Test Report issued under the responsibility of

VDE

TEST REPORT
IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006
Information technology equipment – Safety –
Part 1: General requirements

Report Reference No. ..... :	2520400-3336-0014 (130604) CB/DE1- 42843
Tested by (name + signature) ..... :	Günter Straube
Approved by (name + signature) ..... :	Klaus Dornieden
Date of issue..... :	2010-07-22
CB Testing Laboratory ..... :	VDE Testing and Certification Institute
Address ..... :	Merianstrasse 28, D-63069 Offenbach, Germany
Testing location / procedure ..... :	CBTL ☐ RMT ☐ SMT ☐ WMT ☒ TMP ☐
Testing location / address ..... :	TDK Innoveta Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA WMT (TDAP File no. 2520400-9501-0001)
Applicant's name ..... :	TDK Innoveta Inc.
Address ..... :	3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA
Test specification:	
Standard..... :	DIN EN 60950-1:2006 + A11 (VDE 0805-1 +A11): 2009-11 EN 60950-1:2006 +A11:2009-03 and/or IEC 60950-1:2005 (2nd Edition)
Test procedure..... :	CB – Scheme, VDE
Non-standard test method..... :	N/A
Test Report Form No. ..... :	IECEN60950_1C
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF..... :	2006-06

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.

Test item description ..... :	DC - DC Converter for building in
Trade Mark ..... :	TDK
Manufacturer ..... :	TDK Innoveta Inc.
Model/Type reference ..... :	iSA480 and iSC480-Series
Serial Number……..:	(see model matrix – Appendix 1)
Ratings ..... :	

Input:	DC 36 - 60 V (SELV) or DC 36 - 75 V max. 4 A (TNV-2) (see model matrix – Appendix 1)
Output:	max. DC 28 V, 30A (SELV / TNV2) (see model matrix – Appendix 1)
Ambient:	max. 125°C case temperature (see model matrix – Appendix 1)

Copy of marking plate:

see Appendix 2

Summary of testing:			
Clause 1.5	Components ..... :	☒ Pass	☐ N/A
Clause 1.6	Power interface ..... :	☒ Pass	☐ N/A
Clause 1.7	Markings and instructions ..... :	☒ Pass	☐ N/A
Clause 2.1	Protection from electric shock and energy hazards ..... :	☒ Pass	☐ N/A
Clause 2.2	SELV circuits ..... :	☒ Pass	☐ N/A
Clause 2.3	TNV circuits ..... :	☒ Pass	☐ N/A
Clause 2.4	Limited current circuits ..... :	☐ Pass	☒ N/A
Clause 2.5	Limited power sources ..... :	☐ Pass	☒ N/A
Clause 2.6	Provisions for earthing and bonding ..... :	☒ Pass	☐ N/A
Clause 2.7	Overcurrent and earth fault protection in primary circuits ..... :	☒ Pass	☐ N/A
Clause 2.8	Safety interlocks ..... :	☐ Pass	☒ N/A
Clause 2.9	Electrical insulation ..... :	☒ Pass	☐ N/A
Clause 2.10	Clearances, creepage distances and distances through insulation :	☒ Pass	☐ N/A
Clause 3.1	Wirings ..... :	☒ Pass	☐ N/A
Clause 3.2	Connection to an a.c. mains supply or a d.c. mains supply ..... :	☒ Pass	☐ N/A
Clause 3.3	Wiring terminals for connection of external conductors ..... :	☒ Pass	☐ N/A
Clause 3.4	Disconnection from the mains supply ..... :	☐ Pass	☒ N/A
Clause 3.5	Interconnection of equipment ..... :	☒ Pass	☐ N/A
Clause 4.1	Stability ..... :	☐ Pass	☒ N/A
Clause 4.2	Mechanical strength ..... :	☒ Pass	☐ N/A
Clause 4.3	Design and construction ..... :	☒ Pass	☐ N/A
Clause 4.4	Protection against hazardous moving parts ..... :	☐ Pass	☒ N/A
Clause 4.5	Thermal requirements ..... :	☒ Pass	☐ N/A
Clause 4.6	Openings in enclosures ..... :	☐ Pass	☒ N/A
Clause 4.7	Resistance to fire ..... :	☒ Pass	☐ N/A
Clause 5.1	Touch current and protective conductor current ..... :	☒ Pass	☐ N/A
Clause 5.2	Electric strength ..... :	☒ Pass	☐ N/A
Clause 5.3	Abnormal operating and fault conditions ..... :	☒ Pass	☐ N/A
Clause 6	Connection to telecommunication networks ..... :	☒ Pass	☐ N/A
Clause 7	Connection to cable distribution systems ..... :	☐ Pass	☒ N/A
Annex B	Motor Tests under abnormal conditions ..... :	☐ Pass	☒ N/A
Annex C	Transformers ..... :	☒ Pass	☐ N/A
Annex G	Alternative Method for determining minimum clearances ..... :	☐ Pass	☒ N/A
Annex M	Criteria for telephone ringing signals ..... :	☐ Pass	☒ N/A
Annex U	Insulated winding wires for use without interleaved insulation ..... :	☐ Pass	☒ N/A

