Ref. Certif. No.

SI-6794 A1

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	Power Supply for Building-In
Name and address of the applicant	Delta Electronics (Thailand) Public Co., Ltd. 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn TH-10280, Thailand
Name and address of the manufacturer	Delta Electronics (Thailand) Public Co., Ltd. 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn TH-10280, Thailand
Name and address of the factory	Delta Electronics (Thailand) Public Co., Ltd. 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn TH-10280, Thailand
Note: When more than one factory, please report on page 2	☒ Additional Information on page 2
Ratings and principal characteristics	Input: 100-240 Vac; 50-60 Hz; / 125-250 Vdc; 2.8 A Output: 24 Vd.c.; 4.17 A
Trademark (if any)	DELTA
Customer's Testing Facility (CTF) Stage used	/
Model / Type Ref.	PMC-24V100W1XX (where XX can be any alphanumeric character or blank, no safety relevant information)
Additional information (if necessary may also be reported on page 2)	Unit also complies with EN 62368-1:2014 + A11:2017
	☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2014 (Second Edition)
As shown in the Test Report Ref. No. which forms part of this Certificate	T223-0489/18 A1, dated 2018-12-10

This CB Test Certificate is issued by the National Certification Body

SIQ Ljubljana, Tržaška cesta 2, SI-1000 Ljubljana, Slovenia
T +386 1 4778 100, F +386 1 4778 444, info@siq.si, www.siq.si

9SIQ Ljubljana is accredited by Slovenian Accreditation with accreditation number CP-001 in the field of certification of products, processes and services.

Date: 2018-12-10

Signature: Bojan Pečavar

Name and address of factory:

1.) Delta Electronics (Thailand) Public Co., Ltd.
909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road,
Tambol Phraksa, Amphur Muang, Samutprakarn TH-10280, Thailand

2.) Delta Electronics Power (Dongguan) Co., Ltd.
Delta Industrial Estate, Shijie Town, Dongguan City, Guangdong Province 523308,
China

Additional information (if necessary)

This CB Test Certificate substitutes previously issued CB Test Certificate No. SI-6794, dated 2018-10-19, due to update of the test report.

Date: 2018-12-10

Signature: Bojan Pečavar

Test Report issued under the responsibility of:

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number.....:	**T223-0489/18 A1**
Date of issue.....:	**2018-12-10**
Total number of pages.....:	**188 pages**
Applicant's name.....:	**Delta Electronics (Thailand) Public Co., Ltd.**
Address.....:	**909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn TH-10280, THAILAND**
Test specification:	
Standard .....:	IEC 62368-1:2014 (Second Edition)
Test procedure.....:	CB Scheme
Non-standard test method .....:	N/A
Test Report Form No. ..... :	IEC62368_1B
Test Report Form(s) Originator .....:	UL(US)
Master TRF.....:	2014-03

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.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test Item description ..... :	Power Supply for Building-In	
Trade Mark ..... :	DELTA	
Manufacturer ..... :	Delta Electronics (Thailand) Public Co., Ltd. 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn TH-10280, THAILAND	
Model/Type reference ..... :	PMC-24V100W1XX (where XX can be any alphanumeric character or blank, no safety relevant information)	
Ratings ..... :	Input: 100-240 Vac; 50-60 Hz; / 125-250 Vdc; 2.8 A Output: 24 Vd.c.; 4.17 A	
Testing procedure and testing location:		
☒ CB Testing Laboratory:	SIQ Ljubljana SIQ Ljubljana is accredited by Slovenian Accreditation with accreditation number LP-009 in the field of testing	
Testing location/ address ..... :	Tržaška c. 2, SI-1000 Ljubljana Slovenia	
☐ Associated CB Testing Laboratory:		
Testing location/ address..... :		
Tested by (name + signature).....:	Luka Košir	
Approved by (name + signature) .....:	Branko Lamovšek	
☐ Testing procedure: TMP/CTF Stage 1		
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature) .....:		
☐ Testing procedure: WMT/CTF Stage 2		
Testing location/ address..... :		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature) .....:		
☐ Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature) .....:		
Supervised by (name + signature).....:		

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

1. National differences according to IEC 62368-1:2014 (Second Edition) – Enclosure No. 1 (44 pages)
2. Pictures of the unit – Enclosure No. 2 (6 pages)
3. Technical documentation – schematics, layouts, transformer data – Enclosure No. 3 (23 pages)
4. Additional Test Data – Enclosure No. 4 (5 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
5.2 Electrical energy source measurement 5.4.1.4 Measurement of maximum operating temperatures for materials, components and systems 5.4.1.8 Determination of working voltage 5.4.1.10.3 Ball pressure test 5.4.2 / 5.4.3 Clearance and creepage distances 5.4.4.2 Minimum distance through insulation 5.4.4.6.2 Separable thin sheet material 5.4.8 Humidity conditioning 5.4.9 Electric strength test 5.5.2.2 Capacitor discharge test 5.6.6 Resistance of the protective bonding system 5.7 Prospective touch voltage, touch current and protective conductor current 6.2.2.2 Power measurement for worst-case fault 9.2.5 Temperature test B.2.5 Input test B.3.1 – B.3.8 Simulated abnormal operating conditions: - Covering of ventilation openings - DC mains polarity test - Setting of voltage selector - Maximum load at output terminals B.4.1 – B.4.9 Simulated single fault conditions: - Short circuit of clearances for functional insulation - Short circuit of creepage distances for functional insulation - Short circuit and interruption of electrodes in tubes and semiconductors - Short circuit or disconnection of passive devices - Continuous operation of components F.3.10 Permanence of markings G.5.3.3 Transformer overload test Annex R Limited short-circuit test (protective bonding)	**SIQ Ljubljana** **Mašera-Spasićeva ulica 10, SI-1000 Ljubljana, Slovenia**

T.2	Steady force test, 10 N	

Summary of compliance with National Differences:

List of countries addressed

Australia, Austria, Canada, China, Denmark*, Finland*, Ireland, Germany*, Israel, Italy*, Japan, Korea, Norway*, Slovenia, Spain, Sweden*, Switzerland, Turkey, United Kingdom*, USA as listed in online CB-Bulletin.

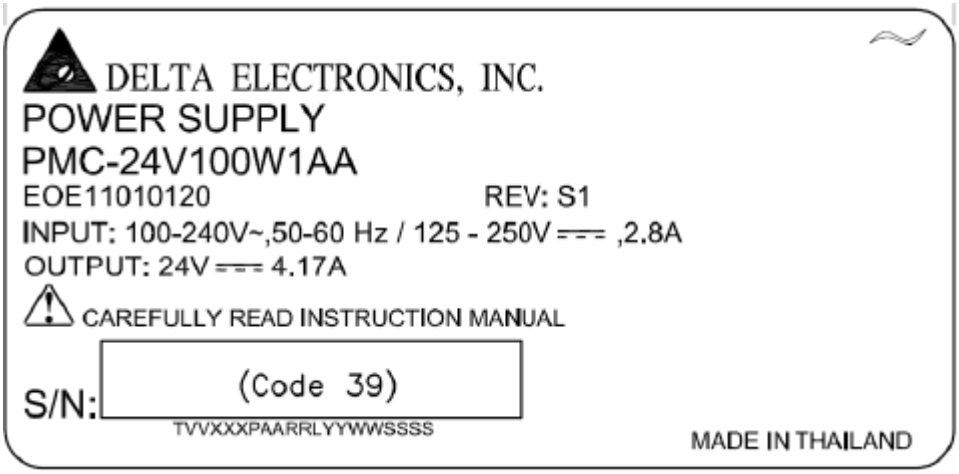
* European Group Differences and National Differences

See enclosure No. 1 for details.

☒ **The product fulfils the requirements of EN 62368-1:2014 + A11:2017**

Copy of marking plate:

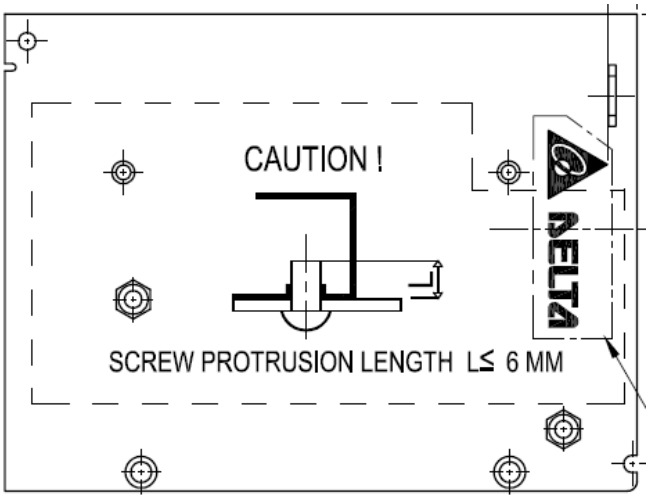
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Label for China:

Markings near terminals:

Warning on enclosure:



TEST ITEM PARTICULARS:	
Classification of use by ..... :	☐ Ordinary person ☐ Instructed person ☒ Skilled person ☐ Children likely to be present
Supply Connection ..... :	☒ AC Mains ☒ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance ..... :	☐ +10%/-10% ☐ +20%/-15% ☒ AC: +10%/-10%; DC (special power conditions): 125-375 Vdc ☐ None
Supply Connection – Type ..... :	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☒ permanent connection ☐ mating connector ☐ other:_____
Considered current rating of protective device as part of building or equipment installation..... :	20 A (USA); 16 A (EU) Installation location: ☒ building; ☐ equipment
Equipment mobility..... :	☐ movable ☐ hand-held ☐ transportable ☐ stationary ☒ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment ..... :	☒ Class I ☐ Class II ☐ Class III
Access location ..... :	☐ restricted access location ☒ N/A
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient :	50°C
IP protection class ..... :	☒ IPX0 ☐ IP___
Power Systems ..... :	☐ TN ☐ TT ☐ IT - ____ V_{L-L}
Altitude during operation (m) ..... :	☐ 2000 m or less ☒ 3000m
Altitude of test laboratory (m) ..... :	☐ 2000 m or less ☒ 300 m
Mass of equipment (kg) ..... :	☒ 0.417 kg
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..... :	2018-10-09
Date (s) of performance of tests..... :	From 2018-10-09 to 2018-10-16

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)..... :	Delta Electronics (Thailand) Public Co., Ltd. 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn 10280, Thailand Delta Electronics Power (Dongguan) Co., Ltd. Delta Industrial Estate, Shijie Town, Dongguan City, Guangdong Province 523308, China

GENERAL PRODUCT INFORMATION:

Product Description –

The equipment is a switching power supply (building-in type) for the use in information technology Equipment. The unit is intended for building-in and will be accessible only to skilled person. The temperature testing was performed in vertical and horizontal application according to manufacturer specification.

The equipment under test (EUT) is a Class I switching mode power supply for building-in intended for information technology products. EUT is provided with a metal enclosure and has been evaluated to operate in an environment judged to be pollution degree 2.
The symbols "." in model name can be any alphanumeric character or blank, for marketing use only, not affecting safety.

Circuit characteristics: The equipment contains primary, secondary (SELV) circuits and limited current circuits.

Maximum recommended ambient (Tmra): 50°C

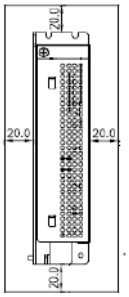
Electromedical equipment connected to the patient:
This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:

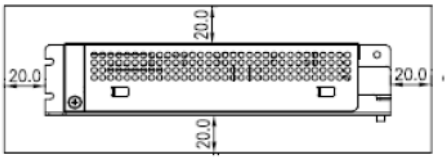
This equipment is intended to operate in a “normal” environment (Offices or homes) and at altitudes up to 3000m. Clearance has been evaluated according to IEC 60664-1 Table A.2 with a multiplication factor of 1.14.

The following mounting positions were used during testing:

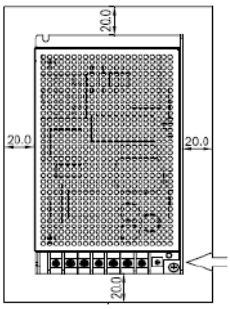
Mounting direction:



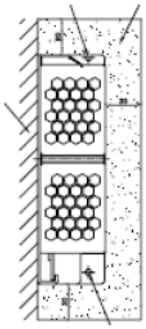
Mounting location 1



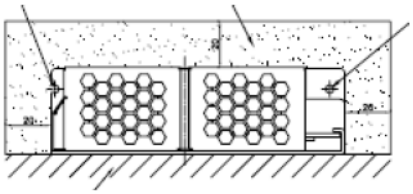
Mounting location 2



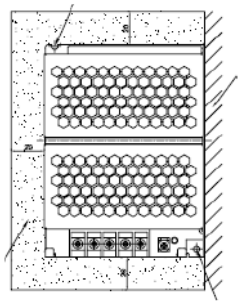
Mounting location 3



Mounting location 4



Mounting location 5



Mounting location 6

Model Differences: /

Additional application considerations – (Considerations used to test a component or sub-assembly) –

The product was tested according to the standard IEC 62368-1:2014 (2nd Edition) and/or EN 62368-1:2014.

Additionally the product was also evaluated according to the standards CSA C22.2 No. 62368-1:2014 and UL 62368-1:2014 (2nd Edition) and fulfils the requirements of these standards.

1. The products were tested on a 20 A (USA) and a 16 A (IEC) branch circuit in series. External circuit breaker did not open during the testing. The unit is approved for TN mains star connections and IT mains with 230Va.c phase to phase voltage. The unit provides internally one fuse in line.
2. All secondary output circuits are separated from mains by reinforced insulation and rated SELV, non-energy hazard.
3. The unit provides no disconnect device.
4. The input and output terminals and connectors are suitable for factory and field wiring.
5. The power supply is rated class I. The power supply shall be properly bonded to the main protective

bonding termination in the end product. The earth leakage current is below 3,5mA. An investigation of the protective bonding terminal has been conducted.

6. The transformers T1 provides reinforced insulation. Transformer is built up to fulfil the requirement of insulation class B (see also list of safety critical components).

7. The equipment has been evaluated for use in a Pollution Degree 2 and overvoltage category II environment and a maximum altitude of 3000m.

8. A suitable Electrical and Fire enclosure shall be provided in the end equipment.

10 . The product was evaluated for a maximum ambient of 50°C.

11 Approval within the end product: Leakage current measurement should be verified with the unit built into the end product.

History Sheet:

Date	Report No.	Change/Modification	Rev. No.
2018-10-19	T223-0489/18	This test report is based on CB Test Report T223-0488/18 acc. to IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013. Additional tests were performed to comply also according to IEC/EN 62368-1: 5.2 Electrical energy source measurement 5.4.9 Electric strength test 5.5.2.2 Capacitor discharge test 5.6.6 Resistance of the protective bonding system 5.7 Prospective touch voltage, touch current and protective conductor current 6.2.2.2, 6.2.2.3 Power Measurements 9.0 Touch temperature measurements Annex T Steady force test 30N Annex R Limited short-circuit test (protective bonding)	-
2018-12-10	T223-489/18 A1	Administrative update of the test report only - model name typo corrected.	1.0

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
Primary circuits supplied by a.c. mains	ES3 (steady-state voltage and current)
Pins of supply terminal	ES3 (stored capacitance)
Secondary circuit before rectifier of T1	ES3 (steady-state voltage and current)
Secondary output connector	ES1 (steady-state voltage and current)
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
All primary circuits and secondary circuits inside the equipment enclosure	PS3
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
N/A	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Sharp edges and corners	MS1
Equipment mass	MS1
Wall mounting (<1kg, ≤ 2m)*	MS1
* Unit is intended for wall mounting inside the cabinet.	
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
All parts of the unit	TS3

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
N/A	N/A

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
☒ **ES** ☒ **PS** ☒ **MS** ☒ **TS** ☒ **RS** **Description of the circuits:** **AC input: ES3 (steady state and capacitance), PS3** **Primary circuit: ES3, PS3** **Secondary circuit of T1: ES3, PS3** **Output of the unit: ES1, PS3** **Complete enclosure: TS3** **LED: RS1** **Mass, edges/corners: MS1; wall mounting (≤2m): MS1**

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Skilled *	ES3: Primary circuit	N/A	N/A	Equipment Enclosure
Skilled (Ordinary person in the final unit)	ES3: supply terminal	N/A	N/A	Bleeder resistors (5.5.2.2)
Skilled *	ES3: Secondary circuit of T1 before rectification **	N/A	N/A	Equipment Enclosure
Ordinary	ES1: output of the unit	N/A	N/A	N/A
* When unit built into final unit, enclosure of this product might be accessible to ordinary person as internal electrical enclosure (except front side with terminals). ** D350 is limiting ES3 voltage to ES1.				
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
All combustible materials	PS3 Less than 4000W	No ignition and no excessive temperature under normal and abnormal operation.	No fire after single fault condition. Unit for building-in. Fire enclosure is end product consideration.	N/A
Output connector	PS3	No ignition and no excessive temperature under normal and abnormal operation.	No fire after single fault condition. Unit for building-in. Fire enclosure is end product consideration.	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced

				(Enclosure)
Skilled	MS1: sharp edges and corners	N/A	N/A	N/A
Skilled	MS1: equipment mass	N/A	N/A	N/A
Ordinary/Instructed/Skilled	MS1: equipment mass for wall mounting up to 2m	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Skilled	TS3	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary/Instructed/Skilled	RS1: LED	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 62368-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, or used in circuits not in accordance with their specified ratings, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 62368-1. (See appended table 4.1.2)	P
4.1.3	Equipment design and construction	Equipment is designed in such a manner that under normal operating condition, abnormal operating condition and single fault condition does not cause any injury or in case of fire, property damage.	P
4.1.15	Markings and instructions .....:	(See Annex F)	P
4.4.4	Safeguard robustness	No solid safeguard accessible to ordinary or instructed person.	N/A
4.4.4.2	Steady force tests .....:	No external enclosure. Unit for building-in.	N/A
4.4.4.3	Drop tests.....:	Unit for building-in. Drop test not applicable.	N/A
4.4.4.4	Impact tests.....:	No external enclosure. Impact test not applicable.	N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....:	No safeguard accessible to ordinary person.	N/A
4.4.4.6	Glass Impact tests .....:	No safeguard made of glass.	N/A
4.4.4.7	Thermoplastic material tests.....:	No such safeguard made of moulded or formed thermoplastic material.	N/A
4.4.4.8	Air comprising a safeguard .....:	No external barrier or enclosure.	N/A
4.4.4.9	Accessibility and safeguard effectiveness		N/A
4.5	Explosion	No risk of explosion.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	Conductors are reliable fixed, no displacement possible.	P
4.6.2	10 N force test applied to ..... :	N/A	N/A
4.7	Equipment for direct insertion into mains socket - outlets	The EUT is not direct plug-in equipment.	N/A
4.7.2	Mains plug part complies with the relevant standard ..... :		N/A
4.7.3	Torque (Nm) ..... :	N/A	N/A
4.8	Products containing coin/button cell batteries	No such component inside the unit.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery ..... :		—
4.8.4	Battery Compartment Mechanical Tests ..... :		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object..... :	No external enclosure therefore entry of foreign object is unlikely.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications ..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current ..... :	See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :	(See appended table 5.2)	P
5.2.2.4	Single pulse limits ..... :	(See appended table 5.2)	P
5.2.2.5	Limits for repetitive pulses ..... :	(See appended table 5.2)	P
5.2.2.6	Ringing signals ..... :	No ringing generator inside the unit.	N/A
5.2.2.7	Audio signals ..... :	No audio amplifier in the unit.	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Bare conductors at ES3 are located or guarded so that unintentional contact with such conductors during service operations by a skilled person is unlikely.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Unit only accessible to skilled person. Output of the unit is ES1 and might be accessible to ordinary/instructed person within the final unit.	P
5.3.2.2	Contact requirements	No contact requirement for skilled person.	N/A
	a) Test with test probe from Annex V..... :		N/A
	b) Electric strength test potential (V) ..... :		N/A
	c) Air gap (mm) ..... :		N/A
5.3.2.4	Terminals for connecting stripped wire	No terminal for connecting stripped wire accessible to ordinary person.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	No hygroscopic insulation materials used.	P
5.4.1.3	Humidity conditioning.....:	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree ..... :	PD2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer used.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such circuits.	N/A
5.4.1.8	Determination of working voltage		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.9	Insulating surfaces	No accessible surface made of insulating material.	N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Bobbin.	P
5.4.1.10.2	Vicat softening temperature .....:	This method not applied.	N/A
5.4.1.10.3	Ball pressure .....:	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage .....:	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage .....:	2500V	—
	b) d.c. mains transient voltage .....:	N/A	—
	c) external circuit transient voltage .....:	N/A	—
	d) transient voltage determined by measurement... :	Measurement not relevant	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	This method not applied.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....:	Maximum specified altitude <3000m. 1,14 multiplication factor used for clearances and 1,10 for electric strength test	P
5.4.3	Creepage distances .....:	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group .....:	Material group IIIb considered.	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation .....:	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	No such component.	N/A
5.4.4.4	Solid insulation in semiconductor devices	Approved optical insulators are used.	P
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	One layer of thin sheet material between primary and secondary winding inside T1 for mechanical protection only.	N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....:	One layer of thin sheet material between primary and secondary winding inside T1 for mechanical protection only.	N/A
5.4.4.6.3	Non-separable thin sheet material	No such material.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.4	Standard test procedure for non-separable thin sheet material .....:		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	T1: Triple insulated wire used. Mechanical stress on wire insulation prevented by physical barrier of this sheet material between the windings.	P
5.4.4.9	Solid insulation at frequencies >30 kHz.....:	(See appended Table 5.4.4.9)	P
5.4.5	Antenna terminal insulation	No such terminal.	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard .....:	No accessible insulation of internal wire.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No such component. Approved optical insulators used.	N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%).....:	Unit tested for tropical conditions: 120h, (93±3)%, (40±2)°C	—
	Temperature (°C) ..... :	40	—
	Duration (h) .....:	120	—
5.4.9	Electric strength test .....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Worse case of all three methods considered.	P
5.4.9.2	Test procedure for routine tests	Transformers subjected to 100% routine tests. Optical insulators are separately certified.	P
5.4.10	Protection against transient voltages between external circuit	No such external circuits.	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test.....:		N/A
5.4.10.2.3	Steady-state test.....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry.....:		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ..... :		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement	Capacitors and RC units that serve as a safeguard comply with IEC 60384-14 and clause G.11 of this standard. CY6 is bridging double or reinforced insulation. Capacitors Line to Neutral and Line/Neutral to PE are separately certified components according IEC 60384-14.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	P
5.5.5	Relays	Relay only used in inrush circuit. (See Annex G.2)	P
5.5.6	Resistors	No resistors as a safeguard.	N/A
5.5.7	SPD's	(See Annex G.8)	P
5.5.7.1	Use of an SPD connected to reliable earthing	No varistor between the mains and earth.	N/A
5.5.7.2	Use of an SPD between mains and protective earth	No such varistor	N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable ..... :	No such external circuit.	N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	Protective conductor serves as a basic/supplementary safeguard.	P
5.6.2.1	General requirements	Power Supply for building-in. Power supply cord not part of the unit.	N/A
5.6.2.2	Colour of insulation	No protective earthing/bonding conductor with insulation	N/A
5.6.3	Requirement for protective earthing conductors	Unit for building-in provided without protective earthing conductor.	N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors	Unit provides main protective earthing/bonding terminal in supply terminal. Bonding is transmitted through PCB trace to enclosure.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.1	Protective bonding conductors	Protective current rating <25A. Protective bonding conductor complies with clause 5.6.6 and Annex R.	P
	Protective bonding conductor size (mm^2). ..... :	N/A	—
	Protective current rating (A) ..... :	20	—
5.6.4.3	Current limiting and overcurrent protective devices	No component in parallel to protective device.	P
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement	Terminal for connection of protective earthing/bonding conductor complies with table 32.	P
	Conductor size (mm^2), nominal thread diameter (mm)..... :	Approved terminals used. Switchlab T24 series: nominal thread diameter M3.5	P
5.6.5.2	Corrosion	No risk of corrosion. Checked to Annex N.	P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements	Protective bonding conductors and their terminations do not have excessive resistance. Checked with 5.6.6.2.	P
5.6.6.2	Test Method Resistance (Ω)..... :	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing	Unit for building-in.	N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current..... :	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection)..... :	Not a system of interconnected equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections) ..... :	No multiple connections to the mains.	—
5.7.4	Earthed conductive accessible parts ..... :	(See appended Table 5.7.4)	P
5.7.5	Protective conductor current	Measured touch current does not exceed ES2 limits in 5.2.2.2 therefore measurement of protective conductor current is not relevant.	N/A
	Supply Voltage (V)..... :		—
	Measured current (mA)..... :		—
	Instructional Safeguard..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA) .....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A
6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	All circuits inside the equipment are declared PS3, arcing and/or resistive PIS. --- EUT is for building-in. Secondary power output is classified PS3.	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault....:	Measurement not relevant. Output is PS3.	N/A
6.2.2.3	Power measurement for worst-case power source fault .....:	Measurement not relevant. Output is PS3.	N/A
6.2.2.4	PS1 .....:	(See appended table 6.2.2)	N/A
6.2.2.5	PS2 .....:	(See appended table 6.2.2)	N/A
6.2.2.6	PS3 .....:	Done by declaration.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS .....:	All internal circuits considered arcing PIS.	P
6.2.3.2	Resistive PIS .....:	All internal circuits considered resistive PIS.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	Unit for building-in. Fire enclosure is end product consideration.	N/A
6.4	Safeguards against fire under single fault conditions		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.1	Safeguard Method	Control fire spread. Selection and application of supplementary safeguards for components, wiring, materials and constructional measures that reduce the spread of fire. In addition, fire enclosure is required in end product.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	No PS1 circuit.	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	This method not applied.	N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	No such circuit.	N/A
6.4.5	Control of fire spread in PS2 circuits	No such circuits in the unit. All circuits are considered PS3.	P
6.4.5.2	Supplementary safeguards .....:	Components other than PCB and wires are: - mounted on PCB rated V-1 or better, or - made of V-2/VTM-2 or better. (See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit	In addition to the compliance with 6.4.5, a fire enclosure that complies with 6.4.8 is required in the final unit.	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General .....:		N/A
6.4.7.2	Separation by distance	All components and combustible materials other than small parts are either rated at least V-1 or mounted on material with rating minimum V-0.	N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Unit for building-in. Fire enclosure is end product consideration.	N/A
6.4.8.1	Fire enclosure and fire barrier material properties		N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Unit for building-in. Fire enclosure is end product consideration.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:		N/A
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)..... :	Unit for building-in.	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	Unit for building-in. Fire enclosure is end product consideration.	N/A
6.5	Internal and external wiring		N/A
6.5.1	Requirements	No internal wiring. All connections done via pcb tracks.	N/A
6.5.2	Cross-sectional area (mm^2) .....:		—
6.5.3	Requirements for interconnection to building wiring..... :		N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous substances.	N/A
7.3	Ozone exposure	Unit does not produce ozone.	N/A
7.4	Use of personal safeguards (PPE)	No PPE specified.	N/A
	Personal safeguards and instructions .....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		—
7.6	Batteries.....:	(See Annex M)	N/A
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General		P
8.2	Mechanical energy source classifications	Sharp edges and corners, and equipment mass are both classified as MS1.	P
8.3	Safeguards against mechanical energy sources	No safeguard is required to be interposed between MS1 and an ordinary person.	P
8.4	Safeguards against parts with sharp edges and corners	No parts with sharp edges or corners.	P
8.4.1	Safeguards		P
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment	No such part.	N/A
8.5.2	Instructional Safeguard..... :	N/A	—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment	Not such product.	N/A
8.5.4.2	Equipment having electromechanical device for destruction of media	The EUT is not a media destruction device.	N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:	No such.	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps	No high pressure lamps in the unit.	N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test .....:		N/A
8.6	Stability		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	Product classification	Unit for building-in. Stability tests are not applicable.	N/A
	Instructional Safeguard ..... :		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force .....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) .....:		N/A
	Position of feet or movable parts .....:		—
8.7	Equipment mounted to wall or ceiling	Unit is intended for panel mounting inside the cabinet. On the request of the manufacturer, unit was investigated for wall mounting with a height ≤2m.	P
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:	Unit provided with 4 threaded openings for screw fixation. M4 screws are specified. Screw length is defined on the unit bottom marking and depends on the thickness of the mounting accessory. Screw shall not penetrate more than 6,0mm into the unit.	P
8.7.2	Direction and applied force .....:	Treaded holes: torque test with 0,4Nm.	P
8.8	Handles strength	No handles.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements	No wheels or casters.	N/A
8.9.1	Classification		N/A
8.9.2	Applied force.....:		—
8.10	Carts, stands and similar carriers	No cart, stand or similar carriers.	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard .....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force.....:		—
8.10.4	Cart, stand or carrier impact test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) ..... :		—
8.10.6	Thermoplastic temperature stability (°C) ..... :		N/A
8.11	Mounting means for rack mounted equipment	The EUT is not intended for rack mounting. No slide-rails provided.	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	No telescoping or rod antennas.	N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	Unit is only accessible to skilled person. All internal parts as well as enclosure specified TS3.	P
9.3	Safeguard against thermal energy sources	No safeguard required for skilled person.	N/A
9.4	Requirements for safeguards		
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		P
10.2	Radiation energy source classification	No hazardous radiation energy sources as specified in this standard are present. Control LED is considered low power application LED and specified as RS1.	P
10.2.1	General classification		P
10.3	Protection against laser radiation	No laser source inside the unit.	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....:		N/A
	Instructional safeguard .....:		—
	Tool .....:		—
10.4	Protection against visible, infrared, and UV radiation		
10.4.1	General		
10.4.1.a)	RS3 for Ordinary and instructed persons .....:		
10.4.1.b)	RS3 accessible to a skilled person .....:		

