









Test Report issued under the responsibility of:



IEC 60601-1 Medical electrical equipment Part 1: General requirements for basic safety and essential performance	
Report Reference No.....	E349607-D1000-2/A3/C1-CB
Date of issue	2017-07-24; 2017-12-18(A1); 2018-03-09(C1); 2018-05-21 (A2); 2020-08-19 (A3)
Total number of pages.....	359
CB Testing Laboratory.....	UL International Polska Sp. z o.o.
Address	Aleja Krakowska 81 05-090 Sekocin Nowy, POLAND
Applicant's name.....	TDK-Lambda UK Ltd
Address	Kingsley Avenue Ilfracombe, Devon, EX34 8ES UNITED KINGDOM
Test specification:	
Standard	IEC 60601-1:2005, COR1:2006, COR2:2007, AMD1:2012 (or IEC 60601-1:2012 reprint)
Test procedure	CB Scheme
Non-standard test method.....	N/A
Test Report Form No.....	IEC60601_1P
Test Report Form Originator	UL(US)
Master TRF	2019-10-11
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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:	Switch Mode Power Supply	
Trade Mark:	TDK-Lambda	
Original Product/Equipment Manufacturer	Same as Applicant	
Branding Manufacturer(s):		
Model/Type reference:	XMS350 or XMS-350 and XMS500, XMS-500, XMS500P, XMS-500P, XMS500A, XMS500AP series switch mode power supplies	
Ratings:	XMS350, XMS-350: 100-240Vac nom., 47-63Hz, 5.3A rms max. XMS500, XMS-500, XMS500P, XMS-500P, XMS500A, XMS500AP: 100-240Vac nom., 47-63Hz, 7A rms max. (see report Model Differences for details of nomenclature)	
Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	
Testing location/ address	UL International Polska Sp. z o.o. Aleja Krakowska 81 05-090 Sekocin Nowy, POLAND	
Tested by (name, function, signature)	Maciej Gryczan (Project Handler)	
Approved by (name, function, signature) ..	Mona Nielsen (Reviewer)	
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) ..		
Approved by (name, function, signature) ..		
<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 3:	

[]	Testing procedure: CTF Stage 4:	
Testing location/ address	TDK-Lambda UK Ltd, Kingsley Avenue, Ilfracombe, Devon, EX34 8ES, United Kingdom	
Tested by (name, function, signature)	Matt Carter (Tester)	
Witnessed by (name, function, signature) ..	Maciej Gryczan (Project Handler) - project 4789521389	
Approved by (name, function, signature) ..	Mona Nielsen (Reviewer)	
Supervised by (name, function, signature) :	Maciej Gryczan (Project Handler)	

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

Refer to Appendix A of this report. All attachments are included within this report.

Summary of testing**Tests performed (name of test and test clause):****Testing location:**

Refer to the Test List in Appendix B of this report if testing was performed as part of this evaluation.

Summary of compliance with National Differences

List of countries addressed: Austria, Republic of Korea, USA, Canada, United Kingdom, Sweden, Japan

[X] The product fulfils the requirements of IEC 60601-1:2005, COR1:2006, COR2:2007, AMD1:2012
(or IEC 60601-1:2012 reprint).

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Statement not required by the standard used for type testing

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

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.

Refer to the enclosure(s) titled Marking Label in the Enclosures section in Appendix A of this report for a copy.

GENERAL INFORMATION	
Test item particulars(see also Clause 6):	
Classification of Installation and Use:	For building-in
Device type (component/sub-assembly/ equipment/ system):	Component Switch Mode Power Supply
Intended use (Including type of patient, application location):	To supply regulated power
Mode of Operation:	Continuous
Supply Connection:	To be determined in the end-product
Accessories and detachable parts included:	None
Other Options Include:	None
Testing	
Date of receipt of test item(s)	2015-06-24 to 2015-08-27, 2015-07-17 to 2015-12-17, 2016-04-21, 2016-04-27, 2016-04-21 to 2016-12-02, 2017-10-18, 2017-04-04, 2018-05-25, 2018-05-30, 2020-04-27, 2020-04-28, 2020-05-19, 2020-06-17
Dates tests performed	2015-07-01 to 2015-09-21, 2015-11-10 to 2015-12-17, 2016-04-26 to 2016-05-16, 2016-09-27 to 2016-12-09, 2017-04-07 to 2017-04-27, 2017-10-19 to 2017-11-06, 2018-04-25 to 2018-05-03, 2020-04-28 to 2020-07-07
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement.....	Pass (P)
- test object was not evaluated for the requirement	N/E (collateral standards only)
- test object does not meet the requirement.....	Fail (F)
Abbreviations used in the report:	
- normal condition	N.C.
- means of Operator protection	MOOP
- single fault condition.....	S.F.C.
- means of Patient protection	MOPP

General remarks:

"(See Attachment #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

The tests 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 testing laboratory.

