



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..... : US25AK1R.300
Date of issue : 2026/01/02
Total number of pages : 77 + Attachments

Name of Testing Laboratory : TÜV Rheinland of North America, Inc.
preparing the Report : 1279 Quarry Lane, Ste. A, Pleasanton, CA 94566 USA

Applicant's name : TDK-Lambda Americas Inc.
Address : 1669 Brandywine Ave., Chula Vista, CA 91911

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

Copyright © 2022 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

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

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

General disclaimer:

The test results presented in this report relate only to the object tested.
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
Trade Mark(s)	<i>TDK·Lambda</i>
Manufacturer	Same as applicant
Model/Type reference	1) TPF12500-385-xxx 2) TPF17000-385-xxx 3) TPF17500-385-xxx Where "x" is any alphanumeric character (0-1, A-Z) or blank, denoting number of modules, minor cosmetic changes or for marketing purposes, not affecting safety.
Ratings	Input: 1) 3 phase AC 400-480V, 50-60Hz, max. 12900W, 22A per phase 2),3) 3 phase AC 400-480V, 50-60Hz, max. 18100W, 31A per phase 1) Output: Max. 12500W a) DC 385Vdc, 32.5A max. b) DC 12Vdc, 1.8A max. 2), 3) Output: Max. 17500W a) DC 385Vdc, 45.4A max. b) DC 12Vdc, 1.8A max.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☐	CB Testing Laboratory:	TUV Rheinland of North America, Inc
Testing location/ address		1279 Quarry Lane, Ste. A, Pleasanton, CA 94566 USA
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
☐	Testing procedure: CTF Stage 1:	N/A
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
☒	Testing procedure: CTF Stage 2:	TDK-Lambda Americas Inc
Testing location/ address		1669 Brandywine Ave., Chula Vista, CA 91911
Tested by (name, function, signature)		Anthony Villaseñor/ Product Safety Engineer <i>A Villaseñor</i>
Witnessed by (name, function, signature) . :		Dan Aquino/ Sr. Test Engineer <i>[Signature]</i>
Approved by (name, function, signature) .. :		Arun Kumar/ Report Authorizer <i>[Signature]</i>
☐	Testing procedure: CTF Stage 3:	N/A
☐	Testing procedure: CTF Stage 4:	N/A
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
Supervised by (name, function, signature) :		

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

Attachment 1: National Differences (43 pages)

Attachment 2: Photographs (4 pages)

Attachment 3: Enclosure Diagram (1 page)

Summary of testing:

The product was tested on a bench top with full load which drew the output power to the max. rated value. Refer to body of report and appended tables for details of each test.

Unless otherwise noted, testing was performed on Model TPF17500-385-xxx which is considered worst case and representative of Models TPF17000-385-xxx and TPF12500-385-xxx.

Report US25AK1R.300: No testing was deemed required. The test data was taken from the CB Report US25AK1R.001 in accordance with IEC 62368-1, 2nd Edition.

Tests performed (name of test and test clause):

Report US25AK1R.300: No testing required

Report US25AK1R.001:

- Input Test (B.2.5)
- Stored Discharge on Capacitors Test (5.5.2.2)
- Resistance of protective conductors and terminations (5.6.6.2)
- Humidity Test (5.4.8)
- Temperature Test (5.4.1.4, 6.3.2, 9.0, B.2.6)
- Ball Pressure Test (5.4.1.10.3)
- Earthed Accessible Conductive Part Test (5.7.2, 5.7.4)
- Electric strength Test (5.4.9)
- Minimum Clearances/Creepage distance (5.4.2.2, 5.4.2.4, 5.4.3)
- Abnormal Operation Condition Test (B.3)
- Fault Condition Tests (B.4)
- Limited Power Source (Q.1)

Testing location:

TDK-Lambda Americas, Inc.
1669 Brandywine Ave., Chula Vista,
CA 91911

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

EU Group Differences, EU Special National Conditions, CA, US, AU/NZ, JP

Explanation of used codes: CA = Canada, US = United States of America, AU/NZ = Australia/New Zealand, JP = Japan

