Ref. Certif. No.

NO113598

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI DACCEPTATION MUTUELLE DE CERTIFICATS DESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	AC/DC switching power supply
Name and address of the applicant Nom et adresse du demandeur	Bel Fuse Inc. 206 Van Vorst St. Jersey City, NJ 07302 USA
Name and address of the manufacturer Nom et adresse du fabricant	Bel Fuse Inc. 206 Van Vorst St. Jersey City, NJ 07302 USA
Name and address of the factory Nom et adresse de l'usine Note: When more than one factory, please report on page 2 Note: Lorsque il y plus d'une usine, veuillez utiliser la deuxième page	BPS Asia Pacific Electronics (Shenzhen) Co., Ltd. Building# 6, Nanming Road, Gongming Town Huahong Xintong Industrial Park, Guangming District, Shenzhen 518108 China ☐ Additional information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input: 1.8 A, 100-240 Vac, 50/60Hz
Trademark (if any) Marque de fabrique (si elle existe)	bel POWER SOLUTIONS & PROTECTION a bel group
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	CTF Stage 3
Model / Type Ref. Ref. De type	MPB125-xxxx Series
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la deuxième page	Output ratings see the test report. The followed by suffix R or G or X or combinations of different suffixes), where R denotes stand-by and remote on/off circuitry, G denotes ROHS version and X denotes a series of alphanumeric characters indicating non-safety critical options, more information see the test report. ☐ Additional information on page 2
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	IEC 62368-1:2018
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport dessais numéro de référence qui constitue partie de ce Certificat	403698

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

Nemko

Philip Pedersen vei 11,
NO-1366 Lysaker, Norway

Date: 14-08-2020

Signature: Juan Z. Saussey
Certification Department

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number..... :	403698
Date of issue ..... :	13 August, 2020
Total number of pages ..... :	83
Name of Testing Laboratory preparing the Report ..... :	
Applicant's name..... :	Bel Fuse Inc.
Address ..... :	206 Van Vorst St., Jersey City, NJ 07302, USA
Test specification:	
Standard ..... :	IEC 62368-1: 2018
Test procedure..... :	CB Scheme
Non-standard test method..... :	N/A
Test Report Form No. ..... :	IEC62368_1C
Test Report Form(s) Originator.... :	UL(US)
Master TRF ..... :	Dated 2019-01-17

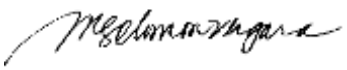
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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 .....:	AC/DC switching power supply
Trade Mark .....:	bel POWER SOLUTIONS & PROTECTION a bel group
Manufacturer.....:	Same as Applicant
Model/Type reference .....:	MPB125-xxxx Series (followed by suffix R or G or X or combinations of different suffixes), where R denotes stand-by and remote on/off circuitry, G denotes ROHS version and X denotes a series of alphanumeric characters indicating non-safety critical options. See table in General product information for additional model variations.
Ratings .....:	Input: 1.8 A, 100-240 Vac, 50/60 Hz Output: See General Product Information for Output Ratings.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	Nemko USA Inc.	
Testing location/ address ..... :		2210 Faraday Ave. Suite 150, Carlsbad, CA 92008, USA	
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature) .. :			
☒	**Testing procedure: CTF Stage 3:**	BPS Asia Pacific Electronics (Shenzhen) Co., Ltd.	
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :		Building#6, Nanming Road, Gongming Town Huahong Xintong Industrial Park Guangming District 518108 Shenzhen PEOPLE'S REPUBLIC OF CHINA	
Tested by (name + signature) ..... :		Editha Vergara (Customer Representative)	
Witnessed by (name, function, signature). :		Jeff Busch (Project Handler)	
Approved by (name, function, signature) .. :		George Daverin (Verificator)	

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

Attachment 1: Europe Group National Differences and National Differences according to EN 62368-1:2020 +A11:2020 (23 pages)

Attachment 2: National Differences: USA and Canada (8 pages)

Attachment 3: Photos (7 pages)

Attachment 4: Miscellaneous Documentation, e.g. Installation instruction, Magnetics drawing etc. (9 pages)

(Not for publication – Engineering use only)

Summary of testing:

The test data referenced in this report was originally generated and published as part of a previous evaluation to IEC 60950-1:2005+Am1:2009+Am2:2013. (CB Report Ref. No. 292059, CB Certificate Ref. No. NO88712) Additional testing was required for this evaluation.