List of test equipment must be kept on file and available for review.

Additional test data and/or information provided in the attachments to this report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC60068-2-1

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

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... :

TDK-LAMBDA UK LTD
KINGSLEY AVENUE
ILFRACOMBE, DEVON, EX34 8ES UNITED KINGDOM

PANYU TRIO MICROTRONIC CO. LTD
SHIJI INDUSTRIAL ESTATE
DONGYONG
NANSHA
GUANGZHOU GUANGDONG CHINA

TRIO-TRONICS (THAILAND) LTD.
7/295 MU. 6
MAP YANG PHON SUB-DISTRICT
PLUAK DAENG DISTRICT
RAYONG PROVINCE THAILAND

General product information:**Report Summary**

This report was modified to include the addition of XMS500A models, verification of 85V input rating, the addition of an alternate fuse (Conquer UBM-A010) and the addition of an alternate factory address

Refer to the Report Modifications for any modifications made to this report.

Product Description

XMS350 or XMS500 series switch mode power supplies
(See Model Differences for details of nomenclature)

The series consists of two power outputs, a 350W and 500W, these use the same topology with some component variations.

The XMS series switch mode power supply consists of:

1. Input filter, consisting of the input fuse(s), X and Y capacitors, common mode chokes up to the bridge and series choke after the bridge.
2. PFC (boost circuit), consisting of the boost choke and associated switching FETs/circuitry.
3. Forward converter, consisting of the main transformer and switching FETs/circuitry supplying channel 1 and fan supply outputs.
4. Standby circuit, consisting of the standby transformer and switching IC/circuitry supplying the standby output.

5. Secondary circuits (SELV), consisting of channel 1 output, standby output, fan supply, power OK and inhibit/enable.

Model Differences

XMS350 or XMS500 series (may also be marked as XMS-350 or XMS-500) as described below:

Units may be marked with a Product Code: Xy where y may be any number of characters.

Unit Configuration Code (Description): may be prefixed with NS # or K # followed by / or - (where # may be any number of characters indicating non-safety related model differences).

Unit Configuration Code (Description): may be prefixed by SP followed by / or – (SP represents a sales code)

Unit Configuration (Description)

XMSxy-a-bc-defghijklm

where:

x = 350 for 350W model

500 for 500W model

500A for enhanced 500W model (less than 1W inhibited)

500P for 576W peak power models (36, 40V and 48V output models only)

500AP for enhanced 500W model with 576W peak power (36V, 40V, 48V output models only)

y = Blank for Class I

D for Class II

a = Channel 1 Output Voltage (see Ch1 in the table below, adjustment range column).

b = Standby Output Voltage: see standby voltage in table below

N for no supply

5 for 5 volt

12 for 12 volt

c = Standby Output Current†:

C for 0.5A

M for 1.0A

H for 2.0A

N for no supply or 0 amps output

d = Fan Supply†:

N for no fan supply (customer cooling)

N1 for 24V fan supply (customer cooling)

N2 for 12V variable supply

N3 for 12V fixed supply

KF for non-standard top fan

TF for top-fan

e = U for non-standard U chassis

P for perforated frame

N for Open Frame

C for custom chassis/covers for non-standard models

S for standard U chassis

B for standard U chassis with perforated cover

f = Touch (Enclosure) current:

B for <100uA

T for <75uA

g = Earth leakage current:

D for Class II (no Earth)

L for <300uA

R for <150uA

T for <100uA

h = E or In for inhibit

T or En for enable

i = A for AC OK option

N for no AC OK option

P for Power Good Option (XMS500A or XMS500AP models only)

j = Blank for dual fuses fitted

FL for single fuse fitted in the Live line

klm = Blank for standard output settings

May be three numbers from 0 to 9 (preceded by -) which denotes various output voltage/current settings within the specified ranges of each output for a particular unit. (may define non-safety related parameters/feature, e.g. reduced primary current limit, reduced OVP)

Input Parameters

Nominal input voltage 100 - 240 Vac

Input voltage range 85 - 264 Vac

Input frequency range 47 - 63 Hz

Maximum input current 7A (5.3A*) rms

* Input for 350W models.