Test item particulars .....:	
Equipment mobility..... :	☐ movable ☐ hand-held ☐ stationary ☐ fixed ☐ transportable ☒ for building-in
Connection to the mains ..... :	☐ pluggable equipment ☐ direct plug-in ☐ permanent connection ☒ for building-in
Operating condition..... :	☒ continuous ☐ short-time ☐ intermittent
Over voltage category ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV
Mains supply tolerance (%) ..... :	0 % Tolerance
Tested for IT power systems ..... :	☐ Yes ☒ No
IT testing, phase-phase voltage (V) ..... :	--
Class of equipment ..... :	☐ Class I ☐ Class II ☐ Class III ☒ Not classified
Mass of equipment (kg)..... :	<18kg
Pollution degree ..... :	☒ PD 2 ☐ PD 3
IP protection class ..... :	IP---
Possible test case verdicts	
- test case does not apply to the test object..... :	N/A (Not Applicable)
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing ..... :	
Date of receipt of test item..... :	2010-02-18
Date(s) of performance of tests..... :	2010-02-18 to 2010-07-22

General remarks:

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 testing laboratory.

"(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.

Factory (for information only)	
Name.....:	TDK Innoveta Inc.
Address .....:	3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA
Name.....:	TDK-Lambda Malaysia
Address .....:	PL033 Kawasan Perindustrian Senai , Locked Bag No. 110, 81400 Senai, Johor, Malaysia

General product information:

The product is a component type DC/DC power module, intended to be used as a component in an end-user's power system.

The Belleta product family consists of high density DC-DC power modules intended to be purchased and used as a component in an end-user's power system. The modules currently come in one input voltage range; a wide range 36 - 75Vdc input. The output voltage will be between 1V and 12V depending upon the model number. The rated output current will be less than 30A. The product is available in two different mechanical configurations the iSA and iSC versions.

The iSA series is a roughly 0.9"x1.3" design that has through-hole leads. The iSC series has an equivalent mechanical form factor but employs surface mount leads.

Conditions of Installation:

DC-DC Power Supply for building-in, ratings see page 2.

The equipment shall be installed in compliance with the enclosure, mounting, spacing, casualty and segregation requirements of the end-use application.

Complete details of construction and testing as well as supporting documentation such as photographs and schematics are included in the attachment.

The units were tested with a maximum continuous output.

The manufacturer specified max. 25°C ambient Temperature (iQE24, iQE48 – Series) and

specified temperature max. 125 °C on PWB near T1 (iQE4W – Series)

The Electrical and Fire Enclosures are to be provided by the end product.

The DC-DC power supply input is protected by fuses, provided by the end product.

The power supply series provides basic insulation based on DC 75 V (TNV-2), between input and output.

Operating Conditions:

A. If the input meets all requirements for ELV, then the output may be considered ELV

B. If the input meets all requirements for SELV, then the output may be considered SELV

C. If the input meets all requirements for TNV-2, then the output may be considered TNV-2

uirements for TNV-2, then the output may be considered TNV-2 or SELV

The label includes: Optional "-R" appended to product code to indicate ROHS compliance.
eg. iSAXXXXX-0## -R Series and ISCWXXXXX-0## -R Series.

Unit is Class I and designed for Pollution Degree 2 and Overvoltage Category 1.

The product has been tested according to standard IEC 60950-1:2005 (2nd Edition) / EN 60950-1:2006 and those deviations taken into account of				
☒ CENELEC common modifications		☒ United Kingdom	☐	☐
☒ Finland	☒ Denmark	☒ Ireland	☐	☐
☒ Sweden	☒ Germany	☒ Spain	☐	☐
☒ Norway	☒ Switzerland	☐	☐	☐

☒ **CB Bull. NATIONAL DIFFERENCES IEC 60950-1(2nd Edition)**				
☒ Switzerland	☒ Spain	☒ Ireland	☒ Sweden	☒ USA
☒ Germany	☒ Finland	☒ Korea	☒ Group Differences	☐
☒ Denmark	☒ United Kingdom	☒ Norway	☒ Canada	☐

These tests fulfil the requirements of standard EN ISO/IEC 17025.

This test report includes the following Appendices:

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