, 40Ah

FY150yyyyy (yyyyy=08000-20000)	15	8000-20000	120-300					10-730	1.98K	10K	Lead-acid battery: 12V, 40Ah; Phosphoric acid iron Li-ion battery: 12.8V, 40Ah
FY166yyyyy (yyyyy=08000-20000)	16.6	8000-20000	132.8-332	80X0.12 MM 21T	16X0.5 MM 3T		25V 1000μF	10-730	1.74K	10K	Li-ion battery: 14.8V, 40Ah
FY168yyyyy (yyyyy=08000-20000)	16.8	8000-20000	134.4-336					10-730	1.74K	10K	Li-ion battery: 14.8V, 40Ah
FY170yyyyy (yyyyy=08000-20000)	17	8000-20000	136-340					10-730	1.71K	10K	Li-ion battery: 14.8V, 40Ah Ni-MH battery: 14.4V, 40Ah
FY180yyyyy (yyyyy=08000-20000)	18	8000-20000	144-360					10-730	1.59K	10K	Phosphoric acid iron Li-ion battery: 16V, 40Ah
FY200yyyyy (yyyyy=07000-19000)	20	7000-19000	140-380			20A, 150V		10-670	2.83K	20K	Lithium titanate battery: 16.8V, 20Ah
FY210yyyyy (yyyyy=07000-18000)	21	7000-18000	147-378					10-670	2.68K	20K	Li-ion battery: 18.5V, 40Ah; Phosphoric acid iron Li-ion battery: 19.2V, 40Ah
FY216yyyyy (yyyyy=07000-18000)	21.6	7000-18000	151.2-388.8					10-670	2.60K	20K	Li-ion battery: 18.5V, 40Ah; Phosphoric acid iron Li-ion battery: 19.2V, 40Ah
FY225yyyyy (yyyyy=07000-17000)	22.5	7000-17000	157.5-382.5					10-620	2.48K	20K	Lithium titanate battery: 19.2V, 20Ah
FY252yyyyy (yyyyy=06000-15000)	25.2	6000-15000	151.2-378				35V 1000μF	10-620	2.19K	20K	Li-ion battery: 22.2V, 40Ah; Phosphoric acid iron Li-ion battery: 22.4V, 40Ah
FY255yyyyy (yyyyy=06000-15000)	25.5	6000-15000	153-382.5				35V 680μF	10-620	2.16K	20K	Li-ion battery: 22.2V, 40Ah; Phosphoric acid iron Li-ion battery: 22.4V, 40Ah
FY280yyyyy (yyyyy=05000-13000)	28	5000-13000	140-364	80X0.12 MM 18T	12X0.5 MM 4T	20A, 200V		10-560	1.94K	20K	Lithium titanate battery: 24V, 20Ah
FY290yyyyy (yyyyy=05000-13000)	29	5000-13000	145-377					10-560	1.87K	20K	Lead-acid battery: 24V,40Ah; Li-ion battery: 25.9V, 40Ah; Phosphoric acid iron Li-ion battery:

											25.6V, 40Ah Ni-MH battery: 24V, 40Ah
FY292yyyyy (yyyyy=05000-13000)	29.2	5000-13000	146-379.6					10-560	1.87K	20K	Lead-acid battery: 24V,40Ah; Li-ion battery: 25.9V, 40Ah; Phosphoric acid iron Li-ion battery: 25.6V, 40Ah Ni-MH battery: 24V, 40Ah
FY294yyyyy (yyyyy=05000-13000)	29.4	5000-13000	147-382.2					10-560	1.87K	20K	Lead-acid battery: 24V,40Ah; Li-ion battery: 25.9V, 40Ah; Phosphoric acid iron Li-ion battery: 25.6V, 40Ah Ni-MH battery: 24V, 40Ah
FY300yyyyy (yyyyy=05000-12500)	30	5000-12500	150-375					10-530	1.80K	20K	Lead-acid battery: 24V,40Ah; Li-ion battery: 25.9V, 40Ah; Phosphoric acid iron Li-ion battery: 25.6V, 40Ah Ni-MH battery: 24V, 40Ah
FY320yyyyy (yyyyy=05000-12000)	32	5000-12000	160-384					10-500	1.68K	20K	Phosphoric acid iron Li-ion battery: 28.8V, 40Ah
FY336yyyyy (yyyyy=04000-11000)	33.6	4000-11000	136-374				50V 470µF	10-460	1.60K	20K	Li-ion battery: 29.6V, 40Ah
FY340yyyyy (yyyyy=04000-11000)	34	4000-11000	136-374					10-460	1.57K	20K	Li-ion battery: 29.6V, 40Ah
FY360yyyyy (yyyyy=04000-10500)	36	4000-10500	144-378					10-500	1.48K	20K	Phosphoric acid iron Li-ion battery: 32V, 30Ah
FY380yyyyy (yyyyy=04000-10000)	38	4000-10000	152-380			16A, 400V		10-430	2.79K	40K	Li-ion battery: 33.3V, 30Ah
FY400yyyyy (yyyyy=03500-09500)	40	3500-9500	140-380	80X0.12 MM 15T	8X0.5 MM 4T			10-410	2.51K	40K	Phosphoric acid iron Li-ion battery: 35.2V, 30Ah
FY420yyyyy (yyyyy=03500-09500)	42	3500-9500	147-399					10-410	2.51K	40K	Li-ion battery: 37V, 30Ah
FY425yyyyy	42.5	3500-9000	148.75-	80X0.12	8X0.5	150V 60A	50V	10-	2.48K	40K	Li-ion:37V, 30Ah

(yyyyy=03500-09000)			382.5	MM 15T	MM 5T		470μF	410			
FY430yyyyy (yyyyy=03500-09000)	43	3500-9000	150.5-387					10-410	2.45K	40K	Phosphoric acid iron Li-ion: 38.4V, 30Ah
FY438yyyyy (yyyyy=03500-09000)	43.8	3500-9000	153.3-394.2					10-410	2.40K	40K	Lead-acid: 36V, 30Ah; Phosphoric acid iron Li-ion: 38.4V, 30Ah
FY440yyyyy (yyyyy=03500-09000)	44	3500-9000	154-396					10-410	2.39K	40K	Lead-acid: 36V, 30Ah; Phosphoric acid iron Li-ion: 38.4V, 30Ah
FY450yyyyy (yyyyy=03500-09000)	45	3500-9000	157.5-405					10-410	2.33K	40K	Lead-acid: 36V, 30Ah; Phosphoric acid iron Li-ion: 38.4V, 30Ah
FY460yyyyy (yyyyy=03000-08500)	46	3000-8500	138-391					10-395	2.28K	40K	Li-ion: 40.7V, 30Ah
FY470yyyyy (yyyyy=03000-08500)	47	3000-8500	141-399.5					10-395	2.23K	40K	Phosphoric acid iron Li-ion: 41.6V, 30Ah
FY480yyyyy (yyyyy=03000-08000)	48	3000-8000	144-384					10-380	2.18K	40K	Phosphoric acid iron Li-ion:41.6V, 30Ah
FY504yyyyy (yyyyy=03000-08000)	50.4	3000-8000	151.1-403.2				63V 330μF	10-380	2.10K	40K	Li-ion: 44.4V, 30Ah; Phosphoric acid iron Li-ion: 44.8V, 30Ah
FY510yyyyy (yyyyy=03000-07500)	51	3000-7500	153-382.5					10-365	2.04K	40K	Li-ion: 44.4V, 30Ah; Phosphoric acid iron Li-ion: 44.8V, 30Ah
FY520yyyyy (yyyyy=03000-07500)	52	3000-7500	156-390					10-365	2.00K	40K	Phosphoric acid iron Li-ion: 44.8V, 30Ah
FY546yyyyy (yyyyy=03000-07000)	54.6	3000-7000	136.5-382.2					10-350	1.91K	40K	Li-ion: 48.1V, 30Ah; Phosphoric acid iron Li-ion: 48V, 30Ah
FY550yyyyy (yyyyy=02500-07000)	55	2500-7000	137.5-385					10-350	1.89K	40K	Li-ion: 48.1V, 30Ah; Phosphoric acid iron Li-ion: 48V, 30Ah
FY580yyyyy (yyyyy=02500-07000)	58	2500-7000	145-406					10-350	1.79K	40K	Lead-acid: 48V, 30Ah; Phosphoric acid iron Li-ion: 51.2V, 30Ah
FY584yyyyy (yyyyy=02500-07000)	58.4	2500-7000	146-408.8					10-350	1.78K	40K	Lead-acid: 48V, 30Ah; Phosphoric acid iron Li-ion: 51.2V, 30Ah
FY588yyyyy (yyyyy=02500-07000)	58.8	2500-7000	147-411.6					10-350	1.76K	40K	Li-ion: 51.8V, 30Ah
FY612yyyyy	61.2	1000-6500	41.2-	80X0.12	8X0.5	200V 60A	800V	10-	2.54K	60K	Phosphoric acid iron Li-ion: 54.4V,

(yyyyy=01000-06500)			397.8	MM 15T	MM 6T		220µF	335			30Ah
FY620yyyyy (yyyyy=01000-06500)	62	1000-6500	62-403					10-335	2.50K	60K	Phosphoric acid iron Li-ion: 54.4V, 30Ah
FY630yyyyy (yyyyy=01000-06500)	63	1000-6500	63-409.5					10-335	2.46K	60K	Li-ion: 55.5V, 30Ah
FY648yyyyy (yyyyy=01000-06000)	64.8	1000-6000	64.8-388.8					10-320	2.39K	60K	Phosphoric acid iron Li-ion: 57.6V, 30Ah
FY650yyyyy (yyyyy=01000-06000)	65	1000-6000	65-390					10-320	2.38K	60K	Phosphoric acid iron Li-ion: 57.6V, 30Ah
FY657yyyyy (yyyyy=01000-06000)	65.7	1000-6000	65.7-394.2					10-320	2.35K	60K	Phosphoric acid iron Li-ion: 57.6V, 30Ah
FY670yyyyy (yyyyy=01000-06000)	67	1000-6000	67-402					10-320	2.31K	60K	Li-ion: 59.2V, 20Ah
FY672yyyyy (yyyyy=01000-06000)	67.2	1000-6000	67.2-403.2					10-320	2.30K	60K	Li-ion: 59.2V, 20Ah
FY684yyyyy (yyyyy=01000-06000)	68.4	1000-6000	68.4-410.4					10-320	2.26K	60K	Phosphoric acid iron Li-ion: 60.8V, 20Ah
FY714yyyyy (yyyyy=01000-05500)	71.4	1000-5500	71.4-392.7					10-305	2.16K	60K	Li-ion: 62.9V, 20Ah
FY720yyyyy (yyyyy=01000-05500)	72	1000-5500	72-396					10-305	2.14K	60K	Lead-acid: 60V, 20Ah; Phosphoric acid iron Li-ion: 64V, 20Ah
FY725yyyyy (yyyyy=01000-05500)	72.5	1000-5500	72.5-398.75					10-305	2.13K	60K	Lead-acid: 60V, 20Ah; Phosphoric acid iron Li-ion: 64V, 20Ah
FY730yyyyy (yyyyy=01000-05500)	73	1000-5500	73-401.5					10-305	2.11K	60K	Lead-acid: 60V, 20Ah; Phosphoric acid iron Li-ion: 64V, 20Ah
FY750yyyyy (yyyyy=01000-05400)	75	1000-5400	75-405					10-300	2.05K	60K	Li-ion: 66.6V, 20Ah; Phosphoric acid iron Li-ion: 67.2V, 20Ah
FY756yyyyy (yyyyy=01000-05400)	75.6	1000-5400	75.6-408.24					10-300	2.04K	60K	Li-ion: 66.6V, 20Ah; Phosphoric acid iron Li-ion: 67.2V, 20Ah
FY800yyyyy (yyyyy=01000-05000)	80	1000-5000	80-400				100V 100µF	10-290	2.56K	80K	Li-ion: 70.3V, 20Ah; Phosphoric acid iron Li-ion: 70.4V, 20Ah

FY828yyyyy (yyyyy=01000-04800)	82.8	1000-4800	82.8-397.44					10-285	2.47K	80K	Phosphoric acid iron Li-ion: 73.6V, 20Ah
FY840yyyyy (yyyyy=01000-04800)	84	1000-4800	48-403.2					10-285	2.43K	80K	Li-ion: 74V, 20Ah
FY864yyyyy (yyyyy=01000-04600)	86.4	1000-4600	86.4-397.44					10-280	2.37K	80K	Phosphoric acid iron Li-ion: 76.8V, 20Ah
FY870yyyyy (yyyyy=01000-04600)	87	1000-4600	87-400.2					10-280	2.35K	80K	Lead-acid: 72V, 20Ah
Remark: Model FY29012000I is identical with model FY29012000, except model name.											

IEC 60335-2-29			
Clause	Requirement + Test	Result - Remark	Verdict
5	**GENERAL CONDITIONS FOR THE TESTS**		**P**
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
5.2	If the test of 21.101 is carried out two additional battery chargers required (IEC 60335-2-29)		P
5.101	Battery chargers tested as motor-operated appliances (IEC 60335-2-29)		P
6	**CLASSIFICATION**		**P**
6.1	Protection against electric shock: Class 0, 0I, I, II, III	Class I appliance	P
	For a class III construction with a detachable power supply part the appliance is classified according to the detachable power supply part		N/A
6.2	Protection against harmful ingress of water	IPX0	N/A
	Battery chargers for outdoor use at least IPX4 (IEC 60335-2-29)		N/A
7	**MARKING AND INSTRUCTIONS**		**P**
7.1	Rated voltage or voltage range (V).....	100-240V	P
	Symbol for nature of supply, or.....	~	P
	Rated frequency (Hz).....	50/60Hz	P
	Rated power input (W), or.....		N/A
	Rated current (A)	5A Max	P
	Manufacturer's or responsible vendor's name, trademark or identification mark	Fuyuang®	P
	Model or type reference.....	See pages 7-12	P
	Symbol IEC 60417-5172, for class II appliances		N/A
	IP number, other than IPX0	IPX0	N/A
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only, or		N/A
	for appliances powered by rechargeable batteries recharged in the appliance		N/A
	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage		N/A
	Battery chargers marked with (IEC 60335-2-29):		P
	- rated d.c. output voltage (V)	Marked on the label	P
	- rated d.c. output current (A)	Marked on the label	P
	No other output current shall be marked	No d.c. distribution board.	N/A
	- rated current (A) of protective devices incorporated in a d.c. distribution board		N/A
	– the polarity of the output terminals unless incorrect polarity connection is prevented		P
	- The positive terminal indicated by symbol IEC 60417-5005 (2002-10) and the negative terminal by symbol IEC 60417-5006 (2002-10)	Marked on the label	P
	- time-current characteristic of fuse-links of the time-lag type	Marked on the label	P
	If the output exceeds 20 VA, battery chargers marked with (IEC 60335-2-29):		P
	- “Before charging, read the instructions” or symbol ISO 7000-0790 (2004-01) (IEC 60335-2-29:2016/AMD1:2019)	Marked on the label	P
	“For indoor use” or symbol IEC 60417-5957 (2004-12) or “Do not expose to rain” or symbol IEC 60417-6062 (2011-05) (IEC 60335-2-29:2016/AMD1:2019)	Marked on the label	P
	Not required if the battery charger output is less than 20 VA or the battery charger has a degree of protection against harmful ingress of water of at least IPX4 (IEC 60335-2-29:2016/AMD1:2019)		N/A
	If the output exceeds 20 VA and the battery charger is for lead-acid batteries, battery chargers marked with (IEC 60335-2-29):		P
	- disconnect the supply before making or breaking the connections to the battery	Marked on the label	P
	- WARNING: Explosive gases. Prevent flames and sparks. Provide adequate ventilation during charging.	Marked on the label	P
	Battery chargers incorporating an engine cracking switch allowing the charger to supply a supplementary starting current for the engine marked with (IEC 60335-2-29):		N/A
	- maximum “on” time		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- minimum “off” time or maximum ratio between “on” time and “off” time		N/A
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	100-240V	P
	Different rated values marked with the values separated by an oblique stroke	50/60Hz	P
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible	Not adjustable	N/A
	Requirement met if frequent changes are not required and the rated voltage or rated frequency to which the appliance is to be adjusted is determined from a wiring diagram		N/A
	If the battery charger can be adjusted to different rated DC output voltages, the output voltage to which the battery charger is adjusted clearly discernible (IEC 60335-2-29)		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		P
	the power input or current are related to the arithmetic mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		P
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking		N/A
	Units of physical quantities and their symbols according to international standardized system		P
	The positive polarity terminal (plus) indicated by symbol IEC 60417-5005 (2002-10) and the negative polarity terminal (minus) by symbol IEC 60417-5006 (2002-10) (IEC 60335-2-29)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	for indoor use only indicated by symbol IEC 60417-5957 (2004-12) (IEC 60335-2-29:2016/AMD1:2019)		P
	do not expose to moisture indicated by symbol IEC 60417-6062 (2011-05) (IEC 60335-2-29:2016/AMD1:2019)		N/A
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless		N/A
	correct mode of connection is obvious		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		P
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		P
	- marking of functional earthing terminals (symbol IEC 60417-5018)		N/A
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		N/A
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means.....		N/A
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
7.11	Indication for direction of adjustment of controls	No adjustment controls	N/A
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		P
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- children being supervised not to play with the appliance		P
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
	For appliances for altitudes exceeding 2000 m, the maximum altitude is stated		N/A
	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only		N/A
	The instructions shall (IEC 60335-2-29:2016/AMD1:2019):		P
	- state that during charging, the battery must be placed in a well-ventilated area (for chargers for batteries that release gases into the atmosphere during normal charging)		P
	- state that the battery charger must only be plugged into an earthed socket-outlet (for portable class I battery chargers for outdoor use)		N/A
	- explain the automatic function, stating any limitation (for automatic battery chargers)		N/A
	The instructions for type 1 battery chargers shall also:		P
	- specify the types, the number of batteries and the rated capacity of the batteries that can be charged		P
	- include a warning against recharging non-rechargeable batteries.		P
	The instructions for type 2 battery chargers shall also:		N/A
	- specify the batteries intended to be charged, such as by a catalogue number, series identification or the equivalent		N/A
	- specify the ambient temperature range for the charger during charging		N/A
	If symbol IEC 60417-5957 (2004-12) or symbol IEC 60417-6062 (2011-05) is used, its meaning shall be explained.		P
	Battery chargers for charging automobile batteries include substance concerning (IEC 60335-2-29):		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- the battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains		N/A
	- after charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection		N/A
7.12.1	Sufficient details for installation supplied		N/A
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance		N/A
	The instructions for battery chargers for installation in caravans and similar vehicles shall state that the connection to the supply mains is to be in accordance with the national wiring rules		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:		N/A
	- dimensions of space		N/A
	- dimensions and position of supporting and fixing		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment	Output flexible cord for battery chargers (for models from FY425yyyyy to FY870yyyyy)	P
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed		N/A
7.12.8	Instructions for appliances connected to the water mains:		N/A
	- max. inlet water pressure (Pa).....		N/A
	- min. inlet water pressure, if necessary (Pa)		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.12.9	Instructions specified in 7.12 and from 7.12.1 to 7.12.8 appear together before any other instructions supplied with the appliance		P
	These instructions may be supplied with the appliance separately from any functional use booklet		N/A
	They may follow the description of the appliance that identifies parts, or follow the drawings/sketches		N/A
	In addition, instructions are also available in an alternative format such as on a website or on request from the user in a format such as a DVD		P
	In addition, instructions are also available in an alternative format such as on a website or in a format such as a DVD.....	Website	P
7.13	Instructions and other texts in an official language	In English	P
7.14	Markings clearly legible and durable:		P
	Signal words WARNING, CAUTION, DANGER in uppercase having a height as specified		P
	Uppercase letter of the text explaining the signal word not smaller than 1,6 mm		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Moulded in, engraved, or stamped markings either raised above or have a depth below the surface of at least 0,25 mm, unless		N/A
	contrasting colours are used		N/A
	Markings checked by inspection, measurement and rubbing test as specified		P
7.15	Markings on a main part	On enclosure	P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool		N/A
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		N/A
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		N/A
	The symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180		N/A
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N/A
7.101	D.C. distribution boards marked with (IEC 60335-2-29):		N/A
	- maximum output current (A) for each output circuit.....		N/A
	- types of any additional power supply which can be connected		N/A
8	**PROTECTION AGAINST ACCESS TO LIVE PARTS**		**P**
8.1	Adequate protection against accidental contact with live parts		P
	During insertion or removal of batteries having a battery voltage exceeding 42,4 V, protection against contact with live parts of the battery or of the battery charger ensured (IEC 60335-2-29)	Not contact with live parts for models from FY425yyyyy to FY870yyyyy	P
8.1.1	Requirement applies for all positions, detachable parts removed		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Lamps behind a detachable cover not removed, if conditions met	No lamp	N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts	Test probe B not contact with live part	P
	Use of test probe B of IEC 61032 through openings, with a force of 20N: no contact with live parts		N/A
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts		P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		P
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements or supporting parts	No glowing heating element	N/A
	For a single switching action obtained by a switching device, requirements as specified		N/A
	For appliances with a supply cord and without a switching device, the single switching action may be obtained by the withdrawal of the plug		N/A
8.1.4	Accessible part not considered live if:		P
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V		N/A
	- safety extra-low d.c. voltage: not exceeding 42.4 V	For models from FY060yyyyy to FY400yyyyy: Measured: Max.42.1V; Not contact with live parts for models from FY425yyyyy to FY870yyyyy.	P
	- or separated from live parts by protective impedance		P
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA	Measured: 0.279mA Peak.	P
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μF	Measured: Max.412V Capacitance measured: 0.01μF	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
	For type 2 battery chargers, voltages and currents are also measured between relevant accessible parts of opposite polarity (IEC 60335-2-29:2016/AMD1:2019)		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		N/A
	- built-in appliances		N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		N/A
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only	Class I appliance with class II construction	P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
9	**STARTING OF MOTOR-OPERATED APPLIANCES**		**N/A**
	Requirements and tests are specified in part 2 when necessary		N/A
10	**POWER INPUT AND CURRENT**		**P**
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1.....	(see appended table)	N/A
	If the power input varies throughout the operating cycle and the maximum value of the power input exceeds, by a factor greater than two, the arithmetic mean value of the power input occurring during a representative period, the power input is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the power input is the arithmetic mean value		N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated power input is related to the arithmetic mean value		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2	(see appended table)	P
	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the current is the arithmetic mean value		N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		P
	the rated current is related to the arithmetic mean value of the range		N/A
10.101	The DC output voltage of type 1 battery chargers not exceed 120 V (IEC 60335-2-29:2016/AMD1:2019)	FY06020000: Max.6.1V; FY07520000: Max.7.9V; FY08420000: Max.8.5V; FY08520000: Max.8.6V; FY11420000: Max.11.8V; FY14320000: Max.15.2V; FY15020000: Max.15.7V; FY17020000: Max.17.4V; FY21618000: Max.22.0V; FY22517000: Max.22.8V; FY25515000: Max.25.6V; FY28013000: Max.28.7V; FY30012500: Max.30.5V; FY36010500: Max.37.1V; FY38010000: Max.28.3V; FY40009500: Max.40.1V; FY42009500: Max.42.1V; FY42509000: Max.42.9V; FY45009000: Max.45.1V; FY46008500: Max.46.8V; FY48008000: Max.48.9V; FY51007500: Max.52.3V; FY55007000: Max.55.7V; FY58407000: Max.59.6V; FY58807000: Max.59.9V; FY62006500: Max.62.4V; FY63006500: Max.64.1V; FY65706000: Max.66.2V; FY67206000: Max.67.8V; FY68406000: Max.69.7V; FY71405500: Max.71.8V; FY73005500: Max.73.5V;	P

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Clause	Requirement + Test	Result - Remark	Verdict
		FY75605400: Max.76.5V; FY80005000: Max.80.7V; FY82804800: Max.83.3V; FY84004800: Max.84.6V; FY86404600: Max.87.1V; FY87046000: Max.87.4V.	
	The DC output voltage of type 2 battery chargers not exceed 250 V (IEC 60335-2-29:2016/AMD1:2019)		N/A
10.102	For type 1 battery chargers, the arithmetic mean value of the output current not deviate from the rated DC output current by more than 10 % (IEC 60335-2-29:2016/AMD1:2019)	(see appended table)	P
	For type 2 battery chargers, the arithmetic mean value of the output current not exceed the rated DC output current by more than 10 % (IEC 60335-2-29:2016/AMD1:2019)	(see appended table)	N/A
11	**HEATING**		**P**
11.1	No excessive temperatures in normal use		P
11.2	The appliance is held, placed or fixed in position as described	(see appended table)	P
	Battery chargers placed in the test corner as specified for heating appliances (IEC 60335-2-29)		P
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless		N/A
	the windings are non-uniform or it is difficult to make the necessary connections	Transformer winding	P
11.4	Heating appliances operated under normal operation at 1,15 times rated power input (W)		N/A
11.5	Battery chargers are operated under normal operation and supplied with the most unfavourable voltage between 0,94 times and 1,06 times the rated voltage.	(see appended table)	P
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0,94- and 1,06-times rated voltage (V)		N/A
11.7	Battery chargers operated until steady conditions are established (IEC 60335-2-29)	Test until steady conditions established.	P
11.8	Temperature rises monitored continuously and not exceeding the values in table 3	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	If the temperature rise of a motor winding exceeds the value of table 3, or		N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Sealing compound does not flow out		P
	Protective devices do not operate, except		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
13	**LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE**		**P**
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times the rated power input (W)		N/A
	Motor-operated appliances and combined appliances supplied at 1,06 times the rated voltage (V)	(see appended table)	P
	Protective impedance and radio interference filters disconnected before carrying out the tests		P
13.2	The leakage current is measured by means of the circuit described in Figure 4 of IEC 60990:1999		P
	For class 0I appliances and class I appliances, except parts of class II construction, C may be replaced by a low impedance ammeter	Class I appliance	P
	Leakage current measurements	(see appended table)	P
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4	(see appended table)	P
	No breakdown during the tests		P
14	**TRANSIENT OVERVOLTAGES**		**P**
	Appliances withstand the transient over-voltages to which they may be subjected		P
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6.....	(see appended table)	N/A
	No flashover during the test, unless		N/A
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	**MOISTURE RESISTANCE**		**P**

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Clause	Requirement + Test	Result - Remark	Verdict
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance	IPX0	N/A
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		N/A
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529.....		N/A
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions		N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		N/A
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		N/A
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Detachable parts subjected to the relevant treatment with the main part		N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without a connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of the solution, over a period of 1 min (l)		N/A
	The appliance withstands the electric strength test of 16.3		N/A
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		N/A
	Humidity test for 48 h in a humidity cabinet	48h, 30°C, 95%R.H.	P
	Reassembly of those parts that may have been removed		N/A
	The appliance withstands the tests of clause 16	No breakdown observed.	P
16	**LEAKAGE CURRENT AND ELECTRIC STRENGTH**		**P**
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		P
	Tests carried out at room temperature and not connected to the supply		P

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Clause	Requirement + Test	Result - Remark	Verdict
16.2	Single-phase appliances: test voltage 1,06 times rated voltage (V)	(see appended table)	P
	Three-phase appliances: test voltage 1,06 times rated voltage divided by √3 (V)		N/A
	Leakage current measurements	(see appended table)	P
	Limit values doubled if:		N/A
	- all controls have an off position in all poles, or		N/A
	- the appliance has no control other than a thermal cut-out, or		N/A
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified	(see appended table)	N/A
16.3	Electric strength tests according to table 7	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified	(see appended table)	P
	No breakdown during the tests		P
17	**OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS**		**P**
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use.....	(see appended table)	P
	Appliance supplied with 1,06- or 0,94-times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V)		P
	Output terminals of battery chargers short-circuited (IEC 60335-2-29)		P
	Basic insulation is not short-circuited		P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		N/A
	Temperature of the winding not exceeding the value specified in table 8		P
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	**ENDURANCE**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
	Requirements and tests are specified in part 2 when necessary		N/A
19	**ABNORMAL OPERATION**		**P**
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe	(see appended table)	P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		N/A
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		N/A
	if applicable, to the test of 19.5		N/A
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6		N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable		N/A
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12 and 19.101 to 19.103, as applicable (IEC 60335-2-29)		P
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		N/A
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		N/A
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0,85 times rated power input (W).....		N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1,24 times rated power input (W).....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		N/A
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4		N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1,5 times working voltage or until the PTC heating element ruptures (V):		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		N/A
	locking moving parts of other appliances		N/A
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	the capacitor is of class S2 or S3 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		N/A
	An electronic timer or programmer that operates to ensure compliance with the test before the maximum period under the conditions of Clause 11 is reached, is a protective electronic circuit		N/A
	Other appliances supplied with rated voltage for a period as specified		N/A
	Winding temperatures not exceeding values specified in table 8	(see appended table)	N/A
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously		N/A
	Motor-operated and combined appliances for which 30.2.3 is applicable and that use overload protective devices relying on electronic circuits to protect the motor windings, are also subjected to the test		N/A
	Winding temperatures not exceeding values as specified.....	(see appended table)	N/A
19.10	Series motor operated at 1,3 times rated voltage for 1 min (V)		N/A
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		P
	they comply with the conditions specified in 19.11.1		N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	restarting does not result in a hazard		P
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		N/A
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		P
	During and after each test the following is checked:		P
	- the temperature of the windings do not exceed the values specified in table 8		P
	- the appliance complies with the conditions specified in 19.13		P
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		P
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met:		N/A
	- the base material of the printed circuit board withstands the test of Annex E		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		N/A
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified:		P
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		P
	b) open circuit at the terminals of any component	(see appended table)	P
	c) short circuit of capacitors, unless	(see appended table)	P
	they comply with IEC 60384-14	X, Y capacitor	P
	d) short circuit of any two terminals of an electronic component, other than integrated circuits	(see appended table)	P
	This fault condition is not applied between the two circuits of an optocoupler		P
	e) failure of triacs in the diode mode		N/A
	f) failure of microprocessors and integrated circuits	(see appended table)	P
	g) failure of an electronic power switching device		N/A
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		N/A
19.11.3	If the appliance incorporates a protective electronic circuit that operates to ensure compliance with clause 19, the appliance is tested as specified		N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		N/A
	a device that can be placed in the stand-by mode,		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		N/A
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena		N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		N/A
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, at frequency ranges specified		N/A
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		N/A
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		N/A
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode		N/A
	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling		N/A
	Earthed heating elements in class I appliances disconnected		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		N/A
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		N/A
	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate		N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A)	Measure: 33.0A; Rated current of the fuse: 10A.	P
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 9	(see appended table)	P
	During the tests, the values of Table 8 apply (IEC 60335-2-29)		P
	Compliance with clause 8 not impaired		P
	No rupture of the battery (IEC 60335-2-29)		P
	If the appliance can still be operated it complies with 20.2		N/A
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4:		P
	- basic insulation (V)	1000V	P
	- supplementary insulation (V)	1750V	P
	- reinforced insulation (V).....	3000V	P
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage		P
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		N/A
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- do not become operational, or		N/A
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:		N/A
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited		N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		N/A
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A
19.101	Battery chargers supplied at rated voltage and operated under normal operation, any control limiting the temperature during tests of clause 11 short-circuited (IEC 60335-2-29)		P
19.102	Reverse connection of battery chargers to a fully charged battery at rated voltage (IEC 60335-2-29)		P
	The capacity of the battery (IEC 60335-2-29)	70Ah for Lead-acid battery; Other battery see pages 7-12	P
19.103	Battery chargers intended to be used with a d.c. distribution board supplied at rated voltage and operated under normal operation, load increased as specified until protective device operates or short-circuit conditions are established (IEC 60335-2-29)		N/A
20	**STABILITY AND MECHANICAL HAZARDS**		**P**
20.1	Appliances having adequate stability		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		P
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury	No moving parts	N/A
	Protective enclosures, guards and similar parts are non-detachable, and		N/A
	have adequate mechanical strength		N/A
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard by unexpected closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		N/A
21	**MECHANICAL STRENGTH**		**P**
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 1,0 J ± 0,05 J (IEC 60335-2-29)	(see appended table)	P
	The appliance shows no damage impairing compliance with this standard, and		P
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm	Enclosure used as reinforce insulation. Thickness of enclosure: 2.0mm.	P
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		P
21.101	Battery chargers, other than built-in battery chargers, having a mass not exceeding 5 kg, subjected to free-fall procedure of IEC 60068-2-31 (IEC 60335-2-29)	Three drops on concrete floor, no damage.	P
	Battery chargers show no damage that could impair compliance with 8.1, 15.1.1, 16.3 and cl. 29 (IEC 60335-2-29)		P
21.102	Battery chargers for installing in caravans and similar vehicles withstand vibrations to which they may be subjected (IEC 60335-2-29)	Not for installing in caravans.	N/A
	Vibration test as specified in IEC 60068-2-6 under conditions specified (IEC 60335-2-29)		N/A
	Battery chargers show no damage that could impair compliance with 8.1, 15.1.1, 16.3 and cl. 29 (IEC 60335-2-29)		N/A
	Connections have not worked loose (IEC 60335-2-29)		N/A
22	**CONSTRUCTION**		**P**
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IPX0	N/A
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		N/A
	- a supply cord fitted with a plug, or		N/A
	- a switch complying with 24.3, or		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0,25 Nm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm		N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		N/A
	rotating does not impair compliance with this standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets	No heating liquids	N/A
22.5	No risk of electric shock when touching pins, for appliances having a capacitor with rated capacitance equal to or greater than 0,1μF, the appliance being disconnected from the supply at the instant of voltage peak		P
	Voltage not exceeding 34 V (V)	Measured: Max.10V	P
	If compliance relies on the operation of an electronic circuit, the electromagnetic phenomena tests of 19.11.4.3 and 19.11.4.4 are applied		N/A
	The discharge test is then repeated three times, voltage not exceeding 34 V (V).....		N/A
22.6	Electrical insulation not affected by condensing water or leaking liquid	No liquid used.	N/A
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		N/A
	In case of doubt, test as described		N/A
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices	No device providing steam.	N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use	No such parts.	N/A
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless		P
	the substance has adequate insulating properties		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:	No such thermal cut-outs.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts	Enclosure is compressed by ultrasonic welding.	P
	Obvious locked position of snap-in devices used for fixing such parts		N/A
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described	50N pull & push, remain in position after test.	P
22.12	Handles, knobs etc. fixed in a reliable manner, if loosening result in a hazard	No such parts.	N/A
	Removing or fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible, if resulting in a hazard		N/A
	A choking hazard does not apply to appliances for commercial use		N/A
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
	If the part is removed and can be contained within the small parts cylinder, it is considered to be a choking hazard		N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		N/A
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P

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Clause	Requirement + Test	Result - Remark	Verdict
	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded	No such devices.	N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts	No such devices.	N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner	No spacers.	N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless	No driving belts.	N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		N/A
	material used is non-corrosive, non-hygroscopic and non-combustible		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless	No such material used.	P
	impregnated		N/A
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos	No asbestos included.	P
22.23	Oils containing polychlorinated biphenyl (PCB) not used	No oils used.	P
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported	No heating elements.	N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.26	The output circuit of a type 1 battery charger supplied through a safety isolating transformer and shall not be connected to accessible metal parts or an earthing terminal (IEC 60335-2-29:2016/AMD1:2019)		P
	The insulation between parts operating at safety extra-low voltage and live parts comply with the requirements for double insulation or reinforced insulation (IEC 60335-2-29:2016/AMD1:2019)		P
	The output circuit of a type 2 battery charger supplied through an isolating transformer and shall not be connected to accessible metal parts or an earthing terminal (IEC 60335-2-29:2016/AMD1:2019)		N/A
	The insulation between parts operating at safety extra-low voltage and live parts comply with the requirements for double insulation or reinforced insulation (IEC 60335-2-29:2016/AMD1:2019)		N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation		P
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water, separated from live parts by double or reinforced insulation	No such metal parts.	N/A
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation	Not permanently connected.	N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or	Outer enclosure.	P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		N/A
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		P

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Clause	Requirement + Test	Result - Remark	Verdict
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29		P
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2		N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation		N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts, or	No liquids used.	N/A
	unearthed metal parts separated from live parts by basic insulation only		N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless	No such parts.	N/A
	the shaft is not accessible when the part is removed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation	No such parts.	N/A
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances and cordless appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N/A
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless	No such parts.	N/A
	they are separated from live parts by double or reinforced insulation		N/A
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless	No accessible metal parts.	N/A
	the capacitors comply with 22.42		P
22.38	Capacitors not connected between the contacts of a thermal cut-out	No thermal cut-outs.	N/A
22.39	Lamp holders used only for the connection of lamps	No lamp holders.	N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If the appliance cannot operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible		N/A
22.41	No components, other than lamps, containing mercury	No component containing mercury.	P
22.42	Protective impedance consisting of at least two separate components	Two Y-Capacitors is series between the primary circuits and secondary circuits	P
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited	Measured: 0.563mA Peak. (Limit: 0.7mA Peak)	P
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		P
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1		N/A
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use		N/A
	No leakage from any part, including any inlet water hose		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless		N/A
	the appliance switches off automatically or can operate continuously without hazard		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		N/A
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode		N/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		N/A
	- continuously, or		N/A
	- automatically, or		N/A
	- remotely		N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		N/A
22.53	Class II appliances and class III appliances that incorporate functionally earthed parts have at least double insulation or reinforced insulation between live parts and the functionally earthed parts		N/A
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless		N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously		N/A
22.55	Devices operated to stop the intended function of the appliance, if any, are be distinguished from other manual devices by means of shape, size, surface texture or position		N/A
	The requirement concerning position does not preclude use of a push on push off switch		N/A
	An indication when the device has been operated is given by:		N/A
	– tactile feedback from the actuator or from the appliance, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– reduction in heat output; or		N/A
	– audible and visible feedback		N/A
22.56	Detachable power supply part provided with the part of class III construction		N/A
22.57	The properties of non-metallic materials do not degrade from exposure to UV-C radiation, as specified in Annex T		N/A
	This requirement does not apply to glass, ceramics or similar materials		N/A
22.101	Each circuit supplied from a d.c. distribution board incorporates an overload protective device (IEC 60335-2-29)		N/A
22.102	Battery chargers for installing in caravans and similar vehicles constructed so that they can be securely fixed to a support (IEC 60335-2-29)		N/A
22.102	Keyhole slots, hooks and similar means, without any further means to prevent the battery charger from being inadvertently lifted off the support not considered to be securely fixed (IEC 60335-2-29)		N/A
23	**INTERNAL WIRING**		**P**
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		P
	Wiring effectively prevented from coming into contact with moving parts		N/A
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges		N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		N/A
	Flexible metallic tubes not causing damage to insulation of conductors		N/A
	Open-coil springs not used		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		N/A
23.4	Bare internal wiring sufficiently rigid and fixed		P
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		P
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		N/A
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation	2000V, 15min, no breakdown	P
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply,		P
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation.		N/A
	A single layer of internal wiring insulation does not provide reinforced insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		N/A
	be such that it can only be removed by breaking or cutting		N/A
23.7	The colour combination green/yellow only used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		P
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	**COMPONENTS**		**P**
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components.....	(see appended table)	P
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance		N/A
	Relays tested as part of the appliance, or		N/A
	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1		N/A
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance		P
	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard		P
	30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections		P
	Components that have not been previously tested to comply with the IEC standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested to comply with the resistance to fire requirements in the IEC standard for the relevant component need not be retested provided the specified conditions are met		P
	If these conditions are not satisfied, the component is tested as part of the appliance.		P
	Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance		N/A
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		P
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard		N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309		P
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, comply with IEC 60384-14	X, Y capacitor complying with IEC 60384-14	P
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Transformers in associated switch mode power supplies comply with Annex BB of IEC 61558-2-16		P
	Safety isolating transformers comply with IEC 61558-2-6		N/A
	If they have to be tested, they are tested according to Annex G		P
	The relevant standard for isolating transformers is IEC 61558-2-4 (IEC 60335-2-29:2016/AMD1:2019)		N/A
	If they have to be tested, they tested in accordance with Annex BB (IEC 60335-2-29:2016/AMD1:2019)		N/A
24.1.3	Switches comply with IEC 61058-1, the number of cycles of operation being at least 10 000		N/A
	If they have to be tested, they are tested according to Annex H		N/A
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If the switch only operates a motor staring relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested		N/A
24.1.4	Automatic controls comply with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		N/A
	- thermostats: 10 000		N/A
	- temperature limiters: 1 000		N/A
	- self-resetting thermal cut-outs: 300		N/A
	- voltage maintained non-self-resetting thermal cut-outs: 1 000		N/A
	- other non-self-resetting thermal cut-outs: 30		N/A
	- timers: 3 000		N/A
	- energy regulators: 10 000		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D		N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		N/A
	Thermal cut-outs of the capillary type comply with the requirements for type 2.K controls in IEC 60730-2-9		N/A
24.1.5	Appliance couplers comply with IEC 60320-1		P
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3		N/A
	Interconnection couplers comply with IEC 60320-2-2		N/A
24.1.6	Small lamp holders similar to E10 lampholders comply with IEC 60238, the requirements for E10 lampholders being applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151		N/A
24.1.8	The relevant standard for thermal links is IEC 60691		N/A
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		N/A
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		N/A
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance		N/A
24.2	Appliances not fitted with:		P
	- switches, automatic controls or power supplies in flexible cords		P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	- thermal cut-outs that can be reset by soldering, unless		P
	the solder has a melding point of at least 230 ˚C		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions	No such components.	N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		P
	The requirement also applicable to plugs, connectors, socket-outlets and appliance outlets in the battery charger output circuit (IEC 60335-2-29)		P
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly	No such components.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V		N/A
	In addition, the motors comply with the requirements of Annex I		N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770	No such components.	N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure		N/A
	One or more of the following conditions are to be met:		N/A
	- the capacitors are of class S2 or S3 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		**P**
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		P
	- supply cord fitted with a plug, the current rating and voltage rating of the plug being not less than the corresponding ratings of its associated appliance		N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- pins for insertion into socket-outlets		P
25.2	Appliance not provided with more than one means of connection to the supply mains		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		N/A
	- a set of terminals allowing the connection of a flexible cord		N/A
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm):		N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord and output flexible cord for battery chargers having a rated output voltage exceeding 42,4 V to the appliance: (IEC 60335-2-29)		P
	- type X attachment		N/A
	- type Y attachment	Output flexible cord for battery chargers (for models from FY425yyyyy to FY870yyyyy)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- type Z attachment, if allowed in relevant part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment		N/A
25.6	Plugs fitted with only one flexible cord		N/A
25.7	Supply cords and output flexible cord for battery chargers having a rated output voltage exceeding 42,4 V, other than for class III appliances, being one of the following types: (IEC 60335-2-29)		P
	- rubber sheathed (at least 60245 IEC 53)		N/A
	- polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- polyvinyl chloride sheathed. Not used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of clause 11		P
	- light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg		N/A
	- ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances	H05V2V2-F (for models from FY425yyyyy to FY870yyyyy)	P
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment other than specially prepared cords		N/A
	- heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg		N/A
	- heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances		N/A
	- halogen-free, low smoke, thermoplastic insulated and sheathed		N/A
	- light duty halogen-free low smoke flexible cable (62821 IEC 101) for circular cable and (62821 IEC 101f) for flat cable		N/A
	- ordinary duty halogen-free low smoke flexible cable (62821 IEC 102) for circular cable and (62821 IEC 102f) for flat cable		N/A
	Supply cords for class III appliances adequately insulated		N/A
	Test with 500 V for 2 min for supply cords of class III appliances that contain live parts		N/A
	Battery chargers for charging vehicle batteries not fitted with natural rubber sheathed supply cords (IEC 60335-2-29)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For battery chargers intended for use at low temperatures, the supply cord have properties not less than those specified for ordinary polychloroprene sheathed cords (code designation 60245 IEC 57) (IEC 60335-2-29)		N/A
25.8	Nominal cross-sectional area of supply cords and output flexible cord for battery chargers having a rated output voltage exceeding 42,4 V not less than table 11; rated current (A); cross-sectional area (mm²) (IEC 60335-2-29)	Output voltage: Max.87.0V For output flexible cord: Rated output current Max.9A, cross-sectional area: 1.0mm^2 (for models from FY425yyyyy to FY870yyyyy)	P
25.9	Supply cords not in contact with sharp points or edges		P
25.10	Supply cord of class I appliances have a green/yellow core for earthing		P
	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue		N/A
	Where additional neutral conductors are provided in the supply cord:		N/A
	– other colours may be used for these additional neutral conductors;		N/A
	– all of the neutral conductors and line conductors are identified by marking using the alpha numeric notation specified in IEC 60445		N/A
	– the supply cord is fitted to the appliance		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure	For models from FY425yyyyy to FY870yyyyy	P
25.13	Inlet openings so constructed as to prevent damage to the supply cord		P
	If it is not evident that the supply cord can be introduced without risk of damage, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		N/A
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described:		N/A
	- applied force (N)		N/A
	- number of flexings		N/A
	The test does not result in:		N/A
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord and output flexible cord for battery chargers having a rated output voltage exceeding 42,4 V, conductors of the cord relieved from strain, twisting and abrasion by use of cord anchorage (IEC 60335-2-29)	Output flexible cord for battery chargers (for models from FY425yyyyy to FY870yyyyy)	P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P
	Pull and torque test of cord:		P
	- fixed appliances: pull 100 N; torque (not on automatic cord reel) (Nm)		N/A
	- other appliances: values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm)	Mass: 1.61Kg, pull: 60N, torque: 0.25N	P
	Cord not damaged and max. 2 mm displacement of the cord	Displacement: 0.1mm	P
25.16	Cord anchorages for type X attachments constructed and located so that:		N/A
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
	- they are suitable for different types of supply cord		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A
	they are separated from accessible metal parts by supplementary insulation		N/A
	- the cord is not clamped by a metal screw which bears directly on the cord		N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	it is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
	failure of the insulation of the cord does not make accessible metal parts live		N/A
	- for class II appliances they are of insulating material, or		N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		N/A
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance	Output flexible cord for battery chargers: Type Y attachment (for models from FY425yyyyy to FY870yyyyy)	P
25.18	Cord anchorages only accessible with the aid of a tool, or		N/A
	Constructed so that the cord can only be fitted with the aid of a tool	Output flexible cord for battery chargers: Type Y attachment (for models from FY425yyyyy to FY870yyyyy)	P
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts	Output flexible cord for battery chargers: Type Y attachment (for models from FY425yyyyy to FY870yyyyy)	P
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		N/A
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		P
	- live parts not accessible during insertion or removal		P
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- connector can be inserted without difficulty		P
	- the appliance is not supported by the connector		P
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		P
	the supply cord is unlikely to touch such metal parts		P
25.23	Interconnection cords comply with the requirements for the supply cord, except that:		N/A
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		N/A
	- the thickness of the insulation may be reduced		N/A
	- for class I or class II appliance with class III construction, the cross sectional areas of the conductors need not comply with 25.8 if specified conditions are met		N/A
	If necessary, electric strength test of 16.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected		N/A
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		N/A
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		N/A
26	**TERMINALS FOR EXTERNAL CONDUCTORS**		**P**
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		P
	Terminals only accessible after removal of a non-detachable cover, except		P
	for class III appliances that do not contain live parts	Class I	N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A
26.2	Appliances with type X attachment and appliances for the connection of cables of fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Terminals fixed so that when the clamping means is tightened or loosened:		N/A
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm).....		N/A
	No deep or sharp indentations of the conductors		N/A
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
	Requirement not apply to the terminals of the output circuit having a no-load voltage not exceeding 42,4 V (IEC 60335-2-29)		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm^2)		N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	**PROVISION FOR EARTHING**		**P**
27.1	Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet	Class I appliance	P
	Earthing terminals and earthing contacts not connected to the neutral terminal		P
	Class 0, II and III appliances have no provision for protective earthing		N/A
	Class II appliances and class III appliances can incorporate an earth for functional purposes		N/A
	Safety extra-low voltage circuits not earthed, unless		P
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		P
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2,5 to 6 mm^2, and		N/A
	- do not provide earthing continuity between different parts of the appliance, and		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- conductors cannot be loosened without the aid of a tool		P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		P
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		P
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		N/A
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance		P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω)	Measured 0.087Ω.	P
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
28	**SCREWS AND CONNECTIONS**		**N/A**
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		N/A
	Screws not of soft metal liable to creep, such as zinc or aluminium		N/A
	Diameter of screws of insulating material min. 3 mm	No screw of insulating material	N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity		N/A
	Screws used for electrical connections or connections providing earthing continuity screwed into metal		N/A
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		N/A
	For screws and nuts; torque-test as specified in table 14	(see appended table)	N/A
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		N/A
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	This requirement does not apply to electrical connections in circuits of appliances for which:		N/A
	• 30.2.2 is applicable and that carry a current not exceeding 0,5 A		N/A
	• 30.2.3 is applicable and that carry a current not exceeding 0,2 A		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together		N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection:		N/A
	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or		N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		N/A
	if an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A
29	**CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION**		**P**

IEC 60335-2-29			
Clause	Requirement + Test	Result - Remark	Verdict
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies ...		N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
	These values apply to functional, basic, supplementary and reinforced insulation.....		P
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless.....	(see appended table)	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		N/A
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N/A
	For appliances intended for use at altitudes exceeding 2 000 m, the clearances in Table 16 is increased according to the relevant multiplier values in Table A.2 of IEC 60664-1		N/A
	Impulse voltage test is not applicable:		N/A
	- when the microenvironment is pollution degree 3, or		N/A
	- for basic insulation of class 0 and class 01 appliances, or		N/A
	- to appliances intended for use at altitudes exceeding 2 000 m		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The values of table 16 or the impulse voltage test of clause 14 are applicable	(see appended table)	P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors	Transformer winding.	P
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16 ..	(see appended table)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage .	(see appended table)	P
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		P
29.1.4	Clearances for functional insulation are the largest values determined from:		P
	- table 16 based on the rated impulse voltage.....	(see appended table)	P
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless		N/A
	the microenvironment is pollution degree 3, or		N/A
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited		P
	Lacquered conductors of windings considered to be bare conductors	Transformer windings.	P
	However, clearances at crossover points are not measured		P
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from:		N/A
	- table 16 based on the rated impulse voltage.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree.....	(see appended table)	P
	Pollution degree 2 applies, unless		P
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		N/A
	- battery chargers for outdoor use, the microenvironment is pollution degree 3 unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance (IEC 60335-2-29)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		N/A
29.2.1	Creepage distances of basic insulation not less than specified in table 17	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17		N/A
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14.....		N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable.....		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable.....		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18.....	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18		N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
	Compliance checked:		P
	- by measurement, in accordance with 29.3.1, or		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- by an electric strength test in accordance with 29.3.2, or		P
	- for insulation, other than single layer internal wiring insulation, by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
	- by an assessment of the thermal quality of the material according to 29.3.3 combined with an electric strength test in accordance with 23.5, for each single layer internal wiring insulation touching each other, or		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A
29.3.1	Supplementary insulation have a thickness of at least 1 mm		P
	Reinforced insulation have a thickness of at least 2 mm	Enclosure thickness: 2.5mm.	P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		P
	Supplementary insulation consist of at least 2 layers		P
	Reinforced insulation consist of at least 3 layers		P
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		N/A
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19		N/A
30	**RESISTANCE TO HEAT AND FIRE**		**P**
30.1	External parts of non-metallic material,		P
	parts supporting live parts, and		P
	parts of thermoplastic material providing supplementary or reinforced insulation		P
	sufficiently resistant to heat		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Ball-pressure test according to IEC 60695-10-2		P
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C)	(see appended table 30.1)	P
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C)	(see appended table 30.1)	P
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C).....	(see appended table 30.1)	P
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to:		N/A
	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		N/A
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		N/A
	Compliance checked by the test of 30.2.1, and in addition:		P
	- for attended appliances, 30.2.2 applies		N/A
	- for unattended appliances, 30.2.3 applies		P
	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		P
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550°C	(see appended table 30.2)	P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		N/A
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
30.2.2	Appliances operated while attended, parts of non-metallic material supporting current-carrying connections, and		N/A
	parts of non-metallic material within a distance of 3mm of such connections,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	N/A
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C, or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or	(see appended table 30.2/30.2.4)	N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10.....		N/A
	Glow-wire test not applicable to conditions as specified:		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	The tests are not applicable to conditions as specified:		N/A
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		P
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C	(see appended table 30.2)	P
	Glow-wire applied to an interposed shielding material, if relevant		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		N/A
30.2.3.2	Parts of non-metallic material supporting connections, and		P
	parts of non-metallic material within a distance of 3mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	P
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		P
	- 650 °C, for other connections		P
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications:		N/A
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	- 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		N/A
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		N/A
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of Annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		N/A
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E	(see appended table 30.2/30.2.4)	N/A
	Test not applicable to conditions as specified	PCB: V-0	P
31	**RESISTANCE TO RUSTING**		**P**
	Relevant ferrous parts adequately protected against rusting		P
	Tests specified in part 2 when necessary		N/A
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		**P**
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		P
	Compliance is checked by the limits or tests specified in part 2, if relevant		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A	**ANNEX A (INFORMATIVE)** **ROUTINE TESTS**		**P**
A.2	Electric strength test (IEC 60335-2-29):		P
	An electric strength test is carried out between the input and output circuits, the test voltage being:		P
	- 2 000 V, for battery chargers having a rated voltage not exceeding 150 V		N/A
	- 2 500 V, for other battery chargers		P
B	**ANNEX B (NORMATIVE)** **APPLIANCES POWERED BY RECHARGEABLE BATTERIES THAT ARE RECHARGED IN THE APPLIANCE**		**N/A**
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		N/A
	Three forms of construction covered:		N/A
	a) Appliance supplied directly from the supply mains or a renewable energy source, the battery charging circuitry and other supply unit circuitry incorporated within the appliance		N/A
	b) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the part of the appliance containing the battery		N/A
	c) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the detachable supply unit		N/A
3.1.9	Appliance operated under the following conditions:		N/A
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage (V) and polarity of the terminals.....		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or		N/A
	use only with <model designation> supply unit		N/A
7.6	Additional symbols		N/A
7.12	The instructions give information regarding charging		N/A
	Instructions for appliances incorporating batteries intended to be replaced by the user include required information		N/A
	Instructions for appliances containing non user-replaceable batteries state the substance of the following:		N/A
	This appliance contains batteries that are only replaceable by skilled persons		N/A
	Instructions for appliances containing non-replaceable batteries shall state the substance of the following:		N/A
	This appliance contains batteries that are non-replaceable		N/A
	For appliances intending to be supplied from a detachable supply unit for the purposes of recharging the battery, the type reference of the detachable supply unit is stated along with the following:		N/A
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance		N/A
	If the symbol for detachable supply unit is used, its meaning is explained		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
	The type reference of the detachable supply unit is placed in close proximity to the symbol		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A
11.7	The battery is charged for the period stated in the instructions or 24 h.....		N/A
11.8	Temperature rise of the battery surface does not exceed the limit in the battery manufacturer's specification; measured (K); limit (K)		N/A
	If no limit specified, the temperature rise does not exceed 20 K; measured (K)		N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		N/A
19.10	Not applicable		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
19.13	The battery does not rupture or ignite		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being:		N/A
	- 100, if the mass of the part does not exceed 250 g (g):		N/A
	- 50, if the mass of the part exceeds 250 g		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A
C	**ANNEX C (NORMATIVE) AGEING TEST ON MOTORS**		**N/A**
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
D	**ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS**		**N/A**
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
E	**ANNEX E (NORMATIVE) NEEDLE-FLAME TEST**		**N/A**
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:		N/A
7	Severities		N/A
	The duration of application of the test flame is 30 s ± 1 s		N/A
9	Test procedure		N/A
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		N/A
9.2	The first paragraph does not apply		N/A
	If possible, the flame is applied at least 10 mm from a corner		N/A
9.3	The test is carried out on one specimen		N/A
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A
F	**ANNEX F (NORMATIVE) CAPACITORS**		**N/A**
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:		N/A
1.5	Terms and definitions		N/A
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		N/A
	Items a) and b) are applicable		N/A
3.4	Approval testing		N/A
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		N/A
	This subclause is applicable		N/A
4.2	Electrical tests		N/A
4.2.1	This subclause is applicable		N/A
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		N/A
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		N/A
	This subclause is applicable		N/A
4.14	Endurance		N/A
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.17	Passive flammability test		N/A
	This subclause is applicable		N/A
4.18	Active flammability test		N/A
	This subclause is applicable		N/A
G	**ANNEX G (NORMATIVE)** **SAFETY ISOLATING TRANSFORMERS**		**P**
	The following modifications to this standard are applicable for safety isolating transformers:		P
7	Marking and instructions		P
7.1	Transformers for specific use marked with:		N/A
	-name, trademark or identification mark of the manufacturer or responsible vendor.....		N/A
	-model or type reference.....		N/A
17	Overload protection of transformers and associated circuits		P
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		P
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		P
29	Clearances, creepage distances and solid insulation		P
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		P
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		N/A
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		N/A
H	**ANNEX H (NORMATIVE)** **SWITCHES**		**N/A**
	Switches comply with the following clauses of IEC 61058-1, as modified below:		N/A
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Before being tested, switches are operated 20 times without load		N/A
8	Marking and documentation		N/A
	Switches are not required to be marked		N/A
	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		N/A
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		N/A
15.1	Not applicable		N/A
15.2	Not applicable		N/A
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		N/A
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation		N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable		N/A
	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1		N/A
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K)		N/A
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Clause 20 is applicable to clearances across full disconnection and micro-disconnection		N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 24		N/A
I	**ANNEX I (NORMATIVE)** **MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE**		**N/A**
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		N/A
8	Protection against access to live parts		N/A
8.1	Metal parts of the motor are considered to be bare live parts		N/A
11	Heating		N/A
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		N/A
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		N/A
16	Leakage current and electric strength		N/A
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test		N/A
19	Abnormal operation		N/A
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:		N/A
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N/A
	- short circuit of each diode of the rectifier		N/A
	- open circuit of the supply to the motor		N/A
	- open circuit of any parallel resistor, the motor being in operation		N/A
	Only one fault simulated at a time, the tests carried out consecutively		N/A
22	Construction		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	**ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS**		**N/A**
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		N/A
5.7	Conditioning of the test specimens		N/A
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		N/A
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		N/A
	Severity 1 is specified		N/A
5.9	Additional tests		N/A
	This subclause is not applicable		N/A
K	**ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES**		**P**
	The information on overvoltage categories is extracted from IEC 60664-1		P
	Overvoltage category is a numeral defining a transient overvoltage condition		P
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	**ANNEX L (INFORMATIVE)** **GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES**		**P**
	Information for the determination of clearances and creepage distances		P
M	**ANNEX M (NORMATIVE)** **POLLUTION DEGREE**		**P**
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		P
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		P
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		P
	Minimum clearances specified where pollution may be present in the microenvironment		P
	Degrees of pollution in the microenvironment		P
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		P
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		P
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		N/A
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	**ANNEX N (NORMATIVE)** **PROOF TRACKING TEST**		**P**
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		P

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Clause	Requirement + Test	Result - Remark	Verdict
7	Test apparatus		P
7.3	Test solutions		P
	Test solution A is used		P
10	Determination of proof tracking index (PTI)		P
10.1	Procedure		P
	The proof voltage is 100V, 175V, 400V or 600V	175V	P
	The test is carried out on five specimens		P
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		P
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	**ANNEX O (INFORMATIVE)** **SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30**		**P**
	Description of tests for determination of resistance to heat and fire		P
P	**ANNEX P (INFORMATIVE)** **GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN TROPICAL CLIMATES**		**N/A**
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332		N/A
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332, if liable to be connected to a supply mains that excludes the protective earthing conductor		N/A
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with symbol IEC 60417-6332		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a tropical climate, but may also be used in other countries		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If symbol IEC 60417-6332 is used, its meaning is explained		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A
15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	**ANNEX Q (INFORMATIVE)** **SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS**		**P**
	Description of tests for appliances incorporating electronic circuits		P
R	**ANNEX R (NORMATIVE)** **SOFTWARE EVALUATION**		**N/A**
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex		N/A
R.1	Programmable electronic circuits using software		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/A
R.2	Requirements for the architecture		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/A
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures:		N/A
	- single channel with periodic self-test and monitoring		N/A
	- dual channel (homogenous) with comparison		N/A
	- dual channel (diverse) with comparison		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures:		N/A
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		N/A
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/A
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		N/A
R.3.1	General		N/A
	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied		N/A
	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1		N/A
R.3.2	Specification		N/A
R.3.2.1	Software safety requirements:	Software Id:	N/A
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		N/A
R.3.2.2.1	The specification of the software architecture includes the aspects listed - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data	Document ref. No:	N/A
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/A
R.3.2.3	Module design and coding		N/A
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		N/A
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		N/A
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS						
Component [a]	Fault/error	Acceptable measures [b, c]	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
1 CPU 1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			N/A
1.2 VOID						N/A
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2			N/A
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4			N/A

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS						
Component [a]	Fault/error	Acceptable measures [b, c]	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/ sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4			N/A
4. Memory 4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2			N/A
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2			N/A
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2			N/A
5.1 VOID						N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14			N/A
6.1 VOID						N/A

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

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS						
Component [a]	Fault/error	Acceptable measures [b, c]	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
6.2 VOID						N/A
6.3 Timing	Wrong point in time	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.10.4 H.2.18.18 H.2.18.10.3 H.2.18.15 H.2.18.3			N/A
	Wrong sequence	Logical monitoring, or time-slot monitoring, or Scheduled transmission	H.2.18.10.2 H.2.18.10.4 H.2.18.18			
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.1 VOID						N/A
7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips [d] e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS						
Component [a]	Fault/error	Acceptable measures [b, c]	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.						
[a)] For fault/error assessment, some components are divided into their sub-functions. [b)] For each sub-function in the table, the Table R.2 measure will cover the software fault/error. [c)] Where more than one measure is given for a sub-function, these are alternatives. [d)] To be divided as necessary by the manufacturer into sub-functions. [e)] Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.						

