Test Report issued under the responsibility of:

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.....:	T223-0196/10
Date of issue.....:	2010-06-16
Total number of pages .....:	203 pages
CB/CCA Testing Laboratory.....:	SIQ – Slovenian Institute of Quality and Metrology Testing Laboratory is accredited by Slovenian Accreditation, Reg. No.: LP-009
Address .....:	Tržaška cesta 2, 1000 Ljubljana, Slovenia
Applicant's name.....:	Arch Electronics Corp.
Address .....:	3F., No. 79, Sec. 1, Hsin Tai Wu Rd., Sijhih City, Taipei County 221, Taiwan
Manufacturer's name .....:	Arch Electronics Corp.
Address .....:	3F., No. 79, Sec. 1, Hsin Tai Wu Rd., Sijhih City, Taipei County 221, Taiwan
Factory's name .....:	Arch Electronics Corp.
Address .....:	3F., No. 79, Sec. 1, Hsin Tai Wu Rd., Sijhih City, Taipei County 221, Taiwan
Test specification:	
Standard .....:	☒ IEC 60950-1:2005 (2nd Edition) and/or ☒ EN 60950-1:2006 + A11:2009
Test procedure .....:	CB
Non-standard test method……..:	N/A
Test Report Form No.....:	IECEN60950_1C
Test Report Form(s) Originator .....:	SGS Fimko Ltd
Master TRF .....:	Dated 2007-06

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 .....:	Switching Power Supply for building-in
Trade Mark .....:	TDK·Lambda

Model/Type reference ..... : KMx15-y

''x'' can be S, D or T

S= Single output

D= Dual output

T= Triple output

''y'' can be 3P3, 5, 7P35, 9, 12, 15, 24, 55, 1212, 1515, 51212 or 51515

Ratings ..... : I/P: 100-240 Vac; 47-63 Hz; 0,32-0,17 A

O/P:

Model Name:	**Output Ratings (output dc voltage / output current)**
KMS15-3P3	3,3 V / 3 A
KMS15-5	5 V / 3 A
KMS15-7P35	7,35 V / 2,04 A
KMS15-9	9 V / 1,666 A
KMS15-12	12 V / 1,25 A
KMS15-15	15 V / 1 A
KMS15-24	24 V / 0,625 A
KMD15-55	+ 5 V / 1,5 A; - 5 V / 1,5 A
KMD15-1212	+ 12 V / 0,625 A; - 12 V / 0,625 A
KMD15-1515	+ 15 V / 0,5 A; - 15 V / 0,5 A
KMT15-51212	+ 5 V / 2 A; + 12 V / 0,2 A; - 12 V / 0,2 A
KMT15-51515	+ 5 V / 2 A; + 15 V / 0,15 A; - 15 V / 0,15 A

Testing procedure and testing location:	
☒ **CB/CCA Testing Laboratory:**	SIQ – Slovenian Institute of Quality and Metrology
Testing location/ address ..... :	Tržaška cesta 2, 1000 Ljubljana, Slovenia
☐ **Associated CB Laboratory:**	
Testing location/ address ..... :	
Tested by (name + signature) ..... :	Mihal Kiselja
Approved by (+ signature) ..... :	Boštjan Glavič
☐ Testing procedure: TMP	
Tested by (name + signature) ..... :	
Approved by (+ signature) ..... :	
Testing location/ address ..... :	
☐ Testing procedure: WMT	
Tested by (name + signature) ..... :	
Witnessed by (+ signature)..... :	
Approved by (+ signature) ..... :	
Testing location/ address ..... :	
☐ Testing procedure: SMT	
Tested by (name + signature) ..... :	
Approved by (+ signature) ..... :	
Supervised by (+ signature)..... :	
Testing location/ address ..... :	
☐ Testing procedure: RMT	
Tested by (name + signature) ..... :	
Approved by (+ signature) ..... :	
Supervised by (+ signature)..... :	
Testing location/ address ..... :	

Summary of testing:	
Tests performed (name of test and test clause): **See next page**	**Testing location:** **SIQ**

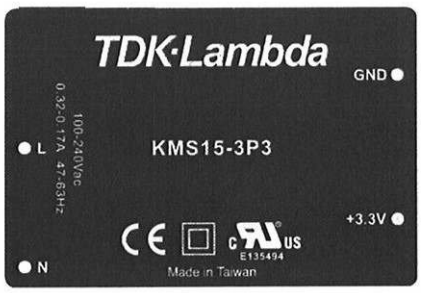
Summary of compliance with National Differences:

