



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 .....: E511889-A6005-CB-1

Date of issue .....: 2023-08-31

Total number of pages .....: 64

Name of Testing Laboratory .....: UL International Italia S.r.l.

preparing the Report .....: Via Delle Industrie, 5 & 6, IT-20061 Carugate (MI), Italy

Applicant's name .....: NEXTYS SA

Address .....: VIA LUSERTE SUD 6  
QUARTINO, TICINO, 6572, Switzerland

#### Test specification:

Standard .....: IEC 62368-1: 2018

Test procedure .....: CB Scheme

Non-standard test method .....: N/A

TRF template used .....: IECEE OD-2020-F1:2021, Ed.1.4

Test Report Form No .....: IEC62368\_1E

Test Report Form(s) Originator ....: UL(US)

Master TRF .....: Dated 2022-04-14

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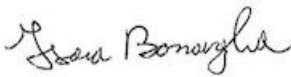
**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**

#### 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.

<b>Test Item Description</b> .....	DIN-rail mounted uninterruptible DC power supply	
<b>Trade Mark(s)</b> .....	TDK-Lambda 	
<b>Manufacturer</b> .....	TDK-LAMBDA GERMANY GMBH KARL-BOLD-STR 40 ACHERN, BADEN-WURTTMBERG, 77855, Germany	
<b>Model/Type reference</b> .....	DUSH960-ZZZZ-XX where ZZZZ and XX can be any character or symbol for marketing purposes only with no effect on safety or blank.	
<b>Ratings</b> .....	(Ratings are optional) Input: 12-48 Vdc, 20 A Output: 12-48 Vdc, 20 A, 960 W	
<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input type="checkbox"/> <b>CB Testing Laboratory:</b>		
<b>Testing location/ address</b> .....		
<b>Tested by (name, function, signature)..... :</b>		
<b>Approved by (name, function, signature) .. :</b>		
<b>Testing procedure: CTF Stage 1:</b>		
<b>Testing location/ address</b> .....		
<b>Tested by (name, function, signature)..... :</b>		
<b>Approved by (name, function, signature) .. :</b>		
<b>Testing procedure: CTF Stage 2:</b>		
<b>Testing location/ address</b> .....	NEXTYS SA VIA LUSERTE SUD 6 6572 QUARTINO SWITZERLAND	
<b>Tested by (name, function, signature)..... :</b>	Mirko Savello/Stefano Ferreira / Tester	
<b>Witnessed by (name, function, signature) . :</b>	Oreste Buzzetti / Witness	
<b>Approved by (name, function, signature) .. :</b>	Isaia Bonavoglia / Reviewer	

<input type="checkbox"/>	Testing procedure: CTF Stage 3:		
<input type="checkbox"/>	Testing procedure: CTF Stage 4:		
Testing location/ address ..... :			
Tested by (name, function, signature)..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			
Supervised by (name, function, signature) :			

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

National Differences (28 pages)

Enclosures (12 pages)

**Summary of testing:****Tests performed (name of test and test clause):**

B.2.5 – INPUT TEST: SINGLE PHASE

B.2.6, 5.4.1.4, 6.3, 9.3, B.1.5 – NORMAL  
OPERATING CONDITIONS TEMPERATURE  
MEASUREMENTB.3 – SIMULATED ABNORMAL OPERATING  
CONDITIONS

B.4 – SIMULATED SINGLE FAULT CONDITIONS

F.3.10 – TEST FOR THE PERMANENCE OF  
MARKINGSM.3.2 – PROTECTION CIRCUITS FOR  
BATTERIES**Testing Location:****CTF Stage 2: NEXTYS SA****VIA LUSERTE SUD 6****6572 QUARTINO SWITZERLAND**test waived. same label already used and tested in report  
A6003Internal coin battery protected by 2 or more components,  
no test deemed necessary.**Summary of compliance with National Differences (List of countries addressed):**

EU Group Differences, United States of America - US, Canada - CA















☒ **The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020, CSA/UL 62368-1:2019****Use of uncertainty of measurement for decisions on conformity (decision rule) :**☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").☐ Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)**Information on uncertainty of measurement:**