S	**ANNEX S (NORMATIVE)** **BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT ARE NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE**		**N/A**
	The following modifications to this standard are applicable for battery-operated appliances where the batteries are either non-rechargeable (primary batteries), or		N/A
	rechargeable batteries (secondary batteries) that are not recharged in the appliance		N/A
5.8.1	If the supply terminals for the connection of the battery have no indication of polarity, the more unfavourable polarity is applied		N/A
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions		N/A
5.S.102	Appliances are tested as motor-operated appliances.		N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless..... .....:		N/A
	the polarity is irrelevant		N/A
	Appliances also marked with:		N/A
	– name, trade mark or identification mark of the manufacturer or responsible vendor..... .....:		N/A
	– model or type reference..... .....:		N/A
	– IP number according to degree of protection against ingress of water, other than IPX0... .....:		N/A
	– type reference of battery or batteries..... .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006		N/A
	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries		N/A
7.6	Additional symbols		N/A
7.12	The instructions contain the following, as applicable:		N/A
	– the types of batteries that may be used... .....:		N/A
	– how to remove and insert the batteries		N/A
	– non-rechargeable batteries are not to be recharged		N/A
	– rechargeable batteries are to be removed from the appliance before being charged		N/A
	– different types of batteries or new and used batteries are not to be mixed		N/A
	– batteries are to be inserted with the correct polarity		N/A
	– exhausted batteries are to be removed from the appliance and safely disposed of		N/A
	– if the appliance is to be stored unused for a long period, the batteries are removed		N/A
	– the supply terminals are not to be short-circuited		N/A
11.5	Appliances are supplied with the most unfavourable supply voltage between		N/A
	– 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries		N/A
	– 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only		N/A
	The values specified in Table S.101 for the internal resistance per cell of the battery is taken into account		N/A
19.1	The tests are carried out with the battery fully charged unless otherwise specified		N/A
19.13	The battery does not rupture or ignite		N/A
19.S.101	Appliances are supplied with the voltage specified in 11.5. The supply terminals having an indication of polarity are connected to the opposite polarity, unless		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	such a connection is unlikely to occur due to the construction of the appliance		N/A
19.S.102	For appliances with provision for multiple batteries, one or more of the batteries are reversed and the appliance is operated, if reversal of batteries is allowed by the construction		N/A
25.5	The flexible leads or flexible cord used to connect an external battery or battery box in is connected to the appliance by a type X attachment		N/A
25.13	This requirement is not applicable to the flexible leads or flexible cord connecting external batteries or a battery box with an appliance		N/A
25.S.101	Appliances have suitable means for connection of the battery. If the type of battery is marked on the appliance, the means of connection is suitable for this type of battery		N/A
26.5	Terminal devices in an appliance for the connection of the flexible leads or flexible cord connecting an external battery or battery box are so located or shielded that there is no risk of accidental connection between supply terminals		N/A
30.2.3.2	There is no battery in the area of the vertical cylinder used for the consequential needle flame test, unless		N/A
	the battery is shielded by a barrier that meets the needle flame test of Annex E, or		N/A
	that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
T	**ANNEX T (NORMATIVE)** **UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS**		**N/A**
	Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the		N/A
	Does not apply to glass, ceramic and similar materials		N/A
	Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:		N/A
	Modifications to ISO 4892-1:		N/A
5.1.6	The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m2 at 254 nm		N/A
	Subclause 5.1.6.1 and Table 1 are not applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.2.4	The black-panel temperature shall be 63 °C +/- 3 °C		N/A
5.3.1	Humidification of the chamber air is specified in part 2 when necessary		N/A
9	This clause is not applicable		N/A
	Modifications to ISO 4892-2:		N/A
7.1	At least three test specimens are tested		N/A
	Ten samples of internal wiring is tested		N/A
7.2	The specimens are attached to the specimen holders such that they are not subject to any stress		N/A
7.3	Apparatus prepared as specified		N/A
	The test specimens and, if used, the irradiance-measuring instrument are exposed for 1 000 h		N/A
7.4	If used, a radiometer is mounted and calibrated such that it measures the irradiance at the exposed surface of the test specimen		N/A
7.5	Material properties and test methods for parts providing mechanical support or impact resistance as specified in Table T.1		N/A
	Material properties and test method for electrical insulation of internal wiring as specified in Table T.2		N/A
8	This clause is not applicable		N/A
AA	**ANNEX AA (NORMATIVE) BATTERY CHARGERS FOR USE BY CHILDREN (IEC 60335-2-29)**		**N/A**
	Battery chargers intended to be used by children at least eight years old without supervision comply with this standard but as modified by this annex		N/A
	The battery charger have a d.c. output at SELV not exceeding 30 V and a rated output not exceeding 50 VA		N/A
5.201	When batteries used, the generally available rechargeable batteries giving the most unfavourable conditions used		N/A
6.1	Battery chargers suitable for outdoor use class III		N/A
	Other battery chargers class II or class III		N/A
6.2	Battery chargers suitable for outdoor use at least IPX7		N/A
6.201	Enclosures classified at least IP3X with regard to protection against ingress of solid foreign objects		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.1	Symbol 5957 of IEC 60417 or text “For indoor use only” for battery chargers for indoor use		N/A
	IP number		N/A
	Smiling face symbol together with 8+		N/A
7.6	Correct symbols used		N/A
7.12	Instructions for safe use contains:		N/A
	- Warning to only allow children at least 8 years old to use battery charger		N/A
	- Sufficient instructions for safe use of battery charger by a child		N/A
	- Explanation that battery charger is not a toy		N/A
	- Instruction for child not to try and recharge non-rechargeable batteries		N/A
	- Warning to examine battery charger regularly for damage		N/A
	- Warning in case battery charger is damaged		N/A
	Instruction for Class III battery charger to be supplied from transformer for toys		N/A
7.14	Height of symbol marked on the appliance at least 10 mm		N/A
	Height of lettering at least 3 mm		N/A
8.1.1	Use of test probe B of IEC 61032: no contact with live parts or metal parts separated from live parts by basic insulation only, even after use of a tool to remove parts of enclosure		N/A
10.101	The output voltage not exceed 42,4 V peak		N/A
11.8	Temperature rises of parts that can be touched by test probe 18 of IEC 61032	(see appended table)	N/A
	- 25 K, if of metal		N/A
	- 35 K, if of other material		N/A
17	Temperature rises of parts that can be touched by test probe 18 of IEC 61032	(see appended table)	N/A
	- 45 K, if of metal		N/A
	- 55 K, if of other material		N/A
19.13	Temperature rises of parts that can be touched by test probe 18 of IEC 61032	(see appended table)	N/A
	- 45 K, if of metal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 55 K, if of other material		N/A
21.201	Impact test Eha of IEC 60068-2-75, with impact energy of 2 J		N/A
	For rectangular shaped battery chargers, the four sides and four edges are subjected to an impact		N/A
	For other battery chargers, the enclosure is subjected to eight impacts equally spaced over the periphery		N/A
	Free fall test Ed, Procedure 1 of IEC 60068-2-32, from the height of 500 mm		N/A
	Battery charger not damaged to such extend that compliance is impaired, live parts shall not become accessible		N/A
22.201	Battery charger with only one rated voltage or rated voltage range		N/A
	Battery charger not incorporate means for manually adjusting output voltage		N/A
22.202	Battery chargers constructed so that reverse charging is prevented, regardless of the state of charge of the battery		N/A
	This applies even if the battery is inserted with the wrong polarity		N/A
24.201	Transformer for toys tested in accordance with sub-clauses 7.2, 20.5.1 and 20.101 and clause 15 of standard IEC 61558-2-7		N/A
25.1	Battery charger not provided with an appliance inlet		N/A
25.5	Battery charger provided with type Y or type Z attachment		N/A
BB	**ANNEX BB (NORMATIVE) ISOLATING TRANSFORMERS (IEC 60335-2-29:2016/AMD1:2019)**		**N/A**
7.1	Isolating transformers for specific use marked with:		N/A
	– name, trademark or identification mark of the manufacturer or responsible vendor		N/A
	– model or type reference		N/A
	Fail-safe transformers comply with Subclause 15.5 of IEC 61558-1		N/A
	This test carried out on three transformers		N/A
22	Subclauses 19.1 and 19.1.2 of IEC 61558-2-4:2009 applicable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
29.1, 29.2 and 29.3	The distances specified in items 2a, 2c and 3 in Table 13 of IEC 61558-1 apply		N/A
	For insulated winding wires complying with Subclause 19.12.3 of IEC 61558-1, there are no requirements for clearances or creepage distances		N/A
	In addition, for windings providing reinforced insulation, the distance specified in item 2c of Table 13 of IEC 61558-1 is not assessed		N/A
	For isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if these values are greater than the values specified in items 2a, 2c and 3 in Table 13 of IEC 61558-1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

10.1	TABLE: Input Power Deviation				N/A
Input deviation of/at:	**P rated (W)**	**P measured (W)**	**Δ P**	**Required Δ P**	**Remark**
--					
Supplementary information:					

10.2	TABLE: Input Current Deviation				P
Current deviation of/at:	**I rated (A)**	**I measured (A)**	**Δ I**	**Required Δ I**	**Remark**
100V, 50Hz	5.0	1.421	-71.6%	+15%	For model: FY06020000 Loaded with figure 101
100V, 60Hz	5.0	1.422	-71.5%	+15%	
240V, 50Hz	5.0	0.701	-85.9%	+15%	
240V, 60Hz	5.0	0.711	-85.8%	+15%	
100V, 50Hz	5.0	1.115	-77.7%	+15%	For model: FY07520000 Loaded with figure 101
100V, 60Hz	5.0	1.114	-77.7%	+15%	
240V, 50Hz	5.0	0.513	-89.7%	+15%	
240V, 60Hz	5.0	0.512	-89.7%	+15%	
100V, 50Hz	5.0	1.928	-61.4%	+15%	For model: FY08420000 Loaded with figure 101
100V, 60Hz	5.0	1.925	-61.5%	+15%	
240V, 50Hz	5.0	1.012	-79.7%	+15%	
240V, 60Hz	5.0	1.009	-79.8%	+15%	
100V, 50Hz	5.0	2.016	-59.7%	+15%	For model: FY08520000 Loaded with figure 101
100V, 60Hz	5.0	2.015	-59.7%	+15%	
240V, 50Hz	5.0	1.021	-79.6%	+15%	
240V, 60Hz	5.0	1.022	-79.6%	+15%	
100V, 50Hz	5.0	2.135	-57.3%	+15%	For model: FY11420000 Loaded with figure 101
100V, 60Hz	5.0	2.134	-57.3%	+15%	
240V, 50Hz	5.0	1.102	-77.9%	+15%	
240V, 60Hz	5.0	1.100	-78.0%	+15%	
100V, 50Hz	5.0	2.141	-57.2%	+15%	For model: FY14320000 Loaded with figure 101
100V, 60Hz	5.0	2.140	-57.2%	+15%	
240V, 50Hz	5.0	1.201	-75.9%	+15%	
240V, 60Hz	5.0	1.204	-75.9%	+15%	

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Clause	Requirement + Test	Result - Remark	Verdict

100V, 50Hz	5.0	2.326	-53.5%	+15%	For model: FY15020000 Loaded with figure 101
100V, 60Hz	5.0	2.324	-53.5%	+15%	
240V, 50Hz	5.0	1.416	-71.7%	+15%	
240V, 60Hz	5.0	1.415	-71.7%	+15%	
100V, 50Hz	5.0	3.106	-37.8%	+15%	For model: FY17020000 Loaded with figure 101
100V, 60Hz	5.0	3.105	-37.9%	+15%	
240V, 50Hz	5.0	1.505	-69.9%	+15%	
240V, 60Hz	5.0	1.503	-69.9%	+15%	
100V, 50Hz	5.0	3.684	-26.3%	+15%	For model: FY21618000 Loaded with figure 101
100V, 60Hz	5.0	3.686	-26.3%	+15%	
240V, 50Hz	5.0	1.493	-70.1%	+15%	
240V, 60Hz	5.0	1.492	-70.2%	+15%	
100V, 50Hz	5.0	3.715	-25.7%	+15%	For model: FY22517000 Loaded with figure 101
100V, 60Hz	5.0	3.714	-25.7%	+15%	
240V, 50Hz	5.0	1.467	-70.7%	+15%	
240V, 60Hz	5.0	1.465	-70.7%	+15%	
100V, 50Hz	5.0	3.727	-25.5%	+15%	For model: FY25515000 Loaded with figure 101
100V, 60Hz	5.0	3.726	-25.5%	+15%	
240V, 50Hz	5.0	1.515	-69.7%	+15%	
240V, 60Hz	5.0	1.514	-69.7%	+15%	
100V, 50Hz	5.0	3.699	-26.0%	+15%	For model: FY28013000 Loaded with figure 101
100V, 60Hz	5.0	3.698	-26.0%	+15%	
240V, 50Hz	5.0	1.534	-69.3%	+15%	
240V, 60Hz	5.0	1.533	-69.3%	+15%	
100V, 50Hz	5.0	3.464	-30.7%	+15%	For model: FY30012500 Loaded with figure 101
100V, 60Hz	5.0	3.462	-30.8%	+15%	
240V, 50Hz	5.0	1.371	-72.6%	+15%	
240V, 60Hz	5.0	1.370	-72.6%	+15%	
100V, 50Hz	5.0	3.832	-23.3%	+15%	For model: FY36010500 Loaded with figure 101
100V, 60Hz	5.0	3.833	-23.3%	+15%	
240V, 50Hz	5.0	1.604	-67.9%	+15%	
240V, 60Hz	5.0	1.603	-67.9%	+15%	

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Clause	Requirement + Test	Result - Remark	Verdict

100V, 50Hz	5.0	4.056	-18.9%	+15%	For model: FY38010000 Loaded with figure 101
100V, 60Hz	5.0	4.071	-18.6%	+15%	
240V, 50Hz	5.0	1.728	-65.4%	+15%	
240V, 60Hz	5.0	1.726	-65.5%	+15%	
100V, 50Hz	5.0	4.011	-19.8%	+15%	For model: FY40009500 Loaded with figure 101
100V, 60Hz	5.0	4.010	-19.8%	+15%	
240V, 50Hz	5.0	1.591	-68.2%	+15%	
240V, 60Hz	5.0	1.593	-68.1%	+15%	
100V, 50Hz	5.0	4.133	-17.3%	+15%	For model: FY42009500 Loaded with figure 101
100V, 60Hz	5.0	4.132	-17.4%	+15%	
240V, 50Hz	5.0	1.577	-68.5%	+15%	
240V, 60Hz	5.0	1.574	-68.5%	+15%	
100V, 50Hz	5.0	1.510	-69.8%	+15%	For model: FY06020000 Loaded with Lithium titanate battery
100V, 60Hz	5.0	1.508	-69.8%	+15%	
240V, 50Hz	5.0	0.759	-84.8%	+15%	
240V, 60Hz	5.0	0.748	-85.0%	+15%	
240V, 60Hz	5.0	1.134	-77.3%	+15%	For model: FY07520000 Loaded with Lead-acid battery
100V, 50Hz	5.0	1.132	-77.4%	+15%	
100V, 60Hz	5.0	0.522	-89.6%	+15%	
240V, 50Hz	5.0	0.521	-89.6%	+15%	
240V, 60Hz	5.0	1.129	-77.4%	+15%	For model: FY07520000 Loaded with Phosphoric acid iron Li-ion battery
240V, 60Hz	5.0	1.128	-77.4%	+15%	
100V, 50Hz	5.0	0.516	-89.7%	+15%	
100V, 60Hz	5.0	0.516	-89.7%	+15%	
240V, 50Hz	5.0	1.951	-60.9%	+15%	For model: FY08420000 Loaded with Li-ion battery
240V, 60Hz	5.0	1.950	-60.9%	+15%	
240V, 60Hz	5.0	1.022	-79.6%	+15%	
100V, 50Hz	5.0	1.021	-79.6%	+15%	
100V, 60Hz	5.0	1.947	-61.1%	+15%	For model: FY08420000 Loaded with Ni-MH battery
240V, 50Hz	5.0	1.946	-61.1%	+15%	
240V, 60Hz	5.0	1.018	-79.6%	+15%	
240V, 60Hz	5.0	1.015	-79.7%	+15%	

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Clause	Requirement + Test	Result - Remark	Verdict

100V, 50Hz	5.0	2.112	-57.8%	+15%	For model: FY08520000 Loaded with Li-ion battery
100V, 60Hz	5.0	2.110	-57.8%	+15%	
240V, 50Hz	5.0	1.033	-79.3%	+15%	
240V, 60Hz	5.0	1.032	-79.4%	+15%	
240V, 60Hz	5.0	2.123	-57.5%	+15%	For model: FY08520000 Loaded with Lithium titanate battery
100V, 50Hz	5.0	2.122	-57.6%	+15%	
100V, 60Hz	5.0	1.045	-79.1%	+15%	
240V, 50Hz	5.0	1.046	-79.1%	+15%	
240V, 60Hz	5.0	2.146	-57.1%	+15%	For model: FY11420000 Loaded with Lithium titanate battery
100V, 60Hz	5.0	2.147	-57.1%	+15%	
240V, 50Hz	5.0	1.134	-77.3%	+15%	
240V, 60Hz	5.0	1.135	-77.3%	+15%	
100V, 50Hz	5.0	2.155	-56.9%	+15%	For model: FY14320000 Loaded with Ni-MH battery
100V, 60Hz	5.0	2.156	-56.9%	+15%	
240V, 50Hz	5.0	1.213	-75.7%	+15%	
240V, 60Hz	5.0	1.214	-75.7%	+15%	
100V, 50Hz	5.0	2.335	-53.3%	+15%	For model: FY15020000 Loaded with Lead-acid battery
100V, 60Hz	5.0	2.336	-53.3%	+15%	
240V, 50Hz	5.0	1.415	-71.7%	+15%	
240V, 60Hz	5.0	1.417	-71.7%	+15%	
100V, 50Hz	5.0	2.328	-53.4%	+15%	For model: FY15020000 Loaded with Phosphoric acid iron Li-ion battery
100V, 60Hz	5.0	2.329	-53.4%	+15%	
240V, 50Hz	5.0	1.421	-71.6%	+15%	
240V, 60Hz	5.0	1.420	-71.6%	+15%	
100V, 50Hz	5.0	3.112	-37.8%	+15%	For model: FY17020000 Loaded with Li-ion battery
100V, 60Hz	5.0	3.109	-37.8%	+15%	
240V, 50Hz	5.0	1.515	-69.7%	+15%	
240V, 60Hz	5.0	1.514	-69.7%	+15%	
240V, 60Hz	5.0	3.115	-37.7%	+15%	For model: FY17020000 Loaded with Ni-MH battery
100V, 50Hz	5.0	3.116	-37.7%	+15%	
100V, 60Hz	5.0	1.509	-69.8%	+15%	
240V, 50Hz	5.0	1.510	-69.8%	+15%	

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Clause	Requirement + Test	Result - Remark	Verdict

240V, 60Hz	5.0	3.688	-26.2%	+15%	For model: FY21618000 Loaded with Li-ion battery
100V, 60Hz	5.0	3.687	-26.3%	+15%	
240V, 50Hz	5.0	1.496	-70.1%	+15%	
240V, 60Hz	5.0	1.495	-70.1%	+15%	
240V, 60Hz	5.0	3.689	-26.2%	+15%	For model: FY21618000 Loaded with Phosphoric acid iron Li-ion battery
100V, 50Hz	5.0	3.688	-26.2%	+15%	
100V, 60Hz	5.0	1.501	-69.9%	+15%	
240V, 50Hz	5.0	1.503	-69.9%	+15%	
240V, 60Hz	5.0	3.716	-25.7%	+15%	For model: FY22517000 Loaded with Lithium titanate battery
100V, 60Hz	5.0	3.715	-25.7%	+15%	
240V, 50Hz	5.0	1.515	-69.7%	+15%	
240V, 60Hz	5.0	1.516	-69.7%	+15%	
240V, 60Hz	5.0	3.731	-25.4%	+15%	For model: FY25515000 Loaded with Li-ion battery
100V, 50Hz	5.0	3.730	-25.4%	+15%	
100V, 60Hz	5.0	1.526	-69.5%	+15%	
240V, 50Hz	5.0	1.527	-69.5%	+15%	
240V, 60Hz	5.0	3.729	-25.4%	+15%	For model: FY25515000 Loaded with Phosphoric acid iron Li-ion battery
240V, 60Hz	5.0	3.730	-25.4%	+15%	
100V, 50Hz	5.0	1.527	-69.5%	+15%	
100V, 60Hz	5.0	1.525	-69.5%	+15%	
240V, 50Hz	5.0	3.705	-25.9%	+15%	For model: FY28013000 Loaded with Lithium titanate battery
240V, 60Hz	5.0	3.706	-25.9%	+15%	
240V, 50Hz	5.0	1.539	-69.2%	+15%	
240V, 60Hz	5.0	1.540	-69.2%	+15%	
100V, 50Hz	5.0	3.475	-30.5%	+15%	For model: FY30012500 Loaded with Lead-acid battery
100V, 60Hz	5.0	3.469	-30.6%	+15%	
240V, 50Hz	5.0	1.541	-69.2%	+15%	
240V, 60Hz	5.0	1.535	-69.3%	+15%	
100V, 50Hz	5.0	3.445	-31.1%	+15%	For model: FY30012500 Loaded with Li-ion battery
100V, 60Hz	5.0	3.447	-31.1%	+15%	
240V, 50Hz	5.0	1.537	-69.3%	+15%	
240V, 60Hz	5.0	1.535	-69.3%	+15%	

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Clause	Requirement + Test	Result - Remark	Verdict

100V, 50Hz	5.0	3.452	-30.9%	+15%	For model: FY30012500 Loaded with Phosphoric acid iron Li-ion battery
100V, 60Hz	5.0	3.450	-31.0%	+15%	
240V, 50Hz	5.0	1.540	-69.2%	+15%	
240V, 60Hz	5.0	1.541	-69.2%	+15%	
100V, 50Hz	5.0	3.466	-30.7%	+15%	For model: FY30012500 Loaded with Ni-MH battery
100V, 60Hz	5.0	3.463	-30.7%	+15%	
240V, 50Hz	5.0	1.539	-69.2%	+15%	
240V, 60Hz	5.0	1.542	-69.2%	+15%	
100V, 50Hz	5.0	3.836	-23.3%	+15%	For model: FY36010500 Loaded with Phosphoric acid iron Li-ion battery
100V, 60Hz	5.0	3.834	-23.3%	+15%	
240V, 50Hz	5.0	1.611	-67.8%	+15%	
240V, 60Hz	5.0	1.612	-67.8%	+15%	
240V, 60Hz	5.0	4.055	-18.9%	+15%	For model: FY38010000 Loaded with Li-ion battery
100V, 50Hz	5.0	4.056	-18.9%	+15%	
100V, 60Hz	5.0	1.731	-65.4%	+15%	
240V, 50Hz	5.0	1.729	-65.4%	+15%	
240V, 60Hz	5.0	4.021	-19.6%	+15%	For model: FY40009500 Loaded with Phosphoric acid iron Li-ion battery
100V, 60Hz	5.0	4.023	-19.5%	+15%	
240V, 50Hz	5.0	1.064	-78.7%	+15%	
240V, 60Hz	5.0	1.063	-78.7%	+15%	
100V, 50Hz	5.0	4.138	-17.2%	+15%	For model: FY42009500 Loaded with Li-ion battery
100V, 60Hz	5.0	4.136	-17.3%	+15%	
240V, 50Hz	5.0	1.569	-68.6%	+15%	
240V, 60Hz	5.0	1.565	-68.7%	+15%	
100V, 50Hz	5.0	4.526	-9.5%	+20%	Tested on FY42509000, load with Li-ion battery 37V
100V, 60Hz	5.0	4.526	-9.5%	+20%	
240V, 50Hz	5.0	1.881	-62.4%	+20%	
240V, 60Hz	5.0	1.881	-62.4%	+20%	
100V, 50Hz	5.0	4.626	-7.5%	+20%	Tested on FY42509000, load with figure 101
100V, 60Hz	5.0	4.626	-7.5%	+20%	
240V, 50Hz	5.0	1.770	-64.6%	+20%	

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Clause	Requirement + Test	Result - Remark	Verdict

240V, 60Hz	5.0	1.771	-64.6%	+20%	
100V, 50Hz	5.0	3.621	-27.6%	+20%	Tested on FY45009000, load with Lead-acid battery 36V
100V, 60Hz	5.0	3.629	-27.4%	+20%	
240V, 50Hz	5.0	1.485	-70.3%	+20%	
240V, 60Hz	5.0	1.488	-70.2%	+20%	
100V, 50Hz	5.0	3.563	-28.7%	+20%	Tested on FY45009000, load with Phosphoric acid iron Li-ion battery 38.4V
100V, 60Hz	5.0	3.771	-24.6%	+20%	
240V, 50Hz	5.0	1.503	-69.9%	+20%	
240V, 60Hz	5.0	1.516	-69.7%	+20%	
100V, 50Hz	5.0	3.765	-24.7%	+20%	Tested on FY46008500, load with Li-ion battery 40.7V
100V, 60Hz	5.0	3.671	-26.6%	+20%	
240V, 50Hz	5.0	1.523	-69.5%	+20%	
240V, 60Hz	5.0	1.528	-69.4%	+20%	
100V, 50Hz	5.0	3.593	-28.1%	+20%	Tested on FY48008000, load with Phosphoric acid iron Li-ion battery 41.6V
100V, 60Hz	5.0	3.672	-26.6%	+20%	
240V, 50Hz	5.0	1.512	-69.8%	+20%	
240V, 60Hz	5.0	1.523	-69.5%	+20%	
100V, 50Hz	5.0	3.738	-25.2%	+20%	Tested on FY51007500, load with Li-ion battery 44.4V
100V, 60Hz	5.0	3.741	-25.2%	+20%	
240V, 50Hz	5.0	1.480	-70.4%	+20%	
240V, 60Hz	5.0	1.486	-70.3%	+20%	
100V, 50Hz	5.0	4.039	-19.2%	+20%	Tested on FY51007500, load with Phosphoric acid iron Li-ion battery 44.8V
100V, 60Hz	5.0	4.089	-18.2%	+20%	
240V, 50Hz	5.0	1.592	-68.2%	+20%	
240V, 60Hz	5.0	1.589	-68.2%	+20%	
100V, 50Hz	5.0	3.936	-21.3%	+20%	Tested on FY55007000, load with Li-ion battery 48.1V
100V, 60Hz	5.0	3.942	-21.2%	+20%	
240V, 50Hz	5.0	1.637	-67.3%	+20%	
240V, 60Hz	5.0	1.642	-67.2%	+20%	
100V, 50Hz	5.0	4.058	-18.8%	+20%	Tested on FY55007000,
100V, 60Hz	5.0	4.069	-18.6%	+20%	

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Clause	Requirement + Test	Result - Remark	Verdict

240V, 50Hz	5.0	1.674	-66.5%	+20%	load with Phosphoric acid iron Li-ion battery 48V
240V, 60Hz	5.0	1.678	-66.4%	+20%	
100V, 50Hz	5.0	4.369	-12.6%	+20%	Tested on FY58407000, load with Lead-acid battery 48V
100V, 60Hz	5.0	4.372	-12.6%	+20%	
240V, 50Hz	5.0	1.684	-66.3%	+20%	
240V, 60Hz	5.0	1.681	-66.4%	+20%	
100V, 50Hz	5.0	4.391	-12.2%	+20%	Tested on FY58407000, load with Phosphoric acid iron Li-ion battery 51.2V
100V, 60Hz	5.0	4.396	-12.1%	+20%	
240V, 50Hz	5.0	1.685	-66.3%	+20%	
240V, 60Hz	5.0	1.697	-66.1%	+20%	
100V, 50Hz	5.0	3.752	-25.0%	+20%	Tested on FY58807000, load with Li-ion battery 51.8V
100V, 60Hz	5.0	3.750	-25.0%	+20%	
240V, 50Hz	5.0	1.555	-68.9%	+20%	
240V, 60Hz	5.0	1.563	-68.7%	+20%	
100V, 50Hz	5.0	4.501	-10.0%	+20%	Tested on FY58807000, load with figure 101
100V, 60Hz	5.0	4.482	-10.4%	+20%	
240V, 50Hz	5.0	1.832	-63.4%	+20%	
240V, 60Hz	5.0	1.835	-63.3%	+20%	
100V, 50Hz	5.0	3.683	-26.3%	+20%	Tested on FY62006500, load with Phosphoric acid iron Li-ion battery 54.4V
100V, 60Hz	5.0	3.688	-26.2%	+20%	
240V, 50Hz	5.0	1.547	-69.1%	+20%	
240V, 60Hz	5.0	1.548	-69.0%	+20%	
100V, 50Hz	5.0	3.796	-24.1%	+20%	Tested on FY63006500, load with Li-ion battery 55.5V
100V, 60Hz	5.0	3.782	-24.4%	+20%	
240V, 50Hz	5.0	1.570	-68.6%	+20%	
240V, 60Hz	5.0	1.574	-68.5%	+20%	
100V, 50Hz	5.0	4.485	-10.3%	+20%	Tested on FY63006500, load with figure 101
100V, 60Hz	5.0	4.452	-11.0%	+20%	
240V, 50Hz	5.0	1.821	-63.6%	+20%	
240V, 60Hz	5.0	1.827	-63.5%	+20%	
100V, 50Hz	5.0	3.862	-22.8%	+20%	Tested on

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Clause	Requirement + Test	Result - Remark	Verdict

100V, 60Hz	5.0	3.832	-23.4%	+20%	FY65706000, load with Phosphoric acid iron Li-ion battery 57.6V
240V, 50Hz	5.0	1.585	-68.3%	+20%	
240V, 60Hz	5.0	1.585	-68.3%	+20%	
100V, 50Hz	5.0	4.049	-19.0%	+20%	Tested on FY67206000, load with Li-ion battery 59.2V
100V, 60Hz	5.0	4.051	-19.0%	+20%	
240V, 50Hz	5.0	1.673	-66.5%	+20%	
240V, 60Hz	5.0	1.678	-66.4%	+20%	
100V, 50Hz	5.0	4.431	-11.4%	+20%	Tested on FY68406000, load with figure 101
100V, 60Hz	5.0	4.438	-11.2%	+20%	
240V, 50Hz	5.0	1.844	-63.1%	+20%	
240V, 60Hz	5.0	1.849	-63.0%	+20%	
100V, 50Hz	5.0	4.378	-12.4%	+20%	Tested on FY68406000, load with Phosphoric acid iron Li-ion battery 60.8V
100V, 60Hz	5.0	4.422	-11.6%	+20%	
240V, 50Hz	5.0	1.698	-66.0%	+20%	
240V, 60Hz	5.0	1.720	-65.6%	+20%	
100V, 50Hz	5.0	3.601	-28.0%	+20%	Tested on FY71405500, load with Li-ion battery 62.9V
100V, 60Hz	5.0	3.509	-29.8%	+20%	
240V, 50Hz	5.0	1.467	-70.7%	+20%	
240V, 60Hz	5.0	1.468	-70.6%	+20%	
100V, 50Hz	5.0	4.269	-14.6%	+20%	Tested on FY73005500, load with Phosphoric acid iron Li-ion battery 64V
100V, 60Hz	5.0	4.230	-15.4%	+20%	
240V, 50Hz	5.0	1.649	-67.0%	+20%	
240V, 60Hz	5.0	1.650	-67.0%	+20%	
100V, 50Hz	5.0	3.843	-23.1%	+20%	Tested on FY73005500, load with Lead-acid battery 60V
100V, 60Hz	5.0	3.821	-23.6%	+20%	
240V, 50Hz	5.0	1.660	-66.8%	+20%	
240V, 60Hz	5.0	1.661	-66.8%	+20%	
100V, 50Hz	5.0	4.088	-18.2%	+20%	Tested on FY75605400, load with Phosphoric acid iron Li-ion battery 67.2V
100V, 60Hz	5.0	4.167	-16.7%	+20%	
240V, 50Hz	5.0	1.688	-66.2%	+20%	
240V, 60Hz	5.0	1.699	-66.0%	+20%	

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Clause	Requirement + Test	Result - Remark	Verdict

100V, 50Hz	5.0	3.684	-26.3%	+20%	Tested on FY75605400, load with Li-ion battery 66.6V
100V, 60Hz	5.0	3.701	-26.0%	+20%	
240V, 50Hz	5.0	1.541	-69.2%	+20%	
240V, 60Hz	5.0	1.543	-69.1%	+20%	
100V, 50Hz	5.0	3.423	-31.5%	+20%	Tested on FY80005000, load with Phosphoric acid iron Li-ion battery 70.4V
100V, 60Hz	5.0	3.404	-31.9%	+20%	
240V, 50Hz	5.0	1.420	-71.6%	+20%	
240V, 60Hz	5.0	1.424	-71.5%	+20%	
100V, 50Hz	5.0	3.782	-24.4%	+20%	Tested on FY80005000, load with Li-ion battery 70.3V
100V, 60Hz	5.0	3.794	-24.1%	+20%	
240V, 50Hz	5.0	1.566	-68.7%	+20%	
240V, 60Hz	5.0	1.573	-68.5%	+20%	
100V, 50Hz	5.0	4.080	-18.4%	+20%	Tested on FY82804800, load with Phosphoric acid iron Li-ion battery 73.6V
100V, 60Hz	5.0	4.118	-17.6%	+20%	
240V, 50Hz	5.0	1.698	-66.0%	+20%	
240V, 60Hz	5.0	1.702	-66.0%	+20%	
100V, 50Hz	5.0	4.138	-17.2%	+20%	Tested on FY84004800, load with Li-ion battery 74V
100V, 60Hz	5.0	4.151	-17.0%	+20%	
240V, 50Hz	5.0	1.715	-65.7%	+20%	
240V, 60Hz	5.0	1.754	-64.9%	+20%	
100V, 50Hz	5.0	3.935	-21.3%	+20%	Tested on FY86404600, load with Phosphoric acid iron Li-ion battery 76.8V
100V, 60Hz	5.0	3.989	-20.2%	+20%	
240V, 50Hz	5.0	1.633	-67.3%	+20%	
240V, 60Hz	5.0	1.634	-67.3%	+20%	
100V, 50Hz	5.0	3.988	-20.2%	+20%	Tested on FY87004600, load with Lead-acid battery 72V
100V, 60Hz	5.0	3.991	-20.2%	+20%	
240V, 50Hz	5.0	1.626	-67.5%	+20%	
240V, 60Hz	5.0	1.630	-67.4%	+20%	
100V, 50Hz	5.0	4.346	-13.1%	+20%	Tested on FY87004600, load with figure 101
100V, 60Hz	5.0	4.275	-14.5%	+20%	
240V, 50Hz	5.0	1.778	-64.4%	+20%	

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Clause	Requirement + Test	Result - Remark	Verdict

240V, 60Hz	5.0	1.784	-64.3%	+20%	
Supplementary information:					

10.102	**TABLE: Output Current Deviation**					**P**
Current deviation of/at:	**U_o rated (V)**	**I_o rated (A)**	**I_o measured (A)**	**ΔI_o (%)**	**Required ΔI_o (%)**	**Remark**
100V, 50Hz	6.0	20.0	19.76	-1.20%	+/-10%	For model: FY06020000
100V, 60Hz	6.0	20.0	19.77	-1.15%	+/-10%	
240V, 50Hz	6.0	20.0	19.81	-0.95%	+/-10%	
240V, 60Hz	6.0	20.0	19.80	-1.00%	+/-10%	
100V, 50Hz	7.5	20.0	19.65	-1.75%	+/-10%	For model: FY07520000
100V, 60Hz	7.5	20.0	19.64	-1.80%	+/-10%	
240V, 50Hz	7.5	20.0	19.66	-1.70%	+/-10%	
240V, 60Hz	7.5	20.0	19.65	-1.75%	+/-10%	
100V, 50Hz	8.4	20.0	19.47	-2.65%	+/-10%	For model: FY08420000
100V, 60Hz	8.4	20.0	19.48	-2.60%	+/-10%	
240V, 50Hz	8.4	20.0	19.48	-2.60%	+/-10%	
240V, 60Hz	8.4	20.0	19.46	-2.70%	+/-10%	
100V, 50Hz	8.5	20.0	19.51	-2.45%	+/-10%	For model: FY08520000
100V, 60Hz	8.5	20.0	19.50	-2.50%	+/-10%	
240V, 50Hz	8.5	20.0	19.52	-2.40%	+/-10%	
240V, 60Hz	8.5	20.0	19.52	-2.40%	+/-10%	
100V, 50Hz	11.4	20.0	19.79	-1.05%	+/-10%	For model: FY11420000
100V, 60Hz	11.4	20.0	19.80	-1.00%	+/-10%	
240V, 50Hz	11.4	20.0	19.77	-1.15%	+/-10%	
240V, 60Hz	11.4	20.0	19.78	-1.10%	+/-10%	
100V, 50Hz	14.3	20.0	19.80	-1.00%	+/-10%	For model: FY14320000
100V, 60Hz	14.3	20.0	19.81	-0.95%	+/-10%	
240V, 50Hz	14.3	20.0	19.82	-0.90%	+/-10%	
240V, 60Hz	14.3	20.0	19.83	-0.85%	+/-10%	
100V, 50Hz	15.0	20.0	19.65	-1.75%	+/-10%	For model: FY15020000
100V, 60Hz	15.0	20.0	19.64	-1.80%	+/-10%	

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Clause	Requirement + Test	Result - Remark	Verdict

240V, 50Hz	15.0	20.0	19.64	-1.80%	+/-10%	
240V, 60Hz	15.0	20.0	19.66	-1.70%	+/-10%	
100V, 50Hz	17.0	20.0	19.73	-1.35%	+/-10%	For model: FY17020000
100V, 60Hz	17.0	20.0	19.72	-1.40%	+/-10%	
240V, 50Hz	17.0	20.0	19.71	-1.45%	+/-10%	
240V, 60Hz	17.0	20.0	19.70	-1.50%	+/-10%	
100V, 50Hz	21.6	18.0	17.91	-0.50%	+/-10%	For model: FY21618000
100V, 60Hz	21.6	18.0	17.93	-0.38%	+/-10%	
240V, 50Hz	21.6	18.0	17.93	-0.38%	+/-10%	
240V, 60Hz	21.6	18.0	17.92	-0.44%	+/-10%	
100V, 50Hz	22.5	17.0	15.59	-8.29%	+/-10%	For model: FY22517000
100V, 60Hz	22.5	17.0	15.57	-8.41%	+/-10%	
240V, 50Hz	22.5	17.0	15.58	-8.35%	+/-10%	
240V, 60Hz	22.5	17.0	15.58	-8.35%	+/-10%	
100V, 50Hz	25.5	15.0	14.23	-5.13%	+/-10%	For model: FY25515000
100V, 60Hz	25.5	15.0	14.22	-5.20%	+/-10%	
240V, 50Hz	25.5	15.0	14.23	-5.13%	+/-10%	
240V, 60Hz	25.5	15.0	14.24	-5.07%	+/-10%	
100V, 50Hz	28.0	13.0	12.09	-7.00%	+/-10%	For model: FY28013000
100V, 60Hz	28.0	13.0	12.09	-7.00%	+/-10%	
240V, 50Hz	28.0	13.0	12.08	-7.08%	+/-10%	
240V, 60Hz	28.0	13.0	12.09	-7.00%	+/-10%	
100V, 50Hz	30.0	12.5	12.31	-1.52%	+/-10%	For model: FY30012500
100V, 60Hz	30.0	12.5	12.32	-1.44%	+/-10%	
240V, 50Hz	30.0	12.5	12.30	-1.60%	+/-10%	
240V, 60Hz	30.0	12.5	12.31	-1.52%	+/-10%	
100V, 50Hz	36.0	10.5	9.76	-7.05%	+/-10%	For model: FY36010500
100V, 60Hz	36.0	10.5	9.75	-7.14%	+/-10%	
240V, 50Hz	36.0	10.5	9.74	-7.24%	+/-10%	
240V, 60Hz	36.0	10.5	9.76	-7.05%	+/-10%	
100V, 50Hz	38.0	10.0	10.10	+1.00%	+/-10%	For model: FY38010000
100V, 60Hz	38.0	10.0	10.13	+1.30%	+/-10%	

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Clause	Requirement + Test			Result - Remark		Verdict

240V, 50Hz	38.0	10.0	10.11	+1.10%	+/-10%	
240V, 60Hz	38.0	10.0	10.12	+1.20%	+/-10%	
100V, 50Hz	40.0	9.5	9.02	-5.05%	+/-10%	For model: FY40009500
100V, 60Hz	40.0	9.5	9.01	-5.16%	+/-10%	
240V, 50Hz	40.0	9.5	9.02	-5.05%	+/-10%	
240V, 60Hz	40.0	9.5	9.03	-4.95%	+/-10%	
100V, 50Hz	42.0	9.5	9.14	-3.79%	+/-10%	For model: FY42009500
100V, 60Hz	42.0	9.5	9.13	-3.89%	+/-10%	
240V, 50Hz	42.0	9.5	9.15	-3.68%	+/-10%	
240V, 60Hz	42.0	9.5	9.14	-3.79%	+/-10%	
100V, 50Hz	42.5	9.0	9.647	+7.2%	+/-10%	Tested on FY42509000
100V, 60Hz	42.5	9.0	9.647	+7.2%	+/-10%	
240V, 50Hz	42.5	9.0	9.647	+7.2%	+/-10%	
240V, 60Hz	42.5	9.0	9.647	+7.2%	+/-10%	
100V, 50Hz	58.8	7.0	7.178	+2.5%	+/-10%	Tested on FY58807000
100V, 60Hz	58.8	7.0	7.179	+2.6%	+/-10%	
240V, 50Hz	58.8	7.0	7.178	+2.5%	+/-10%	
240V, 60Hz	58.8	7.0	7.178	+2.5%	+/-10%	
100V, 50Hz	63.0	6.5	7.130	+9.7%	+/-10%	Tested on FY63006500
100V, 60Hz	63.0	6.5	7.120	+9.5%	+/-10%	
240V, 50Hz	63.0	6.5	7.130	+9.7%	+/-10%	
240V, 60Hz	63.0	6.5	7.120	+9.5%	+/-10%	
100V, 50Hz	68.4	6.0	6.180	+3.0%	+/-10%	Tested on FY68406000
100V, 60Hz	68.4	6.0	6.180	+3.0%	+/-10%	
240V, 50Hz	68.4	6.0	6.190	+3.2%	+/-10%	
240V, 60Hz	68.4	6.0	6.180	+3.0%	+/-10%	
100V, 50Hz	87.0	4.6	5.030	+9.3%	+/-10%	Tested on FY87046000
100V, 60Hz	87.0	4.6	5.030	+9.3%	+/-10%	
240V, 50Hz	87.0	4.6	5.020	+9.1%	+/-10%	
240V, 60Hz	87.0	4.6	5.020	+9.1%	+/-10%	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

11.8-1	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	37.0	45-5=40
Internal lead wire	35.0	105-30=75
Varistor (MOV1)	41.5	85-30=55
Inductor winding (LF1)	36.8	130-30=100
Y capacitor (CY1)	32.2	125-30=95
Inductor winding (LF2)	36.5	130-30=100
PCB under BD1	36.4	130-30=100
E capacitor (C1)	42.1	105-30=75
Inductor winding (L2)	41.8	130-30=100
PCB under U6	48.7	130-30=100
Y capacitor (CY3)	48.7	125-30=95
X capacitor (CX1)	27.3	110-30=80
Inductor winding (L1)	39.9	130-30=100
Inductor bobbin (L1)	39.0	130-30=100
PCB near Q1	36.7	130-30=100
E capacitor (C2)	46.6	105-30=75
E capacitor (C23)	41.0	105-30=75
PCB near Q11	38.5	130-30=100
Winding of transformer (T1)	43.0	85-5=80
Bobbin of transformer (T1)	40.9	For cl.30
Inductor winding (L3)	45.6	130-30=100
Inductor bobbin (L3)	48.9	130-30=100
PCB near T1	49.3	130-30=100
Y capacitor (CY7)	37.7	125-30=95
Optocoupler (U4)	42.8	100-30=70

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Clause	Requirement + Test	Result - Remark	Verdict

Optocoupler (U8)	44.8	100-30=70
PCB near U5	56.3	130-30=100
Inductor winding (LF3)	74.1	130-30=100
E capacitor (C16)	62.2	105-30=75
PCB near Q5	58.4	130-30=100
Y capacitor (CY6)	51.9	125-30=95
Inductor winding (L4)	42.8	130-30=100
Output wire	41.4	105-30=75
Enclosure inside near T1	22.7	For cl.30
Enclosure outside near T1	18.0	60-5=55
Enclosure outside near BD1	19.1	60-5=55
Enclosure outside near Q11	20.3	60-5=55
Tested corner	8.1	65-5=60
Supplementary information: Tested on model FY06020000.		

11.8-2	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	31.6	45-5=40
Internal lead wire	40.1	105-30=75
Varistor (MOV1)	26.8	85-30=55
Inductor winding (LF1)	43.3	130-30=100
Y capacitor (CY1)	22.0	125-30=95
Inductor winding (LF2)	24.2	130-30=100
PCB under BD1	26.6	130-30=100
E capacitor (C1)	31.2	105-30=75
Inductor winding (L2)	29.2	130-30=100
PCB under U6	41.0	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Y capacitor (CY3)	43.5	125-30=95
X capacitor (CX1)	20.5	110-30=80
Inductor winding (L1)	26.7	130-30=100
Inductor bobbin (L1)	25.1	130-30=100
PCB near Q1	26.4	130-30=100
E capacitor (C2)	42.7	105-30=75
E capacitor (C23)	31.7	105-30=75
PCB near Q11	30.2	130-30=100
Winding of transformer (T1)	41.0	85-5=80
Bobbin of transformer (T1)	35.3	For cl.30
Inductor winding (L3)	41.4	130-30=100
Inductor bobbin (L3)	37.9	130-30=100
PCB near T1	41.5	130-30=100
Y capacitor (CY7)	33.6	125-30=95
Optocoupler (U4)	37.2	100-30=70
Optocoupler (U8)	39.5	100-30=70
PCB near U5	51.7	130-30=100
Inductor winding (LF3)	66.8	130-30=100
E capacitor (C16)	54.0	105-30=75
PCB near Q5	52.1	130-30=100
Y capacitor (CY6)	49.7	125-30=95
Inductor winding (L4)	50.8	130-30=100
Output wire	42.4	105-30=75
Enclosure inside near T1	21.4	For cl.30
Enclosure outside near T1	20.1	60-5=55
Enclosure outside near BD1	14.5	60-5=55
Enclosure outside near Q11	15.1	60-5=55
Tested corner	5.8	65-5=60
Supplementary information: Tested on model FY07520000.		

11.8-3	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	37.9	45-5=40
Internal lead wire	43.3	105-30=75
Varistor (MOV1)	37.7	85-30=55
Inductor winding (LF1)	35.3	130-30=100
Y capacitor (CY1)	32.2	125-30=95
Inductor winding (LF2)	36.5	130-30=100
PCB under BD1	36.4	130-30=100
E capacitor (C1)	42.1	105-30=75
Inductor winding (L2)	41.8	130-30=100
PCB under U6	48.7	130-30=100
Y capacitor (CY3)	39.5	125-30=95
X capacitor (CX1)	27.3	110-30=80
Inductor winding (L1)	39.9	130-30=100
Inductor bobbin (L1)	39.0	130-30=100
PCB near Q1	36.7	130-30=100
E capacitor (C2)	43.2	105-30=75
E capacitor (C23)	41.0	105-30=75
PCB near Q11	38.5	130-30=100
Winding of transformer (T1)	43.0	85-5=80
Bobbin of transformer (T1)	40.9	For cl.30
Inductor winding (L3)	45.6	130-30=100
Inductor bobbin (L3)	48.9	130-30=100
PCB near T1	49.3	130-30=100
Y capacitor (CY7)	37.7	125-30=95
Optocoupler (U4)	42.8	100-30=70
Optocoupler (U8)	44.8	100-30=70
PCB near U5	56.3	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Inductor winding (LF3)	74.1	130-30=100
E capacitor (C16)	62.2	105-30=75
PCB near Q5	58.4	130-30=100
Y capacitor (CY6)	51.9	125-30=95
Inductor winding (L4)	41.3	130-30=100
Output wire	41.4	105-30=75
Enclosure inside near T1	22.7	For cl.30
Enclosure outside near T1	18.0	60-5=55
Enclosure outside near BD1	20.3	60-5=55
Enclosure outside near Q11	19.1	60-5=55
Tested corner	8.1	65-5=60
Supplementary information: Tested on model FY08420000.		

11.8-4	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	34.2	45-5=40
Internal lead wire	42.7	105-30=75
Varistor (MOV1)	29.4	85-30=55
Inductor winding (LF1)	45.9	130-30=100
Y capacitor (CY1)	24.6	125-30=95
Inductor winding (LF2)	26.8	130-30=100
PCB under BD1	29.2	130-30=100
E capacitor (C1)	33.8	105-30=75
Inductor winding (L2)	31.8	130-30=100
PCB under U6	43.6	130-30=100
Y capacitor (CY3)	46.1	125-30=95
X capacitor (CX1)	23.1	110-30=80

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Clause	Requirement + Test	Result - Remark	Verdict

Inductor winding (L1)	29.4	130-30=100
Inductor bobbin (L1)	27.8	130-30=100
PCB near Q1	29.0	130-30=100
E capacitor (C2)	45.3	105-30=75
E capacitor (C23)	34.3	105-30=75
PCB near Q11	32.8	130-30=100
Winding of transformer (T1)	69.4	85-5=80
Bobbin of transformer (T1)	56.5	For cl.30
Inductor winding (L3)	41.4	130-30=100
Inductor bobbin (L3)	40.6	130-30=100
PCB near T1	44.1	130-30=100
Y capacitor (CY7)	36.2	125-30=95
Optocoupler (U4)	39.8	100-30=70
Optocoupler (U8)	42.2	100-30=70
PCB near U5	54.4	130-30=100
Inductor winding (LF3)	44.0	130-30=100
E capacitor (C16)	37.9	105-30=75
PCB near Q5	54.7	130-30=100
Y capacitor (CY6)	52.3	125-30=95
Inductor winding (L4)	53.4	130-30=100
Output wire	45.0	105-30=75
Enclosure inside near T1	24.1	For cl.30
Enclosure outside near T1	22.8	60-5=55
Enclosure outside near BD1	17.1	60-5=55
Enclosure outside near Q11	17.7	60-5=55
Tested corner	8.5	65-5=60
Supplementary information: Tested on model FY08520000.		