☒ The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020, CSA/UL 62368-1:2019, AU/NZ 62368.1:2022, J62368-1:2023

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:

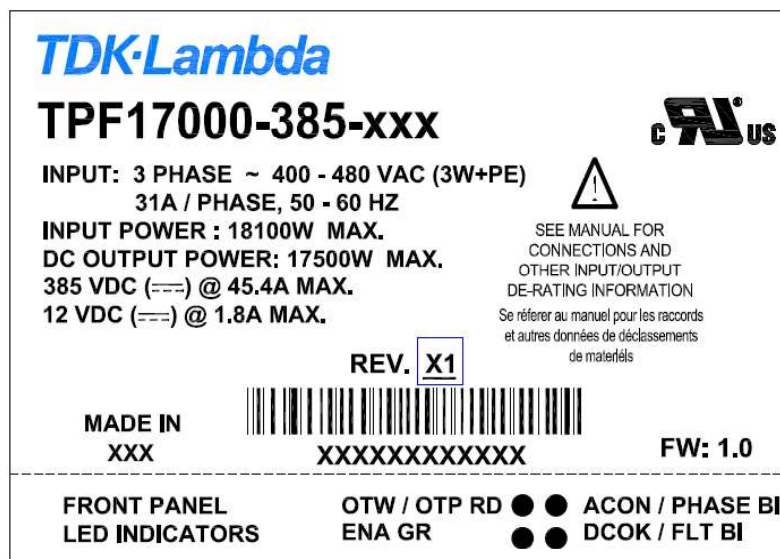
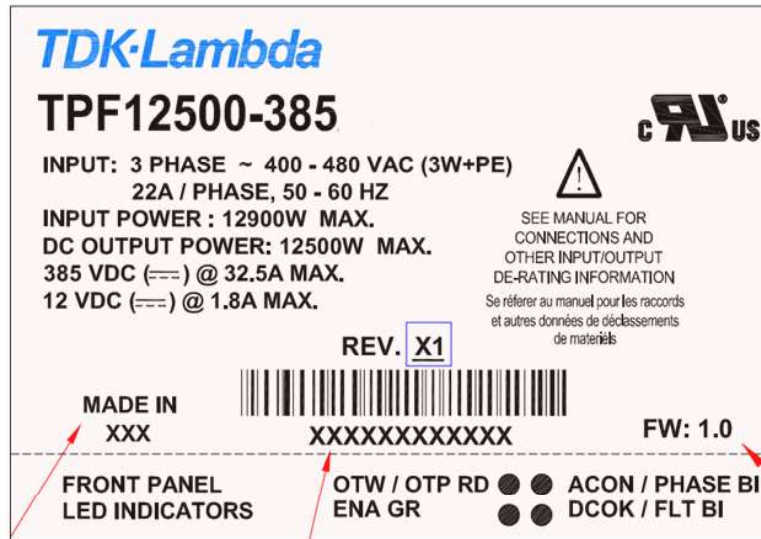
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

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.



TDK-Lambda

TPF17500-385-xxx

INPUT: 3 PHASE ~ 400 - 480 VAC (3W+PE)
31A / PHASE, 50 - 60 HZ

INPUT POWER : 18100W MAX.
DC OUTPUT POWER: 17500W MAX.
385 VDC (---) @ 45.4A MAX.
12 VDC (---) @ 1.8A MAX.

