

## DESCRIPTION

## PRODUCT COVERED:

USR, CNR - Linear Power Supply, Model HCBB-75W, followed by suffix -A. Suffixes after the first hyphen may be replaced by -5XX or -7XX, where X is 0-9. **Model may be followed by G or SXXX or SXXXG, indicating non-safety critical options.**

## ELECTRICAL RATINGS:

Model	Input			Output (dc)	
	V	A	Hz	V	A +
HCBB-75W	100/120/220/230/240	2/1	50/60	5	6
				12 or 15	1.7 or 1.5
				-12 or	1.7 or
				-15 or -5	1.5 or 0.7

+ = At 50 Hz, the output current is derated by 10%.

## ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in (or with) Applicant's Information Technology Equipment, where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Special Considerations - The following items are considerations that were used when evaluating this product.

**USR/CNR indicates investigation to the U.S. and Canadian (Bi-National) Standard for Safety of Information Technology Equipment, Including Electrical Business Equipment, CAN/CSA C22.2, No. 60950-1 \* UL 60950-1, First Edition, April 1, 2003.**

The equipment is considered: For building in Class I (earthed), pluggable Type A or B, intended for use on a TN power system.

Conditions of Acceptability - When installed in the end-use equipment, consideration shall be given to the following:

1. **This component has been judged on the basis of the required spacings in the Standard for Safety of Information Technology Equipment, CSA/UL 60950-1, First Edition, dated April 1, 2003, Sub-clause 2.10, which would cover the component itself if submitted for Listing.**
2. The products were tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary.
3. All secondary output circuits for all models are SELV.
4. The terminals and connectors have not been evaluated for field wiring.
5. The power supply shall be properly bonded to the main protective earthing termination in the end product.
6. Magnetic device (e.g. transformer) T1 employ(s) an (OBJY3) electrical insulation system designated Class B.
7. The equipment has been evaluated for use in Pollution Degree 2 environment.
8. A suitable Electrical and Fire enclosure shall be provided.
9. Abnormal Tests were conducted with a UL Listed time-delay fuse rated 250 V, 1.5 A for 220, 230 or 240 V operation and 250 V, 3 A for 100 or 120 V operation connected in the ungrounded conductor circuit. If a fuse other than noted above is used in the end-use product, additional testing may be necessary.
10. Bonding terminal provided on this equipment have not been evaluated as protective earthing terminals.
11. These power supplies have been evaluated for use in 25° and 50°C ambient in accordance with the manufacturer's specifications. The units were loaded to 100% on normal rated load at 60 Hz input and 90% normal rated load at 50 Hz. Forced-air cooling at 50 LFM is needed at 50°C.
12. The maximum working voltage present is 258 V rms; 368 V pk. The Electric Strength Tests in the end product shall be based on this value.

Product	Linear AC/DC Power Supply
Applicant	Bel Fuse Inc. 206 Van Vorst St. Jersey City, NJ 07302 USA
Manufacturer	Bel Fuse Inc. 206 Van Vorst St. Jersey City, NJ 07302 USA
Factory	BPS Asia Pacific Electronics (Shenzhen) Co., Ltd. Building# 6, Nanming Road, Gongming Town Huahong Xintong Industrial Park Guangming District, Shenzhen 518108 China <input type="checkbox"/> See next page(s)
Ratings	Input: 100/120/220/240 Vac, 2.0/2.0/1.0/1.0 A, 50/60 Hz
Trade mark	 a bel group
Model / Type Ref.	HCBB-75W-A
Principal characteristics	DC outputs (3): 5 V @ 6 A, 12 V @ 1.7 A or 15 V @ 1.5 A, -5 V @ 0.7 A or -12 V @ 1.7 A or -15 V @ 1.5 A. The odel name maybe followed by "G" indicating ROHS compliance. <input type="checkbox"/> See next page(s)
A sample of the product was tested and found to be in conformity with	OFF                      EN 60950-1:2006;A11;A1;A12;A2
Validity	This certificate documents conformity with the standards shown, and also applies as license for use of Nemkos name and certification mark. The certificate and license is valid as long as the applicable conditions are complied with, and provided that any changes to the product are notified to Nemko for acceptance prior to implementation. New standards or amendments to the standards may imply that the product design must be updated and/or that re-testing and re-certification is necessary.
Additional information	<input type="checkbox"/> See next page(s)  The abovementioned certified equipment complies with current regulatory requirements regarding electrical safety in Norway and other EU/EEA member states, as far as this can be checked. Compliance with requirements regarding building-in, protection against electric shock and

Date of issue 15-10-2015



Juan Z. Kleppenes  
Certification Department

**Nemko AS**

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ENTERPRISE NUMBER NO974404532

Electromagnetic Compatibility (EMC) must be checked when the equipment is built-in a completed product or forms a part of a complete system.