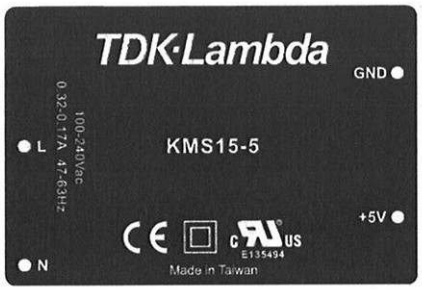
Argentina**, Australia*, Austria**, Belarus**, Belgium**, Brazil**, Bulgaria**, Canada, China*, Croatia**, Czech Republic**, Denmark, Finland, France**, Germany, Greece**, Hungary**, India**, Indonesia**, Ireland, Israel**, Italy**, Japan*, Kenya**, Korea, Malaysia**, Mexico**, Netherlands**, New Zealand*, Norway, Poland**, Portugal**, Romania**, Russian Federation**, Saudi Arabia**, Serbia**, Singapore**, Slovakia**, Slovenia**, South Africa**, Spain, Sweden, Switzerland, Thailand**, Turkey**, Ukraine**, United Arab Emirates**, United Kingdom, Uruguay**, USA

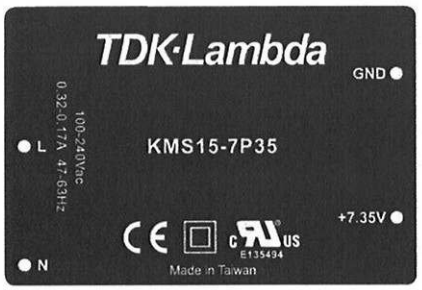
* No national differences to IEC 60950-1:2005 (2nd edition) declared

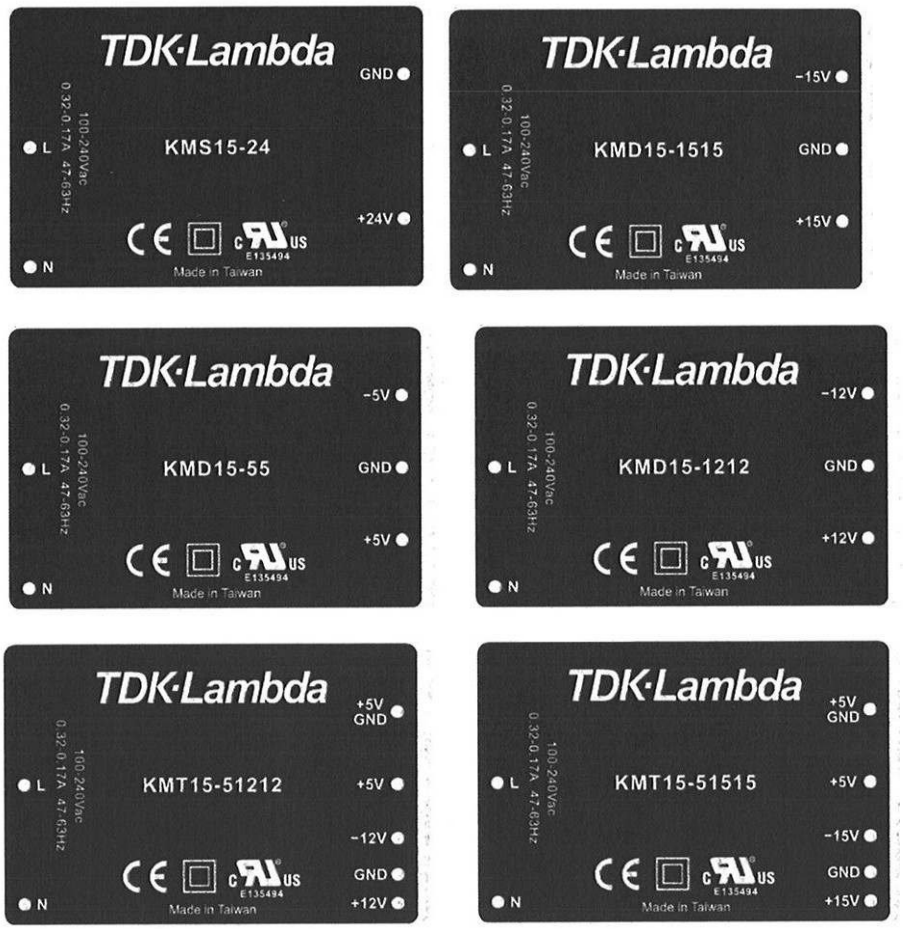
** No national differences to IEC 60950-1:2005 (2nd edition) or IEC 60950-1:2001 (1st edition) declared