The equipment is a component, switch mode power supply with AC input (ES3/PS3) and DC voltage outputs (ES1/PS3) for building-in.

Intended location: The equipment is to be installed in the end product where the suitability of installation is to be evaluated in the end product.

Safety Instructions: Instructions shall be supplied in a language suitable for the country into which the product is to be sold.

Maximum operating temperatures: Equipment for building-in. Heating test was conducted monitoring the internal components temperature. Accessibility to high component temperature must be considered on end system equipment.

Equipment markings: Identification marking (trade-mark and model name) are marked on the equipment. However, the durability test was not considered because the equipment is a component level product for building-in. Therefore, the marked surface is not to be located in an external area where it is likely to be cleaned with cleaning solution, rubbed, etc.

The unit tested is a prototype with all possible options and worst case of the family models when necessary. The following tests have been performed with acceptable results.

Tests performed (name of test and test clause):	**Testing location:**
5.2 Classification of electrical energy sources	BPS Asia Pacific Electronics (Shenzhen) Co., Ltd.
5.4.1.8 Determination of working Voltage measurement	Building#6, Nanming Road, Gongming Town Huahong Xintong Industrial Park Guangming District 518108 Shenzhen PEOPLE'S REPUBLIC OF CHINA
5.4.2, 5.4.3 Minimum clearances/creepage distances	
5.4.8 Humidity	
5.4.9 Electric Strength tests	
5.5.2.2 Stored discharge on capacitors	
5.6.6 Resistance of protective conductors and terminations	
5.7.4 Unearthed accessible parts	
5.7.5 Earthed accessible conductive part (Prospective touch voltage, touch current and protective conductor current)	
6.2.2 Power source circuit classifications	
5.4.1.4, 9.3, B.1.5, B.2.6 – Temperature measurements	

B.2.5 Input B.3, B.4 Abnormal operating and fault condition tests T- Mechanical and Stress Relief test R-Limit short circuit test	

Summary of compliance with National Differences (List of countries addressed):

The list of countries recognizing the CB Scheme is actively updated on the iecee.org website.

All CENELEC members according to EN 62368-1:2020 +A11:2020.

All National Differences listed in the IECEE Online Bulletin are covered by the Common Modifications, Special National Conditions, National Differences, and the National Requirements noted above except for the following countries which are documented in National Differences Appendixes attached to this report.

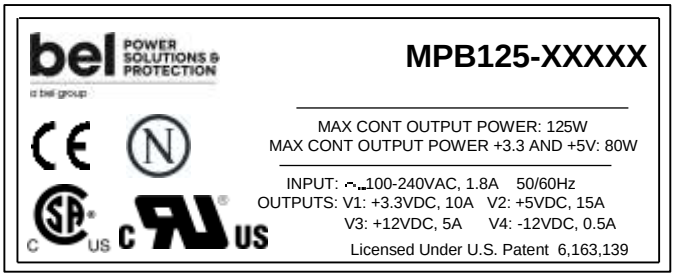
Canada/USA

☒ **The product fulfils the requirements of IEC/EN 62368-1:2020 +A11:2020.**

☒ **The product fulfils the requirements of CSA/UL 62368-1:2019.**

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.



Calibration	All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Further information about traceability will be given on request.
Measurement uncertainty	Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007, and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
Evaluation of results	If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed - ref IEC Guide 115:2007. The instrumentation accuracy is within limits agreed by IECEE-CTL.

Test item particulars:	
Product group .....:	☐ end product ☒ built-in component
Classification of use by .....:	☐ Ordinary person ☐ Children likely present ☒ Instructed person ☒ Skilled person
Supply connection.....:	☒ AC mains ☐ DC mains ☐ not mains connected: ☐ ES1 ☐ ES2 ☐ ES3
Supply tolerance .....:	☒ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☐ None
Supply connection – type .....:	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☒ other: for building-in, to be evaluated at end use
Considered current rating of protective device.....:	☒ 20 A for North America, 16 A for Europe Location: ☒ building ☐ equipment ☐ N/A
Equipment mobility .....:	☐ movable ☐ hand-held ☐ transportable ☐ direct plug-in ☐ stationary ☒ for building-in ☐ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:
Overvoltage category (OVC) .....:	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Class of equipment .....:	☒ Class I ☐ Class II ☐ Class III ☐ Not classified ☐
Special installation location .....:	☒ N/A ☐ restricted access area ☐ outdoor location ☐
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma}.....:	50 °C ☐ Outdoor: minimum °C
IP protection class .....:	☒ IPX0 ☐ IP20
Power systems .....:	☒ TN ☒ TT ☒ IT (Norway only) - 230 V $_{L-L}$ ☐ not AC mains
Altitude during operation (m) .....:	☒ 2000 m or less ☐ m
Altitude of test laboratory (m) .....:	☐ 2000 m or less ☒ 38 m
Mass of equipment (kg) .....:	0.297 kg: MPB125 models 0.445 kg: MPB125-S322