Additional model(s)

See next page(s)

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**CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC**Product  
ProduitName and address of the applicant  
Nom et adresse du demandeurName and address of the manufacturer  
Nom et adresse du fabricantName and address of the factory  
Nom et adresse de l'usineNote: When more than one factory, please report on page 2  
Note: Lorsque il y plus d'une usine, veuillez utiliser la deuxième pageRatings and principal characteristics  
Valeurs nominales et caractéristiques principalesTrademark (if any)  
Marque de fabrique (si elle existe)Type of Manufacturer's Testing Laboratories used  
Type de programme du laboratoire d'essais constructeurModel / Type Ref.  
Ref. De typeAdditional information (if necessary may also be  
reported on page 2)  
Les informations complémentaires (si nécessaire,  
peuvent être indiqués sur la deuxième pageA sample of the product was tested and found  
to be in conformity withUn échantillon de ce produit a été essayé et a été  
considéré conforme à laAs shown in the Test Report Ref. No. which forms part  
of this CertificateComme indiqué dans le Rapport des essais numéro de  
référence qui constitue partie de ce CertificatThis CB Test Certificate is issued by the National Certification Body  
Ce Certificat desai OC est établi par l'Organisme **National de Certification**

Linear AC/DC Power Supplies

Bel Fuse Inc.  
206 Van Vorst St.  
Jersey City, NJ 07302  
USABel Fuse Inc.  
206 Van Vorst St.  
Jersey City, NJ 07302  
USABPS 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

Input: 100/120/220/240 Vac, 2.0/2.0/1.0/1.0 A, 50/60 Hz



HCBB-75W-A


DC outputs (3): 5 V @ 6 A, 12 V @ 1.7 A or 15 V @ 1.5 A, -5 V @ 0.7 A  
or -12 V @ 1.7 A or -15 V @ 1.5 A. The model name maybe followed by "G"  
indicating ROHS compliance. Additional information on page 2



IEC 60950-1(ed.2);am1;am2

292163



<p><b>TEST REPORT</b>  <b>IEC 60950-1</b>  <b>Information technology equipment – Safety –</b>  <b>Part 1: General requirements</b></p>	
<b>Report Number.</b> .....	292163
Date of issue.....	13 October 2015
Total number of pages.....	39
<b>Applicant's name</b> .....	Bel Fuse Inc.
Address .....	206 Van Vorst St., Jersey City, NJ 07302
<b>Test specification:</b>	
Standard .....	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure .....	CB-Scheme
Non-standard test method .....	N/A
<b>Test Report Form No.</b> .....	IEC60950_1F
Test Report Form(s) Originator.....	SGS Fimko Ltd
Master TRF.....	Dated 2014-02
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<b>General disclaimer:</b>	
<p>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.</p>	

<b>Test item description</b> .....	Linear AC/DC Power Supplies		
Trade Mark .....			
Manufacturer .....	Same as Applicant		
Model/Type reference.....	HCBB-75W-A. Model name maybe followed by "G" indicating ROHS compliance.		
Ratings .....	Input: 2.0/2.0/1.0/1.0 A, 100/120/220/240 Vac, 50/60 Hz DC outputs (3):		
	5 V @ 6 A	12 V @ 1.7 A or 15 V @ 1.5 A	-5 V @ 0.7 A or -12 V @ 1.7 A or -15 V @ 1.5 A

<b>Testing procedure and testing location:</b>		
<hr/>		
<b>CB Testing Laboratory:</b>	<b>Nemko USA Inc.</b>	
Testing location/ address .....	<b>2210 Faraday Ave. Suite 150, Carlsbad, CA 92008, USA</b>	
<hr/>		
<b>Associated CB Testing Laboratory:</b>		
Testing location/ address .....		
Tested by (name + signature).....	Eli Madrigal	
Approved by (name + signature).....	Jeff Busch	

