



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-A6001-CB-1

Date of issue.....: 2021-05-28

Total number of pages .....: 91

**Applicant's name**.....: **NEXTYS SA**  
Address .....: **VIA LUSERTE 6**  
**6572 QUARTINO SWITZERLAND**

Name of Test Laboratory .....: UL International Demko A/S  
preparing the Report .....: Borupvang 5A, 2750 Ballerup, Denmark

**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

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The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test Item description	: DIN-rail mounted 3-phase SMPS	
Trade Mark	: TDK-Lambda <b>TDK-Lambda</b>	
Manufacturer	: TDK-LAMBDA GERMANY GMBH KARL-BOLD-STRASSE 40 77855 ACHERN GERMANY	
Model/Type reference	: DRBxxx-yy-3-zz (see model differences)	
Ratings	: Input: DRB120-yy-3-zz: 3~ 400-500 V; 50/60 Hz; 3x0.5 A DRB240-yy-3-zz: 3~ 400-500 V; 50/60 Hz; 3x0.8 A	
Testing procedure and testing location:		
<input type="checkbox"/>	CB Testing Laboratory:	
Testing location/ address :		
Tested by (name + signature).....:		
Approved by (name + signature) .....		
Testing procedure: CTF Stage 1		
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature) .....		
<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 2	
Testing location/ address..... : NEXTYS SA VIA LUSERTE 6 6572 QUARTINO SWITZERLAND		
Tested by (name + signature).....:		Stefano Ferreira / Tester 
Witnessed by (name + signature).....:		Oreste Buzzetti / Witness 

Approved by (name + signature) .....		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 + signature).....:			
Witnessed by (name + signature).....:			
Approved by (name + signature) .....			
Supervised by (name + signature) .....			

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

National Differences (14 pages)

Enclosures (26 pages)

**Summary of testing:**

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

STEADY FORCE TEST, 250 N (4.4.4.2, ANNEX T.5)

CLASSIFICATION OF ELECTRICAL ENERGY SOURCES (5.2, 5.7)

MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2)

DETERMINATION OF WORKING VOLTAGE (5.4.1.8)

BALL PRESSURE TEST (5.4.1.10.3)

SEPARABLE THIN SHEET MATERIAL (5.4.4.6.2)

HUMIDITY CONDITIONING (5.4.8)

ELECTRIC STRENGTH TEST (5.4.9)

SAFEGUARDS AGAINST CAPACITOR DISCHARGE AFTER DISCONNECTION OF A CONNECTOR (5.5.2.2)

RESISTANCE OF THE PROTECTIVE BONDING SYSTEM (5.6.6.2)

PROSPECTIVE TOUCH VOLTAGE AND TOUCH CURRENT MEASUREMENT (5.7)

PROTECTIVE CONDUCTOR CURRENT (5.7.5)

INPUT TEST: POLYPHASE (B.2.5)

SIMULATED ABNORMAL OPERATING CONDITIONS (B.3)

SIMULATED SINGLE FAULT CONDITIONS (B.4)

TEST FOR THE PERMANENCE OF MARKINGS (ANNEX F.3.10)

TRANSFORMER OVERLOAD (ANNEX G.5.3.3)

LIMITED POWER SOURCE (ANNEX Q.1)

LIMITED SHORT CIRCUIT TEST (ANNEX R.1, 5.6.4.1, 5.6.4.4, 5.6.5.1)

STEADY FORCE TEST, 10 N (ANNEX T.2, 5.4.2.6, 5.4.3.2, G.15.3.6)

**Testing Location:**

**CTF Stage 2: NEXTYS SA**

**VIA LUSERTE 6**

**6572 QUARTINO SWITZERLAND**

**Summary of compliance with National Differences:****List of countries addressed:** EU Group and National Differences, USA / Canada

EU Group and National Differences applies to CENELEC member countries: Austria , Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom

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

**Copy of Marking Plate** - Refer to Enclosure titled Marking Plate for copy.

<b>TEST ITEM PARTICULARS:</b>	
Classification of use by	Instructed person
Supply Connection	AC Mains
Supply % Tolerance	Other + 10 % / - 12.5 %
Supply Connection – Type	permanent connection
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	restricted access area
Pollution degree (PD)	PD 2
Manufacturer’s specified maximum operating ambient (°C)	55
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..... :	2020-12-16
Date (s) of performance of tests..... :	2021-03-06 TO 2021-05-07
<b>GENERAL REMARKS:</b>	
<p>"(See Enclosure #)" refers to additional information appended to the report.                      "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
<b>Manufacturer’s Declaration per sub-clause 4.2.5 of IEC60068-2-1:</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"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>Not applicable</b>
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**When differences exist; they shall be identified in the General product information section.**

<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
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**GENERAL PRODUCT INFORMATION:**

**Report Summary**

All applicable tests according to the referenced standard(s) have been carried out.

**Product Description**

Product under evaluation is a series of DIN-rail mounted 3-phase SMPS

**Model Differences**

All models differ for output power and voltage. Transformers are different for each family.

Nomenclature:

xxx = output power in watts (120 or 240)

yy = output voltage in volts (12 or 24 for 120 series; 24 or 36 or 48 for 240 series)

zz = any character or symbol for marketing purposes only with no effect on safety or blank.

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

-

**Technical Considerations**

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of : 55°C
- The product is intended for use on the following power systems : TT, TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply values : +10%/ -12.5%
- The equipment disconnect device is considered to be : To be provided in final installation
- The following were investigated as part of the protective earthing/bonding : Printed wiring board trace (refer to Enclosure - Schematics + PWB for layouts)
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- 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:
  - No EMC tests nor evaluation to EMC Directive 2004/108/EC and 2014/30/EU
  - No evaluation to RoHS Directives 2002/95/EC, 2011/65/EU and (EU) 2016/585
  - No evaluation to Council Recommendation 1999/519/EC nor 2006/25/EC



- Only English version of markings and instructions provided and reviewed

- Products supplied with tri-phase voltage of 400-500 V between phases and 230-290 V between each phase and earth.

### **Engineering Conditions of Acceptability**

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

- The following product-line tests are conducted for this product : Electric Strength, Earthing Continuity
- The end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary-Secondary: 276 Vrms/816 Vpk (Model DRB120-12), Primary-Secondary: 292 Vrms/752 Vpk (Model DRB120-24), Primary-Secondary: 294 Vrms/952 Vpk (Model DRB240-24), Primary-Secondary: 307 Vrms/912 Vpk (Model DRB240-36), Primary-Secondary: 309 Vrms/896 Vpk (Model DRB240-48)
- The following output circuits are at ES1 energy levels : All outputs of all models
- The following output circuits are at PS3 energy levels : All outputs of all models
- The maximum investigated branch circuit rating is : 20 A
- The investigated Pollution Degree is : 2
- Proper bonding to the end-product main protective earthing termination is : Required
- An investigation of the protective bonding terminals has : been conducted
- The following end-product enclosures are required : Electrical, Fire, Mechanical
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C) : Transformers of all models (TR1 or TR3) are Class B (130°C)
- The equipment is suitable for direct connection to : 3-Phase AC mains supply
- The power supply was evaluated to be used at altitudes up to : "3,000 m"
- Safeguards against capacitor discharge after disconnection of a connector shall be checked in final installation.

<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
(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.)	
<b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input <span style="float: right;">ES1</span>	
Source of electrical energy	Corresponding classification (ES)
Input circuit	ES3
Output circuitry	ES1
Secondary circuit at output of Transformer	ES3
Relay output	ES1
<b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): <span style="float: right;">PS2</span>	
Source of power or PIS	Corresponding classification (PS)
Whole product	PS3
<b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component <span style="float: right;">Glycol</span>	
Source of hazardous substances	Corresponding chemical
-	-
<b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit <span style="float: right;">MS2</span>	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Sharp edges and corners	MS1
Mass	MS1
<b>Thermal burn injury (Clause 9)</b> (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 <span style="float: right;">TS1</span>	
Source of thermal energy	Corresponding classification (TS)
Enclosure (metal)	TS1
Terminal blocks (plastic)	TS1
<b>Radiation (Clause 10)</b> (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product <span style="float: right;">RS1</span>	
Type of radiation	Corresponding classification (RS)
-	-