

DESCRIPTION

PRODUCT COVERED:

USR/CNR - Linear - Power Supply, Models HN5-9/OVP, HN12-5.1, HN15-4.5, HN24-3.6, HN28-3, CP323, and HN5-702, followed by suffix -A. Suffixes after the first hyphen may be replaced by -5XX where X is 0-9. **Model name may be followed by "G" or SXXX or SXXXG indicating non-safety critical options.**

ELECTRICAL RATINGS:

Model	Input			Output, (ac) (dc)		
	V	A	Hz	V	A	W [@]
HN5-9/OVP-A	100/120/220/230/240	2/1	50/60	5	9.0	45.0
HN12-5.1-A	100/120/220/230/240	2/1	50/60	12	5.1	61.2
HN15-4.5-A	100/120/220/230/240	2/1	50/60	15	4.5	67.5
HN24-3.6-A	100/120/220/230/240	2/1	50/60	24	3.6	86.0
HN28-3-A	100/120/220/230/240	2/1	50/60	28	3.0	84.0
HN5-702	100/120/220/230/240	2/1	50/60	6	5.0	30.0
CP323-A	100/120/220/230/240	2/1	50/60	5	2.0	58.0
				12	4.0	-

[@] - Maximum continuous output power without forced air cooling when the units operate at 25°C ambient. Some units may require forced air cooling when operated at 50°C. See Conditions of Acceptability for more information.

GENERAL:

Power supplies in this Section are complementary Recognized to Components, Power Supplies, Specialty (QQIJ2).

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

Use - For use only in (or with) complete 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: 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 product, 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 and are not hazardous energy levels.
 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(s) (e.g. transformer, inductor) T1 employ(s) an (OBJY3) electrical insulation system designated Class B.
 7. The equipment has been evaluated for use in a Pollution Degree 2 environment.
 8. A suitable Electrical and Fire enclosure shall be provided.
 9. Abnormal Tests were conducted with a UL Listed non-time-delay fuse rated 250 V, 1 A for 220, 230 or 240 V operation and a 250 V, 2 A for 100 or 120 operation connected in the ungrounded conductor circuit.
 10. Bonding terminals provided on this equipment have not been evaluated as protective earthing terminals.
 11. These power supplies have been evaluated for use in a 25, 50 and 70°C ambient in accordance with the manufacturer's specifications. The units were loaded to 100% normal rated load for 25 and 50°C ambient and 40% of normal load for 70°C ambient. At 50°C, the following units required forced air cooling in order to comply with standard requirements.

<u>Model</u>	<u>Required LFM</u>
HN15-4.5-A	75
HN12-5.1-A	75
HN24-3.6-A	80
HN28-3-A	75

12. All models have been evaluated to requirements in the Seventeenth Edition of the Standard for Electric Industrial Control Equipment (UL 508).
13. Secondary circuits have not been investigated for secondary interconnection or user accessibility.
14. The device shall be installed in compliance with the enclosure, mounting, spacing, casualty, markings, and segregation requirements of the end-use application.
15. The need for conducting Leakage Current Tests is to be determined as part of the end-product evaluation.
16. This power supply has only been evaluated for use in commercial and industrial, controlled environment applications. Spacings evaluation assumes a pollution degree 2 environment.
17. The input and output connectors including terminal blocks are not acceptable for field connections and are only intended for connection to mating connectors of internal wiring inside the end-use product. The acceptability of these and the mating connectors relative to secureness, insulating materials, and temperature shall be considered.
18. The secondary circuits of these power supplies were not subjected to component fault testing as part of this investigation.

Product	Linear AC/DC Power Supplies
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	1.0A or 2.0A 100/120Vac or 220/230/240 Vac 50/60Hz
Trade mark	 a bel group
Model / Type Ref.	HN5-9/OVP, HN12-5.1, HN15-4.5, HN24-3.6
Principal characteristics	Open frame power supply for building-in. Output ratings see the test report. The model name may be followed by suffix -A. Suffixes after the first hyphen may be replaced by -5XX or -7XX where X is 0-9. Model name may be followed by "G" or SXXX or combinations of different options; where X is from 0-9, indicating non-safety critical options) <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 08-07-2015



Juan Z. Kleppenes
Certification Department

Nemko AS
Gaustadalléen 30, P.O. Box 73 Blindern, 0314 Oslo, Norway
TEL +47 22 96 03 30 FAX +47 22 96 05 50 EMAIL info@nemko.com
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)

Date of issue 08-07-2015



Juan Z. Kleppenes
Certification Department

Nemko AS
Gautstadalléen 30, P.O. Box 73 Blindern, 0314 Oslo, Norway
TEL +47 22 96 03 30 FAX +47 22 96 05 50 EMAIL info@nemko.com
ENTERPRISE NUMBER NO974404532