<b>Report History:</b>
Original report

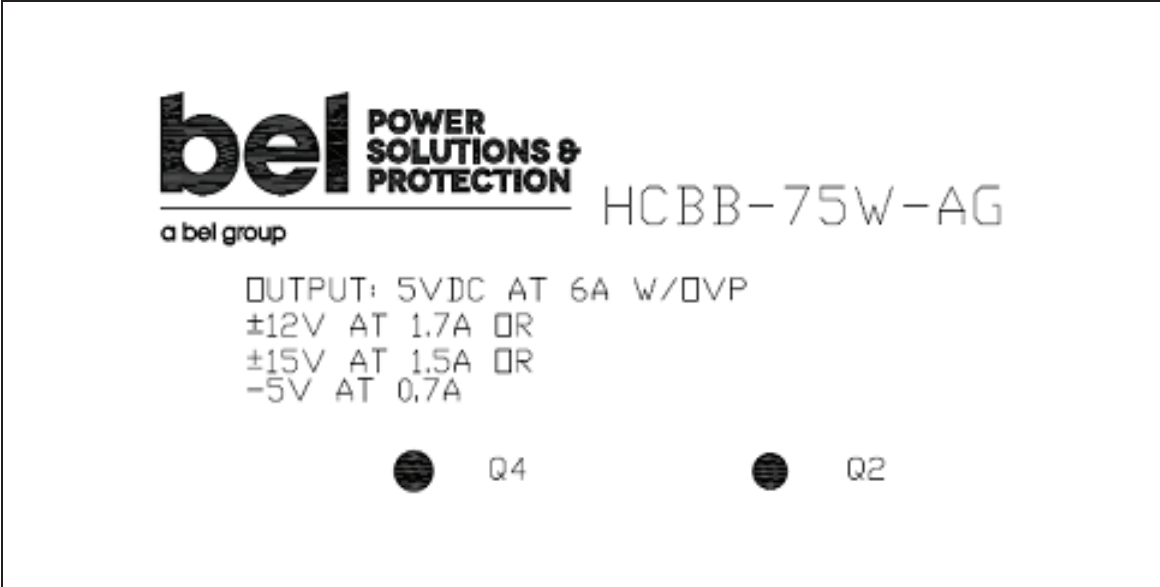
<b>List of Attachments (including a total number of pages in each attachment):</b>
<p><b>Attachment 1:</b> European Group Differences and National Deviations ..... 82 pages          Documented deviations contain individual national documents for several European countries that are included in the European Group Deviations. The European Group Difference: EN60950:2006/A11:2009/A:2010/A12:2011/A2:2013 are considered "Normative". The individual national documents (Denmark, Finland, Germany, Ireland, Norway, Spain, Sweden, Switzerland and United Kingdom) are considered "informative" and included at the manufacturer's request.</p> <p><b>Attachment 2:</b> Miscellaneous Documentation, e.g. Photos, PWB Layout, Schematic etc. .... 16 pages          (Not for publication – Engineering use only)</p>

<b>Summary of testing:</b>	
<b>Tests performed</b> (name of test and test clause): 1) Input Test ..... 1.6.2 2) Durability Test ..... 1.17.11 3) Capacitance Discharge Test..... 2.1.1.7 4) SELV Reliability Test ..... 2.2 5) Protective Bonding Test..... 2.6.3.4 6) Humidity Test ..... 2.9.2 7) Working Voltage Measurement ..... 2.10.2 8) Hazardous Voltage Measurement ..... 2.10.2 9) Heating Test ..... 4.5.1 10) Touch Current Test ..... 5.1 11) Electric Strength Test ..... 5.2.2 12) Component Failure Test ..... 5.3 13) Abnormal Operation Test ..... 5.3 14) PS Output Overload and Short Test ..... 5.3	<b>Testing location:</b> See page 2

<b>Summary of compliance with National Differences:</b>
<b>List of countries addressed</b> Austria (AT), Australia (AU), Canada (CA), China (CN), Denmark (DK), Finland (FI), Germany (DE), Ireland (IE), Israel (IS), Korea (KR), Norway (NO), Slovenia (SI), Spain (ES), Sweden (SE), Switzerland (CH), United Kingdom (GB), United States of America (US)
<input checked="" type="checkbox"/> <b>The product fulfils the requirements of :</b> EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013



**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 Certification Bodies that own these marks. (Additional requirements for markings. See 1.7 NOTE)



<b>Calibration</b>	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.
<b>Measurement uncertainty</b>	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, Nemko routine L227 and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
<b>Evaluation of results</b>	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, and Nemko routine L220. The instrumentation accuracy is within limits agreed by IECEE-CTL (ref. Nemko routine L227).