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

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

**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.

<b>TDK-Lambda</b>		<b>DUSH960-1248-0M</b>	
  	DIN-Rail power supply		
	Read the operating manual! Lisez le manuel d'utilisation!	INPUT 12-48V === / 20A	
	Surrounding Air Temperature: -25..70°C (-13..158°F) Wiring must be ≥ 90°C (194°F) rated Température de l'environnement: -25..70°C Le câblage doit être ≥ 90°C nominale	OUTPUT 960W / 12-48V === / 20A	310KW2
		BATTERY 12-48V === / 20A	0001
		AUX 12-48V === / 5A	P401
		RELAYS 24V === / 1A	Fact. ID: P
		Operating temperature -40..70°C (-40..158°F) derating from 50°C (122°F)	Rev.: D05
<b>EU representative:</b> TDK-Lambda Germany GmbH Karl-Bold-Str. 40 77855 Achern DE		   	
<b>UK representative:</b> TDK-Lambda UK Ltd. Kingsley Avenue Ilfracombe, Devon EX34 8ES UK		 	
<a href="http://www.emea.lambda.tdk.com">www.emea.lambda.tdk.com</a>		<b>LISTED</b> E356563 IND.CONT.EQ	Designed in Switzerland Made in Malaysia

Note: The above markings are the minimum requirements required by the safety lab. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

<b>Test item particulars:</b>	
Product group	built-in component
Classification of use by	Instructed person
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	mating connector
Considered current rating of protective device	N/A
Equipment mobility	DIN-rail mount
Over voltage category (OVC)	OVC II
Class of equipment	Class III
Special installation location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	50°C (max load 960W); 70°C with derating (720W)
IP protection class	IPX0
Power systems	TN TT
Altitude during operation (m)	3000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.5
<b>Possible test case verdicts:</b>	
- 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)
<b>Testing:</b>	
Date of receipt of test item .....	2023-06-07
Date (s) of performance of tests .....	2023-06-07 to 2023-07-14
<b>General remarks:</b>	
"(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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:</b>	

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 ..... :	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b> : TDK-LAMBDA MALAYSIA SDN BHD LOT 2 & 3, BATU 9 3/4 KAWASAN PERINDUSTRIAN BANDAR BARU JAYA GADING 26070 KUANTAN PAHANG MALAYSIA	
<b>General product information and other remarks:</b>	
<b>Product Description</b> EUT is a battery management device used to manage the charging of external battery and is used to provide power either from external PSU or from external battery.	
<b>Model Differences</b> N/A	
<b>Additional Information</b> Tests performed using an external battery able to provide up to 20 A current.	
<b>Technical Considerations</b> <ul style="list-style-type: none"> <li>• The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 50°C (max load 960W), 70°C with derating (720W)</li> <li>• The product is intended for use on the following power systems : No direct connection</li> <li>• Considered current rating of protective device as part of the building installation (A) : N/A</li> <li>• Mains supply tolerance (%) or absolute mains supply : No direct connection</li> <li>• The equipment disconnect device is considered to be : N/A</li> <li>• The Risk Group of a lamp or lamp system (including LEDs) is : Exempt</li> <li>• The following scope limitations apply to this test report and additional evaluation and/or tests may be required when submitting this CB Report to a National Certification Body (NCB) to obtain a national mark:             <ul style="list-style-type: none"> <li>- No EMC tests nor evaluation to EMC Directive 2004/108/EC and 2014/30/EU</li> <li>- No evaluation to RoHS Directives 2002/95/EC, 2011/65/EU and (EU) 2016/585</li> <li>- No evaluation to Council Recommendation 1999/519/EC nor 2006/25/EC</li> <li>- Only English version of markings and instructions provided and reviewed</li> </ul> </li> </ul>	

**Engineering Conditions of Acceptability**

When installed in an end-product, consideration must be given to the following:

- The following output circuits are at ES1 energy levels : All outputs
- The following output circuits are at PS3 energy levels : All outputs
- The investigated Pollution Degree is : 2
- The following end-product enclosures are required : Fire
- Product has not been tested against Annex M for external battery, which is not part of this investigation. Protection circuit of external battery shall be evaluated in final installation, if the case.