11.8-5	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

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

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	31.8	45-5=40
Internal lead wire	51.6	105-30=75
Varistor (MOV1)	51.8	85-30=55
Inductor winding (LF1)	55.6	130-30=100
Y capacitor (CY1)	56.4	125-30=95
Inductor winding (LF2)	61.0	130-30=100
PCB under BD1	55.1	130-30=100
E capacitor (C1)	59.7	105-30=75
Inductor winding (L2)	62.2	130-30=100
PCB under U6	57.7	130-30=100
Y capacitor (CY3)	56.4	125-30=95
X capacitor (CX1)	51.3	110-30=80
Inductor winding (L1)	58.3	130-30=100
Inductor bobbin (L1)	54.8	130-30=100
PCB near Q1	51.3	130-30=100
E capacitor (C2)	61.2	105-30=75
E capacitor (C23)	57.0	105-30=75
PCB near Q11	52.7	130-30=100
Winding of transformer (T1)	67.0	85-5=80
Bobbin of transformer (T1)	59.5	For cl.30
Inductor winding (L3)	60.7	130-30=100
Inductor bobbin (L3)	58.3	130-30=100
PCB near T1	50.6	130-30=100
Y capacitor (CY7)	49.4	125-30=95
Optocoupler (U4)	48.8	100-30=70
Optocoupler (U8)	44.9	100-30=70
PCB near U5	48.7	130-30=100
Inductor winding (LF3)	56.9	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

E capacitor (C16)	53.9	105-30=75
PCB near Q5	56.0	130-30=100
Y capacitor (CY6)	53.0	125-30=95
Inductor winding (L4)	52.1	130-30=100
Output wire	28.5	105-30=75
Enclosure inside near T1	37.1	For cl.30
Enclosure outside near T1	35.0	60-5=55
Enclosure outside near BD1	29.7	60-5=55
Enclosure outside near Q11	25.0	60-5=55
Tested corner	7.2	65-5=60
Supplementary information: Tested on model FY11420000.		

11.8-6	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	31.9	45-5=40
Internal lead wire	33.0	105-30=75
Varistor (MOV1)	53.5	85-30=55
Inductor winding (LF1)	58.7	130-30=100
Y capacitor (CY1)	56.6	125-30=95
Inductor winding (LF2)	58.8	130-30=100
PCB under BD1	57.8	130-30=100
E capacitor (C1)	54.6	105-30=75
Inductor winding (L2)	63.9	130-30=100
PCB under U6	67.3	130-30=100
Y capacitor (CY3)	54.7	125-30=95
X capacitor (CX1)	52.4	110-30=80
Inductor winding (L1)	59.7	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Inductor bobbin (L1)	59.1	130-30=100
PCB near Q1	57.7	130-30=100
E capacitor (C2)	64.6	105-30=75
E capacitor (C23)	58.6	105-30=75
PCB near Q11	54.6	130-30=100
Winding of transformer (T1)	70.4	85-5=80
Bobbin of transformer (T1)	68.8	For cl.30
Inductor winding (L3)	56.5	130-30=100
Inductor bobbin (L3)	50.4	130-30=100
PCB near T1	52.6	130-30=100
Y capacitor (CY7)	49.2	125-30=95
Optocoupler (U4)	47.5	100-30=70
Optocoupler (U8)	50.6	100-30=70
PCB near U5	57.9	130-30=100
Inductor winding (LF3)	64.1	130-30=100
E capacitor (C16)	62.7	105-30=75
PCB near Q5	60.4	130-30=100
Y capacitor (CY6)	53.5	125-30=95
Inductor winding (L4)	59.5	130-30=100
Output wire	43.9	105-30=75
Enclosure inside near T1	44.5	For cl.30
Enclosure outside near T1	38.1	60-5=55
Enclosure outside near BD1	33.8	60-5=55
Enclosure outside near Q11	28.4	60-5=55
Tested corner	10.4	65-5=60
Supplementary information: Tested on model FY143200000.		

11.8-7	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—
Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**

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Clause	Requirement + Test	Result - Remark	Verdict

	Tested with Figure 101	
	Label down	
AC Inlet	30.5	45-5=40
Internal lead wire	55.3	105-30=75
Varistor (MOV1)	52.1	85-30=55
Inductor winding (LF1)	57.3	130-30=100
Y capacitor (CY1)	55.2	125-30=95
Inductor winding (LF2)	57.4	130-30=100
PCB under BD1	60.4	130-30=100
E capacitor (C1)	53.2	105-30=75
Inductor winding (L2)	62.5	130-30=100
PCB under U6	65.8	130-30=100
Y capacitor (CY3)	53.2	125-30=95
X capacitor (CX1)	51.0	110-30=80
Inductor winding (L1)	58.3	130-30=100
Inductor bobbin (L1)	57.7	130-30=100
PCB near Q1	56.3	130-30=100
E capacitor (C2)	63.2	105-30=75
E capacitor (C23)	57.2	105-30=75
PCB near Q11	53.2	130-30=100
Winding of transformer (T1)	68.9	85-5=80
Bobbin of transformer (T1)	67.3	For cl.30
Inductor winding (L3)	55.1	130-30=100
Inductor bobbin (L3)	48.9	130-30=100
PCB near T1	51.1	130-30=100
Y capacitor (CY7)	47.7	125-30=95
Optocoupler (U4)	46.1	100-30=70
Optocoupler (U8)	49.1	100-30=70
PCB near U5	56.5	130-30=100
Inductor winding (LF3)	62.7	130-30=100
E capacitor (C16)	61.3	105-30=75
PCB near Q5	59.0	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Y capacitor (CY6)	52.0	125-30=95
Inductor winding (L4)	58.1	130-30=100
Output wire	42.5	105-30=75
Enclosure inside near T1	43.0	For cl.30
Enclosure outside near T1	36.6	60-5=55
Enclosure outside near BD1	32.3	60-5=55
Enclosure outside near Q11	27.0	60-5=55
Tested corner	9.0	65-5=60
Supplementary information: Tested on model FY15020000.		

11.8-8	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V 240V x 1.06=254.4V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101				
	Label up 94V	Label down 94V	Label up 254.4V	Label down 254.4V	
AC Inlet	39.4	39.4	22.0	26.9	45-5=40
Internal lead wire	54.8	57.5	40.4	42.8	105-30=75
Varistor (MOV1)	52.5	53.7	41.6	43.8	85-30=55
Inductor winding (LF1)	55.7	55.0	29.7	29.8	130-30=100
Y capacitor (CY1)	56.4	56.1	30.9	31.4	125-30=95
Inductor winding (LF2)	61.6	61.7	33.2	33.5	130-30=100
PCB under BD1	60.8	62.4	34.6	35.7	130-30=100
E capacitor (C1)	60.9	64.0	39.3	40.4	105-30=75
Inductor winding (L2)	63.6	66.3	38.4	39.1	130-30=100
PCB under U6	66.6	70.6	51.6	53.7	130-30=100
Y capacitor (CY3)	57.4	59.9	33.9	35.0	125-30=95
X capacitor (CX1)	51.3	50.8	27.5	29.7	110-30=80
Inductor winding (L1)	59.3	62.7	35.3	37.7	130-30=100
Inductor bobbin (L1)	61.6	49.1	37.9	44.5	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

PCB near Q1	56.5	58.7	34.9	36.6	130-30=100
E capacitor (C2)	61.4	64.4	45.8	47.8	105-30=75
E capacitor (C23)	56.3	59.8	41.9	44.0	105-30=75
PCB near Q11	55.5	58.1	41.8	43.5	130-30=100
Winding of transformer (T1)	66.8	69.0	51.7	53.2	85-5=80
Bobbin of transformer (T1)	59.8	62.9	44.5	46.4	For cl.30
Inductor winding (L3)	61.9	64.8	50.3	52.1	130-30=100
Inductor bobbin (L3)	63.0	65.9	51.3	53.6	130-30=100
PCB near T1	56.4	61.5	48.3	51.5	130-30=100
Y capacitor (CY7)	49.5	48.5	38.7	38.1	125-30=95
Optocoupler (U4)	48.9	50.4	40.6	41.9	100-30=70
Optocoupler (U8)	50.9	53.0	43.2	44.6	100-30=70
PCB near U5	54.5	55.1	49.4	50.3	130-30=100
Inductor winding (LF3)	66.3	67.3	61.5	63.9	130-30=100
E capacitor (C16)	63.6	67.4	57.5	61.6	105-30=75
PCB near Q5	59.8	61.8	53.8	55.4	130-30=100
Y capacitor (CY6)	52.5	51.4	48.1	48.2	125-30=95
Inductor winding (L4)	67.6	65.1	62.8	62.6	130-30=100
Output wire	38.8	38.9	35.8	36.9	105-30=75
Enclosure inside near T1	42.0	36.2	29.4	26.0	For cl.30
Enclosure outside near T1	37.0	29.6	25.9	21.8	60-5=55
Enclosure outside near BD1	33.8	32.0	22.2	21.3	60-5=55
Enclosure outside near Q11	27.2	27.3	19.1	18.1	60-5=55
Tested corner	9.4	8.7	8.3	8.8	65-5=60
Supplementary information: Tested on model FY17020000.					

11.8-9	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	

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Clause	Requirement + Test	Result - Remark	Verdict

	Label down	
AC Inlet	38.0	45-5=40
Internal lead wire	47.3	105-30=75
Varistor (MOV1)	54.8	85-30=55
Inductor winding (LF1)	50.5	130-30=100
Y capacitor (CY1)	51.3	125-30=95
Inductor winding (LF2)	57.4	130-30=100
PCB under BD1	57.1	130-30=100
E capacitor (C1)	57.1	105-30=75
Inductor winding (L2)	58.8	130-30=100
PCB under U6	62.9	130-30=100
Y capacitor (CY3)	53.0	125-30=95
X capacitor (CX1)	42.8	110-30=80
Inductor winding (L1)	33.0	130-30=100
Inductor bobbin (L1)	54.1	130-30=100
PCB near Q1	53.3	130-30=100
E capacitor (C2)	59.0	105-30=75
E capacitor (C23)	52.7	105-30=75
PCB near Q11	50.5	130-30=100
Winding of transformer (T1)	55.7	85-5=80
Bobbin of transformer (T1)	50.1	For cl.30
Inductor winding (L3)	58.3	130-30=100
Inductor bobbin (L3)	57.1	130-30=100
PCB near T1	56.6	130-30=100
Y capacitor (CY7)	46.2	125-30=95
Optocoupler (U4)	45.2	100-30=70
Optocoupler (U8)	47.7	100-30=70
PCB near U5	52.7	130-30=100
Inductor winding (LF3)	54.5	130-30=100
E capacitor (C16)	41.1	105-30=75
PCB near Q5	57.1	130-30=100
Y capacitor (CY6)	53.6	125-30=95

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Clause	Requirement + Test	Result - Remark	Verdict

Inductor winding (L4)	60.4	130-30=100
Output wire	33.6	105-30=75
Enclosure inside near T1	39.7	For cl.30
Enclosure outside near T1	34.9	60-5=55
Enclosure outside near BD1	31.3	60-5=55
Enclosure outside near Q11	26.3	60-5=55
Tested corner	9.5	65-5=60
Supplementary information: Tested on model FY21618000.		

11.8-10	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	35.6	45-5=40
Internal lead wire	52.5	105-30=75
Varistor (MOV1)	38.5	85-30=55
Inductor winding (LF1)	49.8	130-30=100
Y capacitor (CY1)	51.3	125-30=95
Inductor winding (LF2)	56.9	130-30=100
PCB under BD1	57.4	130-30=100
E capacitor (C1)	58.4	105-30=75
Inductor winding (L2)	62.5	130-30=100
PCB under U6	63.6	130-30=100
Y capacitor (CY3)	55.5	125-30=95
X capacitor (CX1)	41.6	110-30=80
Inductor winding (L1)	62.6	130-30=100
Inductor bobbin (L1)	60.3	130-30=100
PCB near Q1	55.4	130-30=100
E capacitor (C2)	59.1	105-30=75

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Clause	Requirement + Test	Result - Remark	Verdict

E capacitor (C23)	53.4	105-30=75
PCB near Q11	49.9	130-30=100
Winding of transformer (T1)	52.4	85-5=80
Bobbin of transformer (T1)	50.6	For cl.30
Inductor winding (L3)	57.5	130-30=100
Inductor bobbin (L3)	54.5	130-30=100
PCB near T1	48.5	130-30=100
Y capacitor (CY7)	40.7	125-30=95
Optocoupler (U4)	39.8	100-30=70
Optocoupler (U8)	42.3	100-30=70
PCB near U5	39.8	130-30=100
Inductor winding (LF3)	45.0	130-30=100
E capacitor (C16)	46.9	105-30=75
PCB near Q5	43.4	130-30=100
Y capacitor (CY6)	52.1	125-30=95
Inductor winding (L4)	56.9	130-30=100
Output wire	35.1	105-30=75
Enclosure inside near T1	26.3	For cl.30
Enclosure outside near T1	21.3	60-5=55
Enclosure outside near BD1	27.7	60-5=55
Enclosure outside near Q11	27.8	60-5=55
Tested corner	13.7	65-5=60
Supplementary information: Tested on model FY22517000.		

11.8-11	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	35.2	45-5=40

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Clause	Requirement + Test	Result - Remark	Verdict

Internal lead wire	56.4	105-30=75
Varistor (MOV1)	42.1	85-30=55
Inductor winding (LF1)	51.3	130-30=100
Y capacitor (CY1)	51.9	125-30=95
Inductor winding (LF2)	56.9	130-30=100
PCB under BD1	55.6	130-30=100
E capacitor (C1)	56.3	105-30=75
Inductor winding (L2)	60.3	130-30=100
PCB under U6	61.1	130-30=100
Y capacitor (CY3)	53.5	125-30=95
X capacitor (CX1)	43.0	110-30=80
Inductor winding (L1)	62.6	130-30=100
Inductor bobbin (L1)	57.7	130-30=100
PCB near Q1	54.2	130-30=100
E capacitor (C2)	57.2	105-30=75
E capacitor (C23)	50.7	105-30=75
PCB near Q11	48.8	130-30=100
Winding of transformer (T1)	52.3	85-5=80
Bobbin of transformer (T1)	50.6	For cl.30
Inductor winding (L3)	56.2	130-30=100
Inductor bobbin (L3)	51.7	130-30=100
PCB near T1	46.1	130-30=100
Y capacitor (CY7)	44.6	125-30=95
Optocoupler (U4)	40.5	100-30=70
Optocoupler (U8)	42.7	100-30=70
PCB near U5	40.6	130-30=100
Inductor winding (LF3)	45.2	130-30=100
E capacitor (C16)	44.9	105-30=75
PCB near Q5	42.8	130-30=100
Y capacitor (CY6)	34.7	125-30=95
Inductor winding (L4)	50.3	130-30=100
Output wire	39.3	105-30=75

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

Enclosure inside near T1	35.3	For cl.30
Enclosure outside near T1	35.0	60-5=55
Enclosure outside near BD1	27.2	60-5=55
Enclosure outside near Q11	28.6	60-5=55
Tested corner	14.5	65-5=60
Supplementary information: Tested on model FY25515000.		

11.8-12	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	38.0	45-5=40
Internal lead wire	49.9	105-30=75
Varistor (MOV1)	52.9	85-30=55
Inductor winding (LF1)	56.4	130-30=100
Y capacitor (CY1)	51.7	125-30=95
Inductor winding (LF2)	62.3	130-30=100
PCB under BD1	60.0	130-30=100
E capacitor (C1)	58.8	105-30=75
Inductor winding (L2)	63.7	130-30=100
PCB under U6	65.8	130-30=100
Y capacitor (CY3)	57.8	125-30=95
X capacitor (CX1)	50.5	110-30=80
Inductor winding (L1)	59.3	130-30=100
Inductor bobbin (L1)	58.0	130-30=100
PCB near Q1	54.7	130-30=100
E capacitor (C2)	64.3	105-30=75
E capacitor (C23)	55.8	105-30=75
PCB near Q11	63.9	130-30=100

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

Winding of transformer (T1)	75.2	85-5=80
Bobbin of transformer (T1)	67.7	For cl.30
Inductor winding (L3)	66.4	130-30=100
Inductor bobbin (L3)	64.3	130-30=100
PCB near T1	49.5	130-30=100
Y capacitor (CY7)	50.8	125-30=95
Optocoupler (U4)	48.6	100-30=70
Optocoupler (U8)	46.4	100-30=70
PCB near U5	52.5	130-30=100
Inductor winding (LF3)	61.4	130-30=100
E capacitor (C16)	62.7	105-30=75
PCB near Q5	49.4	130-30=100
Y capacitor (CY6)	45.3	125-30=95
Inductor winding (L4)	77.5	130-30=100
Output wire	39.5	105-30=75
Enclosure inside near T1	40.9	For cl.30
Enclosure outside near T1	35.2	60-5=55
Enclosure outside near BD1	31.3	60-5=55
Enclosure outside near Q11	29.6	60-5=55
Tested corner	13.2	65-5=60
Supplementary information: Tested on model FY28013000.		

11.8-13	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	39.2	45-5=40
Internal lead wire	50.0	105-30=75
Varistor (MOV1)	54.4	85-30=55

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

Inductor winding (LF1)	54.5	130-30=100
Y capacitor (CY1)	55.5	125-30=95
Inductor winding (LF2)	59.2	130-30=100
PCB under BD1	58.7	130-30=100
E capacitor (C1)	59.4	105-30=75
Inductor winding (L2)	60.2	130-30=100
PCB under U6	61.1	130-30=100
Y capacitor (CY3)	55.2	125-30=95
X capacitor (CX1)	55.1	110-30=80
Inductor winding (L1)	57.3	130-30=100
Inductor bobbin (L1)	56.9	130-30=100
PCB near Q1	56.8	130-30=100
E capacitor (C2)	62.2	105-30=75
E capacitor (C23)	56.0	105-30=75
PCB near Q11	55.3	130-30=100
Winding of transformer (T1)	54.7	85-5=80
Bobbin of transformer (T1)	53.7	For cl.30
Inductor winding (L3)	62.9	130-30=100
Inductor bobbin (L3)	61.7	130-30=100
PCB near T1	56.4	130-30=100
Y capacitor (CY7)	49.8	125-30=95
Optocoupler (U4)	47.0	100-30=70
Optocoupler (U8)	48.5	100-30=70
PCB near U5	55.6	130-30=100
Inductor winding (LF3)	47.4	130-30=100
E capacitor (C16)	47.9	105-30=75
PCB near Q5	45.7	130-30=100
Y capacitor (CY6)	38.4	125-30=95
Inductor winding (L4)	62.9	130-30=100
Output wire	25.5	105-30=75
Enclosure inside near T1	46.0	For cl.30
Enclosure outside near T1	40.7	60-5=55

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

Enclosure outside near BD1	34.0	60-5=55
Enclosure outside near Q11	26.9	60-5=55
Tested corner	5.1	65-5=60
Supplementary information: Tested on model FY30012500.		

11.8-14	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	39.0	45-5=40
Internal lead wire	50.6	105-30=75
Varistor (MOV1)	49.0	85-30=55
Inductor winding (LF1)	55.8	130-30=100
Y capacitor (CY1)	59.6	125-30=95
Inductor winding (LF2)	58.8	130-30=100
PCB under BD1	59.6	130-30=100
E capacitor (C1)	61.2	105-30=75
Inductor winding (L2)	60.6	130-30=100
PCB under U6	57.6	130-30=100
Y capacitor (CY3)	61.3	125-30=95
X capacitor (CX1)	61.2	110-30=80
Inductor winding (L1)	56.2	130-30=100
Inductor bobbin (L1)	55.4	130-30=100
PCB near Q1	55.0	130-30=100
E capacitor (C2)	61.8	105-30=75
E capacitor (C23)	63.6	105-30=75
PCB near Q11	49.8	130-30=100
Winding of transformer (T1)	47.1	85-5=80
Bobbin of transformer (T1)	48.7	For cl.30

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

Inductor winding (L3)	48.2	130-30=100
Inductor bobbin (L3)	48.6	130-30=100
PCB near T1	46.3	130-30=100
Y capacitor (CY7)	48.4	125-30=95
Optocoupler (U4)	46.3	100-30=70
Optocoupler (U8)	50.7	100-30=70
PCB near U5	55.0	130-30=100
Inductor winding (LF3)	62.4	130-30=100
E capacitor (C16)	61.4	105-30=75
PCB near Q5	56.3	130-30=100
Y capacitor (CY6)	54.1	125-30=95
Inductor winding (L4)	63.5	130-30=100
Output wire	39.3	105-30=75
Enclosure inside near T1	40.9	For cl.30
Enclosure outside near T1	35.1	60-5=55
Enclosure outside near BD1	26.5	60-5=55
Enclosure outside near Q11	25.5	60-5=55
Tested corner	7.2	65-5=60
Supplementary information: Tested on model FY36010500.		

11.8-15	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	35.2	45-5=40
Internal lead wire	54.8	105-30=75
Varistor (MOV1)	51.7	85-30=55
Inductor winding (LF1)	54.1	130-30=100
Y capacitor (CY1)	57.4	125-30=95

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Clause	Requirement + Test	Result - Remark	Verdict

Inductor winding (LF2)	61.6	130-30=100
PCB under BD1	60.2	130-30=100
E capacitor (C1)	65.5	105-30=75
Inductor winding (L2)	61.6	130-30=100
PCB under U6	67.9	130-30=100
Y capacitor (CY3)	57.5	125-30=95
X capacitor (CX1)	52.2	110-30=80
Inductor winding (L1)	59.3	130-30=100
Inductor bobbin (L1)	58.0	130-30=100
PCB near Q1	54.3	130-30=100
E capacitor (C2)	62.2	105-30=75
E capacitor (C23)	53.4	105-30=75
PCB near Q11	58.0	130-30=100
Winding of transformer (T1)	69.5	85-5=80
Bobbin of transformer (T1)	56.2	For cl.30
Inductor winding (L3)	64.5	130-30=100
Inductor bobbin (L3)	60.8	130-30=100
PCB near T1	49.6	130-30=100
Y capacitor (CY7)	49.0	125-30=95
Optocoupler (U4)	48.2	100-30=70
Optocoupler (U8)	50.8	100-30=70
PCB near U5	54.8	130-30=100
Inductor winding (LF3)	66.8	130-30=100
E capacitor (C16)	65.5	105-30=75
PCB near Q5	61.9	130-30=100
Y capacitor (CY6)	44.4	125-30=95
Inductor winding (L4)	68.9	130-30=100
Output wire	37.1	105-30=75
Enclosure inside near T1	41.8	For cl.30
Enclosure outside near T1	36.1	60-5=55
Enclosure outside near BD1	33.5	60-5=55
Enclosure outside near Q11	28.1	60-5=55

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

Tested corner	9.7	65-5=60
Supplementary information: Tested on model FY38010000.		

11.8-16	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101	
	Label down	
AC Inlet	37.2	45-5=40
Internal lead wire	56.8	105-30=75
Varistor (MOV1)	53.7	85-30=55
Inductor winding (LF1)	56.1	130-30=100
Y capacitor (CY1)	59.2	125-30=95
Inductor winding (LF2)	63.6	130-30=100
PCB under BD1	62.2	130-30=100
E capacitor (C1)	67.5	105-30=75
Inductor winding (L2)	63.6	130-30=100
PCB under U6	69.9	130-30=100
Y capacitor (CY3)	59.5	125-30=95
X capacitor (CX1)	54.2	110-30=80
Inductor winding (L1)	61.3	130-30=100
Inductor bobbin (L1)	60.0	130-30=100
PCB near Q1	56.3	130-30=100
E capacitor (C2)	64.9	105-30=75
E capacitor (C23)	55.4	105-30=75
PCB near Q11	59.9	130-30=100
Winding of transformer (T1)	71.4	85-5=80
Bobbin of transformer (T1)	58.1	For cl.30
Inductor winding (L3)	66.5	130-30=100
Inductor bobbin (L3)	62.8	130-30=100

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

PCB near T1	51.6	130-30=100
Y capacitor (CY7)	51.0	125-30=95
Optocoupler (U4)	50.2	100-30=70
Optocoupler (U8)	52.9	100-30=70
PCB near U5	56.7	130-30=100
Inductor winding (LF3)	68.7	130-30=100
E capacitor (C16)	67.5	105-30=75
PCB near Q5	63.9	130-30=100
Y capacitor (CY6)	46.4	125-30=95
Inductor winding (L4)	70.9	130-30=100
Output wire	39.1	105-30=75
Enclosure inside near T1	43.8	For cl.30
Enclosure outside near T1	38.1	60-5=55
Enclosure outside near BD1	35.6	60-5=55
Enclosure outside near Q11	30.2	60-5=55
Tested corner	11.8	65-5=60
Supplementary information: Tested on model FY40009500.		

11.8-17	**TABLE: Heating Test**					**P**
	Test voltage (V) .....:				100V x 0.94 =94V 240V x 1.06=254.4V	—
	Ambient (°C) .....:				30.0	—
Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**					**Max. temperature rise limit, Δ T (K)**
	Tested with Figure 101					
	Label up 94V	Label down 94V	Label up 254.4V	Label down 254.4V		
AC Inlet	30.7	36.7	24.3	25.8		45-5=40
Internal lead wire	52.1	51.5	43.3	44.8		105-30=75
Varistor (MOV1)	50.7	54.5	39.9	42.5		85-30=55
Inductor winding (LF1)	69.5	64.4	32.4	32.6		130-30=100
Y capacitor (CY1)	69.4	64.8	33.7	34.3		125-30=95
Inductor winding (LF2)	76.6	71.5	35.8	36.5		130-30=100

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

PCB under BD1	81.1	69.7	41.2	38.3	130-30=100
E capacitor (C1)	73.8	70.4	37.2	43.5	105-30=75
Inductor winding (L2)	72.1	77.1	42.1	41.8	130-30=100
PCB under U6	80.4	75.5	40.6	54.3	130-30=100
Y capacitor (CY3)	66.5	65.7	35.8	38.0	125-30=95
X capacitor (CX1)	55.4	52.4	29.2	29.3	110-30=80
Inductor winding (L1)	71.1	70.0	37.9	40.1	130-30=100
Inductor bobbin (L1)	68.3	66.3	36.2	38.3	130-30=100
PCB near Q1	70.0	67.0	38.0	39.6	130-30=100
E capacitor (C2)	66.5	65.8	42.6	42.3	105-30=75
E capacitor (C23)	65.1	64.4	44.0	46.0	105-30=75
PCB near Q11	62.1	60.2	40.6	42.2	130-30=100
Winding of transformer (T1)	65.1	60.0	42.7	44.1	85-5=80
Bobbin of transformer (T1)	62.8	68.0	40.0	40.8	For cl.30
Inductor winding (L3)	69.4	63.3	50.1	51.9	130-30=100
Inductor bobbin (L3)	64.6	55.3	44.3	46.2	130-30=100
PCB near T1	55.5	49.6	41.1	43.6	130-30=100
Y capacitor (CY7)	55.5	48.9	37.6	37.4	125-30=95
Optocoupler (U4)	51.4	51.0	38.4	39.3	100-30=70
Optocoupler (U8)	53.0	48.1	39.7	41.0	100-30=70
PCB near U5	49.7	48.4	40.8	41.9	130-30=100
Inductor winding (LF3)	49.9	55.5	42.5	43.4	130-30=100
E capacitor (C16)	56.1	52.5	46.4	47.7	105-30=75
PCB near Q5	53.9	44.2	47.4	47.8	130-30=100
Y capacitor (CY6)	46.0	63.2	39.3	39.6	125-30=95
Inductor winding (L4)	65.0	32.6	47.7	49.8	130-30=100
Output wire	34.5	32.6	30.0	29.7	105-30=75
Enclosure inside near T1	45.3	41.2	27.9	25.6	For cl.30
Enclosure outside near T1	44.6	37.1	25.8	24.9	60-5=55
Enclosure outside near BD1	41.2	31.1	25.1	20.6	60-5=55
Enclosure outside near Q11	34.4	29.7	20.7	20.1	60-5=55
Tested corner	8.5	7.7	6.9	7.9	65-5=60

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

Supplementary information: Tested on model FY42009500.

11.8-18	**TABLE: Heating Test**		P
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Lithium Titanate Battery	
	Label down	
AC Inlet	27.2	45-5=40
Internal lead wire	48.4	105-30=75
Varistor (MOV1)	31.0	85-30=55
Inductor winding (LF1)	38.2	130-30=100
Y capacitor (CY1)	39.8	125-30=95
Inductor winding (LF2)	44.0	130-30=100
PCB under BD1	44.9	130-30=100
E capacitor (C1)	47.6	105-30=75
Inductor winding (L2)	49.0	130-30=100
PCB under U6	53.7	130-30=100
Y capacitor (CY3)	43.9	125-30=95
X capacitor (CX1)	33.5	110-30=80
Inductor winding (L1)	55.8	130-30=100
Inductor bobbin (L1)	51.5	130-30=100
PCB near Q1	43.8	130-30=100
E capacitor (C2)	50.1	105-30=75
E capacitor (C23)	44.5	105-30=75
PCB near Q11	41.3	130-30=100
Winding of transformer (T1)	43.5	85-5=80
Bobbin of transformer (T1)	41.3	For cl.30
Inductor winding (L3)	49.7	130-30=100
Inductor bobbin (L3)	45.0	130-30=100
PCB near T1	42.2	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Y capacitor (CY7)	34.5	125-30=95
Optocoupler (U4)	34.6	100-30=70
Optocoupler (U8)	36.8	100-30=70
PCB near U5	35.7	130-30=100
Inductor winding (LF3)	41.1	130-30=100
E capacitor (C16)	42.0	105-30=75
PCB near Q5	38.5	130-30=100
Y capacitor (CY6)	31.2	125-30=95
Inductor winding (L4)	51.0	130-30=100
Output wire	43.2	105-30=75
Enclosure inside near T1	41.8	For cl.30
Enclosure outside near T1	38.0	60-5=55
Enclosure outside near BD1	23.5	60-5=55
Enclosure outside near Q11	20.9	60-5=55
Tested corner	9.0	65-5=60
Supplementary information: Tested on model FY06020000.		

11.8-19	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	Tested with Lead-acid battery	Tested with Phosphoric acid iron Li-ion battery	
	Label down		
AC Inlet	25.5	32.8	45-5=40
Internal lead wire	48.8	56.5	105-30=75
Varistor (MOV1)	28.2	54.0	85-30=55
Inductor winding (LF1)	36.5	58.2	130-30=100
Y capacitor (CY1)	38.1	59.3	125-30=95
Inductor winding (LF2)	42.3	63.1	130-30=100
PCB under BD1	43.2	62.4	130-30=100
E capacitor (C1)	45.9	63.5	105-30=75

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

Inductor winding (L2)	47.3	66.0	130-30=100
PCB under U6	52.0	64.3	130-30=100
Y capacitor (CY3)	42.2	59.2	125-30=95
X capacitor (CX1)	31.8	52.9	110-30=80
Inductor winding (L1)	54.1	64.4	130-30=100
Inductor bobbin (L1)	49.8	61.7	130-30=100
PCB near Q1	42.1	58.0	130-30=100
E capacitor (C2)	48.4	61.3	105-30=75
E capacitor (C23)	42.8	60.7	105-30=75
PCB near Q11	39.6	59.4	130-30=100
Winding of transformer (T1)	41.8	66.9	85-5=80
Bobbin of transformer (T1)	39.6	62.1	For cl.30
Inductor winding (L3)	48.0	59.9	130-30=100
Inductor bobbin (L3)	43.0	55.6	130-30=100
PCB near T1	40.5	58.4	130-30=100
Y capacitor (CY7)	32.8	52.7	125-30=95
Optocoupler (U4)	32.9	49.9	100-30=70
Optocoupler (U8)	35.1	50.0	100-30=70
PCB near U5	34.0	56.8	130-30=100
Inductor winding (LF3)	39.4	64.9	130-30=100
E capacitor (C16)	40.3	63.9	105-30=75
PCB near Q5	36.8	61.0	130-30=100
Y capacitor (CY6)	29.5	55.8	125-30=95
Inductor winding (L4)	49.3	63.8	130-30=100
Output wire	41.5	36.8	105-30=75
Enclosure inside near T1	40.1	47.9	For cl.30
Enclosure outside near T1	36.3	40.7	60-5=55
Enclosure outside near BD1	21.8	39.9	60-5=55
Enclosure outside near Q11	19.2	33.2	60-5=55
Tested corner	7.3	16.9	65-5=60
Supplementary information: Tested on model FY07520000.			

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Clause	Requirement + Test	Result - Remark	Verdict

11.8-20	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	Tested with Li-ion battery	Tested with Ni-MH battery	
	Label down		
AC Inlet	27.9	27.1	45-5=40
Internal lead wire	38.4	37.6	105-30=75
Varistor (MOV1)	36.7	35.9	85-30=55
Inductor winding (LF1)	34.6	33.8	130-30=100
Y capacitor (CY1)	33.3	32.5	125-30=95
Inductor winding (LF2)	37.6	36.8	130-30=100
PCB under BD1	37.4	36.6	130-30=100
E capacitor (C1)	43.2	42.4	105-30=75
Inductor winding (L2)	42.8	42.0	130-30=100
PCB under U6	49.8	49.0	130-30=100
Y capacitor (CY3)	39.2	38.4	125-30=95
X capacitor (CX1)	28.6	27.8	110-30=80
Inductor winding (L1)	41.2	40.4	130-30=100
Inductor bobbin (L1)	40.9	40.1	130-30=100
PCB near Q1	37.6	36.8	130-30=100
E capacitor (C2)	45.3	44.5	105-30=75
E capacitor (C23)	42.1	41.3	105-30=75
PCB near Q11	39.4	38.6	130-30=100
Winding of transformer (T1)	43.9	43.1	85-5=80
Bobbin of transformer (T1)	42.2	41.4	For cl.30
Inductor winding (L3)	46.5	45.7	130-30=100
Inductor bobbin (L3)	49.8	43.7	130-30=100
PCB near T1	50.2	49.4	130-30=100
Y capacitor (CY7)	38.6	37.8	125-30=95
Optocoupler (U4)	43.6	42.8	100-30=70

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

Optocoupler (U8)	45.8	45.0	100-30=70
PCB near U5	57.3	56.5	130-30=100
Inductor winding (LF3)	74.1	73.3	130-30=100
E capacitor (C16)	63.5	62.7	105-30=75
PCB near Q5	59.4	58.6	130-30=100
Y capacitor (CY6)	54.1	53.3	125-30=95
Inductor winding (L4)	43.8	43.0	130-30=100
Output wire	44.7	43.9	105-30=75
Enclosure inside near T1	23.6	22.8	For cl.30
Enclosure outside near T1	18.6	17.8	60-5=55
Enclosure outside near BD1	20.7	19.9	60-5=55
Enclosure outside near Q11	19.8	19.0	60-5=55
Tested corner	9.4	8.6	65-5=60
Supplementary information: Tested on model FY08420000.			

11.8-21	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	Tested with Li-ion battery	Tested with Lithium titanate battery	
	Label down		
AC Inlet	29.1	28.0	45-5=40
Internal lead wire	39.6	38.6	105-30=75
Varistor (MOV1)	37.9	35.1	85-30=55
Inductor winding (LF1)	35.8	35.9	130-30=100
Y capacitor (CY1)	34.5	30.8	125-30=95
Inductor winding (LF2)	38.8	35.0	130-30=100
PCB under BD1	38.6	34.7	130-30=100
E capacitor (C1)	44.4	40.2	105-30=75
Inductor winding (L2)	44.0	39.8	130-30=100
PCB under U6	41.0	46.8	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Y capacitor (CY3)	40.4	36.5	125-30=95
X capacitor (CX1)	29.8	29.6	110-30=80
Inductor winding (L1)	42.4	38.5	130-30=100
Inductor bobbin (L1)	42.1	35.5	130-30=100
PCB near Q1	38.8	35.1	130-30=100
E capacitor (C2)	48.6	45.6	105-30=75
E capacitor (C23)	43.3	39.0	105-30=75
PCB near Q11	40.6	36.5	130-30=100
Winding of transformer (T1)	45.1	40.3	85-5=80
Bobbin of transformer (T1)	45.0	39.2	For cl.30
Inductor winding (L3)	47.7	42.9	130-30=100
Inductor bobbin (L3)	51.0	46.1	130-30=100
PCB near T1	51.4	46.0	130-30=100
Y capacitor (CY7)	39.8	35.0	125-30=95
Optocoupler (U4)	44.8	39.4	100-30=70
Optocoupler (U8)	47.0	41.5	100-30=70
PCB near U5	58.5	50.8	130-30=100
Inductor winding (LF3)	75.3	64.3	130-30=100
E capacitor (C16)	64.7	60.0	105-30=75
PCB near Q5	60.6	52.4	130-30=100
Y capacitor (CY6)	55.3	46.3	125-30=95
Inductor winding (L4)	45.0	39.2	130-30=100
Output wire	45.9	36.2	105-30=75
Enclosure inside near T1	24.8	21.1	For cl.30
Enclosure outside near T1	19.8	16.7	60-5=55
Enclosure outside near BD1	21.9	19.6	60-5=55
Enclosure outside near Q11	21.0	18.7	60-5=55
Tested corner	10.6	8.3	65-5=60
Supplementary information: Tested on model FY08520000.			

11.8-22	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—

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

	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Lithium Titanate Battery	
	Label down	
AC Inlet	38.8	45-5=40
Internal lead wire	56.2	105-30=75
Varistor (MOV1)	54.7	85-30=55
Inductor winding (LF1)	59.1	130-30=100
Y capacitor (CY1)	57.6	125-30=95
Inductor winding (LF2)	62.5	130-30=100
PCB under BD1	62.1	130-30=100
E capacitor (C1)	61.2	105-30=75
Inductor winding (L2)	70.8	130-30=100
PCB under U6	67.7	130-30=100
Y capacitor (CY3)	60.5	125-30=95
X capacitor (CX1)	54.9	110-30=80
Inductor winding (L1)	62.0	130-30=100
Inductor bobbin (L1)	60.3	130-30=100
PCB near Q1	60.5	130-30=100
E capacitor (C2)	66.2	105-30=75
E capacitor (C23)	60.2	105-30=75
PCB near Q11	57.9	130-30=100
Winding of transformer (T1)	70.8	85-5=80
Bobbin of transformer (T1)	69.7	For cl.30
Inductor winding (L3)	65.3	130-30=100
Inductor bobbin (L3)	67.0	130-30=100
PCB near T1	58.8	130-30=100
Y capacitor (CY7)	52.4	125-30=95
Optocoupler (U4)	51.3	100-30=70
Optocoupler (U8)	54.4	100-30=70
PCB near U5	60.4	130-30=100

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

Inductor winding (LF3)	68.4	130-30=100
E capacitor (C16)	66.9	105-30=75
PCB near Q5	60.6	130-30=100
Y capacitor (CY6)	55.6	125-30=95
Inductor winding (L4)	71.5	130-30=100
Output wire	42.5	105-30=75
Enclosure inside near T1	53.5	For cl.30
Enclosure outside near T1	46.5	60-5=55
Enclosure outside near BD1	41.4	60-5=55
Enclosure outside near Q11	40.7	60-5=55
Tested corner	16.0	65-5=60
Supplementary information: Tested on model FY11420000.		

11.8-23	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Ni-MH battery	
	Label down	
AC Inlet	39.4	45-5=40
Internal lead wire	54.7	105-30=75
Varistor (MOV1)	52.6	85-30=55
Inductor winding (LF1)	56.0	130-30=100
Y capacitor (CY1)	54.5	125-30=95
Inductor winding (LF2)	61.1	130-30=100
PCB under BD1	59.0	130-30=100
E capacitor (C1)	58.1	105-30=75
Inductor winding (L2)	67.7	130-30=100
PCB under U6	64.6	130-30=100
Y capacitor (CY3)	57.4	125-30=95
X capacitor (CX1)	51.8	110-30=80

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

Inductor winding (L1)	58.9	130-30=100
Inductor bobbin (L1)	62.4	130-30=100
PCB near Q1	57.4	130-30=100
E capacitor (C2)	63.1	105-30=75
E capacitor (C23)	57.1	105-30=75
PCB near Q11	54.8	130-30=100
Winding of transformer (T1)	67.7	85-5=80
Bobbin of transformer (T1)	66.5	For cl.30
Inductor winding (L3)	62.2	130-30=100
Inductor bobbin (L3)	63.9	130-30=100
PCB near T1	55.7	130-30=100
Y capacitor (CY7)	49.3	125-30=95
Optocoupler (U4)	48.2	100-30=70
Optocoupler (U8)	51.3	100-30=70
PCB near U5	57.3	130-30=100
Inductor winding (LF3)	65.3	130-30=100
E capacitor (C16)	63.7	105-30=75
PCB near Q5	57.5	130-30=100
Y capacitor (CY6)	52.5	125-30=95
Inductor winding (L4)	68.4	130-30=100
Output wire	39.4	105-30=75
Enclosure inside near T1	50.4	For cl.30
Enclosure outside near T1	43.4	60-5=55
Enclosure outside near BD1	38.3	60-5=55
Enclosure outside near Q11	37.6	60-5=55
Tested corner	12.9	65-5=60
Supplementary information: Tested on model FY14320000.		

11.8-24	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

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

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	Tested with Lead-acid battery	Tested with Phosphoric acid iron Li-ion battery	
	Label down		
AC Inlet	39.4	25.1	45-5=40
Internal lead wire	57.0	53.1	105-30=75
Varistor (MOV1)	54.9	54.7	85-30=55
Inductor winding (LF1)	58.3	56.0	130-30=100
Y capacitor (CY1)	56.8	56.2	125-30=95
Inductor winding (LF2)	63.4	59.4	130-30=100
PCB under BD1	61.3	57.3	130-30=100
E capacitor (C1)	60.4	58.6	105-30=75
Inductor winding (L2)	70.0	59.8	130-30=100
PCB under U6	66.9	56.6	130-30=100
Y capacitor (CY3)	59.7	53.0	125-30=95
X capacitor (CX1)	54.1	52.4	110-30=80
Inductor winding (L1)	61.2	59.3	130-30=100
Inductor bobbin (L1)	64.7	58.2	130-30=100
PCB near Q1	59.7	57.9	130-30=100
E capacitor (C2)	65.5	58.2	105-30=75
E capacitor (C23)	59.4	44.5	105-30=75
PCB near Q11	57.1	50.3	130-30=100
Winding of transformer (T1)	70.0	61.6	85-5=80
Bobbin of transformer (T1)	68.9	60.9	For cl.30
Inductor winding (L3)	64.6	57.5	130-30=100
Inductor bobbin (L3)	66.2	56.1	130-30=100
PCB near T1	58.0	45.5	130-30=100
Y capacitor (CY7)	51.6	45.6	125-30=95
Optocoupler (U4)	50.5	57.4	100-30=70
Optocoupler (U8)	53.7	55.1	100-30=70
PCB near U5	59.6	51.9	130-30=100
Inductor winding (LF3)	67.7	54.8	130-30=100

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

E capacitor (C16)	66.1	54.5	105-30=75
PCB near Q5	59.8	48.2	130-30=100
Y capacitor (CY6)	54.9	49.4	125-30=95
Inductor winding (L4)	70.7	55.1	130-30=100
Output wire	41.7	38.6	105-30=75
Enclosure inside near T1	52.7	41.0	For cl.30
Enclosure outside near T1	45.7	35.3	60-5=55
Enclosure outside near BD1	40.6	33.2	60-5=55
Enclosure outside near Q11	39.9	27.3	60-5=55
Tested corner	15.2	10.3	65-5=60
Supplementary information: Tested on model FY15020000.			

11.8-25	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V 240V x 1.06=254.4V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested with Ni-MH battery		Tested with Li-ion battery		
	94V Label down	254.4V Label down	94V Label down	254.4V Label down	
AC Inlet	39.3	27.3	36.9	27.5	45-5=40
Internal lead wire	56.0	43.6	53.7	42.7	105-30=75
Varistor (MOV1)	51.6	44.3	49.3	44.0	85-30=55
Inductor winding (LF1)	52.9	30.1	50.6	29.8	130-30=100
Y capacitor (CY1)	54.0	31.2	51.7	30.5	125-30=95
Inductor winding (LF2)	59.2	34.5	56.8	33.7	130-30=100
PCB under BD1	59.5	36.8	57.2	34.9	130-30=100
E capacitor (C1)	60.7	40.2	58.3	39.2	105-30=75
Inductor winding (L2)	62.6	39.8	60.2	37.6	130-30=100
PCB under U6	67.3	52.6	64.9	51.1	130-30=100
Y capacitor (CY3)	56.2	34.1	53.8	33.7	125-30=95
X capacitor (CX1)	44.4	29.7	42.1	27.5	110-30=80

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

Inductor winding (L1)	58.3	37.9	55.9	36.0	130-30=100
Inductor bobbin (L1)	60.5	35.8	58.2	35.4	130-30=100
PCB near Q1	54.8	36.2	52.4	34.3	130-30=100
E capacitor (C2)	62.5	47.5	60.2	45.9	105-30=75
E capacitor (C23)	58.0	43.6	55.6	42.2	105-30=75
PCB near Q11	56.6	44.1	54.3	42.6	130-30=100
Winding of transformer (T1)	68.6	54.3	66.3	53.1	85-5=80
Bobbin of transformer (T1)	61.0	45.8	58.7	44.9	For cl.30
Inductor winding (L3)	65.1	52.2	62.8	50.2	130-30=100
Inductor bobbin (L3)	65.7	46.8	63.3	46.5	130-30=100
PCB near T1	59.9	52.0	57.6	51.3	130-30=100
Y capacitor (CY7)	51.2	38.9	48.9	37.7	125-30=95
Optocoupler (U4)	51.5	42.7	49.1	41.4	100-30=70
Optocoupler (U8)	53.9	45.3	51.6	43.8	100-30=70
PCB near U5	59.0	50.9	56.7	51.3	130-30=100
Inductor winding (LF3)	72.8	62.5	70.4	61.6	130-30=100
E capacitor (C16)	68.9	61.7	66.6	58.2	105-30=75
PCB near Q5	65.0	56.3	52.7	53.0	130-30=100
Y capacitor (CY6)	57.8	49.4	55.4	47.5	125-30=95
Inductor winding (L4)	66.6	62.9	64.3	61.7	130-30=100
Output wire	41.9	37.2	39.6	36.3	105-30=75
Enclosure inside near T1	42.6	27.8	40.3	27.5	For cl.30
Enclosure outside near T1	37.6	25.4	35.3	22.9	60-5=55
Enclosure outside near BD1	32.2	22.7	29.9	21.5	60-5=55
Enclosure outside near Q11	28.7	20.1	26.3	19.4	60-5=55
Tested corner	9.6	8.6	7.3	7.1	65-5=60
Supplementary information: Tested on model FY17020000.					

11.8-26	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

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

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	Tested with Li-ion battery	Tested with Phosphoric acid iron Li-ion battery	
	Label down		
AC Inlet	38.4	30.7	45-5=40
Internal lead wire	48.8	54.4	105-30=75
Varistor (MOV1)	52.4	51.9	85-30=55
Inductor winding (LF1)	49.3	56.1	130-30=100
Y capacitor (CY1)	50.3	57.2	125-30=95
Inductor winding (LF2)	56.9	61.0	130-30=100
PCB under BD1	57.6	60.3	130-30=100
E capacitor (C1)	59.0	61.4	105-30=75
Inductor winding (L2)	60.7	63.9	130-30=100
PCB under U6	65.6	62.2	130-30=100
Y capacitor (CY3)	53.9	57.1	125-30=95
X capacitor (CX1)	42.6	50.8	110-30=80
Inductor winding (L1)	38.9	62.2	130-30=100
Inductor bobbin (L1)	56.7	59.6	130-30=100
PCB near Q1	54.6	55.9	130-30=100
E capacitor (C2)	60.7	59.2	105-30=75
E capacitor (C23)	55.5	58.6	105-30=75
PCB near Q11	52.1	57.2	130-30=100
Winding of transformer (T1)	57.1	64.8	85-5=80
Bobbin of transformer (T1)	50.9	60.0	For cl.30
Inductor winding (L3)	59.9	57.8	130-30=100
Inductor bobbin (L3)	58.3	53.5	130-30=100
PCB near T1	60.3	56.3	130-30=100
Y capacitor (CY7)	44.5	50.6	125-30=95
Optocoupler (U4)	45.2	47.8	100-30=70
Optocoupler (U8)	48.1	47.9	100-30=70
PCB near U5	54.2	54.6	130-30=100
Inductor winding (LF3)	52.9	62.8	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

E capacitor (C16)	55.3	61.8	105-30=75
PCB near Q5	57.0	58.9	130-30=100
Y capacitor (CY6)	38.5	53.7	125-30=95
Inductor winding (L4)	62.0	61.6	130-30=100
Output wire	31.5	34.7	105-30=75
Enclosure inside near T1	34.3	45.8	For cl.30
Enclosure outside near T1	27.7	38.6	60-5=55
Enclosure outside near BD1	29.9	37.7	60-5=55
Enclosure outside near Q11	26.1	31.1	60-5=55
Tested corner	8.8	14.8	65-5=60
Supplementary information: Tested on model FY21618000.			

11.8-27	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Lithium titanate battery	
	Label down	
AC Inlet	27.6	45-5=40
Internal lead wire	50.9	105-30=75
Varistor (MOV1)	30.3	85-30=55
Inductor winding (LF1)	38.6	130-30=100
Y capacitor (CY1)	40.2	125-30=95
Inductor winding (LF2)	44.4	130-30=100
PCB under BD1	45.3	130-30=100
E capacitor (C1)	48.0	105-30=75
Inductor winding (L2)	49.4	130-30=100
PCB under U6	54.1	130-30=100
Y capacitor (CY3)	44.3	125-30=95
X capacitor (CX1)	33.9	110-30=80
Inductor winding (L1)	56.2	130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Inductor bobbin (L1)	51.9	130-30=100
PCB near Q1	44.2	130-30=100
E capacitor (C2)	50.5	105-30=75
E capacitor (C23)	44.9	105-30=75
PCB near Q11	41.7	130-30=100
Winding of transformer (T1)	43.9	85-5=80
Bobbin of transformer (T1)	41.7	For cl.30
Inductor winding (L3)	50.1	130-30=100
Inductor bobbin (L3)	45.4	130-30=100
PCB near T1	42.6	130-30=100
Y capacitor (CY7)	34.9	125-30=95
Optocoupler (U4)	35.0	100-30=70
Optocoupler (U8)	37.2	100-30=70
PCB near U5	36.1	130-30=100
Inductor winding (LF3)	41.5	130-30=100
E capacitor (C16)	42.4	105-30=75
PCB near Q5	38.9	130-30=100
Y capacitor (CY6)	31.6	125-30=95
Inductor winding (L4)	51.4	130-30=100
Output wire	43.6	105-30=75
Enclosure inside near T1	42.2	For cl.30
Enclosure outside near T1	38.4	60-5=55
Enclosure outside near BD1	23.9	60-5=55
Enclosure outside near Q11	21.3	60-5=55
Tested corner	9.4	65-5=60
Supplementary information: Tested on model FY22517000.		

11.8-28	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**

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

	Tested with Li-ion battery	Tested with Phosphoric acid iron Li-ion battery	
	Label down		
AC Inlet	28.9	38.5	45-5=40
Internal lead wire	52.2	49.9	105-30=75
Varistor (MOV1)	31.6	40.9	85-30=55
Inductor winding (LF1)	39.9	51.8	130-30=100
Y capacitor (CY1)	41.5	53.9	125-30=95
Inductor winding (LF2)	45.7	59.5	130-30=100
PCB under BD1	46.6	60.3	130-30=100
E capacitor (C1)	49.2	61.0	105-30=75
Inductor winding (L2)	50.7	65.2	130-30=100
PCB under U6	55.4	66.4	130-30=100
Y capacitor (CY3)	45.6	58.2	125-30=95
X capacitor (CX1)	35.2	43.6	110-30=80
Inductor winding (L1)	57.5	67.7	130-30=100
Inductor bobbin (L1)	52.5	59.6	130-30=100
PCB near Q1	45.5	58.3	130-30=100
E capacitor (C2)	51.8	58.0	105-30=75
E capacitor (C23)	46.1	56.5	105-30=75
PCB near Q11	43.0	53.5	130-30=100
Winding of transformer (T1)	45.2	56.1	85-5=80
Bobbin of transformer (T1)	43.0	54.5	For cl.30
Inductor winding (L3)	51.4	60.2	130-30=100
Inductor bobbin (L3)	46.7	56.4	130-30=100
PCB near T1	43.9	50.4	130-30=100
Y capacitor (CY7)	36.2	42.7	125-30=95
Optocoupler (U4)	36.3	41.7	100-30=70
Optocoupler (U8)	38.2	44.0	100-30=70
PCB near U5	37.3	40.1	130-30=100
Inductor winding (LF3)	42.8	43.8	130-30=100
E capacitor (C16)	43.7	46.6	105-30=75
PCB near Q5	40.2	43.1	130-30=100

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

Y capacitor (CY6)	32.9	33.8	125-30=95
Inductor winding (L4)	52.6	55.4	130-30=100
Output wire	44.9	59.7	105-30=75
Enclosure inside near T1	43.3	45.8	For cl.30
Enclosure outside near T1	39.7	39.4	60-5=55
Enclosure outside near BD1	25.2	31.1	60-5=55
Enclosure outside near Q11	22.6	30.8	60-5=55
Tested corner	10.7	15.3	65-5=60
Supplementary information: Tested on model FY25515000.			

11.8-29	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Lithium titanate battery	
	Label down	
AC Inlet	38.7	45-5=40
Internal lead wire	51.8	105-30=75
Varistor (MOV1)	54.9	85-30=55
Inductor winding (LF1)	55.1	130-30=100
Y capacitor (CY1)	56.4	125-30=95
Inductor winding (LF2)	63.5	130-30=100
PCB under BD1	61.4	130-30=100
E capacitor (C1)	55.0	105-30=75
Inductor winding (L2)	58.2	130-30=100
PCB under U6	65.5	130-30=100
Y capacitor (CY3)	56.1	125-30=95
X capacitor (CX1)	51.0	110-30=80
Inductor winding (L1)	59.3	130-30=100
Inductor bobbin (L1)	56.0	130-30=100
PCB near Q1	49.4	130-30=100

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

E capacitor (C2)	62.7	105-30=75
E capacitor (C23)	58.1	105-30=75
PCB near Q11	50.2	130-30=100
Winding of transformer (T1)	71.0	85-5=80
Bobbin of transformer (T1)	68.7	For cl.30
Inductor winding (L3)	66.7	130-30=100
Inductor bobbin (L3)	64.5	130-30=100
PCB near T1	55.9	130-30=100
Y capacitor (CY7)	49.8	125-30=95
Optocoupler (U4)	48.6	100-30=70
Optocoupler (U8)	50.0	100-30=70
PCB near U5	56.6	130-30=100
Inductor winding (LF3)	62.4	130-30=100
E capacitor (C16)	63.6	105-30=75
PCB near Q5	56.0	130-30=100
Y capacitor (CY6)	52.0	125-30=95
Inductor winding (L4)	68.2	130-30=100
Output wire	42.7	105-30=75
Enclosure inside near T1	45.6	For cl.30
Enclosure outside near T1	40.5	60-5=55
Enclosure outside near BD1	37.5	60-5=55
Enclosure outside near Q11	33.5	60-5=55
Tested corner	15.2	65-5=60
Supplementary information: Tested on model FY28013000.		

