



SI-651

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit

Name and address of the applicant Nom et adresse du demandeur

Name and address of the manufacturer Nom et adresse du fabricant

Name and address of the factory Nome et adresse de l'usine

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

Trademark (if any) Marque de fabrique (si elle existe)

Model / Type Ref. Ref. De type

Additional information (if necessary) Information complémentaire (si nécessaire)

A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la

As shown in the Test Report Ref. No. which forms part of this Certificate

Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat

Power supply for building-in

PULS Elektronische Stromversorgungen GmbH Arabellastrasse 15, D-81925 München, Germany

PULS Elektronische Stromversorgungen GmbH Arabellastrasse 15, D-81925 München, Germany

See annex to the certificate

See annex to the certificate

PULS

ML30.xxx-yyy, ML50.xxx-yyy xxx and yyy are not safety relevant

This CB Test Certificate substitutes previously issued CB Test Certificate No. SI-523.

PUBLICATION

EDITION

IEC 60 950:1999

3rd

T223-0060/02

This CB Test Certificate is issued by the National Certification Body Ce Certificat d'essai OC est établi par l'Organisme National de Certification



Slovenski institut za kakovost in meroslovje Slovenian Institute of Quality and Metrology Tržaška c. 2, 1000 Ljubljana, Slovenia

Date: 2002-02-14

Signature:





ANNEX to CB Test Certificate No.: SI-651

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	Input rat	ting		Output	rating	
Model	V ac	Α	Hz	V dc	Α	W.
ML30.xxx-	100-240	1,0	50-60	5-48	≤5,5	≤30
ууу				ог		
				12-15	-	≤36
	or		·			
Model	Vdc	Α				
ML30.xxx-	100-375	1,0	-	5-48	≤5,5	≤30
ууу				or		
				12-15	-	≤36

	Input rat	ting		Output	rating	
Model	V ac	Α	Hz	V dc	Α	W
ML50.xxx. yyy	100-240	1,0	50-60	12 - 48		≤50
	or					
Model	Vdc	Α				
ML50.xxx. yyy	100-375	1,0		12 - 48	-	≤50

The power supplies have adjustable output voltage and output power limitation. Both power supplies can be supplied by ac or dc voltage.

NAME AND ADDRESS OF THE PRODUCTION SITES (FACTORIES):

PULS Elektronische Stromversorgungen GmbH Weltenburgerstr. 6 D-81677 München

PULS Production s.r.o. Zadni Vinohrady ul. Alfonse Muchy 496 43001 Chomotov

2002-02-14

Podpis pooblascene osebe / Authorized signature

Land

Ljubljana,

TEST REPORT

IEC 60950

Safety of information technology equipment

Report reference number:	T223-0060/02
Compiled by (a signature):	Boštjan Glavič Glave Gregor Schoss Glave
Approved by (a signature):	Gregor Schoss Clop Clop
Date of issue:	2002-02-27
Testing laboratory:	Slovenian Institute of Quality and Metrology
Address	Tržaška 2, 1000 Ljubljana, SLOVENIA
Testing location	Same as above
Applicant:	PULS Elektronische Stromversorgungen GmbH
Address:	Arabellastraße 15,D-81925 München Germany
Standard:	IEC 60950, 3rd Edition, 1999
Test Report Form No:	l950F/00-03
TRF originator:	FIMKO
Master TRF	dated 00-02
Copyright blank test report:	the bodies participating in the Committee of Certification Bodie (CCB) and/or the CENELEC Certification Agreement (CCA). This report is based on a blank test report that was prepared by KEM, using information obtained from the TRF originator.
Test procedure:	CB-scheme
Procedure deviation	N.A.
Non-standard test method:	N.A.
Type of test object	Power Supply for building-in
Trademark:	PULS Stromversorgungen
Model/type reference:	ML30.xxx-yyy, ML50.xxx-yyy xxx and yyy are non safety relevant modifications related to output voltage or customer specific versions.
Manufacturer:	PULS Elektronische Stromversorgungen GmbH
	Arabellastraße 15,D-81925 München Germany
Rating:	See page 2

T1	:1		I
1291	ITAM	particu	ıare:
1 631	ILCIII	Daitiou	ıaı o.

Equipment mobility :: For built in use

Operating condition :: continuous

Tested for IT power systems :: Yes

IT testing, phase-phase voltage (V) :: 230 Vac

Class of equipment :: Class I

Mass of equipment (kg).....: approx. 0,3 kg

Protection against ingress of water: IP20

Possible test case verdicts:

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 testing laboratory.

