

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Issued: 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Component Recognition
CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Complementary CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	AC-DC Power Supply
Model:	KWD5-1212, KWD5-1515, KWD10-1212, KWD10-1515, KWD15-1212, KWD15-1515
Rating:	100-240V~, 0.2A, 50/60Hz [Models KWD5-1212, KWD5-1515] 100-240V~, 0.3A, 50/60Hz [Models KWD10-1212, KWD10-1515] 100-240V~, 0.4A, 50/60Hz [Models KWD15-1212, KWD15-1515] Refer to Product description for output ratings.
Applicant Name and Address:	TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Issue Date: 2020-08-25

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Report Reference #

E122103-A6102-UL

Revision Date: 2022-08-03

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Handler

Reviewed By: Tadao Nakayama / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The product covered in this Test Report is a building-in component, module type switching power supply filled with insulating compound.

Output ratings, see Additional application considerations.

Model Differences

<Model Differences between each models in KWD5 series, in KWD10 series, and in KWD15 series>

Models are identical except output ratings, Transformer (T1), and rating of some minor components.

<Differences between KWD5 series, KWD10 series, and KWD15 series>

KWD5 series, KWD10 series and KWD15 series are similar except electrical rating, size of product, Y-Capacitors (C3, C4, C5), Inductor (L1), Transformer (T1), ratings of minor components in primary and secondary circuits.

Test Item Particulars

Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	Soldering to PCB
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	Not classified
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	Up to 70
IP protection class	IP class not specified (for building in)
Power Systems	TN
Altitude during operation (m)	Up to 3000 m for QQJQ2/8, up to 2000 m for QQGQ2/8 m
Altitude of test laboratory (m)	2000 m or less

Mass of equipment (kg)	0.075 (KWD5 series), 0.10 (KWD10 series), 0.15 (KWD15 series)
<p>Technical Considerations</p> <ul style="list-style-type: none"> • The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of : 70°C (Refer to Enclosure id. 07-01) • The product is intended for use on the following power systems : TN • Considered current rating of protective device as part of the building installation (A) : 20 • Mains supply tolerance (%) or absolute mains supply values : +10%/-10% <p>Engineering Conditions of Acceptability</p> <p>For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:</p> <ul style="list-style-type: none"> • The end-product Electric Strength Test is to be based upon a maximum working voltage of : [For Models KWD5 series] Primary-Secondary/Ground: 280 Vrms, 546 Vpk. [For Models KWD15 series] Primary- Secondary/Ground: 285 Vrms, 516 Vpk. [For Models KWD10 series] Primary-Secondary/Ground: 285 Vrms, 586 Vpk. • The following output circuits are at ES1 energy levels : Output of all models • The following output circuits are at PS2 energy levels : Output of all models • The maximum investigated branch circuit rating is : 20 A • The investigated Pollution Degree is : 2 • The following end-product enclosures are required : Electrical • The following magnetic devices (e.g. transformers or inductor) are provided with an OBJ2 insulation system with the indicated rating greater than Class A (105°C) : T1 (Class 155(F)) • The power supply terminals and/or connectors are suitable for factory wiring only • Humidity conditioning has been conducted by tropical condition. • Classification of PIS has not been conducted. However, the Case and Cover have been evaluated as fire barriers to any PIS parts and/or components inside the unit. • This component has been evaluated in 'control of fire spread' method, and the Case and Cover have been evaluated as fire barriers. • The secondary outputs are SELV and are not at hazardous energy levels. 	
<p>Additional Information</p> <p>Rated Output:</p> <p>KWD5-1212: +/-12VDC, 0.22A KWD5-1515: +/-15VDC, 0.18A KWD10-1212: +/-12VDC, 0.45A KWD10-1515: +/-15VDC, 0.36A KWD15-1212: +/-12VDC, 0.65A KWD15-1515: +/-15VDC, 0.52A</p> <p>See Enclosure Id. 07-01 for Output Derating Specification.</p>	
<p>Additional Standards</p> <p>The product fulfills the requirements of: CSA C22.2 NO. 60950-1-07 - Edition 2 - Revision Date 2014/10/01 UL 60950-1 - Edition 2 - Revision Date 2019/05/09</p>	
<p>Markings and Instructions</p>	

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number