11.8-30	**TABLE: Heating Test**					**P**
	Test voltage (V) ..... :	100V x 0.94 =94V				—
	Ambient (°C) .....:	30.0				—
Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**	
	Tested with Lead-acid battery	Tested with Li-ion battery	Tested with Phosphoric acid iron Li-ion battery	Tested with Ni-MH battery		

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

	Label down				
AC Inlet	35.8	38.6	32.5	36.9	45-5=40
Internal lead wire	49.1	56.1	54.5	47.9	105-30=75
Varistor (MOV1)	50.3	54.7	53.4	49.1	85-30=55
Inductor winding (LF1)	50.4	58.0	55.7	49.2	130-30=100
Y capacitor (CY1)	51.0	59.5	56.9	49.8	125-30=95
Inductor winding (LF2)	55.2	65.0	63.5	54.0	130-30=100
PCB under BD1	5.1	63.3	59.7	53.9	130-30=100
E capacitor (C1)	57.4	67.7	57.4	56.2	105-30=75
Inductor winding (L2)	57.9	68.2	62.3	56.7	130-30=100
PCB under U6	59.1	62.8	65.6	57.9	130-30=100
Y capacitor (CY3)	50.8	61.6	58.5	49.6	125-30=95
X capacitor (CX1)	50.9	53.2	52.7	49.7	110-30=80
Inductor winding (L1)	55.3	61.0	56.0	54.1	130-30=100
Inductor bobbin (L1)	59.4	62.8	53.8	58.2	130-30=100
PCB near Q1	54.4	58.2	55.9	53.2	130-30=100
E capacitor (C2)	59.2	71.0	61.1	57.4	105-30=75
E capacitor (C23)	54.2	59.9	52.6	53.0	105-30=75
PCB near Q11	47.8	58.6	54.0	51.9	130-30=100
Winding of transformer (T1)	53.1	71.0	57.8	51.9	85-5=80
Bobbin of transformer (T1)	57.0	66.8	60.7	55.8	For cl.30
Inductor winding (L3)	63.1	59.4	57.7	62.0	130-30=100
Inductor bobbin (L3)	61.9	53.6	55.6	60.8	130-30=100
PCB near T1	57.7	51.4	57.7	56.5	130-30=100
Y capacitor (CY7)	43.6	51.0	45.1	42.4	125-30=95
Optocoupler (U4)	43.9	49.8	48.6	42.7	100-30=70
Optocoupler (U8)	46.0	52.3	47.4	44.8	100-30=70
PCB near U5	58.9	57.6	48.4	57.8	130-30=100
Inductor winding (LF3)	45.2	68.0	65.5	44.0	130-30=100
E capacitor (C16)	49.2	63.3	64.4	48.0	105-30=75
PCB near Q5	46.4	60.2	49.3	45.2	130-30=100
Y capacitor (CY6)	36.7	53.2	53.6	35.5	125-30=95

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Clause	Requirement + Test	Result - Remark	Verdict

Inductor winding (L4)	64.2	64.0	55.7	63.0	130-30=100
Output wire	32.6	40.6	40.0	31.4	105-30=75
Enclosure inside near T1	33.7	43.9	42.1	32.5	For cl.30
Enclosure outside near T1	26.4	39.4	39.9	25.2	60-5=55
Enclosure outside near BD1	31.1	37.9	31.3	29.9	60-5=55
Enclosure outside near Q11	26.6	29.4	28.6	25.4	60-5=55
Tested corner	20.8	12.1	10.2	19.6	65-5=60
Supplementary information: Tested on model FY30012500.					

11.8-31	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Phosphoric acid iron Li-ion battery	
	Label down	
AC Inlet	36.0	45-5=40
Internal lead wire	55.5	105-30=75
Varistor (MOV1)	52.1	85-30=55
Inductor winding (LF1)	55.6	130-30=100
Y capacitor (CY1)	56.1	125-30=95
Inductor winding (LF2)	61.9	130-30=100
PCB under BD1	60.7	130-30=100
E capacitor (C1)	63.1	105-30=75
Inductor winding (L2)	67.6	130-30=100
PCB under U6	62.2	130-30=100
Y capacitor (CY3)	59.0	125-30=95
X capacitor (CX1)	51.0	110-30=80
Inductor winding (L1)	59.7	130-30=100
Inductor bobbin (L1)	61.5	130-30=100
PCB near Q1	56.9	130-30=100
E capacitor (C2)	69.7	105-30=75

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

E capacitor (C23)	58.6	105-30=75
PCB near Q11	57.3	130-30=100
Winding of transformer (T1)	69.6	85-5=80
Bobbin of transformer (T1)	65.5	For cl.30
Inductor winding (L3)	58.1	130-30=100
Inductor bobbin (L3)	52.3	130-30=100
PCB near T1	50.1	130-30=100
Y capacitor (CY7)	49.7	125-30=95
Optocoupler (U4)	48.5	100-30=70
Optocoupler (U8)	50.9	100-30=70
PCB near U5	56.3	130-30=100
Inductor winding (LF3)	66.7	130-30=100
E capacitor (C16)	62.0	105-30=75
PCB near Q5	58.9	130-30=100
Y capacitor (CY6)	51.8	125-30=95
Inductor winding (L4)	62.6	130-30=100
Output wire	39.3	105-30=75
Enclosure inside near T1	42.6	For cl.30
Enclosure outside near T1	38.1	60-5=55
Enclosure outside near BD1	36.6	60-5=55
Enclosure outside near Q11	28.0	60-5=55
Tested corner	10.8	65-5=60
Supplementary information: Tested on model FY36010500.		

11.8-32	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Tested with Li-ion battery	
	Label down	
AC Inlet	39.0	45-5=40

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

Internal lead wire	53.1	105-30=75
Varistor (MOV1)	41.3	85-30=55
Inductor winding (LF1)	53.2	130-30=100
Y capacitor (CY1)	55.2	125-30=95
Inductor winding (LF2)	60.9	130-30=100
PCB under BD1	62.2	130-30=100
E capacitor (C1)	64.1	105-30=75
Inductor winding (L2)	68.3	130-30=100
PCB under U6	71.4	130-30=100
Y capacitor (CY3)	60.2	125-30=95
X capacitor (CX1)	43.2	110-30=80
Inductor winding (L1)	61.2	130-30=100
Inductor bobbin (L1)	58.8	130-30=100
PCB near Q1	59.2	130-30=100
E capacitor (C2)	69.5	105-30=75
E capacitor (C23)	62.5	105-30=75
PCB near Q11	61.8	130-30=100
Winding of transformer (T1)	62.0	85-5=80
Bobbin of transformer (T1)	59.7	For cl.30
Inductor winding (L3)	77.2	130-30=100
Inductor bobbin (L3)	75.0	130-30=100
PCB near T1	56.5	130-30=100
Y capacitor (CY7)	50.8	125-30=95
Optocoupler (U4)	51.1	100-30=70
Optocoupler (U8)	52.4	100-30=70
PCB near U5	49.0	130-30=100
Inductor winding (LF3)	57.1	130-30=100
E capacitor (C16)	63.2	105-30=75
PCB near Q5	61.9	130-30=100
Y capacitor (CY6)	57.1	125-30=95
Inductor winding (L4)	64.2	130-30=100
Output wire	25.8	105-30=75

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

Enclosure inside near T1	50.3	For cl.30
Enclosure outside near T1	38.9	60-5=55
Enclosure outside near BD1	32.8	60-5=55
Enclosure outside near Q11	30.7	60-5=55
Tested corner	16.0	65-5=60
Supplementary information: Tested on model FY38010000.		

11.8-33	**TABLE: Heating Test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30.0	—

Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
	Tested with Phosphoric acid iron Li-ion battery	
	Label down	
AC Inlet	39.3	45-5=40
Internal lead wire	54.5	105-30=75
Varistor (MOV1)	42.7	85-30=55
Inductor winding (LF1)	54.6	130-30=100
Y capacitor (CY1)	56.6	125-30=95
Inductor winding (LF2)	62.3	130-30=100
PCB under BD1	63.5	130-30=100
E capacitor (C1)	65.5	105-30=75
Inductor winding (L2)	69.7	130-30=100
PCB under U6	72.7	130-30=100
Y capacitor (CY3)	61.5	125-30=95
X capacitor (CX1)	44.6	110-30=80
Inductor winding (L1)	62.6	130-30=100
Inductor bobbin (L1)	60.1	130-30=100
PCB near Q1	60.6	130-30=100
E capacitor (C2)	70.9	105-30=75
E capacitor (C23)	63.8	105-30=75
PCB near Q11	63.1	130-30=100

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

Winding of transformer (T1)	63.4	85-5=80
Bobbin of transformer (T1)	61.1	For cl.30
Inductor winding (L3)	78.5	130-30=100
Inductor bobbin (L3)	76.3	130-30=100
PCB near T1	57.8	130-30=100
Y capacitor (CY7)	52.2	125-30=95
Optocoupler (U4)	52.4	100-30=70
Optocoupler (U8)	53.8	100-30=70
PCB near U5	50.4	130-30=100
Inductor winding (LF3)	58.5	130-30=100
E capacitor (C16)	64.6	105-30=75
PCB near Q5	63.3	130-30=100
Y capacitor (CY6)	58.4	125-30=95
Inductor winding (L4)	65.6	130-30=100
Output wire	27.2	105-30=75
Enclosure inside near T1	51.6	For cl.30
Enclosure outside near T1	40.2	60-5=55
Enclosure outside near BD1	34.2	60-5=55
Enclosure outside near Q11	32.1	60-5=55
Tested corner	17.4	65-5=60
Supplementary information: Tested on model FY40009500.		

11.8-34	**TABLE: Heating Test**			**P**
	Test voltage (V) .....:	100V x 0.94 =94V 240V x 1.06=254.4V		—
	Ambient (°C) .....:	30.0		—
Thermocouple Locations	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Tested with Li-ion battery			
	94V Label down	254.4V Label down		
AC Inlet	34.4	25.9		45-5=40
Internal lead wire	50.0	45.1		105-30=75

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

Varistor (MOV1)	54.1	41.7	85-30=55
Inductor winding (LF1)	67.3	33.6	130-30=100
Y capacitor (CY1)	67.9	34.5	125-30=95
Inductor winding (LF2)	75.6	36.2	130-30=100
PCB under BD1	73.6	41.5	130-30=100
E capacitor (C1)	73.4	43.6	105-30=75
Inductor winding (L2)	81.6	42.3	130-30=100
PCB under U6	78.2	53.2	130-30=100
Y capacitor (CY3)	68.7	36.5	125-30=95
X capacitor (CX1)	54.3	30.1	110-30=80
Inductor winding (L1)	73.0	39.6	130-30=100
Inductor bobbin (L1)	71.1	37.5	130-30=100
PCB near Q1	70.9	40.2	130-30=100
E capacitor (C2)	68.1	42.7	105-30=75
E capacitor (C23)	66.4	45.5	105-30=75
PCB near Q11	62.5	41.8	130-30=100
Winding of transformer (T1)	64.4	40.3	85-5=80
Bobbin of transformer (T1)	62.6	39.8	For cl.30
Inductor winding (L3)	69.6	50.7	130-30=100
Inductor bobbin (L3)	65.3	46.7	130-30=100
PCB near T1	56.7	44.0	130-30=100
Y capacitor (CY7)	51.5	38.2	125-30=95
Optocoupler (U4)	50.5	40.1	100-30=70
Optocoupler (U8)	52.5	40.9	100-30=70
PCB near U5	49.1	42.3	130-30=100
Inductor winding (LF3)	48.5	44.5	130-30=100
E capacitor (C16)	55.4	46.6	105-30=75
PCB near Q5	52.2	48.0	130-30=100
Y capacitor (CY6)	44.4	38.5	125-30=95
Inductor winding (L4)	66.0	48.7	130-30=100
Output wire	32.3	31.4	105-30=75
Enclosure inside near T1	43.4	26.9	For cl.30

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

Enclosure outside near T1	38.4	25.6	60-5=55
Enclosure outside near BD1	33.3	30.3	60-5=55
Enclosure outside near Q11	29.9	21.4	60-5=55
Tested corner	7.9	7.3	65-5=60
Supplementary information: Tested on model FY42009500.			

11.8-35	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Loaded with Figure 101		Loaded with empty battery, label up	
	Label up	Label down	Li-ion	
Appliance inlet	52.7	51.4	46.7	95-5=90
Internal wire	53.3	54.1	46.1	T105-30=75
MOV1	42.8	47.1	48.8	T85-30=55
Winding of LF1	71.3	70.4	63.0	T130-30=100
CY1 body	72.8	71.9	65.6	T125-30=95
Winding of LF2	82.7	81.6	71.6	T130-30=100
PCB near BD1	81.5	77.3	68.5	T130-30=100
C1 body	70.8	69.9	60.5	T105-30=75
Winding of L2	86.0	80.5	75.4	T130-30=100
PCB near U6	83.8	78.5	72.4	T130-30=100
Winding of L4	80.1	81.1	80.6	T130-30=100
CX1 body	69.3	67.5	61.8	T110-30=80
Winding of L1	78.7	76.7	68.8	T130-30=100
Bobbin of L1	76.7	74.7	67.0	For cl.30
PCB near Q1, D4	74.5	72.6	60.1	T130-30=100
C2 body	69.2	67.4	64.3	T105-30=75
C3 body	68.7	66.9	64.6	T105-30=75
C4 body	70.1	68.3	65.2	T105-30=75
C23 body	71.1	69.2	66.1	T105-30=75
C48 body	70.4	68.6	64.3	T105-30=75

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

CY5 body	45.8	44.6	50.7	T125-30=95
PCB near Q11, Q13	70.2	68.4	64.1	T130-30=100
Winding of T1	69.6	67.8	64.8	85-5=80
Bobbin of T1	68.6	66.8	63.9	For cl.30
Winding of L3	71.4	69.5	69.3	T105-30=75
Bobbin of L3	70.4	68.6	68.4	For cl.30
PCB near T1, L3	59.3	57.8	59.7	T105-30=75
CY7 body	48.0	46.7	53.0	T125-30=95
CY8 body	47.7	46.5	52.6	T125-30=95
Optocoupler (U4)	50.8	49.4	50.2	T100-30=70
Optocoupler (U8)	50.5	49.2	49.9	T100-30=70
PCB near U5	48.3	47.0	45.8	T130-30=100
Winding of LF3	44.7	43.5	36.7	T130-30=100
C15 body	44.7	43.5	48.9	T105-30=75
C16 body	48.3	47.0	52.0	T105-30=75
PCB near Q5, Q9	53.6	52.2	50.8	T130-30=100
Output wire	34.0	33.2	34.8	T80-30=50
Enclosure inside near T1	54.3	53.1	52.7	For cl.30
Enclosure inside near BD1	54.1	52.9	46.9	For cl.30
Enclosure inside near Q11	53.9	52.6	50.9	For cl.30
Enclosure outside near T1	43.4	42.4	32.3	60-5=55
Enclosure outside near BD1	42.7	41.7	30.7	60-5=55
Enclosure outside near Q11	42.3	41.3	31.8	60-5=55
Support	36.4	35.5	29.0	65-5=60
Supplementary information: Tested on FY58807000, only the most unfavourable result was recorded.				

11.8-36	**TABLE: Heating test**			**P**
	Test voltage (V) ..... :		240V x 1.06 =254.4V	—
	Ambient (°C) ..... :		30	—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Loaded with Figure 101		Loaded with empty battery, label up	
	Label up	Label down	Li-ion	

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Clause	Requirement + Test	Result - Remark	Verdict

Appliance inlet	30.6	31.0	25.6	95-5=90
Internal wire	29.9	32.1	24.8	T105-30=75
MOV1	33.2	35.5	29.1	T85-30=55
Winding of LF1	37.8	39.7	33.8	T130-30=100
CY1 body	39.2	38.9	35.5	T125-30=95
Winding of LF2	44.3	43.5	39.2	T130-30=100
PCB near BD1	45.6	43.9	40.5	T130-30=100
C1 body	48.4	44.0	44.6	T105-30=75
Winding of L2	48.8	44.5	44.2	T130-30=100
PCB near U6	56.5	52.0	47.0	T130-30=100
Winding of L4	63.7	57.9	63.0	T130-30=100
CX1 body	35.5	36.3	32.7	T110-30=80
Winding of L1	47.6	42.5	41.9	T130-30=100
Bobbin of L1	46.3	41.3	41.8	For cl.30
PCB near Q1, D4	46.0	43.4	41.1	T130-30=100
C2 body	49.7	45.4	43.3	T105-30=75
C3 body	47.1	42.6	45.3	T105-30=75
C4 body	49.2	44.3	42.8	T105-30=75
C23 body	53.5	49.2	44.6	T105-30=75
C48 body	51.5	51.7	50.1	T105-30=75
CY5 body	39.4	39.9	52.4	T125-30=95
PCB near Q11, Q13	49.8	45.8	49.6	T130-30=100
Winding of T1	49.2	47.8	50.0	85-5=80
Bobbin of T1	48.1	46.7	48.6	For cl.30
Winding of L3	55.9	53.6	57.7	T105-30=75
Bobbin of L3	54.9	52.4	56.7	For cl.30
PCB near T1, L3	45.3	42.0	56.3	T105-30=75
CY7 body	44.0	44.3	43.1	T125-30=95
CY8 body	38.0	41.4	40.6	T125-30=95
Optocoupler (U4)	41.4	40.8	35.0	T100-30=70
Optocoupler (U8)	41.7	42.2	38.0	T100-30=70
PCB near U5	41.4	39.4	39.4	T130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Winding of LF3	35.2	35.7	37.5	T130-30=100
C15 body	39.2	38.3	31.1	T105-30=75
C16 body	44.1	43.2	36.1	T105-30=75
PCB near Q5, Q9	50.5	50.4	41.5	T130-30=100
Output wire	30.6	30.5	45.5	T80-30=50
Enclosure inside near T1	36.4	36.3	39.0	For cl.30
Enclosure inside near BD1	33.9	32.8	35.0	For cl.30
Enclosure inside near Q11	37.8	33.3	29.8	For cl.30
Enclosure outside near T1	26.4	28.0	21.9	60-5=55
Enclosure outside near BD1	22.6	26.0	21.1	60-5=55
Enclosure outside near Q11	29.2	25.4	22.9	60-5=55
Support	21.3	24.8	19.5	65-5=60
Supplementary information: Tested on FY58807000, only the most unfavourable result was recorded.				

11.8-37	**TABLE: Heating test**			**P**
	Test voltage (V) .....:		100V x 0.94=94V	—
	Ambient (°C) .....:		30	—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Tested on FY45009000		Tested on FY46008500	
	Lead-acid	Phosphoric acid iron Li-ion	Li-ion	
Appliance inlet	47.8	46.1	48.5	95-5=90
Internal wire	44.8	43.2	45.4	T105-30=75
MOV1	38.7	37.2	39.3	T85-30=55
Winding of LF1	65.2	62.9	66.0	T130-30=100
CY1 body	66.6	64.3	67.4	T125-30=95
Winding of LF2	75.8	73.2	76.7	T130-30=100
PCB near BD1	74.6	72.1	75.5	T130-30=100
C1 body	64.7	62.4	65.5	T105-30=75
Winding of L2	78.8	76.2	79.8	T130-30=100
PCB near U6	76.8	74.2	77.7	T130-30=100
Winding of L4	73.4	70.9	74.3	T130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

CX1 body	63.3	61.1	64.1	T110-30=80
Winding of L1	72.1	69.6	72.9	T130-30=100
Bobbin of L1	70.2	67.7	71.0	For cl.30
PCB near Q1, D4	68.2	65.8	69.0	T130-30=100
C2 body	63.2	61.0	64.0	T105-30=75
C3 body	62.8	60.6	63.6	T105-30=75
C4 body	64.1	61.8	64.9	T105-30=75
C23 body	65.0	62.7	65.8	T105-30=75
C48 body	64.4	62.1	65.1	T105-30=75
CY5 body	41.5	39.9	42.1	T125-30=95
PCB near Q11, Q13	64.2	61.9	65.0	T130-30=100
Winding of T1	63.6	61.3	64.3	85-5=80
Bobbin of T1	62.7	60.5	63.5	For cl.30
Winding of L3	65.2	63.0	66.0	T105-30=75
Bobbin of L3	64.3	62.1	65.1	For cl.30
PCB near T1, L3	54.0	52.1	54.7	T105-30=75
CY7 body	43.5	41.8	44.1	T125-30=95
CY8 body	43.3	41.6	43.9	T125-30=95
Optocoupler (U4)	46.1	44.4	46.7	T100-30=70
Optocoupler (U8)	45.8	44.1	46.5	T100-30=70
PCB near U5	43.8	42.1	44.4	T130-30=100
Winding of LF3	40.4	38.9	41.0	T130-30=100
C15 body	40.4	38.9	41.0	T105-30=75
C16 body	43.8	42.1	44.4	T105-30=75
PCB near Q5, Q9	48.7	46.9	49.3	T130-30=100
Output wire	30.5	29.3	31.0	T80-30=50
Enclosure inside near T1	49.4	47.6	50.1	For cl.30
Enclosure inside near BD1	49.2	47.4	49.9	For cl.30
Enclosure inside near Q11	48.9	47.2	49.6	For cl.30
Enclosure outside near T1	39.2	37.7	39.8	60-5=55
Enclosure outside near BD1	38.6	37.1	39.1	60-5=55
Enclosure outside near Q11	38.2	36.8	38.8	60-5=55

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Clause	Requirement + Test	Result - Remark	Verdict

Support	32.7	31.4	33.2	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.				

11.8-38	**TABLE: Heating test**			**P**
	Test voltage (V) .....:		240V x 1.06 =254.4V	**—**
	Ambient (°C) .....:		30	**—**

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Tested on FY45009000		Tested on FY46008500	
	Lead-acid	Phosphoric acid iron Li-ion	Li-ion	
Appliance inlet	29.5	21.4	27.3	95-5=90
Internal wire	27.5	20.0	23.7	T105-30=75
MOV1	28.2	24.1	30.5	T85-30=55
Winding of LF1	33.2	28.2	34.6	T130-30=100
CY1 body	36.8	29.5	36.5	T125-30=95
Winding of LF2	39.6	32.0	39.6	T130-30=100
PCB near BD1	42.7	35.2	41.2	T130-30=100
C1 body	44.6	36.8	44.9	T105-30=75
Winding of L2	44.9	37.6	44.7	T130-30=100
PCB near U6	53.7	46.3	53.5	T130-30=100
Winding of L4	57.7	53.2	58.6	T130-30=100
CX1 body	32.5	26.8	32.6	T110-30=80
Winding of L1	42.9	34.1	41.4	T130-30=100
Bobbin of L1	42.0	32.7	40.5	For cl.30
PCB near Q1, D4	42.3	35.5	41.6	T130-30=100
C2 body	46.9	40.1	47.1	T105-30=75
C3 body	44.3	36.9	44.0	T105-30=75
C4 body	46.4	38.8	46.3	T105-30=75
C23 body	51.0	44.2	51.2	T105-30=75
C48 body	49.5	43.0	51.5	T105-30=75
CY5 body	35.2	40.1	42.8	T125-30=95
PCB near Q11, Q13	48.3	42.5	49.8	T130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Winding of T1	47.0	45.6	53.2	85-5=80
Bobbin of T1	46.0	41.9	49.3	For cl.30
Winding of L3	52.7	51.8	59.0	T105-30=75
Bobbin of L3	52.3	48.2	55.2	For cl.30
PCB near T1, L3	42.1	42.8	49.8	T105-30=75
CY7 body	41.5	38.6	42.7	T125-30=95
CY8 body	35.6	37.7	39.5	T125-30=95
Optocoupler (U4)	39.0	38.7	42.3	T100-30=70
Optocoupler (U8)	39.3	39.8	44.3	T100-30=70
PCB near U5	38.1	39.7	44.4	T130-30=100
Winding of LF3	32.2	38.5	39.7	T130-30=100
C15 body	35.2	41.0	42.9	T105-30=75
C16 body	39.8	43.9	47.7	T105-30=75
PCB near Q5, Q9	45.8	51.2	53.1	T130-30=100
Output wire	24.8	33.6	35.8	T80-30=50
Enclosure inside near T1	34.3	27.2	33.6	For cl.30
Enclosure inside near BD1	33.9	30.8	30.9	For cl.30
Enclosure inside near Q11	36.8	31.6	40.5	For cl.30
Enclosure outside near T1	24.4	21.8	25.6	60-5=55
Enclosure outside near BD1	22.3	20.6	24.7	60-5=55
Enclosure outside near Q11	26.9	23.5	25.9	60-5=55
Support	20.3	22.9	24.4	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.				

11.8-39	**TABLE: Heating test**			**P**
	Test voltage (V) .....:		100V x 0.94=94V	—
	Ambient (°C) .....:		30	—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Tested on FY48008000		Tested on FY51007500	
	Phosphoric acid iron Li-ion	Li-ion	Phosphoric acid iron Li-ion	
Appliance inlet	46.1	50.0	52.3	95-5=90

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Clause	Requirement + Test	Result - Remark	Verdict

Internal wire	46.7	52.9	55.3	T105-30=75
MOV1	43.2	40.5	46.6	T85-30=55
Winding of LF1	63.5	68.1	69.0	T130-30=100
CY1 body	64.9	69.6	70.5	T125-30=95
Winding of LF2	74.1	79.2	78.1	T130-30=100
PCB near BD1	72.9	78.0	76.9	T130-30=100
C1 body	63.0	67.6	70.4	T105-30=75
Winding of L2	72.0	78.1	79.1	T130-30=100
PCB near U6	75.1	76.0	81.2	T130-30=100
Winding of L4	53.2	76.7	79.7	T130-30=100
CX1 body	61.6	62.6	65.2	T110-30=80
Winding of L1	70.4	67.5	70.2	T130-30=100
Bobbin of L1	68.5	65.6	68.3	For cl.30
PCB near Q1, D4	66.5	63.7	66.4	T130-30=100
C2 body	61.5	58.9	63.2	T105-30=75
C3 body	61.1	58.5	62.8	T105-30=75
C4 body	62.4	59.8	64.1	T105-30=75
C23 body	63.3	60.6	65.0	T105-30=75
C48 body	62.7	60.0	64.3	T105-30=75
CY5 body	39.8	41.9	45.3	T125-30=95
PCB near Q11, Q13	58.1	62.5	65.1	T130-30=100
Winding of T1	57.5	61.9	66.3	85-5=80
Bobbin of T1	56.6	61.0	65.3	For cl.30
Winding of L3	59.1	63.5	66.2	T105-30=75
Bobbin of L3	58.2	62.7	65.3	For cl.30
PCB near T1, L3	52.3	52.4	54.7	T105-30=75
CY7 body	41.7	45.5	47.6	T125-30=95
CY8 body	41.5	45.3	47.4	T125-30=95
Optocoupler (U4)	44.4	48.2	46.6	T100-30=70
Optocoupler (U8)	44.1	48.0	46.4	T100-30=70
PCB near U5	42.1	45.8	44.3	T130-30=100
Winding of LF3	38.7	42.3	40.8	T130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

C15 body	38.7	42.3	40.8	T105-30=75
C16 body	42.1	45.8	44.3	T105-30=75
PCB near Q5, Q9	47.0	50.9	53.2	T130-30=100
Output wire	28.8	32.0	33.7	T80-30=50
Enclosure inside near T1	40.5	51.7	54.0	For cl.30
Enclosure inside near BD1	40.4	51.5	53.8	For cl.30
Enclosure inside near Q11	40.1	51.2	53.5	For cl.30
Enclosure outside near T1	31.3	41.1	43.0	60-5=55
Enclosure outside near BD1	30.8	40.4	42.4	60-5=55
Enclosure outside near Q11	30.4	40.0	42.0	60-5=55
Support	25.4	34.3	36.0	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.				

11.8-40	**TABLE: Heating test**			**P**
	Test voltage (V) .....:	240V x 1.06 =254.4V		—
	Ambient (°C) .....:	30		—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Tested on FY48008000		Tested on FY51007500	
	Phosphoric acid iron Li-ion	Li-ion	Phosphoric acid iron Li-ion	
Appliance inlet	22.4	27.2	28.5	95-5=90
Internal wire	19.5	28.5	29.5	T105-30=75
MOV1	24.8	29.7	31.1	T85-30=55
Winding of LF1	28.8	33.2	34.9	T130-30=100
CY1 body	30.9	34.2	35.8	T125-30=95
Winding of LF2	33.0	36.9	38.5	T130-30=100
PCB near BD1	35.1	38.4	40.2	T130-30=100
C1 body	37.5	40.3	42.2	T105-30=75
Winding of L2	37.3	40.3	42.2	T130-30=100
PCB near U6	49.7	49.0	50.6	T130-30=100
Winding of L4	51.4	51.5	53.8	T130-30=100
CX1 body	26.4	31.7	32.8	T110-30=80

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

Winding of L1	36.0	38.5	40.3	T130-30=100
Bobbin of L1	34.0	38.0	39.9	For cl.30
PCB near Q1, D4	34.1	37.7	40.2	T130-30=100
C2 body	33.7	40.2	43.0	T105-30=75
C3 body	38.2	38.6	41.4	T105-30=75
C4 body	35.6	40.4	42.9	T105-30=75
C23 body	37.7	44.6	47.0	T105-30=75
C48 body	42.3	43.0	45.5	T105-30=75
CY5 body	41.2	34.5	36.9	T125-30=95
PCB near Q11, Q13	40.9	41.0	43.9	T130-30=100
Winding of T1	41.4	44.7	47.1	85-5=80
Bobbin of T1	39.9	41.3	43.9	For cl.30
Winding of L3	47.5	45.9	48.1	T105-30=75
Bobbin of L3	39.4	45.8	48.0	For cl.30
PCB near T1, L3	43.7	38.1	41.4	T105-30=75
CY7 body	37.4	36.3	39.8	T125-30=95
CY8 body	33.5	31.6	35.4	T125-30=95
Optocoupler (U4)	32.1	33.4	37.1	T100-30=70
Optocoupler (U8)	34.0	34.4	38.0	T100-30=70
PCB near U5	35.0	31.3	34.9	T130-30=100
Winding of LF3	34.3	31.6	34.6	T130-30=100
C15 body	33.2	34.5	36.8	T105-30=75
C16 body	36.2	39.6	41.8	T105-30=75
PCB near Q5, Q9	44.3	46.4	48.0	T130-30=100
Output wire	39.5	28.9	31.6	T80-30=50
Enclosure inside near T1	29.9	35.7	38.4	For cl.30
Enclosure inside near BD1	28.7	30.7	32.9	For cl.30
Enclosure inside near Q11	32.1	27.1	31.5	For cl.30
Enclosure outside near T1	25.4	22.7	24.5	60-5=55
Enclosure outside near BD1	19.5	20.9	22.8	60-5=55
Enclosure outside near Q11	20.8	20.6	25.6	60-5=55
Support	17.7	21.6	25.9	65-5=60

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.

11.8-41	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	100V x 0.94=94V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested on FY55007000		Tested on FY58407000		
	Phosphoric acid iron Li-ion	Li-ion	Lead-acid	Phosphoric acid iron Li-ion	
Appliance inlet	39.8	45.1	39.6	45.6	95-5=90
Internal wire	40.4	45.7	45.4	52.0	T105-30=75
MOV1	37.5	42.4	40.9	46.4	T85-30=55
Winding of LF1	59.7	62.1	51.3	63.9	T130-30=100
CY1 body	61.0	63.5	53.6	66.5	T125-30=95
Winding of LF2	69.7	72.5	58.8	75.5	T130-30=100
PCB near BD1	68.6	71.3	64.8	72.2	T130-30=100
C1 body	59.2	61.6	57.1	69.3	T105-30=75
Winding of L2	70.7	75.5	62.0	76.4	T130-30=100
PCB near U6	70.7	73.5	59.4	76.3	T130-30=100
Winding of L4	67.5	70.1	56.3	72.6	T130-30=100
CX1 body	57.9	60.3	58.4	62.7	T110-30=80
Winding of L1	64.4	68.9	62.5	67.0	T130-30=100
Bobbin of L1	62.6	67.0	60.8	65.2	For cl.30
PCB near Q1, D4	60.8	65.0	56.7	63.5	T130-30=100
C2 body	57.8	60.2	52.5	65.2	T105-30=75
C3 body	57.4	59.7	52.7	65.5	T105-30=75
C4 body	58.6	61.0	53.2	66.1	T105-30=75
C23 body	59.5	61.9	54.0	67.0	T105-30=75
C48 body	58.9	61.3	52.4	65.2	T105-30=75
CY5 body	43.6	45.5	44.1	51.4	T125-30=95
PCB near Q11, Q13	58.7	61.1	56.3	64.9	T130-30=100
Winding of T1	58.1	60.5	56.1	64.8	85-5=80
Bobbin of T1	57.3	59.6	55.3	63.9	For cl.30

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Clause	Requirement + Test	Result - Remark	Verdict

Winding of L3	59.7	62.1	65.6	70.3	T105-30=75
Bobbin of L3	58.9	61.3	64.7	69.3	For cl.30
PCB near T1, L3	49.1	51.2	56.4	60.5	T105-30=75
CY7 body	42.3	51.2	49.9	53.7	T125-30=95
CY8 body	42.1	51.0	49.6	53.3	T125-30=95
Optocoupler (U4)	44.9	46.8	47.2	50.9	T100-30=70
Optocoupler (U8)	44.6	46.6	46.9	50.6	T100-30=70
PCB near U5	42.6	41.1	43.0	46.4	T130-30=100
Winding of LF3	39.2	37.8	31.3	37.3	T130-30=100
C15 body	39.2	41.0	46.0	49.6	T105-30=75
C16 body	42.6	44.4	45.2	52.7	T105-30=75
PCB near Q5, Q9	47.5	49.5	44.1	48.4	T130-30=100
Output wire	29.4	30.8	29.5	29.4	T80-30=50
Enclosure inside near T1	51.9	50.2	49.7	53.5	For cl.30
Enclosure inside near BD1	51.7	50.0	44.1	47.6	For cl.30
Enclosure inside near Q11	51.4	49.8	47.9	51.7	For cl.30
Enclosure outside near T1	38.1	39.8	29.5	34.2	60-5=55
Enclosure outside near BD1	37.4	39.1	30.7	32.4	60-5=55
Enclosure outside near Q11	37.1	38.7	29.0	33.6	60-5=55
Support	31.6	33.0	29.0	30.7	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.					

11.8-42	**TABLE: Heating test**				**P**
	Test voltage (V) .....:		240V x 1.06=254.4V		—
	Ambient (°C) .....:		30		—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested on FY55007000		Tested on FY58407000		
	Phosphoric acid iron Li-ion	Li-ion	Lead-acid	Phosphoric acid iron Li-ion	
Appliance inlet	21.5	22.6	13.5	26.4	95-5=90
Internal wire	19.8	21.2	14.7	29.3	T105-30=75
MOV1	24.4	24.8	17.2	30.1	T85-30=55
Winding of LF1	28.7	29.5	19.4	34.4	T130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

CY1 body	29.9	30.7	20.9	36.1	T125-30=95
Winding of LF2	32.9	33.9	23.3	39.9	T130-30=100
PCB near BD1	34.3	35.4	24.8	41.2	T130-30=100
C1 body	38.1	39.3	25.6	44.2	T105-30=75
Winding of L2	37.5	38.6	25.6	43.6	T130-30=100
PCB near U6	46.2	47.3	27.0	52.5	T130-30=100
Winding of L4	50.4	52.2	36.1	54.1	T130-30=100
CX1 body	31.1	31.9	18.8	33.4	T110-30=80
Winding of L1	35.1	36.6	23.6	41.8	T130-30=100
Bobbin of L1	35.3	36.6	23.2	41.1	For cl.30
PCB near Q1, D4	34.4	35.3	24.1	41.0	T130-30=100
C2 body	39.2	40.1	26.0	44.6	T105-30=75
C3 body	36.3	37.2	24.7	43.2	T105-30=75
C4 body	38.4	39.4	25.6	44.4	T105-30=75
C23 body	43.3	44.2	29.5	49.6	T105-30=75
C48 body	40.3	41.8	30.5	47.9	T105-30=75
CY5 body	33.1	33.7	24.6	36.8	T125-30=95
PCB near Q11, Q13	40.6	43.0	28.5	47.1	T130-30=100
Winding of T1	43.2	43.7	30.7	48.4	85-5=80
Bobbin of T1	40.0	40.5	29.4	46.0	For cl.30
Winding of L3	47.0	51.7	34.1	54.6	T105-30=75
Bobbin of L3	45.1	48.9	32.9	53.0	For cl.30
PCB near T1, L3	37.2	37.8	26.9	43.0	T105-30=75
CY7 body	33.5	34.3	26.2	41.1	T125-30=95
CY8 body	30.2	30.6	23.9	35.4	T125-30=95
Optocoupler (U4)	33.4	34.2	25.0	38.3	T100-30=70
Optocoupler (U8)	34.6	35.5	25.7	39.8	T100-30=70
PCB near U5	33.9	34.4	24.0	34.8	T130-30=100
Winding of LF3	31.9	32.1	22.9	33.5	T130-30=100
C15 body	33.7	34.1	24.9	37.2	T105-30=75
C16 body	37.5	38.0	27.2	41.3	T105-30=75
PCB near Q5, Q9	41.7	42.1	35.0	46.4	T130-30=100

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Clause	Requirement + Test	Result - Remark	Verdict

Output wire	26.3	27.0	20.1	29.8	T80-30=50
Enclosure inside near T1	31.5	31.9	23.1	35.7	For cl.30
Enclosure inside near BD1	31.9	32.4	22.3	35.3	For cl.30
Enclosure inside near Q11	30.1	30.5	21.7	33.5	For cl.30
Enclosure outside near T1	18.3	18.5	15.3	22.9	60-5=55
Enclosure outside near BD1	20.8	20.0	16.1	24.9	60-5=55
Enclosure outside near Q11	21.4	21.0	14.3	25.3	60-5=55
Support	16.4	16.2	13.3	20.5	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.					

11.8-43	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	94V / 254.4V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	100V x 1.06 =106V	240V x 1.06=254.4V	
Appliance inlet	41.4	24.7	95-5=90
Internal wire	47.5	27.6	T105-30=75
MOV1	50.2	32.0	T85-30=55
Winding of LF1	62.1	36.1	T130-30=100
CY1 body	64.7	37.4	T125-30=95
Winding of LF2	73.6	40.5	T130-30=100
PCB near BD1	73.2	42.8	T130-30=100
C1 body	62.1	45.6	T105-30=75
Winding of L2	77.4	45.0	T130-30=100
PCB near U6	76.3	53.3	T130-30=100
Winding of L4	78.5	56.8	T130-30=100
CX1 body	60.9	33.2	T110-30=80
Winding of L1	67.9	42.3	T130-30=100
Bobbin of L1	66.1	41.6	For cl.30
PCB near Q1, D4	64.3	41.7	T130-30=100
C2 body	63.4	45.6	T105-30=75
C3 body	63.7	43.3	T105-30=75

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Clause	Requirement + Test	Result - Remark	Verdict

C4 body	64.3	45.1	T105-30=75
C23 body	63.4	48.4	T105-30=75
C48 body	61.6	48.4	T105-30=75
CY5 body	48.3	36.2	T125-30=95
PCB near Q11, Q13	64.0	46.9	T130-30=100
Winding of T1	63.0	46.9	85-5=80
Bobbin of T1	62.1	45.2	For cl.30
Winding of L3	68.4	52.9	T105-30=75
Bobbin of L3	67.5	51.7	For cl.30
PCB near T1, L3	58.8	44.1	T105-30=75
CY7 body	52.2	40.9	T125-30=95
CY8 body	51.8	34.8	T125-30=95
Optocoupler (U4)	49.4	37.3	T100-30=70
Optocoupler (U8)	49.0	38.8	T100-30=70
PCB near U5	45.0	33.1	T130-30=100
Winding of LF3	36.0	33.3	T130-30=100
C15 body	48.1	36.0	T105-30=75
C16 body	51.1	40.4	T105-30=75
PCB near Q5, Q9	49.9	45.5	T130-30=100
Output wire	34.0	29.4	T80-30=50
Enclosure inside near T1	50.4	35.3	For cl.30
Enclosure inside near BD1	44.7	34.8	For cl.30
Enclosure inside near Q11	48.6	32.6	For cl.30
Enclosure outside near T1	34.0	25.8	60-5=55
Enclosure outside near BD1	32.2	25.2	60-5=55
Enclosure outside near Q11	33.4	25.0	60-5=55
Support	30.5	23.3	65-5=60
Supplementary information: Tested on FY62006500 for label up and loaded with empty battery (Phosphoric acid iron Li-ion). Only the most unfavourable result was recorded.			

11.8-44	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	100V x 0.94 =94V	—
	Ambient (°C) .....:	30	—

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Clause	Requirement + Test	Result - Remark	Verdict

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Loaded with Figure 101		Loaded with empty battery, label up	
	Label up	Label down	Li-ion	
Appliance inlet	47.4	45.6	44.9	95-5=90
Internal wire	54.0	52.0	51.1	T105-30=75
MOV1	47.1	45.4	44.6	T85-30=55
Winding of LF1	70.0	67.6	66.4	T130-30=100
CY1 body	72.8	70.3	69.1	T125-30=95
Winding of LF2	79.4	76.7	75.3	T130-30=100
PCB near BD1	75.9	73.3	72.0	T130-30=100
C1 body	67.2	64.9	63.7	T105-30=75
Winding of L2	83.4	80.6	79.1	T130-30=100
PCB near U6	79.5	76.8	76.0	T130-30=100
Winding of L4	76.3	73.7	72.3	T130-30=100
CX1 body	68.7	66.3	65.1	T110-30=80
Winding of L1	73.4	70.8	69.6	T130-30=100
Bobbin of L1	71.4	68.9	67.7	For cl.30
PCB near Q1, D4	66.8	64.5	63.3	T130-30=100
C2 body	59.9	57.7	56.7	T105-30=75
C3 body	60.2	58.0	57.0	T105-30=75
C4 body	60.7	58.6	57.5	T105-30=75
C23 body	61.6	59.4	58.4	T105-30=75
C48 body	59.8	57.7	56.7	T105-30=75
CY5 body	46.8	45.1	44.3	T125-30=95
PCB near Q11, Q13	66.0	63.7	62.5	T130-30=100
Winding of T1	65.8	63.5	62.4	85-5=80
Bobbin of T1	64.9	62.6	61.5	For cl.30
Winding of L3	71.4	68.9	67.7	T105-30=75
Bobbin of L3	70.4	68.0	66.8	For cl.30
PCB near T1, L3	61.5	59.3	58.2	T105-30=75
CY7 body	49.0	47.2	46.4	T125-30=95
CY8 body	48.7	46.9	46.1	T125-30=95

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Clause	Requirement + Test	Result - Remark	Verdict

Optocoupler (U4)	51.7	49.8	49.0	T100-30=70
Optocoupler (U8)	51.4	49.5	48.7	T100-30=70
PCB near U5	47.2	45.4	44.7	T130-30=100
Winding of LF3	33.6	32.2	31.6	T130-30=100
C15 body	45.1	43.4	42.7	T105-30=75
C16 body	48.0	46.3	45.5	T105-30=75
PCB near Q5, Q9	46.9	45.1	44.4	T130-30=100
Output wire	31.6	30.3	29.9	T80-30=50
Enclosure inside near T1	54.4	52.4	51.5	For cl.30
Enclosure inside near BD1	48.3	46.6	45.7	For cl.30
Enclosure inside near Q11	52.5	50.6	49.7	For cl.30
Enclosure outside near T1	35.9	34.5	33.9	60-5=55
Enclosure outside near BD1	34.1	32.8	32.2	60-5=55
Enclosure outside near Q11	35.3	33.9	33.3	60-5=55
Support	32.3	31.0	30.4	65-5=60
Supplementary information: Tested on FY63006500, only the most unfavourable result was recorded.				

11.8-45	**TABLE: Heating test**			**P**
	Test voltage (V) .....:		240V x 1.06=254.4V	—
	Ambient (°C) .....:		30	—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Loaded with Figure 101		Loaded with empty battery, label up	
	Label up	Label down	Li-ion	
Appliance inlet	22.7	28.7	24.8	95-5=90
Internal wire	21.4	26.5	26.8	T105-30=75
MOV1	25.4	29.9	30.4	T85-30=55
Winding of LF1	31.4	36.6	34.7	T130-30=100
CY1 body	34.2	38.9	35.8	T125-30=95
Winding of LF2	36.5	41.4	39.4	T130-30=100
PCB near BD1	37.4	41.2	40.7	T130-30=100
C1 body	38.0	45.1	43.3	T105-30=75
Winding of L2	38.6	45.5	43.1	T130-30=100

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

PCB near U6	46.3	52.6	49.0	T130-30=100
Winding of L4	51.5	56.7	34.3	T130-30=100
CX1 body	23.1	32.6	44.6	T110-30=80
Winding of L1	34.7	41.1	44.5	T130-30=100
Bobbin of L1	34.8	41.2	43.2	For cl.30
PCB near Q1, D4	33.0	40.8	48.6	T130-30=100
C2 body	37.6	44.2	49.7	T105-30=75
C3 body	35.3	42.2	41.2	T105-30=75
C4 body	38.0	43.9	38.8	T105-30=75
C23 body	42.0	47.7	32.5	T105-30=75
C48 body	41.8	48.3	35.1	T105-30=75
CY5 body	31.5	34.7	53.2	T125-30=95
PCB near Q11, Q13	41.6	45.1	32.1	T130-30=100
Winding of T1	43.8	47.6	40.6	85-5=80
Bobbin of T1	41.0	45.0	40.2	For cl.30
Winding of L3	50.6	54.3	41.3	T105-30=75
Bobbin of L3	46.8	51.0	39.9	For cl.30
PCB near T1, L3	38.7	40.9	42.9	T105-30=75
CY7 body	34.2	39.7	42.9	T125-30=95
CY8 body	28.8	34.7	46.8	T125-30=95
Optocoupler (U4)	32.5	37.6	34.3	T100-30=70
Optocoupler (U8)	34.3	38.9	36.1	T100-30=70
PCB near U5	32.6	35.2	31.9	T130-30=100
Winding of LF3	27.4	31.1	31.3	T130-30=100
C15 body	31.1	33.8	34.1	T105-30=75
C16 body	36.3	38.8	38.5	T105-30=75
PCB near Q5, Q9	38.7	41.3	42.3	T130-30=100
Output wire	25.3	27.7	28.0	T80-30=50
Enclosure inside near T1	32.2	33.4	35.2	For cl.30
Enclosure inside near BD1	25.8	29.5	34.3	For cl.30
Enclosure inside near Q11	33.3	39.5	33.0	For cl.30
Enclosure outside near T1	20.7	19.3	30.0	60-5=55

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure outside near BD1	25.5	26.2	23.0	60-5=55
Enclosure outside near Q11	20.7	27.5	23.8	60-5=55
Support	18.9	18.9	20.3	65-5=60
Supplementary information: Tested on FY63006500, only the most unfavourable result was recorded.				

11.8-46	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	94V / 254.4V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**
	100V x 1.06 =106V	240V x 1.06=254.4V	
Appliance inlet	40.3	26.2	95-5=90
Internal wire	46.3	25.8	T105-30=75
MOV1	40.1	26.9	T85-30=55
Winding of LF1	60.8	30.8	T130-30=100
CY1 body	63.3	32.7	T125-30=95
Winding of LF2	69.2	35.5	T130-30=100
PCB near BD1	66.1	37.8	T130-30=100
C1 body	58.2	39.8	T105-30=75
Winding of L2	72.9	39.9	T130-30=100
PCB near U6	69.9	49.7	T130-30=100
Winding of L4	66.4	54.8	T130-30=100
CX1 body	59.6	29.9	T110-30=80
Winding of L1	63.8	37.9	T130-30=100
Bobbin of L1	62.0	37.2	For cl.30
PCB near Q1, D4	57.9	37.4	T130-30=100
C2 body	51.6	41.8	T105-30=75
C3 body	51.9	39.1	T105-30=75
C4 body	52.4	41.0	T105-30=75
C23 body	53.1	45.8	T105-30=75
C48 body	51.5	44.6	T105-30=75
CY5 body	39.8	30.6	T125-30=95
PCB near Q11, Q13	57.1	44.3	T130-30=100

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

Winding of T1	57.0	43.1	85-5=80
Bobbin of T1	56.1	42.4	For cl.30
Winding of L3	62.0	50.9	T105-30=75
Bobbin of L3	61.1	48.9	For cl.30
PCB near T1, L3	53.0	36.9	T105-30=75
CY7 body	41.8	35.9	T125-30=95
CY8 body	41.5	30.4	T125-30=95
Optocoupler (U4)	44.2	34.6	T100-30=70
Optocoupler (U8)	43.9	34.4	T100-30=70
PCB near U5	40.1	32.3	T130-30=100
Winding of LF3	27.8	28.8	T130-30=100
C15 body	38.3	36.1	T105-30=75
C16 body	40.9	35.1	T105-30=75
PCB near Q5, Q9	39.9	40.4	T130-30=100
Output wire	26.1	24.1	T80-30=50
Enclosure inside near T1	46.6	28.2	For cl.30
Enclosure inside near BD1	41.2	23.7	For cl.30
Enclosure inside near Q11	44.9	31.8	For cl.30
Enclosure outside near T1	29.9	18.0	60-5=55
Enclosure outside near BD1	28.3	19.6	60-5=55
Enclosure outside near Q11	29.3	23.8	60-5=55
Support	26.6	16.7	65-5=60
Supplementary information: Tested on FY65706000 for label up and loaded with empty battery (Phosphoric acid iron Li-ion). Only the most unfavourable result was recorded.			

11.8-47	**TABLE: Heating test**			**P**
	Test voltage (V) .....:	94V / 254.4V		—
	Ambient (°C) .....:	30		—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**		**Max. temperature rise limit, Δ T (K)**	
	100V x 1.06 =106V	240V x 1.06=254.4V		
Appliance inlet	47.4	21.9	95-5=90	
Internal wire	53.9	22.2	T105-30=75	
MOV1	47.2	23.1	T85-30=55	

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

Winding of LF1	69.5	27.9	T130-30=100
CY1 body	72.3	29.1	T125-30=95
Winding of LF2	78.7	31.7	T130-30=100
PCB near BD1	75.3	34.3	T130-30=100
C1 body	66.8	37.4	T105-30=75
Winding of L2	82.6	37.1	T130-30=100
PCB near U6	79.5	45.9	T130-30=100
Winding of L4	75.6	49.6	T130-30=100
CX1 body	68.2	24.7	T110-30=80
Winding of L1	72.8	34.5	T130-30=100
Bobbin of L1	70.9	34.4	For cl.30
PCB near Q1, D4	66.4	34.4	T130-30=100
C2 body	59.6	38.6	T105-30=75
C3 body	59.9	36.3	T105-30=75
C4 body	60.5	38.1	T105-30=75
C23 body	61.3	43.9	T105-30=75
C48 body	59.6	41.7	T105-30=75
CY5 body	46.9	30.6	T125-30=95
PCB near Q11, Q13	65.6	41.5	T130-30=100
Winding of T1	65.4	42.4	85-5=80
Bobbin of T1	64.5	40.4	For cl.30
Winding of L3	70.9	46.7	T105-30=75
Bobbin of L3	69.9	45.7	For cl.30
PCB near T1, L3	61.2	36.6	T105-30=75
CY7 body	49.0	34.1	T125-30=95
CY8 body	48.7	30.0	T125-30=95
Optocoupler (U4)	51.6	33.9	T100-30=70
Optocoupler (U8)	51.3	33.5	T100-30=70
PCB near U5	47.2	32.4	T130-30=100
Winding of LF3	33.8	27.3	T130-30=100
C15 body	45.2	30.2	T105-30=75
C16 body	48.1	34.6	T105-30=75

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

PCB near Q5, Q9	46.9	35.2	T130-30=100
Output wire	32.0	23.3	T80-30=50
Enclosure inside near T1	54.2	31.6	For cl.30
Enclosure inside near BD1	48.3	29.1	For cl.30
Enclosure inside near Q11	52.4	33.2	For cl.30
Enclosure outside near T1	36.1	20.4	60-5=55
Enclosure outside near BD1	34.4	28.2	60-5=55
Enclosure outside near Q11	35.5	20.8	60-5=55
Support	32.6	18.6	65-5=60
Supplementary information: Tested on FY67206000 for label up and loaded with empty battery (Li-ion). Only the most unfavourable result was recorded.			

11.8-48	**TABLE: Heating test**			**P**
	Test voltage (V) .....:	100V x 0.94=94V		—
	Ambient (°C) .....:	30		—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Loaded with Figure 101		Loaded with empty battery, label up	
	Label up	Label down	Phosphoric acid iron Li-ion	
Appliance inlet	52.5	50.4	43.2	95-5=90
Internal wire	53.2	51.0	43.8	T105-30=75
MOV1	42.6	40.8	34.6	T85-30=55
Winding of LF1	71.4	68.7	59.7	T130-30=100
CY1 body	72.9	70.1	61.0	T125-30=95
Winding of LF2	82.9	79.8	69.7	T130-30=100
PCB near BD1	81.6	78.6	68.6	T130-30=100
C1 body	70.8	68.1	59.2	T105-30=75
Winding of L2	86.2	83.1	72.6	T130-30=100
PCB near U6	84.0	80.9	70.7	T130-30=100
Winding of L4	80.3	77.3	67.5	T130-30=100
CX1 body	69.4	66.7	57.9	T110-30=80
Winding of L1	78.9	75.9	66.2	T130-30=100
Bobbin of L1	76.8	73.9	64.4	For cl.30

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Clause	Requirement + Test	Result - Remark	Verdict

PCB near Q1, D4	74.6	71.8	62.5	T130-30=100
C2 body	69.2	66.6	57.8	T105-30=75
C3 body	68.8	66.1	57.4	T105-30=75
C4 body	70.2	67.5	58.6	T105-30=75
C23 body	71.1	68.4	59.5	T105-30=75
C48 body	70.5	67.8	58.9	T105-30=75
CY5 body	45.7	43.7	37.2	T125-30=95
PCB near Q11, Q13	70.3	67.6	58.7	T130-30=100
Winding of T1	69.6	67.0	58.1	85-5=80
Bobbin of T1	68.7	66.0	57.3	For cl.30
Winding of L3	71.4	68.7	59.7	T105-30=75
Bobbin of L3	70.5	67.8	58.9	For cl.30
PCB near T1, L3	59.2	56.9	49.1	T105-30=75
CY7 body	47.8	45.8	39.1	T125-30=95
CY8 body	47.6	45.6	38.9	T125-30=95
Optocoupler (U4)	50.6	48.5	41.6	T100-30=70
Optocoupler (U8)	50.4	48.3	41.3	T100-30=70
PCB near U5	48.1	46.1	39.4	T130-30=100
Winding of LF3	44.5	42.6	36.2	T130-30=100
C15 body	44.5	42.6	36.2	T105-30=75
C16 body	48.1	46.1	39.4	T105-30=75
PCB near Q5, Q9	53.5	51.3	44.0	T130-30=100
Output wire	33.7	32.1	26.8	T80-30=50
Enclosure inside near T1	54.2	52.1	44.7	For cl.30
Enclosure inside near BD1	54.0	51.9	44.5	For cl.30
Enclosure inside near Q11	53.7	51.6	44.3	For cl.30
Enclosure outside near T1	43.2	41.3	35.1	60-5=55
Enclosure outside near BD1	42.5	40.7	34.5	60-5=55
Enclosure outside near Q11	42.1	40.3	34.1	60-5=55
Support	36.1	34.4	28.9	65-5=60
Supplementary information: Tested on FY68406000, only the most unfavourable result was recorded.				