All ratings apply for ambient temperatures up to 50°C.

At 85Vac input the following deratings apply to all XMS500 TF models: 500W output power at 40°C ambient or 400W output power at 50°C ambient

Output Parameters

†Output ratings are in accordance with the following table:

Standard models:

Output Channel	Voltage Designation	Vout nom.(V)	Adjustment Range (V)	Output Current (A)	Output Power (W)
CH1 (500W)	12	12	11.6 - 13.2	41.6	500
	24	24	23.8 - 25.2	20.8	500
	36	36	36	13.8(16*)	500(576*)
	40	40	38 - 42	12.5(15.16*)	500(576*)
	48	48	47-50	10.4(12*)	500(576*)
Standby Option	5	5	5 - 5.5	0.5	2.75
	5	5	5 - 5.5	2.0	11.0
	12	12	12-13.2	1	13.2
Fan Supply	N	-	-	-	-
	N1	24	Fixed	0.2	4.8
	N2	12	6-12	-	3.0
	N3	12	Fixed	0.25	3.0
CH1 (350W)	24	24	23.8 - 25.2	14.6	350

Standby Option	N	10	5 - 15	0	0
Fan Supply	N	-	-	-	-
	N1	24	Fixed	0.2	4.8

*576W peak power up to 2 minutes with 500Wrms power using the following formula:

$$500Wrms = ((\text{peakpower}^2 \times T1 + \text{reducedpower}^2 \times T2) / (T1 + T2))^{1/2}$$

Where T1 = peakpower time on in seconds

T2 = reducedpower time on in seconds

Non-Standard Models:

X00011# XMS350-24-NN-N1CBLEN Customer specific chassis

X00023# XMS500D-24.5-5C-KFCBDEN Customer specific top fan/chassis model

X00073# XMS500-24-NN-NCBRInA Customer specific chassis/cover

Where # can be any letter denoting non-safety related changes.

Output Limitations:

All outputs are SELV

Channel 1 is hazardous energy

Additional Information

Cooling for units with customer supplied air (all models except –TF and KF fan supply)

The following method must be used for determining the safe operation of PSUs.

The components listed in the following table must not exceed the temperatures given. To determine the component temperatures the heating tests must be conducted in accordance with the requirements of the standard in question. Consideration should also be given to the requirements of other safety standards. Test requirements include: PSU to be fitted in its end-use equipment and operated under the most adverse conditions permitted in the end-use equipment handbook/specification and which will result in the highest temperatures in the PSU. To determine the most adverse conditions consideration should be given to the end use equipment maximum operating ambient, the PSU loading and input voltage, ventilation, end use equipment orientation, the position of doors & covers etc. Temperatures should be monitored using type K fine wire thermocouples (secured with cyanoacrylate adhesive or similar) placed on the hottest part of the component (out of any direct airflow) and the equipment should be run until all temperatures have stabilised.

Cooling for unit temperature table:

Circuit Ref:	Description	Max. Temperature (°C) ++
J1	Input Connector	105
C7, C8	X Capacitor	100
L2, L4	Common Mode Choke Winding	130 (145)
L6	Series Mode Choke Winding	130
ASY5 D7	Bridge Diode	125 (130)
C14, C11, C21, C22, C10, C23, C24, C6, C18 (++)	Y Capacitors	100
C26	Capacitor	85 (105)
RLY1	Relay	100
U1, U2, U5, U6, U7 (++)	Opto-Coupler	100
TX1 (Standby)	Windings and core	120 (130)
TX3 500W	Windings and core	120 (130)

TX3 350W	Windings and core	100 (110)
ASY6 Q3	Boost FET	127 (130)
ASY4 Q1	Forward FET	127 (130)
ASY3 Q4	Output FET	127 (130)
C13	Boost Capacitor	80 (105)
C9	Boost Capacitor	70 (105)
L3, L5	Boost Choke Winding	130 (140)
L7	Channel 1 Output Choke	130 (140)
C4, C5, C15, C16, C17		
C19, C20 (++)	Electrolytic Capacitors	80 (105)

+ The higher temperature limits in brackets may be used but product life may be reduced.

++ When fitted

Amendment 1 (project #4787185482):

This report is the 1st amendment to the original CBTR Ref. No. E349607-D1000-CB-1 dated 2015-06-11 with CB Test Certificate DK-49679-UL dated 2015-06-11.