Copy of marking plate









The above label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

Overview of the testing done (P = Test passed, N/A test not applicable)		
Clause	Test	Test Conducted
1.6.2	Input Test	P
1.7.11	Durability	P
2.1.1.5	Energy Hazard Measurements	P
2.1.1.7	Capacitance Discharge Test	P
2.2.2	SELV: Hazard Voltage (Circuit) Measurement Test	N/A
2.2.3	SELV Reliability testing	P
2.4	Limited Current Circuit (Bridging components)	P
2.5	Limited Power Source	N/A
2.6	Earthing Test, earth trace test (UL PAG)	N/A
2.9.2	Humidity Test	P
2.10.2	Working Voltage measurement on PCB and Transformer	P
2.10.3/ 2.10.4	Clearance and Creepage distance measurement	P
2.10.5.6	Thin Sheet Material (barriers)	N/A
2.10.5.3	Enclosed or Hermetically Sealed Unit Test	N/A
4.2.2- 4.2.4	Steady force test, 10N, 30 N, 250 N	P
4.2.5	Impact test, Fall test, Swing test	N/A
4.2.6	Drop test	N/A
4.2.7	Stress relief test; heat test (°C/7 h)	N/A
4.2.10	Wall or ceiling mounted equipment	N/A
4.3.2	Handle Test (with USA Deviation)	N/A
4.3.6	Torque Test for direct plug in Products. Dimensions of the plugs	N/A
4.5.2	Heating (Temperature) Test	P
4.5.5	Resistance to abnormal heat (Ball pressure test)	P
5.1	Touch Current and protective conductor current	P
5.2	Electric Strength Test	P
5.3	Abnormal Operating Tests foreseeable misuse: SELV reliability and failure in the voltage regulation Functional insulation, Component faults Overload and short and no load at the outputs , Air holes closed, Fan blocked, Voltage Mismatch, battery back feed test	P

Test item particulars ..... :	
Equipment mobility ..... :	[] movable [] hand-held [] transportable [] stationary [X] for building-in [] direct plug-in
Connection to the mains ..... :	[] pluggable equipment [] type A [] type B [] permanent connection [] detachable power supply cord [] non-detachable power supply cord [X] not directly connected to the mains
Operating condition ..... :	[X] continuous [] rated operating / resting time:
Access location ..... :	[X] operator accessible [] restricted access location
Over voltage category (OVC) ..... :	[] OVC I [X] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values ..... :	± 10 %
Tested for IT power systems ..... :	[] Yes [X] No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	[] Class I [X] Class II [] Class III [] Not classified
Considered current rating (A) ..... :	16 A
Pollution degree (PD) ..... :	[] PD 1 [X] PD 2 [] PD 3
IP protection class ..... :	IP20
Altitude during operation (m) ..... :	Up to 2000 m
Altitude of test laboratory (m) ..... :	300 m
Mass of equipment (kg) ..... :	120 g
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 ..... :	2010-05-18
Date(s) of performance of tests ..... :	2010-05-18 to 2010-06-09
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. **Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.** Throughout this report a comma is used as the decimal separator.	

This Test Report consists of the following documents:

1. Test Report
2. National Differences – Enclosure No. 1
3. European Group Differences and National Differences according to EN 60950-1:2006 + A11:2009 – Enclosure No. 1a
4. Pictures – Enclosure No. 2
5. Schematics, Layouts, Transformer data - Enclosure No. 3

General product information:

Information about the Product:

The equipment, models: KMx15-y is switching type power supply for building into the information technology equipment.

In model designation, ‘’x’’ can be S, D or T (S= Single output, D= Dual output, T= Triple output), ‘’y’’ can be 3P3, 5, 7P35, 9, 12, 15, 24, 55, 1212, 1515, 51212 or 51515, which is used to indicate different output. For output rating of each model, see table on page 2 for details.

The equipment, models: KMx15-y is provided with plastic case and filled with non-conductive compound.

PCB with dimension 60 mm by 41 mm is used. There are totally 3 different layout of main PCB:

- MTC-S
- MTC-D
- MTC-T

Circuit design in primary circuit of all models is identical. Circuit design in secondary circuit of all models is similar except for different design and sets of regulation circuits for multiple outputs.

All the transformers have similar separation construction, transformer construction details of model KMx15-y is specified in Enclosure No. 3.

Summary of testing:

1) PSU was tested according to the standard IEC 60950-1:2005 (2nd Edition) and/or EN 60950-1:2006.

2) The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturers specification of: 50 degree C.

3) Safety Instructions: Built in product, safety instructions are end product considerations

4) The test samples are pre-production with serial number.

5) Switch mode transformer provides reinforced insulation between primary and secondary side. Secondary windings are triple insulated and made by RUBADUE. There is also reinforced insulation between transformed core and secondary parts of the equipment.

6) The equipment has been evaluated for use in a Pollution Degree 2 and overvoltage category II environment and a maximum altitude of 2000 m.

7) A suitable Electrical and Fire enclosure shall be provided in the end equipment.

8) The output of power supply does not comply with the requirements for limited power sources sub-clause 2.5.

9) The requirements given in EN 60950-1:2001 incl. A11:2004 are fully covered by the requirements given in EN 60950-1:2006. The EN 60950-1:2006 incorporates several different requirements which do not have any influence on the requirements also given in EN 60950-1:2001 incl. EN 60950-1:2001/A11:2004. Therefore all products conforming to EN 60950-1:2006 will also be conform to EN 60950-1:2001 incl. A11:2004.