<b>Test item particulars:</b>	
Equipment mobility.....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains <input checked="" type="checkbox"/> For building-in, compliance at end use
Operating condition.....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location.....	<input checked="" type="checkbox"/> operator accessible, for building-in <input type="checkbox"/> restricted access location
Over voltage category (OVC).....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values.....	-10%, +6%
Tested for IT power systems.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
IT testing, phase-phase voltage (V).....	230
Class of equipment.....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A).....	For building-in, to be evaluated at end use
Pollution degree (PD).....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class.....	IPX0 (Not evaluated for ingress of water)
Altitude during operation (m).....	2000 m
Altitude of test laboratory (m).....	38 m, sea level
Mass of equipment (kg).....	3.38 kg
Temperature, Ambient (°C).....	50 °C

<b>Possible test case verdicts:</b>	
- 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)

<b>Testing..... :</b>	
Date of receipt of test item .....	October 2015
Date (s) of performance of tests.....	October 2015

<p><b>General remarks:</b></p> <p>"(See Enclosure #)" refers to additional information appended to the report.          "(See appended table)" refers to a table appended to the report.  <b>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</b></p>
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<p><b>Manufacturer's Declaration per sub-clause 6.2.5 of IECCE 02:</b></p>	
<p>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..... :</p>	<p><input type="checkbox"/> Yes  <input checked="" type="checkbox"/> <b>Not applicable</b></p>
<p><b>When differences exist; they shall be identified in the General product information section.</b></p>	
<p><b>Name and address of factory (ies) .....</b>: BPS Asia Pacific Electronics (Shenzhen) Co., Ltd.          Building# 6, Nanming Road, Gongming Town          Huahong Xintong Industrial Park          Guangming District          518108 Shenzhen          PEOPLE'S REPUBLIC OF CHINA</p>	

<p><b>General product information:</b></p> <p>This test report is based on a TUV SUD test report Ref. No. 095-800001170-000 dated: 2008-11-13 with appended CB cert Ref. No. DE 3 – 57977 dated: 2008-11-24.</p> <p>This test report includes additional evaluation of the power supply to the requirements of IT power systems and an engineering evaluation of the Leakage at the output of the PSU. Also, the report includes an upgrade to IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013.</p> <p>For continuity, data from the original TUV report is included in this report, along with the additional evaluation referenced.</p> <p>Model HCBB-75W is an open frame AC to DC linear power supply. It has been evaluated for use in maximum ambient of 50°C, convection cooled. The units were loaded to 100% of normal rated load at 60 Hz input and load is derated by 10% at 50 Hz input.</p>
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<b>Additional Electrical Rating Information:</b>										
Model	Input AC			Output #1		Output #2		Output #3		Required Airflow (linear feet per minute, lfm)
	Vac	A	Hz	Vdc	A	Vdc	A	Vdc	A	
HCBB-75W-A	100/120 220/230/240	3.0/ 1.5	50/60	5	6.0	+12V or +15V	1.7 or 1.5	-12V or -15V or -5V	1.7A  1.5A  0.7A	0

**CONDITIONS OF ACCEPTABILITY:**

When installed in the end use equipment, the following are among the considerations to be made:

All models require:

- 1) A suitable electrical fire enclosure at end use.
- 2) A reliable ground (Protective Earth) connection at end use.
- 3) External fusing as specified in the installation instructions

<b>Abbreviations used in the report:</b>	
- normal conditions.....N.C.	- single fault conditions ..... S.F.C
- functional insulation .....OP	- basic insulation.....BI
- double insulation..... DI	- supplementary insulation.....SI
- between parts of opposite polarity ..... BOP	- reinforced insulation .....RI
Indicate used abbreviations (if any): ..... None	