This E349607-D1000-1/A1/C0 amending Test Report shall be read and reproduced only in conjunction with Original Test Report.

Based on conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard.

The original report was modified to include the following changes/additions:

- 1) CH1, 48V unit assessed (CH1 output voltage rated 48V added)
- 2) Standby, 12V, 1A and 5V, 2A assessed (new ratings of standby output)
- 3) Variable speed fan assessed
- 4) Perforated chassis assessed
- 5) Bypass capacitors assessed (C23, C24 added to CCL)
- 6) Critical components updated
- 7) Enclosures updated
- 8) Add standard top fan
- 9) Add standard U chassis
- 10) CBTL changed to CBTL Denmark
- 11) Models designations description revised

Amendment 2 (project #4787424006):

This report is an amendment to CBTR Ref. No. E349607-D1000-1-CB dated 2015-06-11 including E349607-D1000-1/A1/CO-ULCB amendment 1 dated 2016-02-15 with CB Test Certificates DK-49679-UL dated 2015-11-09 and DK-49679-A1-UL dated 2016-02-24.

This E349607-D1000-1/A2/C0 amending Test Report shall be read and reproduced only in conjunction with Original Test Report and previous Amendment.

Based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required.

The original report was modified on 2016-06-03 to include the following changes/additions:

- 1) CH1, 12V unit assessed
- 2) Critical components updated/corrected (added C21 and C22 input to chassis Y capacitors)
- 3) Enclosures updated
- 4) XMS350 input current rating corrected to 5.3A
- 5) Added N3 option (as N2 but fixed 12V standby output)

- 6) Added standard 12V top fan
- 7) Clause 15.5.2 corrected
- 8) Table 8.8.3 corrected to include Z primary to secondary

Amendment 3 (project #4787696215):

This report E349607-D1000-1/A3/C0 is the 3rd amendment to CBTR Ref. No. E349607-D1000-1-CB dated 2015-06-11 with amendment 1 dated 2016-02-15 and amendment 2 dated 2016-08-11.

This E349607-D1000-1/A3/C0 amending Test Report shall be read and reproduced only in conjunction with Original Test Report and previous Amendments.

Based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required.

The original report was modified to include the following changes/additions:

1. Addition of alternates to the CCL.
2. Corrections to CCL.
3. Add alternate TX1 flyback transformers
 - 230295 (5V, 0.5A)(winding position changes for EMC)
 - 230294 (5V, 2A), (adding foil for EMC)
 - 230287 (12V, 1A), (winding position changes for EMC)
4. Add alternate GUL wing Lexan insulator
5. Nomenclature changes:
 - g = T for <100uA
 - h = T or En for enable
 - E or In for inhibit
6. XMS500 40V and 48V models add peak power of 576W up to 2 mins
7. C7 X capacitor value increased to 470nF max
8. Add alternate L2 common mode choke

Amendment 1 (Project# 4788143479)

This report is an amendment to CBTR Ref. No. E349607-D1000-2/A0/C0-ULCB dated 2017-07-24 with CB Test Certificates DK-65446-UL dated 2017-06-25.

Based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required.

The original report was modified on 2017-11-09 to include the following changes/additions:

1. Addition of alternates to the CCL, add L4 to alternate L2 common mode choke and Rynite base E41938
2. Corrections to CCL. (Rynite UL CCN code)
3. Add X00073# (where # may be any letter) to non-standard models.
4. Add X00073# Gap-pad to CCL
5. Add Nomenclature change:
 - e = B for standard U chassis with perforated cover
6. Add X00073# Gap-pad drawings to Enclosures
7. Add X00073# chassis and cover drawings to Enclosures
8. Replace the following Enclosures with updated Enclosures:
 - diagrams 01, 04, 09
 - manuals 01
 - miscellaneous 07
9. Add new Enclosures:
 - photographs 06, 07
 - diagrams 10 – 14

Amendment 2 (Project#4788477050)

This report is an amendment to CBTR Ref. No. E349607-D1000-2/A1/C0-ULCB dated 2017-12-18 with CB

Test Certificate DK-65446-A1-UL dated 2017-12-18.

Based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required.

1. Addition of alternate capacitors and discharge resistors in the Critical Components Table
2. Amendments to the Critical Components Table to update component certificate numbers and include standard editions and issue dates
3. Update the enclosures to include diagrams, revised manual & PWB layouts and deleted License documents where they are no longer applicable to this product.
4. Evaluate the Clearance requirements of the PSU for use at 4000m
5. Correction to the report to include nomenclature update for "B" under option "e" which was omitted from the previous publication and exclude model "TF" in the Additional Information for units with customer supplied air.