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Clause	Requirement + Test	Result - Remark	Verdict
	Personal safeguard (PPE) instructional safeguard ..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 ..:		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque ..... :		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV ..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation ..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions ..... :		N/A
10.4.2	Instructional safeguard ..... :		N/A
10.5	Protection against x-radiation	No X-Radiation.	N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards ..... :		N/A
	Instructional safeguard for skilled person .....:		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation ..... :		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg) ..... :		N/A
10.6	Protection against acoustic energy sources	The EUT is not a personal music player.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) ..... :		N/A
	Output voltage, unweighted r.m.s. ..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2 ..... :		—
	Means to actively inform user of increase sound pressure ..... :		—
	Equipment safeguard prevent ordinary person to RS2 ..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) ..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) ..... :		—
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements ..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	No audio amplifier within the unit.	N/A
B.2.3	Supply voltage and tolerances	+10% / -10%	P
B.2.5	Input test ..... :	(See appended table B.2.5) The measured input current under normal operating conditions did not exceed the rated current by more than 10%.	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements ..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	Air holes closed test performed. See appended table B.3.2.	P
B.3.3	D.C. mains polarity test	Unit not intended for connection to d.c. mains.	N/A
B.3.4	Setting of voltage selector ..... :	No voltage selector.	N/A
B.3.5	Maximum load at output terminals ..... :	Output overload test performed. See table B.3.	P
B.3.6	Reverse battery polarity	No replaceable battery.	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	No audio amplifier in the unit.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	During an abnormal operating condition that does not lead to a single fault condition, all safeguards are remained effective. After restoration of normal operating conditions, all safeguards are compliant with applicable requirements. For those abnormal operating conditions that lead to single fault conditions, see Clause B.4.8.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :	No temperature controlling device in the sense of this clause.	N/A
B.4.3	Motor tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....:	Approved fan used. Fan blocked test performed in order to verify temperatures of other parts and materials in the unit. (See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	Clearances for functional insulation that are not evaluated for basic insulation or relevant electric strength test are short-circuited in turn. See appended table B.4.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	Creepage distances for functional insulation that are not evaluated for basic insulation or relevant electric strength test are short-circuited in turn. See appended table B.4.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	See appended table B.4.	P
B.4.6	Short circuit or disconnect of passive components	See appended table B.4.	P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ....:	No charging.	N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated load impedance (Ω) .....:		
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language ..... :	English.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are compliant with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphic symbols are compliant with IEC 60417 or ISO 3864-2 or ISO 7000.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	External surface of the unit.	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....:	DELTA	—
F.3.2.2	Model identification .....:	PMC-24V100W1XX	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage..... :	~ symbol used to identify AC input. Correct DC symbol used for DC input.	—
F.3.3.4	Rated voltage..... :	100-240 V~ 125-250 Vdc	—
F.3.3.4	Rated frequency ..... :	50-60 Hz	—
F.3.3.6	Rated current or rated power..... :	2.8 A	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No such voltage selector.	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No such outlet.	N/A
F.3.5.2	Switch position identification marking..... :	No switch in the unit.	N/A
F.3.5.3	Replacement fuse identification and rating markings ..... :	Fuse located in Line and marked on PCB near the fuse with: F1 F3.15AH 250Vac.	P
F.3.5.4	Replacement battery identification marking ..... :	No battery.	N/A
F.3.5.5	Terminal marking location	Terminal marking not located on the screws, removable washers or other removable parts.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal	IEC 60417-5019 (2006-08) symbol used near terminal for connection of protective earthing/bonding conductor.	P
F.3.6.1.2	Neutral conductor terminal	Terminal for connection of Neutral conductor identified with “N”.	P
F.3.6.1.3	Protective bonding conductor terminals	See F.3.6.1.1	P
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking ..... :	N/A	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		N/A
	a) Equipment for use in locations where children not likely to be present - marking	Unit for building-in. Instructions are end product consideration.	N/A
	b) Instructions given for installation or initial use		N/A
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		P
G.1	**Switches**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		P
G.2.1	General requirements	No relay used as a safeguard. However relay in inrush circuit is separately approved and complies with particular requirements.	P
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		P
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		P
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance (Ω) . :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :	(See appended Table B.4)	N/A
G.4	**Connectors**		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components.....	(See Annex J)	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Approved triple insulated wire is used inside the transformer. See list of critical components.	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.1.2 b)	Construction subject to routine testing	Wire contact prevented by mechanical separation through use of thin sheet material.	P
G.5.2	Endurance test on wound components	100% routine tests on transformers.	P
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) ..... :		—
	Temperature (°C) ..... :		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) ..... :	The isolation transformers meet the requirements given in Annexes G.5.3.2 and G.5.3.3.	P
	Position ..... :	T1 (primary-secondary)	—
	Method of protection ..... :	Primary and secondary current regulation.	—
G.5.3.2	Insulation		P
	Protection from displacement of windings ..... :	The insulation in transformers fulfils requirements of Clause 5 and passes the relevant electric strength tests, according to the application of the insulation in the equipment. Transformers provided with TIW therefore displacement of the wire is not a concern.	—
G.5.3.3	Overload test..... :	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding Temperatures testing in the unit		P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements	No fans used.	N/A
	Position ..... :		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V) .....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h).....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		P
G.6.1	General	Approved triple insulated wire is used inside transformers (complies with Annex J). All other enamelled wires were only considered for functional insulation. See list of critical components.	P
G.6.2	Solvent-based enamel wiring insulation	Only considered as functional insulation.	P
G.7	**Mains supply cords**		N/A
G.7.1	General requirements	Power supply for building-in provided with terminals for permanent fixation of conductors. Power supply cord is part of end product.	N/A
	Type..... :		—
	Rated current (A)..... :		—
	Cross-sectional area (mm^2), (AWG)..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N).....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry.....:		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....:		—
	Diameter (m) ..... :		—
	Temperature (°C) ..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand	The unit is not allowed to be used with stranded wires. Proper instruction provided in instruction manual – wires should be provided wire lug.	N/A
G.8	**Varistors**		P
G.8.1	General requirements	Varistor only complies with G.8.2 due to that method “reduce the likelihood of ignition” not used.	P
G.8.2	Safeguard against shock	Varistor L to N is separately certified component and complies with particular requirements of this clause. See list of critical components.	P
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test ..... :	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage ..... :	(See appended table B.3)	N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiters.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA ..... :		—
G.9.1 d)	IC limiter output current (max. 5A) ..... :		—
G.9.1 e)	Manufacturers’ defined drift ..... :		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements	No resistors used as safeguard or insulation. Unit complies with capacitor discharge test requirements of clause 5.5.2.2 also under fault condition – opening of bleeder resistor.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements	CY5 is bridging double or reinforced insulation and complies with clause Y1. Capacitors Line to Neutral and Line/Neutral to PE are separately certified components according IEC 60384-14.	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) ..... :	Optical insulators comply with cemented joint test. See list of critical components.	P
	Type test voltage Vini .....:	N/A	—
	Routine test voltage, Vini,b .....:	N/A	—
G.13	**Printed boards**		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board is compliant with the minimum requirements of clearances (5.4.2) and creepage distances (5.4.3)	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface	No inner layers.	N/A
	Compliance with cemented joint requirements (Specify construction) .....:		—
G.13.5	Insulation between conductors on different surfaces	No overlapping of PCB traces where basic, double or reinforced insulation is affected.	N/A
	Distance through insulation ..... :	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs) .....:	N/A	—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:		N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No LFC.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No ICX used in the unit.	N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General	No ringing generator.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA): .....:		—
H.3.2	Tripping device and monitoring voltage .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) ..... :		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
	General requirements	Approved TIW used. See list of critical components. No additional testing considered required.	P
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance..... :	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method ..... :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) ..... :		N/A
K.7.2	Overload test, Current (A) ..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test ..... :	(See appended table 5.4.11)	N/A
L	**DISCONNECT DEVICES**		N/A
L.1	General requirements	Unit for building-in. Disconnect device is end product consideration.	N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices	No switch as disconnect device.	N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements	No battery provided.	N/A
M.2	Safety of batteries and their cells		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance ..... :		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature ..... :		—
M.4.2.2 b)	Single faults in charging circuitry ..... :		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		N/A
M.6.2	Leakage current (mA) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s).....:		—
M.8.2.3	Correction factors.....:		—
M.8.2.4	Calculation of distance *d* (mm) .....:		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....:		N/A
N	**ELECTROCHEMICAL POTENTIALS**		P
	Metal(s) used.....:	Pollution degree considered	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied .....:	Considered	—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		N/A
P.1	General requirements	Unit for building in does not provide external electrical/fire enclosure. Therefore requirements of this clause need to be verified in the end product.	N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) .....:		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts.....:		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....:		N/A
P.3	Safeguards against spillage of internal liquids		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C) ..... :		—
	Ta (°C) ..... :		—
P.4.2 b)	Abrasion testing ..... :	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing ..... :	(See Annex T)	N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		**P**
R.1	General requirements	Enclosure is bonded to PE through PCB traces. Rating of external protection does not exceed 25A. Therefore limited short circuit test performed in order to verify that protective bonding conductors (PCB traces) are able to carry fault currents.	P
R.2	Determination of the overcurrent protective device and circuit	Unit is specified for max 20A external protective device.	P
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :	240V, 1500A. No damage of protective bonding conductors (PCB traces) as a result of limited short circuit test.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Certified materials used. No additional testing considered required. See list of critical components.	N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		**P**
T.1	General requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.2	Steady force test, 10 N .....:	(See appended table T.2)	P
T.3	Steady force test, 30 N .....:		P
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....:		N/A
T.8	Stress relief test.....:		N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m).....:		—
T.10	Glass fragmentation test.....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT used.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen..... :	(See Annex T)	N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		N/A
V.1	Accessible parts of equipment		N/A
V.2	Accessible part criterion		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: list of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Unit from outside					
Enclosure	Interchangeable	Interchangeable	Aluminium or steel, approx. overall dimension: 158mm by 97mm by 38mm and 0.6mm thickness min.	IEC/EN 62368-1	Accepted
Input terminal block (CN1)	+ Switchlab Inc.	T24 series	Min. 10A, 300V	IEC/EN 62368-1 UL1059	Accepted UR (E167040)
Alternate - Input terminal block (CN1)	+ Dinkle	DT-49 series	Min. 10A, 300V	IEC/EN 62368-1 UL1059	Accepted UR (E102914)
Alternate - Input terminal block (CN1)	+ Switchlab Inc.	C44M series	Min. 10A, 300V	IEC/EN 62368-1 UL1059	Accepted UR (E167040)
Alternate - Input terminal block (CN1)	+ Switchlab Inc.	T44 series	Min. 15A, 300V	IEC/EN 62368-1 UL1059	Accepted UR (E167040)
Alternate - Input terminal block (CN1)	+ JWT	A3963 series	Min. 10A, 300V	IEC/EN 62368-1 UL1059	Accepted UR (E144544)
Alternate - Input terminal block (CN1)	+ JST	VH series	Min. 10A, 300V	IEC/EN 62368-1 UL1059	Accepted UR (E60389)
Components located on EOE11010120 board					
Fuse (F1)	+Littelfuse	215 series	T3.15AH, 250Vac	EN60127-2, UL248-14 (JDYX2)	VDE UR E10480
	Belfuse	5HT / 5HTP series	T3.15AH, 250Vac	EN60127-2 (JDYX2)	VDE UR E20624
	Schurter	SPT series	T3.15AH, 250Vac	EN60127-2 (JDYX2)	VDE UR E41599
Varistor (Z1)	+Thinking	TVR14471K	300 Vac min., coating min. V-1	IEC 60950-1 + Annex Q (VZCA2) UL 1449	VDE UR E314979

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Littelfuse	V300LA20A	300 Vac min., coating min. V-1	IEC 60950-1 (Annex Q) UL1449 (VZCA2)	VDE UR E320116
	Walsin	VZ14D471K	300 Vac min., coating min. V-1	IEC 60950-1 (Annex Q) UL1449 (VZCA2)	VDE UR E309297
	Epcos	S14K300 series / S14K320 series	300 Vac min., coating min. V-1	IEC 60950-1 (Annex Q) UL1449 (VZCA2)	VDE UR E321126
	Joyin	14N471K	300 Vac min., coating min. V-1	IEC 60950-1 (Annex Q) UL1449 (VZCA2)	VDE UR E325508
X-Capacitors (CX2)	+Kemet Electronics	R46/R49/F861	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE, FI
	Vishay	3362/3382/339M	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE
	Hua Jung	MKP	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE, FI
	Iskra	KNB1530/ KNB1560	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE
	Panasonic Corporation, Panasonic Corporation of North America	ECQUL	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE
	Okaya	LE / RE	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	Semko
	Epcos	B3291 / B3292	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE
	Europtronics or	MPX / MPX2	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Pilkor	PCX2339	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	Semko
	Xiamen Faratronics	MKP62 / MKP64	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE
	Zhuhai Sung Ho Electronics Co., Ltd	CMPP	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE
	Strong Components Co., Ltd	MPX	0,68uF max.; 250V min.; 100°C min marked “X1” or “X2”	IEC 60384-14:1993	VDE
Y-Capacitors (CY3, CY4)	+ Vishay Electronics	VY1 / VY2 / WKO / WKP	220pF max., 250V min. 125°C min; marked with Y1 or Y2	IEC60384-14:2013	VDE, FI
	Murata	KX / KY / KH / RA	220pF max., 250V min. 125°C min; marked with Y1 or Y2	IEC60384-14:2013	VDE
	TDK	CS / CD	220pF max., 250V min. 125°C min; marked with Y1	IEC 60384-14:1993	VDE, Fimko
	Walsin	AC / AH	220pF max., 250V min. 125°C min; marked with Y1	IEC 60384-14:1993	VDE, Fimko
	Kunshan Wansheng Electronics Co., Ltd	CT7 series	220pF max., 250V min. 125°C min; marked with Y1	IEC 60384-14:1993	VDE, FI
Y-Capacitors (CY8, CY9)	+ Vishay Electronics	VY1 / VY2 / WKO / WKP	1500pF max., 250V min. 125°C min; marked with Y1 or Y2	IEC60384-14:2013	VDE, FI
	Murata	KX / KY / KH / RA	1500pF max., 250V min. 125°C min; marked with Y1 or Y2	IEC60384-14:2013	VDE, FI
	TDK	CS / CD	1500pF max., 250V min. 125°C min; marked with Y1 or Y2	IEC60384-14:2013	VDE, FI
	Walsin	AC / AH	1500pF max., 250V min. 125°C min; marked with Y1 or Y2	IEC60384-14:2013	VDE, FI

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Kunshan Wansheng Electronics Co., Ltd	CT7 series	1500pF max., 250V min. 125°C min; marked with Y1 or Y2	IEC60384-14:2013	VDE, FI
Bleeder Resistors (R4, R5, R25)	Interchangeable	Interchangeable	680kΩ max., 1/4W min.	IEC 60950-1 EN 60950-1	Tested in the unit.
Bleeder Resistors (R4A, R5A)	Interchangeable	Interchangeable	1MΩ max., 1/4W min.	IEC 60950-1 EN 60950-1	Tested in the unit.
Line Filter (FL1)	Delta Electronics Ins.	HFH-TPT8027	130°C	IEC 60950-1 EN 60950-1	Tested in the unit.
PFC Choke (L1)	Delta Electronics Ins.	CRH-TPT8074	130°C	IEC 60950-1 EN 60950-1	Tested in the unit.
Y-Capacitors (CY5)	+ Vishay Electronics	VY1 / WKP	2200pF max., 250V min. 125°C min; marked with Y1	IEC60384-14:2013	VDE, FI
	Murata	KX / KY / RA	2200pF max., 250V min. 125°C min; marked with Y1	IEC60384-14:2013	VDE, FI
	TDK	CD	2200pF max., 250V min. 125°C min; marked with Y1	IEC60384-14:2013	VDE, FI
	Walsin	AH	2200pF max., 250V min. 125°C min; marked with Y1	IEC60384-14:2013	VDE, FI
	Kunshan Wansheng Electronics Co., Ltd	CT17 Series	2200pF max., 250V min. 125°C min; marked with Y1	IEC60384-14:2013	VDE, FI
Diode Bridge (BD1)	Interchangeable	Interchangeable	Min. 600V, 6A	IEC 62368-1 EN 62368-1	Tested in the unit.
Inrush limiter (NTC1, NTC2)	Interchangeable	Interchangeable	Min. 1.5Ω	IEC 62368-1 EN 62368-1 UL 1434	Tested in the unit. UL
Transistors (Q1)	Interchangeable	Interchangeable	Min 700V, 8A	IEC 62368-1 EN 62368-1	Tested in the unit.
Electrolytic Capacitor (C1)	Interchangeable	Interchangeable	Min.150μF, 400V, Min. 105°C	IEC 62368-1 EN 62368-1	Tested in the unit.
Electrolytic Capacitor (C2)	Interchangeable	Interchangeable	Min.100μF, 400V, Min. 105°C	IEC 62368-1 EN 62368-1	Tested in the unit.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Transformer (T1)	Delta Electronics Inc.	MV-TPT8099	Class B	IEC 62368-1 EN 62368-1	Tested in the unit.
Bobbin (T1)	+Sumitomo Bakelite	PM-9630 / PM-9820	V-0, Phenolic	IEC 62368-1 EN 62368-1 UL94	Accepted UL E41429
Insulator Tape (T1)	+ 3M	1350F-1 / 1350F-2 / 1350T-1 1350T-3 / 1351-1 / 92	Min. 130°C.	IEC/EN 62368-1 (OANZ2)	Accepted UR E17385
	Jingjiang Yahua Pressure	CT	130°C	IEC/EN 62368-1 (OANZ2)	Accepted UR E165111
	Symbio Inc.	35660Y	130°C.	IEC/EN 62368-1 (OANZ2)	Accepted UR E50292
Triple Insulation Wire (T1)	+Furukawa Electric	TEX-E / TEX-ELZ / TEX-ECEW3	130°C	IEC/EN 60950-1 (OBJT2)	TUV, UL UR E206440
Alternate Triple Insulation Wire (T1)	+Totoku Electric	TIW-2 / TIW-2X / TIW-2LZ / TIW-2LZX / TIW-2S / TIW-2SX / TIW-3 / TIW-3X / TIW-3LZ / TIW-3LZX	Min. 130°C	IEC/EN 60950-1 (OBJT2)	TUV, UL UR E166486
Optocouplers (IC550, IC620)	+Everlight	EL816 series / EL101 series	Dti > 0,5mm, int. cr. > 6,0mm, ext. cr. > 7,7mm, Isolation 3000Vac, Min., 100°C min., Thermal cycling test	IEC/EN 60950-1: 2005, VDE 0884 GB4943.1-2011	FIMKO, VDE, CQC
	Everlight	EL357L series / EL817 series	Dti >0,5mm, int. cr > 6,0mm, ext. cr > 7,7mm, Isolation 3000Vac min., 100°C min., Thermal cycling test	IEC/EN 60950-1: 2005, VDE 0884 GB4943.1-2011	FIMKO, VDE, CQC

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Cosmo	KPC357NT series	Dti > 0,4mm, Ext cr > 5,0mm, Isolation 3000Vac min., 100°C min., Thermal cycling test	IEC/EN 60950-1: 2005, VDE 0884 GB4943.1-2011	FIMKO, VDE, CQC
Cosmo	K1010 series	Dti > 0,4mm, Int cr > 5,3mm, Ext cr > 8,0mm, Isolation 3000Vac min., 100°C min., Thermal cycling test	IEC/EN 60950-1: 2005, VDE 0884 GB4943.1-2011	FIMKO, VDE, CQC
Sharp	PC123 series	Dti > 0,4mm, Ext cr > 8,0mm, Isolation 3000Vac min., 100°C min., Thermal cycling test	IEC/EN 60950-1: 2005, VDE 0884 GB4943.1-2011	SEMKO, VDE, CQC
Vishay	SFH610 series / SFH617A series / SFH1617A series / TCET1113(G)D / TCET1103 /	Dti ≥ 0,4mm, int. cr. ≥ 5,0mm, ext. cr. ≥ 8,0mm Provide 3000Vac isolation test voltage rating min., 110°C min.	IEC/EN 60950-1: 2005, VDE 0884 GB4943.1-2011	VDE, FI
	VO617 series / VOL617 series	Dti ≥ 0,4mm, int. cr. ≥ 5,2mm, ext. cr. ≥ 8,0mm Thermal cycling test. Provide 3000Vac isolation test voltage rating min., 115°C min.	IEC/EN 60950-1: 2005, VDE 0884 GB4943.1-2011	VDE; FI, CQC
Lite-on	LTV-100X series / LTV816 series	Dti ≥ 0,4mm, int. cr. ≥ 5,0mm, ext. cr. ≥ 8,0mm Provide 3000Vac isolation test voltage rating min., 110°C min.	IEC/EN 60950-1 IEC/EN 60065 IEC/EN 60747-5-2 (FPQU2)	VDE, FI, N VDE UR E113898

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Toshiba	TLP383 / TLP385 / TLP785 / TLP785F / TLP781 / TLP781F	Dti ≥ 0,4mm, ext. cr. ≥ 8,0mm Provide 3000Vac isolation test voltage rating min., 100°C min., Thermal cycling performed Dti ≥ 0,4mm, int. cr. ≥ 5,0mm, ext. cr. > 7,6mm Provide 3000Vac isolation test voltage rating min., 100°C min., Thermal cycling performed	IECEN 60950-1 IEC/EN 60747-5-2 GB4943.1-2011 IECEN 60950-1 IEC/EN 60747-5-2 (FPQU2)	VDE, CQC VDE, SEMKO UR E67349
	Fairchild	FOD817 series	Dti = 0,4mm, int. cr. = 5,2mm, ext. cr. > 7,8mm, Isolation 5000Vac min., 115°C min.	IEC/EN 60950-1 (FPQU2) IEC/EN60747-5-2 (reinforced)	Nemko, FI, VDE cURus E90700
		H11A817 series	Dti = 0,4mm, int. cr. = 5,2mm, ext. cr. > 7,0mm, Isolation 5000Vac min., 100°C min.	IEC/EN 60950-1 (FPQU2) IEC/EN60747-5-2 (reinforced)	VDE cURus E90700
Themistor (NTC3)	+ Thinking	TTC-104	100KΩ	IEC / EN 62368-1 UL 1434	Accepted UL
Alternate Themistor (NTC3)	+ Uppermost	TDC05D410	100KΩ	IEC / EN 62368-1 UL 1434	Accepted UL
Insulator sheet between Q1	+ Bergquist	SIL- PAD K-4	VTM-0, 150°C Min.	IEC / EN 62368-11 UL94	Accepted UL
Supplementary / Reinforce Tube	Interchangeable	Interchangeable	VW-1, Min. 0.4 mm thickness.	IEC / EN 62368-1	Accepted UL
PCB	Interchangeable	Interchangeable	Min. flammability V-0, 130°C	IEC / EN 62368-1 UL94, UL796	Accepted UL

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

1) [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

2) + means, that components from other vendor and other model number, but with the same rating and equivalent approvals are accepted.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A

(The following mechanical tests are conducted in the sequence noted.)

4.8.4.2 TABLE: Stress Relief test —

Part	Material	Oven Temperature (°C)	Comments

4.8.4.3 TABLE: Battery replacement test —

Battery part no. ..... :		—
Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	8	
	9	
	10	

4.8.4.4 TABLE: Drop test —

Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

4.8.4.5 TABLE: Impact —

Impacts per surface	Surface tested	Impact energy (Nm)	Comments

4.8.4.6 TABLE: Crush test —

Test position	Surface tested	Crushing Force (N)	Duration force applied (s)

Supplementary information:

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result		N/A
Test position	**Surface tested**	**Force (N)**	**Duration force applied (s)**
Supplementary information:			

5.2	Table: Classification of electrical energy sources					P
5.2.2.2 – Steady State Voltage and Current conditions						
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				U (Vrms or Vpk)	I (Apk or Arms) / Hz	
1	264Vac/60Hz	+24V to GND	Normal	24.06Vdc	- / dc	ES1
			Abnormal (Covering ventilation opening)	24.06Vdc	- / dc	
			Single fault – SC IC620(1-2)	24.06Vdc	- / dc	
		+24V to PE	Normal	-	0.386mApk / -	
			Abnormal (Covering ventilation opening)	-	0.386mApk / -	
			Single fault – SC IC620(1-2)	-	0.386mApk / -	
		GND to PE	Normal	-	0.39mApk / -	
			Abnormal (Covering ventilation opening)	-	0.39mApk / -	
			Single fault – SC IC620(1-2)	-	0.39mApk / -	
2	264Vac/60Hz	+24V to PE	PE interrupted	-	0.564mApk / -	ES1
		GND to PE	PE interrupted	-	0.564mApk / -	
3	375Vdc	+24V to GND	Normal	23.92Vdc	- / dc	ES1
			Abnormal (Covering ventilation opening)	23.92Vdc	- / dc	
			Single fault – SC/OC IC620(1-2)	23.92Vdc	- / dc	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
1	240Vac/ 50Hz	L to N CX2=0.68µF	Normal	0.816µF	340	ES1
			Abnormal	-	-	
			Single fault – OC R4	0.816µF	340	
			Single fault – OC R4A	0.816µF	340	
2	240Vac/ 50Hz	L to PE CY3=220pF	Normal	264pF	340	ES1
3	240Vac/ 50Hz	N to PE CY4=220pF	Normal	264pF	0	ES1
4	250V dc	+ to - CX2=0.68µF	Normal	0.816µF	250	ES3

5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	-	-	-	--
			Abnormal	-	-	-	
			Single fault – SC/OC	-	-	-	

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
1	264V ac/ 50Hz	24V to GND	Normal	-	-	-	ES1
			Abnormal - Output SC	1.29 s	1.3	-	
			Abnormal - Output overload	1.36 s	23.9	-	
			Single fault – SC/OC T1 (1-3)	994 ms	0.3	-	
			Single fault – SC/OC T1 (6-5)	928 ms	10.70	-	
			Single fault – SC/OC T1 (10,11,12-7,8,9)	1.46 s	6.25	-	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

			Single fault – SC/OC D350	1.55 s	1.40	-	
2	264V ac/ 50Hz	22V to GND	Abnormal - Output SC	1.29 s	1.3	-	ES1
			Abnormal- Output overload	1.28 s	22.2	-	
3	264V ac/ 50Hz	28V to GND	Abnormal - Output SC	1.27 s	1.4	-	ES1
			Abnormal- Output overload	1.47 s	27.9	-	

Test Conditions:

Normal –

Abnormal -

Supplementary information: SC=Short Circuit, OC=Short Circuit

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V)	264Vac/ 50Hz	240Vac/ 50Hz	100Vac/ 50Hz	90Vac/ 50Hz	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	—
	Ambient T_{min} (°C)	49.6	50.3	50.7	50.0	—
	Ambient T_{max} (°C)	50	50	50	50	—
	Tma (°C)	50	50	50	50	—

Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
T1 wire (primary)	95.9	94.4	95.9	99.0	110
T1 wire (secondary)	94.5	93.0	94.3	97.3	110
T1 core	88.9	87.8	88.4	90.8	110
FL1	69.7	70.4	94.9	102.1	120
L1	74.1	74.5	97.0	103.4	120
L350	84.4	83.6	83.7	85.1	120
IC550	75.8	75.2	79.9	82.3	100
IC620	78.6	77.9	81.1	83.4	100
CX2 near BD1	70.0	69.7	84.3	89.0	100
CY3	67.5	67.4	82.4	87.6	125
CY4	69.4	69.5	84.1	88.8	125
CY5	70.1	70.3	79.0	81.9	125
CY6	64.6	64.4	66.8	68.0	125
CY7	65.9	65.8	68.7	70.1	125
CY8	73.6	72.7	80.1	83.8	125
CY9	71.8	71.0	79.0	82.8	125
C1	68.4	67.8	76.1	79.7	105
C2	70.7	70.7	85.6	90.1	105
C350 near R351	85.3	83.9	81.0	82.3	105
C352 near L350	80.6	79.7	80.2	81.9	105

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Clause	Requirement + Test	Result - Remark	Verdict

NTC1 near PWB	73.4	74.7	98.9	104.5	130 for PWB
BD1	79.9	80.9	109.5	117.0	130 for PWB
Q1 near PWB	80.5	78.8	87.9	93.4	130 for PWB
D350	80.1	80.1	81.5	82.2	130 for PWB
C14 near T1	79.1	78.8	83.0	85.2	105
ZD3	77.6	77.2	84.2	87.2	130 for PWB
CN1 @ L terminal	65.3	65.2	65.7	66.2	105
CN1 @ + terminal	55.7	56.4	60.0	60.4	105
External chassis near label	61.7	61.6	63.7	64.7	70

Supplementary information:
Note 1: Tma should be considered as directed by applicable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)
Case cover A, Mounting Location 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V)	375Vdc	250Vdc	125Vdc	100Vdc	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	—
	Ambient T_{min} (°C)	49.9	50.4	50.3	49.7	—
	Ambient T_{max} (°C)	50	50	50	50	—
	Tma (°C)	50	50	50	50	—

Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
T1 wire (primary)	96.0	91.2	94.3	100.1	110
T1 wire (secondary)	94.5	89.8	92.7	98.3	110
T1 core	88.9	84.8	86.5	90.8	110
FL1	63.4	63.8	71.6	77.8	120
L1	67.4	68.0	77.1	83.7	120
L350	84.1	81.5	81.9	84.1	120
IC550	74.5	72.6	75.0	78.4	100
IC620	77.8	75.3	77.4	80.8	100
CX2 near BD1	66.2	65.3	71.0	76.0	100
CY3	63.9	63.2	68.4	73.4	125
CY4	65.9	65.1	70.4	75.1	125
CY5	67.6	66.8	70.5	73.9	125
CY6	63.9	63.0	64.5	66.3	125
CY7	64.9	64.0	65.8	67.9	125
CY8	73.1	71.0	76.9	83.0	125
CY9	70.9	69.1	74.3	79.7	125
C1	67.3	65.8	70.1	74.6	105
C2	68.2	68.1	76.0	81.6	105
C350 near R351	85.6	80.4	79.5	81.7	105
C352 near L350	80.4	77.2	78.2	80.8	105
NTC1 near PWB	63.0	78.8	76.1	83.0	130 for PWB
BD1	74.9	78.1	95.3	106.5	130 for PWB
Q1 near PWB	80.5	77.2	87.1	97.8	130 for PWB
D350	80.0	78.8	80.4	82.3	130 for PWB

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	78.4	76.3	79.3	83.1	105
ZD3	76.5	74.7	79.7	84.4	130 for PWB
CN1 @ L terminal	65.3	64.4	64.9	65.7	105
CN1 @ + terminal	54.5	55.2	56.7	57.2	105
External chassis near label	61.7	60.8	62.6	64.5	70

Supplementary information:
Note 1: Tma should be considered as directed by applicable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)
Case cover A, Mounting Location 1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V)	264Vac/ 50 Hz	90Vac/ 50 Hz			—
	Operating condition:	28V/3.572A	28V/3.572A			—
	Ambient T_{min} (°C)	49.6	49.6			—
	Ambient T_{max} (°C)	50	50			—
	Tma (°C)	50	50			—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		97.6	96.4	-	-	110
T1 wire (secondary)		96.0	94.8	-	-	110
T1 core		90.6	88.9	-	-	110
FL1		69.8	100.7	-	-	120
L1		74.2	102.0	-	-	120
L350		83.2	82.9	-	-	120
IC550		76.3	81.1	-	-	100
IC620		79.1	81.9	-	-	100
CX2 near BD1		70.1	87.7	-	-	100
CY3		67.4	86.1	-	-	125
CY4		69.5	87.7	-	-	125
CY5		70.4	81.0	-	-	125
CY6		64.9	67.7	-	-	125
CY7		66.1	69.5	-	-	125
CY8		74.5	82.3	-	-	125
CY9		72.4	81.4	-	-	125
C1		68.8	78.4	-	-	105
C2		71.2	89.3	-	-	105
C350 near R351		84.9	80.7	-	-	105
C352 near L350		80.4	80.4	-	-	105
NTC1 near PWB		73.4	103.2	-	-	130 for PWB
BD1		80.4	115.8	-	-	130 for PWB
Q1 near PWB		79.8	89.9	-	-	130 for PWB
D350		77.4	79.3	-	-	130 for PWB

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	81.0	84.7	-	-	105
ZD3	88.5	89.9	-	-	130 for PWB
CN1 @ L terminal	67.0	79.3	-	-	105
CN1 @ + terminal	56.3	60.8	-	-	105
External chassis near label	61.4	63.8	-	-	70
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) Case cover A, Mounting Location 1					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264Vac/ 50Hz	240Vac/ 50Hz	100Vac/ 50Hz	90Vac/ 50Hz	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	
	Ambient T_{min} (°C) :	50.4	50.4	51.3	50.3	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		99.3	96.5	100.1	105.9	110
T1 wire (secondary)		98.4	95.8	99.6	105.1	110
T1 core		93.3	90.7	94.7	100.1	110
FL1		74.1	71.9	96.9	111.2	120
L1		76.6	73.9	95.8	106.3	120
L350		88.5	86.4	88.0	90.7	120
IC550		78.9	76.8	84.4	89.7	100
IC620		81.2	79.2	85.4	90.5	100
CX2 near BD1		72.1	70.0	83.8	91.2	100
CY3		69.4	67.6	80.1	87.4	125
CY4		72.0	70.1	84.4	92.6	125
CY5		74.2	72.9	84.9	92.0	125
CY6		67.0	65.7	69.0	71.8	125
CY7		68.6	67.2	71.3	74.6	125
CY8		70.3	68.8	76.4	81.2	125
CY9		68.1	66.6	74.9	79.9	125
C1		65.9	64.5	73.1	78.2	105
C2		68.3	67.2	79.7	85.6	105
C350 near R351		90.1	87.2	85.9	88.8	105
C352 near L350		84.9	83.0	85.6	89.2	105
NTC1 near PWB		77.5	75.2	99.1	109.8	130 for PWB
BD1		81.1	79.7	108.2	119.8	130 for PWB
Q1 near PWB		80.5	77.7	87.8	95.6	130 for PWB
D350		81.4	80.1	81.9	84.2	130 for PWB