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Clause	Requirement + Test	Result - Remark	Verdict

11.8-49	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	240V x 1.06=254.4V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**			**Max. temperature rise limit, Δ T (K)**
	Loaded with Figure 101		Loaded with empty battery, label up	
	Label up	Label down	Phosphoric acid iron Li-ion	
Appliance inlet	28.4	29.0	25.2	95-5=90
Internal wire	27.9	30.1	26.2	T105-30=75
MOV1	30.3	32.0	27.9	T85-30=55
Winding of LF1	37.5	38.2	32.3	T130-30=100
CY1 body	39.2	39.2	33.8	T125-30=95
Winding of LF2	42.5	42.2	36.2	T130-30=100
PCB near BD1	43.3	42.2	37.4	T130-30=100
C1 body	47.0	45.3	40.4	T105-30=75
Winding of L2	46.9	45.1	39.9	T130-30=100
PCB near U6	55.5	52.9	48.0	T130-30=100
Winding of L4	60.0	56.0	51.4	T130-30=100
CX1 body	32.9	32.6	28.9	T110-30=80
Winding of L1	44.1	41.3	35.8	T130-30=100
Bobbin of L1	43.4	40.8	35.4	For cl.30
PCB near Q1, D4	43.5	41.4	37.0	T130-30=100
C2 body	48.5	45.4	40.7	T105-30=75
C3 body	45.9	43.1	38.3	T105-30=75
C4 body	48.4	44.7	39.7	T105-30=75
C23 body	53.8	50.0	45.3	T105-30=75
C48 body	51.6	48.1	43.5	T105-30=75
CY5 body	36.7	34.8	32.4	T125-30=95
PCB near Q11, Q13	49.6	46.5	42.4	T130-30=100
Winding of T1	52.4	50.0	45.4	85-5=80
Bobbin of T1	49.8	47.6	43.2	For cl.30
Winding of L3	57.3	54.9	50.4	T105-30=75
Bobbin of L3	55.7	53.3	49.0	For cl.30

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Clause	Requirement + Test	Result - Remark	Verdict

PCB near T1, L3	44.7	40.7	37.4	T105-30=75
CY7 body	43.5	42.8	39.0	T125-30=95
CY8 body	36.4	37.5	34.5	T125-30=95
Optocoupler (U4)	40.6	39.2	36.1	T100-30=70
Optocoupler (U8)	41.6	40.5	37.3	T100-30=70
PCB near U5	39.9	36.7	34.1	T130-30=100
Winding of LF3	34.9	33.0	30.6	T130-30=100
C15 body	37.1	34.9	32.5	T105-30=75
C16 body	42.5	39.6	36.6	T105-30=75
PCB near Q5, Q9	47.5	45.2	43.1	T130-30=100
Output wire	28.8	27.3	25.3	T80-30=50
Enclosure inside near T1	37.9	36.0	32.9	For cl.30
Enclosure inside near BD1	36.9	35.4	32.0	For cl.30
Enclosure inside near Q11	36.6	35.2	32.0	For cl.30
Enclosure outside near T1	27.8	25.2	23.4	60-5=55
Enclosure outside near BD1	37.9	24.1	21.9	60-5=55
Enclosure outside near Q11	26.0	25.3	22.8	60-5=55
Support	26.4	28.6	20.8	65-5=60
Supplementary information: Tested on FY68406000, only the most unfavourable result was recorded.				

11.8-50	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	100V x 0.94=94V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested on FY71405500	Tested on FY73005500		Tested on FY75605400	
	Li-ion	Lead-acid	Phosphoric acid iron Li-ion	Li-ion	
Appliance inlet	43.5	37.2	38.7	41.9	95-5=90
Internal wire	49.8	42.8	44.5	48.3	T105-30=75
MOV1	43.7	45.3	47.1	42.0	T85-30=55
Winding of LF1	54.8	56.3	58.6	64.7	T130-30=100
CY1 body	55.6	58.7	61.1	54.1	T125-30=95

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Clause	Requirement + Test	Result - Remark	Verdict

Winding of LF2	60.9	64.2	66.9	71.8	T130-30=100
PCB near BD1	66.0	61.3	63.8	69.0	T130-30=100
C1 body	62.3	54.0	56.2	65.1	T105-30=75
Winding of L2	64.2	67.7	70.4	71.4	T130-30=100
PCB near U6	56.8	64.9	67.6	71.7	T130-30=100
Winding of L4	58.3	61.6	64.1	68.8	T130-30=100
CX1 body	63.6	55.2	57.4	62.2	T110-30=80
Winding of L1	45.9	59.1	61.6	66.1	T130-30=100
Bobbin of L1	45.2	57.5	59.8	65.2	For cl.30
PCB near Q1, D4	57.8	53.6	55.8	56.3	T130-30=100
C2 body	55.4	57.5	59.9	57.8	T105-30=75
C3 body	54.5	57.8	60.2	56.8	T105-30=75
C4 body	56.2	58.3	60.7	58.6	T105-30=75
C23 body	57.0	59.2	61.6	59.5	T105-30=75
C48 body	55.1	57.5	59.8	57.4	T105-30=75
CY5 body	51.2	45.0	46.8	49.6	T125-30=95
PCB near Q11, Q13	57.1	57.3	59.6	59.6	T130-30=100
Winding of T1	57.0	57.1	59.4	59.4	85-5=80
Bobbin of T1	56.2	56.3	58.6	58.5	For cl.30
Winding of L3	66.2	62.1	64.7	64.8	T105-30=75
Bobbin of L3	65.3	61.3	63.8	63.9	For cl.30
PCB near T1, L3	60.9	53.2	55.4	59.4	T105-30=75
CY7 body	45.1	47.1	49.0	43.5	T125-30=95
CY8 body	44.7	46.7	48.7	43.1	T125-30=95
Optocoupler (U4)	44.3	44.5	46.3	46.3	T100-30=70
Optocoupler (U8)	43.9	44.2	46.0	45.8	T100-30=70
PCB near U5	40.3	40.5	42.1	38.7	T130-30=100
Winding of LF3	35.9	32.2	33.5	34.2	T130-30=100
C15 body	41.0	43.3	45.1	39.3	T105-30=75
C16 body	44.3	46.2	48.0	42.7	T105-30=75
PCB near Q5, Q9	43.2	45.0	46.9	44.8	T130-30=100
Output wire	26.3	30.4	31.6	24.5	T80-30=50

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure inside near T1	44.1	46.9	48.8	44.8	For cl.30
Enclosure inside near BD1	41.4	41.5	43.2	42.0	For cl.30
Enclosure inside near Q11	42.8	45.2	47.0	43.4	For cl.30
Enclosure outside near T1	32.6	30.3	31.6	33.2	60-5=55
Enclosure outside near BD1	30.4	28.7	29.9	30.8	60-5=55
Enclosure outside near Q11	31.5	29.8	31.0	32.0	60-5=55
Support	22.9	27.1	28.2	30.3	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.					

11.8-51	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	240V x 1.06=254.4V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested on FY71405500	Tested on FY73005500		Tested on FY75605400	
	Li-ion	Lead-acid	Phosphoric acid iron Li-ion	Li-ion	
Appliance inlet	23.3	27.1	22.7	18.8	95-5=90
Internal wire	24.2	25.1	24.3	18.5	T105-30=75
MOV1	28.1	25.8	28.6	21.5	T85-30=55
Winding of LF1	31.6	30.8	32.4	25.1	T130-30=100
CY1 body	33.2	34.4	34.0	26.7	T125-30=95
Winding of LF2	36.4	37.2	36.6	28.6	T130-30=100
PCB near BD1	38.4	40.3	38.8	31.9	T130-30=100
C1 body	39.6	42.2	40.5	31.2	T105-30=75
Winding of L2	40.5	42.5	41.3	32.1	T130-30=100
PCB near U6	49.3	51.3	47.1	34.5	T130-30=100
Winding of L4	48.9	55.3	51.9	43.6	T130-30=100
CX1 body	28.9	30.1	30.8	23.1	T110-30=80
Winding of L1	37.7	40.5	38.3	27.9	T130-30=100
Bobbin of L1	37.3	40.6	37.7	27.8	For cl.30
PCB near Q1, D4	38.0	39.9	38.8	31.2	T130-30=100
C2 body	41.5	44.5	43.0	32.8	T105-30=75

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Clause	Requirement + Test	Result - Remark	Verdict

C3 body	39.3	41.9	40.2	30.6	T105-30=75
C4 body	40.7	44.0	41.2	31.5	T105-30=75
C23 body	46.6	48.6	47.5	37.7	T105-30=75
C48 body	43.5	47.1	46.8	36.2	T105-30=75
CY5 body	41.7	32.8	33.0	27.3	T125-30=95
PCB near Q11, Q13	40.7	45.9	44.8	36.0	T130-30=100
Winding of T1	41.5	44.6	42.4	36.6	85-5=80
Bobbin of T1	40.4	43.6	40.3	34.3	For cl.30
Winding of L3	49.9	50.3	53.5	42.0	T105-30=75
Bobbin of L3	48.5	49.9	51.9	39.8	For cl.30
PCB near T1, L3	39.1	39.7	44.0	32.4	T105-30=75
CY7 body	37.3	39.1	39.6	31.3	T125-30=95
CY8 body	32.2	33.2	34.2	26.8	T125-30=95
Optocoupler (U4)	34.6	36.6	37.1	29.5	T100-30=70
Optocoupler (U8)	35.8	36.9	38.4	30.1	T100-30=70
PCB near U5	31.5	35.7	32.8	25.9	T130-30=100
Winding of LF3	29.9	29.8	31.4	24.4	T130-30=100
C15 body	33.5	32.8	34.5	27.5	T105-30=75
C16 body	37.6	37.4	38.2	30.6	T105-30=75
PCB near Q5, Q9	41.3	43.4	42.9	38.0	T130-30=100
Output wire	27.5	22.4	28.6	22.3	T80-30=50
Enclosure inside near T1	32.5	31.9	32.6	24.6	For cl.30
Enclosure inside near BD1	29.9	31.5	31.4	26.2	For cl.30
Enclosure inside near Q11	34.5	34.4	32.9	27.6	For cl.30
Enclosure outside near T1	21.1	22.0	21.7	17.7	60-5=55
Enclosure outside near BD1	26.6	19.9	21.9	17.3	60-5=55
Enclosure outside near Q11	22.8	24.5	24.7	18.8	60-5=55
Support	20.1	17.9	26.2	15.9	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.					

11.8-52	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	100V x 0.94=94V	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested on FY75605400	Tested on FY80005000		Tested on FY82804800	
	Phosphoric acid iron Li-ion	Li-ion	Phosphoric acid iron Li-ion	Phosphoric acid iron Li-ion	
Appliance inlet	38.6	49.1	49.6	40.6	95-5=90
Internal wire	44.7	49.8	50.2	46.5	T105-30=75
MOV1	38.8	46.1	41.4	49.1	T85-30=55
Winding of LF1	60.3	67.2	67.1	60.7	T130-30=100
CY1 body	50.2	68.7	68.9	63.2	T125-30=95
Winding of LF2	67.1	78.3	77.4	69.0	T130-30=100
PCB near BD1	64.4	77.0	77.3	65.9	T130-30=100
C1 body	60.6	66.7	67.0	58.2	T105-30=75
Winding of L2	66.6	81.4	81.6	72.6	T130-30=100
PCB near U6	67.0	79.3	79.5	71.6	T130-30=100
Winding of L4	64.2	75.8	76.0	73.7	T130-30=100
CX1 body	57.9	65.3	65.6	59.5	T110-30=80
Winding of L1	61.6	74.4	74.6	66.3	T130-30=100
Bobbin of L1	60.8	72.4	72.6	64.5	For cl.30
PCB near Q1, D4	52.3	70.3	70.6	60.3	T130-30=100
C2 body	53.7	65.1	65.5	61.9	T105-30=75
C3 body	52.8	64.7	65.0	62.2	T105-30=75
C4 body	54.5	66.1	66.4	62.8	T105-30=75
C23 body	55.3	67.0	67.3	61.9	T105-30=75
C48 body	53.4	66.3	66.6	60.2	T105-30=75
CY5 body	46.0	42.5	43.1	47.3	T125-30=95
PCB near Q11, Q13	55.4	66.2	66.5	62.5	T130-30=100
Winding of T1	55.3	65.5	65.8	61.5	85-5=80
Bobbin of T1	54.5	64.6	64.9	60.7	For cl.30
Winding of L3	60.4	67.3	67.6	66.8	T105-30=75
Bobbin of L3	59.5	66.3	66.6	65.9	For cl.30
PCB near T1, L3	55.3	55.6	56.0	57.5	T105-30=75

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Clause	Requirement + Test	Result - Remark	Verdict

CY7 body	40.2	44.6	44.4	51.0	T125-30=95
CY8 body	39.8	44.3	44.2	50.6	T125-30=95
Optocoupler (U4)	42.8	47.3	47.0	48.3	T100-30=70
Optocoupler (U8)	42.4	47.0	46.8	48.0	T100-30=70
PCB near U5	35.6	44.9	44.7	44.0	T130-30=100
Winding of LF3	31.3	41.4	41.2	35.3	T130-30=100
C15 body	36.2	41.4	41.2	47.1	T105-30=75
C16 body	39.4	44.9	45.4	50.0	T105-30=75
PCB near Q5, Q9	41.4	50.0	50.5	48.8	T130-30=100
Output wire	22.1	31.1	31.7	33.4	T80-30=50
Enclosure inside near T1	41.4	50.8	51.2	49.3	For cl.30
Enclosure inside near BD1	38.7	50.6	51.0	43.7	For cl.30
Enclosure inside near Q11	40.1	50.3	50.7	47.6	For cl.30
Enclosure outside near T1	30.4	40.1	40.7	33.4	60-5=55
Enclosure outside near BD1	28.1	39.5	40.0	31.7	60-5=55
Enclosure outside near Q11	29.3	39.1	39.7	32.8	60-5=55
Support	27.6	33.3	34.0	30.0	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.					

11.8-53	**TABLE: Heating test**				**P**
	Test voltage (V) .....:	240V x 1.06=254.4V			—
	Ambient (°C) .....:	30			—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested on FY75605400	Tested on FY80005000		Tested on FY82804800	
	Phosphoric acid iron Li-ion	Li-ion	Phosphoric acid iron Li-ion	Phosphoric acid iron Li-ion	
Appliance inlet	19.6	33.6	26.2	32.1	95-5=90
Internal wire	20.0	32.6	25.1	31.1	T105-30=75
MOV1	23.8	34.0	27.2	40.1	T85-30=55
Winding of LF1	27.4	39.7	31.8	40.0	T130-30=100
CY1 body	29.0	43.2	35.2	38.9	T125-30=95

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Clause	Requirement + Test	Result - Remark	Verdict

Winding of LF2	30.9	51.4	43.0	43.2	T130-30=100
PCB near BD1	34.2	47.1	38.8	40.6	T130-30=100
C1 body	33.5	49.3	40.9	42.6	T105-30=75
Winding of L2	34.4	49.6	41.1	47.2	T130-30=100
PCB near U6	36.8	58.9	51.5	45.7	T130-30=100
Winding of L4	46.3	63.4	56.1	27.2	T130-30=100
CX1 body	25.4	38.5	30.9	26.5	T110-30=80
Winding of L1	30.2	48.8	41.3	26.2	T130-30=100
Bobbin of L1	30.1	46.8	38.3	32.0	For cl.30
PCB near Q1, D4	33.5	46.0	37.9	34.7	T130-30=100
C2 body	35.1	47.0	42.2	37.7	T105-30=75
C3 body	32.9	47.4	39.6	39.3	T105-30=75
C4 body	33.8	49.1	41.2	42.0	T105-30=75
C23 body	40.0	53.5	46.3	42.4	T105-30=75
C48 body	38.5	52.8	45.7	51.8	T105-30=75
CY5 body	29.6	36.8	29.3	31.6	T125-30=95
PCB near Q11, Q13	38.3	51.1	44.1	44.2	T130-30=100
Winding of T1	38.9	52.2	44.1	46.3	85-5=80
Bobbin of T1	36.6	51.0	42.9	44.9	For cl.30
Winding of L3	44.5	61.4	54.2	52.1	T105-30=75
Bobbin of L3	42.1	59.4	52.2	51.2	For cl.30
PCB near T1, L3	34.7	44.2	36.8	39.0	T105-30=75
CY7 body	33.6	43.1	35.9	37.9	T125-30=95
CY8 body	29.1	37.2	29.8	30.9	T125-30=95
Optocoupler (U4)	31.8	41.0	34.1	35.1	T100-30=70
Optocoupler (U8)	32.4	42.4	35.4	35.1	T100-30=70
PCB near U5	28.2	39.6	32.0	34.3	T130-30=100
Winding of LF3	26.7	34.3	26.9	27.8	T130-30=100
C15 body	29.8	37.7	30.0	38.3	T105-30=75
C16 body	32.9	43.1	35.3	36.5	T105-30=75
PCB near Q5, Q9	40.3	46.1	39.3	42.1	T130-30=100
Output wire	24.6	31.2	24.0	22.0	T80-30=50

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure inside near T1	26.9	39.3	30.9	33.6	For cl.30
Enclosure inside near BD1	28.5	32.7	25.3	35.6	For cl.30
Enclosure inside near Q11	29.9	36.0	29.6	31.8	For cl.30
Enclosure outside near T1	20.0	30.3	22.0	25.8	60-5=55
Enclosure outside near BD1	19.6	32.0	23.2	22.3	60-5=55
Enclosure outside near Q11	21.1	26.5	21.1	24.9	60-5=55
Support	18.2	24.3	18.2	22.7	65-5=60
Supplementary information: Label up and loaded with empty battery. Only the most unfavourable result was recorded.					

11.8-54	**TABLE: Heating test**					**P**
	Test voltage (V) .....:	100V x 0.94=94V				—
	Ambient (°C) .....:	30				—
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**					**Max. temperature rise limit, Δ T (K)**
	Tested on FY84004800	Tested on FY FY86404600	Tested on FY87004600			
	Loaded with empty battery			Loaded with figure 101		
	Li-ion	Phosphoric acid iron Li-ion	Lead-acid			
Appliance inlet	33.7	40.2	42.9	42.3		95-5=90
Internal wire	39.3	46.1	49.1	48.4		T105-30=75
MOV1	33.8	48.8	51.8	51.1		T85-30=55
Winding of LF1	53.8	60.5	64.0	63.2		T130-30=100
CY1 body	44.4	63.0	66.6	65.8		T125-30=95
Winding of LF2	60.0	68.8	72.7	74.8		T130-30=100
PCB near BD1	57.5	65.7	69.5	71.5		T130-30=100
C1 body	54.1	58.0	61.4	68.6		T105-30=75
Winding of L2	59.6	72.5	76.5	75.6		T130-30=100
PCB near U6	59.9	69.5	73.5	75.5		T130-30=100
Winding of L4	60.6	66.1	69.9	71.8		T130-30=100
CX1 body	51.5	59.3	62.8	62.0		T110-30=80
Winding of L1	55.0	63.5	67.1	66.3		T130-30=100
Bobbin of L1	54.2	61.7	65.3	64.5		For cl.30

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Clause	Requirement + Test	Result - Remark	Verdict

PCB near Q1, D4	46.4	57.6	61.0	62.8	T130-30=100
C2 body	47.7	61.7	65.3	64.5	T105-30=75
C3 body	46.8	62.0	65.7	64.8	T105-30=75
C4 body	48.4	62.6	66.3	65.4	T105-30=75
C23 body	49.1	63.5	67.2	66.3	T105-30=75
C48 body	47.3	61.7	65.3	64.5	T105-30=75
CY5 body	40.5	48.5	51.6	50.8	T125-30=95
PCB near Q11, Q13	49.2	61.5	65.1	64.2	T130-30=100
Winding of T1	49.1	61.3	64.9	64.1	85-5=80
Bobbin of T1	48.3	60.4	64.0	63.2	For cl.30
Winding of L3	53.8	66.6	70.4	69.5	T105-30=75
Bobbin of L3	53.0	65.7	69.5	68.6	For cl.30
PCB near T1, L3	49.1	57.2	60.6	59.8	T105-30=75
CY7 body	35.1	50.7	53.9	53.1	T125-30=95
CY8 body	34.8	50.3	53.5	52.7	T125-30=95
Optocoupler (U4)	37.5	48.0	51.0	50.3	T100-30=70
Optocoupler (U8)	37.1	47.7	50.7	50.0	T100-30=70
PCB near U5	30.8	43.7	46.6	45.9	T130-30=100
Winding of LF3	26.9	34.9	37.4	36.8	T130-30=100
C15 body	31.4	46.8	49.7	49.0	T105-30=75
C16 body	34.4	49.7	52.8	52.1	T105-30=75
PCB near Q5, Q9	36.2	48.5	51.6	47.8	T130-30=100
Output wire	22.8	33.0	35.4	29.0	T80-30=50
Enclosure inside near T1	42.5	50.5	53.6	56.8	For cl.30
Enclosure inside near BD1	39.7	44.8	47.7	50.6	For cl.30
Enclosure inside near Q11	41.1	48.7	51.8	54.9	For cl.30
Enclosure outside near T1	31.2	33.0	35.4	36.6	60-5=55
Enclosure outside near BD1	28.9	31.3	33.6	34.8	60-5=55
Enclosure outside near Q11	30.0	32.4	34.8	36.0	60-5=55
Support	28.3	29.6	31.9	32.9	65-5=60
Supplementary information: Label up. Only the most unfavourable result was recorded.					

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Clause	Requirement + Test	Result - Remark	Verdict

11.8-55	**TABLE: Heating test**		**P**
	Test voltage (V) .....:	240V x 1.06=254.4V	—
	Ambient (°C) .....:	30	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**				**Max. temperature rise limit, Δ T (K)**
	Tested on FY84004800	Tested on FY FY86404600	Tested on FY87004600		
	Loaded with empty battery			Loaded with figure 101	
	Li-ion	Phosphoric acid iron Li-ion	Lead-acid		
Appliance inlet	27.1	25.9	26.8	30.5	95-5=90
Internal wire	27.2	24.1	26.2	31.5	T105-30=75
MOV1	27.7	28.6	26.7	32.5	T85-30=55
Winding of LF1	32.2	32.9	33.4	38.7	T130-30=100
CY1 body	34.7	35.6	36.3	38.9	T125-30=95
Winding of LF2	38.2	38.7	39.4	42.3	T130-30=100
PCB near BD1	40.2	41.4	42.1	43.1	T130-30=100
C1 body	43.8	43.8	44.5	46.2	T105-30=75
Winding of L2	43.0	45.0	54.5	45.4	T130-30=100
PCB near U6	51.7	54.2	53.5	53.5	T130-30=100
Winding of L4	55.3	59.5	56.8	55.3	T130-30=100
CX1 body	26.8	32.8	31.1	34.2	T110-30=80
Winding of L1	41.7	41.7	40.6	42.1	T130-30=100
Bobbin of L1	39.9	40.5	41.0	41.2	For cl.30
PCB near Q1, D4	39.6	41.6	40.6	42.2	T130-30=100
C2 body	42.9	46.2	46.6	45.3	T105-30=75
C3 body	40.9	43.4	42.5	43.2	T105-30=75
C4 body	43.3	45.5	45.0	45.1	T105-30=75
C23 body	48.1	50.5	50.1	49.6	T105-30=75
C48 body	46.4	50.0	49.5	47.8	T105-30=75
CY5 body	30.7	33.4	32.9	33.6	T125-30=95
PCB near Q11, Q13	44.0	48.1	48.0	46.6	T130-30=100
Winding of T1	46.2	50.4	48.1	46.4	85-5=80
Bobbin of T1	45.0	47.8	47.2	45.3	For cl.30

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Clause	Requirement + Test	Result - Remark	Verdict

Winding of L3	51.7	56.7	57.5	54.3	T105-30=75
Bobbin of L3	49.9	56.2	55.7	54.1	For cl.30
PCB near T1, L3	42.2	41.2	40.8	40.5	T105-30=75
CY7 body	37.0	40.1	40.7	41.5	T125-30=95
CY8 body	29.8	33.2	34.6	35.3	T125-30=95
Optocoupler (U4)	34.4	37.5	37.4	38.4	T100-30=70
Optocoupler (U8)	35.9	38.1	37.4	41.0	T100-30=70
PCB near U5	33.7	36.4	35.9	36.9	T130-30=100
Winding of LF3	27.8	29.6	29.7	31.4	T130-30=100
C15 body	31.1	33.5	38.1	32.6	T105-30=75
C16 body	36.2	38.4	37.0	37.8	T105-30=75
PCB near Q5, Q9	38.5	43.2	43.2	41.4	T130-30=100
Output wire	25.5	27.0	24.8	28.2	T80-30=50
Enclosure inside near T1	37.6	36.7	34.1	37.6	For cl.30
Enclosure inside near BD1	37.8	33.2	35.4	40.5	For cl.30
Enclosure inside near Q11	32.9	34.9	40.7	37.7	For cl.30
Enclosure outside near T1	26.0	27.7	24.6	27.7	60-5=55
Enclosure outside near BD1	25.6	24.6	24.9	26.1	60-5=55
Enclosure outside near Q11	22.1	25.6	23.9	25.6	60-5=55
Support	20.1	23.0	22.4	24.1	65-5=60
Supplementary information: Label up. Only the most unfavourable result was recorded.					

11.8	**TABLE: Heating Test, resistance method**					**N/A**
	Test voltage (V) ..... :			--		**—**
	Ambient, t_1 (°C) ..... :			--		**—**
	Ambient, t_2 (°C) ..... :			--		**—**
Temperature rise of winding	**R_1 (Ω)**	**R_2 (Ω)**	**ΔT (K)**	**Max. ΔT (K)**	**Insulation class**	
--						
Supplementary information:						

13.2	**TABLE: Leakage Current**		**P**
	Heating appliances: 1,15 x rated input (W) ..... :	--	**—**

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Clause	Requirement + Test	Result - Remark	Verdict

	Motor-operated and combined appliances: 1,06 x rated voltage (V)..... :	1.06 x 100 V = 106V; 1.06 x 240 V = 254.4V	—

Leakage current between:	**I (mA)**	**Max. allowed I (mA)**
L/N – Output terminal	0.25 peak	0.35 peak
L/N – Enclosure	0.05 peak	0.35 peak
Supplementary information: Tested on all models, only the most unfavourable test data were recorded.		

13.3	**TABLE: Dielectric Strength**	**P**

Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
L/N – Output terminal	3000	No
L/N – Enclosure	3000	No
Pri. winding – Sec. winding of transformer	3000	No
One layer of insulation tape of transformer	1750	No
Live/Neutral – Earth parts	1000	No
Supplementary information: Tested on all models.		

14	**TABLE: Transient overvoltages**	**N/A**

Clearance between:	**Cl (mm)**	**Required Cl (mm)**	**Rated impulse voltage (V)**	**Impulse test voltage (V)**	**Flashover (Yes/No)**
--					
Supplementary information:					

16.2	**TABLE: Leakage Current**	**P**
	Single phase appliances: 1,06 x rated voltage (V) ..... :	1.06 x 100 V = 106V; 1.06 x 240 V = 254.4V —
	Three phase appliances 1,06 x rated voltage divided by √3 (V) ..... :	-- —

Leakage current between:	**I (mA)**	**Max. allowed I (mA)**
L/N – Output terminal	0.06	0.25
L/N – Enclosure	0.01	0.25
Supplementary information: Tested on all models, only the most unfavourable test data were recorded.		

16.3	**TABLE: Dielectric Strength**	**P**

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Clause	Requirement + Test	Result - Remark	Verdict

Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
L/N – Output terminal	3000	No
L/N – Enclosure	3000	No
Pri. winding – Sec. winding of transformer	3000	No
One layer of insulation tape of transformer	1750	No
Live/Neutral – Earth parts	1250	No
Supplementary information: Tested on all models.		

17	**TABLE: Overload Protection, resistance method**				**P**
	Test voltage (V) .....:		100V x 0.94 =94V		—
	Ambient, t_1 (°C).....:		25.0		—
	Ambient, t_2 (°C).....:		25.0		—
Temperature of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
Model: FY06020000					
Transformer winding	--	--	58.5	83.5	175
Model: FY07520000					
Transformer winding	--	--	60.9	85.9	175
Model: FY08420000					
Transformer winding	--	--	66.5	91.5	175
Model: FY08520000					
Transformer winding	--	--	64.6	89.6	175
Model: FY11420000					
Transformer winding	--	--	67.9	92.9	175
Model: FY14320000					
Transformer winding	--	--	70.3	95.3	175
Model: FY15020000					
Transformer winding	--	--	71.9	96.9	175
Model: FY17020000					
Transformer winding	--	--	99.1	124.1	175
Model: FY21618000					
Transformer winding	--	--	69.6	94.6	175
Model: FY22517000					

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Clause	Requirement + Test		Result - Remark		Verdict
Transformer winding	--	--	71.8	96.8	175
Model: FY25515000					
Transformer winding	--	--	68.0	93.0	175
Model: FY28013000					
Transformer winding	--	--	67.5	92.5	175
Model: FY30012500					
Transformer winding	--	--	68.7	93.7	175
Model: FY36010500					
Transformer winding	--	--	67.7	92.7	175
Model: FY38010000					
Transformer winding	--	--	65.9	90.9	175
Model: FY40009500					
Transformer winding	--	--	74.3	99.3	175
Model: FY42009500					
Transformer winding	--	--	80.7	100.7	175
Tested on FY58807000					
Transformer winding	--	--	95.3	120.3	175
Tested on FY63006500					
Transformer winding	--	--	92.5	117.5	175
Tested on FY68406000					
Transformer winding	--	--	103.0	128.0	175
Tested on FY87004600					
Transformer winding	--	--	101.1	126.1	175
Supplementary information: Short circuit transformer, appliance shut down immediately, no hazard.					

19	**Abnormal Operation Conditions**		**P**
Operational characteristics	**YES/NO**	**Operational conditions**	
Are there electronic circuits to control the appliance operation?	Yes		
Are there “off” or “stand-by” position?	No		
The unintended operation of the appliance results in dangerous malfunction?	No		

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Clause	Requirement + Test	Result - Remark	Verdict

Sub-clause	Operating conditions description	Test results description	PEC description	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.11.2	See table 19.11.2	See table 19.11.2	N/A	N/A	N/A	N/A	P
19.11.4.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.101	See cl.19.101	See cl.19.101	N/A	N/A	N/A	N/A	P
19.102	See cl.19.102	See cl.19.102	N/A	N/A	N/A	N/A	P
19.103	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supplementary information:							

19.7	**TABLE: Abnormal Operation, locked rotor/moving parts**					**N/A**
	Test voltage (V) .....:		--			—
	Ambient, t_1 (°C).....:		--			—
	Ambient, t_2 (°C).....:		--			—
Temperature of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**	
--						
Supplementary information:						

19.9	**TABLE: Abnormal Operation, running overload**					**N/A**
	Test voltage (V) .....:		--			—
	Ambient, t_1 (°C).....:		--			—
	Ambient, t_2 (°C).....:		--			—
Temperature of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**	

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Clause	Requirement + Test	Result - Remark	Verdict

19.9	**TABLE: Abnormal Operation, running overload**		**N/A**
	Test voltage (V) .....:	--	**—**
	Ambient, t_1 (°C).....:	--	**—**
	Ambient, t_2 (°C).....:	--	**—**

Temperature of winding:	**R_1 (Ω)**	**R_2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
--					

Supplementary information:

19.11.2	**TABLE: Fault Conditions**	**P**
Fault condition performed:	**Observation:**	
Short circuit C5	Fuse (F1) opened immediately, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit C3	Fuse (F1) opened immediately, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit C12	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit BD1	Fuse (F1) opened immediately, Q1 damaged, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit MOV1	Fuse (F1) opened immediately, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit Pin G-D of Q11	Fuse (F1) opened immediately, Q11 damaged, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit Pin S-D of Q11	Fuse (F1) opened immediately, Q11 damaged, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit Pin G-S of Q11	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit Pin G-D of Q13	Fuse (F1) opened immediately, Q13 damaged, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit Pin S-D of Q13	Fuse (F1) opened immediately, Q13 damaged, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit Pin G-S of Q13	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A	
Short circuit Pin G-D of Q5	Fuse (F1) opened immediately, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A	

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Clause	Requirement + Test	Result - Remark	Verdict

Short circuit Pin S-D of Q5	Fuse (F1) opened immediately, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A
Short circuit Pin G-S of Q5	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A
Short circuit D7	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A
Short circuit Pin 2-7 of U1	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A
Short circuit Pin 10-12 of U3	Fuse (F1) opened immediately, U3 damaged, appliance shut down, no hazard. Output current: 0A, Output voltage: 0A
Short circuit Pin 11-12 of U5	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A
Short circuit Pin 1-7 of U7	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A
Short circuit Pin 5-6 of U9	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A
Short circuit output of T1	Appliance shut down immediately, no hazard. Output current: 0A, Output voltage: 0A
Supplementary information: Only the most unfavourable test data were recorded.	

19.13	**TABLE: Abnormal Operation, temperature rises**	**P**
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Enclosure inside near T1	53.5	For cl.30
Test corner	17.4	150
Supplementary information: Only the most unfavourable test data were recorded.		

21.1	**TABLE: Impact Resistance**		**P**
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**
Three times	Top	1.0J	No damage
Three times	Bottom	1.0J	No damage
Three times	Side	1.0J	No damage
Supplementary information:			

24.1	**TABLE: Critical components information**				**P**
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure	TEIJIN LIMITED RESIN AND PLASTIC	LN-1250G(#)(*)	PC, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E50075
Appliance inlet (for output voltage >42V)	Dongguan HUACONN Electronics Co., Ltd	HC-99	AC 10A, 250V, Max.120°C	EN 60320-1	ENEC NO4009
Appliance inlet (for output voltage ≤42V)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A01-003J	AC 10A, 250V, 70°C	IEC/EN 60320-1 IEC/EN 60320-3	VDE 40013388
(Interchangeable)	Dongguan HUACONN Electronics Co., Ltd	HC-99 Series	AC 10A, 250V, 70°C	IEC/EN 60320-1 IEC/EN 60320-3	VDE 40032734
(Interchangeable)	LECI Electronics Co., Ltd	DB-14-3	AC 10A, 250V, 70°C	IEC/EN 60320-1 IEC/EN 60320-3	VDE 40032137
(Interchangeable)	Dongguan HUACONN Electronics Co., Ltd	HC-99	AC 10A, 250V, 70°C	IEC/EN 60320-1 IEC/EN 60320-3	ENEC NO4009
Fuse (F1)	Conquer Electronics Co., Ltd.	MST	AC 250V, T10A	IEC/EN 60127-1 IEC/EN 60127-3	TÜV R 50176525
(Interchangeable)	Dongguan Better Electronics Technology Co., Ltd.	932	AC 250V, T10A	IEC/EN 60127-1 IEC/EN 60127-3	TÜV R 50279350
(Interchangeable)	Suzhou Walter Electronic Co., Ltd.	2010 Serie(s)	AC 250V, T10A	IEC/EN 60127-1 IEC/EN 60127-3	TÜV J 50361151
(Interchangeable)	Dongguan Chevron Electronic Technology Co., LTD	SET, SEF	AC 250V, T10A	IEC/EN 60127-1 IEC/EN 60127-3	TÜV J 504265070001
Varistor (MOV1)	Cerglass MFG Inc	10D511K, 10D561K, 14D511K, 14D561K,	Min. 300V, Min. 85°C	IEC 61051-2-2 IEC 61051-1	VDE 40028836
(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	10D511K, 10D561K, 14D511K, 14D561K,	Min. 300V, Min. 85°C	IEC 61051-2-2 IEC 61051-1	VDE 40023049

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Clause	Requirement + Test	Result - Remark	Verdict

(Interchangeable)	Thinking Electronic Industrial Co., Ltd.	TVR10511-M, TVR10561-M, TVR14511-M, TVR14561-M,	Min. 300V, Min. 85°C	IEC 61051-2-2 IEC 61051-1	VDE 40036061
(Interchangeable)	Dongguan City Dafu Electronics Co. Ltd.	10D511K 10D561K	Min. 300V, Min. 85°C	IEC 61051-2-2 IEC 61051-1	VDE 40050909
X-capacitor (CX1)	XIAMEN FARATRONIC CO LTD	MKP62	Max. 1.0μF, 275Vac, X2 type, 110°C	IEC/EN 60384-14	VDE 40000358
(Interchangeable)	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 1.0μF, 275Vac, X2 type, 105°C	IEC/EN 60384-14	VDE 40018238
(Interchangeable)	Europtronic (SuZhou) Co. Ltd.	MPX2	Max. 1.0μF, 275Vac, X2 type, 110°C	IEC/EN 60384-14	VDE 40025981
(Interchangeable)	Guangdong JURCC electronics Co., LTD.	MPX/MKP	Max. 1.0μF, 275Vac, X2 type, 110°C	IEC/EN 60384-14	VDE 40034920
(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	Max. 1.0μF, 275Vac, X2 type, 110°C	IEC/EN 60384-14	VDE 40034679
(Interchangeable)	Dongguan City Dafu Electronics Co.,Ltd .	MPX	Max. 1.0μF, 275Vac, X2 type, 110°C	IEC/EN 60384-14	VDE 40044620
(Interchangeable)	Joey Electronics (Dong guan) Co.,Ltd	MPX	Max. 1.0μF, 275Vac, X2 type, 105°C	IEC/EN 60384-14	VDE 40032481
(Interchangeable)	Xiangtai Electronics (Shenzhen) Co., Ltd.	MPX/MKP	Max. 1.0μF, 275Vac, X2 type, 110°C	IEC/EN 60384-14	VDE 40036065
Bleeding resistor (RX1)	--	--	Min. 1/4W, Max. 820kΩ	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Line Filter (LF1, LF2)	Fuyuan Electronic Co., Ltd	T18L	130°C, 4mH	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance

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

Magnet wire Line Filter (LF1, LF2)	XIN LONG MAGNET WIRE CO LTD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E171082
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/130 or QA-1/130	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155 or QA-1/155	155°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
(Interchangeable)	TA WIN INDUSTRIES(M) SDN BHD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E152187
Y-capacitor (CY1, CY2)	Hsuan Tai Electronic Co. Ltd.	CY	Max. 3300pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40008912
(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD-Series	Max. 3300pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40025754
(Interchangeable)	Yinan Don's Electronic Component Co.,Ltd.	CT81	Max. 3300pF, Min. 250Vac, Y1 or Y2 type, 125°C	IEC/EN 60384-14	VDE 135256
(Interchangeable)	Xiangtai Electronic (Shenzhen) Co., Ltd.	YO-series	Max. 3300pF, 400Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40036880
(Interchangeable)	Dongguan City Dafu Electronics Co.,Ltd.	CT7 Y1 Series	Max. 3300pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40041523
(Interchangeable)	Dongguan City Dafu Electronics Co.,Ltd.	CT7 Y2 Series	Max. 3300pF, Min. 250Vac, Y2 type, 125°C	IEC/EN 60384-14	VDE 40041521
(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CE Series	Max. 3300pF, Min. 250Vac, Y2 type, 125°C	IEC/EN 60384-14	VDE 40025748

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

Y-capacitor (CY3, CY4, CY5, CY6)	Hsuan Tai Electronic Co. Ltd.	CY	Max. 470pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40008912
(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD-Series	Max. 470pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40025754
(Interchangeable)	Yinan Don's Electronic Component Co.,Ltd.	CT81	Max. 470pF, Min. 250Vac, Y1 or Y2 type, 125°C	IEC/EN 60384-14	VDE 135256
(Interchangeable)	Xiangtai Electronic (Shenzhen) Co., Ltd.	YO-series	Max. 470pF, 400Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40036880
(Interchangeable)	Dongguan City Dafu Electronics Co.,Ltd.	CT7 Y1 Series	Max. 470pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40041523
(Interchangeable)	Dongguan City Dafu Electronics Co.,Ltd.	CT7 Y2 Series	Max. 470pF, Min. 250Vac, Y2 type, 125°C	IEC/EN 60384-14	VDE 40041521
(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CE Series	Max. 470pF, Min. 250Vac, Y2 type, 125°C	IEC/EN 60384-14	VDE 40025748
Bridging diode (BD1)	--	--	Min. 600V, Min. 15A	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Line Filter (L2)	Fuyuan Electronic Co., Ltd	T90-125	130°C, 50μH	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Magnet wire of Line Filter (L2)	DONGGUAN XINLONG VARNISHED WIRE CO LTD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E171082
(Interchangeable)	TA WIN INDUSTRIES(M) SDN BHD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E152187

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

(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/130 or QA-1/130	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155 or QA-1/155	155°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
Heat shrinkable tube of Line Filter (L2)	SHENZHEN WOLIDA TRADING CO LTD	RSFR-H	VW-1, Min. 125°C, 600V	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E329530
(Interchangeable)	DONGGUAN SALIPT CO LTD	SALIPT S-901-600	VW-1, Min. 125°C, 600V	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E209436
Line Filter (L1)	Fuyuan Electronic Co., Ltd	PQ5035-L	130°C, 0.27mH	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Bobbin of Line Filter (L1)	CHANG CHUN PLASTICS CO LTD	T375HF	PCM, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E59481
(Interchangeable)	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9823, PM-9830	PF V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E41429
Magnet wire of Line Filter (L1)	DONGGUAN XINLONG VARNISHED WIRE CO LTD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E171082
(Interchangeable)	TA WIN INDUSTRIES(M) SDN BHD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E152187
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/130 or QA-1/130	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155 or QA-1/155	155°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055

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

Insulating tape of Line Filter (L1)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b)	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PF* (d)(g)	180°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	Suzhou Mailaduona Electric Material Co Ltd	JY313#	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A(b)	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	J16	180°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Tube of Line Filter (L1)	FUREDA PLASTIC CO LTD	FRD-TT-T	200°C, max. 300V	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E254113
Ripple Capacitor (C2, C3, C4)	--	--	Max. 120μF, Min. 420V, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Transistor (Q1, Q11, Q13)	--	--	Min. 500V, 20A Min.	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Current sense resistor (R7)	--	--	1.0MM , 0.04Ω	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Capacitor (C23)	--	--	0.047μF, Min.275V, Min.105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Line Filter (L4)	Fuyuan Electronic Co., Ltd	R8L	130°C, 1.8mH	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance

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

Magnet wire of Line Filter (L4)	DONGGUAN XINLONG VARNISHED WIRE CO LTD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E171082
(Interchangeable)	TA WIN INDUSTRIES(M) SDN BHD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E152187
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/130 or QA-1/130	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155 or QA-1/155	155°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
Line Filter (L3)	Fuyuan Electronic Co., Ltd	PQ3230-L	130°C, 105uH	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Bobbin of Line Filter (L3)	CHANG CHUN PLASTICS CO LTD	T375HF	PCM, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E59481
(Interchangeable)	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9823, PM-9830	PF V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E41429
Magnet wire of Line Filter (L3)	DONGGUAN XINLONG VARNISHED WIRE CO LTD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E171082
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/130 or QA-1/130	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155 or QA-1/155	155°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
Insulating tape of Line Filter (L3)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b)	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance

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

(Interchangeable)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PF* (d)(g)	180°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	Suzhou Mailaduona Electric Material Co Ltd	JY313#	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A(b)	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	J16	180°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Tube of Line Filter (L3)	FUREDA PLASTIC CO LTD	FRD-TT-T	200°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E254113
Y Capacitor (CY7, CY8)	Hsuan Tai Electronic Co.,Ltd	CY	Max. 4700pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40008912
(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD-Series	Max. 4700pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40025754
(Interchangeable)	Yinan Don’s Electronic Component Co.,Ltd	CT81	Max. 4700pF, Min. 250Vac, Y1 or Y2 type, 125°C	IEC/EN 60384-14	VDE 135256
(Interchangeable)	Xiangtai Electronic (Shenzhen) Co., Ltd.	YO-series	Max. 4700pF, 400Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40036880
(Interchangeable)	Dongguan City Dafu Electronics Co.,Ltd .	CT7 Y1 Series	Max. 4700pF, Min. 250Vac, Y1 type, 125°C	IEC/EN 60384-14	VDE 40041523
(Interchangeable)	Dongguan City Dafu Electronics Co.,Ltd .	CT7 Y2 Series	Max. 4700pF, Min. 250Vac, Y2 type, 125°C	IEC/EN 60384-14	VDE 40041521

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

(Interchangeable)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CE Series	Max. 4700pF, Min. 250Vac, Y2 type, 125°C	IEC/EN 60384-14	VDE 40025748
Optocoupler (U4, U8)	Everlight Electronics Co., Ltd.	EL817	Di>0.4mm int. dcr.=6.0mm, ext. dcr.=7.7mm, 110°C	IEC/EN 60747-5-5	VDE 132249
(Interchangeable)	COSMO Electronics Corporation	K1010	Di>0.4mm int. dcr.=6.5mm, ext. dcr.=8.0mm, 100°C	IEC/EN 60747-5-5	VDE 101347
(Interchangeable)	Sharp Corporation	PC817	Di>0.4mm int. dcr.=5.3mm, ext. dcr.=8.0mm, 100°C	IEC/EN 60747-5-5	VDE 40008087
(Interchangeable)	CRM ICBG (Wuxi) Co., Ltd.	PC817C	Di>0.4mm int. dcr.=5.3mm, ext. dcr.=8.0mm, 100°C	IEC/EN 60747-5-5	VDE 40042139
(Interchangeable)	CT Micro International Corporation	CT817	Di>0.4mm int. dcr.=5.3mm, ext. dcr.=8.0mm, 100°C	IEC/EN 60747-5-5	VDE 40039590
(Interchangeable)	LITE-ON Technology Corp	LTV-817	Di>0.4mm int. dcr.=5.3mm, ext. dcr.=8.0mm, 100°C	IEC/EN 60747-5-5	VDE 40015248
Transformer (T1) (for model FY060yyyyy, FY073yyyyy, FY075yyyyy, FY084yyyyy, FY085yyyyy)	Fuyuan Electronic Co., Ltd	FY10020000-PT	Class B	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Transformer (T1) (for model FY110yyyyy, FY114yyyyy, FY126yyyyy, FY138yyyyy, FY143yyyyy, FY146yyyyy, FY150yyyyy)	Fuyuan Electronic Co., Ltd	FY15020000-PT	Class B	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance

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

Transformer (T1) (for model FY166yyyyy, FY168yyyyy, FY170yyyyy, FY180yyyyy, FY200yyyyy, FY210yyyyy, FY216yyyyy, FY225yyyyy, FY252yyyyy, FY255yyyyy)	Fuyuan Electronic Co., Ltd	FY25515000-PT	Class B	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Transformer (T1) (for model FY280yyyyy, FY290yyyyy, FY292yyyyy, FY294yyyyy, FY300yyyyy, FY320yyyyy, FY336yyyyy, FY340yyyyy, FY360yyyyy, FY380yyyyy)	Fuyuan Electronic Co., Ltd	FY38010000-PT	Class B	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Transformer (T1) (for model FY400yyyyy, FY420yyyyy)	Fuyuan Electronic Co., Ltd	FY58806000-PT	Class B	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Transformer (T1) (for model FY425yyyyy, FY430yyyyy, FY438yyyyy, FY440yyyyy, FY450yyyyy, FY460yyyyy, FY470yyyyy, FY480yyyyy, FY504yyyyy, EHFPA-100L, FY510yyyyy, FY520yyyyy, FY546yyyyy, FY550yyyyy, FY580yyyyy, FY584yyyyy, FY588yyyyy)	Fuyuan Electronic Co., Ltd	FY58806000-PT	Class B	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance

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

Transformer (T1) (for model FY612yyyyy, FY620yyyyy, FY630yyyyy, FY648yyyyy, FY650yyyyy, FY657yyyyy, FY670yyyyy, FY672yyyyy, FY684yyyyy, FY714yyyyy, FY720yyyyy, FY725yyyyy, FY730yyyyy, FY750yyyyy, FY756yyyyy, FY800yyyyy, FY828yyyyy, FY840yyyyy, FY864yyyyy, FY870yyyyy)	Fuyuan Electronic Co., Ltd	FY87004600-PT	Class B	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Bobbin of Transformer (T1)	CHANG CHUN PLASTICS CO LTD	T375HF	PCM, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E59481
(Interchangeable)	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9823, PM-9830	PF V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E41429
Triple insulated wire of Transformer (T1)	Great Leoflon Industrial Co., Ltd.	TRW (B)-M Serie(s)	130°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 136581
(Interchangeable)	Rubadue Wire Co., Inc	TCA 3 Serie(s)	155°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 40000223
(Interchangeable)	Great Leoflon Industrial Co., Ltd.	TRW (F) Serie(s)	155°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 136581
(Interchangeable)	Suzhou Yusheng Electronic Co.,Ltd.	TIW-B	130°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 40033527
(Interchangeable)	Huizhou Huili Industrial Co. Ltd.	MIW-B(x)	130°C	IEC/EN 60950-1 IEC/EN 61558-2-16	VDE 40029142

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

(Interchangeable)	Huizhou Huili Industrial Co. Ltd.	MIW-F(x)	155°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 40029142
(Interchangeable)	Hangzhou Fuyang Youheng Cable Co., Ltd	YH-F	130°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 40041248
(Interchangeable)	Dah Jin Technology Co., Ltd.	TLW-B	130°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 40008834
(Interchangeable)	Guangzhou Wanbao Electronic Material Co., Ltd.,	DTM-B DTM-TF DTM-TF+XX	155°C	IEC/EN 61558-1 IEC/EN 61558-2-16	VDE 40044801
Magnet wire of Transformer (T1)	DONGGUAN XINLONG VARNISHED WIRE CO LTD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E171082
(Interchangeable)	TA WIN INDUSTRIES(M) SDN BHD	UEW	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E152187
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/130 or QA-1/130	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
(Interchangeable)	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155 or QA-1/155	155°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E344055
Insulating tape of Transformer (T1)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b)	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E165111
(Interchangeable)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PF	180°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E165111
(Interchangeable)	Suzhou Mailaduona Electric Material Co Ltd	JY313#	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance

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

(Interchangeable)	JINGJIANG JINGYI ADHESIVEPRODUCT CO LTD	JY25-A(b)	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
(Interchangeable)	JINGJIANG JINGYI ADHESIVEPRODUCT CO LTD	J16	180°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Tube of Transformer (T1)	FUREDA PLASTIC CO LTD	FRD-TT-T	200°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E254113
(Interchangeable)	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-T	200°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E180918
Line Filter (LF3)	Fuyuan Electronic Co., Ltd	T20L	130°C, 0.2mH	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance
Internal wire	DONGGUAN LICHENG ELECTRONICS CO LTD	1672	105°C, 300V, Min 22AWG, VW-1	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E205058
(Interchangeable)	Dongguan Wenchang Electronic Co.,Ltd.	1672	105°C, 300V, Min 22AWG, VW-1	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E214500
(Interchangeable)	Dongguan Hongfuwei Cable T echnology Co Ltd	1015, 1672, 2464	105°C, 300V, Min 22AWG, VW-1	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E316005
(Interchangeable)	GUANGDONG DONGJU WIRE & CABLE CO LTD	1672	105°C, 300V, Min 22AWG, VW-1	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E189674
PCB	GUANG ZHOU SHENGXIN ELECTRIC CO LTD	SX-3 (FR-4)	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E355344
(Interchangeable)	KINGBOARD LAMINATES HOLDINGS LTD	KB-6160A KB-6160C (FR-4)	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E123995
(Interchangeable)	GOLDENMAX INTERNATIONAL TECHNOLOGY(ZHUHAI) LTD	GF-432	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E330731

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

(Interchangeable)	DONG GUAN CITY XINXIONG ELECTRONICS CO LTD	XX-4 XX-FR-4	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E302227
(Interchangeable)	ZHEJIANG WAZAM NEW MATERIALS CO LTD	H130 H1170	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E136069
(Interchangeable)	NAN YA PLASTICS CORP CCL DEPT ELECTRONIC MATERIAL DIV	NP-140R	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E98983
(Interchangeable)	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-9F (FR-4)	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E141940
(Interchangeable)	FASTLINE CIRCUITS CO LTD	FJ-2 (FR-4) FJ-D (FR-4)	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E464342
(Interchangeable)	Dongguan Xiangyu Electronics Co Ltd	XY-4, XY-FR-4	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E525577
(Interchangeable)	(Interchangeable)	(Interchangeable)	V-0, 130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL
Tape over primary heat sink	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b)	130°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E165111

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

Output cord (output current ≥15A, for models FY060yyyyy, FY073yyyyy, FY075yyyyy, FY084yyyyy, FY085yyyyy, FY110yyyyy, FY114yyyyy, FY126yyyyy, FY138yyyyy, FY143yyyyy, FY146yyyyy, FY150yyyyy, FY166yyyyy, FY168yyyyy, FY170yyyyy, FY180yyyyy, FY200yyyyy, FY210yyyyy, FY216yyyyy, FY225yyyyy, FY252yyyyy FY255yyyyy)	SHENZHEN DONG JU WIRE & CABLE CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E189674
(Interchangeable)	DONGGUAN LICHENG ELECTRONICS CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance UL E205058
(Interchangeable)	DONGGUAN WENCHANG ELECTRONIC CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance UL E214500
(Interchangeable)	HIP TAI ELECTRONIC WIRE CO	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance UL E225804
(Interchangeable)	DONGGUAN DANYANG ELECTRONIC WIRE CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance UL E332522
(Interchangeable)	DONGGUAN XIEHE WIRE CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance UL E251491
(Interchangeable)	DONGGUAN YIAO ELECTRONICS CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance UL E348933

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

(Interchangeable)	SHENZHEN XIN LI HUA XU ELECTRONICS CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN60335-1 IEC/EN60335-2-29	Tested with appliance UL E252561
(Interchangeable)	DONGGUAN HONGFUWEI CABLE TECHNOLOGY CO LTD	1015	Min. 300V, Min. 13AWG, VW-1, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E316005
(Interchangeable)	DONGGUAN LICHENG ELECTRONICS CO LTD	SJT, SVT	Min. 300V, Min 13AWG, FT-1 or VW, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E205059
(Interchangeable)	DONGGUAN HONGFUWEI CABLE TECHNOLOGY CO LTD	SJT, SVT	Min. 300V, Min 13AWG, FT-1 or VW, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E505984
(Interchangeable)	ZHONGSHAN WIRE & CABLE CO LTD	SJT, SVT	Min. 300V, Min 13AWG, FT-1 or VW, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E357326
(Interchangeable)	(Interchangeable)	SJT, SVT	Min. 300V, Min 13AWG, FT-1 or VW, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL

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

Output cord (output current <15A, for models FY060yyyyy, FY073yyyyy, FY075yyyyy, FY084yyyyy, FY085yyyyy, FY110yyyyy, FY114yyyyy, FY126yyyyy, FY138yyyyy, FY143yyyyy, FY146yyyyy, FY150yyyyy, FY166yyyyy, FY168yyyyy, FY170yyyyy, FY180yyyyy, FY200yyyyy, FY210yyyyy, FY216yyyyy, FY225yyyyy, FY252yyyyy, FY255yyyyy, FY280yyyyy, FY290yyyyy, FY292yyyyy, FY294yyyyy, FY300yyyyy, FY320yyyyy, FY340yyyyy, FY360yyyyy, FY380yyyyy, FY400yyyyy, FY420yyyyy)	GUANGDONG DONGJU WIRE & CABLE CO LTD	2464, 2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E189674
(Interchangeable)	DONGGUAN LICHENG ELECTRONICS CO LTD	2464, 2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E205058
(Interchangeable)	DONGGUAN WENCHANG ELECTRONIC CO LTD	2464, 2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E214500
(Interchangeable)	HIP TAI ELECTRONIC WIRE CO	2464, 2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E225804

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

(Interchangeable)	DONGGUAN DANYANG ELECTRONIC WIRE CO LTD	2464, 2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E332522
(Interchangeable)	DONGGUAN XIEHE WIRE CO LTD	2464, 2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E251491
(Interchangeable)	DONGGUAN YIAO ELECTRONICS CO LTD	2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E348933
(Interchangeable)	DONGGUAN HONGFUWEI CABLE TECHNOLOGY CO LTD	2464	Min. 300V, Min. 18AWG, VW-1, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E316005
(Interchangeable)	SHENZHEN XIN LI HUA XU ELECTRONICS CO LTD	2464, 2468	Min. 300V, Min 18AWG, VW-1, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E252561
(Interchangeable)	DONGGUAN LICHENG ELECTRONICS CO LTD	SJT, SVT	Min. 300V, Min 18AWG, FT-1 or VW, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E205059
(Interchangeable)	DONGGUAN HONGFUWEI CABLE TECHNOLOGY CO LTD	SJT, SVT	Min. 300V, Min 18AWG, FT-1 or VW, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E505984
(Interchangeable)	ZHONGSHAN WIRE & CABLE CO LTD	SJT, SVT	Min. 300V, Min 18AWG, FT-1 or VW, 105°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E357326
(Interchangeable)	(Interchangeable)	SJT, SVT	Min. 300V, Min 18AWG, FT-1 or VW, 80°C	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL

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

Output cord (For models FY425yyyyy, FY430yyyyy, FY438yyyyy, FY440yyyyy, FY450yyyyy, FY460yyyyy, FY470yyyyy, FY480yyyyy, FY504yyyyy, FY510yyyyy, FY520yyyyy, FY546yyyyy, FY550yyyyy, FY580yyyyy, FY584yyyyy, FY588yyyyy, FY612yyyyy, FY620yyyyy, FY630yyyyy, FY648yyyyy, FY650yyyyy, FY657yyyyy, FY670yyyyy, FY672yyyyy, FY684yyyyy, FY714yyyyy, FY720yyyyy, FY725yyyyy, FY730yyyyy, FY750yyyyy, FY756yyyyy, FY800yyyyy, FY828yyyyy, FY840yyyyy, FY864yyyyy, FY870yyyyy)	Dongguan Hongfuwei Cable Technology Co., Ltd	H05V2V2-F	2x1.0mm^2	EN 50525-2-11	VDE 40043104
(Interchangeable)	New Square Company Ltd.	H05V2V2-F	2x1.0mm^2	EN 50525-2-11	VDE 116006
(Interchangeable)	I-Sheng Electric Wire & Cable Co., Ltd.	H05V2V2-F	2x1.0mm^2	EN 50525-2-11	VDE 40006070
(Interchangeable)	New Square Company Ltd.	H07RN-F	2x1.0mm^2	EN 50525-2-21	VDE 40018859
(Interchangeable)	Dongguan Licheng Electronics Co., Ltd.	H05V2V2-F	2x1.0mm^2	EN 50525-2-11	VDE 40020058

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

Plastic of output connector	CHANG CHUN PLASTICS CO LTD	T375HF	PMC, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E59481
(Interchangeable)	SILVER AGE ENGINEERING PLASTICS (DONGGUAN) CO LTD	140G00, 8460G	PET, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E225348
(Interchangeable)	SABIC JAPAN L L C	945(GG)	PC, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E207780
(Interchangeable)	NINGBO ECOT SCI & TECH COLTED	PBT 226(X)(yy)	PBT, V-0	IEC/EN 60335-1 IEC/EN 60335-2-29	Tested with appliance UL E357231
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

28.1	**TABLE: Threaded Part Torque Test**		**N/A**
Threaded part identification	**Diameter of thread (mm)**	**Column number (I, II, or III)**	**Applied torque (Nm)**
--			
Supplementary information:			

29.1/29.2	**TABLE: Clearance And Creepage Distance Measurements**					**P**
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**required dcr (mm)**	**dcr (mm)**
Between live part and earth part	340	240	2.0	3.0	2.5	5.0
Trace between Y cap. (CY7)	397	240	2.0	5.2	2.5	5.2
Trace between Y cap. (CY8)	397	240	2.0	3.1	2.5	3.1
Between live part and accessible part	340	240	3.5	6.0	5.0	6.0
Pri. part to Sec. part on PCB	556	240	3.5	6.8	5.0	6.8
Between core to Sec. pin of transformer	556	240	3.5	9.7	5.0	9.7
Between L/N on PCB	340	240	2.0	5.0	2.0	5.0
Between different pin of fuse on PCB	340	240	2.0	2.7	2.0	2.7

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

Between live part of output connector type B to accessible part	87	87	1.5	6.0	4.3	6.0
Supplementary information:						

29.3	**TABLE: Distance Through Insulation Measurements**			**P**
Distance through insulation di at/of:	**U r.m.s. (V)**	**Test voltage (V)**	**Required di (mm)**	**di (mm)**
Enclosure	240V	240V	2.0	2.0
Supplementary information:				

30.1	**TABLE: Ball Pressure Test of Thermoplastics**		**P**
Allowed impression diameter (mm) .....:	2.0		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Enclosure	See table 24.1	125.0	1.3
Appliance inlet	See table 24.1	125.0	1.1
Bobbin of transformer (T1)	See table 24.1	125.0	0.9
Bobbin of Line Filter (L1)	See table 24.1	125.0	0.9
Bobbin of Line Filter (L3)	See table 24.1	125.0	0.9
PCB	See table 24.1	125.0	0.6
Plastic of output connector type B	See table 24.1	125	0.9
Supplementary information: Only the most unfavourable value was recorded.			