Amendment 3 (Project# 4789460918).

This report is a technical amendment to CBTR Ref. No. E349607-D1000-2/A2/C1-ULCB dated 2018-05-21 with CB test certificate DK-65446-A2-UL dated 2018-05-21.

Based on previously conducted testing and the review of product technical documentation including: photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required.

The report was modified to include the following changes/additions:

1. Addition of XMS500A, XMS500P, XMS-500Png, XMS500AP models including relevant testing and modifications to the CCL and Enclosures
2. Verification of 85V input rating for all XMS models.
3. Addition of alternative fuse including relevant testing and modifications to the CCL
4. Addition of alternate factory address
5. General updates to enclosures

Technical Considerations

- The product was investigated to the following standards:

Main Standard(s):

IEC 60601-1 Edition 3.1 (2012)

From Country Differences:

- Austria: EN 60601-1:2006/A1:2013
- Republic of Korea: KS C IEC 60601-1
- USA: AAMI/IEC 60601-1:2005 + AMD 1:2012
- Canada: CSA CAN/CSA-C22.2 NO. 60601-1:14
- United Kingdom: BS EN 60601:2006 A1
- Sweden: SS-EN 60601-1:2006+A11:2011+A1:2013+AC1:2014+A12:2014
- Japan: National standard JIS T 0601-1:2017 (IEC 60601-1:2005 + A1:2012(MOD))

Additional Standards:

EN 60601-1:2006/ A11:2011/ A1:2013/ A12:2014 (IEC60601-1, Edition 3.1),
ANSI/AAMI ES60601-1:2005/(R)2012 and A1:2012,, C1:2009/(R)2012 and A2:2010/(R)2012
Medical Electrical Equipment - Part 1 (IEC 60601-1:2005, Mod),
CAN/CSA-C22.2 NO. 60601-1:14 - Medical electrical equipment - Part 1 (Adopted IEC 60601-1:2005, third edition, 2005-12, incl. Am1:2012, with Canadian deviations), Third Edition

- The following additional investigations were conducted:
- The product was not investigated to the following standards or clauses: Biocompatibility, PESS, EMC, Annex Z of EN standards for compliance with the MDD
- The following accessories were investigated for use with the product:
- The product was tested for use at the maximum ambient temperature (T_{ma}) 50°C in normal conditions permitted by the manufacturer, see Additional Information for details.

EMC compliance has not been verified nor has it been taken into consideration. An accredited EMC Test Report will be required in conjunction with the Certification of the end product.

Multilayer PWB's accepted under CBTR Ref No. E349607-A23 dated 2014-07-31 and letter report in Enclosure 8-07 of this report.

Engineering Conditions of Acceptability

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

The following Production Line tests are conducted for this product: Electric Strength, Earthing Continuity (except XMSxD model)

The following secondary output circuits are SELV: All

The following secondary output circuits are at hazardous energy levels: Channel 1

The following secondary output circuits are at non-hazardous energy levels: Standby output, fan output

The following output terminals were referenced to earth during performance testing. All outputs and their return lines individually referenced to earth to obtain maximum working voltage.

The power supply terminals and/or connectors are: Not investigated for field wiring

The maximum investigated branch circuit rating is: 20A

The investigated Pollution Degree is: 2

Open frame models, H3 is connected to the input connector earth (not applicable to XMSxD model)

Proper bonding to the end-product main protective earthing termination is: Required (except XMSxD model)

The following magnetic devices (e.g. transformer or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): TX1 (Class F), TX3 (Class B or F) see Critical Component List for details of insulation systems used.

The following end-product enclosures are required: Mechanical, Fire, Electrical

All models require component temperatures monitored as detailed in the Additional Information (except KF and TF fan models)

The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV:405Vrms, 655Vpk, Primary-Earthed Dead Metal: 365Vrms, 632Vpk

An investigation of the protective bonding terminals has: been conducted.

Output circuits have not been evaluated for direct patient connection (Type B, BF, CF)

Considerations to the applied parts requirement, to be conducted as end-product.

End product Risk Management Process to be performed to include consideration of requirements specific to the Power Supply.