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	79.4	78.0	84.3	88.4	105
ZD3	76.0	74.6	82.7	87.3	130 for PWB
CN1 @ L terminal	68.6	67.8	69.1	70.2	105
CN1 @ + terminal	57.8	57.4	61.6	63.8	105
External chassis near label	65.0	63.6	66.5	69.3	70
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) Case cover A, Mounting Location 2					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	375Vdc	250Vdc	125Vdc	100Vdc	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	
	Ambient T_{min} (°C) :	49.9	50.4	50.7	50.3	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		98.0	93.0	97.6	105.4	110
T1 wire (secondary)		97.1	92.3	96.8	104.3	110
T1 core		91.6	87.1	90.9	97.4	110
FL1		65.3	65.2	73.5	80.5	120
L1		67.1	67.7	77.2	84.2	120
L350		87.4	84.2	85.3	88.4	120
IC550		75.4	73.4	77.7	82.7	100
IC620		78.4	76.0	79.9	84.8	100
CX2 near BD1		66.7	65.7	71.9	77.1	100
CY3		64.7	63.7	68.9	73.6	125
CY4		66.8	66.0	71.8	76.9	125
CY5		69.7	68.9	74.2	79.3	125
CY6		65.5	64.3	66.2	68.8	125
CY7		66.6	65.4	67.7	70.7	125
CY8		69.0	67.4	72.7	78.3	125
CY9		66.5	65.1	69.9	74.7	125
C1		64.0	63.0	67.0	71.4	105
C2		65.2	65.3	72.0	77.0	105
C350 near R351		89.1	83.4	83.6	87.2	105
C352 near L350		83.2	80.1	82.4	86.2	105
NTC1 near PWB		64.1	65.8	76.6	83.6	130 for PWB
BD1		73.8	77.4	95.1	106.8	130 for PWB
Q1 near PWB		79.7	76.3	86.7	98.6	130 for PWB
D350		80.9	78.9	80.6	83.7	130 for PWB

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	77.9	75.7	80.0	85.3	105
ZD3	74.0	72.6	78.1	83.4	130 for PWB
CN1 @ L terminal	67.9	66.9	67.6	69.0	105
CN1 @ + terminal	56.1	56.1	57.8	59.2	105
External chassis near label	64.2	62.6	64.9	68.4	70
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) Case cover A, Mounting Location 2					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264Vac/ 50 Hz	90Vac/ 50 Hz			—
	Operating condition:	28V/3.572A	28V/3.572A			
	Ambient T_{min} (°C) :	50.2	51.1			—
	Ambient T_{max} (°C) :	50	50			—
	Tma (°C) :	50	50			—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		100.3	102.1			110
T1 wire (secondary)		99.5	101.4			110
T1 core		94.2	96.9			110
FL1		71.4	103.9			120
L1		73.5	101.4			120
L350		86.3	87.6			120
IC550		78.1	86.8			100
IC620		80.7	87.7			100
CX2 near BD1		70.2	87.6			100
CY3		67.4	83.5			125
CY4		70.3	88.5			125
CY5		73.5	88.4			125
CY6		66.2	70.4			125
CY7		67.4	72.8			125
CY8		70.1	79.2			125
CY9		67.4	77.9			125
C1		64.9	76.0			105
C2		67.0	83.6			105
C350 near R351		88.7	86.3			105
C352 near L350		83.8	86.5			105
NTC1 near PWB		74.0	104.1	-	-	130 for PWB
BD1		79.3	115.8	-	-	130 for PWB
Q1 near PWB		79.1	91.2	-	-	130 for PWB
D350		78.0	80.7	-	-	130 for PWB

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	81.5	87.9	-	-	105
ZD3	86.9	92.4	-	-	130 for PWB
CN1 @ L terminal	69.3	70.7	-	-	105
CN1 @ + terminal	57.4	62.8	-	-	105
External chassis near label	63.9	67.4	-	-	70
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) Case cover A, Mounting Location 2					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264Vac/ 50Hz	90Vac/ 50Hz	375Vdc	100Vdc	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	
	Ambient T_{min} (°C) :	50.3	51.1	50.4	50.7	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		95.7	98.7	95.5	99.7	110
T1 wire (secondary)		94.3	67.1	93.9	97.9	110
T1 core		88.8	90.6	88.4	90.3	110
FL1		68.8	100.8	62.0	76.4	120
L1		72.8	101.9	65.7	82.2	120
L350		84.5	85.3	83.9	83.9	120
IC550		74.9	81.4	73.1	77.2	100
IC620		78.1	82.8	76.8	79.9	100
CX2 near BD1		68.9	87.6	64.7	74.3	100
CY3		66.7	86.3	62.7	71.9	125
CY4		68.4	87.7	64.4	73.7	125
CY5		68.9	80.4	66.0	72.2	125
CY6		64.5	67.8	63.2	65.8	125
CY7		65.7	70.0	64.2	67.4	125
CY8		73.9	84.3	73.0	83.2	125
CY9		72.1	83.4	70.8	80.0	125
C1		69.1	80.9	67.6	75.3	105
C2		69.7	89.5	67.0	80.5	105
C350 near R351		85.8	82.8	85.7	81.9	105
C352 near L350		80.4	81.8	80.0	80.5	105
NTC1 near PWB		73.0	103.9	62.0	81.7	130 for PWB
BD1		78.5	114.8	72.6	103.0	130 for PWB
Q1 near PWB		81.8	95.1	81.3	99.0	130 for PWB
D350		82.7	85.2	82.0	84.7	130 for PWB

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	77.8	83.6	76.8	81.4	105
ZD3	76.0	85.4	74.5	82.4	130 for PWB
CN1 @ L terminal	65.5	66.3	65.1	65.7	105
CN1 @ + terminal	55.7	60.4	54.4	57.2	105
External chassis near label	63.7	66.9	63.0	66.2	70

Supplementary information:
Note 1: Tma should be considered as directed by applicable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)
Case cover A, Mounting Location 3

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264Vac/ 50Hz	90Vac/ 50Hz	375Vdc	100Vdc	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	
	Ambient T_{min} (°C) :	49.6	50.4	49.8	50.0	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		96.2	98.7	95.8	99.8	110
T1 wire (secondary)		94.7	97.0	94.4	98.1	110
T1 core		89.2	90.6	88.8	90.6	110
FL1		72.0	101.3	63.3	77.6	120
L1		76.8	102.7	67.3	83.6	120
L350		84.7	84.9	84.1	84.0	120
IC550		76.3	82.0	74.3	78.4	100
IC620		79.1	83.2	77.8	80.7	100
CX2 near BD1		71.5	88.4	66.1	75.9	100
CY3		69.0	87.0	63.8	73.2	125
CY4		70.8	88.4	65.7	74.9	125
CY5		71.1	81.7	67.4	73.9	125
CY6		64.9	68.0	63.8	66.3	125
CY7		66.3	70.1	64.7	67.9	125
CY8		73.8	83.5	72.8	82.7	125
CY9		72.1	82.4	70.7	79.5	125
C1		68.7	79.3	67.0	74.3	105
C2		71.4	89.7	68.0	81.3	105
C350 near R351		85.6	82.2	85.4	81.6	105
C352 near L350		80.9	81.8	80.1	80.7	105
NTC1 near PWB		76.4	103.9	62.9	82.8	130 for PWB
BD1		81.6	116.5	74.7	106.2	130 for PWB
Q1 near PWB		80.5	93.0	80.1	97.2	130 for PWB
D350		80.0	82.0	79.7	82.0	130 for PWB

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	79.5	85.1	78.3	82.9	105
ZD3	78.0	87.0	76.3	84.1	130 for PWB
CN1 @ L terminal	65.6	66.2	65.3	65.7	105
CN1 @ + terminal	56.1	60.4	54.6	57.2	105
External chassis near label	61.7	64.3	61.3	64.2	70
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) Case cover A, Mounting Location 4					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264Vac/ 50Hz	90Vac/ 50Hz	375Vdc	100Vdc	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	
	Ambient T_{min} (°C) :	50.4	50.8	49.7	50.5	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		98.9	105.3	97.4	104.8	110
T1 wire (secondary)		98.1	104.6	96.4	103.7	110
T1 core		93.0	99.6	90.9	96.8	110
FL1		74.1	111.1	64.9	80.1	120
L1		76.4	106.0	66.6	83.8	120
L350		88.2	90.5	86.8	88.0	120
IC550		78.6	89.3	74.9	82.2	100
IC620		81.0	90.0	77.8	84.4	100
CX2 near BD1		72.0	90.9	66.2	76.8	100
CY3		69.3	87.3	64.3	73.4	125
CY4		71.9	92.3	66.3	76.5	125
CY5		74.5	91.6	69.4	78.8	125
CY6		66.7	71.5	65.0	68.3	125
CY7		68.4	74.3	66.0	70.1	125
CY8		69.9	80.8	68.4	77.6	125
CY9		67.7	79.5	65.8	74.0	125
C1		65.5	77.8	63.5	70.8	105
C2		68.0	85.5	64.7	76.6	105
C350 near R351		89.7	88.5	88.4	86.6	105
C352 near L350		84.7	88.9	82.6	85.8	105
NTC1 near PWB		77.4	109.3	63.8	83.3	130 for PWB
BD1		80.8	119.0	73.4	106.5	130 for PWB
Q1 near PWB		79.7	94.5	78.9	97.5	130 for PWB
D350		81.1	83.8	80.3	83.1	130 for PWB

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Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	78.6	87.6	77.4	84.7	105
ZD3	75.6	86.8	73.4	82.7	130 for PWB
CN1 @ L terminal	68.5	70.0	67.6	68.8	105
CN1 @ + terminal	57.7	63.6	55.9	59.1	105
External chassis near label	64.5	68.8	63.6	67.7	70

Supplementary information:
Note 1: Tma should be considered as directed by applicable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)
Case cover A, Mounting Location 5

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264Vac/ 50Hz	90Vac/ 50Hz	375Vdc	100Vdc	—
	Operating condition:	24V/4.17A	24V/4.17A	24V/4.17A	24V/4.17A	
	Ambient T_{min} (°C) :	51.2	51.2	50.7	50.9	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire (primary)		96.5	99.7	96.2	101.1	110
T1 wire (secondary)		95.1	98.0	94.7	99.1	110
T1 core		89.5	91.2	89.0	91.4	110
FL1		69.3	101.0	62.6	77.3	120
L1		73.5	102.4	66.6	83.4	120
L350		85.1	86.0	84.4	85.1	120
IC550		75.5	82.0	73.8	78.4	100
IC620		78.8	83.6	77.5	81.2	100
CX2 near BD1		69.5	88.1	65.3	75.6	100
CY3		67.2	86.8	63.2	73.1	125
CY4		69.0	88.4	65.1	74.9	125
CY5		69.4	80.9	66.7	73.2	125
CY6		65.0	68.6	64.0	67.1	125
CY7		66.3	70.8	64.9	68.7	125
CY8		75.0	85.7	74.2	85.2	125
CY9		73.2	84.8	72.0	81.9	125
C1		70.3	82.4	68.9	77.4	105
C2		70.6	90.4	67.8	82.0	105
C350 near R351		86.4	83.6	86.3	83.1	105
C352 near L350		81.1	82.6	80.5	81.6	105
NTC1 near PWB		73.4	104.0	62.5	82.4	130 for PWB
BD1		79.0	115.4	73.4	104.2	130 for PWB
Q1 near PWB		82.8	96.8	82.6	101.3	130 for PWB
D350		83.5	86.4	83.1	86.4	130 for PWB

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Clause	Requirement + Test	Result - Remark	Verdict

C14 near T1	78.8	84.8	77.6	82.7	105
ZD3	77.0	86.6	75.6	84.0	130 for PWB
CN1 @ L terminal	65.9	66.8	65.5	66.3	105
CN1 @ + terminal	56.1	60.7	54.7	57.7	105
External chassis near label	64.7	68.2	64.2	68.2	70
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) Case cover A, Mounting Location 6					

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264V	90V	264V	90V	—
	Operating condition:	Case cover B, Location 1; 24V/4.17A	Case cover B, Location 1; 24V/4.17A	Case cover B, Location 2; 24V/4.17A	Case cover B, Location 2; 24V/4.17A	
	Ambient T_{min} (°C) :	50.4	50.5	50.0	49.8	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—

Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
T1 wire	98	101	102	108	110
T1 core	95	98	100	106	110
FL1	73	106	75	112	120
L1	79	112	79	111	120
L350	90	91	93	97	120
IC550	83	88	84	94	100
IC620	79	86	81	93	100
CX2 near BD1	74	98	74	96	100
CY4	73	92	74	94	125
CY5	73	84	77	93	125
CY8	77	89	75	89	125
C1	76	102	75	99	105
C2	73	87	72	89	105
C350 near R351	91	88	94	94	105
NTC1 near PWB	79	115	79	116	130 for PWB
BD1	79	111	77	106	130 for PWB
Q1 near PWB	77	87	82	88	130 for PWB
D350	96	95	96	94	130 for PWB
External chassis near label	62	65	64	67	70

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	375V DC	100V DC	264V	90V	—
	Operating condition:	Case cover B, Location 2; 24V/4.17A	Case cover B, Location 2; 24V/4.17A	Case cover B, Location 2; 28V/3.75A	Case cover B, Location 2; 28V/3.75A	
	Ambient T_{min} (°C) :	49.7	50.1	50.0	50.0	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—

Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
T1 wire	100	107	102	106	110
T1 core	98	105	101	103	110
FL1	67	82	75	111	120
L1	69	89	79	110	120
L350	92	94	92	94	120
IC550	81	88	84	93	100
IC620	78	85	82	92	100
CX2 near BD1	67	79	74	95	100
CY4	69	79	74	93	125
CY5	72	81	77	93	125
CY8	71	83	73	82	125
C1	69	87	74	97	105
C2	67	77	69	82	105
C350 near R351	93	92	94	92	105
NTC1 near PWB	65	87	77	109	130 for PWB
BD1	71	94	76	104	130 for PWB
Q1 near PWB	78	92	77	85	130 for PWB
D350	95	95	92	93	130 for PWB
External chassis near label	63	67	63	66	70

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264V	90V	264V	90V	—
	Operating condition:	Case cover B, Location 3; 24V/4.17A	Case cover B, Location 3; 24V/4.17A	Case cover B, Location 4; 24V/4.17A	Case cover B, Location 4; 24V/4.17A	
	Ambient T_{min} (°C) :	50.0	50.0	49.8	49.8	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire		97	100	98	101	110
T1 core		95	97	96	98	110
FL1		70	101	73	106	120
L1		76	107	79	112	120
L350		88	89	90	91	120
IC550		80	85	83	88	100
IC620		77	84	79	87	100
CX2 near BD1		71	94	74	99	100
CY4		70	88	73	92	125
CY5		71	81	73	84	125
CY8		75	87	76	88	125
C1		73	98	76	102	105
C2		71	84	72	86	105
C350 near R351		91	87	91	87	105
NTC1 near PWB		77	113	79	115	130 for PWB
BD1		80	107	79	111	130 for PWB
Q1 near PWB		79	88	77	86	130 for PWB
D350		94	93	95	94	130 for PWB
External chassis near label		63	65	62	65	70

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	264V	90V	264V	90V	—
	Operating condition:	Case cover B, Location 5; 24V/4.17A	Case cover B, Location 5; 24V/4.17A	Case cover B, Location 6; 24V/4.17A	Case cover B, Location 6; 24V/4.17A	—
	Ambient T_{min} (°C) :	50.6	50.5	49.7	50.0	—
	Ambient T_{max} (°C) :	50	50	50	50	—
	Tma (°C) :	50	50	50	50	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
T1 wire		101	108	97	100	110
T1 core		99	106	95	97	110
FL1		75	112	70	101	120
L1		78	110	76	107	120
L350		93	97	88	89	120
IC550		83	96	80	85	100
IC620		91	92	77	84	100
CX2 near BD1		73	95	71	95	100
CY4		74	93	70	88	125
CY5		76	93	71	82	125
CY8		72	85	75	86	125
C1		73	98	73	98	105
C2		69	84	71	83	105
C350 near R351		94	94	91	86	105
NTC1 near PWB		80	117	76	113	130 for PWB
BD1		76	106	76	107	130 for PWB
Q1 near PWB		77	88	78	87	130 for PWB
D350		95	95	93	93	130 for PWB
External chassis near label		63	67	62	65	70

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	**TABLE: Temperature measurements**					P
	Supply voltage (V) :	90Vac/ 50Hz	90Vac/ 50Hz	90Vac/ 50Hz		—
	Operating condition:	Case cover B, Location 1; 24V/4.17A	Case cover B, Location 2; 24V/4.17A	Case cover B, Location 3; 24V/4.17A		—
	Ambient T_{min} (°C) :	22.0	22.9	23.1		—
	Ambient T_{max} (°C) :	25	25	25		—
	Tma (°C) :	25	25	25		—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
External enclosure over T1		47.8	51.2	47.8		70
External enclosure under T1		36.6	45.0	-		70
External enclosure near FL1		40.4	46.0	38.8		70
External enclosure near C358		38.9	44.7	45.6		70
External enclosure near C1		41.1	48.4	40.1		70
Connector near L-pin		33.4	37.9	37.4		70
External enclosure near D350		-	-	37.9		70

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

The unit is accessible to skilled personnel only. The test was performed for information only.

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm) .....:			—
Object/ Part No./Material	Manufacturer/trademark	T softening (°C)	
Supplementary information: Compliance check by ball pressure test.			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm) .....:		≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
FL1: Bobbin, NANYA PLASTICS, 1403G6 (PBT), (E130115)	--	125	1.0	
Connector CN1: DINKLE, DT-49-B01W-07 (Polyamide), (E102914)	--	125	1.0	
Supplementary information: The impression diameter caused by the ball did not exceed 2,0mm.				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)
Functional / basic and supplementary insulation							
L to N before fuse (functional)	340	240	0,06	1,7	3,2	2,5	3,2
L to N before fuse (functional) (DC input)	250	250	0,06	1,7	3,2	2,5	3,2
Secondary to Earth (Functional)	-	12	--	Method B.4.4 applied			
Basic:							
Primary to Earth	340	240	0,06	1,7	3,5	2,5	3,5
Primary to Earth (DC Input)	250	250	--	1,7	3,5	2,5	3,5
Reinforced / double insulation							

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Clause	Requirement + Test			Result - Remark			Verdict
Primary to Secondary (Reinforced) - under T1	505	293	120	3.3	32.2	6.4	32.2
Primary to Secondary (Reinforced) – Capacitor CY5	360	206	120	3.3	7.0	5.0	7.0
Primary to Secondary (Reinforced) - Optocouplers IC550, IC620	385	227	120	3.3	8.0	5.0	8.0
Primary to Secondary (Reinforced) - PCB	390	272	120	3.3	6.4	5.8	6.4
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group Above values for required clearances are only derived from Procedure 1 (5.4.2.2). Values for procedure 2 are stated in next table. Required clearances are adopted for altitude of 3000m (correction factor 1,07).							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2.3	**TABLE: Minimum Clearances distances using required withstand voltage**		P
	Overvoltage Category (OV):		II
	Pollution Degree:		2

Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
Functional:			
L to N before the fuse (Functional)	2500	1.7	3.2
L to N after the fuse (Functional)	2500	1.7	Method B.4.4 applied
Secondary to Earth (Functional)	2500	1.7	Method B.4.4 applied
Basic:			
Primary to Earth	2500	1.7	3.2
Reinforced / double insulation			
Primary to Secondary (Reinforced) - under T1	2500	3.3	32.2
Primary to Secondary (Reinforced) – Capacitor CY5	2500	3.3	7.0
Primary to Secondary (Reinforced) - Optocouplers IC550, IC620	2500	3.3	8.0
Primary to Secondary (Reinforced) - PCB	2500	3.3	6.4
Supplementary information: Above clearances are derived from Procedure 2 (5.4.2.3 – Required withstand voltage). Required clearances are adopted for altitude of 3000m (correction factor 1,07).			

5.4.2.4	**TABLE: Clearances based on electric strength test**		N/A

Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
Functional / basic and supplementary insulation			
Reinforced / double insulation			
Supplementary information: Clause 5.4.2.2 and 5.4.2.3 applied.			

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.4.2, 5.4.4.5 c) 5.4.4.9	**TABLE: Distance through insulation measurements**	P

Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Basic: Insulator (For Q1)	354	0,06	**	0,4	*
Basic: Sleeve (C1, C2, CY8)	354	--	**	0,4	*
Reinforced: Sleeve (CY5	354	0,06	**	0,4	0,4 min.

Supplementary information:

**See table 4.1.2 for details.

*No requirements for basic insulation.

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:				
Secondary to Protective earth*		AC	500	No
Basic/supplementary:				
Between primary and protective earth		DC	2500	No
Y2-Capacitor, Vishay, type VY1 / VY2 / WKO / WKP, E183844		DC	2500	No
Y2-Capacitor, Murata, type KX / KY / KH / RA, E37921		DC	2500	No
Y2-Capacitor, TDK, type CS/CD, E37861		DC	2500	No
Y2-Capacitor, Walsin, type AC/AH, E146544		DC	2500	No
Y2-Capacitor, Wansheng, type CT7, E249006		DC	2500	No
Reinforced:				
Between primary and secondary		DC	4000	No
Between primary and secondary of transformer (T1)		DC	4000	No
Between secondary and core of transformer T1		DC	4000	No
1 layers of Insulator tape type 1350F-1 from 3M.		DC	4000	No
Heat shrinkable tube type LHS-125FR from Longwell, 0.4mm thickness min.		DC	4000	No
Insulator sheet for Q1 from Bergquist type SIL PAD K-4		DC	4000	No
Routine Tests:				
Transformer T1		AC	3000	No
Supplementary information: *Performed by customer request.				

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Clause	Requirement + Test	Result - Remark	Verdict

5.5.2.2	TABLE: Stored discharge on capacitors				P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
240V, 50Hz	L to N	N	--	0.39	ES1
240V, 50Hz	L to N	N	--	21.0	ES1
240V, 50Hz	L to N	SFC/ No load O/C R4A	--	46.2	ES1
240V, 50Hz	L to N	SFC/ No load O/C R4	--	71.2	ES2
250Vdc	+ to -	N	--	13.0	ES1

Supplementary information:

X-capacitors installed for testing are: CX2= 0.68µF

☒ bleeding resistor rating: R4,R5,R25= 680kΩ, R4A,R5A= 1MΩ.

☐ ICX:

Notes:

A. Test Location:

Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth

B. Operating condition abbreviations:

N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

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Clause	Requirement + Test	Result - Remark	Verdict

5.6.6.2	TABLE: Resistance of protective conductors and terminations			P
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
PE terminal – Case at far end	32	2	0.082	0.003
PE terminal – Case at far end	40	2	0.321	0.008

Supplementary information:
The resistance of protective bonding path did not exceed 0,1ohm.

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		P
Supply voltage	264Vac, 60Hz; TN/TT System. (Figure 6)		—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7		Touch current (mApk)
PE terminal	1	“e” – O; “p” – N	0.708
	1	“e” – O; “p” – R	0.728
	2*	“e” – O; “n” – O; “p” – N	0.622
	2*	“e” – O; “n” – O; “p” – R	0.618
	4		/
	5		/
	6		/
	8		/

Supplementary Information:

Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage

[2] Earthed neutral conductor [Voltage differences less than 1% or more]

[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3

[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.

[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

Faults:

1: PE of not reliable earthed equipment disconnected. Normal and reverse polarity.

2: Neutral of single phase equipment open. Normal and reverse polarity.

3: EUT use on IT systems shall be tested with each phase conductor faulted to earth (switch g)

4: Three phase equipment should be tested with each phase conductor open, one at the time.

5: Single phase equipment use on IT system or on 3P delta-system shall be tested with a 3P power system, with each phase faulted to PE, one at the time in combination with normal and reverse polarity and separately with each phase conductor open one at the time and in combination with normal and reverse polarity.

6: Three phase equipment for use on centre-earthed delta supply systems shall be tested on a delta supply

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Clause	Requirement + Test	Result - Remark	Verdict

system with each delta-leg centre-earthed, one at the time.

8: Accessible conductive parts which are only incidentally electrically connected to other parts shall be tested for both when connected electrically to other parts and when not. Examples of such parts: doors and assemblies attached by metal hinges, adhesively-bonded labels which have an accessible conductive part etc.

Measured touch current to earthed accessible conductive part does not exceed ES2 limits.

5.7.2.2, 5.7.4	**TABLE: Earthed accessible conductive part**			P
Supply voltage		264Vac/ 60Hz (Line-to-Neutral) Star IT system. (Figure 9)		—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7		Touch current (mApk)
PE terminal		1	“e” – O; “p” – N	0.708
			“e” – O; “p” – R	0.728
		2*	“e” – O; “n” – O; “p” – N	0.622
			“e” – O; “n” – O; “p” – R	0.618
		3	“e” – O; “g” – Phase 1	0.644
			“e” – O; “g” – Phase 2	0.932
			“e” – O; “g” – Phase 3	1.132
		4	N/A	N/A
		5	“e” – O; “g” – Phase 1; “p” – N	0.644
			“e” – O; “g” – Phase 1; “p” – R	0.618
			“e” – O; “g” – Phase 2; “p” – N	0.932
			“e” – O; “g” – Phase 2; “p” – R	0.926
			“e” – O; “g” – Phase 3; “p” – N	1.132
			“e” – O; “g” – Phase 3; “p” – R	1.15
			“e” – O; “l1” – O; “p” – N	N/A
			“e” – O; “l1” – O; “p” – R	N/A
			“e” – O; “l2” – O; “p” – N	N/A
			“e” – O; “l2” – O; “p” – R	N/A
		6	N/A	N/A
		8	N/A	N/A

Supplementary Information:

Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage

[2] Earthed neutral conductor [Voltage differences less than 1% or more]

[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3

[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.

[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

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Clause	Requirement + Test	Result - Remark	Verdict

Faults:

1: PE of not reliable earthed equipment disconnected. Normal and reverse polarity.

2: Neutral of single phase equipment open. Normal and reverse polarity.

3: EUT use on IT systems shall be tested with each phase conductor faulted to earth (switch g)

4: Three phase equipment should be tested with each phase conductor open, one at the time.

5: Single phase equipment use on IT system or on 3P delta-system shall be tested with a 3P power system, with each phase faulted to PE, one at the time in combination with normal and reverse polarity and separately with each phase conductor open one at the time and in combination with normal and reverse polarity.

6: Three phase equipment for use on centre-earthed delta supply systems shall be tested on a delta supply system with each delta-leg centre-earthed, one at the time.

8: Accessible conductive parts which are only incidentally electrically connected to other parts shall be tested for both when connected electrically to other parts and when not. Examples of such parts: doors and assemblies attached by metal hinges, adhesively-bonded labels which have an accessible conductive part etc.

Measured touch current to earthed accessible conductive part does not exceed ES2 limits.

5.7.2.2, 5.7.4	**TABLE: Earthed accessible conductive part**			P
Supply voltage	264Vac/ 60Hz (Line-to-Line) Star IT system. (Figure 10)			—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7			Touch current (mApk)
PE terminal	1		“e” – O; “p” – N	0.222
			“e” – O; “p” – R	0.226
	2*		“e” – O; “n” – O; “p” – N	N/A
			“e” – O; “n” – O; “p” – R	N/A
	3		“e” – O; “g” – Phase 1	0.594
			“e” – O; “g” – Phase 2	0.562
			“e” – O; “g” – Phase 3	0.662
	4		“e” – O; “l1” – O	N/A
			“e” – O; “l2” – O	N/A
			“e” – O; “l3” – O	N/A
	5		“e” – O; “g” – Phase 1; “p” – N	0.594
			“e” – O; “g” – Phase 1; “p” – R	0.582
			“e” – O; “g” – Phase 2; “p” – N	0.562
			“e” – O; “g” – Phase 2; “p” – R	0.562
			“e” – O; “g” – Phase 3; “p” – N	0.662
			“e” – O; “g” – Phase 3; “p” – R	0.642
			“e” – O; “l1” – O; “p” – N	0.36
			“e” – O; “l1” – O; “p” – R	0.372
			“e” – O; “l2” – O; “p” – N	0.366

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		“e” – O; “l2” – O; “p” – R	0.38
		“e” – O; “l3” – O; “p” – N	N/A
		“e” – O; “l3” – O; “p” – R	N/A
	6	“e” – O; “g” – Phase 1	N/A
		“e” – O; “g” – Phase 2	N/A
		“e” – O; “g” – Phase 3	N/A
	8	n/a	N/A

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
A	Normal operation: Output 24V	Power (W) :	--	138.6	PS3
		V_A (V) :	--	23.7	
		I_A (A) :	--	5.8	
B	Normal operation: Output 28V Maximum adjust	Power (W) :	--	146.0	PS3
		V_A (V) :	--	28.1	
		I_A (A) :	--	5.19	
		Power (W) :			
		V_A (V) :			
		I_A (A) :			
Supplementary Information: (*) Measurement taken only when limits at 3 seconds exceed PS1 limits					

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			N/A
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No

Supplementary information:

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

All internal circuits considered PS3, resistive PIS.

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6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				N/A
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No

Supplementary Information:

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

All internal circuits considered PS3, resistive PIS.

8.5.5	TABLE: High Pressure Lamp		N/A
Description		Values	Energy Source Classification
Lamp type ..... :			—
Manufacturer ..... :			—
Cat no. ..... :			—
Pressure (cold) (MPa) ..... :			MS_
Pressure (operating) (MPa) ..... :			MS_
Operating time (minutes) ..... :			—
Explosion method ..... :			—
Max particle length escaping enclosure (mm) :			MS_
Max particle length beyond 1 m (mm) ..... :			MS_
Overall result ..... :			
Supplementary information:			

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B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
264V/50Hz	0.90	-	113.2	-	F1	0.90	+24V/4.17A / normal
240V/50Hz	0.97	2.8	113.1	-	F1	0.97	+24V/4.17A / normal
100V/50Hz	2.18	2.8	117.5	-	F1	2.18	+24V/4.17A / normal
90V/50Hz	2.48	-	119.1	-	F1	2.48	+24V/4.17A / normal
375VDC	0.29	-	111.38	-	F1	0.29	+24V/4.17A / normal
250VDC	0.45	2.8	111.5	-	F1	0.45	+24V/4.17A / normal
125VDC	0.91	2.8	113.3	-	F1	0.91	+24V/4.17A / normal
100VDC	1.16	-	116.0	-	F1	1.16	+24V/4.17A / normal
264V/50Hz	0.90	-	112.6	-	F1	0.90	+28V/3.57A / normal
240V/50Hz	0.97	2.8	112.4	-	F1	0.97	+28V/3.57A / normal
100V/50Hz	2.17	2.8	116.93	-	F1	2.17	+28V/3.57A / normal
90V/50Hz	2.46	-	118.4	-	F1	2.46	+28V/3.57A / normal
375VDC	0.30	-	111.38	-	F1	0.30	+28V/3.57A / normal
250VDC	0.45	2.8	111.3	-	F1	0.45	+28V/3.57A / normal
125VDC	0.90	2.8	112.9	-	F1	0.90	+28V/3.57A / normal
100VDC	1.15	-	115.2	-	F1	1.15	+28V/3.57A / normal
264V/60Hz	0.88	-	113.1	-	F1	0.88	+24V/4.17A / normal
240V/60Hz	0.95	2.8	112.9	-	F1	0.95	+24V/4.17A / normal
100V/60Hz	2.10	2.8	116.93	-	F1	2.10	+24V/4.17A / normal
90V/60Hz	2.36	-	118.8	-	F1	2.36	+24V/4.17A / normal
264V/60Hz	0.87	-	112.6	-	F1	0.87	+28V/3.57A / normal
240V/60Hz	0.94	2.8	112.4	-	F1	0.94	+28V/3.57A / normal
100V/60Hz	2.09	2.8	116.3	-	F1	2.09	+28V/3.57A / normal
90V/60Hz	2.35	-	117.7	-	F1	2.35	+28V/3.57A / normal

Supplementary information:

Equipment may be have rated current or rated power or both. Both should be measured.