30.2	**TABLE: Resistance to heat and fire - Glow wire tests**							**P**
Object/ Part No./ Material	**Manufacturer / trademark**	**Glow wire test (GWT); (°C)**						**Verdict**
		550	**650**		**750**		**850**	
			t_e (s)	**t_i (s)**	**t_e (s)**	**t_i (s)**		
Enclosure	See table 24.1	No flame, no drop	--	--	--	--	--	P
Appliance inlet	See table 24.1	--	--	--	0	0	No flame, no drop	P
Bobbin of transformer (T1)	See table 24.1	--	--	--	0	0	No flame, no drop	P

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

Bobbin of Line Filter (L1)	See table 24.1	--	--	--	0	0	No flame, no drop	P
Bobbin of Line Filter (L3)	See table 24.1	--	--	--	0	0	No flame, no drop	P
PCB	See table 24.1	--	--	--	0	0	No flame, no drop	P
X capacitor	See table 24.1	--	--	--	0	0	No flame, no drop	P
Plastic of output connector	See table 24.1	--	--	--	0	0	No flame, no drop	P

Supplementary information: Only the most unfavourable value was recorded.

Object/ Part No./ Material	**Manufacturer / trademark**	**Glow-wire flammability index (GWFI), °C**				**GW ignition temp. (GWIT), °C**		**Verdict**
		550	**650**	**750**	**850**	**675**	**775**	
--								N/A

The test specimen passed the glow wire test (GWT) with no ignition [($t_e - t_i$) ≤ 2s] (Yes/No) :	Yes
If no, then surrounding parts passed the needle-flame test of annex E (Yes/No) .....:	N/A
The test specimen passed the test by virtue of most of the flaming material being withdrawn with the glow-wire (Yes/No)?.....:	Yes
Ignition of the specified layer placed underneath the test specimen (Yes/No) .....:	No

Supplementary information:

550 °C GWT not relevant (or applicable) to parts of material classified at least HB40 or if relevant HBF
The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not relevant (or applicable) for attended appliances.

30.2/30.2.4	**TABLE: Needle- flame test (NFT)**				**N/A**
Object/ Part No./ Material	**Manufacturer/ trademark**	**Duration of application of test flame (t_a); (s)**	**Ignition of specified layer Yes/No**	**Duration of burning (t_b); (s)**	**Verdict**
--					

Supplementary information:

NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1
NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.
Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
N/A					

Statement of Measurement Uncertainty

The Test Report shall include a statement concerning the uncertainty of the measurement systems used for the tests conducted when it is required by the standard, client or other authorities.
In such cases, the table below is to be used for reporting U of M.

This page may be removed from the final Test Report when not required. See also clause 4.8 in OD 2020 for more details.

Clause #	Parameter/ Measurement / test method	Requirement % or k	Calculated U of M*
N/A			

*Note: Calculations leading to the reported value are on file with the NCB

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict

Differences according to.....:	EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017 + A1:2019 + A14:2019 + A2:2019 EN 60335-2-29:2004 + A2:2010 EN 62233:2008 + AC:2008		
	CENELEC COMMON MODIFICATIONS (EN)		
6.1	Delete “class 0” and “class 01”	Class I appliance	P
7.1	Single-phase appliances to be connected to the supply mains: 230 V covered	100-240V	P
	Multi-phase appliances to be connected to the supply mains: 400 V covered		N/A
7.12	The instructions include the substance of the following:		P
	- this appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved		P
	- children shall not play with the appliance		P
	- cleaning and user maintenance shall not be made by children without supervision		P
8.1.1	Also test probe 18 of EN 61032 is applied		P
	The appliance being in every possible position during the test, except that		P
	appliances normally used on the floor and having a mass exceeding 40 kg are not tilted		N/A
	The force on the probe in the straight position is increased to 10 N when probe 18 is used		P
	When using test probe 18 the appliance is fully assembled as in normal use without any parts removed, and		P
	parts intended to be removed for user maintenance are also not removed		P
8.1.3	Instead of test probe B, test probe 18 and test probe 13, for appliances other than those of class II, test probe 41 of IEC 61032 is applied with a force not exceeding 1 N to live parts of visibly glowing heating elements, all poles of which can be disconnected by a single switching action		N/A
8.2	Compliance is checked by inspection and by applying the test probes of EN 61032 in accordance with the conditions specified in 8.1.1		P
	Test probe B and probe 18 of EN 61032 are applied to built-in appliances and fixed appliances only after installation		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
10.101	No-load d.c. output voltage not exceed 42.4 V (EN 60335-2-29) ..... :	For models from FY060yyyyy to FY400yyyyy: Measured: Max.42.1V; Not contact with live parts for models from FY425yyyyy to FY870yyyyy.	P
15.1.2	Appliances with an automatic cord reel tested with the cord in the most unfavourable position so that the reeling of the wet cord may affect electrical insulation during operation, the cord not being dried before reeling		N/A
20.2	For appliances having dangerous moving parts, due to their working function, e.g. the needle of a sewing machine, tools of kitchen machines or the blade of an electrical knife, full protection is not possible for performing their intended use		N/A
	When using a test probe similar to test probe B of EN 61032, having a circular stop face and applied with a force of 5N, the accessories and detachable covers are removed		N/A
	When using test probe 18 it is applied with a force of 2,5N on the appliance fully assembled		N/A
22.12	Other parts intended to be detached during use, maintenance or cleaning (e.g. batteries, battery covers, lids, attachments, steam nozzles) are not considered as parts providing a similar function as handles, knobs, grips, levers	No such parts	N/A
22.17	The requirement is not applicable to built-in appliances		N/A
24.1	Components comply with the safety requirements specified in the relevant EN standards as far as they reasonably apply		P
	Motors are not required to comply with EN 60034-1, but tested as part of the appliance according to this standard		N/A
	Relays are tested as part of the appliance according to this standard		N/A
	Relays may be alternatively tested to EN 60730-1 and the additional requirements in EN 60335-1		N/A
	The requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance		P
	Components may comply with the requirements for clearances and creepage distances for functional insulation as specified in the relevant component standard		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	The requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components		P
	Components that have not been tested and shown to comply with the EN standard for the relevant component are tested according to the requirements of 30.2 of this standard		P
	Components that have been tested and shown to comply with the resistance to fire requirements in the EN standard for the relevant component need not be retested provided that:		P
	- the severity specified in the component standard is not less than the severity specified in 30.2, and		P
	- the test report for the component states the values of t_e and t_i acc. to EN 60695-2-11		P
	If the above two conditions are not satisfied, the component is tested as part of the appliance		P
	Power electronic converter circuits are not required to comply with EN 62477-1, but tested as part of the appliance according to this standard		N/A
	Unless components have been tested and found to comply with the relevant EN standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		P
	For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant EN standard for the component are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components that have not been tested and found to comply with the relevant EN standard, and		P
	components that are not marked or not used in accordance with their marking,		P
	are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard		P
	Lamp-holders and starter-holders that have not been tested and found to comply with the relevant EN standard are tested as a part of the appliance and additionally comply with the gauging and interchangeability requirements of the relevant EN standard under the conditions occurring in the appliance		N/A
	Where the relevant EN standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	There are no additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of EN 60320-1 and EN 60309, unless they are specifically mentioned in the text of this standard		N/A
	Plugs and socket-outlets and other connecting devices of interconnection cords are not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1, or		N/A
	with connectors and appliance inlets complying with the standard sheets of EN 60320-1, if		P
	direct supply to these parts from the supply mains gives rise to a hazard		N/A
	For plugs used in CENELEC countries Annex ZH applies		N/A
24.1.7	When the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is EN 41003		N/A
	Compliance with Clause 8 of this standard is not impaired by connecting the appliance to a device covered by EN 41003		N/A
24.Z1	Type S2 and S3 capacitors according to EN 60252-1 are not required to undergo the testing as required by 30.2.2 and 30.2.3.1		N/A
25.1	Plugs and pins for insertion into socket outlets follow the relevant standards sheets in Annex ZH		N/A
25.7	Rubber sheathed cords (60245 IEC 53) are not suitable for appliances intended to be used outdoors, or		N/A
	when they are liable to be exposed to significant amount of ultraviolet radiation		N/A
25.25	Instead of IEC/TR 60083, dimensions of the pins and engagement face of plugs of appliances that are inserted into socket-outlets are in accordance with the dimensions of the relevant plug standard		N/A
	Common plugs and socket-outlets types in CENELEC countries as shown in Annex ZH		N/A
26.11	Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position,		N/A
	unless they are held in place near the terminals independently of the solder		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
29.3.Z1	Appliance constructed so that if there is a possibility of damaging the insulation during installation, the insulation withstands the scratch and penetration test of 21.2		N/A
32	Compliance regarding electromagnetic fields is checked according to EN 62233	EN 62233	P
Annex I, 19.I.101	The appliance is supplied at rated voltage and operated under normal operation with each of the fault conditions specified		N/A
	The duration of any of the tests is as specified in 19.7		N/A
ZA	**ANNEX ZA (**NORMATIVE) **SPECIAL NATIONAL CONDITIONS (EN)**		P
	Denmark, Sweden, Norway and Finland		N/A
7.12.8	The maximum inlet water pressure is at least 1,0 MPa .... :		N/A
	Norway		N/A
19.5	The test is also applicable to appliances intended to be permanently connected to fixed wiring		N/A
	Norway		N/A
22.2	The second paragraph of this subclause, dealing with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system		N/A
	Denmark		N/A
22.47	The maximum inlet water pressure is at least 1,0 MPa .... :		N/A
	Ireland and United Kingdom		P
25.8	In the table, the line >10 A and ≤16 A is replaced with:		P
	> 10 and ≤ 13 1,25 (1,0)[b]		P
	> 13 and ≤ 16 1,5 (1,0)[b]		P
ZB	**ANNEX ZB** (INFORMATIVE) **A-DEVIATIONS**		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	Ireland		N/A
25.1 and 25.25	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S. 401:1997, or equivalent, to be fitted to domestic appliances		N/A
	United Kingdom		P
25.1 and 25.25	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs to BS 1363 to be fitted to domestic appliances.		N/A
	It also allows plugs to BS 4573 and EN 50075 to be fitted to shavers and toothbrushes		N/A
ZC	**ANNEX ZC (NORMATIVE)** **NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**		**P**
	A list of documents referred to in the text of this standard in such a way that some or all of their content constitutes requirements of this document		P
ZD	**ANNEX ZD** (INFORMATIVE) **IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS**		N/A
	List of IEC and CENELEC code designations for flexible cords		N/A
ZE	**ANNEX ZE** (INFORMATIVE) **SPECIFIC ADDITIONAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE**		N/A
7.1	Business name and full address of the manufacturer and, where applicable, his authorized representative ..... :		N/A
	Model or type reference..... :		N/A
	Serial number, if any		N/A
	Production year		N/A
	Designation of the appliance ..... :		N/A
7.12	Instructions provided with the appliance so that the appliance can be used safely		N/A
	The instructions contain at least the following information:		N/A
	- the business name and full address of the manufacturer and, where applicable, his authorized representative		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	- model or type reference of the appliance as marked on the appliance itself, except for the serial number		N/A
	- the designation of the appliance together with its explanation in case it is given by a combination of letters and/or numbers		N/A
	- the general description of the appliance, when needed due to the complexity of the appliance		N/A
	- specific precautions required during installation, operation, adjusting, user maintenance, cleaning, repairing or moving		N/A
	- when needed drawings, diagrams, descriptions and explanations necessary for the safe use and user maintenance of the appliance		N/A
	- the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance		N/A
	The words “Original instructions” appear on the language version(s) verified by the manufacturer or by the authorized representative		N/A
	When a translation of the original instructions has been provided by a person introducing the appliance on the market; the meaning of the sentence “Translation of the original instructions” appear in the relevant instructions delivered with the appliance		N/A
	The instructions for maintenance/service to be done by specialized personnel, mandated by the manufacturer or the authorized representative may be supplied in only one Community language which the specialized personnel understand		N/A
	The instructions indicate the type and frequency of inspections and maintenance required for safe operation including the preventive maintenance measures		N/A
7.12.ZE1	If needed for specific appliances, the following information to be given:		N/A
	- on use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns, if these operations have consequences on stability of the appliance in order to avoid overturning, falling or uncontrolled movements of the appliance or of its component parts		N/A
	- on how to maintain adequate mechanical stability when in use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	- on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided		N/A
	- on the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur the operating method to safely unblock the appliance		N/A
	- on the specifications on the spare parts to be used, when these affect the health and safety of the operator		N/A
	- on airborne noise emissions, determined and declared in accordance with the relevant Part 2, which includes:		N/A
	- the A-weighted emission sound pressure level at workstations, where this exceeds 70 dB(A) ..... ;		N/A
	- where this level does not exceed 70 dB(A), this fact is indicated		N/A
	- the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 µPa) ..... :		N/A
	- the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A) ..... :		N/A
7.12.ZE2	The instructions include a warning to disconnect the appliance from its power source during service and when replacing parts		N/A
	If the removal of the plug is foreseen, it is clearly indicated that the removal of the plug is such that an operator can check from any of the points to which he has access that the plug remains removed		N/A
	If this is not possible, due to the construction of the appliance or its installation, a disconnection with a locking system in the isolated position is provided		N/A
19.11.4.8	The appliance continues to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage fluctuation occurred, or		N/A
	a manual operation is required to restart it		N/A
20.1	Appliances and their components and fittings have adequate mechanical stability during transportation, assembly, dismantling and any other action involving the appliance		N/A
20.2	Dangerous moving transmission parts safeguarded either by design or guards		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	When guards are used, they are fixed guards, interlocking movable guards or protective devices		N/A
	Moving parts directly involved in the function of the appliance which cannot be made completely inaccessible fitted with:		N/A
	- fixed guards or interlocking movable guards preventing access to those sections of the parts that are not used in the work, and		N/A
	- adjustable guards restricting access to those sections of the moving parts where access is necessary		N/A
	Interlocking movable guards used where frequent access is required		N/A
21.1	Appliances and their components and fittings have adequate mechanical strength and is constructed to withstand such rough handling that may be expected in normal use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance		N/A
22.ZE.1	For appliances provided with a seat, the seat gives adequate stability		N/A
	The distance between the seat and the control devices capable of being adapted to the operator		N/A
22.ZE.2	For appliances provided with separate devices for the start and the stop functions, the stop function is unambiguously identifiable and does always override the start function		N/A
	For appliances provided with one device performing the start and the stop function, the stop function is unambiguously identifiable and does always override the start function		N/A
22.ZE.3	Appliances designed in such a way that incorrect mounting is avoided, if this can lead to an unsafe situation		N/A
	If this is not possible, information on the correct mounting is given directly on the part and/or the enclosure		N/A
22.ZE.4	Where the weight, size or shape prevents appliances from being moved manually, they are fitted with attachments for lifting gear, or		N/A
	so designed that they can be fitted with such attachments, or		N/A
	be shaped in such a way that standard lifting gear can easily be used		N/A
	Appliances to be moved manually are constructed or equipped so that they can be moved easily and safely		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
22.ZE.5	The fixing systems of fixed guards which prevent access to dangerous moving transmission parts only removable with the use of tools		N/A
	If such guards have to be removed by the user for routine cleaning or maintenance their fixing systems remain attached to the fixed guards or to the machine after removal		N/A
	Where possible, guards are incapable of remaining in place without their fixings		N/A
	This does not apply if, after removal of the screws, or if the component is incorrectly repositioned, the appliance becomes inoperative		N/A
	Movable guards are interlocked		N/A
	The interlocking devices prevent the start of hazardous appliance functions until the guards are fixed in their position, and give a stop command whenever they are no longer closed		N/A
	Where it is possible for an operator to reach the danger zone before the risk due to hazardous appliance functions has ceased, movable guards associated with a guard locking device in addition to an interlocking device that:		N/A
	- prevents the start of hazardous appliance functions until the guard is closed and locked, and		N/A
	- keeps the guard closed and locked until the risk of injury from the hazardous appliance functions has ceased		N/A
	Interlocking movable guards remain attached to the appliance when open, and		N/A
	they are designed and constructed in such a way that they can be adjusted only by means of an intentional action		N/A
22.ZE.6	Interlocking movable guards designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous appliance functions		N/A
	The guard is opened to the extent needed to cause the interlocking to operate and is then closed, the number of operations being defined in the specific Part 2 ..... :		N/A
	After this test any defect that may be expected in normal use is applied to the interlock system, including interruption of the supply, only one defect being simulated at a time		N/A
	After these tests the interlock system is fit for further use		N/A
22.ZE.7	Adjustable guards restricting access to areas of the moving parts strictly necessary for the work are:		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	- adjustable manually or automatically, depending on the type of work involved, and		N/A
	- readily adjustable without the use of tools		N/A
22.ZE.8	In case of interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply, the appliance does not restart		N/A
	However, automatic restarting of the operation is allowed if the appliance may continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage interruption or fluctuation occurred		N/A
22.ZE.9	Appliances fitted with means to isolate them from all energy sources		N/A
	Such isolators are clearly identified, and		N/A
	they are capable of being locked if reconnection endanger persons		N/A
	After the energy source is disconnected, it is possible to dissipate any energy remaining or stored in the circuits of the appliance without risk to persons		N/A
ZF	**ANNEX ZF** (INFORMATIVE) **CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD**		P
	List of standards under CENELEC/TC61 with the allocation under the LVD (Low Voltage Directive) or the MD (Machinery Directive)..... :	LVD	P
ZG	**ANNEX ZG** (NORMATIVE) **UV APPLIANCES**		N/A
	The following modifications to this standard apply to appliances having UV emitters		N/A
	This annex is not applicable to appliances covered by the scopes of IEC 60335-2-27, IEC 60335-2-59 or IEC 60335-2-109		N/A
7.12.ZG	The instructions for appliances incorporating UVC emitters include the substance of the following: WARNING — This appliance contains a UV emitter. Do not stare at the light source		N/A
32	For appliances incorporating UV emitters the manufacturer delivers a declaration providing evidence that the plastic material exposed to the radiation is UV resistant		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
ZH	**ANNEX ZH** (INFORMATIVE) **Common plug and socket-outlet types in CENELEC countries**		N/A
	In general, supply cords of single-phase appliances having a rated current not exceeding 16 A are fitted with a plug complying with the following standard sheets:		N/A
	- for class I appliances or class II appliances with functional earth, standard sheet EU2, EU3 or EU4:		N/A
	- for class II appliances, standard sheet EU5, EU6 or EU7..... :		N/A
	There are exemptions or differences in certain CENELEC countries		N/A
ZI	**ANNEX ZI** (INFORMATIVE) **Information on the application of A11:2014 to EN 60335-1:2012 CENELEC CLC/TC 61(SEC)2096A**		P
	Clarification of the application of parts 2 in conjunction with the 2002 or 2012 version of EN 60335-1		P
ZZA	**ANNEX ZZA** (INFORMATIVE) **RELATIONSHIP BETWEEN THIS EUROPEAN STANDARD AND THE SAFETY OBJECTIVES OF DIRECTIVE 2014/35/EU [2014 OJ L96} AIMED TO BE COVERED**		P
	This standard provides one means of conforming to safety objectives of Directive 2014/35/EU		P
	When cited in the Official Journal under that Directive, compliance with the normative clauses of this standard given in Table ZZA.1 confers a presumption of conformity with the safety objectives of that Directive and associated EFTA regulations		P
	Compliance with this Part 1 when used together with the relevant Part 2 provides one means of conformity with the safety objectives		P
ZZB	**ANNEX ZZB** (INFORMATIVE) **RELATIONSHIP BETWEEN THIS EUROPEAN STANDARD AND THE ESSENTIAL REQUIREMENTS OF DIRECTIVE 2006/42/EC AIMED TO BE COVERED**		P
	This standard provides one means of conforming to essential requirements of EU Directive 2006/42/EC		P
	When cited in the Official Journal under that Directive, compliance with the normative clauses of this standard given in Table ZZB.1 confers a presumption of conformity with the essential requirements of that Directive and associated EFTA regulations		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	Compliance with this Part 1 when used together with the relevant Part 2 provides one means of conformity with the essential health and safety requirements		P
	ANNEX EN 62233:2008 + AC:2008 **EMF- ELECTROMAGNETICS FIELDS**		P
	The tested product also complies with the requirements of EN 62233:2008		P
	Limit ……100%	Measured max. : 2.878%	P

Variations to EN 60335-1:2012/A15:2021			
20.2	Replace “dangerous” with “hazardous” (twice)		P
22.44	An appliance is child-appealing if one of the following criteria is present:		N/A
	— appliance decorated using faces, cartoon like characters, or similar images;		N/A
	— appliance using shapes representing animals, characters, persons or scale models.		N/A
	An appliance is child-appealing if more than one of the following criteria are present:		N/A
	— using non-functional light (functional light is e.g. illumination of an object or area, signal indicating status of an appliance);		N/A
	— using non-functional sound (e.g. music);		N/A
	— using non-functional movement.		N/A
	If the appliance is child-appealing, has a mass less than 4 kg or is mounted or normally intended for use at a height less than 850 mm, the following conditions shall be met:		N/A
	— No surface (both functional surfaces and non-functional) that are accessible by means of test probe 19 of IEC 61032 located at a height less than 850 mm shall exceed the standard temperature rises.		N/A
	— Hazardous moving parts shall not be accessible by means of test probe 19 of IEC 61032 under the conditions specified for test probe 18 in Clause 20.2.		N/A
	— Live parts shall not be accessible by means of test probe 19 of IEC 61032 under the conditions specified for test probe 18 in Clause 8.1.1.		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	— Liquid in the appliance shall not exceed 38 °C in normal use when it is accessible by means of test probe 19 under the conditions specified for test probe 18 in Clause 20.2 or can get out of the appliance when positioned in different positions. Vessels in which two independent and sequential actions are needed to access the liquid are considered to meet the requirement.		N/A
	— The requirement of 22.12 is applicable for all accessible parts of the appliance.		N/A
	The requirement is not applicable to appliances where there is a toy shaped like the appliance.		N/A
24.1	In the note, replace the word “NOTE Z3” with “NOTE Z1”		N/A
24.1.7	Replace the sub clause with the following:		N/A
	If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151.		N/A
Annex ZA	*Modify the reference for Clause 25.8 by adding Cyprus to the countries listed*		P
Annex ZB	*Delete the second paragraph, including the note, starting with: “*This European Standard/Harmonization Document ….”		P
Annex ZC	Normative references to international publications with their corresponding European publications		P
Annex ZF	Criteria applied for the allocation of products covered by standards in the EN 60335 series under LVD or MD		P
Annex ZH	Common plug and socket-outlet types in CENELEC countries		P

Variations to EN 60335-2-29:2004/A11:2018			
Annex ZZ	Relationship between this European Standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered		P

National Differences for United Kingdom	
BS EN 60335-1:2012+AC:2014+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021, BS EN 60335-2-29:2004+A2:2010+A11:2018, BS EN 62233:2008 are same as EN 60335-1:2012+AC:2014+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021, EN 60335-2-29:2004+A2:2010+A11:2018, EN 62233:2008	P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict

Differences according to ..... : AS/NZS 60335.2.29:2017 + A1:2020 AS/NZS 60335.1:2020			
	National Differences		P
3	**TERMS AND DEFINITIONS**		N/A
	Insert the following definition:		N/A
AZ.3.1.201	Outlet load (AS/NZS 60335.1:2020)		N/A
	maximum allowed load that may be connected to appliance outlets and socket outlets accessible to the user (AS/NZS 60335.1:2020)		N/A
	Note to entry 1 A USB outlet is not considered to be an appliance outlet (AS/NZS 60335.1:2020)		N/A
5	**GENERAL CONDITIONS FOR THE TESTS**		P
5.2	Insert the following variation:		P
	If the tests of AZ.22.201 need to be performed they are carried out on separate appliances, the number of appliances is that required by AS/NZS 3112. (AS/NZS 60335.1:2020)		P
5.8.1	Replace the test condition by the following variation:		P
	Appliances for a.c. only are tested with a.c. at 50 Hz, and those for a.c. and d.c. are tested at a.c. 50 Hz or d.c., whichever is the more unfavourable supply. (AS/NZS 60335.1:2020)		P
7	**MARKING AND INSTRUCTIONS**		P
7.1	After the first paragraph of the requirement insert the following variation:		P
	Battery chargers shall be marked with the types of battery that are intended to be charged by the battery charger. (AS/NZS 60335.2.29:2017/A1:2020)		P
	For appliance outlets and socket outlets accessible to the user that are incorporated in appliances connected to the supply mains; and		N/A
	- that operate at rated voltage;		N/A
	the appliances shall be marked with their maximum outlet load in Watts. (AS/NZS 60335.1:2020)		N/A
	Max. Outlet load (W)……:		N/A
7.13	Replace the requirement with the following variation:		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	Instructions and other text required by this standard are written in English. (AS/NZS 60335.1:2020)		P
7.14	Insert the following variation:		P
	The marking concerning the types of battery that are intended to be charged by the battery charger shall be visible when the battery charger is being used, as in normal use. The lettering shall have a height of not less than 3 mm. (AS/NZS 60335.2.29:2017/A1:2020)		P
	Height of lettering (mm)……:	Measured: 3.24mm	P
7.15	After the last paragraph of the requirement insert the following variation:		N/A
	The marking of the maximum outlet load shall be close to the appliance outlet or socket outlet. (AS/NZS 60335.1:2020)		N/A
10	**POWER INPUT AND CURRENT**		N/A
10.1	After the last paragraph of the test specification insert the following variation:		N/A
	Appliance outlets and socket outlets accessible to the user that are incorporated in appliances connected to the supply mains; and		N/A
	that operate at rated voltage;		N/A
	are not loaded during the test, however their contribution to the power input is considered to be the marked outlet load per appliance outlet or socket-outlet. (AS/NZS 60335.1:2020)		N/A
11	**HEATING**		N/A
11.7	After the first paragraph of the test specification insert the following variation:		N/A
	Appliance outlets and socket outlets accessible to the user are loaded with a resistive load that gives the marked outlet load in watts. (AS/NZS 60335.1:2020)		N/A
11.8	After the first paragraph of the test specification insert the following variation:		N/A
	The pins of plug connectors inserted into appliance outlets accessible to the user and plugs inserted into socket outlets accessible to the user shall have a temperature rise not exceeding 45 K. (AS/NZS 60335.1:2020)		N/A
	Temperature rise (K)……..……:		N/A
19	**ABNORMAL OPERATION**		P
19.13	After the seventh paragraph of the test specification insert the following variation:		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	During and after the tests the no-load output voltage of an accessible safety extra-low voltage outlet or connector 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 60335.1:2020)		P
	Voltage normal use (V)……...:		P
	Voltage abnormal operation (V)……:		P
	Deviation (%)……:		P
	During and after the tests the no-load output voltage of a USB outlet shall not increase by more than 3 V or 10% of its no-load output voltage in normal use, whichever is higher. (AS/NZS 60335.1:2020)		N/A
	Voltage normal use (V)……...:		N/A
	Voltage abnormal operation (V)……:		N/A
	Deviation (%)……:		N/A
22	**CONSTRUCTION**		N/A
22.2	After the first paragraph of the requirement insert the following variation:		N/A
	For stationary appliances permanently connected to the fixed wiring, compliance with this requirement is considered to be met if the instruction concerning disconnection incorporated in the fixed wiring is in accordance with AS/NZS 3000. (AS/NZS 60335.1:2020)		N/A
22.3	Replace the text with the following variation:		N/A
	VOID (AS/NZS 60335.1:2020)		N/A
22.33	Delete the last sentence of the first paragraph of the requirement and introduce it as a new first paragraph of the requirement. (AS/NZS 60335.1:2020)		N/A
AZ.22.201	Appliances having integral pins for insertion into socket outlets shall comply with the appropriate requirements of AS/NZS 3112. (AS/NZS 60335.1:2020)		N/A
	Compliance is checked as specified in Annex J of AS/NZS 3112 (AS/NZS 60335.1:2020)		N/A
AZ.22.202	Appliance outlets and socket outlets accessible to the user that are incorporated in appliances connected to the supply mains; and		N/A
	that operate at rated voltage		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	shall be single-phase and have a current rating not exceeding 16 A. (AS/NZS 60335.1:2020)		N/A
	The socket outlets shall comply with AS/NZS 3112; (AS/NZS 60335.1:2020)		N/A
	accept a 3-pin, flat-pin plug as described in figure 2.1(a1) of AS/NZS 3112. (AS/NZS 60335.1:2020)		N/A
	The appliance outlets and socket outlets shall be protected by one of the following protection devices that has a current rating not exceeding the current rating of the appliance outlet or socket-outlet: (AS/NZS 60335.1:2020)		N/A
	- a circuit breaker for equipment complying with IEC 60934; (AS/NZS 60335.1:2020)		N/A
	- a manually resettable trip-free or cycling trip-free overcurrent protection device; (AS/NZS 60335.1:2020)		N/A
	- a non-user replaceable fuse-link. (AS/NZS 60335.1:2020)		N/A
	Current of outlet (A)……..:		N/A
	Current of protection device (A)……..:		N/A
	The protection device shall be placed behind a non-detachable cover. The actuating member of the circuit breaker and the manually resettable protection device may be accessible. (AS/NZS 60335.1:2020)		N/A
	The current rating of the appliance outlets and socket outlets is obtained from the marked outlet load in watts divided by the rated voltage. (AS/NZS 60335.1:2020)		N/A
	Load of outlet (W)……..……..:		N/A
	Rated voltage (V)……..:		N/A
	Current of outlet (A)……..:		N/A
	Compliance is checked by inspection and for a manually resettable trip-free or cycling trip-free overcurrent protection device by the following tests: (AS/NZS 60335.1:2020)		N/A
	The device shall be operated at rated voltage at 136% of its current rating, in an ambient temperature of 23°C ± 2°C in a draught-free environment. (AS/NZS 60335.1:2020)		N/A
	Rated voltage (V)……..:		N/A
	Current of outlet (A)……..:		N/A

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	Test current (A)……..…….……..:		N/A
	Ambient temperature (°C)…..…..…….……..:		N/A
	The device shall operate to interrupt the current within 2 h. (AS/NZS 60335.1:2020)		N/A
	Overload condition existed for (_h,_min, _sec)…..:		N/A
	The device shall be operated at rated voltage at 600% of its current rating in an ambient temperature of 23°C ± 2°C in a draught-free environment (AS/NZS 60335.1:2020)		N/A
	Rated voltage (V)……..:		N/A
	Current of outlet (A)……..:		N/A
	Test current (A)……..…….……..:		N/A
	Ambient temperature (°C)…..…..…….……..:		N/A
	The device shall operate to interrupt the current within 5 s. (AS/NZS 60335.1:2020)		N/A
	Overload condition existed for (sec)……....:		N/A
	Immediately following the overcurrent tests, the test of clause 16.3 shall be applied, and the device shall comply with the specified requirements of the test. (AS/NZS 60335.1:2020)		N/A
	The device shall comply with the ball pressure test of 30.1 carried out at 160 °C. (AS/NZS 60335.1:2020)		N/A
	Plastic material type……:		N/A
	Impression diameter (mm)…….……..:		N/A
	The device shall comply with the glow-wire test of 30.2.3.1 with a test severity of 960 °C. (AS/NZS 60335.1:2020)		N/A
	Plastic material type…….……:		N/A
	Time of ignition (sec)…….…….……:		N/A
	Time of extinguish (sec)…….……..:		N/A
	Specified layer placed underneath the test specimen does not ignite. ……..…….……..:		N/A
24	**COMPONENTS**		P
24.1	Insert the following variation before NOTE 1:		P
	NOTE 201 The relevant IEC standard can be replaced with the relevant Australia/New Zealand standard where applicable. (AS/NZS 60335.1:2020)		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		N/A
25.1	Insert the following variation:		N/A
	Supply cords for single-phase portable appliances intended for direct connection to the supply mains, shall be fitted with an appropriate plug complying with AS/NZS 3112. (AS/NZS 60335.1:2020)		N/A
Table 11	In footnote *a insert* the following variation		N/A
	However, they cannot be used in class I appliances. (AS/NZS 60335.1:2020)		N/A
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		N/A
32.101	Insert the following to the test specification:		N/A
	The spectral irradiance for appliances for wavelengths in the range 200 nm ≤ λ ≤ 280 nm shall not exceed 1,0 x 10^{-5} W/m^2/nm (AS/NZS 60335.2.27:2020)		N/A
	The ratio (R) of the total irradiance in the range 280 nm ≤ λ ≤ 320 nm to the total irradiance in the range 280 nm ≤ λ ≤ 400 nm shall fall within the limits 0,007 < R < 0,03. (AS/NZS 60335.2.27:2020)		N/A
	Spectral irradiance (W/m^2/nm)……:……		N/A
	Ratio value……		N/A
Annex BB	**DETAILED CLASSIFICATION OF UV APPLIANCES**		N/A
BB.2	At the end of the Note *insert* the following variation:		N/A
	UV Type 1 appliances, UV Type 4 appliances and UV Type 5 appliances are not allowed for household use or commercial use (AS/NZS 60335.2.27:2020)		N/A
	Special national conditions (if any)		P
	Australia		P
5	**GENERAL CONDITIONS FOR THE TESTS**		P
AZ.5.201	For appliances, other than class III appliances, that are intended for connections to the supply mains and that are not marked with: (AS/NZS 60335.1:2020)	Class I	P
	- a rated voltage of at least 240 V for single-phase appliances and at least 415 V for three-phase appliances, or (AS/NZS 60335.1:2020)		N/A
	- a rated voltage range that includes 240 V for single-phase appliances and 415 V for three-phase appliances, (AS/NZS 60335.1:2020)	100-240V	P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
	the rated voltage is equal to 240 V for single-phase appliances and 415 V for three phase appliances, (AS/NZS 60335.1:2020)		N/A
	and the upper limit of the rated voltage range is equal to 240 V for single-phase appliances and 415 V for three-phase appliances. (AS/NZS 60335.1:2020)		N/A
	In addition, the rated current or rated power input is equal to the calculated value corresponding to 240 V for single-phase appliances and 415 V for three-phase appliances as appropriate (AS/NZS 60335.1:2020)		N/A
7.1	After the first paragraph of the requirement insert the following variation:		P
	Appliances intended for connection to the supply mains, other than class III appliances, shall be marked with:	Class I	P
	- a rated voltage of at least: .....230 V for single-phase appliances; ..... 400 V for poly-phase appliances; or (AS/NZS 60335.1:2020)		N/A
	- a rated voltage range that includes: .....230 V for single-phase appliances; .....400 V for poly-phase appliances. (AS/NZS 60335.1:2020)	100-240V	P
24	**COMPONENTS**		P
24.1.7	Telecommunication interface circuitry must comply with the Telecom Labeling Notice issued under the Telecommunications Act instead of IEC 62151 (AS/NZS 60335.1:2020)		P
	New Zealand		P
7.1	After the first paragraph of the requirement insert the following variation:		P
	Appliances intended for connection to the supply mains, other than class III appliances, shall be marked with:		P
	- a rated voltage of: .....230 V for single-phase appliances; ..... 400 V for poly-phase appliances; or (AS/NZS 60335.1:2020)		N/A
	- a rated voltage range that includes: .....230 V for single-phase appliances; .....400 V for poly-phase appliances. (AS/NZS 60335.1:2020)	100-240V	P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict

National Differences for Korea:	**KC 60335-1 & K60335-2-29**		
7	**Marking and instructions**		P
7.17 (*new subclause)*	For ozone generating appliances with a percentage of ozone exceeding 5×10^{-6} according to clause 32, the product and instructions shall indicate the following: - Precautions to prevent the user from approaching the ozone generating part during operation - Precautions to ventilate the room for ozone removal during use or after use - Prohibition of use in a confined space - Ozone concentration (PPM) and ozone generation rate(㎎ / ㎥) (applicable to appliances used by a trained specialist for sterilization and deodorization) Note The ozone concentration is measured according to clause 32, and the ozone concentration of 1 PPM corresponds to the amount of ozone generation rate of 2 mg / ㎥. - Appliances used by trained specialists for sterilization, deodorization and other purposes should include instructions for user protection and instructions on wearing protective equipment		N/A
24	**Components**		P
24.4 *(addition)*	Plugs for the connection of the apparatus to the supply main shall comply with the Korean requirement(KS C 8305).		P

Attachment 1: National Differences			
Clause	Requirement - Test	Result - Remark	Verdict
32	**Radiation, toxicity and similar hazards**		N/A
(addition)	The following test shall be applied for appliances with ozone generation function, or The relevant standard shall be applied, if the test method is specified in Part 2 (particular standard). The ozone concentration produced by ozone generating appliances shall not be excessive. Compliance is checked by the following test. Testing is carried out in a room without openings having dimensions of 2.5 m × 3.5 m × 3.0 m, the walls being covered with polyethylene sheet. The appliance is positioned in accordance with the instructions. The appliances used on a table are placed in the centre of the room approximately 750 mm above the floor. The appliance is supplied at rated voltage and operated for the following times to allow ozone to be generated at maximum. - maximum time allowed on appliance, if the continuous operation time is less than 1 hour or - maximum time allowed on appliance (24 hours if exceeding 24 hours), if the continuous operation time is over 1 hour The ozone sampling tube is to be located in the air stream 50 mm from the air outlet of the appliance. The background ozone concentration measured prior to the test is subtracted from the maximum concentration measured during the test. The percentage of ozone in the room shall not exceed as following; - 1×10^{-6} (if the continuous operation time is less than 1 hour), or - 5×10^{-6} (if the continuous operation time is over 1 hour)		N/A
	Special national conditions		P
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.	100-240V	P
Frequency	Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted.	50/60Hz	P
Instruction	Instruction manuals and appliance marking related safety, including nameplate shall be in Korean		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
National Differences - Japan			
2	Replacement: Among the IEC and ISO standards listed in IEC 60335-1:2010, replace as follows: - ISO 2768-1 with JIS B 0405 (IDT) - IEC 60529:1989 with JIS C 0920:2003 (IDT) - IEC 61032:1997 with JIS C 0922:2002 (IDT) - IEC 60112:2003+Amd.1:2009 with JIS C 2134:2007 (IDT) - IEC 60227 with JIS C 3662 (MOD) - IEC 60245 with JIS C 3663 (MOD) - IEC 60085:2007 with JIS C 4003:2010 (MOD) - IEC 61058-1:2000+Amd.1:2001+Amd.2:2007 with JIS C 4526-1:2013 (MOD) - IEC 60384-14:2005 with JIS C 5101-14:2009 (IDT) - IEC 60065:2001+Amd.1:2005 with JIS C 6065:2013 (MOD) - IEC 60127 with JIS C 6575 (MOD) - IEC 60691 with JIS C 6691 (MOD) - IEC 60061-1 with JIS C 7709-1 (MOD) - IEC 60238 with JIS C 8280 (MOD) - IEC 60320-1 with JIS C 8283-1 (MOD) - IEC 60320-2-2 with JIS C 8283-2-2 (MOD) - IEC 60320-2-3 with JIS C 8283-2-3 (MOD) - IEC 60730-1:1999+Amd.1:2003+Amd.2:2007 with JIS C 9730-1:2010 (MOD) - IEC 60730-2-8:2000+Amd.1:2002 with JIS C 9730-2-8:2004 (MOD) - IEC 60730-2-10 with JIS C 9730-2-10 (IDT) - IEC 60068-2-2 with JIS C 60068-2-2:2010 (IDT) - IEC 60068-2-31 with JIS C 60068-2-31:1995 (IDT) - IEC 60068-2-75 with JIS C 60068-2-75:2004 (IDT) - IEC 60068-2-78 with JIS C 60068-2-78:2004 (IDT) - IEC 60664-1:2007 with JIS C 60664-1:2009 (IDT) - IEC 60664-3:2003 with JIS C 60664-3:2009 (IDT) - IEC 60664-4:2005 with JIS C 60664-4:2009 (IDT) - IEC 60695-2-11:2000 with JIS C 60695-2-11:2004 (IDT) - IEC 60695-2-12 with JIS C 60695-2-12:2004 (IDT) - IEC 60695-2-13 with JIS C 60695-2-13:2004 (IDT) - IEC 60695-10-2 with JIS C 60695-10-2:2008 (IDT) - IEC 60695-11-5:2004 with JIS C 60695-11-5:2007 (IDT)		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	- IEC 60695-11-10 with JIS C 60695-11-10:2006 (IDT) - IEC 61000-4-2 with JIS C 61000-4-2:2012 (IDT) - IEC 61000-4-3 with JIS C 61000-4-3:2012 (IDT) - IEC 61000-4-4 with JIS C 61000-4-4:2007 (MOD) - IEC 61000-4-5 with JIS C 61000-4-5:2009 (MOD) - IEC 61000-4-6 with JIS C 61000-4-6:2006 (MOD) - IEC 61000-4-11 with JIS C 61000-4-11:2008 (IDT) - IEC 61000-4-34:2005 with JIS C 61000-4-34:2008 (IDT) - IEC 61558-1:2005 with JIS C 61558-1:2008 (MOD) - IEC 61558-2-6:2009 with JIS C 61558-2-6:2012 (MOD) - ISO 9772:2001 with JIS K 7241:2005 (IDT) - ISO 9773 with JIS K 7341:2006 (IDT)		P
	Addition: Add the following. - JIS C 4908 (corresponding to IEC 60252-1:2001, IEC 61048:1999 and IEC 61049:1991; MOD) - JIS C 8285 (corresponding to IEC 60309-1:1999+Amd.1:2005; MOD) - JIS C 8303 (corresponding to IEC/TR 60083; JIS original) - JIS C 8324 (corresponding to IEC60400:2008; MOD) - IEC 60061-3		N/A
	(Remark: Edition of each IEC standard shown in parentheses is according to the current edition of the JIS standard concerned as of 2016-01.)		N/A
	Deletion: Delete IEC/TR 60083, IEC 60598-1 and IEC 61770.		N/A
3.1.4	Addition: Add the following sentence at the end of the existing sentence. However, if no power input is assigned to the appliance, the rated power input for heating appliances and combined appliances is the power input measured when the appliance is supplied at rated voltage and operated under normal operation.		N/A
	Deletion: Delete the existing NOTE.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.6	Addition: Add the following sentence at the end of the existing sentence. However, if no current is assigned to the appliance, the rated current is - for heating appliances, the current calculated from the rated power input and the rated voltage; - for motor-operated appliances and combined appliances, the current measured when the appliance is supplied at rated voltage and operated under normal operation.		P
	Deletion: Delete the existing NOTE.		N/A
3.3.6	Replacement: In the existing sentence, replace “class II constructions” with “class II constructions (basic insulation constructions if it is a class 0 appliance) ”.		P
3.3.7	Addition: Add the following paragraph after the existing paragraph. Class 0 appliances have either an enclosure of insulating material which may form a part or the whole of the basic insulation, or a metal enclosure which is separated from live parts by an appropriate insulation. If an appliance with an enclosure of insulating material has provision for earthing internal parts, it is considered to be a class I appliance or class 0I appliance.		N/A
	Deletion: Delete NOTE		N/A
3.3.8	Addition: Add the following paragraph after the existing paragraph. If appliances have a plug which is of two-pin type and equipped with an earthing lead, it is considered to be a class 0I appliance.		N/A
3.3.13	Replacement: In NOTE 2, replace “a class I appliance or class II appliance” with “a class 0I appliance, class I appliance or class II appliance”.		N/A
3.3.15A	Addition: Add the following new subclause after 3.3.15. 3.3.15A functional earthing earthing provided for other purpose than safety NOTE The term “earthing” in this standard means protective earthing unless specified specially, and excludes functional earthing.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
3.7.1A	Addition: Add the following new subclause after 3.7.1. 3.7.1A heat sensing wire wire which is used as thermostat or thermal cut-out and which is able to adjust the heat (power consumption) by controlling the current flowing through heating wire. In any portion of the wire, the sensing wire is able to sense the temperature of the heating device inside the wire.		N/A
5.6	Addition: Add the following paragraph after the existing paragraph. If the adjusting means of the control is accessible without the aid of a tool, this subclause applies whether the setting can be altered by hand or with the aid of a tool. If the adjusting means is not accessible without the aid of a tool and if the setting is not intended to be altered by the user, this subclause does not apply.		N/A
	Deletion: Delete the existing NOTE 1.		N/A
5.8.1	Replacement: In the second paragraph, replace “a rated frequency range of 50 Hz to 60 Hz” with “a rated frequency range of 50 Hz to 60 Hz or two rated frequencies of 50 Hz and 60 Hz, for example, in a manner of 50 Hz/60 Hz”.		P
6.1	Addition: Add the following paragraph after the first paragraph. Class 0 appliances shall have the rated voltage of 150 V or less and be of indoor-use.		N/A
7.1	Replacement: Replace the second dash with the following: - symbol for nature of supply, unless the supply is of two-wire system of single phase and the rated frequency is marked;		P
	Addition: Before NOTE 1, add new dash as follows: - rated frequency, if the appliance is for exclusive use for 50 Hz or 60 Hz.		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	Addition: Add the following paragraph after NOTE 4. If components have an independent marking, the marking of the appliance and that of the components is to be such that there can be no doubt with regard to the marking of the appliance itself.		P
	Deletion: Delete the existing NOTE 3.		N/A
7.3	Replacement: In the example of NOTE 3, replace “230 V/400 V” with “230 V/400 V 3 ~”.		N/A
	Addition: Add the following paragraph before the last paragraph. The marking of rated frequency is not needed to separate by a hyphen or an oblique stroke.		N/A
7.12	Addition: Add the following after the existing second paragraph. If the class 0I appliance having a plug is one of the following a) to c), the warning of the following purport shall be stated in the instructions. WARNING - There is risk of electric shock if this appliance is used without earthing. a) appliances generating the leakage current exceeding the limit of leakage current specified for class 0I appliances in 13.2, when the leakage current was measured under the state eqquipped the filter for interference suppression in accordance with 13.2; b) for the minimum clearance corresponding to the rated impulse voltage of 1 500 V, specified in Table 16 of 29.1, appliances do not comply with the value shown in the parrenthes which applies for class 01 appliances; and c) appliances of which a surge protective device connected between the live parts and the accessible metal parts, except appliances intended for the installation by a professional.		N/A
	Replacement: In the fourth paragraph, replace “by persons (including children) with reduced physical, sensor or mental capabilities, or lack of experience and knowledge,” with “by persons (including children) who are required assistance,”		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
7.12.5	Addition: Add the following new dash before the last paragraph. - For class 0I appliances equipped with an external earthig terminal and with type X attachment, if the earthing conductor is not provided by packing together with the appliance (except earthing conductor connected by an electrician), the instructions shall contain the following: Information of the cross-sectional area of the earthing conductor		N/A
7.12.8	Deletion: Delete the first paragraph.		N/A
	Addition: Add the following NOTE after the existing last paragraph. NOTE The requirement on the maximum inlet water pressure and the minimum inlet water pressure of the appliances connected to the water mains (the first paragraph of the corresponding international standard) was deleted.		N/A
7.16	Replacement: In the first paragraph, replace “a replaceable thermal link or fuse link” with “a thermal link or fuse link which is intended its replacement”.		N/A
8.1.1	Addition: Add the following paragraph after the first paragraph. For screw-type fuses and screw-type miniature circuit breakers that are detachable without the aid of a tool, this applies for the state without detaching of those.		N/A
	Deletion: Delete the existing NOTE.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	Addition: Add the following paragraphs after the existing last paragraph. Lampholers for lamps shall be checked in accordance with the following. - E14 lampholders shall be designed so that the live parts are not accessible when it is supplied during insertion of the cap of lamp. - E11, E12, E17, E26 and E39 lampholders shall be designed so that the live parts are not accessible after inserted the cap of lamp completely. Compliance is checked by the following. - For E14 lampholders, the gauge of standard sheet 7006-61 specified in IEC 60061-3 applies. - For E11, E12, E17, E26 and E39 lampholders, the test finger shown as test probe B in JIS C 0922 applies.		N/A
8.1.2	Replacement: At the end of the first paragraph, replace “socket-outlets” with “socket-outlets and connectors of cord sets”.		N/A
8.1.4	Replacement: In the first dash, replace “the part is supplied at safety extra-low voltage, provided that” with; the part is supplied at safety extra-low voltage or, if the appliance is class 0 appliance, by an isolating transformer complying with the electric strength test for reinforced insulation of 16.3, provided that		P
8.1.5	Addition: Add the following sentence at the end of the first paragraph. However, the power supply terminal part is excluded.		N/A
10.1	Addition: Add the following paragraph below Table 1. The allowable deviation of the rated power input of appliances, which a PTC heating element is used as heating device, shall be ±15 %, regardless of the rated values.		N/A
10.2	Addition: Add the following paragraph below Table 2. The allowable deviation of the rated current of appliances, which a PTC heating element is used as heating device, shall be ±15 %, regardless of the rated values.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
11.4	Addition: Add the following NOTE. NOTE For heating appliances, which the power input is not proportional to the square of the voltage, refer to 5.13.		N/A
11.8	Addition: In 1/3 of Table 3, add "[k]" at the end of "Rubber, polychloroprene or polyvinyl chloride insulation of internal and external winding, including supply cords:". *(Concretely, the 6th column of table)*		N/A
	Replacement: In 1/3 of Table 3, replace "- B22, E26 and E27" with "- B22 and E26". *(Concretely, the 11th column of table)*		N/A
	Replacement: In the column for temperature rise of 1/3 of Table 3, replace the value of "55", which corresponds to "- other lampholders and starter holders for fluorescent lamps" in the left column, with "[d]". *(Concretely, the 11th column of table)*		N/A
	Addition: In the first column of 3/3 of Table 3, add the following paragraphs before the existing NOTE 1. If other materials than those mentioned in the table are used, they are not to be subjected to temperatures in excess of their thermal capabilities as determined by ageing tests. The values in the table are based on an ambient temperature not normally exceeding 25 ˚C but occasionally reaching 35 ˚C. However, the temperature rise values specified are based on 25 ˚C. The temperature of the terminals of switches is measured if the switch is tested in accordance with Annex H.		N/A
	Deletion: In the first column of 3/3 of Table 3, delete the existing NOTE 1, NOTE 2 and NOTE 3.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	Replacement: In the last column of 3/3 of Table 3, replace the existing "[f]" with the following. f For thermoplastic materials, the temperature rise has to be determined in order that the tests of 30.1 can be carried out. For materials that the applicable limit is specially not specified in the table, if those comply with "1(1)ロ(ハ) of Appendix 4 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)", those are considered to be the material complying with the temperature rise limit.		N/A
	Addition: In the last column of 3/3 of Table 3, add the following at the end. k The values apply to the cords and wiring which comply with the applicable relevant IEC standard. For other cords and wiring, if those comply with "1(1)ロ(ハ) of Appendix 4 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)", those are considered to be the material complying with the temperature rise limit.		N/A
13.1	Addition: Add the following NOTE below the fourth paragraph. NOTE For heating appliances, which the power input is not proportional to the square of the voltage, refer to 5.13.		N/A
	Addition: Add the following sentence at the end of the last paragraph. However, for class 0 appliances, the appliance is supplied at the rated voltage, and the test of 13.2 is carried out under the state eqquipped with the filter for interference suppression.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
13.2	Replacement: Replace the existing first paragraph with the following. The leakage current is measured by means of the circuit described in Figure 4 of IEC 60990. However, for class 0I appliances and class I appliances, the appliances may be checked that the current flowing through the earthed conductor does not exceed the limit, by using an ammeter of low-impedance, which has capability of measuring of the true RMS of the leakage current at the commercial frequency.		N/A
	Replacement: In the eighth paragraph, replace the eighth dash with "- for class 0I appliances (if having a filter for interference suppression, under the state where the filter was removed) 0,5 mA".		N/A
	Addition: In the eighth paragraph, add the following new dash after the existing third dash. - for class 0I appliances equipped with filter for interference suppression 1,0 mA		N/A
13.3	Addition: In NOTE 1, add the following sentence at the end of the existing sentence. However, the test is carried out without removing the surge protective device connected to accessible part.		N/A
16.2	Replacement: Replace the existing second paragraph with "The test voltage is 1,06 times rated voltage."		P
16.3	Replacement: In the last sentence of the third paragraph, replace "class 0 appliances and class I appliances" with "class 0 appliances, class 0I appliances and class I appliances":		N/A
17	Replacement: In the third paragraph, replace "safety extra-low voltage circuits" with "safety extra-low voltage circuits (for class 0 appliances, the circuits isolated by an isolating transformer complying with 8.1.4 are included)".		N/A
19.3	Addition: Change the existing NOTE as NOTE 1, and add the following below that. NOTE 2 For heating appliances, which the power input is not proportional to the square of the voltage, refer to 5.13.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
19.7	Replacement: In the last sentence of the third paragraph, replace “of class P2 of IEC 60252-1” with “capacitors of class P2 of IEC 60252-1 or capacitors with a built-in safety device or safety mechanism of JIS C 4908”.		N/A
19.11.3	Addition: Add the following paragraph after the existing paragraph. The compliance criteria applied for these tests are those detailed in 19.13.		N/A
	Deletion: Delete the existing NOTE.		N/A
19.11.4.4	Replacement: In the second paragraph, replace “class I appliances” with “class 0I appliances and class I appliances”.		N/A
19.12	Replacement: In the first paragraph, replace “a miniature fuse-link complying with IEC 60127” with “a miniature fuse-link complying with IEC 60127 or a fuse complying with Appendix 3 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)”.		P
	Addition: In the third dash, add the following new item. ● for the relevant period or for 4 min, whichever is the shorter, for fuse-links without the marking of quick-acting or time-lag.		P
	Addition: Add the following NOTE 4 after NOTE 3. NOTE 4 If the fuses have special characteristics, the characteristics should be taken into account.		N/A
19.14	Addition: Add the following NOTE 1 after the third paragraph. NOTE 1 The following are the examples: - relays for power switch; and - starting-relays for capacitor induction motors.		N/A
	Modification: Change the existing NOTE as NOTE 2.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
19.15A	Addition: Add the following new subclause after 19.15. 19.15A For heating appliances having rectifiers in parallel connection which are equipped in the power supply part, for adjusting the power consumption, the appliance shall not show any abnormality under the state where one of rectifiers was open-circuited. Compliance is checked by the following; - one rectifier shall have a rated capacity not less than the current of the main circuit, and rectifiers in parallel connection shall be of same specifications; and - when the heating test of Clause 11 is carried out under the state where one of rectifiers in parallel connection was open-circuited, the appliance shall comply with the requirements of Clause 11.		N/A
21.2	Replacement: Replace the second paragraph with the following. Compliance is checked by subjecting the insulation to the following test, unless the thickness of supplementary insulation is at least 1 mm and that of the reinforced insulation is at least 2 mm, or in case of class 0 appliance, unless the thickness of enclosure of synthetic resin used as basic insulation is at least 0,3 mm.		N/A
	Replacement: In the third paragraph, replace the existing first sentence with the following. For the supplementary insulation or the reinforced insulation of class II appliances, the insulation is raised to the temperature measured during the test of Clause 11.		N/A
22.3	Replacement: In the first sentence of the first paragraph, replace “with pins” with “with pins (including flat blades)”.		N/A
	Addition: At the end of the last paragraph, add the following. However, the torque test of 0,4 Nm does not apply for flat-blade plugs.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
22.16	Addition: Add the following paragraph between the fifth paragraph and NOTE. If a flat cord without sheath is used, the number of recoil operation by the reel is reduced to 2 000 times. In this case, not more than 20 % of the strands of the conductor shall be broken.		N/A
22.27	Addition: At the end of the first paragraph, add the following. However, this subclause does not apply to class 0 appliances.		P
22.31	Addition: Add the following paragraph before the last paragraph. For the part of basic insulation, if a wire is connected by soldering, the wire shall be soldered after making mechanical connection, for example, by passing through it into a hole or by entangling it.		P
22.39	Addition: Add the following paragraph after the existing first paragraph. Lampholders for fluorescent lamps specified in JIS C 8324 except GX53 shall be used only for the connection of fluorescent lamps. However, this excludes other lamps than fluorescent lamps; - if the lamp is not a detachable one as defined in 3.6.2 and complies with this standard; or - if the lamp complies with the applicable relevant standard.		N/A
22.42	Addition: At the end of the first paragraph, add the following sentence. However, for class 0 appliances, protective impedance may consist of only one class Y1 capacitor in JIS C 5101-14, and in this case, the capacitor is not short-circuited.		N/A
22.44	Modification: Modify the existing NOTE as NOTE 1.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	Addition: Add the following after the existing last paragraph. This requirement does not apply to appliances which are intended for use by children normally. NOTE 2 Kiddie rides (JIS C 9335-2-82) is an example of such appliances.		N/A
22.47	Replacement: Replace the whole with “This subclause does not apply.”		N/A
22.48	Replacement: Replace the whole with “This subclause does not apply.”		N/A
22.52	Replacement: Replace the existing first paragraph with the following. Output-outlets and appliance outlets on other than class I appliances, which are accessible to the user, shall be of which the connection of class I appliance is not possible.		N/A
22.52A	Addition: Add the following new subclause after 22.52. 22.52A Surge protective devices shall not be used for connection between the live parts and the accessible metal parts of class 0I appliances, except appliances which are intended for installation by a professional. Compliance is checked by inspection.		N/A
23.3	Replacement: In NOTE 1, replace “IEC 60227 or IEC 60245” with the following; JIS C 3662 series, JIS C 3663 series, or “Appendix 1 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)”		N/A
23.5	Replacement: In the third paragraph, replace “IEC 60227 or IEC 60245” with the following. IEC 60227 or IEC 60245 or of cords complying with “Appendix 1 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3),”		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	Addition: Add the following new paragraph after NOTE 1. For class II construction, the requirements for supplementary insulation and reinforced insulation apply except that the sheath of a cord complying with JIS C 3662 series or JIS C 3663 series or of a cord complying with “Appendix 1 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)” provides supplementary insulation.		N/A
	Deletion: Delete the existing NOTE 2.		N/A
23.7	Addition: Add the following NOTE after the existing last paragraph. NOTE For conductors for functional earthing, use of a conductor identified by the colour combination green/yellow is not required.		N/A
23.10	Addition: At the end of the first paragraph, add the following sentence. However, this requirement does not apply for the internal wiring of class 0 appliances and the internal wiring connected with SELV circuits.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
24	*Addition:* *For plugs of supply cords, add the following.* *For appliances using a plug based on "Appendix 4 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3), the plug of supply cord shall comply with the requirements specified in Appendixes revised by the METI Notices dated 2014-09-18 and 2015-01-16.* *Plugs shall comply with the following:* *a. The insulation material of plug surface that faces with the surface of outlet and that is between blades of plug shall be of PTI of 400 or better, which is specified in JIS C2134:2007 (corresponding to IEC 60112:2003, IDT).* *b. Insulation material holding the blades shall comply with the requirement of the test specified in JIS C60695-2-11:2004 (corresponding to IEC 60695-2-11:2000, IDT) or JIS C60695-2-12:2013 (corresponding to IEC 60695-2-12:2010, IDT), when it is conducted at 750 ˚C. However, this does not apply if the material is of GWIT of 775 ˚C or better, which is specified in JIS C60695-2-13:2013 (corresponding to IEC 60695-2-13:2010, IDT).* *If the issue date of the certificate of DENAN conformity assessment for plug is 2015-09-17 or before, it is not considered to be a sufficient evidence. If the date is 2015-09-18 or after, the certificate is considered to be a sufficient evidence.* *If a test report prepared by the certificate holder of the certificate of DENAN conformity assessment is available, compliance may be checked by reviewing the contents of report.* *If no sufficient evidence is available, compliance is check by tests.*		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
24.1	Addition: At the end of the first paragraph, add the following sentence. This excludes the components; - that are complying with “Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)”; and - that are used in accordance with the ratings marked on the component. Even this case, subclauses from 24.1.1 to 24.1.9 apply.		P
	Addition: Add the following new paragraphs between NOTE 2 and NOTE 3. Unless otherwise specified, the requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance, Unless otherwise specified, the requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components. Components that have been previously tested and shown to comply with the resistance to fire requirements in the relevant standard for the component need not be retested provided that - the severity specified in the component standard is not less than the severity specified in 30.2 of this standard, and - unless the preselection alternative is used, the test report for the component states whether it complied with the relevant standard for the component with or without flame. Flames existing for a cumulative time not exceeding 2 s during the test are ignored. If the above two conditions are not satisfied, the component is tested as part of the appliance. There are two levels of severity specified for appliances for which 30.2.3 is applicable. Components which have not been previously tested and shown to comply with the resistance to fire requirements in the relevant standard for the component are tested according to the requirements of 30.2 of this standard.		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	Deletion: Delete the existing NOTE 3 and NOTE 4.		P
	Replacement: In the paragraph before the last paragraph, replace “IEC/TR 60083” with “JIS C 8303”, and “IEC 60320-1” with “JIS C 8283-1, JIS C 8285”.		P
24.1.2	Addition: Add the following sentence at the end of the existing paragraph. However, class 0 appliances are not required to comply with Annex G if the appliance complies with the requirements of this standard.		P
24.1.3	Addition: Add the following new paragraph after the first paragraph. The declared number of operating cycles is only applicable for switches required for compliance with this standard.		N/A
	Deletion: Delete the existing NOTE.		N/A
24.1.8	Replacement: In the second sentence, replace “for the purposes of Clause 19” with “defined in Subclause 3.7.8”.		N/A
24.4	Replacement: In the first paragraph, replace “IEC/TR 60083” with “JIS C 8303”.		P
24.7	Deletion: Delete the existing first paragraph.		N/A
24.8	Addition: Add the following new dash after the first dash. - the capacitors are a capacitor with a built-in safety device or a capacitor with safety mechanism, which are according to JIS C 4908;		N/A
	Addition: By modifying the existing NOTE as NOTE 1, add the following NOTE 2 after NOTE 1. NOTE 2 This metallic or ceramic enclosure means the case (inside of the enclosure) which is equipped in other part than the enclosure touchable by a test probe B of JIS C 0922. It is considered that, even if adjacent non-metallic parts inside the case are within 50 mm of the outer surface of the capacitor, the case will prevent the diffusion of flame or molten material.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
24.8A	Addition: Add the following new subclause after 3.7.1. 24.8A The heat sensing wire of appliances incorporated a heat sensing wire shall not show remarkable change of the operation temperature in normal use. Compliance is checked by applying Annex JA.		N/A
25.3	Addition: Add the following after the existing second dash. If appliances of which the current flowing through the power supply terminals is 10 A or more have a supply lead (limited to those of stranded conductor), the supply lead shall comply with one of the following; • a supply lead is accommodated in the appliance or in a suitable compartment equipped for the appliance; • a supply lead is equipped with a bar-shaped terminal which is crimped at the tip of conductor, and is connectable with plug-in connectors; or • the instructions for use or installation specifies the box (including outlet box) having appropriate space to connect the lead conductor to the supply mains.		N/A
25.4	Addition: Add the following new paragraph after Table 10. In addition to those complying with Table 10, those complying with the dimensions specified in “Supplementary Table 1 and Supplementary Table 5 of Appendix 2 of Interpretation of Ministerial Ordinance establishing Technical requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)” are considered that those comply with this clause.		N/A
25.5	Addition: Add the following NOTE after the existing last paragraph. NOTE Earthing conductor not integrated in a supply cord is not considered to be supply cord. However, this subclause is considered to be applicable also to the earthing conductor of class 0I appliance drawing out an earthing lead conductor. And, the earthing conductor of class 0I appliance equipped with an external earthing terminal is considered to be type X attachment, except those connected by an electrician.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
25.7	Addition: In the first paragraph, add the following new dash after the existing last dash. - cords complying with “Appendix 1 of Interpretation of Ministerial Ordinance establishing Technical requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)” However, flat cords without sheath shall not be used for; • other appliances than class 0 appliance; or • class 0 appliances for floor-exclusive-use.		N/A
25.8	Replacement: Replace the existing first paragraph with the following. Except supply cords complying with “Appendix 1 of Interpretation of Ministerial Ordinance establishing Technical requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)”, conductors of supply cords shall have a nominal cross-sectional area of not less than that shown in Table 11. For class 0I appliances which use a two-pin type plug equipped with an earthing lead conductor, the requirements for supply cords apply. Earthing conductor of other class 0I appliances shall comply with “Paragraph 4 of Article 17 of Interpretation of Technical Requirements for Electric Facilities”.		N/A
	Addition: To the existing item a in Table 11, add the following sentence. However, in this case, except tinsel cords, the plug shall be equipped with a fuse which has a rated current of 3 A or less and a rated breaking capacity of 500 A or more, in its inside..		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict

Addition:
Add the following between Table 11 and the last paragraph.

For cords complying with “Appendix 1 of Interpretation of Ministerial Ordinance establishing Technical requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)”, the following applies.

a) Allowable current at the ambient temperature of 30°C is specified in the following.
1) Allowable current for cords is specified in Table 11A.

N/A

Table 11A – Allowable current for cords

N/A

cross-sectional area mm^2	number of strands /diameter of strand number/mm	allowable current A			
		Upper limit of temperature for use of electric insulation			
		60 ˚C	75 ˚C	80 ˚C	90 ˚C
0.75	30/0.18	7	8	9	10
1.25	50/0.18	12	14	15	17
2.0	37/0.26	17	20	22	24
3.5	45/0.32	23	28	29	32
5.5	70/0.32	35	42	45	49

2) Allowable current for cabtire cables (limited to those of which the upper limit of temperature for use of electric insulation is 60 ˚C), is specified in Table 11B.

N/A

Table 11B – Allowable current of cabtire cable

N/A

cross-sectional area mm^2	number of strands /diameter of strand number/mm	allowable current A			
		single core	two cores	three cores	four and five cores
0.75	30/0.18	14	12	10	9
1.25	50/0.18	19	16	14	13
2.0	37/0.26	25	22	19	17
3.5	45/0.32	37	32	28	25
5.5	70/0.32	49	41	36	32
8.0	50/0.45	62	51	44	39
14	88/0.45	88	71	62	55
22	7/20/0.45 [a)]	115	95	83	74
30	7/27/0.45 [a)]	140	100	98	89
38	7/34/0.45 [a)]	165	130	110	100

NOTE Normally, the number of cable core does not include conductor for neutral, conductor for earthing and conductor for control circuits.
[a)] 7/n/0.45 means composite stranded cable, which were stranded seven strands. Here, each of seven strands is compsited of the strands of the number of n and of the diameter of 0.45 mm.

3) Allowable current for insulated cables (limited to those of which the upper limit of temperature for use of electric insulation is 60 ˚C), is specified in Table 11C.

N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict

Table 11C – Allowable current of insulated wire
(those of which the upper limit of temperature for use of electric insulation is 60 ˚C)

conductors			allowable current A	
solid conductor, or stranded conductor	cross-sectional area mm^2	number of strands /diameter of strand number/mm	copper conductors	aluminium conductors
solid conuctor	-	1.0	16	12
		1.2	19	15
		1.6	27	21
		2.0	35	27
		2.6	48	37
		3.2	62	48
		4.0	81	63
		5.0	107	83
stranded conductor	0.9	7/0.4	17	13
	1.25	7/0.45	19	15
	2	7/0.6	27	21
	3.5	7/0.8	37	29
	5.5	7/1.0	49	38
	8	7/1.2	61	48
	14	7/1.6	88	69
	22	7/2.0	115	90
	30	7/2.3	139	108
	38	7/2.6	162	126

N/A

4) For 2) and 3), the allowable current for cables having the upper limit of temperature for use of electric insulation of other than 60°C shall be the value which was multiplied the allowable current and the correction coefficient for allowable current specified in Table 11D, according to the upper limit of temperature for use of electric insulation. The value of allowable current shall be rounded up if 8 or more and rounded down if less than 8, after first digit from the decimal point.

N/A

Table 11D - Correction coefficient for cables of the upper limit of other than 60°C

Upper limit of temperature for use of electric insulation	Correction coefficient for allowable current
75 ˚C	1.22
80 ˚C	1.29
90 ˚C	1.41

N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	b) The allowable current at the ambient temperature of 40°C shall be the value which was multiplied the allowable current and the correction coefficient for allowable current specified in Table 11E, according to the upper limit of temperature for use of electric insulation. The value of allowable current shall be rounded up if 8 or more and rounded down if less than 8, after first digit from the decimal point.		N/A
	Table 11E - Correction coefficient at ambient temperature of 40°C		N/A

Upper limit of temperature for use of electric insulation	Correction coefficient for allowable current
60 ˚C	0.82
75 ˚C	1.08
80 ˚C	1.15
90 ˚C	1.29

	c) The allowable current for insulated cables that are distributed during the construction of conduit tubes shall be the value which was multiplied the allowable current and the correction coefficient for allowable current specified in Table 11E. The value of allowable current shall be rounded up if 8 or more and rounded down if less than 8, after first digit from the decimal point.		N/A
	Table 11F - Correction coefficient for insulated cables distributed during the construction of conduit tubes		N/A

Number of cables inside the same tube	Correction coefficient for allowable current
3 or less	0.70
4	0.63
5 or 6	0.56

	d) For cords or sheathed flexible cables (cabtire cables), if the cross-sectional area is not specified in Table 11A and Table 11B, the allowable current shall be the values calculated by the linear interpolation between points of the allowable current value for each cross-sectional area.		N/A
25.10	Addition: Add the following paragraph after the existing first paragraph. If an earthing conductor is attached to the class 0I appliance, the conductor connected with the earthing terminal shall have a sheath of the colour combination green/yellow.		N/A
25.13	Replacement: In the first sentence of the first paragraph, replace “the sheath” with “the covering and sheath”.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	(*Remark: For the part, the marking of ND is not provided in JIS C 9335-1. However, added by understanding that ths might be intentional modification for interpreting the English term "sheath".)*		N/A
	Replacement: In the second sentence of the first paragraph, replace “Unless the enclosure at the inlet opening is insulating material,” with; Except where the opening is of well-rounded like for cord reels and does not give stress to the supply cord, unless the enclosure at the inlet opening is insulating material,		N/A
25.14	Replacement: In the first paragraph, replace “Appliances provided with a supply cord and that are moved while in operation” with; Appliances provided with a supply cord and that are moved while in operation, and portable appliances with a flat cord without sheath and that are not used by placing on same place under the state of normal use		N/A
	(Remark: “Not used by placing on same place under the state of normal use” is interpreted as “not moved to other place even if it is the state that the appliance is not powered.)		N/A
	Addition: Add the following paragraph after the first paragraph. This does not apply to appliances with automatic cord reels that are tested by 22.16 instead.		N/A
	Deletion: Delete the existing NOTE 1.		N/A
	Addition: Add the following sentence at the end of the existing sixth paragraph. However, if the appliance is not moved while in operation and if the appliance uses a flat cord without sheath, the flexing number of 2 000 times at the rate of flexing of 60 per minute applies.		N/A
25.15	Addition: Add the following paragraph at the end of this subclause. Cord anchorage is not required for; - the earthing lead conductor of class 0I appliances which draw out an earthing lead conductor from the inside of appliance; and - the earthing conductor of class 0I appliances equipped with an earthing terminal.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
25.20	Addition: In the first paragraph, add the following sentence before the last sentence. However, appliances that use a flat cord without sheath, i.e., class 0 appliances, are excluded.		N/A
25.21	Replacement: In the first paragraph, replace “The space for the connection of supply cords having type X attachment, or for the connection of fixed wiring, shall be constructed” with; Except the construction of class 0I appliance drawing out an earthing lead conductor from the inside of appliance or the construction of class 0I appliance equipped with an external earting terminal, the space for the connection of supply cords having type X attachment, or for the connection of fixed wiring, shall be constructed		N/A
25.22	Addition: In the first paragraph, add the following new dash after the first dash. - not be magnet-type inlet, except the case allowed by the relevant part 2.		N/A
	Addition: In the first paragraph, add the following dash at the end. - be constructed, if it is an appliance inlet complying with JIS C 8283-1, so that no mechanical stress is given to the soldered part of terminal when inserting and pulling out the connector. This excludes the case where the fixation of the appliance inlet does not rely on soldering.		N/A
25.23	Addition: At the end of the first dash, add the following. However, Table 11 does not apply to the interconnection cord if satisfying the following; - that the current carried by the conductor is less than 6 A; and - that the interconnection cord complies with the requirements for the insulation of the conductor of the interconnection cord during the tests of Clause 11 and Clause 17.		N/A

<table>
<tr><th colspan="4">NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010</th></tr>
<tr><td>Clause</td><td>Requirement + Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td>25.25</td><td>Replacement:
In the second sentence of the first paragraph, replace “listed in IEC/TR 60083” with “specified in 6(1)ニ(ホ)a of Appendix 4 of Interpretation of Ministerial Ordinance establishing Technical Requirements for Electrical Appliances and Materials (20130605, shokyoku No. 3)”.</td><td></td><td>N/A</td></tr>
<tr><td>26.4</td><td>Replacement:
Replace the existing NOTE with;

NOTE Reshaping of the conductor before its introduction into the terminal, twisting a stranded conductor to consolidate the end, or use of a seaming-terminal by the truss screw shown in Figure B.1 of JIS C 8303 is allowed.</td><td></td><td>N/A</td></tr>
<tr><td>26.5</td><td>Addition:
Add the following paragraph after the third paragraph.

The test is also applied to earthing conductors.</td><td></td><td>N/A</td></tr>
<tr><td></td><td>Deletion:
Delete the existing NOTE.</td><td></td><td>N/A</td></tr>
<tr><td>26.6</td><td>Replacement
In the first sentence of the first paragraph, replace “conductors” with “any of conductors”.</td><td></td><td>N/A</td></tr>
<tr><td></td><td>Replacement:
Replace Table 13 with the following:</td><td></td><td>N/A</td></tr>
<tr><td></td><td colspan="2"><table>
<tr><th rowspan="2">Rated current of appliance
A</th><th colspan="2">Nominal cross- sectional area
mm^2</th></tr>
<tr><th>Flexible cords</th><th>Cable for fixed wiring</th></tr>
<tr><td>≤3</td><td>0,5 to 0,75</td><td>1 to 2,5</td></tr>
<tr><td>>3 and ≤6</td><td>0,75 to 1</td><td>1 to 2,5</td></tr>
<tr><td>>6 and ≤10</td><td>1 to 1,5</td><td>1 to 2,5</td></tr>
<tr><td>>10 and ≤16</td><td>1,5 to 2,5</td><td>1,5 to 4</td></tr>
<tr><td>>16 and ≤25</td><td>2,5 to 4</td><td>2,5 to 6</td></tr>
<tr><td>>25 and ≤32</td><td>4 to 6</td><td>4 to 10</td></tr>
<tr><td>>32 and ≤50</td><td>6 and 10</td><td>6 to 16</td></tr>
<tr><td>>50 and ≤63</td><td>10 and 16</td><td>10 to 25</td></tr>
</table></td><td>N/A</td></tr>
<tr><td>26.7</td><td>Addition:
At the end of the first paragraph, add the following:

However, earthing conductor of class 0I appliances equipped with an external earthing terminal is excluded.</td><td></td><td>N/A</td></tr>
</table>

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
26.11A	Addition: Add the following new subclause after 26.11. 26.11A Class 0I appliances shall be equipped with a protective earthing terminal in the easily visible section of the enclosure, or an earthing lead conductor. Compliance is checked by inspection and by manual test.		N/A
27.1	Addition: Add the following NOTE 3 after the third paragraph. NOTE 3 Appliances may have connection measures for functional earthig.		N/A
27.2	Replacement: In the first paragraph, replace “earthing terminals” with “earthing terminals intended for connection of an external conductor”.		N/A
	Replacement: In NOTE 1, replace “For other constructions,” with “For other constructions (for example, the case where a round-type or Y-type crimped terminal is used and it is secured by the head of terminal screw),”		N/A
27.3	Addition: Add the following paragraph after the second paragraph. This requirement applies also to a class 0I appliance which draws out an earthing lead conductor from a plug.		N/A
29.1	Replacement: In the first paragraph, replace the second sentence with the following. However, if the construction is such that the distances could be affected by wear, by distortion, by movement of the parts or during assembly, the impulse voltage test is not applicable for the clearances for rated impulse voltages of 1 500 V and above. For such construction, except lacquered conductors of windings, basic insulation of class 0 appliances, and between the live parts and the accessible metal parts earthed of class 0I appliances, the values for clearance specified in Table 16 are increased by 0,5 mm.		N/A
29.1 Table 15	Addition: Add the following column into the Table 15. >300 and ≤600 | 2 500 | 4 000 | 6 000		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
29.1 Table 16	Replacement: In Table 16, replace the column for 1 500 V with the following. 1 500 | 0,5 [c] (1,5) [e]		P
	Addition: Add the following into the bottom column of Table 16. [e] The value in the parenthesises applies to: - the basic insulation, if class 0 appliance; and - between the live parts and the earthed accessible metal parts, if class 0I appliance.		P
29.1.1	Replacement: Replace the second paragraph with; The clearance at the terminals of tubular sheathed heating elements (sheath heaters) may be reduced to 1,0 mm if the microenvironment is pollution degree 1 and if the value required of clearance exceeds 1,0 mm.		N/A
29.1.4	Replacement: Replace the fifth paragraph with; The clearance between surfaces of PTC heating elements may be reduced to 1 mm if the value required of clearance exceeds 1,0 mm.		N/A
29.1.5	Replacement: In the first paragraph, replace the existing first dash with; - Table 16 based on the rated impulse voltage in accordance with the rated voltage;		N/A
	Addition: Add the following NOTE 1 after the first dash in the first paragraph. NOTE 1 Clearances for intermediate values of Table 16 may be determined by interpolation, if higher overvoltage than rated impulse voltages is generated as mentioned in NOTE 2 of Table 15.		N/A
	Deletion: Delete the existing NOTE 1 after the third dash.		N/A
29.2.1	Addition: In Table 17, add the following new paragraph before NOTE 1. For working voltage > 50 V and ≤ 630 V, if the voltage is not specified in the table, the values of creepage distances may be found by interpolation.		P

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	Deletion: In Table 17, delete the existing NOTE 4.		N/A
29.2.2	Replacement: In the first paragraph, replace “IEC 60664-4” with “JIS C 60664-4 (if a frequency exceeds 30 kHz)”.		N/A
	Addition: Add the following sentence at the end of the first paragraph. However, NOTE 1 of Table 17 does not apply.		N/A
	Deletion: Delete the existing NOTE.		N/A
29.2.3	Replacement: In the first paragraph, replace “IEC 60664-4” with “JIS C 60664-4 (if a frequency exceeds 30 kHz)”.		N/A
	Addition: Add the following sentence at the end of the first paragraph. However, NOTE 1 of Table 17 does not apply.		N/A
	Deletion: Delete the existing NOTE.		N/A
29.2.4	Replacement: In Table 18, replace the existing NOTE 1, NOTE 2, NOTE 3 and NOTE 4 with the following. For PTC heating elements, the creepage distances over the surface of the PTC material need not be greater than the associated clearance for working voltages less than 250 V and for pollution degrees 1 and 2. However, the creepage distances between terminations are those specified in the table. For glass, ceramics and other inorganic insulating materials that do not track, creepage distances need not be greater than the associated clearance. For tracks on printed wiring boards under pollution degree 1 and pollution degree 2 conditions, the values specified in Table F.4 of JIS C 60664-1 apply. For voltages less than 100 V, the values must not be less than those specified for 100 V. For working voltages > 10 V and ≤ 630 V, if the voltage is not specified in the table, the values of creepage distances may be found by interpolation.		N/A
	Deletion: In Table 18, delete the existing NOTE 1, NOTE 2, NOTE 3 and NOTE 4.		N/A

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
30	Addition: Add the following NOTE. NOTE Selection and sequence of the tests specified in this clause are shown with figures in Annex O.		N/A
Figure 3	Addition: By deleting N in “L1, L2, L3, N supply voltage with neutral”, add the following. N: neutral of star connection and earth of delta connection		N/A
Figure 4	Addition: By deleting N in “L1, L2, L3, N Supply voltage with neutral”, add the following. N: neutral of star connection and earth of delta connection		N/A
Annex B	Addition: Add the following paragraphs between the existing paragraph and Clause 3. For separable supply units, this annex applies also to the supply unit. This annex does not apply to battery charger to which JIS C 9335-2-29 (see Bibliography)) applies.		N/A
	Deletion: Delete the existing NOTE.		N/A
Annex B 8.2	Replacement: In the last sentence, replace “double insulation or reinforced insulation” with “double insulation or reinforced insulation (if class 0 appliances, basic insulation)”		N/A
Annex B 30.2	Replacement: In the second sentence, repalce “30.2.2” with “the relevant part 2”.		N/A
Annex G 29	Addition: Add the following paragraph after the first paragraph. The values stated for pollution degree 2 are applicable.		P
	Deletion: Delete the existing NOTE.		N/A
Annex P	Addition: At the end of NOTE, add the following. In Japan, normally this annex does not apply.		N/A
Annex R R.2.2.1	Replacement: In the second paragraph, replace “the source code” with “the source code or documents“.		N/A
Annex R R.2.2.2	Replacement: In the second paragraph, replace “the source code” with “the source code or documents“.		N/A

<table>
<tr><th colspan="4">NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010</th></tr>
<tr><td>Clause</td><td>Requirement + Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td>Annex R
R.2.2.3</td><td>Replacement:
In the second paragraph, replace “the source code” with “the source code or documents“.</td><td></td><td>N/A</td></tr>
<tr><td rowspan="2">Annex R
R.2.2.4</td><td>Addition:
Add the following after the first paragraph.

In the case where other measures than those specified as acceptable measures in Table R.1 and Table R.2 apply, it is acceptable if the measures is proved that dealing of the fault/error conditions which are identified by the measures are possible.</td><td></td><td>N/A</td></tr>
<tr><td>Replacement:
In the last paragraph, replace “the source code” with “the source code or documents“.</td><td></td><td>N/A</td></tr>
<tr><td rowspan="2">Annex R
Table R.1</td><td>Replacement:
For 5.1, 6.1, 6.2 and 7.2 which are shown as VOID, replace with the following.</td><td></td><td>N/A</td></tr>
<tr><td colspan="3"><table>
<tr><td>5.1 Data</td><td>Stuck at</td><td>Word protection with single bit redundancy</td><td>H.2.19.8.2</td></tr>
<tr><td>6.1 Data</td><td>Hamming distance 3</td><td>Word protection with multi-bit redundancy, or
CRC – single word, or
transfer redundancy, or
protocol test</td><td>H.2.19.8.1
H.2.19.4.1
H.2.18.2.2
H.2.18.14</td></tr>
<tr><td>6.2 Addressing</td><td>Wrong address</td><td>Word protection with multi-bit redundancy including the address, or
CRC – single word, including the address, or
transfer redundancy, or
protocol test</td><td>H.2.19.8.1

H.2.19.4.1
H.2.18.2.2
H.2.18.14</td></tr>
<tr><td>7.1 Digital I/O</td><td>Fault conditions specified in 19.11.2</td><td>Plausibility check</td><td>H.2.18.13</td></tr>
</table></td><td>N/A</td></tr>
<tr><td rowspan="2">Annex R
Table R.2</td><td>Replacement:
Replace 6.2 with the following.</td><td></td><td>N/A</td></tr>
<tr><td colspan="3"><table>
<tr><td>6.2 Addressing</td><td>Wrong address and multiple addressing</td><td>CRC – double word, including the address, or
full bus redundancy of data and address, or
comparison of redundant communication channels by either:
- reciprocal comparison
- independent hardware comparator</td><td>H.2.19.4.2
H.2.18.1.1

H.2.18.15
H.2.18.3</td></tr>
</table></td><td>N/A</td></tr>
<tr><td>Annex R
R.2.2.5</td><td>Replacement:
In the second paragraph, replace “the source code” with “the source code or documents“.</td><td></td><td>N/A</td></tr>
<tr><td>Annex R
R.2.2.6</td><td>Replacement:
In the second paragraph, replace “the source code” with “the source code or documents“.</td><td></td><td>N/A</td></tr>
<tr><td>Annex R
R.2.2.7</td><td>Replacement:
In the second paragraph, replace “the source code” with “the source code or documents“.</td><td></td><td>N/A</td></tr>
<tr><td>Annex R
R.2.2.8</td><td>Replacement:
In the second paragraph, replace “the source code” with “the source code or documents“.</td><td></td><td>N/A</td></tr>
<tr><td>Annex R
R.2.2.9</td><td>Replacement:
In the second paragraph, replace “the source code” with “the source code or documents“.</td><td></td><td>N/A</td></tr>
</table>

<table>
<tr><th colspan="4">NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010</th></tr>
<tr><td>Clause</td><td>Requirement + Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td>Annex R
R.3.2.3.1</td><td>Addition:
Add the following new paragraph after NOTE 2.

The module design shall specify:
● function(s),
● interfaces to other modules,
● data.</td><td></td><td>N/A</td></tr>
<tr><td></td><td>Deletion:
Delete the existing NOTE 3.</td><td></td><td>N/A</td></tr>
<tr><td>Annex JA</td><td>Addition:
Add new Annex JA as follows.

Annex JA
(normative)
Test method for Heat Sensing Wires

Appliances which use a heat sensing wire are subjected to the following tests.
For heat sensing wires divided into 10 pieces of equal length, the dispersion of the operating temperature measured of each specimen shall be within the allowable tolerance specified in Table JA.1.

Table JA.1 – Allowable tolerance of operating temperature
<table><tr><th>Mean of operating temperature (°C)</th><th>Allowable tolerance (°C)</th></tr><tr><td>Those equal to or less than 120</td><td>± 7</td></tr><tr><td>Those exceeding 120</td><td>± 10</td></tr></table>
Measurement method of the operating temperature of the heat sensing wires is specified in Table JA.2.</td><td></td><td>N/A</td></tr>
</table>

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict

Table JA.2 – Measurement method of operating temperature of heat sensing wires

N/A

Heat sensing system	Measurement method
System which the heat sensing strands are short-circuited by melting of the insulation between the heat sensing strands, or which the resistance between the heat sensing strands decreases remarkably by the melting.	For the test specimens of heat sensing wires, cut the whole length of heat sensing wire evenly into 10 pieces so that each has a length of 20 cm, except the terminal treatment parts at both ends. And, mount the specimen to the device shown in Figure JA.1. Then, to the specimen, supply at the voltage equal to the rated voltage of the cuircuit which the heat sensing wire is connected and at the current equal to the rated current of the cuircuit connected. Moreover, under this operating state, raise the temperature of the specimen of heat sensing wire at a rate of 1 °C per minute by heating externaly, and then measure the operating temperature of the heat sensing wire. However, if heat sensing wires cause error in the operating temparature by cutting, not cut the the heat sensing wire. And, set up a specimen of the specified length in a thermostatic chamber, and measure.
System which utilizes change of electrical characteristics (resistance, capacitance, impedance, etc.) caused by the temperature of the insulation between the heat sensing strands, or which utilizes change of electrical characteristics caused by the temperature of the heat sensing strand itself.	1) Divide the whole length of heat sensing wire evenly into 10 pieces, place each specimen into a thermostatic chamber of the temperature equal to ± 2 °C of the nominal operating temperature of the heat sensing wire for 1 h, and then measure the electrical characteristics in the chamber. 2) Take out a specimen that shows a characteristic value most close to the average of 10 values measured during the procedure of 1). Maintain the specimen in a thermostatic chamber at the nominal operating temperature of the heat sensing wire plus (15 ± 2 °C) and also minus (– 15 ± 2 °C) each for 1 h, and then measure the electrical characteristic in the chamber. 3) Prepare a graph showing the relation between the temperature and the electrical characteristic value as shown in Figure JA.2, according to the results of 1) and 2). And, convert the deviation of the electrical characteristic value into that of the temperature as follows: - (a, b) between – 15 °C and the mean, for the electric characteristic value being higher than the mean; and - (b, c) between + 15 °C and the mean, for the electric characteristic value being lower than the mean.
NOTE Impedance measurement with a.c. is recommended.	

N/A

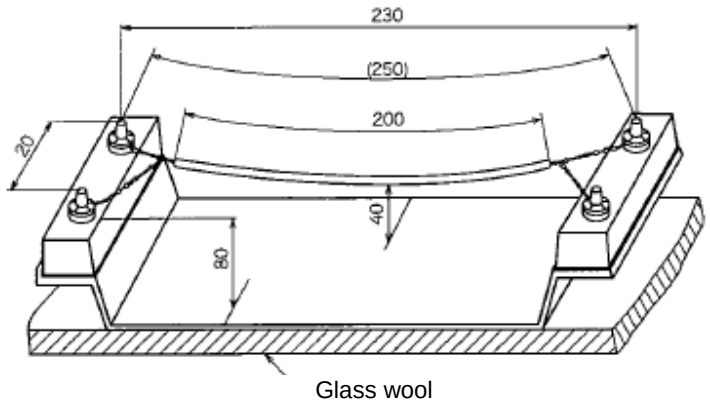
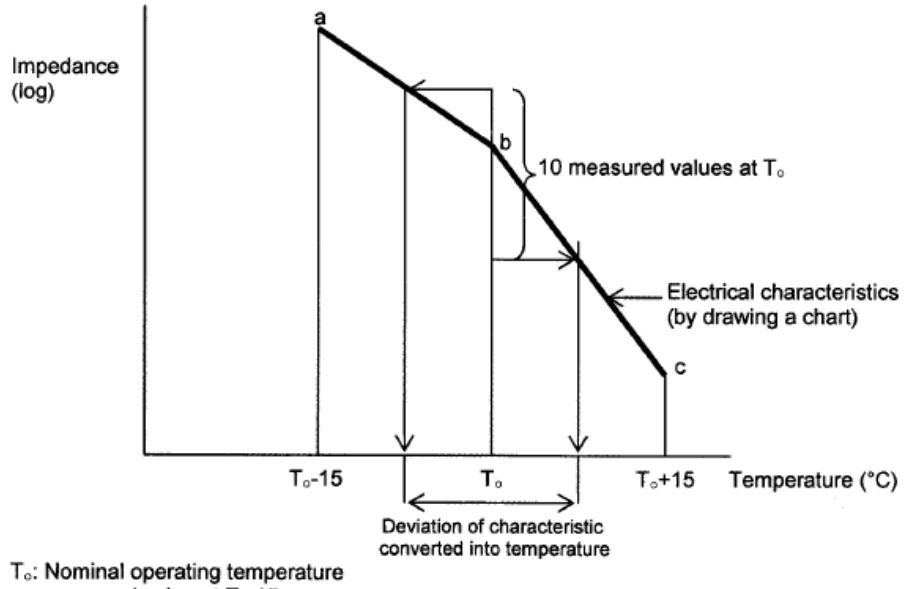


Figure JA.1 – Test stand

NDs of J60335-1(H27) (JIS C 9335-1:2014) for IEC 60335-1:2010			
Clause	Requirement + Test	Result - Remark	Verdict
	 T_o: Nominal operating temperature a: measured value at T_o-15 b: mean value of measurement of 10 times c: measured value at T_o+15 Figure JA.2 – Temperature and electrical characteristics		N/A
Bibliography	Replacement: Among the IEC standards listed in IEC 60335-1:2010, replace as follows: - IEC 60364 with JIS C 0364 (MOD) - IEC 60998-2-1 with JIS C 2814-2-1 (MOD) - IEC 60998-2-2 with JIS C 2814-2-2 (MOD) - IEC 60034-1 with JIS C 4034-1 (MOD) - IEC 60950-1 with JIS C 6950-1 (MOD) - IEC 61029 with JIS C 9029 (MOD) - IEC 60335-2-29 with JIS C 9335-2-29 (MOD) - IEC 60730 with JIS C 9730 (MOD) - IEC 60745 with JIS C 9745 (MOD) - IEC 60721-2-1 with JIS C 60721-2-1 (MOD) - IEC 61000-3-2 with JIS C 61000-3-2 (MOD) - IEC 60601 with JIS T 0601 (MOD)		N/A
	Addition: Add the following. - JIS C 8105-1 (corresponding to IEC 60598-1; MOD)		N/A

NDs of J60335-2-29(2019) (JIS C 60335-2-29:2019) for IEC 60335-2-29 (2016)			
Clause	Requirement + Test	Result - Remark	Verdict
National Differences - Japan			
6.2	**Addition:** After the second paragraph of sub-clause 6.2 of Part 2, add the following. NOTE 101A In the corresponding international standard, Addition is adopted, but it is not appropriate, Replacement is adopted in this standard in consideration of convenience of the standard user.		N/A
7.1	**Replacement:** In sub-clause 7.1 of Part 2, replace the second dash item with the following. - Rated DC output current (A). However, no other output current shall be marked in the vicinity of this marking.		P
7.12	**Replacement:** In sub-clause 7.12 of Part 2, replace the first dash item with the following. - For those other than battery charger preventing improper connection, specify the types, the number of batteries and the nominal rated capacity of the batteries that can be charged.		P
	Replacement: In sub-clause 7.12 of Part 2, replace the last paragraph with the following. The instructions for battery chargers for charging automobile batteries shall include how to safely charge the battery.		N/A
10.102	**Replacement:** In sub-clause 10.102 of Part 2, replace the first paragraph with the following. The arithmetic mean value of the output current shall not deviate from the rated DC output current by more than 10%.		P
11.2	**Addition:** After the first paragraph of sub-clause 11.2 of Part 2, add the following. NOTE 101A In the corresponding international standard, Modification is adopted, but it is not appropriate, Addition is adopted in this standard in consideration of convenience of the standard user.		N/A

NDs of J60335-2-29(2019) (JIS C 60335-2-29:2019) for IEC 60335-2-29 (2016)			
Clause	Requirement + Test	Result - Remark	Verdict
11.5	**Addition:** In sub-clause 11.5 of Part 2, add the following. (The sub-clause of the corresponding international standard is not applied in this standard, but 11.5 of JIS C 9335-1 is applied.)		P
19.1	**Addition:** After the first paragraph of sub-clause 19.1 of Part 2, add the following. NOTE 101A Same as the NOTE 101A of 11.2.		N/A
21.1	**Replacement:** After the first paragraph of sub-clause 21.1 of Part 2, replace the following. NOTE 101A In the corresponding international standard, Modification is adopted, but it is not appropriate, Replacement is adopted in this standard in consideration of convenience of the standard user.		P
22.26	**Addition:** In sub-clause 22.26 of Part 2, add the following. (The sub-clause of the corresponding international standard is not specified in this standard.)		P
25.7	**Replacement:** In sub-clause 25.7 of Part 2, replace the first paragraph with the following. However, except for battery chargers intended for indoor use, battery chargers for charging automobile batteries shall not be fitted with natural rubber-sheathed supply cords.		N/A
26.5	**Addition:** After the first paragraph of sub-clause 26.5 of Part 2, add the following. NOTE 101A Same as the NOTE 101A of 11.2.		N/A
Annex AA 6.1	**Addition:** After the last paragraph of sub-clause 6.1 in Annex AA of Part 2, add the following. NOTE 201A Same as the NOTE 101A of 21.1.		N/A

NDs of J60335-2-29(2019) (JIS C 60335-2-29:2019) for IEC 60335-2-29 (2016)			
Clause	Requirement + Test	Result - Remark	Verdict
Annex AA 6.2	**Addition:** After the second paragraph of sub-clause 6.2 in Annex AA of Part 2, add the following. NOTE 201A In the corresponding international standard, Addition is adopted, but it is not appropriate, Replacement is adopted in this standard in consideration of convenience of the standard user.		N/A
Annex AA 8.1.1	**Addition:** After the second paragraph of sub-clause 8.1.1 in Annex AA of Part 2, add the following. NOTE 201A Same as the NOTE 101A of 11.2.		N/A
Annex AA 25.1	**Addition:** After the first paragraph of sub-clause 25.1 in Annex AA of Part 2, add the following. NOTE 201A Same as the NOTE 101A of 21.1.		N/A
Annex AA 25.5	**Addition:** After the first paragraph of sub-clause 25.5 in Annex AA of Part 2, add the following. NOTE 201A Same as the NOTE 101A of 21.1.		N/A

J3000(H25)			
Clause	Requirement + Test	Result - Remark	Verdict
Safety requirements on prevention of accidents			
1	General requirements		P
	For AC electrical appliances, which have been listed in Items 6 to 9 of Appendix Table 1 and Items 7 to 11 of Appended Table 2 of the Cabinet Ordinance (Cabinet Order No. 324: 1962) of Electrical Appliance and Material Safety Act, and portable generators, shall comply with the following. For appliances using appliance coupler specified in JIS C 8283-1:2008 (Appliance couplers for household and similar general purposes-Part 1: General requirements), shall be of structure where no mechanical stress is loaded to the soldered part of terminal of appliance inlet when the connector is inserted or removed. However, this does not apply to those of which the appliance inlet itself is fixed so that fixing of the appliance inlet does not rely on only soldering. Compliance is checked by inspection.		P
2	Particular requirements		N/A
	(1) For electric heating appliances, if equipped with diodes for power adjustment which are connected in parallel, an abnormality shall not be caused even under the condition where one diode has been open-circuited. Compliance is checked by the following.		N/A
	① the rated capacity of a diode is not less than the current of the main circuit, and the diodes connected in parallel are of same specification;		N/A
	② it shall comply with the requirement when conducting the temperature rise test specified in Clause 11 of JIS C 9335-1:2003 and also the temperature rise test specified in the applicable particular requirements, in the condition where one among the diodes connected in parallel has been opened.		N/A
	(2) Electric room heaters having a heating element which is heating up shall comply with the following.		N/A
	① the frame or net for protection shall not be made surface treatment by coating or by using adhesive agent;		N/A

J3000(H25)			
Clause	Requirement + Test	Result - Remark	Verdict
	② in the sections specified in the following (a) and (b), and by using the terms clearly readable and easily understandable, mark the following purport. (a) easily visible section of the main body of appliance (b) instruction manual and other document attached to the product "CAUTION – Ventilate enough during use, because, in the initial stage of use, emission of volatile organic compound and carbonyl compound from this appliance may be of the highest." Compliance is checked by inspection.		N/A
3	Requirements for components used for appliances		N/A
	(1) If a capacitor for motor is used for ventilation fans, electric room fans, electric air conditioners, electric washing machines, electric refrigerators or electric freezers and if the capacitor is in scope of JIS C 4908:2007, the capacitor shall comply with the following. The capacitor for motor shall be of either of capacitor with a built-in safety device or capacitor with safety mechanism, which are specified in JIS C 4908:2007, or shall be capacitor of class P2 specified in IEC 60252-1:2001. However, this does not apply if it complies with any of the following.		N/A
	① Capacitor installed inside a metal or ceramic enclosure for preventing scattering of flame or melt by failure of the capacitor. However, the enclosure may have an opening for wiring for connection between the capacitor and a motor. In this case, "installed inside a metal or ceramic enclosure" means that the capacitor is installed inside a case of metal or ceramic, which prevents scattering of flame or melt by a means of other than enclosure to which a test finger contacts, and it is considered that scattering of flame or melt is prevented even if a non-metal section, which has been mounted together with the capacitor not specified in JIS C 4908:2007 inside the metal or ceramic case, locates within a distance of 50 mm or less from the capacitor.		N/A
	② Appliances of which a distance between the neighbouring non-metal section and the outer surface of capacitor exceeds 50 mm;		N/A

J3000(H25)			
Clause	Requirement + Test	Result - Remark	Verdict
	③ The neighbouring non-metal section having a distance of 50 mm or less from the outer surface of capacitor complies with the needle flame test.;		N/A
	④ The neighbouring non-metal section having a distance of 50 mm or less complies with flammability class of V-1 specified in JIS C 60695-11-10:2006. (Test specimens used for classification shall not be of thickness of more than the section in question.)		N/A
	(2) Attachment plugs connecting directly to the mains and used for electric refrigerators or electric freezers shall comply with the following.		N/A
	① For the outer surface of plug, which directly contacts with a wall socket, the insulation material contacting directly with the plug blades (except for earthing contact) shall be of PTI of 400 or more, which is specified in JIS C 2134:2007. However, this does not apply to those molded with insulation material having CTI of 400 or more.		N/A
	② For insulation material supporting/holding between plug blades (except for earthing contact), it shall comply with the glow-wire test specified in JIS C 60695-2-11:2004 or JIS C 60695-2-12:2004, which is carried out at the test temperature of 750°C. However, this does not apply to the materials having a glow-wire igniting temperature of 775°C or more in accordance with JIS C 60695-2-13:2004.		N/A

IEC 61558-2-16 Annex BB of Attachment 5			
Clause	Requirement + Test	Result - Remark	Verdict
BB	**Annex BB**		P
	Particular requirements for associated transformers for switch mode power supplies with internal frequencies > 500 Hz		P
BB.6	**Ratings**		P
	Rated output voltage <=50Va.c. or 120V ripple-free d.c. Rated supply frequency <= 500Hz Rated internal operating frequency <=100 MHz		P
BB.8	**MARKING AND OTHER INFORMATION**		P
BB.8.2	Marking for transformers IP00 or for associated transformers: type and trademark, instruction sheets		P
BB.8.11	Correct symbols:	Not used for incorporated SMPS	N/A
BB.9	**PROTECTION AGAINST ELECTRIC SHOCK**	Check together with appliance according to EN / IEC 60335	N/A
BB.10	**CHANGE OF INPUT VOLTAGE SETTING**	One input voltage	N/A
BB.11	**OUTPUT VOLTAGE AND OUTPUT CURRENT UNDER LOAD**		N/A
BB.12	**NO-LOAD OUTPUT VOLTAGE**		N/A
BB.13	**SHORT-CIRCUIT VOLTAGE**		N/A
BB.14	**HEATING**		P
BB.14.2	Application of 14.1 or 14.3 according to the insulation system	Test with appliance	P
BB.14.3	Accelerated ageing test for undeclared class of isolating system	Temperature rise not exceed	N/A

IEC 61558-2-16 Annex BB of Attachment 5			
Clause	Requirement + Test	Result - Remark	Verdict
BB.15	**SHORT-CIRCUIT AND OVERLOAD PROTECTION**	Test with appliance	N/A
BB.16	**MECHANICAL STRENGTH**	Test with appliance	N/A
BB.17	**PROTECTION AGAINST HARMFUL INGRESS OF WATER AND MOISTURE**	Test with appliance	N/A
BB.18	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
BB.18.2	Insulation resistance between:		P
	– input circuits and output circuits for double or reinforced insulation ≥5MΩ		P
	– each input circuit and all other input circuits connected together ≥2MΩ		P
	– each output circuit and all other output circuits connected together ≥2MΩ	Only one output circuit	N/A
BB.18.3	Electric strength test (1 min): no flashover or breakdown:		P
	1) double or reinforced insulation between input circuits and output circuits; working voltage (V); test voltage (V)		P
	2) basic or supplementary insulation		P
	1) Functional insulation for windings intended to be connected in series or parallel (test voltage = working voltage + 500 V) (IEC 61558-2-16:2009)		P
BB.19	**CONSTRUCTION**		P
BB.19.1	Separation of input and output circuits		P
BB.19.1.1	SMPS incorporating auto-transformers (IEC 61558-2-16:2009)	See BB.19.1.3	N/A
BB.19.1.2	SMPS incorporating separating transformers (IEC 61558-2-16:2009)	See BB.19.1.3	N/A

IEC 61558-2-16 Annex BB of Attachment 5			
Clause	Requirement + Test	Result - Remark	Verdict
	– Allowed for associated transformers by the equipment standard		N/A
	– Clause 19.8 of part 1 is fulfilled		N/A
BB.19.1.3	SMPS incorporating isolating transformers and safety isolating transformers (IEC 61558-2-16:09)		P
BB.19.1.3.1	Input and output circuits electrically separated (IEC 61558-2-16:09)		P
	No possibility of any connection between these circuits		P
BB.19.1.3.2	The insulation between input and output winding(s) consist of double or reinforced insulation (exception see 19.1.3.4) (IEC 61558-2-16:09)		P
	Class I SMPS **not** intended for connection to the mains by a plug:		N/A
	Class II SMPS (IEC 61558-2-16:09)		P
BB.19.1.3.3	SMPS with intermediate conductive parts not connected to the body (between input/output) (EN 61558-2-16:09):		N/A
BB.19.1.3.4	For class I SMPS, with protective screen, **no**t connected to the mains by a plug the following conditions comply (EN 61558-2-16:09):		N/A
	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)		N/A
BB.19.1.3.5	No connection between output circuit and protective earth, except of associated transformers (allowed by equipment standard) or 19.8 is fulfilled (EN 61558-2-16:09)	No protective earth	N/A
BB.19.1.3.6	No connection between output circuit and body, except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)		P
BB.19.1.3.7	The distance between input and output terminals for the connection of external wiring is ≥ 25 mm	Pins on transformer not for wiring connection	N/A

IEC 61558-2-16 Annex BB of Attachment 5			
Clause	Requirement + Test	Result - Remark	Verdict
BB.19.1.3.8	Portable SMPS having an rated output ≤ 630 VA (EN 61558-2-16:09)	Built in transformer	N/A
BB.19.1.3.9	No connection between input and output circuit, except of associated transformers (allowed by equipment standard) (EN 61558-2-16:09)		P
BB.19.1.3.10	Protective screening is not allowed for SMPS with plug connection to the mains (EN 61558-2-16:09)		N/A
BB.19.12	Windings construction		P
BB.19.12.1	Undue displacement in all types of transformers not allowed:		P
BB.19.12.2	Serrated tape:		P
BB.19.12.3	Insulated windings wires:	For sec. winding	P
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	**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**		P
BB.26.1	See 26.101		P
BB.26.2	Creepage distances (cr) and clearances (cr)		P
BB.26.2.1	Windings covered with adhesive tape		P
BB.26.2.2	Uncemented insulating parts pollution degree P2 or P3	P2	P

IEC 61558-2-16 Annex BB of Attachment 5			
Clause	Requirement + Test	Result - Remark	Verdict
BB.26.2.3	Cemented insulating parts		N/A
BB.26.2.4	Enclosed parts, by impregnation or potting	No this construction	N/A
BB.26.3	Distance through insulation		P
	For double or reinforced insulation, the required values of Tables 13, C1, and D1 – boxes 2b, 2c and 7 are fulfilled		P
BB.26.3.1	Reduced values of the thickness of insulation for supplementary or reinforced insulation are allowed if the following conditions are fulfilled:	Not used	N/A
BB.26.3.2	Insulation in thin sheet form		N/A
BB.26.3.3	Mandrel test of insulation in thin sheet form (specimen 0f 70 mm width are necessary):		N/A
BB.26.101	Creepage distances, clearances and distances through insulation, specified values according to (EN 61558-2-16:09):	See main report CN21EDLY 001	P
BB.26.102	Values of IEC 61558-2-16 applicable for frequency up to 3 MHz (EN 61558-2-16:09)		P
	For frequency above 3 MHz clause 7 of IEC 60664-4 is applicable (high frequency testing)		N/A
BB.26.103	Clearance (EN 61558-2-16:09)		P
	a.) Clearance for frequency $\geq$ 30 kHz according figure 101 two determinations are necessary:		P
	b.) Clearance for frequency $\leq$ 30 kHz according figure 101 two determinations are necessary:		N/A
BB.26.104	The working voltages of Table 102, 103 and 104 are peak voltages including µsec peaks EN 61558-2-16:09)		P
	The working voltage according to Table 13 of part 1 are r.m.s. voltages		P
BB.26.105	Creepage distances		P
	Two determinations of creepage distances are necessary (see Figure 102)		P
BB.26.106	Distance through insulation (EN 61558-2-16:09)		P