RATINGS

Rated Input:

ML50.xxx-yyy (12-48 V d.c.)			
100 – 240 V a.c.	1,0 – 0,5 A	50-60 Hz	1 phase
ML30.xxx-yyy (5-48 V d.c., max. 30 W)			
100 – 240 V a.c.	0,6 – 0,25 A	50-60 Hz	1 phase
ML30.xxx-yyy (+/- 12-15 V d.c., max. 36 W)			
100 – 240 V a.c.	0,7 – 0,4 A	50-60 Hz	1 phase

Rated Output:

ML30.xxx-yyy: 5 V d.c. -48 V d.c., ≤ 5.5 A, ≤ 30 W and

+/- 12 - 15 V d.c., \leq 36 W

ML50.xxx-yyy: $12 \text{ V d.c.} - 48 \text{ V d.c.} \le 50 \text{ W}$

History sheet

Date	Name	Change	Revision No
2001-05-18-	T223-0179/01	Initial test report issued.	
2002-02-27	T223-0060/02	Added an alternative construction. The output diode is replaced by an electronic board with a FET transistor to reduce the power loss and reduce the temperature rise within the unit (see also list of critical components). Output voltage range for ML50 version is extended to 12-48 V d.c. Changed National Deviations according to CB Bulletin 99A. Changed EN deviations to EN 60950:2000	1.0

[&]quot;(see remark #)" refers to a remark appended to the report.

[&]quot;(see appended table)" refers to a table appended to the report.

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

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		IEC 60950	
Clause	Requirement - Test	Result - Remark	Verdict

ADDITIONAL INFORMATION DESCRIPTION OF EQUIPMENT UNDER TEST Equipment under test is power supply for building-in. There are two different versions of power supplies. Both versions have the same input circuit. There is a potentiometer for adjusting the output voltage. NAME AND ADDRESS OF PRODUCTION-SITES (FACTORIES): PULS Elektronische Stromversorgungen PULS Production s.r.o. **GmbH** Zadni Vinohrady ul. Alfonse Muchy 496 Weltenburgerstr. 6 43001 Chomotov, Check Republic D-81677 München, Germany INFORMATION ABOUT THE STANDARDS / DOCUMENTS CONSIDERED IEC 60950, 3rd Edition: 1999 EN 60950, 3rd Edition: 2000 TESTED ACCORDING TO NATIONAL REQUIREMENTS FOR THE FOLLOWING COUNTRIES: All CENELEC members as listed in EN 60950:2000. All CB members as listed in CB Bulletin 99A, July 2001 LIST OF APPENDIXES / ENCLOSURES TO THE TEST REPORT Appendix EN 60950: 2000 Page 76 **GROUP DIFFERENCES** Page 86 Australian deviations (including New Zealand) Page 88 Canadian und USA deviations. Page 97 Chinese deviations Page 102 Israeli deviations Page 102 Japanese deviations. Page 103 Korean deviations Page 107 Norwege deviations Page 107 Sweden deviations Page 109

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Clause	Requirement - Test	Result - Remark	Verdict

	SUMMARY OF TESTING :	
Clause	Information/Remarks	Comments
1.0	General	The component has been judged on the basis of the required spacing, in the standard for information technology equipment, including electrical business equipment, CSA22.2-no. 60950, UL60950, IEC60950 third edition.
1.2.8	Circuits and circuit characteristics	The outputs are SELV, non hazard energy level.
1.7.10	IT Power System	The Power Supply was tested for IT and TN Power Systems.
2.10	Pollution degree	The equipment was evaluated for use in a pollution degree II environment.
4.5	Heating test	The following components should be given special considerations during the end-use heating tests because of temperatures achieved during the component level testing: Component max. Temp. Achieved:
		T1 winding 87 °C at 24 °C ambient (85 Vdc input).
5.3.6	Abnormal testing	The product is tested on a 32 a branch circuit. If used on a branch circuit greater than this, additional testing might be necessary.
Annex C	Working voltage	The working voltage present is 335 Vrms, 508 V peak. The electrical strength test for the power supply shall be based on these values.
1.5	Terminals	The terminals are suitable for field wiring.
4.6.2	Enclosures	An electrical and fire enclosure has to be provided in the end product.
UL508 32.7	Limited energy circuit requirements	Unit complies with requirement for limited energy circuit.

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		IEC 60950	
Clause	Requirement - Test	Result - Remark	Verdict

Overview of Tests Performed

Clause	Test	Result
		_
1.6.1	Input Test: Single Phase.	Р
2.1.1.5	Energy Hazard Measurements	Р
2.1.1.7	Capacitance Discharge Test	Р
2.9.2	Humidity Test	Р
2.2.2	SELV: Hazard Voltage (Circuit) Measurement Test	Р
2.2.3	SELV Reliability testing	Р
2.6.3.3	Earthing Test	Р
2.7	Fuse Test (AC approved fuse in DC circuit)	Р
2.10	Creepage and Clearance	Р
	Working Voltage measurement	
2.10.5.1	Distance through Insulation Measurements	Р
2.10.7	Enclosed or Hermetically Sealed Unit Test	N
4.2	Steady Force test (10 N, 30 N.)	Р
4.2.7	Stress relief test	Р
4.2.10	Wall mounting test.	N
4.5.1	Heating (Temperature) Test	Р
5.1	Touch Current	Р
5.2	Electric Strength Test	Р
5.3.6	Component Failure Test	Р
5.3	Abnormal Operating Tests foreseeable misuse	Р
Annex C.	Transformer Output Short	Р
	Transformer loaded with max. possible Current	
	Working Voltage measurement	
UL 508	Limited Energy circuit	Р
32.7		

This is an extract of the CB-Scheme report with the most important information. If a complete copy of the report is required, please contact your PULS sales representative.	e.