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B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....:			25					—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
+28V	O-l (Test @ 49.5°C)	240Vac, 50Hz	7hrs 52mins	F1	0.91	--	--	Loaded to 4A (+27.8V), unit start turn on – turn off when loaded beyond 4.3A and then still can increase current up to 5.3A. T1 Coil: 114°C. No hazard.
+28V	O-l (Test @ 27.6°C)	240Vac, 50Hz	9hrs 21mins	F1	1.2	--	--	Loaded to 5.25A (+27.74V), when loaded beyond to 5.32A and then unit hiccup. T1 Coil: 110°C. No hazard.
+28V	O-l	375Vdc	11hrs 51mins	F1	0.43	--	--	Loaded to 5.2A (+27.8V), unit hiccup when loaded beyond 5.3A. T1 Coil: 110°C. No hazard.

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B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....:			25					—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
+28V	O-l (Tamb @ 23.8°C)	240Vac, 50Hz	11hrs 19mins	F1	1.1	--	--	Loaded to 4.7A, unit turn on/off when loaded beyond 4.8A and then still can increase current up to 4.83A, unit hiccup. T1 Coil: 110°C. No hazard. Tested with alternative case cover.
+28V	O-l (Tamb @ 50.1°C)	240Vac, 50Hz	4hrs 48mins	F1	1.05	--	--	Loaded to 4.5, unit hiccup when loaded beyond 4.7A. T1 Coil: 113°C. No hazard. Tested with alternative case cover.
+22V	S-c	240Vac, 50Hz	3hrs 54mins	F1	0.3	--	--	Unit hiccup. T1 Coil: 90°C. No hazard.
+24V	S-c	240Vac, 50Hz	3hrs 31mins	F1	0.29	--	--	Unit hiccup. T1 Coil: 88°C. No hazard.
+28V	S-c	240Vac, 50Hz	2hrs 25mins	F1	0.3	--	--	Unit hiccup. T1 Coil: 94°C. No hazard.

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B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....:			25					—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
+22V	O-l	240Vac, 50Hz	10hrs 26mins	F1	1.11	--	--	Loaded to 6.1A (+21.3V), when loaded beyond to 6.25A and then unit hiccup. T1 Coil: 105°C. No hazard.
+24V	O-l	240Vac, 50Hz	12hrs 43mins	F1	1.12	--	--	Loaded to 5.8A (+23.75V), when loaded beyond to 5.88A and then unit hiccup. T1 Coil: 109°C. No hazard.
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.								

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B.4	TABLE: Fault condition tests							P
Ambient temperature (°C) .....:					23±3 or otherwise stated			—
Power source for EUT: Manufacturer, model/type, output rating ..:					Elettrotest, 0-300V; 9kVA			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Faults in voltage limiting components in ES circuit; Method B.4.4 (test of functional insulation), B.4.5 (s-c and interruption of electrodes in tubes and semiconductors), B.4.6 (s-c or disconnection of passive components), B.4.7 (cont. operation of components)								
R1A	S-c	240Vac, 50Hz	3hrs 46mins	F1	0.8	--	--	Normal operation. T1 Coil: 86.4°C. No hazard.
R7	S-c	240Vac, 50Hz	3hrs 45mins	F1	0.8	--	--	Normal operation. T1 Coil: 87.6°C. No hazard.
BD1(L to +)	S-c	240Vac, 50Hz	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 87°C. No hazard.
BD1 (L to +)	S-c	375Vdc	2hrs 55mins	F1	0.3	--	--	Normal operation. T1 Coil: 89.8°C. No hazard.
BD1(N to -)	S-c	240Vac, 50Hz	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 87°C. No hazard.
BD1(N to -)	S-c	375Vdc	3hrs 42mins	F1	0.3	--	--	Normal operation. T1 Coil: 87.8°C. No hazard.
D9	S-c	240Vac, 50Hz	3hrs 51mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 84°C. No hazard.
D12	S-c	240Vac, 50Hz	2hrs 22mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 88°C. No hazard.
D350 (SELV)	S-c	240Vac, 50Hz	3hrs 17mins	F1	0.3	--	--	Unit hiccup. T1 Coil: 94°C. No hazard.
L350 (SELV)	S-c	240Vac, 50Hz	3hrs 27mins	F1	0.8	--	--	Normal operation. T1 Coil: 89.7°C. No hazard.

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C1	S-c	240Vac, 50Hz	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 89°C. No hazard.
C1 # 1	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.
C1 # 2	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 93°C. No hazard.
C1 # 3	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 93°C. No hazard.
C1 # 4	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 92°C. No hazard.
C1 # 5	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 92°C. No hazard.

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C1 # 6	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 89°C. No hazard.
C1 # 7	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 86°C. No hazard.
C1 # 8	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.
C1 # 9	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.
C1 # 10	S-c (Test with Bel Fuse type 5HT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 93°C. No hazard.
C1 # 1	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.

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C1 # 2	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 92°C. No hazard.
C1 # 3	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 92°C. No hazard.
C1 # 4	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.
C1 # 5	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.
C1 # 6	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.
C1 # 7	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 87°C. No hazard.

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C1 # 8	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 92°C. No hazard.
C1 # 9	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 92°C. No hazard.
C1 # 10	S-c (Test with Littelfuse type 215 series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 88°C. No hazard.
C1 # 1	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 92°C. No hazard.
C1 # 2	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 89°C. No hazard.
C1 # 3	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 94°C. No hazard.

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C1 # 4	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 94°C. No hazard.
C1 # 5	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 90°C. No hazard.
C1 # 6	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 93°C. No hazard.
C1 # 7	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 88°C. No hazard.
C1 # 8	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 94°C. No hazard.
C1 # 9	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 91°C. No hazard.
C1 # 10	S-c (Test with Schurter type SPT series)	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. T1 Coil: 88°C. No hazard.

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C14	S-c	240Vac, 60Hz	3hrs 1min	F1	0.03	--	--	Unit shutdown. T1 Coil: 86°C. No hazard.
Q1 (D-G)	S-c	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly.Q1, Q2, IC1, D11, R28, R29, R37, ZD5, ZD6 and ZD7 damaged. T1 Coil: 88°C. No hazard.
Q1 (D-S)	S-c	375Vdc	Instant	F1	#	--	--	Unit shutdown. F1 opened instantly. Q1, IC1, Q2, D11, R29 and R26 damaged. T1 Coil: 87°C. No hazard.
IC1 (1-8)	S-c	240Vac, 60Hz	2hrs 59mins	F1	0.03	--	--	Unit shutdown. IC1, ZD5,ZD6 & ZD7 damaged. T1 Coil: 87°C. No hazard.
IC1 (2-8)	S-c (Test with IC550 type TCET1103(G)D)	240Vac, 60Hz	3hrs 19mins	F1	0.03	--	--	Unit shutdown. IC1, IC550, D11, Q2, ZD5, ZD6, ZD7 and ZD2 damaged. T1 Coil: 87°C. No hazard.
IC1 (2-8)	S-c (Test with IC550 type TCET1103(G)D)	375Vdc	2hrs 47mins	F1	0.001	--	--	Unit shutdown. F1 opened instantly. IC1, IC550, ZD5, ZD6, ZD7 and ZD2 damaged. T1 Coil: 84°C. No hazard.

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IC1 (2-8)	S-c (Test with IC550 type SFH617A)	240Vac, 60Hz	2hrs 22mins	F1	0.03	--	--	Unit shutdown. IC1, IC550, D11, Q2, ZD5, ZD6, ZD7 and ZD2 damaged. T1 Coil: 89°C. No hazard.
IC1 (2-8)	S-c (Test with IC550 type SFH617A)	375Vdc	2hrs 18mins	F1	0.001	--	--	Unit shutdown. IC1, IC550, ZD2, ZD5, ZD6 and ZD7 damaged. T1 Coil: 86°C. No hazard.
IC1 (3-8)	S-c	240Vac, 60Hz	2hrs 14mins	F1	0.03	--	--	Unit shutdown. IC1, ZD5, ZD6 and ZD7 damaged. T1 Coil: 88°C.No hazard.
IC1 (4-8)	S-c	240Vac, 60Hz	2hrs 51mins	F1	0.03	--	--	Unit shutdown. ZD5, ZD6, ZD7 and IC1 damaged. T1 Coil: 87°C.No hazard.
IC1 (5-8)	S-c	240Vac, 60Hz	2hrs 50mins	F1	0.03	--	--	Unit shutdown. IC1, Q2, D11, R26, ZD5, ZD6 and ZD7 damaged. T1 Coil: 87°C. No hazard.
IC1 (6-8)	S-c	240Vac, 60Hz	3hrs 24mins	F1	0.03	--	--	Unit shutdown. IC1, Q4, D10, R11, Q5, ZD5, ZD6 and ZD7 damaged. T1 Coil: 84°C. No hazard.
Q1 (D-G)	S-c	240Vac, 50Hz	3hrs 9mins	F1	0.03	--	--	Unit shutdown. Q1, Q2, IC1, D11, R26, R28, R29 and R37 damaged. T1 Coil: 89°C.No hazard.

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Q1 (D-S)	S-c	240Vac, 50Hz	2hrs 30mins	F1	0.03	--	--	Unit shutdown. Q1, IC1, Q2, D11, R26, R29 and R37 damaged. T1 Coil: 86°C. No hazard.
Q1 (G-S)	S-c	240Vac, 50Hz	3hrs 23mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 90°C. No hazard.
IC550 (1-2)	S-c	240Vac, 50Hz	3hrs 3mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 86°C. No hazard.
IC550 (3-4)	S-c	240Vac, 50Hz	2hrs 52mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 90°C. No hazard.
IC620 (1-2)	S-c	240Vavc 60Hz	1hr 1min	F1	0.8	--	--	Normal operation. T1 Coil: 87.2°C. No hazard.
IC620 (3-4)	S-c	240Vac, 50Hz	3hrs 54mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 89°C. No hazard.
IC550 (1-2)	S-c (No load)	240Vac, 50Hz	2hrs 50mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 32°C. No hazard.
IC550 (3-4)	S-c (No load)	240Vac, 50Hz	3hrs 6mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 35°C. No hazard.
IC620 (1-2)	S-c (No load)	240Vac, 50Hz	3hrs 1min	F1	0.03	--	--	Normal operation. T1 Coil: 32.4°C. No hazard.
IC620 (3-4)	S-c (No load)	240Vac, 50Hz	2hrs 30mins	F1	0.03	--	--	Unit shutdown. T1 Coil: 36°C; No hazard.
Ventilation openings	Blocked (test @ 27.4°C)	240Vac, 50Hz	2hrs 46mins	F1	0.8	--	--	Normal operation. T1 Coil: 102.0°C. No hazard.
Ventilation openings	Blocked (test @ 49.9°C)	240Vac, 50Hz	3hrs 4mins	F1	0.85	--	--	Normal operation around 2hrs after that unit turn on -turn off alternately. T1 Coil: 110.2°C. No hazard.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Mounting	Misused (Location 1)	240Vac, 50Hz	2hrs 51mins	F1	0.8	--	--	Normal operation. T1 Coil: 82.2°C. No hazard.
Mounting	Misused (Location 2)	240Vac, 50Hz	2hrs 44mins	F1	0.8	--	--	Normal operation. T1 Coil: 93.9°C. No hazard.
G.5.3.3 Transformer overload test								
T1 (1 – 3)	Short circut	240Vac/ 50Hz	3hrs 45mins	F1	0.23	--	--	Unit hiccup. T1 Coil: 84°C. No hazard.
T1 (6 – 5)	Short circut	240Vac/ 50Hz	4hrs 52mins	F1	0.22	--	--	Unit hiccup. T1 Coil: 89°C. No hazard.
T1 (10,11,12-7,8,9)	Short circut	240Vac/ 50Hz	3hrs 19mins	F1	0.30	--	--	Unit hiccup. ZD1 and D6 damaged. T1 Coil: 87°C. No hazard.
T1 pin 10,11,12-7,8,9 after D350	Overload	240Vac /50Hz	3h	F1	1.2	--	--	Loaded to 5.35A unit hiccup when loaded beyond 5.4A. T1 Coil: 103°C. No hazard.
Supplementary information:								
s-c=short circuit, o-c=open circuit, o-l=overload								
# Fuse current is much larger than fuse rating times 2.1								
All fault conditions where fuse F1 opened were repeated 2 times with similar result.								
Hi-pot test voltage 3000Vac was applied between primary to secondary and 1772Vac was applied between primary to ground after fault condition test and in case component damaged								

Annex M	**TABLE: Batteries**									N/A
The tests of Annex M are applicable only when appropriate battery data is not available										N/A
Is it possible to install the battery in a reverse polarity position? .....:										N/A
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:										Verdict
- Chemical leaks										N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

- Explosion of the battery		N/A
- Emission of flame or expulsion of molten metal		N/A
- Electric strength tests of equipment after completion of tests		N/A
Supplementary information:		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**	N/A

Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				

Supplementary Information:

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation

Supplementary Information:

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**	N/A

Note: Measured UOC (V) with all load circuits disconnected:

Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit

Supplementary Information:
SC=Short circuit, OC=Open circuit

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test				P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Components	Different	--	10	5	Pass.
Components	Different	--	30	5	Pass.
Supplementary information:					

T.6, T.9	TABLE: Impact tests			N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
Supplementary information:				

T.7	TABLE: Drop tests			N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
Supplementary information:				

T.8	TABLE: Stress relief test				N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Supplementary information:					

Enclosure No. 1

National differences according to IEC 62368-1:2014 (Second Edition)

(44 pages including this cover page)

Country	Australia
IECEE Member NCB	--
IEC Standard	IEC 62368-1:2014 (Ed. 2.0)
Corresponding National Standard	AS/NZS 62368.1:2018
Regulatory Requirements	N/A

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (**Audio/video, information and communication technology equipment**)			
Differences according to.....: AS/NZS 62368.1:2018			
Attachment Form No.....: AU_NZ_ND_IEC62368_1B **Attachment Originator .....**: JAS-ANZ **Master Attachment**.....: 2018-02			
	National Differences		**—**
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		**—**
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		**—**
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		**—**
2	*Add* the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, *Approval and test specification—Plugs and socket-outlets* -AS/NZS 3123, *Approval and test specification—Plugs, socket-outlets and couplers for general industrial application* -AS/NZS 3191, *Electric flexible cords* -AS/NZS 60065, *Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)* -AS/NZS 60320.1, *Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)* -AS/NZS 60320.2.2, *Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)*	Considered.	P

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	-AS/NZS 60695.2.11*, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products* -AS/NZS 60695.11.5, *Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance* -AS/NZS 60695.11.10, *Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods* -AS/NZS 60884.1, *Plugs and socket-outlets for household and similar purposes, Part 1: General requirements* -AS/NZS 60950.1:2015, *Information technology equipment—Safety*, Part 1: *General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)* IEC 61032:1997, *Protection of persons and equipment by enclosures—Probes for verification* -AS/NZS 61558.1:2008 (including Amendment 2:2015), *Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)* -AS/NZS 61558.2.16, *Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.*		
4.1.1	**Application of requirements and acceptance of materials, components and subassemblies** 1 *Replace* the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'. 2 *Replace* the text 'IEC 60065' with 'AS/NZS 60065'.	Considered.	P
4.7	**Equipment for direct insertion into mains socket-outlets**		
4.7.2	**Requirements** *Delete* the text of the second paragraph and *replace* with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.	Not direct plug-in equipment.	N/A
4.7.3	**Compliance Criteria** *Delete* the first paragraph and Note 1 and Note 2 and *replace* with the following: *Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.*		N/A
4.8	*Delete* existing clause title and *replace* with the following: **4.8 Products containing coin/button cell batteries**		N/A

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.1	**General** 1 Second dashed point, *delete* the text and *replace* with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, *insert* the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, *renumber* the existing Note as 'NOTE 2'. 4 Fifth dashed point, *delete* the word 'lithium'.	No such component inside the unit.	N/A
4.8.2	**Instructional Safeguard** First line, *delete* the word 'lithium'.		N/A
4.8.3	**Construction** First line, after the word 'Equipment' *insert* the words 'containing one or more coin/button batteries and'		N/A
4.8.5	**Compliance criteria** *Delete* the first paragraph and *replace* with the following: *Compliance is checked by applying a force of 30 N +/-1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.*		N/A
5.4.10.2	**Test methods**		N/A
5.4.10.2.1	**General** *Delete* the first paragraph and *replace* with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.	No such external circuits.	N/A
Table 29	*Replace* the table with the following:		

Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) [a]	2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) [b]	1.5 kV 10/700 µs [c]		1.0 kV	1.5 kV

[a] Surge suppressors shall not be removed.

[b] Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.

[c] During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	**Electrically-caused fire**		P
6.1	**General** After the first paragraph, *insert* the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202	No alternative requirements applied.	N/A
6.6	After Clause 6.6, *add* the new Clauses 6.201 and 6.202 as follows: **6.201 External power supplies, docking stations and other similar devices** and **6.202 Resistance to fire—Alternative tests** (see special national conditions)		N/A
8.5.4	**Special categories of equipment comprising moving parts**		N/A
8.5.4.1	**Large data storage equipment** In the first dashed row and the second dashed rows *replace* 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.	Unit is no a large data storage equipment.	N/A
8.6	**Stability of equipment**		N/A

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1 and Table 36	**Requirements** 1. Table 36, *insert* Footnote c at the end of the 'Glass slide' heading, and *add* a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: [c] The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, *insert* '[201]' at the end of 'No stability requirements' 3. Table 36, ninth row, *insert* '[201]' at the end of 'No stability requirements' 4. Table 36, *add* the following new footnote: [201] MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, *delete* the words 'MS2 and MS3 television sets' and *replace* with 'MS2 and MS3 television sets and display devices'	Unit for building-in. Stability tests are not applicable.	N/A
8.6.1	After Clause 8.6.1 *add* the following new clauses: **8.6.1.201 Instructional safeguard for fixed-mount television sets** (see special national conditions)	Not a TV.	N/A
Annex F Paragraph F.3.5.1	**Mains appliance outlet and socket-outlet markings** *Replace* 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.	No mains appliance outlet provided.	N/A
Annex G Paragraph G.4.2	**Mains connectors** 1 In the second line *insert* 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line *insert* 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 *Add* the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	No mains plug provided.	N/A
Paragraph G.5.3.1	**Transformers, General** 1 In the third dashed point *replace* 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point *replace* 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.	Transformer meets the requirements given in G5.3.2 and G5.3.3.	P
Paragraph G.7.1	**Mains supply cords, General** *In the fourth dashed paragraph, replace 'IEC 60320-1' with 'AS/NZS 60320.1'*	No power supply cord provided.	N/A

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Table G.5	**Sizes of conductors** 1 In the second row, first column, *delete* '6' and *replace* with '7.5' 2 In the second row, second column, *delete* '0,75' and *replace* with '0.75[b] 3 *Delete* Note 1. 4 *Replace* 'NOTE 2' with 'NOTE:'. 5 *Delete* the text of 'Footnote b' and *replace* with the following: [b] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c *replace* 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M **Paragraph M.3.2**	**Protection circuits for batteries provided within the equipment, Test method** After the first dashed point *add* the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.	No battery provided.	N/A
	Special national conditions (if any)		

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	**External power supplies, docking stations and other similar devices** For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. *Compliance shall be checked by measurement, taking into account the abnormal* *operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4*	No alternative requirements applied.	N/A
6.202	**Resistance to fire—Alternative tests**		N/A
6.202.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.		N/A

<table>
<tr><td colspan="4">IEC 62368_1B ATTACHMENT</td></tr>
<tr><td>Clause</td><td>Requirement + Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.
For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5.
The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.
These tests are not carried out on internal wiring.</td><td></td><td></td></tr>
<tr><td>6.202.2</td><td>Testing of non-metallic materials
Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.
Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.</td><td></td><td>N/A</td></tr>
<tr><td>6.202.3</td><td>Testing of insulating materials
Parts of insulating material supporting Potential Ignition Sources shall be subject
to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.
The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.
NOTE: Contacts in components such as switch contacts are considered to be connections</td><td></td><td>N/A</td></tr>
<tr><td></td><td>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test.
However, parts shielded by a barrier which meets the needle-flame test need not be tested</td><td></td><td>N/A</td></tr>
<tr><td></td><td>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:
<table>
<tr><td>Clause of AS/NZS 60695.11.5</td><td>Change</td></tr>
<tr><td>9 Test procedure</td><td></td></tr>
<tr><td>9.2 Application of needle-flame</td><td>Delete the first and second paragraphs and replace with the following:
The specimen shall be arranged so that</td></tr>
</table></td><td></td><td>N/A</td></tr>
</table>

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s □1 s. **9.3 Number of test specimens** *Replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test. **11 Evaluation of test results** *Replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s. The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.		
6.202.4	**Testing in the event of non-extinguishing material** If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.		N/A

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		
6.202.5	**Testing of printed boards** The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if— – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. *Conformance shall be determined using the smallest thickness of the material.* NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.		N/A
6.202.6	**For open circuit voltages greater than 4 kV** Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in		N/A

IEC 62368_1B ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		
8.6.1.201	**8.6.1.201 Instructional safeguard for fixed-mount television sets** MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions	No fixed mount television set.	N/A
8.6.1.202	**Restraining device** MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

Country	Canada
IECEE Member NCB	CSA International
IEC Standard	IEC 62368-1:2014 (Ed. 2.0)
Corresponding National Standard	CAN/CSA C22.2 No. 62368-1-14
Regulatory Requirements	N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
1DV.1	Battery backup systems that are not an integral part of stationary equipment, such as provided in separate cabinets, are subject to the appropriate standard for battery backup systems, such as UL 1973, Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications.	Not a battery back-up system.	N/A
1DV.2	For equipment intended for outdoor installation, additional requirements for Information and communication technology equipment are covered by CSA/UL 60950-22 and for Audio/video equipment are covered by the relevant requirements in CSA C22.2 No. 60065 or UL 60065.		N/A
1DV.3.1	Standard is applicable to equipment designed to be installed in accordance with the Canadian Electrical Code, Part I, C22.1-12; Canadian Electrical Code, Part II, General Requirements, CAN/CSA C22.2 No. 0-10; the National Electrical Code, NFPA 70-2014; and the National Electrical Safety Code, IEEE C2-2012.	Unit for building-in. Not intended for direct connection to mains.	N/A
1DV.3.2	For equipment designed to be installed in accordance with Article 645 of the National Electrical Code, NFPA 70-2014, and the Standard for the Protection of Information Technology Equipment, NFPA 75-2013, identification by a marking or instruction [see Annex DVK (Annex DVA, Clause 1)] is required.		N/A
1DV.3.3	Additional regulatory requirements that apply to this equipment per Annex DVA, as applicable.		N/A
1DV.4.1	Additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities per Annex DVB.	Not intended for installation in general patient areas of health care facilities.	N/A
1DV.4.2	This standard includes additional requirements for equipment intended for mounting under kitchen cabinets. See Annex DVC.	Not intended for mounting under kitchen cabinet.	N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
1DV.4.3	This standard does not apply to equipment having Remote Feeding Telecommunication (RFT) circuits. Equipment having RFT circuits is covered by CSA/UL 60950-21.	No RFT circuit.	N/A
1DV.4.4	Additional requirements may apply to large data storage equipment. Refer to CSA/UL 60950-23.	No large data storage equipment.	N/A
1DV.4.5	Does not cover Modular Data Centers (MDCs) but only the information and communication technology equipment contained within.	Not MDC.	N/A
1DV.5.1	Power Distribution Equipment and Sub-Assemblies	Not such product.	N/A
1DV.5.1.1	Power distribution sub-assemblies connected to a mains used to distribute power entirely within a system of equipment, such as power distribution units (PDUs), cord-connected power strips, shelves with multiple power outlets (receptacles) etc., and intended to be installed in system racks, cabinets, home entertainment centers, etc. are covered by this standard		N/A
1DV.5.1.2	For equipment covered by this standard that incorporates components and sub-assemblies that perform a power distribution and control function covered by other standards, such as panelboards, load transfer equipment, or uninterruptible power systems utilized in power conditioners and computer power centers, this standard only may be used for investigation of safety for those aspects not covered by the other standards.		N/A
1DV.5.1.3	This standard also does not apply to stand-alone equipment used for distribution of mains power that is covered by individual power distribution equipment standards.		N/A
1DV.5.1.4	Based on the specific function, the following requirements are applicable to the stand-alone distribution equipment, or apply additionally to power distribution sub-assemblies and components of equipment covered by this standard, as described in 1DV.5.1.2 and 1DV.5.1.3:		N/A
	– For Industrial Control Equipment, see CSA C22.2 No. 14 and UL 508.		--
	– For Panelboards, see CSA C22.2 No. 29 and UL 67.		--

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	– For Switchboards, see CSA C22.2 No 244 and UL 891.		--
	– For Transfer Switch Equipment, see CSA C22.2 No 178.1 and UL 1008.		--
	– For Uninterruptible Power Systems, see CSA C22.2 No. 107.3 and UL 1778.		--
	– For Power Distribution Centers for Communications Equipment, see UL Subject 1801.		--
	– Other forms of power distribution units for general applications, such as, • Relocatable Power Taps, CSA-C22.2 No. 21, Cord Sets and Power Supply Cords, and UL 1363, Relocatable Power Taps. • Cord connected Surge Protective Devices, CSA Technical Information Letter No. A-24, Interim Certification Requirements for AC Line Connected Wiring Devices with Varistors, and UL 1449, Surge Protective Devices. • Furniture Power Distribution Units, CSA-C22.2 No. 21, Cord Sets and Power Supply Cords and UL 962A, Furniture Power Distribution Units.		--
3.3.1.2DV D2	For additional information regarding low voltage d.c. mains (centralized d.c. power systems) equipment, refer to Annex DVD. This standard covers high voltage d.c. mains up to 600 Vdc.	Not intended for connection to d.c. mains.	N/A
3.3.1.3DV.1	New definition: telecommunication network – metallically terminated transmission medium intended for communication between equipment that may be located in separate buildings, excluding: – the mains system for supply, transmission and distribution of electrical power, if used as a telecommunication transmission medium; – cable distribution systems; – ES1 circuits connecting units of audio/video, information and communication technology equipment.	No telecommunication network.	N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.1DV.1 D2	In the U.S. and Canada, components and subassemblies that comply with the standards referenced in Annex DVE are required in addition to or as a replacement for the requirements in this standard. Components complying with these standards are considered acceptable as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.	Considered. UL/CSA certified components are used. See table 4.1.2 in main report.	P
4.1.1DV.2 DC	In the U.S. and Canada, components and subassemblies that comply with the standards referenced in Annex DVG are acceptable as an alternative to requirements as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.	Considered. UL/CSA certified components are used. See table 4.1.2 in main report.	P
4.1.2DV DC	In the U.S. and Canada, some UL/CSA component standards may be used as alternatives to referenced IEC standards for the purposes of North America certifications or surveillance programs. Components and subassemblies that comply with the standards referenced in Annex DVF are acceptable as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.	Considered. UL/CSA certified components are used. See table 4.1.2 in main report.	P
4.1.16DV.1	Mains connections		N/A
4.1.16DV.1 .1 DE, 4.1.16DV.1 .2 DR	Requirements for Mains Supply Cords for Pluggable (Cord Connected) Equipment (Canadian and U.S. regulatory based requirements) - Annex G.7 and G.7ADV	Supply cord not part of the product.	N/A
4.1.16DV.1 .3 D2, 4.1.16DV.1 .4 DR	Requirements for Permanently Connected Equipment. (Canadian and U.S. regulatory-based requirements) – Annex DVH	Unit provides means for fix connection however not permanently connected equipment. To be evaluated in the final unit.	N/A
4.1.17DV.1	External interconnecting cable and wiring		N/AA
4.1.17DV.1 .1	General External interconnecting cable and wiring are investigated to the requirements of 6.5 and either 4.1.17DV.1.2 or 4.1.17DV.1.3, as appropriate.		