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 .....:	October 2015
Date (s) of performance of tests.....:	October 2015, July 2020
General remarks:	
"(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.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
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** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	BPS Pacific Electronics (Shenzhen) Co.,Ltd. Building# 6, Nanming Road, Gongming Town Huahong Xintong Industrial Park Guangming District 518108 Shenzhen PEOPLE'S REPUBLIC OF CHINA

General product information and other remarks:

The MPB125-Series are open frame AC to DC switch mode power supplies. The models can be operated at convection cooling and with air cooling. Maximum output power is derated at convection cooling.
Model MPB125-S322 is exactly the same as MPB125-3000 except the addition of AC filter, no output #3 and use of DC harness with connector for the output.
Ambient temperature specification is 0 to 50°C for full ratings and derated at 2.5% per K from 50°C to 70°C ambient.

ELECTRICAL RATING: (DC Output Ratings)

Model	Output #1		Output #2		Output #3		Output #4	
	VDC	A	VDC	A	VDC	A	VDC	A
MPB125-S290	24	5.2	--	--	--	--	--	--
MPB125-S292	3.3	10	5	15	12	5	-12	0.5
MPB125-S295	48	2.6	--	--	--	--	--	--
MPB125-S300 ***)	3.3	13	5	10	12	2	--	--
MPB125-S304	24	5.2	--	--	--	--	--	--
MPB125-S306	12	10.5	--	--	--	--	--	--
MPB125-S322*	5	16.5	12	5	--	--	--	--
MPB125-RS299	60	2.0	12	0.5	5	0.2	--	--
MPB125-1012	12	10.5	--	--	--	--	--	--
MPB125-2003****)	3.3	30	12	0.5	--	--	--	--
MPB125-2005	5	25	12	0.5	--	--	--	--
MPB125-2012	12	10.5	12	0.5	--	--	--	--
MPB125-2015	15	8.3	12	0.5	--	--	--	--
MPB125-2024	24	5.2	12	0.5	--	--	--	--
MPB125-S319	24	5.2	12	0.5	--	--	--	--
MPB125-S323	24	5.2	12	0.5	--	--	--	--
MPB125-2048	48	2.6	12	0.5	--	--	--	--
MPB125-3000 *)	5	16.5	12	5	-12	0.5	--	--
MPB125-4250 **)	2.5	12	5	15	12	5	-12	0.5
MPB125-4350 **)	3.3	10	5	15	12	5	-12	0.5
MPB125-4350S282	3.3	11	5	4	12	1.5	--	--

*) Maximum continuous power for output #1 is 60 W with convection cooling.
**) Maximum continuous power for output #1 and #2 combined: 80 W with 5 cfm external airflow, 40W with convection cooling.
***) Maximum continuous power for output #1 and #2 combined: 75W with 5 cfm external airflow.
****) With external 5 CFM airflow V1 output may only operate up to 25A, and 30A with 10 CFM. Combined output power may not exceed 105 W with 10 CFM and 55W with convection cooling.
Maximum continuous total output power 70 W with convection cooling, 125 W with 5 cfm external airflow for all models except MPB125-S290, which are rated 100 W, and MPB125-4350S282, which is rated 75W, with 5 cfm external airflow and MPB125-S300, which is rated 100W, with 5 cfm external airflow.

CONDITIONS OF ACCEPTABILITY:

Where installed in the end use equipment, the following are among the consideration to be made:

1) A suitable electrical, mechanical and fire enclosure at end-use.
2) A reliable ground (Protective Earth) connection at end-use.
3) Cooling and Accessible temperature requirements must be fulfilled at end-use