Report Modifications

Date Modified (Year-Month-Day)	Modifications Made (include Report Reference Number)	Modified By
2017-07-24	<p>Reissue 2 (project #4787966767): This report is a reissue of CBTR Ref. No. E349607-D1000-1-CB dated 2015-06-11 including E349607-D1000-1/A1/C0-ULCB (Amendment 1) dated 2016-02-15, E349607-D1000-1/A2/C0-ULCB (Amendment 2) dated 2016-08-11 and E349607-D1000-1/A3/C0-ULCB (Amendment 3) dated 2017-02-07 with CB Test Certificates: DK-49679-UL dated 2015-11-09, DK-49679-A1-UL dated 2016-02-24, DK-49679-A2-UL dated 2016-08-23 and DK-49679-A3-UL dated 2017-02-16. Based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required. Under this reissue, the report was modified to include the following changes/additions:</p> <ol style="list-style-type: none"> 1. Addition of 36V Model 2. Addition of 36V Peak Power Model 3. Addition of Nomex for top fan option 4. Updates to CCL 5. CBTL changed to UL Poland 	Mrs. T. Burgess
2017-12-18	<p>This report is an amendment to CBTR Ref. No. E349607-D1000-2/A0/C0-ULCB dated 2017-07-24 with CB Test Certificates DK-65446-UL dated 2017-06-25. Based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required.</p> <p>The original report was modified on 2017-11-09 to include the following changes/additions:</p> <ol style="list-style-type: none"> 1. Addition of alternates to the CCL, add L4 to alternate L2 common mode choke and Rynite base E41938 2. Corrections to CCL. (Rynite UL CCN code) 3. Add X00073# (where # may be any letter) to non-standard models. 4. Add X00073# Gap-pad to CCL 5. Add Nomenclature change: e = B for standard U chassis with perforated cover 6. Add X00073# Gap-pad drawings to Enclosures 7. Add X00073# chassis and cover drawings to Enclosures 8. Replace the following Enclosures with updated Enclosures: diagrams 01, 04, 09 manuals 01 	Hubert Koszewski

	miscellaneous 07 9. Add new Enclosures: photographs 06, 07 diagrams 10 – 14	
2018-03-09	The report was modified to include the output ratings table in the Model Differences section and the temperature table in the Additional Information section of the report, typographical correction.	Hubert Koszewski
2018-05-21	<p>Technical modification to the report to make the following changes in the report:</p> <ol style="list-style-type: none"> 1. Addition of alternate capacitors and discharge resistors in the Critical Components Table 2. Amendments to the Critical Components Table to update component certificate numbers and include standard editions and issue dates 3. Update the enclosures to include diagrams, revised manual & PWB layouts and deleted License documents where are not longer applicable to this product. 4. Evaluate the Clearance requirements of the PSU for use at up to 4000m 5. Correction to the report to include nomenclature update for "B" under option "e", which was omitted from the previous publication and exclude model "TF" in the Additional Information for units with customer supplied air. <p>Only limited testing was considered necessary to make these changes to the product. Based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard.</p> <p>This report must be read in conjunction with the original Test Report No. E349607-D1000-02/A0/C0-ULCB dated 2017-07-24 & Test Certificate DK-65446-UL dated 2017-07-25 , Test Report No. E349607-D1000-02/A1/C0-ULCB dated 2017-12-18 & Test Certificate DK-65446-A1-UL dated 2017-12-28 and Test Report No. E349607-D1000-02/A1/C1-ULCB dated 2018-03-09.</p>	Hashan Dias
2020-08-19	<p>This report is an technical amendment to CBTR Ref. No. E349607-D1000-02/A0/C0-CB dated 2017-07-24 & Test Certificate DK-65446-UL dated 2017-07-25.</p> <p>Based on previously conducted testing and the review of product technical documentation including: photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard and only limited testing was required.</p> <p>The report was modified to include the following changes/additions:</p> <ol style="list-style-type: none"> 1. Addition of XMS500A, XMS500P, XMS-500P, XMS500AP models including relevant testing and modifications to the LoCC (XR54, XR55, XR79, XR94, XR100, XR101, XR102, XR103 (alternate) Discharge Resistors (XMS500A models only), TX1 (Optional) (XMS500A & XMS500AP models), TX1 Bobbin (XMS500A & XMS500AP models), TX1 Triple Insulated Wire (XMS500A & XMS500AP models) and XTH501 Thermistor) and updated Enclosures 2. Verification of 85V input rating for all XMS models. 3. Addition of alternative fuse including relevant testing and 	Mr. M. Carter

	modifications to the LoCC (Fuse F1 (alternate)XMS350 models only and Fuse F1 (alternate) XMS500 models only) 4. Addition of alternate factory address	
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