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	– External interconnecting cable and wiring 3,05 m or less may be investigated as part of the equipment (system) to the requirements of this standard. See 4.1.17DV.1.2.		N/A
	– External interconnect cable and wiring longer than 3,05 m are regulated by the Canadian Electrical Code, C22.1, and the National Electrical Code, NFPA 70, and are subject to associated requirements. See 4.1.17DV.1.3.		N/A
	– External interconnect cable longer than 3,05 m designed to carry audio and/or video signals only, and that is not specified by the manufacturer to be routed inside the building structure (e.g., walls, ceilings, etc.), is subject to the applicable requirements of 4.1.17DV.1.2. For purposes of 4.1.17DV.1.2, it is assumed such cables are connected to PS1 circuits.		N/A
	Alternatively, detachable external interconnecting cable and wiring (with terminations) may be excluded from the equipment evaluation if specified by the manufacturer.		N/A
4.1.17DV.1.2	Equipment (system) interconnecting cable and wiring		N/A
	The following requirements apply to detachable and nondetachable external interconnecting cable and wiring investigated as part of the equipment (system).		N/A
	– The length of the external interconnecting cable or wiring shall not exceed 3,05 m;		N/A
	– For external interconnecting cable and wiring connected to PS2 and PS3 circuits, see 6.5 for fire (flammability) considerations;		N/A
	– There are no fire (flammability) considerations for external interconnecting cable and wiring specified by the manufacturer for connection to circuits that are PS1.		N/A
	– External interconnecting cable and wiring intended to be connected to an ES3 or PS3 circuit require a jacket for mechanical protection in accordance with Table G.7ADV.2, or equivalent;		N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	– Detachable external interconnecting cable and wiring (with terminations) intended to be connected to a PS2, PS3, ES2 or ES3 circuit and furnished as part of the equipment shall be either marked, or similarly identified in the installation instructions with (a) the name, trademark or trade name of the organization that is responsible for the equipment, and (b) the organization's identifying number or equivalent designation for the cable. See Annex DVK. – The marking may be applied on the cable and wiring at any location – This marking is not required to comply with the test for permanence of markings, F.3.9		N/A
	Optical fiber interconnecting cables 3,05 m or less are not subject to the above requirements		N/A
4.1.17DV.1.3	External interconnecting cable and wiring considered part of the building installation.		N/A
	External interconnecting cables and wiring longer than 3,05 m are regulated by the Canadian Electrical Code, C22.1, and the National Electrical Code, NFPA 70. See Annex DVA(Annex Q entry).		N/A
4.6.2DV D2	Additional examples of compliance: - wire-wrap terminals used for the connection of ES1 and ES2 that are: • provided on equipment that forms part of the telecommunication network, up to and including the demarcation point, and are located in service access areas only. (This equipment is generally considered Central Office Equipment, although it may be deployed elsewhere in similarly controlled environments.) and • provided with a guard or cover that prevents unintentional contact during normal operation. are tested with a steady force of 2,5 N ± 0,25 N.	No wire-wrap terminal used.	N/A
4.8.3DV D2	If screws or similar fasteners are used to secure the door/cover providing access to the battery compartment, the fasteners shall be captive to ensure that they remain with the door/cover. This does not apply to side panel doors on larger devices which are necessary for the functioning of the equipment and which are not likely to be discarded or left off the equipment	No battery compartment.	N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.4.5DV D2	0,5 J impact test deleted.		N/A
4.8.5DV.1 D2	Replace 30 N battery compartment door/cover test with 45 N		N/A
4.8.5DV.2 D2	Additional compliance criteria replaced with: - the battery compartment door/cover shall not open; and - the battery shall not become accessible		N/A
5.4.4.1DV D1	For printed boards, see Clause G.13		P
	For antenna terminals, see Clause 5.4.5		N/A
	For solid insulation on internal and external wiring, see Clause G.6.		P
	Additionally, for internal wiring accessible to an ordinary person, see Clause 5.4.6.		N/A
5.6.3DV.1 DR to 5.6.3DV.3 DR	Protective earthing conductors shall comply with the minimum conductor sizes in Table G.5, except as required by • Table G.7ADV.1 for cord connected equipment; or • Annex DVH for permanently connected equipment.	Power supply cord not part of the unit.	N/A
5.6.4.1DV DR	Minimum conductor size alternative compliance to Table G.5 or Table G.7ADV.1 as applicable, or Table 31 Minimum protective bonding conductor size of copper conductors	Protective bonding conductors (PCB traces) comply with limited short-circuit test of Annex R.	P
5.6.4.4DV DR	Protective bonding conductor sizes alternative compliance to Table G.7ADV.1 in addition to Table 31 or Table G.5		N/A
Table 32 DV DR	Include alternative conductor size compliance with Table G.7ADV.1 in the first column heading for protective conductor terminals.		N/A
5.6.6.1 DV DR	Protective bonding conductors that meet the minimum conductor sizes in Table G.5 or Table G.7ADV.1 as applicable, throughout their length and whose terminals all meet the minimum sizes in Table 32 are considered to comply without test.	Only PCB traces.	N/A
5.7.6.2DV DE	Clause title modified to read “Prospective touch voltage and touch current to external circuits”		N/A
5.7.7DV.1 D2	Clause 5.7.7 to apply to stationary pluggable equipment type A or pluggable equipment type B	No external circuit in the sense of this clause.	N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.7DV.2 D2	Summation of touch currents not exceeding the limits of ES2 exception per Clause 5.7.7(a)(1)		N/A
5.7.7DV.3 D2	Clause 5.7.7(a)(2) replaced with: Such equipment shall comply with Clause 5.7.5. The value of S(I1) shall be added to the measured protective conductor current to determine compliance with the 5 % input current limit per phase specified in Clause 5.7.5.		N/A
5.7.7.1DV D2	Limitation of touch current due to ringing signals Equipment containing input telecommunication network leads over which ringing voltages are applied to the equipment shall be tested using the circuit of Figure 5.7.7.1DV.1 for mains-connected equipment or Figure 5.7.7.1DV.2 for other equipment. For any position of the selector switches, the total touch current including consideration of 5.7.7 shall not exceed the relevant limits for ES2 specified in Table 4, unless the equipment complies with 5.7.7(a) with the protective conductor current due to ringing signal taken into account. An EUT that receives ringing voltages on up to three telecommunication network connection ports shall have simulated ringing applied to each network connection. For four or more ports receiving ringing, simulated ringing shall be applied to three ports and an additional 3 % (rounding down) of the remaining ports. Compliance is checked by the following tests, which are conducted using the measuring network described in IEC 60990, Figure 4. Simulated ringing at 120 V, 50 to 60 Hz, shall be applied to ringing input telecommunication network leads, either one lead at a time or connected together. Other telecommunication network leads shall be left disconnected. Equipment shall be evaluated in each operating state, including ground start. The general test methods of 5.7 shall apply, checking touch current for all positions of switches S1, S2, and S3 in Figure 5.7.7.1DV.1. In case the total touch current exceeds the ES2 limits, the protective conductor current is measured using the test set up of Figure 5.7.7.1DV.1 or Figure 5.7.7.1DV.2 with the measuring instrument replaced with an ammeter having negligible impedance.		N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1DV.1 DC	Add the following text to the end of the second, third and fourth paragraphs: or the insulation of the conductor or cable assembly shall be rated VW-1 or FT-1.	Considered.	P
6.5.1DV.2 D2	Add the following after the third paragraph: PS3 wiring outside a fire enclosure shall comply with single fault testing in B.4. Alternatively, the following constructions are considered to comply: – conductors provided with overcurrent protection in accordance with Article 240 of the National Electrical Code, NFPA 70, and the Canadian Electrical Code, Part I, C22.1, Section 14; – internal conductors supplied by a power source that is limited to the output voltage and current values specified in Table Q.1 or is limited to the output voltage values and provided with an overcurrent protective device with a rated current value as specified in Table Q.2; – interconnecting cables supplied by a limited power source (see Q.1); – a 20-A protective device used with any size wire in the primary.	Fire enclosure is end product requirement.	N/A
6.7DV.1	Safeguards against electrically-caused fire due to overvoltage from power line crosses	No overvoltages from power crosses expected.	N/A
6.7DV.1.1	Equipment with external circuits intended for connection to a telecommunication network that uses outside cable subject to overvoltage from power line failures shall comply with Annex DVI.		N/A
10.6.1DV D2	For telecommunication-network connected equipment, see Annex DVJ.		N/A
F.1DV DR	F.1DV.1 See Annex DVK for U.S. and Canadian markings and instructions.	Must be verified during final product evaluation.	N/A
F.3.3.9DV.1	Equipment with output terminals Output terminals provided for supply of other equipment except mains supply shall be marked with the nominal output voltage and frequency, and, in addition, the maximum output current or power, unless the terminals are marked with the type references of the equipment which are permitted to be connected. When intended to be installed or interconnected in the field by a skilled person, the Class of wiring shall be marked adjacent to the terminals.	No such output.	N/A
G.4.3DV D2	Delete the 2nd sentence reference to “banana plug” of the EXAMPLE.		N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.2DV DR	In the second paragraph, replace the reference to Table G.4 with a reference to Table G.7ADV.1.	No power supply cord.	N/A
G.7ADV DR	Additional requirements: Power supply cords – detachable and non-detachable		N/A
G.7ADV.1	General Flexible cords and plugs are permitted for movable equipment, hand-held equipment, stationary equipment and transportable equipment, and for fixed equipment where the fastening means and mechanical connections of the equipment are designed to permit removal for maintenance and repair.		N/A
G.7ADV.2	Methods of connection Flexible cords shall be provided with an attachment plug for connection to the branch circuit.		N/A
G.7ADV.3	Sizing and ratings The attachment plug configuration shall be one that is rated not less than 125 percent of the current rating of the equipment.		N/A
	Power supply cords shall have conductors with cross-sectional areas sufficient for the rated current of the equipment. Conductors shall be sized based on the requirements in the National Electrical Code (NEC), NFPA 70, and the Canadian Electrical Code, Part I, C22.1.		N/A
	Table G.7ADV.1 provides allowable ampacity for flexible cords and cables based on Table 400.5(a)(1) of the NEC. See Table 400.5(a)(2) of the NEC for ampacity information on portable power cables.		N/A
	For equipment with a rated current up to and including 2 A, 20 AWG is acceptable provided that the mains plug is provided with a 2 A fuse maximum and the equipment is not provided with a socket outlet.		N/A
G.7ADV.4	Serviceability Power supply cords and cord sets shall incorporate flexible cords suitable for the particular application or shall be of a type at least as serviceable for the particular application. Table G.7ADV.2 lists common applications and associated suitable cord types.		N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
G.7ADV.5.1	Minimum length The minimum length of a power supply cord shall be 1,5 m unless it is intended for a special installation, such as dedicated equipment intended to be mounted near a mains socket-outlet.		N/A
	For equipment provided with an external power supply, the minimum length of the power supply cord shall be 0,5 m, provided that the total length of the conductive path from the receptacle to the equipment is 1,5 m or greater.		N/A
G.7ADV.5.2	Maximum length For equipment intended for installation in ITE Rooms, the length of a power supply cord shall not exceed 4,5 m. For other intended installations, see Table G.7ADV.2.		N/A
H.2DV D2	item a: Continuous ringing signals shall: • be located only in areas where a skilled person has access during servicing; • be so located and guarded that unintentional contact with such parts is unlikely during servicing by a skilled person, or be provided with a marking to warn a skilled person of the presence of continuous ringing signals; and • not become accessible to an ordinary person under single fault conditions.	No ringing generator.	N/A
H.4DV.1	Other telecommunication signals: Telecommunication signaling systems (e.g., some message waiting systems) using voltages or current, or both, greater than those specified in 5.2.1.1 and 5.2.1.2 shall be permitted if they comply with the following:		N/A
	– continuous signal: For a signal of duration greater than 5 s, the current through the relevant measuring instrument described in IEC 60990:1999, Figure 4, shall be not greater than 7.1 mA peak a.c., or 30 mA d.c., or the limit shown in Figure H.4DV.1 for combinations of a.c. and d.c., when measured in accordance with 5.7.		N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	– intermittent signal: For a signal of duration less than 5 s, the current through the relevant measuring instrument described in IEC 60990:1999, Figure 4, shall be not greater than the limit specified in Figure H.4DV.2. The signal shall be followed by a quiet interval of at least 1 s before the next intermittent signal. During the quiet interval, either the voltage is less than 56,6 V d.c., or the current measured is less than 0,5 mA.		
M.2.1DV DC	Battery packs with sealed secondary cells and batteries (other than button) containing alkaline or other non-acid electrolyte and used in stationary equipment shall comply with either IEC 62133, UL 2054 or UL 1973. Additionally, such battery packs that rely on solid-state circuits and software controls as safeguards shall comply with either the requirements in UL 1973 for System Safety Analysis (5.7) and Protective Circuit and Controls (5.8), or similar requirements in an appropriate standard for electronic safety-related controls that are suitable for investigation of such protection of secondary cells and batteries.	No battery packs.	N/A
P.4.1DV DE	Additional text added to correct for editing error: For metalized coatings, clearances and creepage distances for pollution degree 3 shall be maintained instead of the tests of P.4.2DV.1.	No metalized coating.	N/A
P.4.2DV DE	Added test requirements text from Clause P.5 as new Clause P.4.2DV DE to correct for editing error.		N/A
P.5DV DE	Clause P.5 relocated to P.4.1 and P.4.2		N/A
U.1DV D1	Added the following text: The outer enclosure housing a CRT shall have no opening that exceeds 130 mm2 unless the minor dimension of the opening is 10 mm or less.	No CRT.	N/A

CANADA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Table W.3DV DE	Modify Table W.3 by replacing the entry for 1.2.8.14 in the first column with the following to correct a typographical error: **TNV-3 CIRCUIT** **TNV CIRCUIT** **– whose normal operating voltages exceed the limits for an SELV circuit under normal operating conditions and** **– on which overvoltages from telecommunication networks and cable distribution systems are possible**		N/A
Annex DVA	(normative) Canadian and U.S. regulatory-based requirements		N/A
Annex DVB	(normative) Equipment used in health care facilities		N/A
Annex DVC	(normative) Under kitchen cabinet equipment		N/A
Annex DVD	(informative) D.C. powered equipment and centralized d.c. power systems (DC mains)		N/A
Annex DVE	(normative) UL and CSA component requirements (mandatory)		N/A
Annex DVF	(normative) UL and CSA component requirements (alternative to IEC standards)		N/A
Annex DVG	(normative) UL and CSA component requirements (alternative)		N/A
Annex DVH	(normative) Permanently connected equipment – mains connections		N/A
Annex DVI	(normative) Safeguards against electrically-caused fire due to overvoltage from power line crosses		N/A
Annex DVJ	(normative) Acoustic tests for telecommunications equipment		N/A
Annex DVK	(normative) Canadian and U.S. marking and instructions		N/A

Country	Denmark
IECEE Member NCB	UL (Demko)
IEC Standard	IEC 62368-1:2014 (Ed. 2.0)
Corresponding National Standard	DS/EN 62368-1:2014
Regulatory Requirements	N/A

DENMARK NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Various	Please see the EN version of the standard where the Denmark National and Special National Deviations are stated.		—

Country	European Group Differences and National Differences
IECEE Member NCB	--
IEC Standard	IEC 62368-1:2014 (Ed. 2.0)
Corresponding National Standard	EN 62368:2014 + A11:2017
Regulatory Requirements	N/A

<table>
<tr><th colspan="4">GROUP DIFFERENCES (CENELEC common modifications EN)</th></tr>
<tr><td>Clause</td><td>Requirement + Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td>Contents</td><td>Add the following annexes:
Annex ZA (normative) Normative references to international publications with their corresponding European publications
Annex ZB (normative) Special national conditions
Annex ZD (informative) A-deviations
Annex ZD (informative) IEC and CENELEC code designations for flexible cords</td><td></td><td>P</td></tr>
<tr><td>General</td><td>Delete all the “country” notes in the reference document according to the following list:
<table>
<tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr>
<tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>4.5.2.3.2.2 Table 13</td><td>Note c</td></tr>
<tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr>
<tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr>
<tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2,3 and 4</td></tr>
<tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F3.3.6</td><td>Note 3</td></tr>
</table>
For special national conditions, see Annex ZB.</td><td></td><td>P</td></tr>
<tr><td>1</td><td>Add the following note:
NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</td><td></td><td>N/A</td></tr>
<tr><td>4.Z1</td><td>Add the following new subclause after 4.9:
To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):
a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</td><td>Unit provides appropriate internal protection.</td><td>P</td></tr>
<tr><td></td><td>b) for components in series with the mains input</td><td>Protection does not rely on building</td><td>N/A</td></tr>
</table>

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	installation. Unit provides appropriate internal protection.	
	c) it is permitted for **pluggable equipment type B** or **permanently connected** equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.	Protection does not rely on building installation. Unit provides appropriate internal protection.	N/A
	If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Protection does not rely on building installation. Unit provides appropriate internal protection.	N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.		N/A
10.2.1	**Add** the following to c) and d) in Table 39: For additional requirements, see 10.5.1.		N/A
10.5.1	Add the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus. Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive		N/A

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	96/29/Euratom of 13 May 1996.		
10.6.2.1	Add the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A
10.Z1	**Add** the following new subclause after 10.6.5. **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566.		N/A
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A
Bibliography	Additional EN standards.		—
ZA	**Normative references to international publications with their corresponding European publications**		—
ZB	**Special National Conditions**		—
4.1.15	**Denmark, Finland, Norway and Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes		N/A

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex	The EUT is not direct plug-in equipment.	N/A
5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking **safeguard**) for high **touch current** is required if the **touch current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 And Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of		N/A

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		P
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in c**lass I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2.	No such resistors.	N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	**Ireland and United Kingdom**	Unit for building-in, not directly	N/A

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.	connected to the mains.	
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.		N/A
5.7.5	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations,		N/A

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.		N/A
B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-		N/A

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a *Justification:* Heavy Current Regulations, Section 6c		
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	The EUT is not direct plug-in equipment.	N/A
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug	No power supply cord provided.	N/A

GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	conforming to BS 1363 or an approved conversion plug.		
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard	No power supply cord provided.	N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.	No power supply cord provided.	N/A
ZC	**A-deviations**		—
	A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC national member. This European Standard falls under Directive 2006/95/EC. NOTE (from CEN/CENELEC IR Part 2:2011, 2.17): Where standards fall under EU Directives, it is the view of the Commission of the European Communities (OJ No C 59; 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive. A-deviations in an EFTA-country are **valid instead** of the relevant provisions of the European Standard in that country until they have been removed.		—
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification:* German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No CRT provided.	N/A

Annex ZD
(informative)
IEC and CENELEC code designations for flexible cords

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H
Cords insulated and sheathed with halogen-free thermoplastic compounds		
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F

Country	Italy
IECEE Member NCB	IMQ S.p.A.
IEC Standard	IEC 62368-1:2014 (Ed. 2.0)
Corresponding National Standard	CEI EN 62368-1:2016
Regulatory Requirements	N/A

ITALY NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Various	Please see the EN version of the standard where the Italian National and Special National Deviations are stated.		—

Country	Sweden
IECEE Member NCB	Intertek Semko AB
IEC Standard	IEC 62368-1:2014 (Ed. 2.0)
Corresponding National Standard	SS-EN 62368-1:2014
Regulatory Requirements	N/A

SWEDEN NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Various	Please see the EN version of the standard where the Swedish National and Special National Deviations are stated.		—

Country	United States of America
IECEE Member NCB	--
IEC Standard	IEC 62368-1:2014 (Ed. 2.0)
Corresponding National Standard	UL 62368-1, Ed. No. 2
Regulatory Requirements	--

USA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
SPECIAL NATIONAL CONDITIONS BASED ON REGULATIONS			
1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	Unit for building-in. Not intended for direct connection to mains.	N/A
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	Not a power distribution equipment.	N/A
4.1.17	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.	Power supply cord not part of the product.	N/A
5.6.3	Protective earthing conductors are required to comply with the minimum conductor sizes in Table G.5, except as required by, Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.	Power supply cord not part of the product.	N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	Unit for building in. Rating of the output is marked on the label.	N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G	Power supply cords are required to have		N/A

USA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
(G.7)	attachment plugs rated not less than 125 percent of the rated current of the equipment.		
Annex G (G.7)	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex M (M.2.1)	Battery packs for stationary applications are required to comply with special component requirements.	No battery pack.	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A
Annex DVA (1)	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
Annex DVA (1)	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A
Annex DVA (1)	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Not pluggable type A, however 20A external protection specified.	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A

USA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (10.3.1)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370)		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the “Normal Operating Condition” in Table 2 of CAN/CSA C22.2 No. 235.”	Only one phase conductor.	N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.	Rated current marked.	P
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No disconnect device provided. Disconnect device is end product requirement.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.3.4)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is required not to be operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A

USA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1are required to be marked with the voltage rating and “Class 2” or equivalent. The marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.	Unit not intended for direct connection to mains. Connection will be realized through host unit.	N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
OTHER NATIONAL DIFFERENCES			
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.	No such battery.	N/A

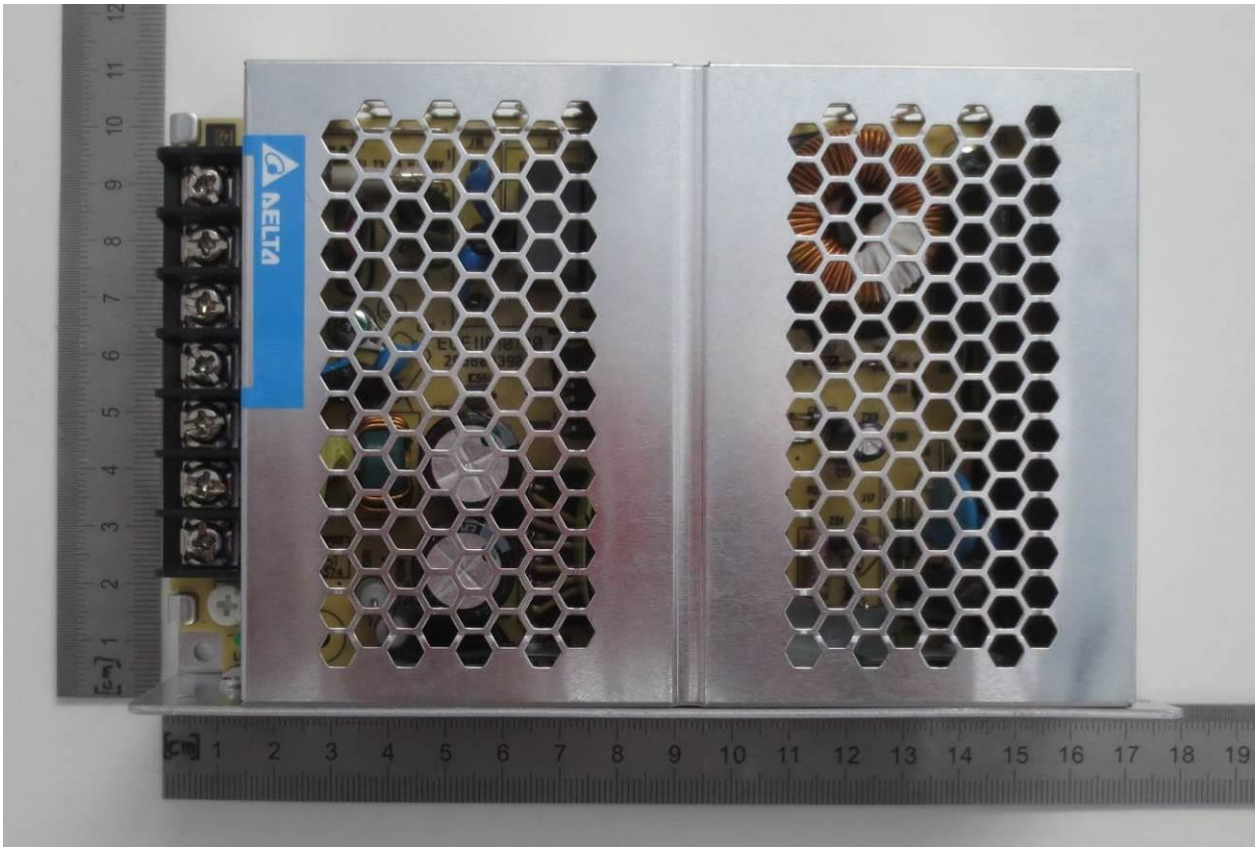
USA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.7	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	Not intended to receive ringing signals.	N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.	End product consideration.	N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centers, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	UL/CSA certified components used.	P
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the		N/A

USA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	ear is required to comply with special acoustic pressure requirements.		

Enclosure No. 2

Pictures of the unit

(6 pages including this cover page)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CAUTION !
SCREW PROTRUSION LENGTH L ≤ 6 MM
10.09.2018
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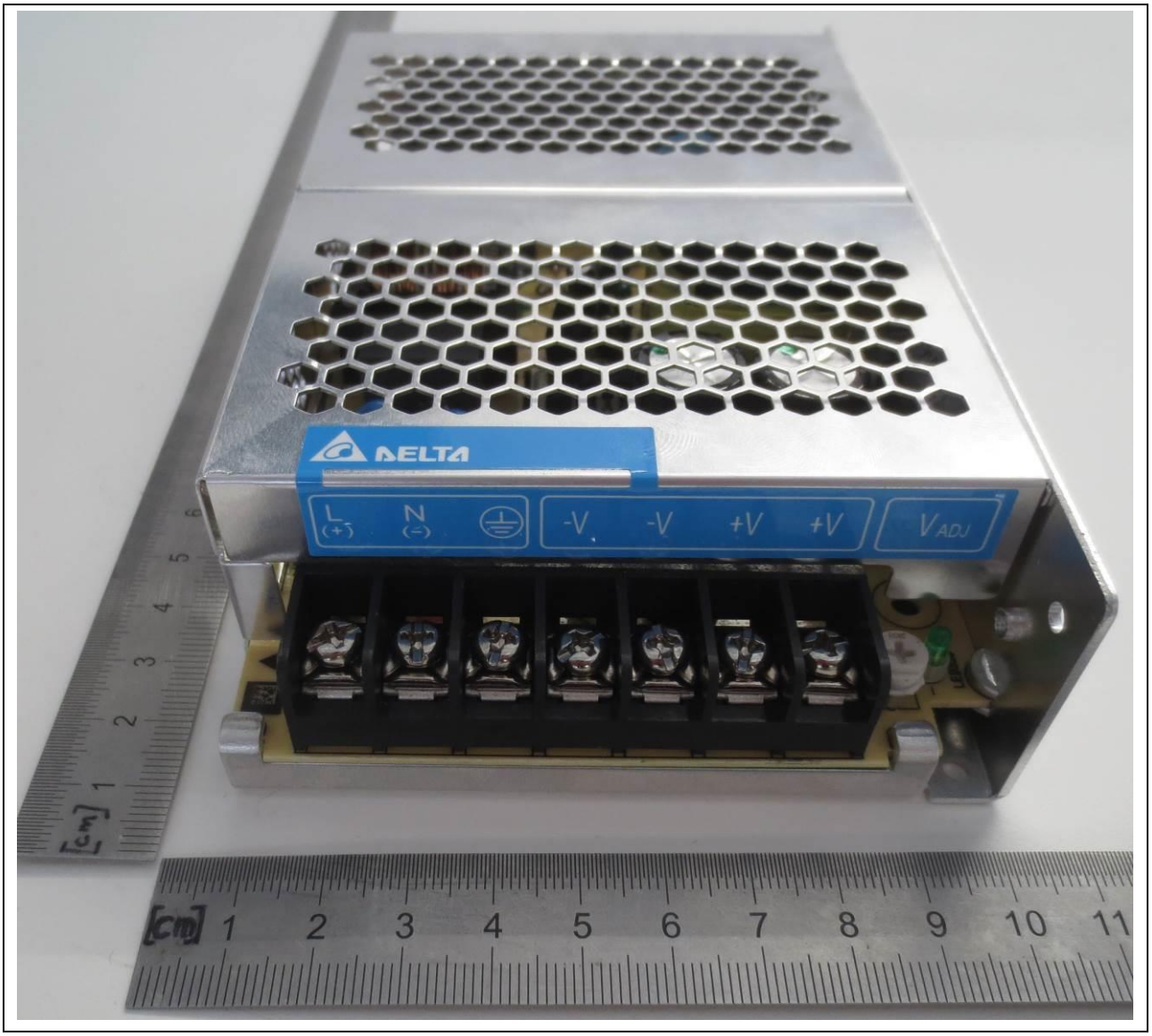
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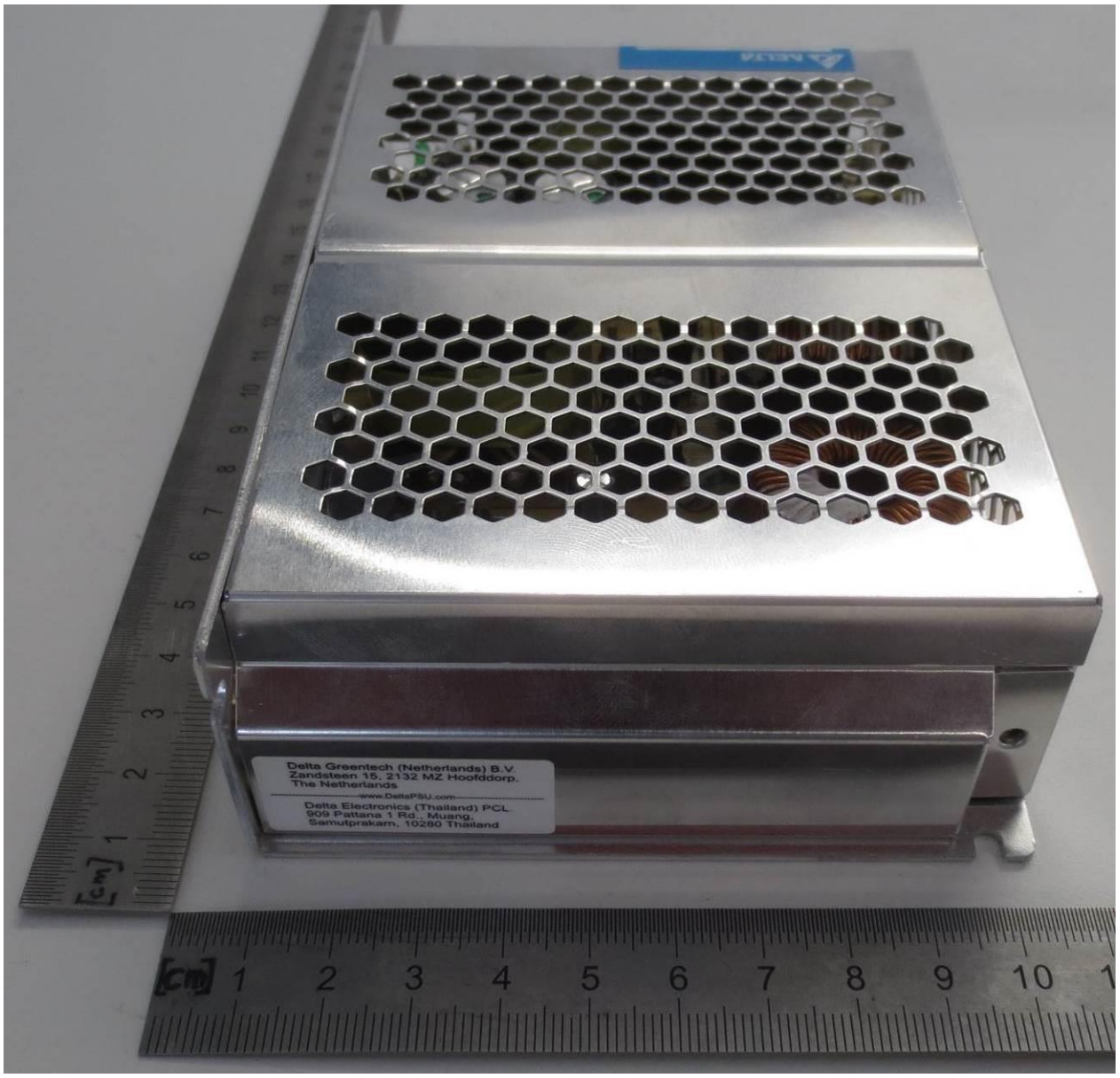
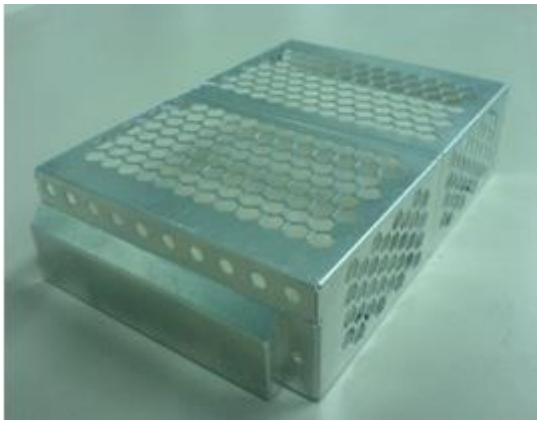
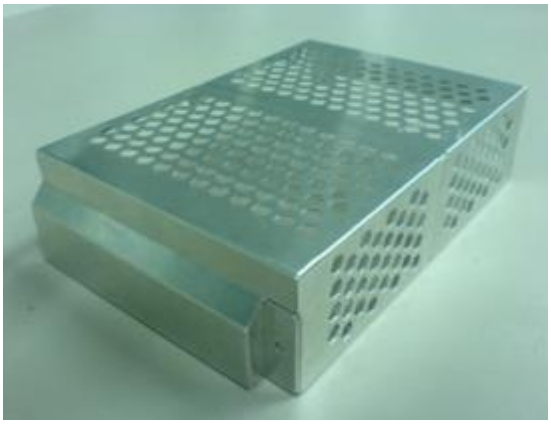