REV. X1

MADE IN
XXX

FW: 1.0

FRONT PANEL
LED INDICATORS

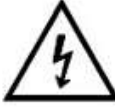
OTW / OTP RD ● ● **ACON / PHASE BI**
ENA GR ● ● **DCOK / FLT BI**

SEE MANUAL FOR
 CONNECTIONS AND
 OTHER INPUT/OUTPUT
 DE-RATING INFORMATION
 Se référer au manuel pour les raccords
 et autres données de déclassements
 de matériels

“Caution: High Touch Current” or equivalent word/text placed to the equipment adjacent to the equipment supply connection

WARNING: HIGH LEAKAGE CURRENT
 Earth connection essential before connecting supply

ATTENTION: Courant de fuites élevé
 Mise à terre essentielle avant toute installation électrique

Test item particulars:			
Product group	☐ end product	☒ built-in component	
Classification of use by	☐ Ordinary person ☐ Children likely present ☒ Instructed person ☒ Skilled person		
Supply connection	☒ AC mains ☐ DC mains ☐ not mains connected: ☐ ES1 ☐ ES2 ☐ ES3		
Supply tolerance	☒ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☐ None		
Supply connection – type	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☒ permanent connection ☐ mating connector ☒ other: Building In		
Considered current rating of protective device	☒ 90 A; Location: ☐ building ☒ equipment ☐ N/A		
Equipment mobility	☐ movable ☐ hand-held ☐ transportable ☐ direct plug-in ☐ stationary ☒ for building-in ☐ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:		
Overvoltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:		
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified ☐		
Special installation location	☒ N/A ☐ restricted access area ☐ outdoor location ☐		
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3		
Manufacturer's specified T_{ma}	40°C ☐ Outdoor: minimum °C		
IP protection class	☒ IPX0 ☐ IP ____		
Power systems	☒ TN ☐ TT ☐ IT - V _{L-L} ☐ not AC mains		
Altitude during operation (m)	☐ 2000 m or less ☒ 4000 m		
Altitude of test laboratory (m)	☐ 2000 m or less ☒ 50 m		
Mass of equipment (kg)	25kg		

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: N/A (Report US25AK1R.300) 2025/06/16 (Report US25AK1R.001) Date (s) of performance of tests: N/A (Report US25AK1R.300) 2025/06/16 – 2025/06/23 (Report US25AK1R.001)	
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. ☐ This Test Report Form contains requirements according to IEC/ISO Standard dated and includes Corrigendum dated (Note: The above text maybe removed if not applicable)	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC62368-1:	
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) : TDK-Lambda Malaysia Sdn Bhd Lot 2 & 3, Batu 9 3/4 Kawasan Perindustrian Bandar Baru Jaya Gading 26070 Kuantan, Malaysia	

General product information and other remarks:

The TPF non-isolated series is a 3Phase industrial power supply for distributed architecture for the semiconductor test market. The unit is Class I, evaluated for use in Installation Category II and Pollution Degree 2 environments. The units have Hazardous Energy Level output and intended application is to be determined in end installation access location. Units consist of a steel box-type frame enclosure and steel cover.

Conditions of Acceptability:

1. The equipment is considered to operate under the conditions of:
 - Pollution Degree 2 environment
 - Equipment mobility: Component for building-in
 - Class of Equipment: Class I (grounded)
 - Operating altitude: 4000 meters
2. Ambient Operating Temperature: 40°C
3. The product is for building-in. Fire enclosure requirements must be addressed in the end product application.
4. Output is considered hazardous energy levels and must be addressed in the end product application.
5. Temperature test must be re-evaluated in the end product application.

Model Differences:

- Model TPF12500-xxx includes total of 3 modules.
- Model TPF17000-xxx and TPF17500-xxx includes total of 4 modules.

Note: "x" is any alphanumeric character (0-9, A-Z) or blank, denoting number of modules, minor cosmetic changes or for marketing purposes, not affecting safety.

Model TPF17000-xxx is similar to Model TPF17500-xxx except for different model names for marketing purposes.

History of CB report:

US25AK1R.001: Original IEC 62368-1, 2nd Edition CB report evaluation.

US25AK1R.300: Original IEC 62368-1, 3rd Edition CB report evaluation.

Note: Gaps in the report numbering are for reports reserved for TUV internal use and not applicable to the CB Scheme.