IEC 61558-2-16 Annex BB of Attachment 5			
Clause	Requirement + Test	Result - Remark	Verdict
	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:		N/A
BB.27	**RESISTANCE TO HEAT, FIRE AND TRACKING**	Test with appliance	N/A
BB.E	**ANNEX E , GLOW WIRE TEST**		P
	The test is required according to IEC 60695-2-10 and IEC 60695-2-11 with the following additions:		N/A
BB.F	**ANNEX F, REQUIREMENTS FOR MANUALLY OPERATED SWITCHES WHICH ARE PARTS OF THE TRANSFORMER**		N/A
BB.H	**ANNEX H, ELECTRONIC CIRCUITS** (IEC 61558-1)		N/A
BB.K	**ANNEX K, INSULATED WINDING WIRES FOR USE AS MULTIPLE LAYER INSULATION**		P
BB.K.1	Wire construction:	Approved triple insulated wires	P
BB.U	**ANNEX U – INFORMATIVE – OPTIONAL TW – MARKING FOR TRANSFORMERS**		N/A
V	**ANNEX V, SYMBOLS TO BE USED FOR THERMAL CUT-OUTS**		N/A

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

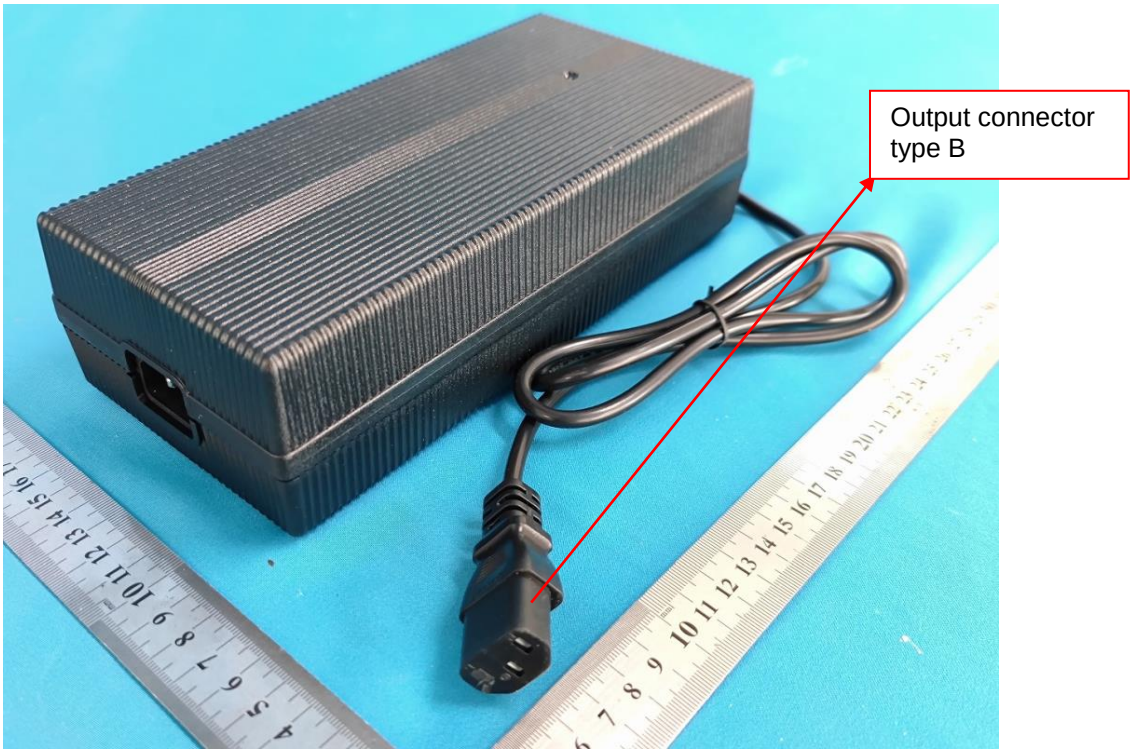


Figure 1. Over view (For models from FY425yyyyy to FY870yyyyy)

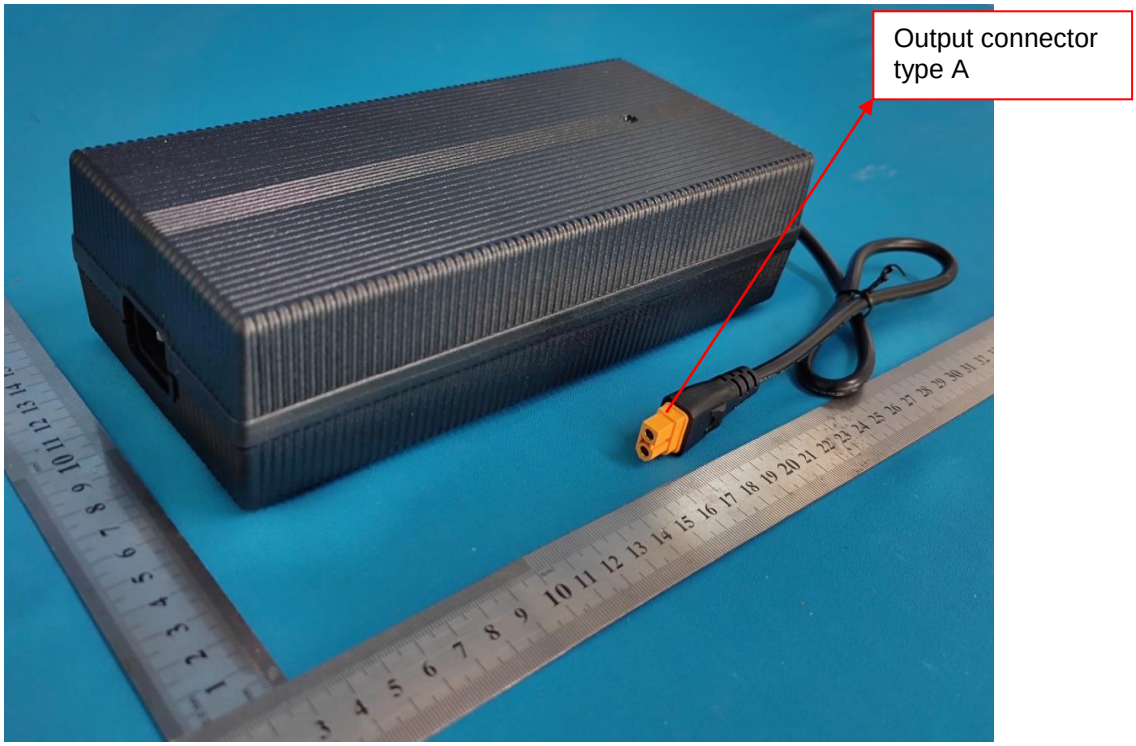


Figure 2. Over view (For models from FY060yyyyy to FY400yyyyy)

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

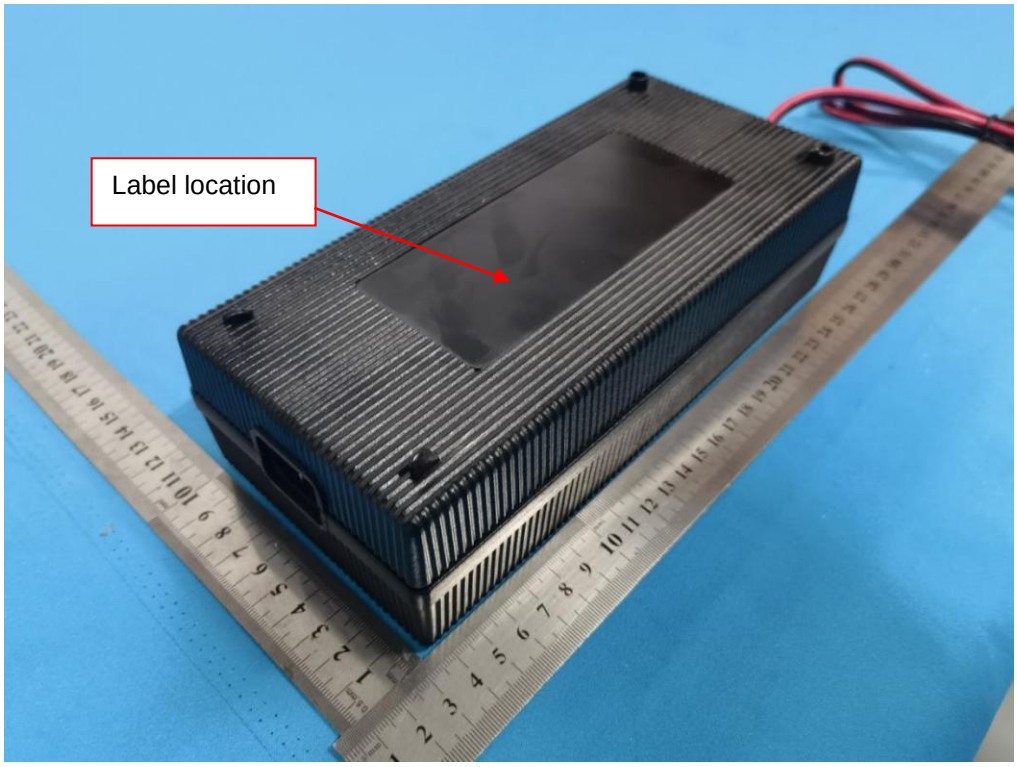


Figure 3. Over view


Figure 4. Internal view

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

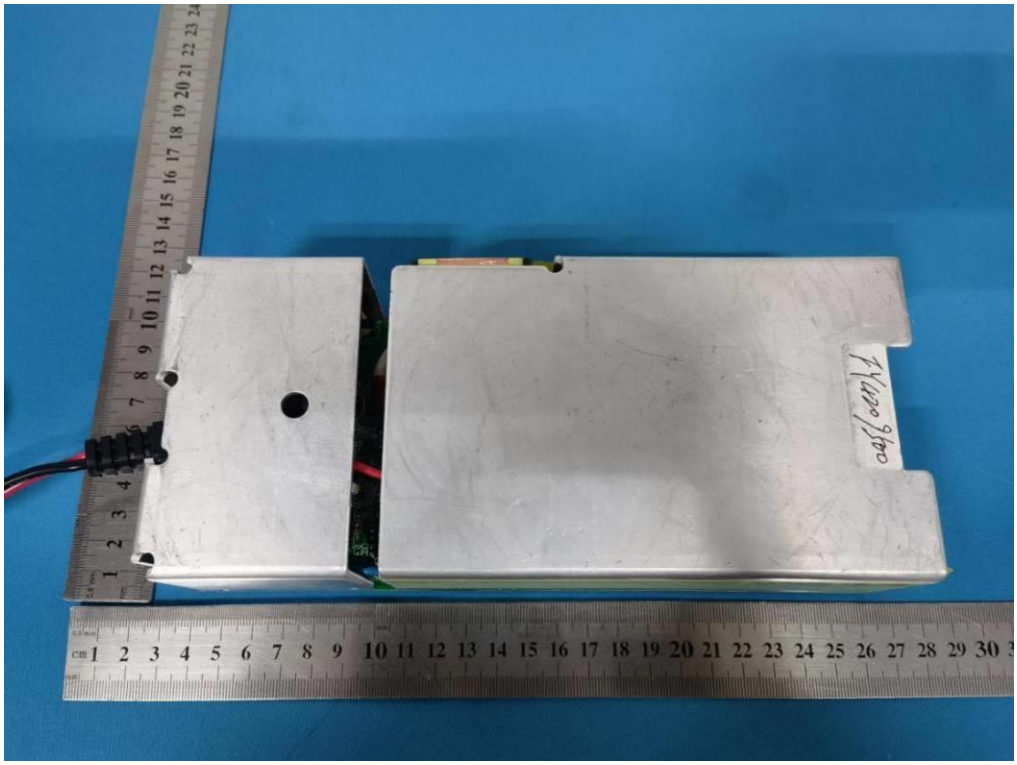


Figure 5. Internal view

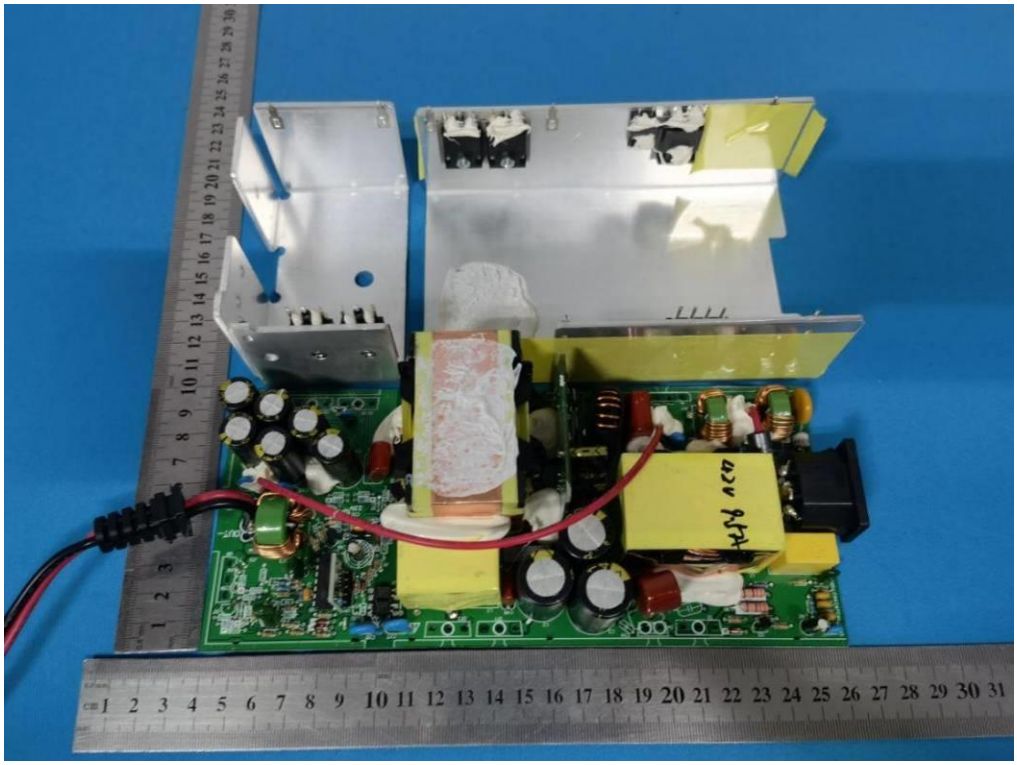


Figure 6. PCB view (components side)

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

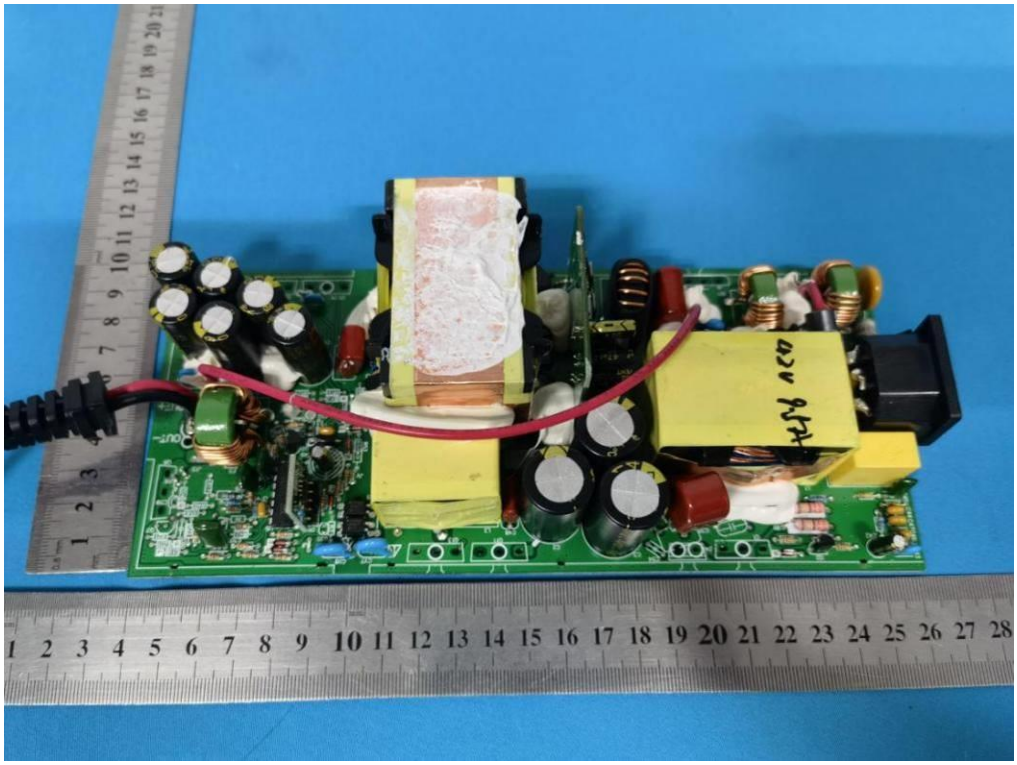


Figure 7. PCB view (components side)

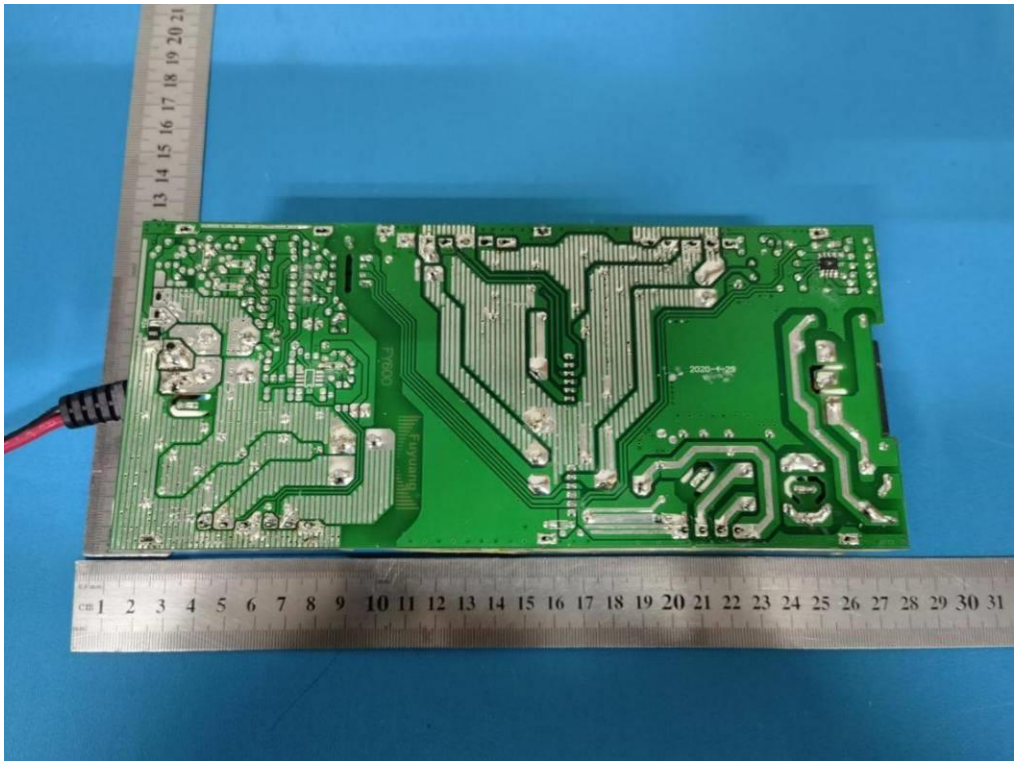


Figure 8. PCB view (trace side)

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

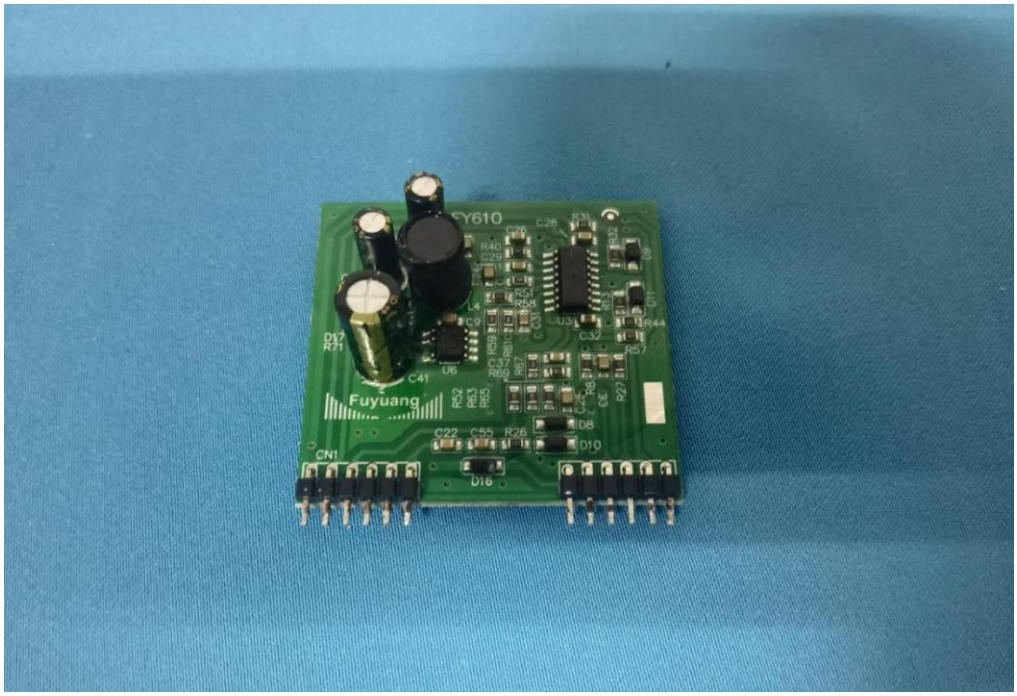


Figure 9. PCB view (components side)

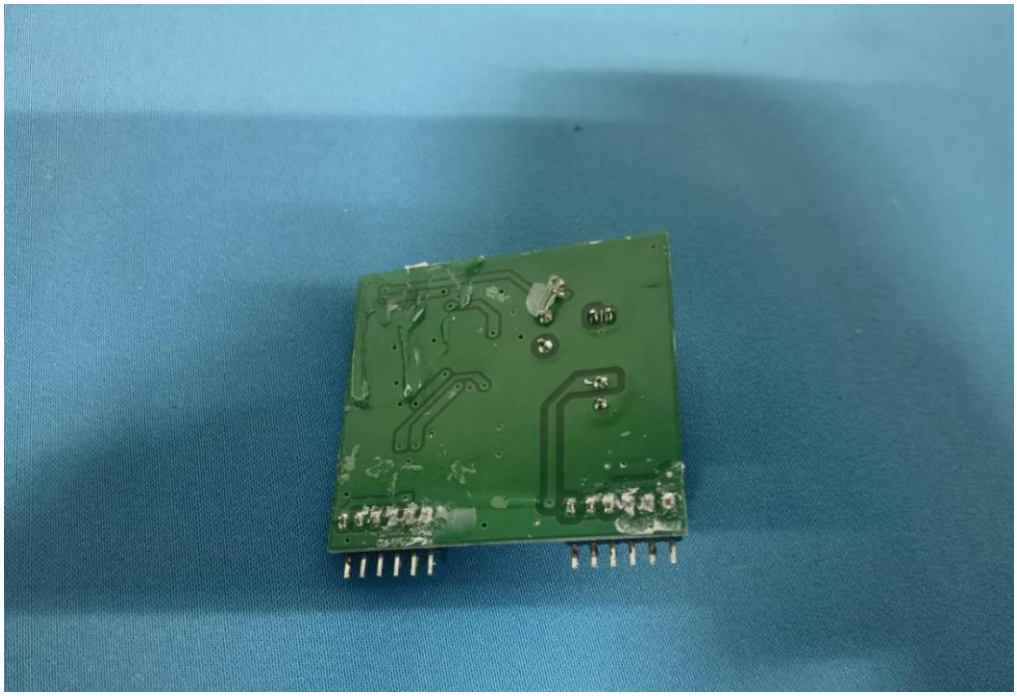


Figure 10. PCB view (trace side)

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

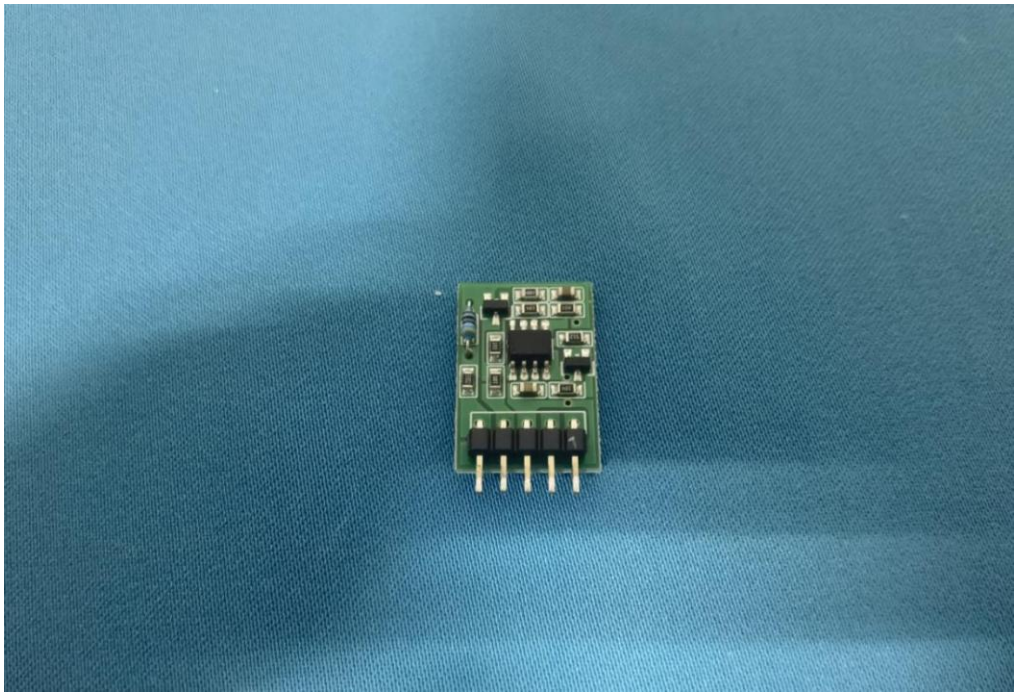


Figure 11. PCB view (components side)

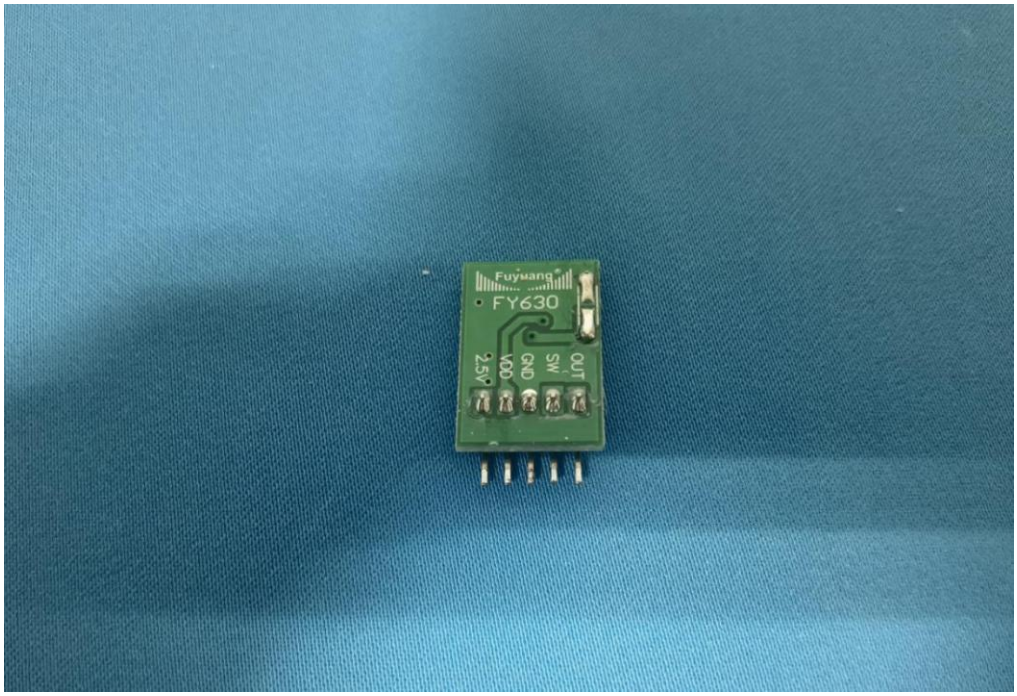


Figure 12. PCB view (trace side)

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

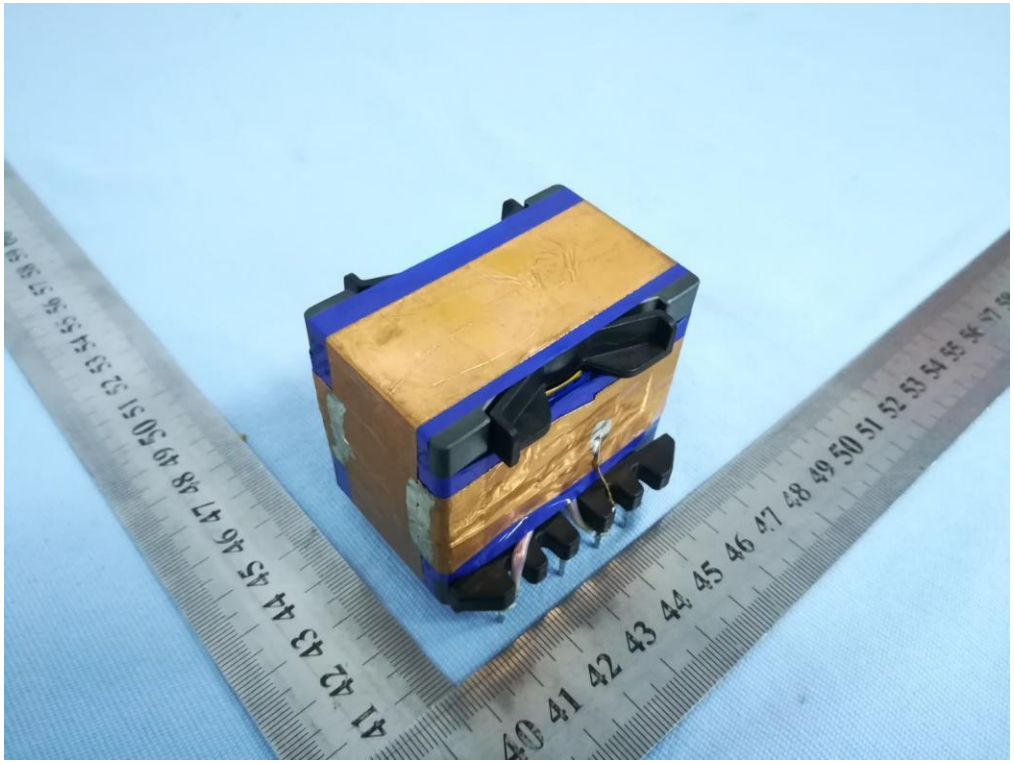


Figure 13. Over view of transformer

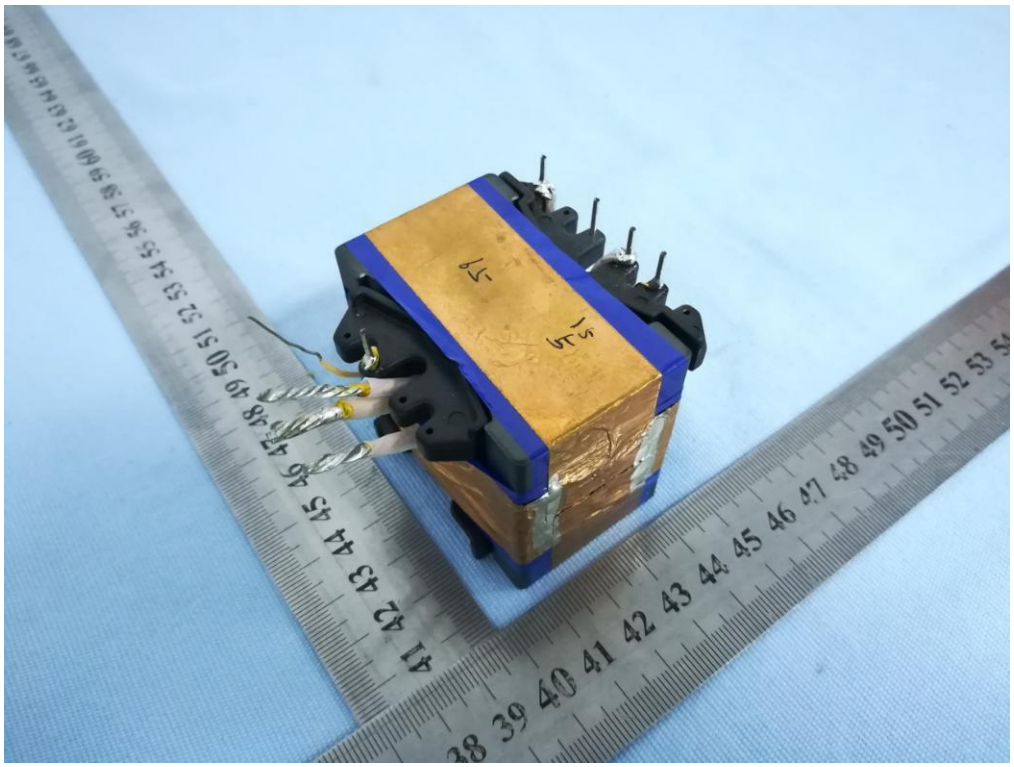


Figure 14. Over view of transformer

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

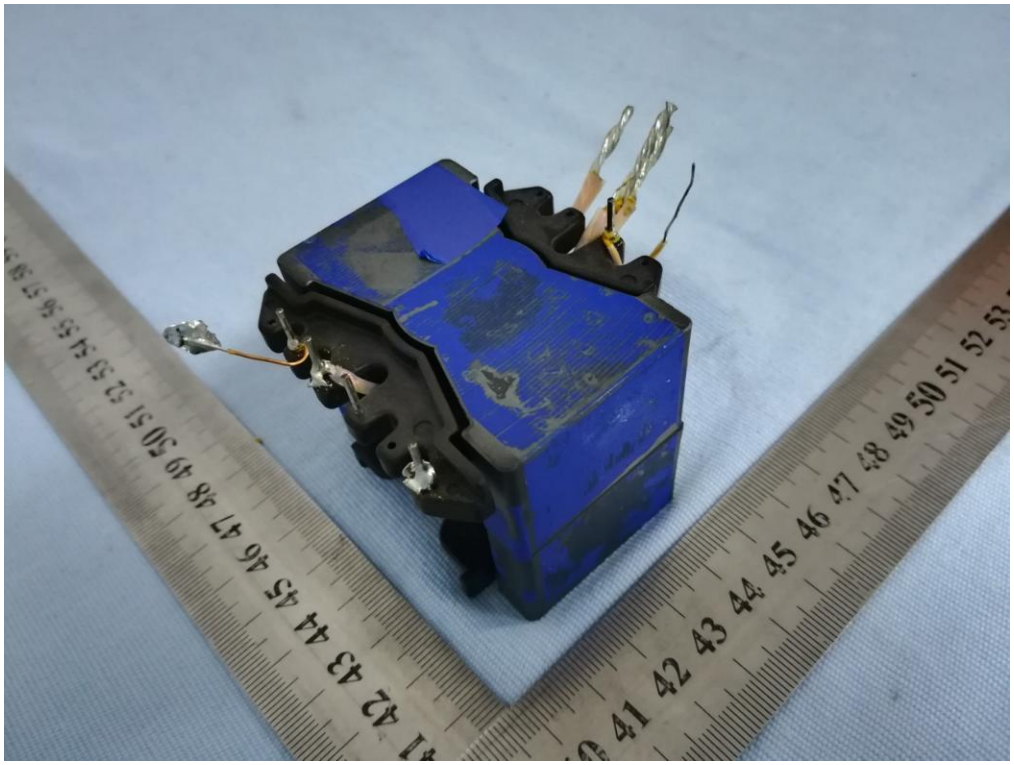


Figure 15. Internal view of transformer

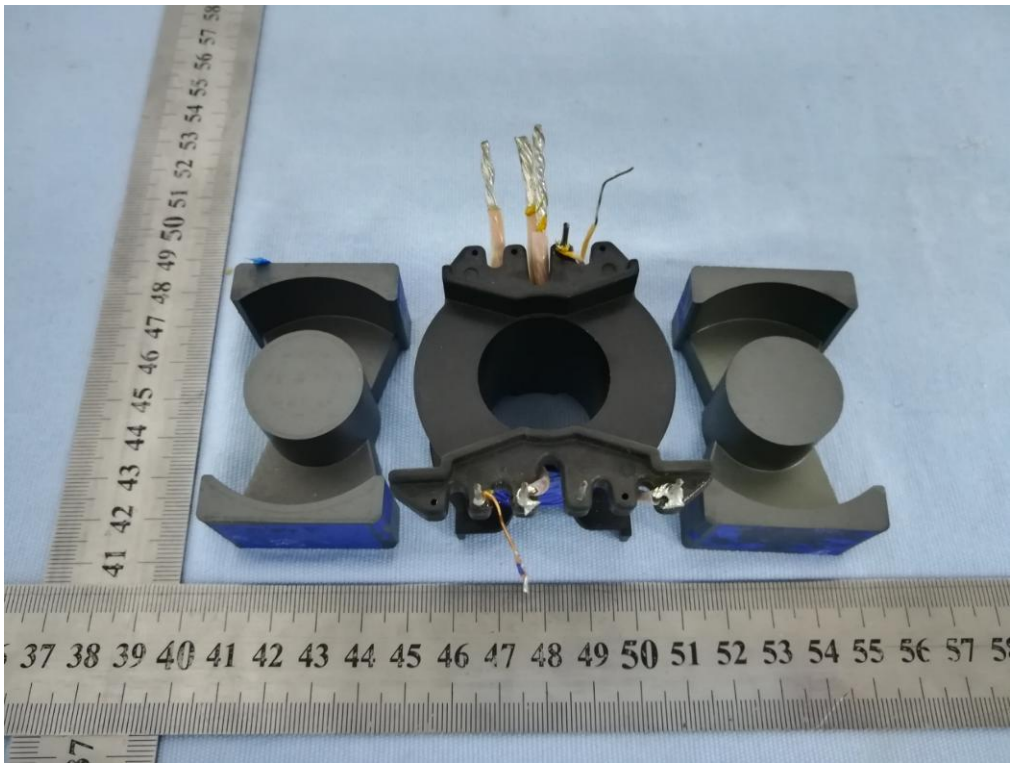


Figure 16. Internal view of transformer

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

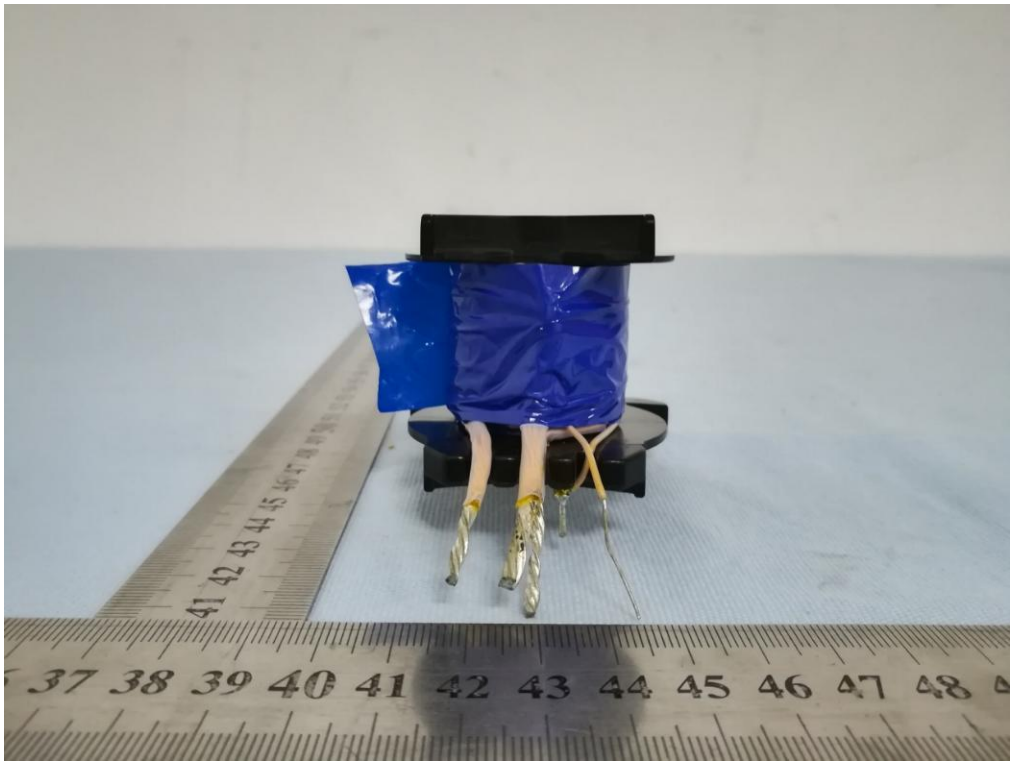


Figure 17. Internal view of transformer

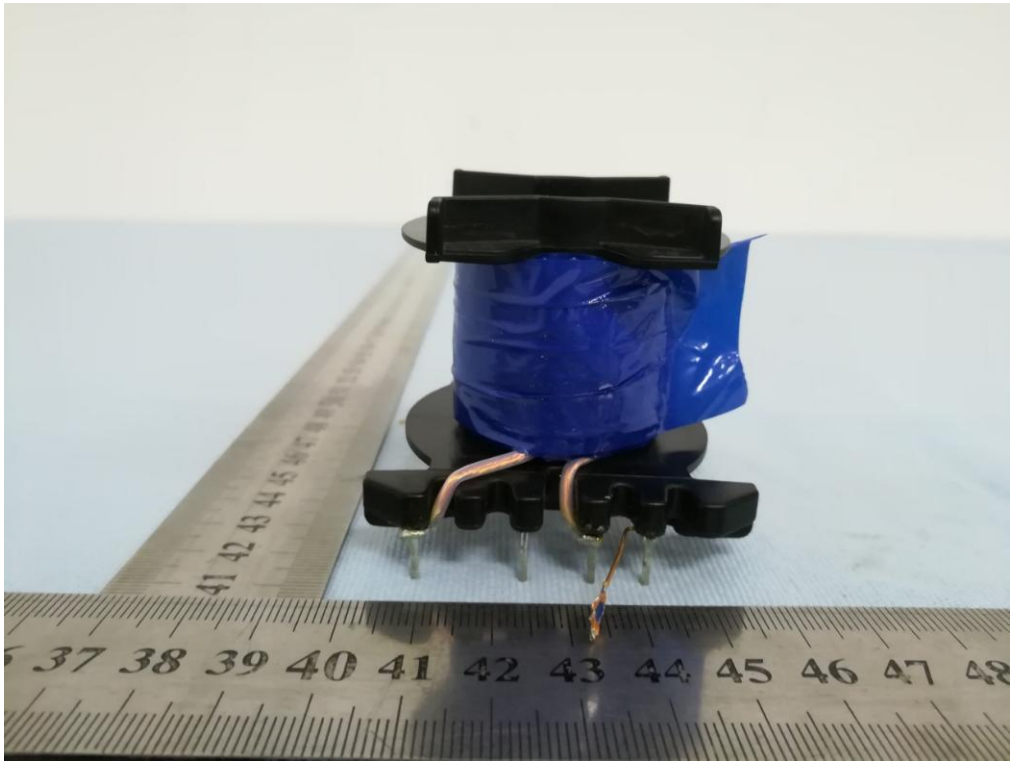


Figure 18. Internal view of transformer

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

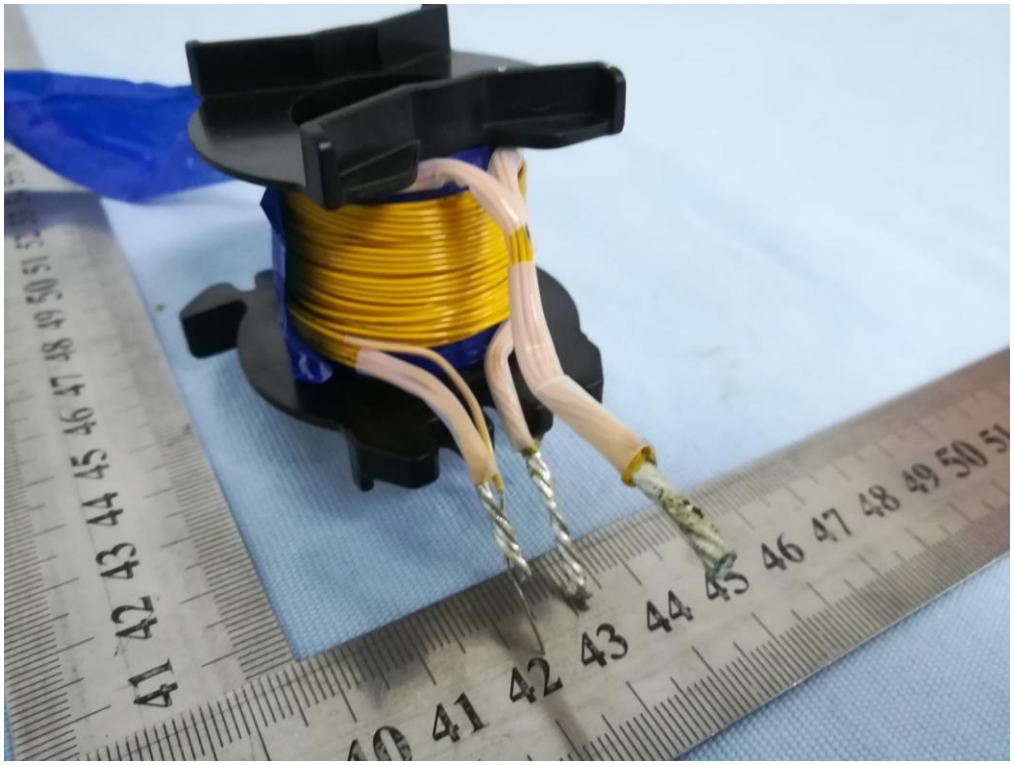


Figure 19. Secondary winding view of transformer

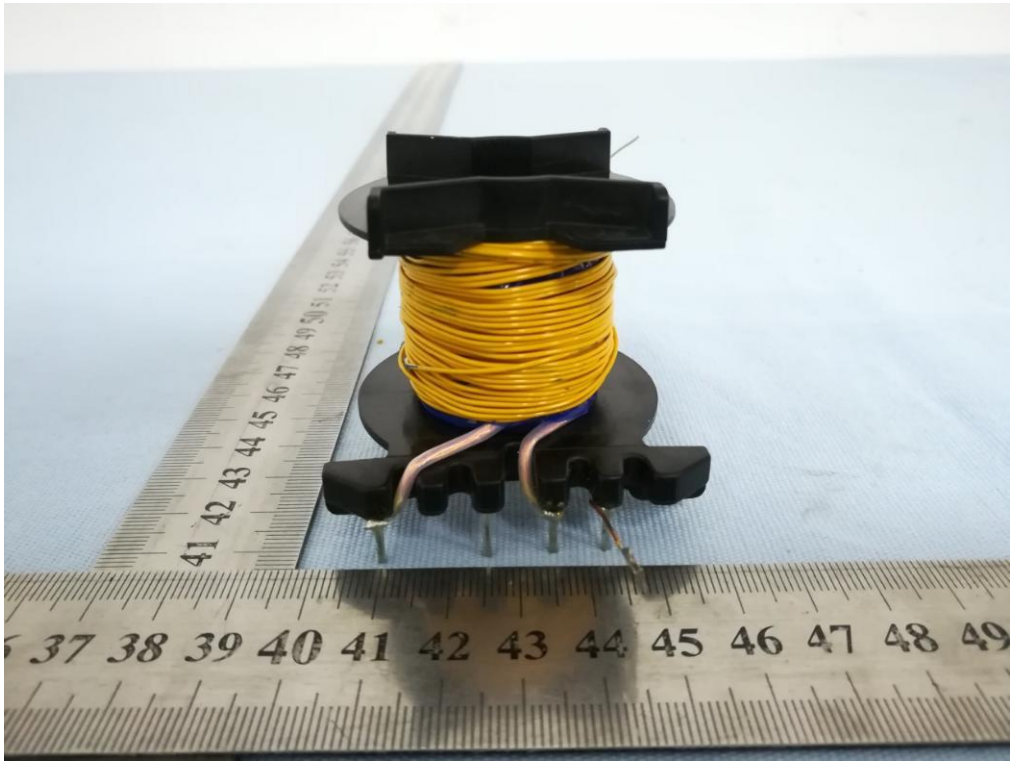


Figure 20. Secondary winding view of transformer

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

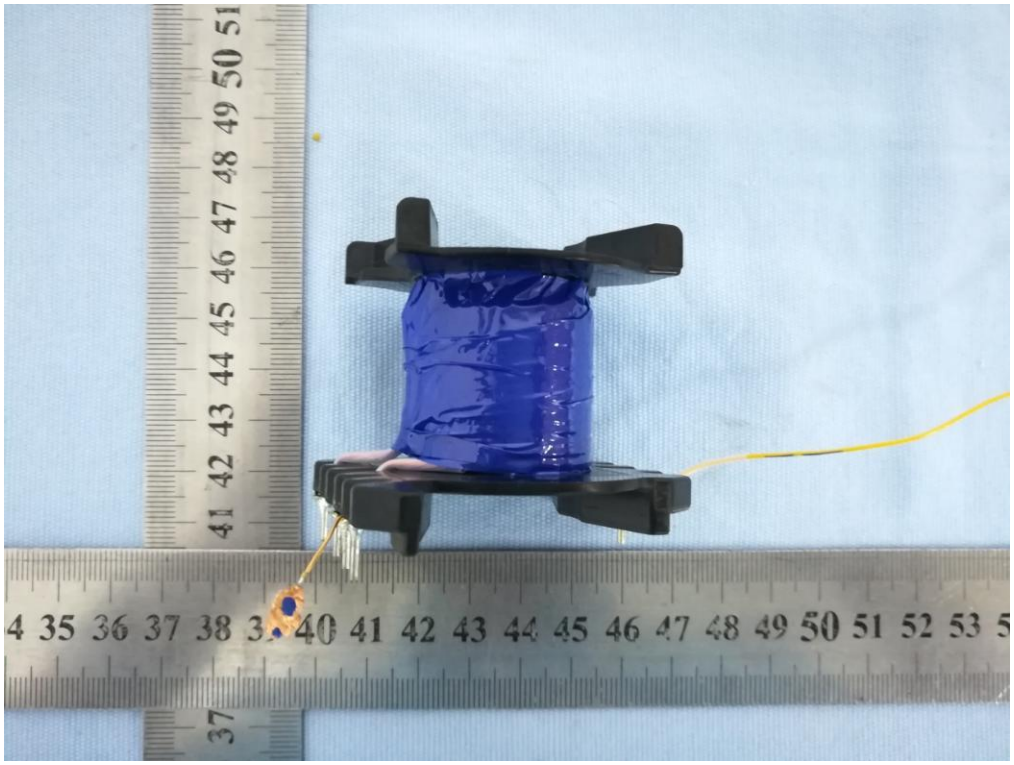


Figure 21. Internal view of transformer

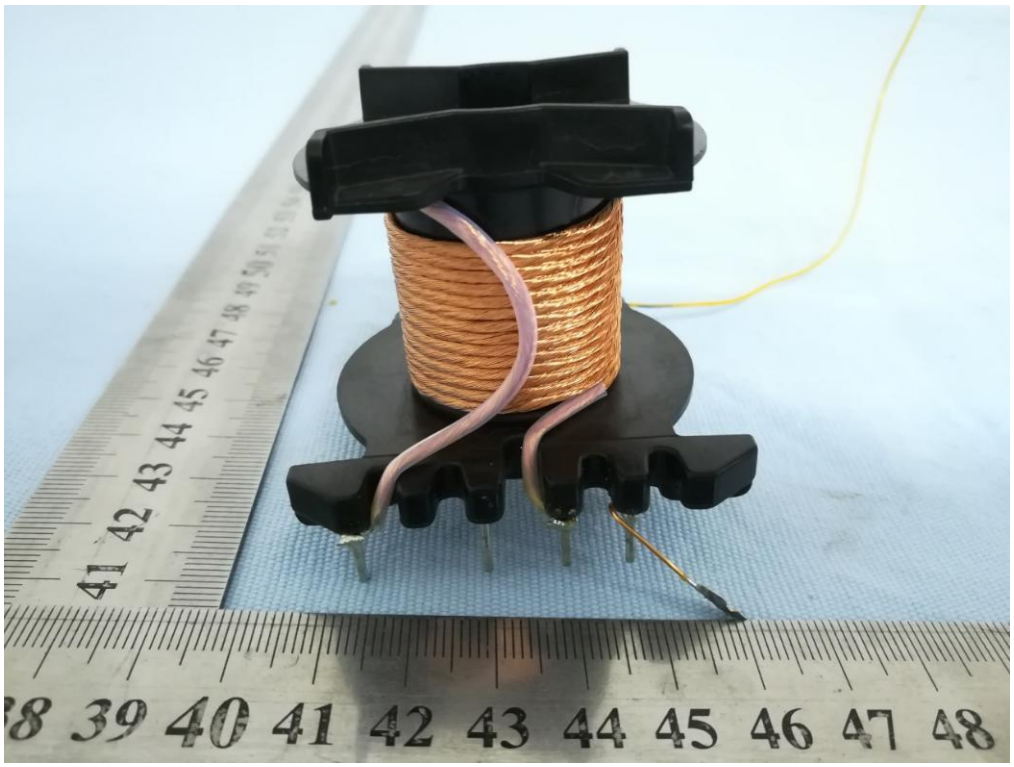


Figure 22. Primary winding view of transformer

Product Name : Battery Charger
Model : FYxxxyyyyy, FY29012000I (for xxx and yyyyy, refer to test report)

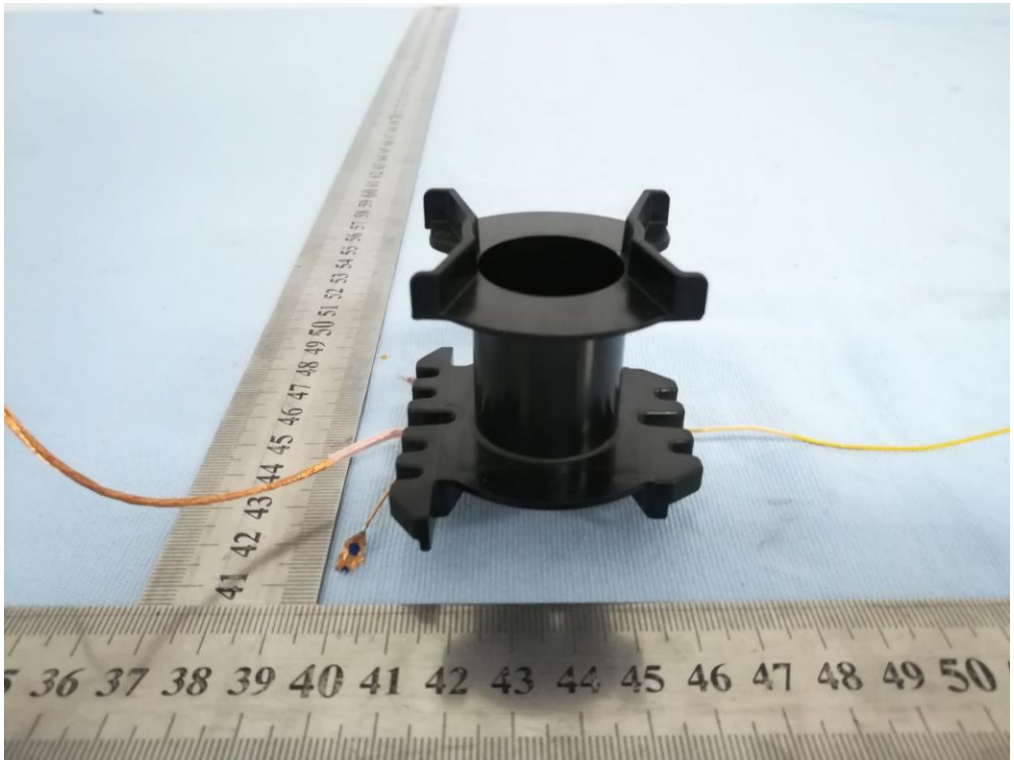


Figure 23. Bobbin view of transformer