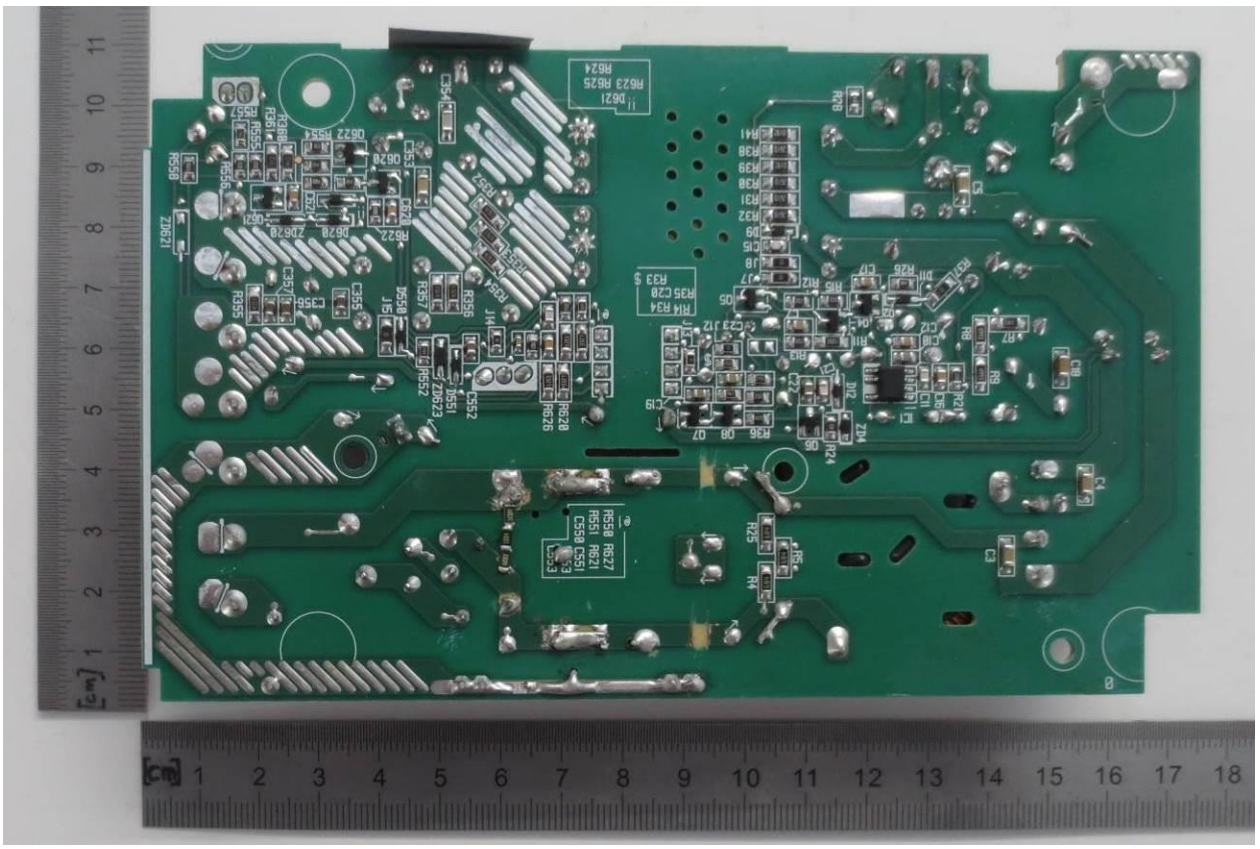


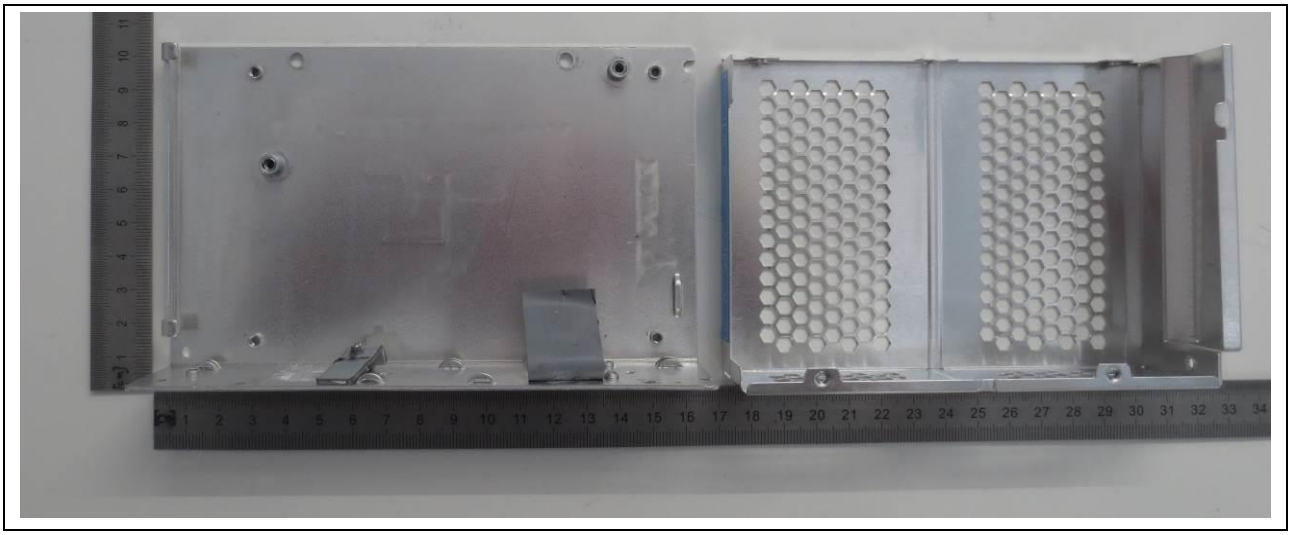
Case cover A



Case cover B

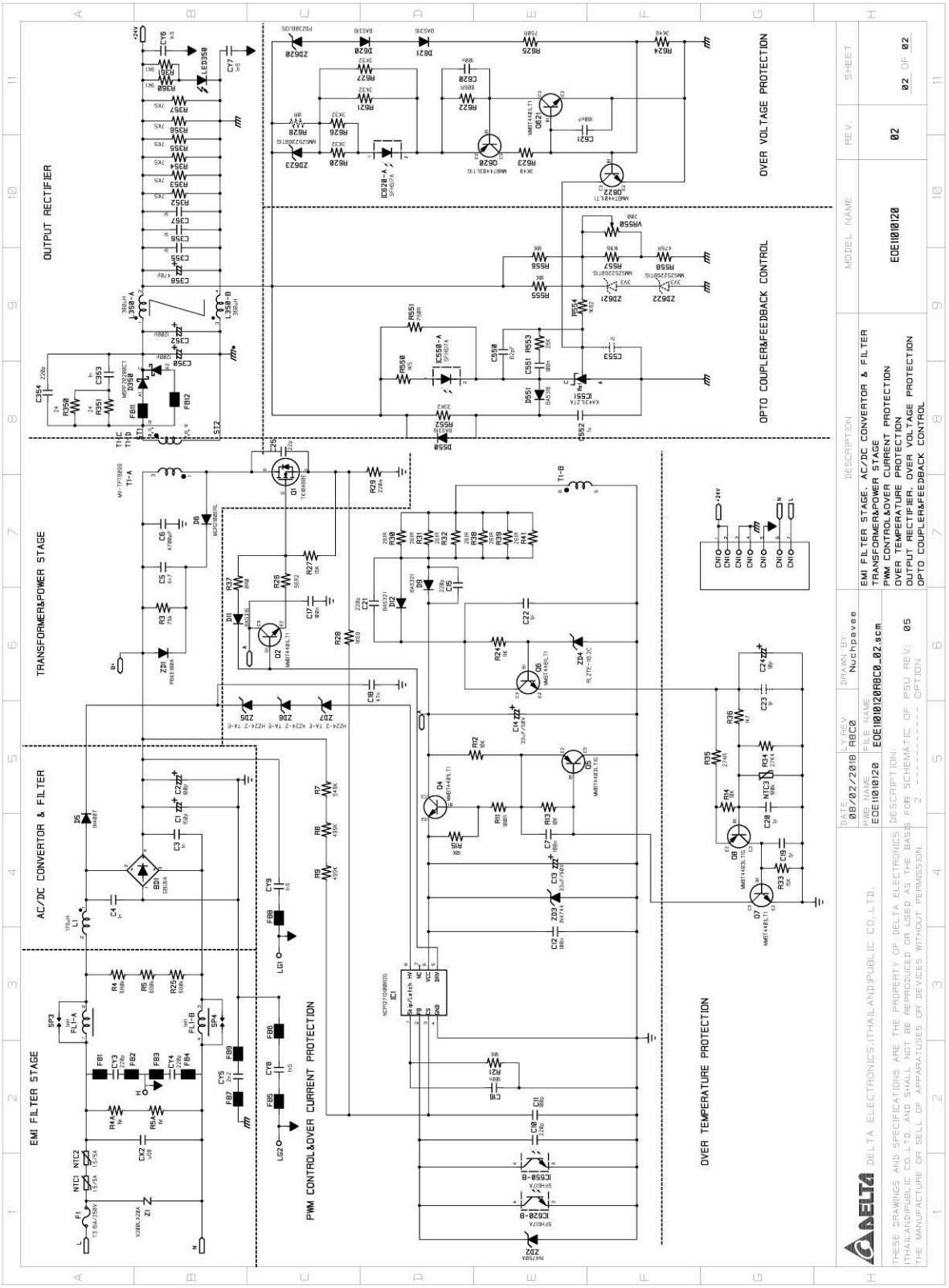

DELTA
EOE1101012B
2958033907
VR550
LED350





Enclosure No. 3

Technical documentation – schematics, layouts, transformer data (23 pages including this cover page)


EMI FILTER STAGE
AC/DC CONVERTOR & FILTER
TRANSFORMER&POWER STAGE
OUTPUT RECTIFIER
PWM CONTROL&OVER CURRENT PROTECTION
OVER TEMPERATURE PROTECTION
OPTO COUPLER&FEEDBACK CONTROL
OVER VOLTAGE PROTECTION
DELTA ELECTRONICS,(THAILAND)PUBLIC CO.,LTD.
EDE1101201R0C0_02.scm
EDE1101201R0
08/02/2018
R0C0
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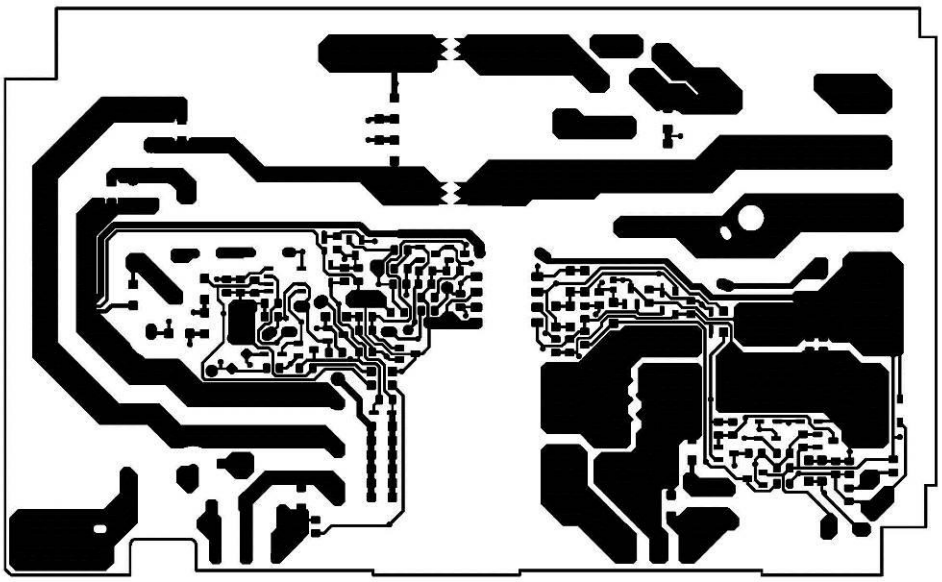
EDE1101201R0C0
02
02 OF 02
05
EMI FILTER STAGE, AC/DC CONVERTOR & FILTER
TRANSFORMER&POWER STAGE
PWM CONTROL&OVER CURRENT PROTECTION
OVER TEMPERATURE PROTECTION
OUTPUT RECTIFIER, OVER VOLTAGE PROTECTION
OPTO COUPLER&FEEDBACK CONTROL

SIZE:A4 SHEET 03 TO 04

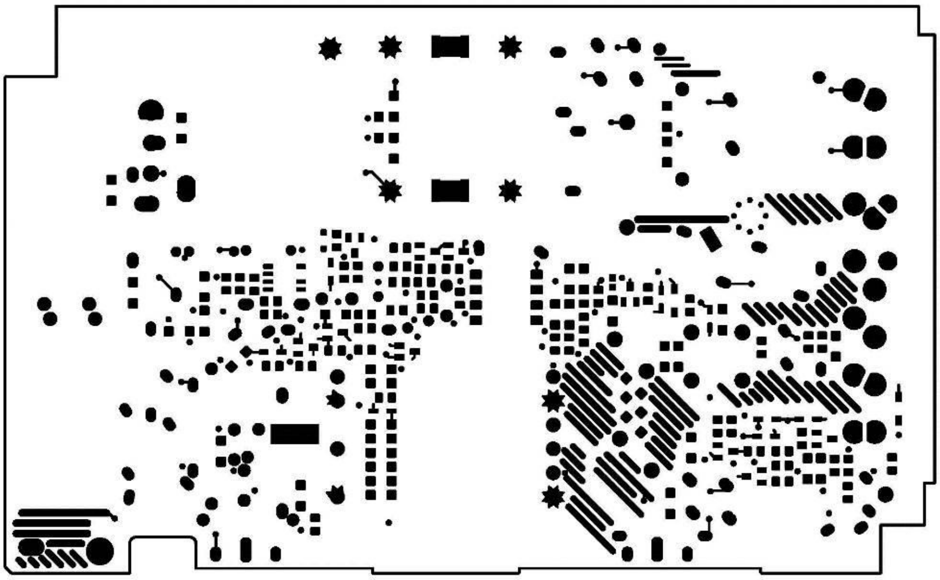
DELTA ELECTRONICS(THAILAND) PUBLIC COMPANY LIMITED	DRAWING NO: PT-EDE1010120 REV: B
	USED ON: EDE1010120 CODE: 0
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DELTA ELECTRONICS(THAILAND)PUBLIC CO.,LTD. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SELL OF APPARATUSES OR DEVICES WITHOUT PERMISSION.	MADE BY: NUCHPAVEE DATE:9/4/2018
	P/N: 2958233506
	SOLDER SIDE SIZE:1-1



Form: 06E2L20Z_00

SIZE:A4 SHEET 04 TO 05

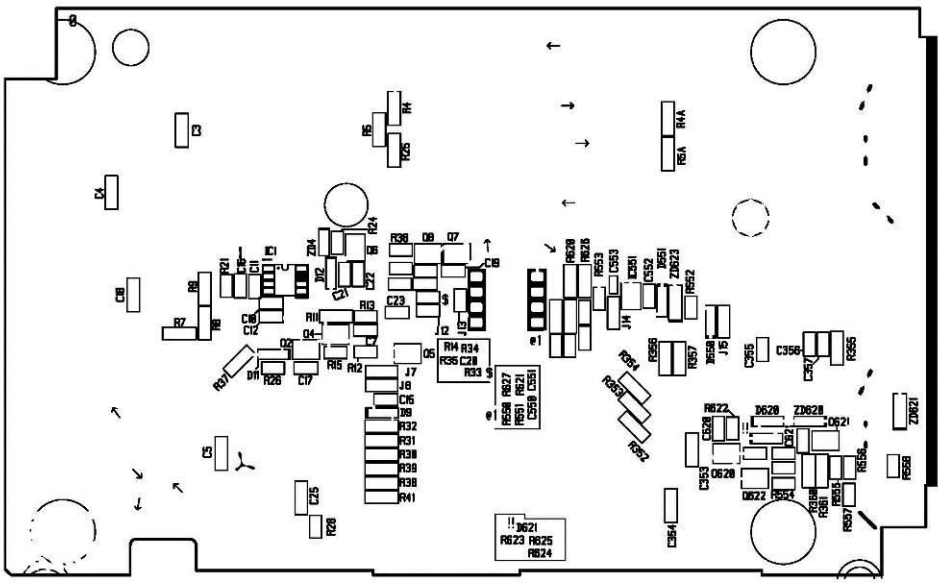
DELTA — DELTA ELECTRONICS(THAILAND) PUBLIC COMPANY LIMITED	DRAWING NO. PR-EOE1010120 REV: 0 USED ON: EOE1010120 CODE: 0
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DELTA ELECTRONICS(THAILAND)PUBLIC CO.,LTD. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SELL OF APPARATUSES OR DEVICES WITHOUT PERMISSION.	MADE BY: NUCHPAVEE DATE: 9/4/2018 P/N 2950033900 SOLDER SIDE SIZE 1-1



Form: 06E2L20Z_00

SIZE:A4 SHEET 05 TO 06

DELTA ELECTRONICS(THAILAND) PUBLIC COMPANY LIMITED	DRAWING NO: PW-EDE1101120 REV: B USED ON: EDE1101120 CODE: 0 MADE BY: NUCHPAVEE DATE: 9/4/2018 P/N: 2956233506 SOLDER SIDE SIZE:1-1
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DELTA ELECTRONICS(THAILAND)PUBLIC CO.,LTD. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SELL OF APPARATUSES OR DEVICES WITHOUT PERMISSION.	

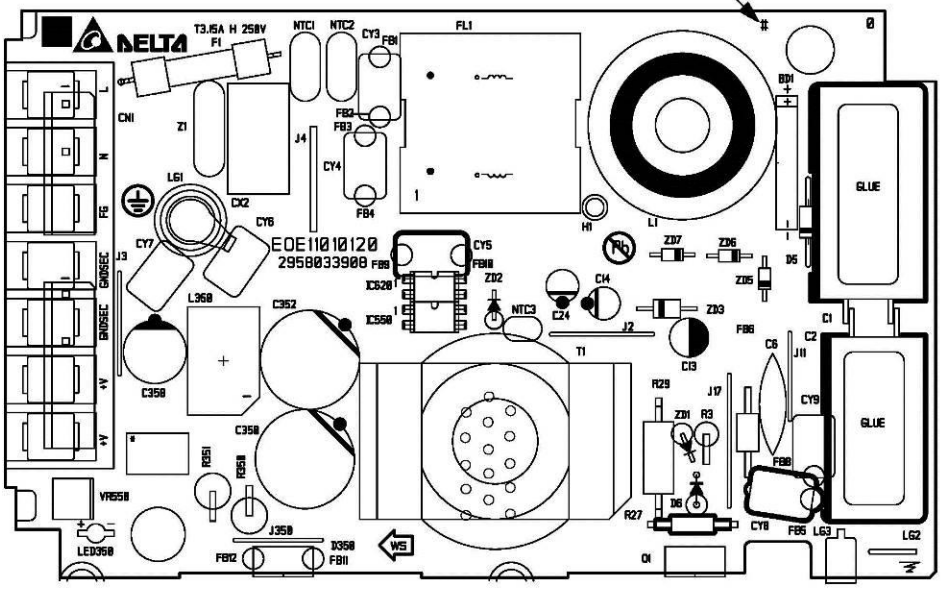


Form: 06E2L20Z_00

SIZE:A4 SHEET 06 TO 07

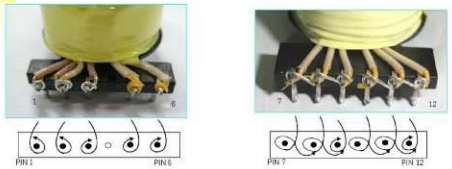
DELTA ELECTRONICS(THAILAND) PUBLIC COMPANY LIMITED	DRAWING NO: PW-I-EOE11010120 REV: 0 USED ON: EOE11010120 CODE: 0 MADE BY: NUC-PAVEE DATE: 3/4/2018 P/N: 2958033908 COMPONENT SIDE SIZE: 1:1
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DELTA ELECTRONICS(THAILAND)PUBLIC CO.,LTD. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SELL OF APPARATUSES OR DEVICES WITHOUT PERMISSION.	

Board Position Assignment



Form: 06E2L20Z_00

REV.	Description
00	SPEC ISSUE, (EOE11010120) (SANDWICH)
01	1. UPDATE SPECIFICATION – CHANGE CONNECTION WIRE OF SHIELD 1 & SHIELD 2 AND 7,8,9,10,11,12 FROM "TNC" TO "TEX-E" – CHANGE MECHANICAL DIMENSION, SHILED AND COPPER FOIL 2. UPDATE BOM DELETE – 4010520000 WIRE TNC ø0.32 – 3227500100 TUBE TEFLON 26*0.02#26 LW CLEAR – 4010670000 WIRE TNC ø0.6 – 3220134600 TAPE POLYESTER 13mm 1L#1350F-1 YEL – 3220132224 TAPE MYLAR 13mm CT-280 YEL – 3220130800 TAPE POLYESTER 20mm 1L#1350F-1 YEL – 3220313624 TAPE POLYESTER 20mm 1L CT-280 LIGHT YEL ADD – 4037190105 WIRE TEX-E ø0.32 YEL 0.12 MTR – 3227502600 TUBE TEFLON 0.508*0.15#24 LW CLEAR 0.030 MTR – 3220133300 TAPE POLEYESTER 26mm 1L#1350F-1 YEL DD 0% 0.090 MTR – 3220314224 TAPE POLEYESTER 26mm 1L CT-280 LIGHT YEL DD 100% 0.090 MTR – 3220134100 TAPE POLEYESTER 30mm 1L#1350F-1 YEL EE 0% 0.600 MTR – 3220134624 TAPE POLEYESTER 30mm 1L CT-280 LIGHT YEL EE 100% 0.600 MTR CHANGE USAGE – 3227503400 TUBE TEFLON 0.81*0.15#20 LW CLEAR FROM 0.080 MTR TO 0.240 MTR – 4037090105 WIRE TEX-E ø0.6 YEL FROM 2.030 TO 2.500 MTR ECN NO. 112TN0810072 DELTA DDCC-ChungLi Document is released 2016.07.07 16:03:52 +08'00'
02	1. ADD PIN 2 CUT OFF AFTER SOLDER 2. CHANGE COPPER FOIL DRAWING OF (10,11,12–7,8,9) AND OUTER SHIELD SEE PAGE 3 OF 4 – UPDATE BOM 1. Delete – 3199840500 BOBBIN LUG PM9820 PJ3324 11P 3.5±0.3 – 3220134100 TAPE POLYESTER 30mm 1L #1350F-1 YEL

REV.	Description
02	– 3220314624 TAPE POLYESTER 30mm 1L CT-280 LIGHT YEL 2. ADD – 3199840600 BOBBIN LUG PM9820 PJ3324 11P 1.000 PCE – 3220130900 TAPE POLYESTER 22mm 1L #1350F-1 YEL EE 0% 0.550 MTR – 3220313824 TAPE POLYESTER 22mm 1L CT-280 LIGHT YEL EE 100% 0.550 MTR 3. CHANGE USAGE – 3220131300 TAPE POLYESTER 28mm 1L #1350F-1 YEL FROM 0.220 MTR TO 0.250 MTR – 3220314424 TAPE POLYESTER 28mm CT-280B YEL FROM 0.220 MTR TO 0.250 MTR – 3227502600 TUBE PTFE 0.508*0.15 #24 LW CLEAR 150V FROM 0.030 MTR TO 0.040 MTR – 3227503400 TUBE PTFE 0.81*0.15 #20 LW CLEAR 300V FROM 0.240 MTR TO 0.20 MTR – 4181008800 COPPER FOIL 10mm*0.001" OH FROM 0.500 GRM TO 0.150 GRM – 4181016700 COPPER FOIL 12mm*0.005" OH FROM 7.100 GRM TO 8.000 GRM ECN NO. 112TN0812030
03	1. ADD NOTE 6.4 TRIMMING PROCESS:  FOR SUBCONTRACTOR 112TN1201071/JAN.24'12
04	1. VARNISH : TVB-2180T CHANGE TO BC-346-A (VACUUM) (CONSISTENCY 14±1 SEC) 2. BOM a. DELETE P/N 4020604100 (VARNISH COATING RESIN YEL TVB2180T) b. DELETE P/N 4020604200 (VARNISH HARDENER RESIN YEL TEC9652) c. ADD P/N 4020600700 (BC-346-A) 1.024 GRM d. ADD P/N 4020241300 (T-100) 0.610 GRM MC REQUEST/112TN1207011/JUL.04'12
05	1. WINDING STRUCTURE: SANDWICH 2. HI-POT TEST: PRI TO SEC 3000Vac CHANGE TO 3300Vac 3. BOM ASSEMBLY P/N 2831579500: – DEL 4020201200 (#425), 4020204800 (A83), 4020208200 (800 NO CLEAN) – DEL 4090006500, 4090050100 (SOLDER BAR) – 4020208300 (800 THINNER) FROM FS 0% 0.01 GRM CHANGE TO FG 0% 0.029 GRM – 4020241600 (QF2036) FROM 0.20 GRM CHANGE TO 0.029 GRM

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DELTA ELECTRONICS, INC.

DIMENSIONAL TOLERANCES

( )		( )		( )		( )		
<30	±0.25	DECIMALS		UP~100	±0.2		XX	XXX
>30~100	±0.35	X	±0.3	100~150	±0.25	0~10	±0.2	±0.05
>100~300	±0.5	XX	±0.2	150~200	±0.3	10~30	±0.3	±0.15
ABOVE 300	±0.8	XXX	±0.1	200~250	±0.35	ABOVE30	±0.5	±0.25
HOLES: ±0.05		ANGLES: ±0.5°		250~300	±0.4	ANGULAR DIMS ± 1/2 DEG		
				300~350	±0.45			
				350~400	±0.5			

SCALE | UNIT mm | USED ON

Drawn: JUN.27'16

Approved: JUN.30'16

THIRD ANGLE PROJECTION

A4 SIZE

DESCRIPTION: TRANSFORMER

PART NO.: 2870144200

REV. 11

SHEET 1 OF 7

FRAME NAME : DF-MAGA4H-1R00.DWG

EDM : F28700006898-101T

REV.	Description
05	3. BOM ASSEMBLY P/N 2831579500: – 4090051500 (SOLDER BAR) CHANGE TO 4090050500 (SOLDER BAR) – ADD 4020231800 (8158J) JK 100% 10.0 MG – ADD 4020507300 (9155E–4) IK 100% 0.5 MG – ADD 4020229100 (RF800T3) FS 0% 0.029 GRM – ADD 4020241500 (2000) FG 100% 0.029 GRM – ADD 4020235800 (8188) JK 0% 10.0 MG – ADD 4020507600 (9175) IK 0% 0.5 MG 4. BOM ASSEMBLY P/N 3941161000: – 3220131300 (#1350F–1 W=28) FROM FS 0% CHANGE TO TA 0% – 3220314424 (CT–280B W=28) FROM FS 100% CHANGE TO TA 100% 5. BOM ASSEMBLY P/N 3941161000 & 3941161100 & 3941161200: – DEL 4020201200 (#425), 4020204800 (A83), 4020208200 (800 NO CLEAN) – DEL 4090006500, 4090050100 (SOLDER BAR) – 4090051500 (SOLDER BAR) CHANGE TO 4090050500 (SOLDER BAR) – 4020208300 (800 THINNER) FROM FS 0% CHANGE TO FG 0% – 4020241600 (QF2036) FROM 0.20 GRM CHANGE TO 0.01 GRM – ADD 4020229100 (RF800T3) FS 0% 0.01 GRM – ADD 4020241500 (2000) FG 100% 0.01 GRM EE REQUEST/112TN1212031/DEC.12'12
06	1. MECHANICAL DIMENSION: DIM. B = 3.0±0.5 CHANGE TO $3.0^{+0.5}_{-0.3}$ EE REQUEST/112TN1212138/DEC.28'12
07	1. HI–POT TEST: 1SEC CHANGE TO 2SEC 2. MARKING: "DELTA" CHANGE TO "E115982" 3. DRAWING OF CORE: a. C2089 CHANGE TO C2089 OR EP399–1 b. G757 CHANGE TO G757 OR EP376FR 4. BOM ASSEMBLY P/N 2831579500: a. 4020117500 (2089–1 A) ADD ALT ZB 100 % b. 4020117600 (2089–1 B) ADD ALT ZB 100 % c. ADD 4023009600 (EP399–1) ZB 0 % 0.057 GRM d. ADD 4090153400 (SOLDER WIRE) NN 0 % 0.100 GRM

REV.	Description
07	e. ADD 4020155200 (EP376FR) 0.15 GRM 1.CUSTOMER REQUEST(IPS)/2.STANDARDIZED ECN NO.112TN1307219/JUL.30'13
08	1. NOTE 7.2: UNIT WEIGHT 66.6g/PC(REF.) CHANGE TO PACKAGE MUST BE IN COMPLIANCE WITH PACKING SPEC NO. : 3526981900 CARTON NO. : 3512142900 66.6g/PC 10.153Kg/CARTON 128PCS/CARTON 2. REVISE THE DRIWING OF CORE: G757 OR EP376FR CHANGE TO EP376FR 3. BOM: (REVISE THE ASSEMBLY P/N:2831579500) a. 4020231800 (THINNER ADDITIVE) FROM JK 100% 10.000 MG CHANGE TO JK 0% 0.010 GRM b. 4020235800 (THINNER 8188J) FROM JK 0% 10.000 MG CHANGE TO JK 100% 0.010 GRM c. 4020507300 (INK IDENTIFY) FROM IK 100% CHANGE TO IK 0% d. 4020507600 (INK BLK 9175) FROM IK 0% CHANGE TO IK 100% e. 4090104100 & 4090152400 & 4090153400 (SOLDER WIRE) FROM 0.100 GRM CHANGE TO 0.128 GRM f. ADD 3526981900 (PML) YG 0% 1.00 PCS g. ADD 4020101400 (EPOXY GRAY 2089) ZB 100% 0.057GRM h. ADD 4090153300 (SOLDER WIRE 0.8) NN 0% 0.128 GRM i. DEL 4020117500 (2089–1 A) j. DEL 4020117600 (2089–1 B) 4. BOM: (REVISE THE ASSEMBLY P/N: 3941161000 & 3941161200) a. ADD 4090153300 (SOLDER WIRE 0.8) ZW 0% 0.022 GRM b. ADD 4090153400 (SOLDER WIRE 1.0) ZW 0% 0.022 GRM c. 4090104100 & 4090104200 & 4090152400 & 4090152500 FROM 0.15 GRM CHANGE TO 0.022 GRM 5. BOM: (REVISE THE ASSEMBLY P/N: 3941161100) a. ADD 4090153300 (SOLDER WIRE 0.8) ZW 0% 0.342 GRM b. ADD 4090153400 (SOLDER WIRE 1.0) ZW 0% 0.342 GRM c. 4090104100 & 4090104200 & 4090152400 & 4090152500 FROM 0.15GRM CHANGE TO 0.342 GRM 6. BOM: (REVISE P/N: 2870144200) a. ADD 3512142900 (CARTON) YY 0% 6.25TP FACTORY REQUEST (RELLEN.ZHAO (CZ))/112TN1311046/NOV.14'13
09	1. SPECIFICATION OF COPPER (10,11,12–7,8,9): a. CHANGE THE SHAPE OF START & END TO CURVE CUTTING b. THE LENGTH = 528.0mm(REF.) CHANGE TO 533.0±3.0

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DIMENSIONAL TOLERANCES

( ) DECIMALS: X : ±0.3; XX : ±0.2; XXX : ±0.1; ANGLES: ±0.5°; HOLES: ±0.05

( ) <30 : ±0.05; >30~100 : ±0.35; >100~300 : ±0.5; ABOVE 300 : ±0.8

( ) UP~100 : ±0.2; 100~150 : ±0.25; 150~200 : ±0.3; 200~250 : ±0.35; 250~300 : ±0.4; 300~350 : ±0.45; 350~400 : ±0.5

( ) XX XXX; 0~10 ±0.2 ±0.08; 10~30 ±0.3 ±0.15; ABOVE30 ±0.5 ±0.25; ANGULAR DIMS ± 1/2 DEG

SCALE | UNIT mm | USED ON

Drawn: JUN.27'16

Approved: JUN.30'16

THIRD ANGLE PROJECTION

A4 SIZE

DESCRIPTION: TRANSFORMER

PART NO.: 2870144200

SHEET 2 OF 7

REV. 11

FRAME NAME : DF-MAGA4H-1R00.DWG

1 2 3 4

EDM : F28700006898-101T

REV.	Description	REV.	Description
09	c. STICK T17 TAPE 2PCE ON START & END 2. BOM ASSEMBLY P/N 3941161100: a. 3220130500 (#1350F-1 W=17) FROM 0.06 MTR CHANGE TO 0.12 MTR b. 3220313024 (CT-280 W=17) FROM 0.06 MTR CHANGE TO 0.12 MTR 3. BOM ASSEMBLY P/N 2831579500: a. 4090050500 (SOLDER BAR) FROM 0.235 GRM CHANGE TO 0.242 GRM b. 4090051800 (SOLDER BAR) FROM 0.235 GRM CHANGE TO 0.242 GRM PE ENGINEER REQUEST(Ekkachai.B) 112TN1402108/FEB.24'14 ECR NO. 112TR1402025		
10	1. ADD TR(1-2) & (2-3): 495±3% mV 2. MECHANICAL DIMENSION: a. STEP 1~3: ADD "AFTER DIP VARNISH" b. ADD PCB FIXTURE HOLE : ø1.4 3. CORE GAP: ADD "(PJ33/19)" 4. BOM ASSEMBLY P/N 2831579500: 3526981900 (PML) ADD YG 100% For CZ BOM 5. BOM P/N 2870144200: 3512142900 (CARTON) ADD YY 100% For CZ BOM CZ FACTORY REQUEST(YIFAN.LIU)/112TN1404007/APR.04'14		
11	BOM REVISE ASSEMBLY P/N 2831579500: a. 4154040500 (FSS-33*19B PDLT 2HM5) ADD ALT KK 0 % b. 4154040600 (FSS-33*24B PDLT 2HM5) ADD ALT KK 0 % c. ADD 4154045700 (PJ33/19 NH2C) LL 100 % 0.50 NPR d. ADD 4154046800 (PJ3324 NH2C) LL 100 % 0.50 NPR 1. MATERIAL IS EOL(2HM5) 2. ADD SECOND SOURCE(NH2C)/112TN1606089/JUN.27'16		

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DELTA ELECTRONICS, INC.

DIMENSIONAL TOLERANCES

( ) DECIMALS	( )	( )	( ) XX	XXX
<30 : ±0.25	UP~100 : ±0.2			
>30~100 : ±0.35	100~150 : ±0.25			
>100~300 : ±0.5	150~200 : ±0.3	0~10	±0.2	±0.08
ABOVE 300 : ±0.8	200~250 : ±0.35	10~20	±0.3	±0.15
	250~300 : ±0.4	ABOVE20	±0.5	±0.25
	300~350 : ±0.45			
	350~400 : ±0.5			

HOLES ±0.05 ANGLES±0.5 ANGULAR DIMS ± 1/2 DEG

SCALE | UNIT mm | USED ON

Drawn: JUN.27'16

Approved: JUN.30'16

THIRD ANGLE PROJECTION

A4 SIZE

DESCRIPTION: TRANSFORMER

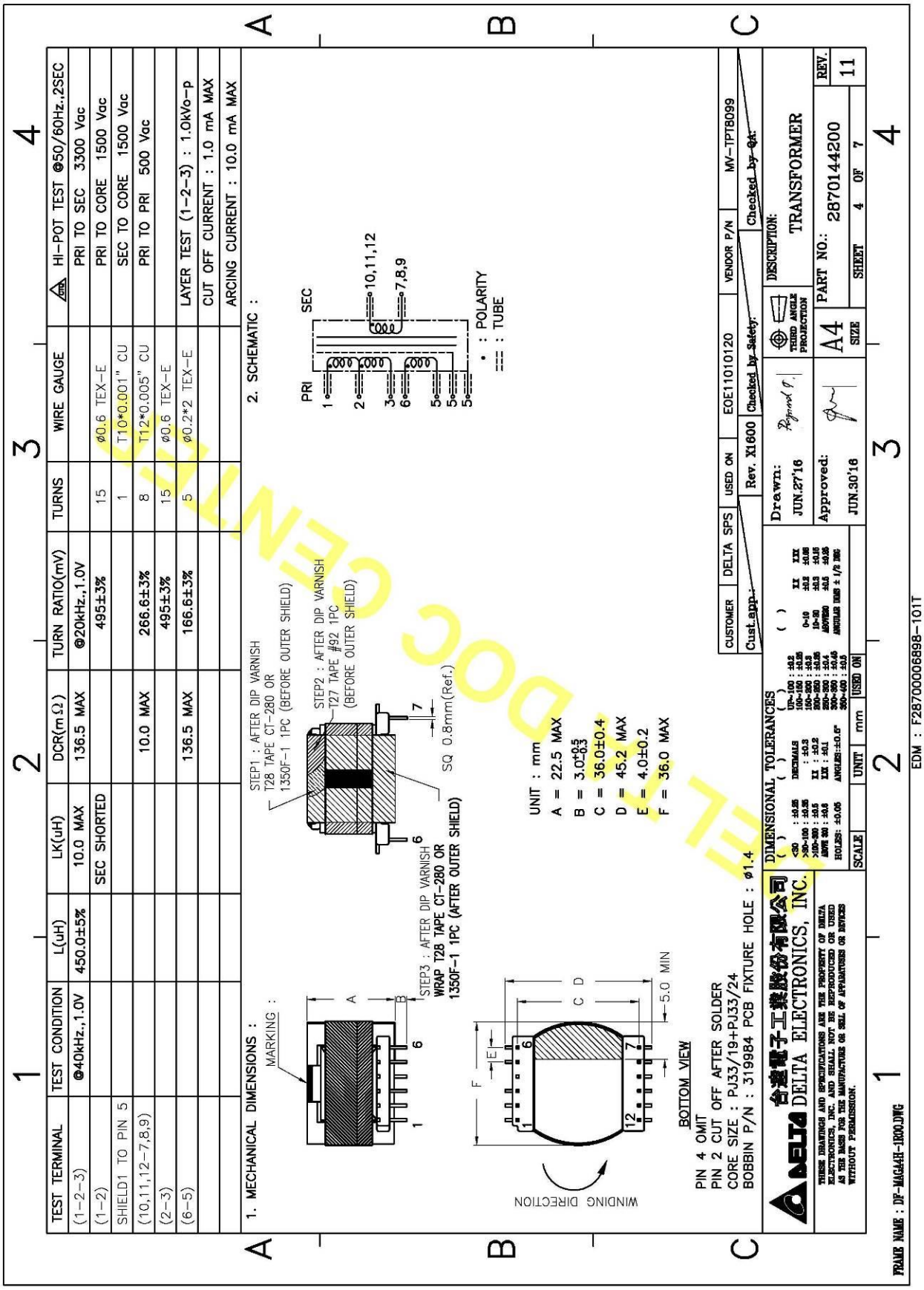
PART NO.: 2870144200

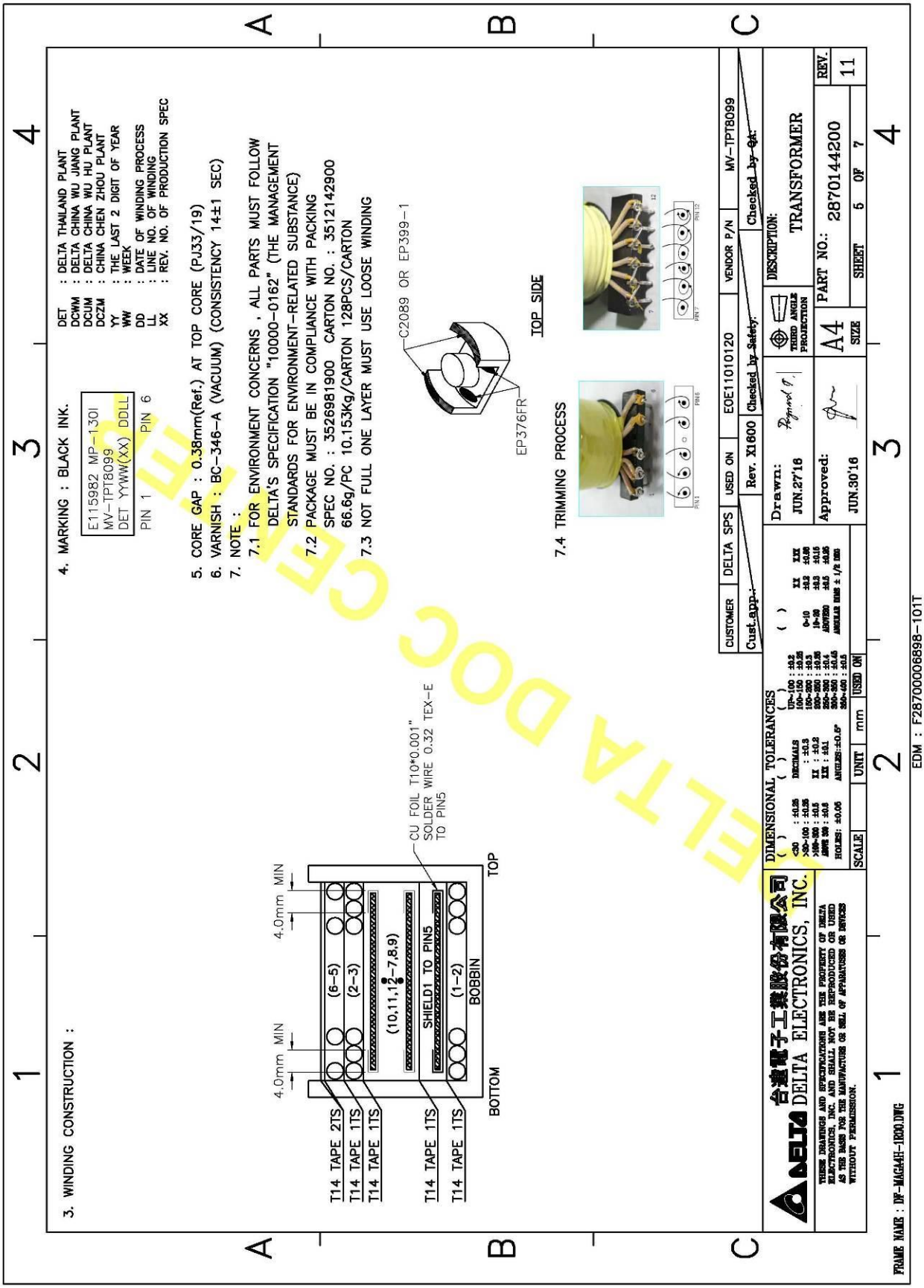
REV. 11

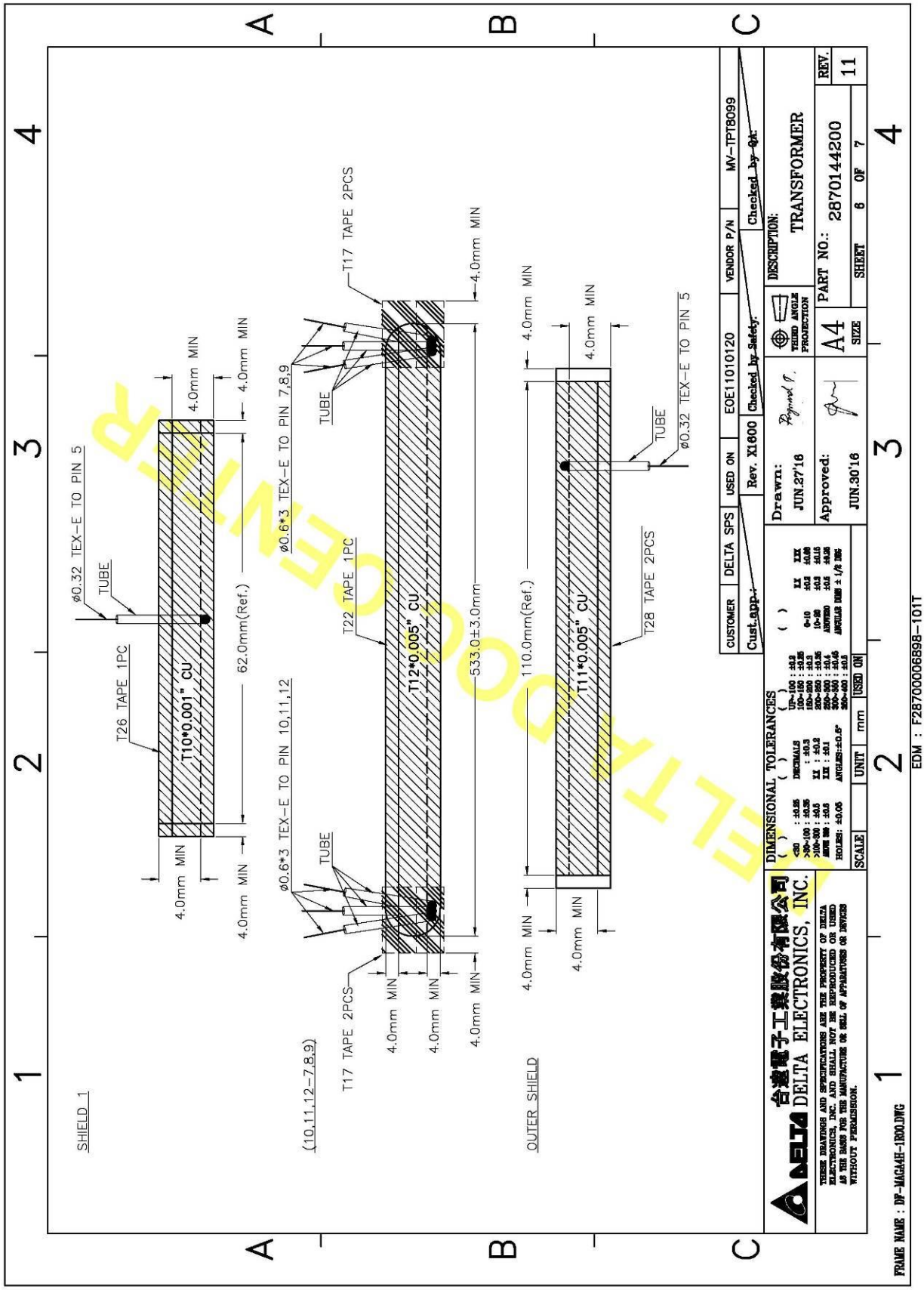
SHEET 3 OF 7

FRAME NAME : DF-MAGA4H-1R00.DWG

EDM : F28700006898-101T







MATERIAL LIST :

NO.	PART	MANUFACTURER	MANUFACTURER PART NO.	DESCRIPTION	UL FILE NO.
1	MAGNET WIRE	PACIFIC-THAI ELECTRIC WIRE & CABLE CO.,LTD	MW-75C 130°C UEW-U	POLYURETHANE	E142108
			MW-28C 130°C UEW-NY	POLYURETHANE OVERCOAT POLYAMIDE	
		FURUKAWA ELECTRIC CO.,LTD	130°C NO.TEX-E	TRIPLE INSULATED WINDING PROVIDING REINFORCED	E206440
		HSIEH HO INDUSTRY	TNC WIRE	TINNED CU WIRE	N/A
2	TAPE	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	130°C CTI II TAPE NO.1350F-1(YELLOW)	POLYESTER FILM TAPE 0.063mm THICKNESS	E17385
		HUIZHOU YAHUA STICKING TAPE CO.,LTD	130°C CTI I TAPE NO.CT (YELLOW)	POLYESTER FILM TAPE 0.055mm THICKNESS	E165111
		SYMBIO INC.	130°C CTI II TAPE NO.35660(YELLOW)	POLYESTER FILM TAPE 0.055 mm THICKNESS	E50292
3	VARNISH	JOHN C DOLPH CO	BC-346-A		E317427
		KYOCERA CHEMICAL CORP	TVB2180T		E83702
4	BOBBIN	SUMITOMO BAKELTE CO.,LTD.	150°C 94V-0 PM-9630	PHENOLIC (Thk.0.30 mm MIN)	E41429
		SUMITOMO BAKELTE CO.,LTD.	150°C 94V-0 PM-9820	PHENOLIC (Thk.0.30 mm MIN)	E41429
5	SLEEVING	GREAT HOLDING INDUSTRIL CO.,LTD.	200°C VW-1 TFL-150V	PTFE	E156256
6	TAPE	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	180°C CTI IIIb TAPE NO.92	POLYESTER FILM TAPE 0.080 mm THICKNESS	E17385

CUSTOMER	DELTA SPS	USED ON	EOE11010120	VENDOR P/N	MV-TPT8099
Cust.app.:		Rev. X1600	Checked by Safety:		Checked by QA:

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DELTA ELECTRONICS, INC.

DIMENSIONAL TOLERANCES

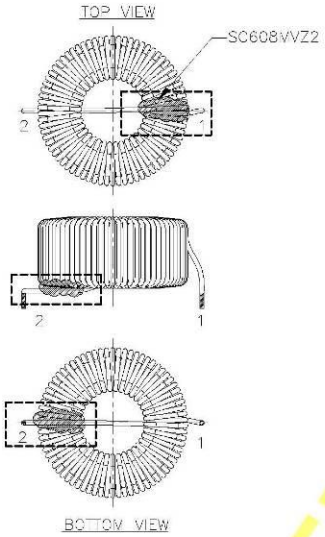
( )		( )		( )		( )		
<30	: ±0.25	DECIMALS		UP~100	: ±0.2		XX	XXX
>30~100	: ±0.35		: ±0.3	100~150	: ±0.25	0~10	±0.2	±0.05
>100~300	: ±0.5	XX	: ±0.2	150~200	: ±0.3	10~20	±0.3	±0.15
ABOVE 300	: ±0.8	XXX	: ±0.1	200~250	: ±0.35	ABOVE20	±0.5	±0.25
HOLES: ±0.05		ANGLES: ±0.5°		250~300	: ±0.4	ANGULAR DIMS ± 1/2 DEG		
				300~350	: ±0.45			
				350~400	: ±0.5			

SCALE		UNIT	mm	USED ON	

Drawn:	THIRD ANGLE PROJECTION	DESCRIPTION:
JUN.27'16		TRANSFORMER
Approved: JUN.30'16	A4 SIZE	PART NO.: 2870144200
		SHEET 7 OF 7
		REV. 11

FRAME NAME : DF-MAG44H-1R00.DWG

EDM : F28700006898-101T

REV.	Description
00	SPEC ISSUE, (EOE11010120, L1)
01	1. ADD MAT'L IN 2835238700 P/N 4145050047 CORE IRON T26.9*14.5*11.1 C -26 U75 AA0% 1.000 PCE WINAI/112TN1009019/SEP.14'10
02	1. BOM – DELETE P/N 4020118800 ADHESIVE HOT MELT FH-7063 CHAM DION – ADD P/N 4020166800(ADHESIVE SC608MVZ2) 0.650 GRM 2. CHANGE EPOXY FIX WIRE FROM "FH-7063" TO BE "SC608MVZ2" AND FIX START & FINISH PIN AS BELOW.  ECR NO. 112TR1108001 IE REQUEST BY SARAWUT 112TN1108087/AUG.17'11

REV.	Description
03	SPEC CORE SOURCE : "KST106-26" CHANGE TO "KST106-26-200" BOM ALT GROUP 4145050047 KST106-26 CORE IRON T26.9*14.5*11.1 YEL/WHT AA 100% CHANGE TO AA 0% ADD 4145050447 KST106-26-200 CORE IRON T26.9*14.5*11.1 YEL U75 AA 100% 1.000 PCE Upgrade coating temperature withsdanding. 112TN1611047/NOV.11'16

DDCC-ChungLi
Document is released
2016.11.23 20:09:33 +08'00'

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

DIMENSIONAL TOLERANCES

( )		( )		( )		( )		
<30	±0.25	DECIMALS		UP~100	±0.2		X.X	X.XX
>30~100	±0.35	X	±0.3	100~150	±0.25	0~10	±0.2	±0.05
>100~300	±0.5	XX	±0.2	150~300	±0.3	10~80	±0.3	±0.15
ABOVE 300	±0.6	XXX	±0.1	300~250	±0.35	ABOVE80	±0.5	±0.25
HOLES: ±0.05		ANGLES: ±0.5°		250~300	±0.4	ANGULAR DIMS ± 1/2 DEG		
				300~350	±0.45			
				350~400	±0.5			

SCALE | UNIT mm | USED ON

Drawn: NOV.14'16
Approved: NOV.17'16

THIRD ANGLE PROJECTION

DESCRIPTION: CHOKE

A4 SIZE

PART NO.: 2876131300

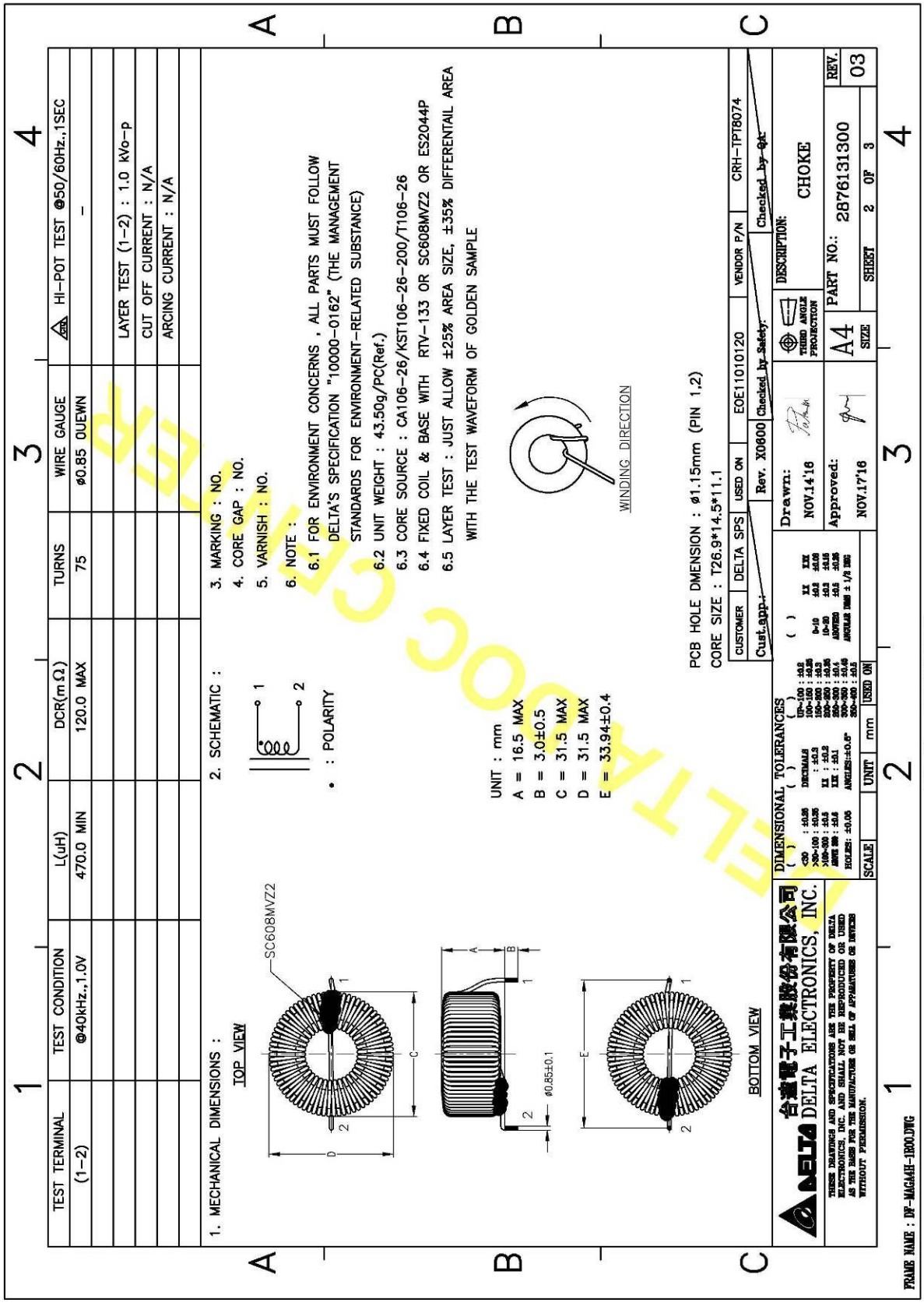
REV. 03

SHEET 1 OF 3

FRAME NAME : DF-MAG44H-1R00.DWG

1 2 3 4

EDM NO. : F28700006918


TEST TERMINAL | TEST CONDITION | L(uH) | DCR(mΩ) | TURNS | WIRE GAUGE | HI-POT TEST @50/60Hz.,1SEC
(1-2) | @40kHz.,1.0V | 470.0 MIN | 120.0 MAX | 75 | ø0.85 OUEWN | -
LAYER TEST (1-2) : 1.0 kVo-p
CUT OFF CURRENT : N/A
ARCING CURRENT : N/A
1. MECHANICAL DIMENSIONS :
TOP VIEW
SC608MVZ2
BOTTOM VIEW
2. SCHEMATIC :
• : POLARITY
3. MARKING : NO.
4. CORE GAP : NO.
5. VARNISH : NO.
6. NOTE :
6.1 FOR ENVIRONMENT CONCERNS , ALL PARTS MUST FOLLOW DELTA'S SPECIFICATION "10000-0162" (THE MANAGEMENT STANDARDS FOR ENVIRONMENT-RELATED SUBSTANCE)
6.2 UNIT WEIGHT : 43.50g/PC(Ref.)
6.3 CORE SOURCE : CA106-26/KST106-26-200/T106-26
6.4 FIXED COIL & BASE WITH RTV-133 OR SC608MVZ2 OR ES2044P
6.5 LAYER TEST : JUST ALLOW ±25% AREA SIZE, ±35% DIFFERENTAIL AREA WITH THE TEST WAVEFORM OF GOLDEN SAMPLE
UNIT : mm
A = 16.5 MAX
B = 3.0±0.5
C = 31.5 MAX
D = 31.5 MAX
E = 33.94±0.4
ø0.85±0.1
WINDING DIRECTION
PCB HOLE DMENSION : ø1.15mm (PIN 1,2)
CORE SIZE : T26.9*14.5*11.1
CUSTOMER | DELTA SPS | USED ON | EOE11010120 | VENDOR P/N | CRH-TPT8074
Cust.app.: | Rev. X0600 | Checked by Safety:
Drawn: NOV.14'16
Approved: NOV.17'16
Checked by QC:
DESCRIPTION: CHOKE
PART NO.: 2876131300
REV. 03
SIZE A4
SHEET 2 OF 3
台達電子工業股份有限公司
DELTA ELECTRONICS, INC.
DIMENSIONAL TOLERANCES
SCALE | UNIT mm | USED ON
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FRAME NAME : DF-MAGA4H-1B00.DWG
EDM NO. : F2870000691B
DELTA CONFIDENTIAL

MATERIAL LIST :

NO	PART	MANUFACTURER	MANUFACTURER PART NO	DESCRIPTION	UL FILE NO.
1	MAGNET WIRE	PACIFIC–THAI ELECTRIC WIRE & CABLE CO.,LTD	MW–75C 130°C UEW–U	POLYURETHANE	E142108
			MW–28C 130°C UEW–NY	POLYURETHANE OVERCOAT POLYAMIDE	
		JUNG SHING WIRE CO.,LTD.	MW28–C UEY–2 130°C	POLYURETHANE OVERCOAT POLYAMIDE	E174837
			MW75C UEW–4 130°C	POLYURETHANE	
2	ADHESIVE	SONY CHEMICAL CORP.	SC608MVZ2 94V–0	UNSATURATED POLYESTER (UP)	E63260
		CANADA SILICONE TNC	ES2044P 94V–0	SILICONE ROOM TEMPERATURE VULCANISING(RTV)	E223694
		MOMENTIVE	RTV 133 94V–0 Thk.3.4mm MIN	SILICONE ROOM TEMPERATURE VULCANISING(RTV)	E36952

CUSTOMER	DELTA SPS	USED ON	EOE11010120	VENDOR P/N	CRH–TPT8074
Cust.app.:		Rev. X0600	Checked by Safety:		Checked by QA:

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DIMENSIONAL TOLERANCES

( ) <30 : ±0.25; >30~100 : ±0.35; >100~300 : ±0.5; ABOVE 300 : ±0.6; HOLES: ±0.05

( ) DECIMALS : ±0.3; X.X : ±0.2; X.XX : ±0.1; ANGLES: ±0.5°

( ) UP~100 : ±0.2; 100~150 : ±0.25; 150~200 : ±0.3; 200~250 : ±0.35; 250~300 : ±0.4; 300~350 : ±0.45; 350~400 : ±0.5

( ) X.X / X.XX: 0~10 ±0.2 ±0.05; 10~20 ±0.3 ±0.15; ABOVE20 ±0.5 ±0.25; ANGULAR DIMS ± 1/2 DEG

SCALE | UNIT mm | USED ON

Drawn: NOV.14'16

Approved: NOV.17'16

THIRD ANGLE PROJECTION

DESCRIPTION: CHOKE

A4 SIZE

PART NO.: 2876131300

REV. 03

SHEET 3 OF 3

FRAME NAME : DF-MAGA4H-1R00.DWG

EDM NO. : F28700006918

REV.	Description	REV.	Description
00	SPEC ISSUE, (EOE11010120, FL1) (EASY) DDCC-ChungLi Document is released 2014.03.07 10:38:16 +08'00'	03	2. BOM: – ADD 4020155200 (EP376FR) CC 100% 0.15 GRM – 4020116500 (EPOXY G757) ADD ALT CC 0% EE REQUEST/112TN1301006/JAN.09'13
01	1. UPDATE SPECIFICATION – CHANGE DIM "B" FROM 4.0±1.0 TO 3.0±0.5 – CHANGE BASE P/N 3171062300 TO P/N 3171062100 2. UPDATE BOM – DEL 3171062300 BASE LUG*4'ASSY L1:3.5+–0.5 – DEL 4157012900 CORE MN–ZN SP28 28.2*28.2*5 TL10 U10000 – DEL 4157013600 CORE MN–ZN SP28 28.4*28.4*5 R10K U10000 – ADD 3171062100 BASE LUG PM9820 RM10 6P L1=3.0+0.4/–0 94 – DEL ALT GROUP AA 0% OF 4157011800 ECN NO. 112TN0810013	04	1. MECHANICAL DIMENSION: G757 OR EP376FR CHANGE TO G757*2 OR EP376FR*2 2. BOM : a. 4010770000 (WIRE CU 0.75 2UEW) FROM 18.50 GRM CHANGE TO 16.92 GRM b. 4011060000 (WIRE CU 0.75 2UEWN) FROM 18.50 GRM CHANGE TO 16.92 GRM c. 4020231800 (8158J) FROM JK 100% CHANGE TO JK 0% d. 4020235800 (8188J) FROM JK 0% CHANGE TO JK 100% e. 4020507300 (9155E–4) FROM IK 100% CHANGE TO IK 0% f. 4020507600 (9175) FROM IK 0% CHANGE TO IK 100% CORRECTION/112TN1310143/112TR1310036/NOV.05'13
02	1. DELETE MAT'L IN BOM P/N 3131580000 BOBBIN ROLL PBT 94V–0 2. ADD MAT'L IN BOM P/N 3132045600 BOBBIN 1403G6 SP28 94V0 NAT : 2.000 PCE ECR NO. 112TR0906012 ECN NO. 112TN0906054	05	1. NOTE 6.2: UNIT WEIGHT 33.85g/PC(REF.) CHANGE TO PACKAGE MUST BE IN COMPLIANCE WITH PACKING SPEC NO.: 3526990800 CARTON NO.: 3510050100 33.85g/PC 8.385Kg/CARTON 200PCS/CARTON 2. BOM: (REVISE P/N: 2875098500) a. MOVE ALL PARTS INTO ASSEMBLY P/N 2831587200 b. ADD 2831587200 (BOBBIN+WIRE ASSY 2875098500) 1.00 PCE c. ADD 3510050100 (CARTON) YY 0% 5.0 TP 3. BOM: (REVISE THE ASSEMBLY P/N: 2831587200) a. 4020231800 (THINNER ADDITIVE) FROM 10.000 MG CHANGE TO 0.01 GRM b. 4020235800 (THINNER 8188J) FROM 10.000 MG CHANGE TO 0.01 GRM c. 3526305500 (PML) CHANGE TO 3526990800 (PML) FACTORY REQUEST (RELLEN.ZHAO (CZ))/112TN1311047/NOV.14'13
03	1. MECHANICAL DIMENSION: – DIM. B = 3.0±0.5 CHANGE TO 3.0±0.5 – G757 CHANGE TO G757 OR EP376FR 2. BOM: – DEL 4020201200 (#425), 4020204800 (A83), 4020208200 (800 NO CLEAN) – DEL 4020500500 (INK NON–CLEA BLK) – DEL 4090006500, 4090050100 (SOLDER BAR) – 4020208300 (800 THINNER) FROM FS 0% 0.01 GRM CHANGE TO FG 0% 0.029 GRM – 4020241600 (QF2036) FROM 0.20 GRM CHANGE TO 0.029 GRM – 4090051500 (SOLDER BAR) CHANGE TO 4090050500 (SOLDER BAR) – 4020231800 (8158J) FROM IK 100% 3.0 MG CHANGE TO JK 100% 10.0 MG – ADD 4020229100 (RF800T3) FS 0% 0.029 GRM – ADD 4020241500 (2000) FG 100% 0.029 GRM – ADD 4020235800 (8188) JK 0% 10.0 MG – ADD 4020507600 (9175) IK 0% 0.5 MG	06	IN BOM – ADD IN 2831587200 BOBBIN+WIRE ASSY 2875098500 : 3131580000 BOBBIN ROLL PBT V–0 FF 100% 1.000 PCE – ADD ALT GROUP IN 2831587200 BOBBIN+WIRE ASSY 2875098500 : 3132045600 BOBBIN 1403G6 SP28 V–0 NAT FF 0% FACTORY DELTA WJ REQUEST/112TN1401066/JAN.22'14

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

DIMENSIONAL TOLERANCES

( )		( )		( )		( )		
<30	±0.25	DECIMALS		UP~100	±0.2		X.X	X.XX
>30~100	±0.35	X	±0.3	100~150	±0.25	0~10	±0.2	±0.08
>100~300	±0.5	XX	±0.8	150~200	±0.3	10~20	±0.3	±0.15
ABOVE 300	±0.6	XXX	±0.1	200~250	±0.35	ABOVE20	±0.5	±0.25
HOLES:	±0.05	ANGLES:	±0.5°	250~300	±0.4	ANGULAR DIMS ± 1/2 DEG		
				300~350	±0.45			
				350~400	±0.5			

SCALE | | UNIT | mm | USED ON

Drawn: MAR.06'14 Tanwchan

Approved: MAR.06'14

THIRD ANGLE PROJECTION

DESCRIPTION: LINE FILTER

A4 SIZE

PART NO.: 2875098500 REV. 07

SHEET 1 OF 3

FRAME NAME : DF–MAGA4H–1R00.DWG

EDM : F28700006917–101T

REV.	Description	REV.	Description
07	– UPDATE SPEC ADD HOLE DIMENSION : 1.1 mm IN BOM – ADD IN 2831587200 3526990800 PML 2870232500 1.00 PCE YG 0% FOR DET BOM AND YG 100% FOR CZ BOM – ADD IN 2875098500 3510050100 CARTON PAPER 495*295*195 5.000 TP YG 0% FOR DET BOM AND YG 100% FOR CZ BOM YIFAN.LIU (CZ) REQUEST 112TN1402101/FEB.21'14		

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

DIMENSIONAL TOLERANCES

( )		( )		( )		( )		
<30	±0.25	DECIMALS		UP~100	±0.2		XX	XXX
>30~100	±0.35	X	±0.3	100~150	±0.25			
>100~300	±0.5	XX	±0.2	150~200	±0.3	0~10	±0.2	±0.05
ABOVE 300	±0.8	XXX	±0.1	200~250	±0.35	10~20	±0.3	±0.15
HOLES:	±0.05	ANGLES:	±0.5°	250~300	±0.4	ABOVE20	±0.5	±0.25
				300~350	±0.45	ANGULAR DIMS ± 1/2 DEG		
				350~400	±0.5			

SCALE | | UNIT | mm | USED ON |

Drawn: MAR.06'14

Approved: MAR.06'14

THIRD ANGLE PROJECTION

A4 SIZE

DESCRIPTION: LINE FILTER

PART NO.: 2875098500

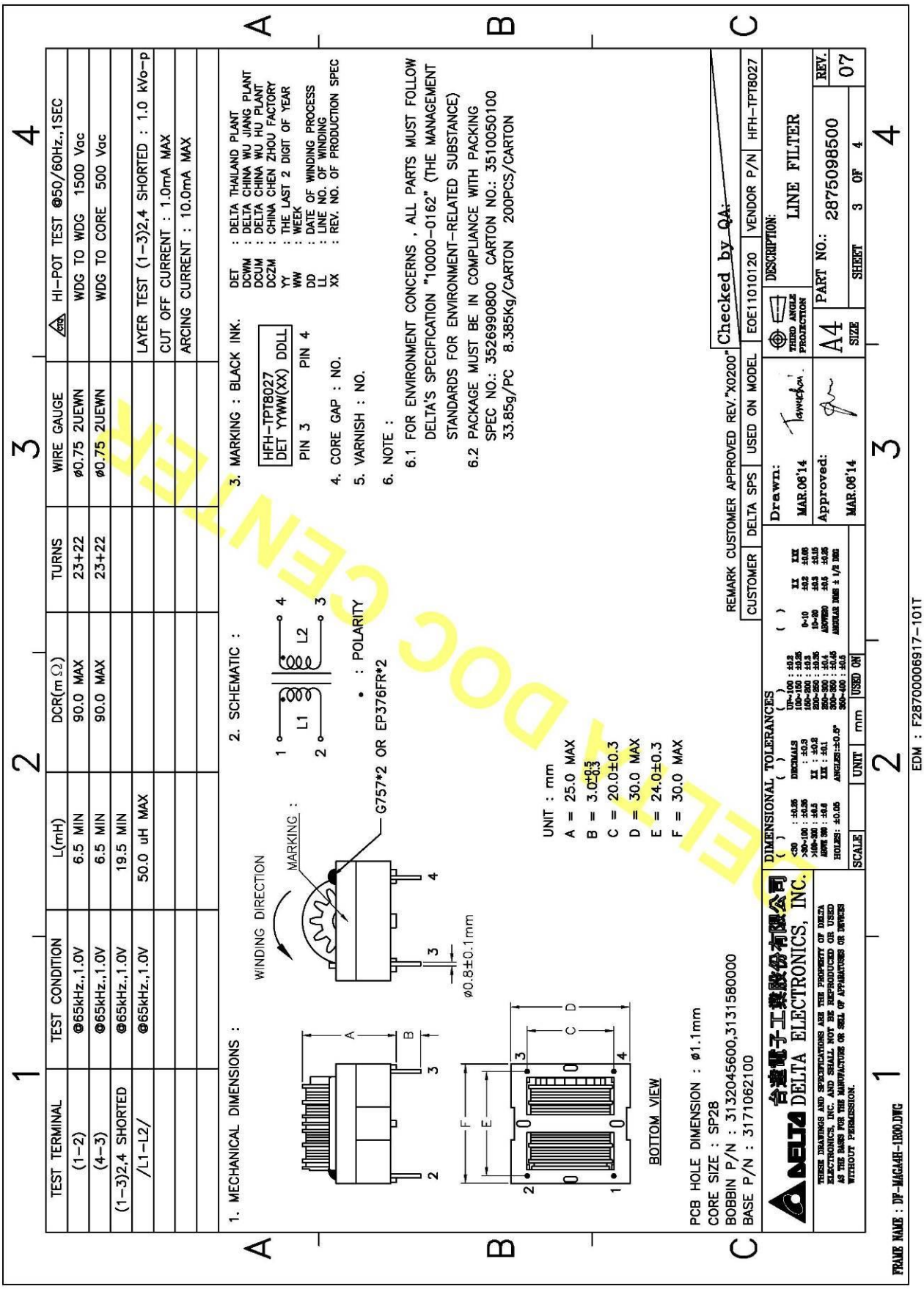
SHEET 2 OF 4

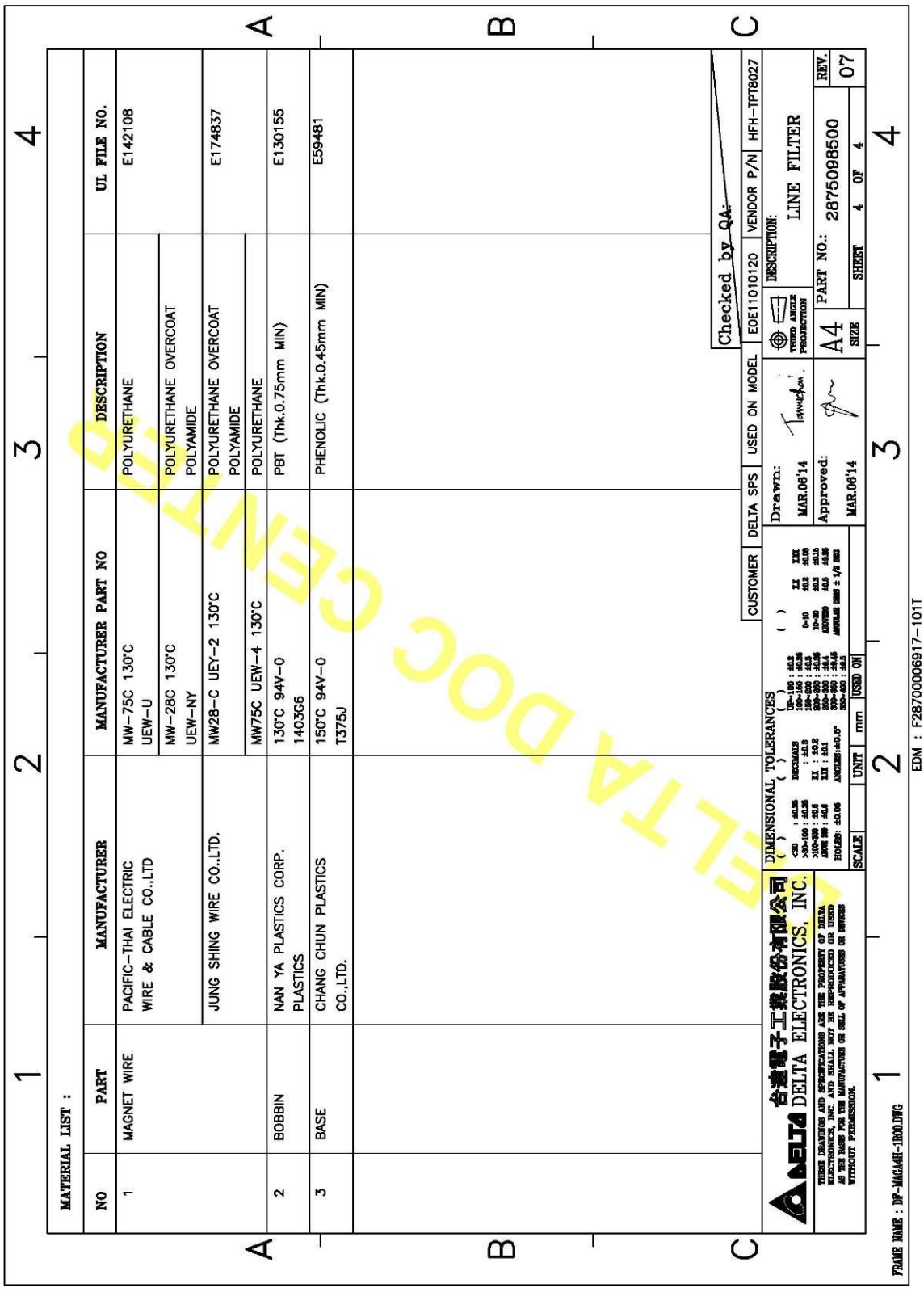
REV. 07

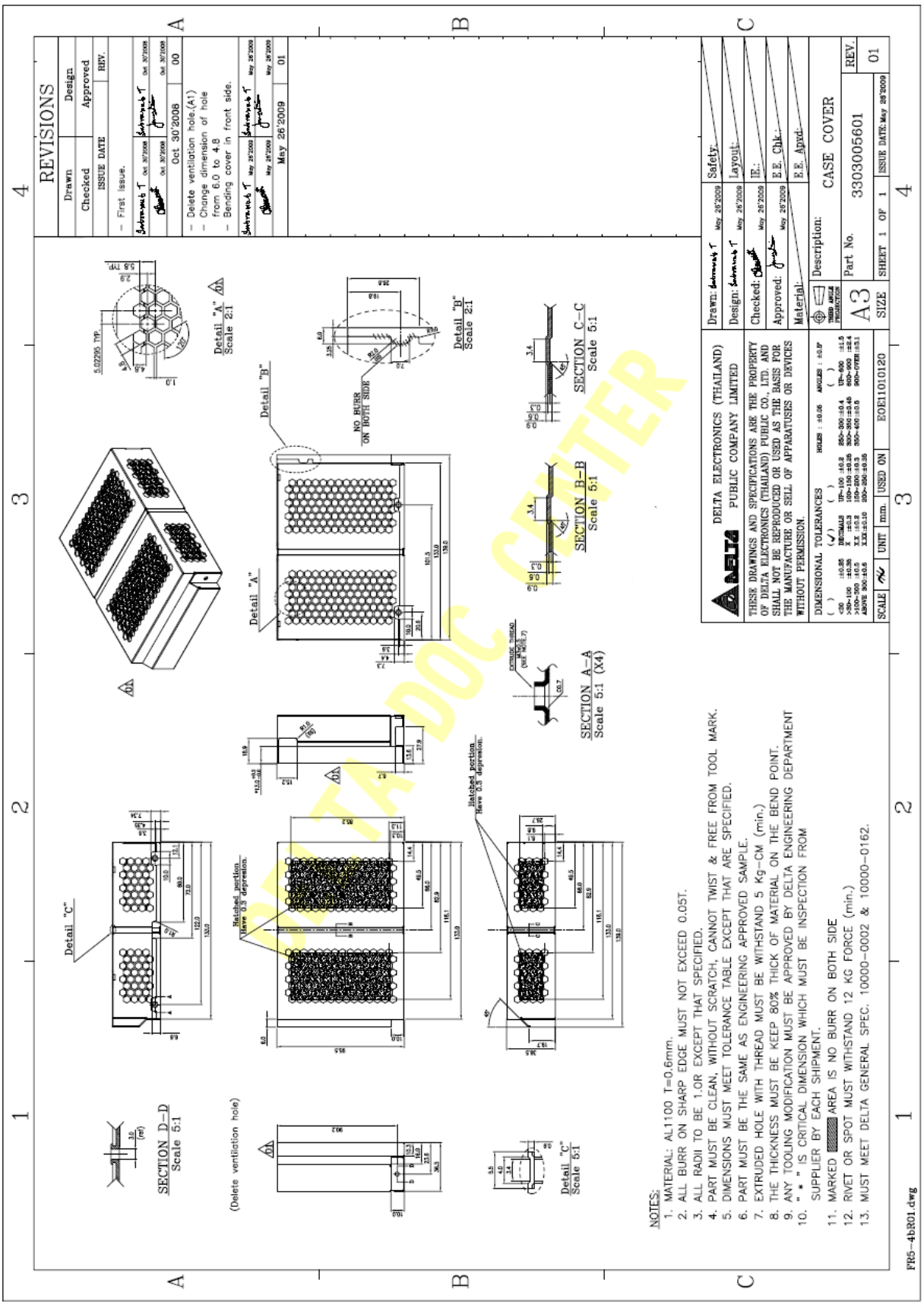
FRAME NAME : DF-MAG44H-1R00.DWG

1 2 3 4

EDM : F28700006917-101T






REVISIONS
Drawn
Checked
Design
Approved
ISSUE DATE
REV.
- First issue.
Oct 30'2008
00
- Delete ventilation hole.(A1)
- Change dimension of hole from 6.0 to 4.8
- Bending cover in front side.
May 26'2009
01
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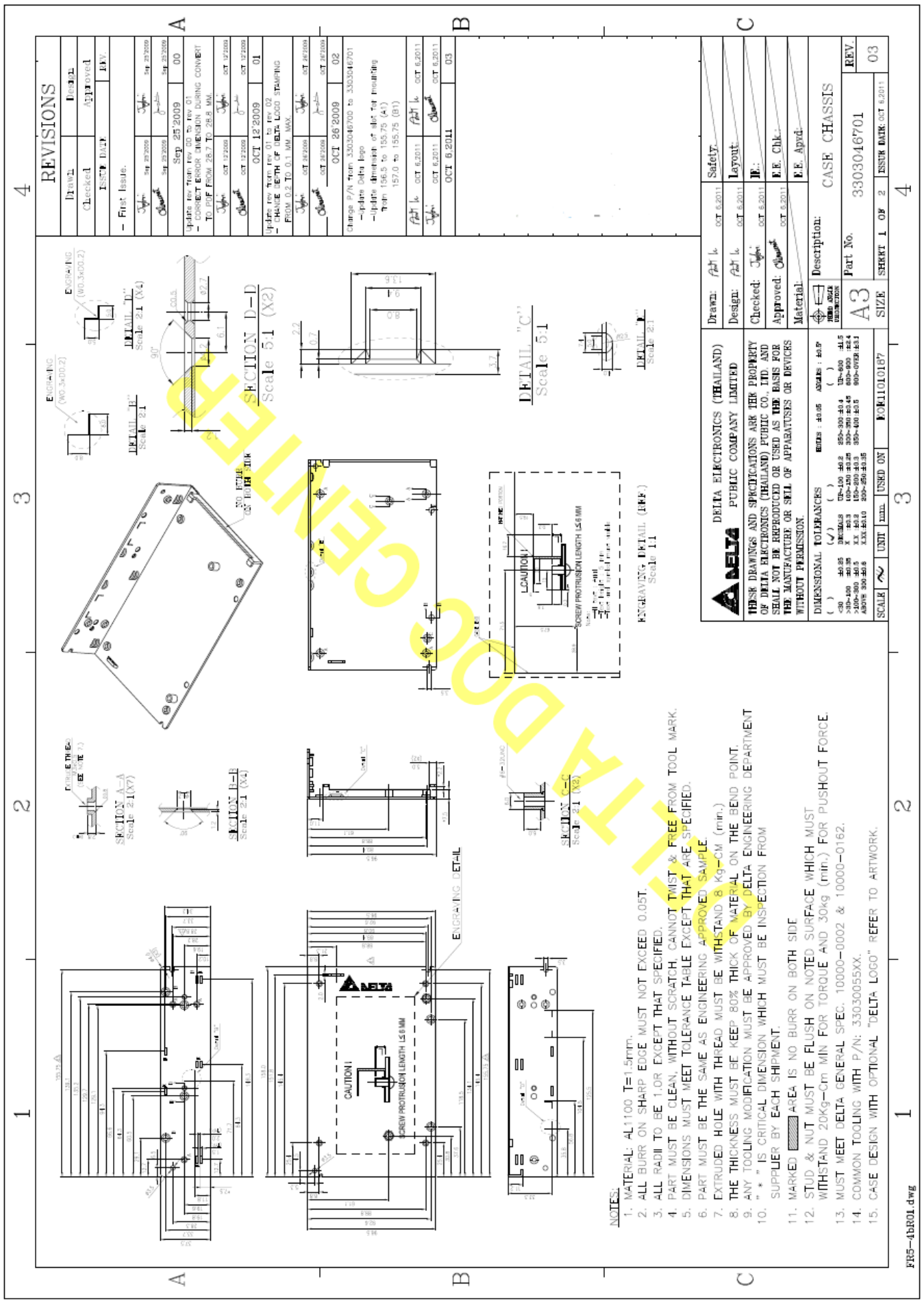
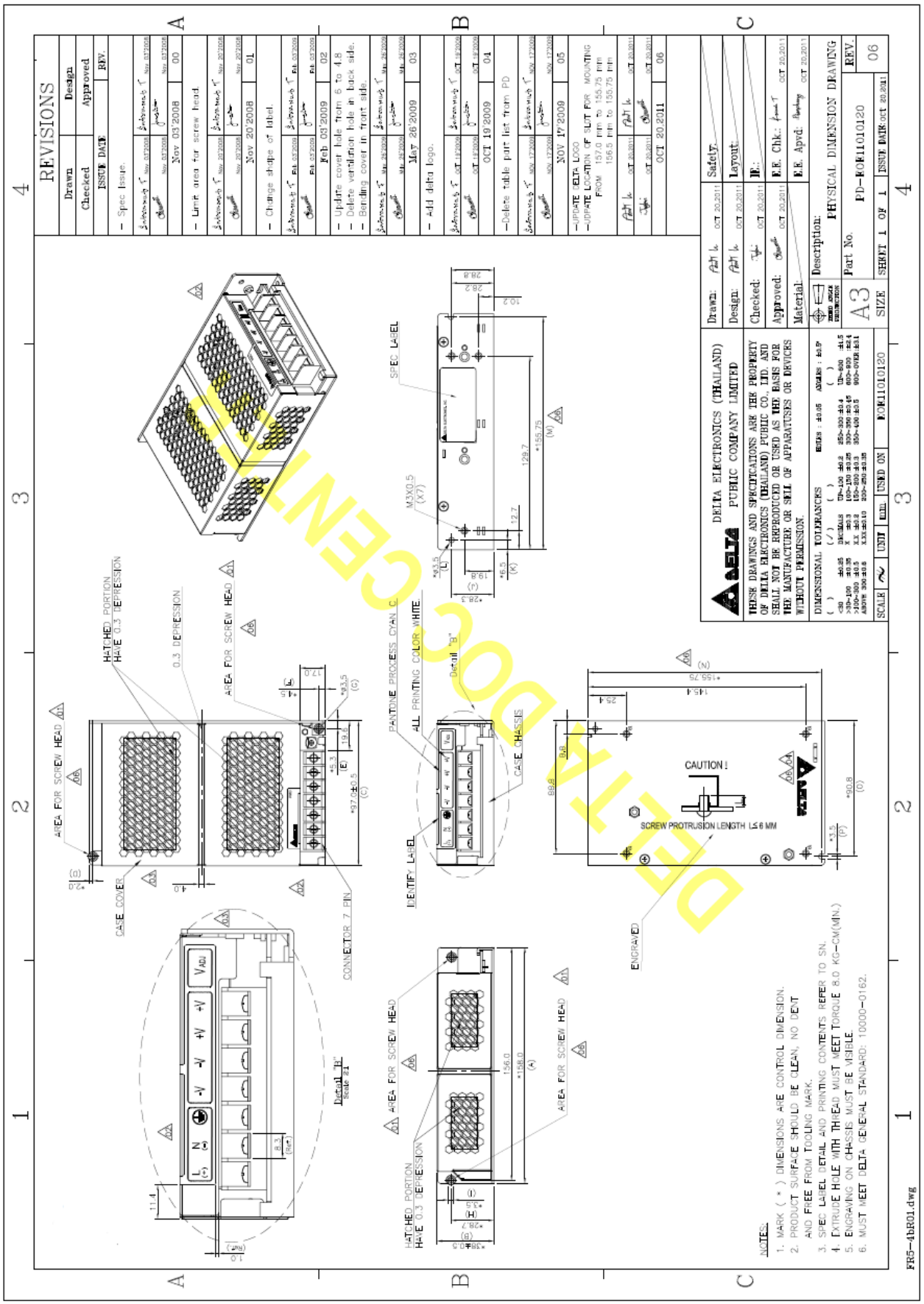
DIMENSIONAL TOLERANCES
Drawn:
Design:
Checked:
Approved:
Material:
Safety:
Layout:
IE:
E.E. Chk:
E.E. Apvd:
Description: CASE COVER
Part No. 3303005601
REV. 01
SIZE A3
SHEET 1 OF 1
ISSUE DATE: May 26'2009
SCALE
UNIT mm.
USED ON EOE11010120
Detail "A" Scale 2:1
Detail "B" Scale 2:1
Detail "C" Scale 5:1
SECTION A–A Scale 5:1 (X4)
SECTION B–B Scale 5:1
SECTION C–C Scale 5:1
SECTION D–D Scale 5:1
NO BURR ON BOTH SIDE
Hatched portion Have 0.3 depression.
(Delete ventilation hole)
NOTES:
1. MATERIAL: AL1100 T=0.6mm.
2. ALL BURR ON SHARP EDGE MUST NOT EXCEED 0.05T.
3. ALL RADII TO BE 1.0R EXCEPT THAT SPECIFIED.
4. PART MUST BE CLEAN, WITHOUT SCRATCH, CANNOT TWIST & FREE FROM TOOL MARK.
5. DIMENSIONS MUST MEET TOLERANCE TABLE EXCEPT THAT ARE SPECIFIED.
6. PART MUST BE THE SAME AS ENGINEERING APPROVED SAMPLE.
7. EXTRUDED HOLE WITH THREAD MUST BE WITHSTAND 5 Kg-CM (min.)
8. THE THICKNESS MUST BE KEEP 80% THICK OF MATERIAL ON THE BEND POINT.
9. ANY TOOLING MODIFICATION MUST BE APPROVED BY DELTA ENGINEERING DEPARTMENT
10. " * " IS CRITICAL DIMENSION WHICH MUST BE INSPECTION FROM SUPPLIER BY EACH SHIPMENT.
11. MARKED AREA IS NO BURR ON BOTH SIDE
12. RIVET OR SPOT MUST WITHSTAND 12 KG FORCE (min.)
13. MUST MEET DELTA GENERAL SPEC. 10000-0002 & 10000-0162.
FR5-4bR01.dwg
DELTA DOC CENTER




REVISIONS
Drawn
Checked
Design
Approved
ISSUE DATE
REV.
- Spec Issue.
Nov 03'2008
00
- Limit area for screw head.
Nov 20'2008
01
- Change shape of label.
Feb 03'2009
02
- Update cover hole from 6 to 4.8
- Delete ventilation hole at back side.
- Bending cover in front side.
May 26'2009
03
- Add delta logo.
OCT 19'2009
04
-Delete table part list from PD
NOV 17'2009
05
-UPDATE DELTA LOGO
-UPDATE LOCATION OF SLOT FOR MOUNTING
FROM 137.0 mm to 155.75 mm
156.5 mm to 155.75 mm
OCT 20,2011
06
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Drawn:
Design:
Checked:
Approved:
Material:
Safety:
Layout:
DE:
E.E. Chk.:
E.E. Apvd.
Description:
PHYSICAL DIMENSION DRAWING
SIZE
A3
Part No.
PD-EOE11010120
REV.
06
SCALE
UNIT
mm
TOLERANCES
PCB11010120
SHEET 1 OF 1
ISSUE DATE oct 20,2011
NOTES:
1. MARK (*) DIMENSIONS ARE CONTROL DIMENSION.
2. PRODUCT SURFACE SHOULD BE CLEAN, NO DENT AND FREE FROM TOOLING MARK.
3. SPEC LABEL DETAIL AND PRINTING CONTENTS REFER TO SN.
4. EXTRUDE HOLE WITH THREAD MUST MEET TORQUE 8.0 KG-CM(MIN.)
5. ENGRAVING ON CHASSIS MUST BE VISIBLE
6. MUST MEET DELTA GENERAL STANDARD: 10000-0162.
PR5-4bR01.dwg
AREA FOR SCREW HEAD
HATCHED PORTION HAVE 0.3 DEPRESSION
CASE COVER
CONNECTOR 7 PIN
SPEC LABEL
M3X0.5 (X7)
IDENTIFY LABEL
PANTONE PROCESS CYAN C
ALL PRINTING COLOR WHITE
CASE CHASSIS
CAUTION !
SCREW PROTRUSION LENGTH L≤ 6 MM
ENGRAVED
DELTA DOCUMENT

Enclosure No. 4

Additional Test Data

(5 pages including this cover page)

5.2.2	TABLE: Evaluation of voltage limiting components in ES circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
T1 pin 10, 11, 12 – COM	150	47.92	-
After D350/D351	56	24.41	D350
After L351-A	-	26.4	L350A

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
D350 s-c-	24.8 Vdc; unit hiccup. *)
L350A s-c	26.0 Vdc; Normal operation. *)
supplementary information:	
s-c=Short circuit ***) See table 5.3 for measurement under fault condition.**	

5.4.1.8	**Table: working voltage measurement**	P

Location	RMS voltage (V)	Peak voltage (V)	Comments
T1, pins 1 – 7, 8, 9	273	465	Input 240V / 50Hz
T1, pins 1 – 10, 11, 12	243	440	
T1, pins 1 – PE	274	505	
T1, pins 2 – 7, 8, 9	223	405	
T1, pins 2 – 10, 11, 12	208	380	
T1, pins 2 – PE	223	440	
T1, pins 3 – 7, 8, 9	204	385	
T1, pins 3 – 10, 11, 12	210	485	
T1, pins 3 – PE	205	360	
T1, pins 5 – 7, 8, 9	204	370	
T1, pins 5 – 10, 11, 12	212	390	
T1, pins 5 – PE	208	360	
T1, pins 6 – 7, 8, 9	211	420	
T1, pins 6 – 10, 11, 12	209	370	
T1, pins 6 – PE	210	430	
IC550, pins 3 - 1	227	385	
IC550, pins 3 - 2	226	385	
IC550, pins 4 - 1	226	380	
IC550, pins 4 - 2	225	380	
IC620, pins 3 - 1	226	380	
IC620, pins 3 - 2	226	380	
IC620, pins 4 - 1	226	380	
IC620, pins 4 - 2	226	380	
CY5	206	360	
CY8	207	360	
CY9	206	360	
T1, pins 1 – 7, 8, 9	140	320	Input 100V /60Hz
T1, pins 1 – 10, 11, 12	120	300	
T1, pins 1 – PE	144	370	
IC550, pins 3 - 1	104	176	
IC550, pins 3 - 2	102	174	
IC550, pins 4 - 1	104	176	
IC550, pins 4 - 2	103	174	
IC620, pins 3 - 1	103	176	
IC620, pins 3 - 2	103	176	
IC620, pins 4 - 1	104	176	
IC620, pins 4 - 2	103	176	
CY5	84.3	152	
CY8	84.3	152	
CY9	84.3	152	

T1, pins 1 – 7, 8, 9	292	405	Input 250Vdc
T1, pins 1 – 10, 11, 12	271	360	
T1, pins 1 – PE	293	445	
T1, pins 2 – 7, 8, 9	261	370	
T1, pins 2 – 10, 11, 12	253	330	
T1, pins 2 – PE	261	405	
T1, pins 3 – 7, 8, 9	249	300	
T1, pins 3 – 10, 11, 12	253	380	
T1, pins 3 – PE	249	275	
T1, pins 5 – 7, 8, 9	4	46	
T1, pins 5 – 10, 11, 12	41	120	
T1, pins 5 – PE	3	12	
T1, pins 6 – 7, 8, 9	26	62	
T1, pins 6 – 10, 11, 12	16	70	
T1, pins 6 – PE	26	70	
IC550, pins 3 - 1	22	28	
IC550, pins 3 - 2	21	28	
IC550, pins 4 - 1	22	30	
IC550, pins 4 - 2	22	30	
IC620, pins 3 - 1	22	29	
IC620, pins 3 - 2	22	29	
IC620, pins 4 - 1	22	30	
CY5	0	0	
CY8	0	0	
CY9	250	275	
supplementary information:			

Annex R	**TABLE: Limited Short circuit Test**	P

Three samples of the complete EUT were used for this test. The supply source used to conduct this test was determined to supply 1500 Aac under short-circuit conditions of its output terminals.

For this test, the following overcurrent protective device and supply conductors were used: 20A UL489 listed circuit breaker.

The short-circuit was applied between locations noted below and the test was continued until the overcurrent protective device operated. Protective bonding conductors were inspected for any damage after the test.

Sample No.	Short circuit current applied between	Supply voltage (Vac)	CB Tripped?	Trace Damage?
1	PE terminal and Enclosure	240	Yes	No
2	PE terminal and Enclosure	240	Yes	No
3	PE terminal and Enclosure	240	Yes	No

The protective bonding conductor was not damaged.
There was no damage to basic insulation, supplementary insulation, or reinforced insulation.
There was no reduction of clearances, creepage distances and distances through insulation.
There was no delamination of the printed board.

Ref. Certif. No.

NO87822

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI DACCEPTATION MUTUELLE DE CERTIFICATS DESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	Power Supply for building-in
Name and address of the applicant Nom et adresse du demandeur	Delta Electronics (Thailand) Public Co. Ltd. 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn 10280 Thailand
Name and address of the manufacturer Nom et adresse du fabricant	Delta Electronics (Thailand) Public Co. Ltd. 909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 Road, Tambol Phraksa, Amphur Muang, Samutprakarn 10280 Thailand
Name and address of the factory Nom et adresse de l'usine Note: When more than one factory, please report on page 2 Note: Lorsque il y plus d'une usine, veuillez utiliser la deuxième page	☑ Additional information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	AC input: 2.8A 100-240V 50-60Hz, DC input: 2.8A 125-250V Cl. I, DC-output: 4.17A +24V
Trademark (if any) Marque de fabrique (si elle existe)	DELTA
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	PMC-24V100W1..
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la deuxième page	The symbols "." in model name can be any alphanumeric character or blank, for marketing use only, not affecting safety. ☐ Additional information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2);am1;am2
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport dessais numéro de référence qui constitue partie de ce Certificat	291599

This CB Test Certificate is issued by the National Certification Body
Ce Certificat dessai OC est établi par l'Organisme **National de Certification**

Nemko
Gaustadalléen 30
NO-0373 Oslo, Norway

Date: 04-08-2015

Signature: Nastaran Vadoodi
Certification Department

Delta Electronics Power (Dongguan) Co., Ltd.
Delta Industrial Estate, Shijie Town, Dongguan City,
Guangdong Province 523308
China

Delta Electronics (Thailand) Public Co., Ltd.
909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z.),
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Nemko
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NO-0373 Oslo, Norway

Date: 04-08-2015

Signature: Nastaran Vadoodi
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