Product	Linear AC/DC Power Supplies
Pos. No	1
Model / Type Ref.	HN28-3
Trade mark (if different from page 1)	
Rating	1.5A or 3.0A 100/120Vac or 220/230/240 Vac 50/60Hz
Principal characteristics	Open frame power supply for building-in. Output ratings see the test report. The model name may be followed by suffix –A. Suffixes after the first hyphen may be replaced by -5XX or -7XX where X is 0-9. Model name may be followed by “G” or SXXX or combinations of different options; where X is from 0-9, indicating non-safety critical options)
Product	Linear AC/DC Power Supplies
Pos. No	2
Model / Type Ref.	CP323
Trade mark (if different from page 1)	
Rating	2.0A or 4.0A 100/120Vac or 220/230/240 Vac 50/60Hz
Principal characteristics	Open frame power supply for building-in. Output ratings see the test report. The model name may be followed by suffix –A. Suffixes after the first hyphen may be replaced by -5XX or -7XX where X is 0-9. Model name may be followed by “G” or SXXX or combinations of different options; where X is from 0-9, indicating non-safety critical options)

Date of issue 08-07-2015



Juan Z. Kleppenes
Certification Department

Nemko AS
Gaustadalléen 30, P.O. Box 73 Blindern, 0314 Oslo, Norway
TEL +47 22 96 03 30 FAX +47 22 96 05 50 EMAIL info@nemko.com
ENTERPRISE NUMBER NO974404532

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OCProduct
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 page

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 des essais numéro de référence qui constitue partie de ce Certificat

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

Linear AC/DC power supply

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

1.0A or 2.0A 100/120Vac or 220/230/240 Vac, 50/60Hz



HN5-9/OVP, HN12-5.1, HN15-4.5, HN24-3.6

Open frame power supply for building-in. Output ratings see the test report. The model name may be followed by suffix -A. Suffixes after the first hyphen may be replaced by -5XX or -7XX where X is 0-9. Model name may be followed by "G" or SXXX or combinations of different options; where X is from 0-9, indicating non-safety critical options).

 Additional information on page 2

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

289586

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OCProduct
Produit

Linear AC/DC power supply

Name and address of the applicant
Nom et adresse du demandeurBel Fuse Inc.
206 Van Vorst St.
Jersey City, NJ 07302
USAName and address of the manufacturer
Nom et adresse du fabricantBel Fuse Inc.
206 Van Vorst St.
Jersey City, NJ 07302
USAName and address of the factory
Nom et adresse de l'usineBPS Asia Pacific Electronics (Shenzhen) Co., Ltd.
Building# 6, Nanming Road, Gongming Town Huahong
Xintong Industrial Park
Guangming District, Shenzhen 518108
ChinaNote: When more than one factory, please report on page 2
Note: Lorsque il y plus d'une usine, veuillez utiliser la deuxième page Additional information on page 2Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

2.0A or 4.0A 100/120Vac or 220/230/240 Vac 50/60Hz

Trademark (if any)
Marque de fabrique (si elle existe)Type of Manufacturer's Testing Laboratories used
Type de programme du laboratoire d'essais constructeur

CP323

Model / 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 pageOpen frame power supply for building-in. Output ratings see the test report.
The model name may be followed by suffix -A. Suffixes after the first
hyphen may be replaced by -5XX or -7XX where X is 0-9. Model name may
be followed by "G" or SXXX or combinations of different options; where X is
from 0-9, indicating non-safety critical options) Additional information on page 2A 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 la

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

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

289586

Comme indiqué dans le Rapport desais numéro de
référence qui constitue partie de ce CertificatThis CB Test Certificate is issued by the National Certification Body
Ce Certificat desais OC est établi par l'Organisme **National de Certification**Gaustadalléen 30
NO-0373 Oslo, Norway

Date: 08-07-2015

Signature: Juan Z. Kleppenes
Certification Department

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OCProduct
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 page

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 des essais numéro de référence qui constitue partie de ce Certificat

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

Linear AC/DC power supply

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

1.5A or 3.0A 100/120Vac or 220/230/240 Vac 50/60Hz



HN28-3

Open frame power supply for building-in. Output ratings see the test report. The model name may be followed by suffix -A. Suffixes after the first hyphen may be replaced by -5XX or -7XX where X is 0-9. Model name may be followed by "G" or SXXX or combinations of different options; where X is from 0-9, indicating non-safety critical options).


 Additional information on page 2

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

289586





TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number : Date of issue..... : Total number of pages..... :	289586 6 July 2015 48
Applicant's name : Address..... :	Bel Fuse Inc. 206 Van Vorst St., Jersey City, NJ 07302
Test specification:	
Standard..... : Test procedure..... : Non-standard test method..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 CB-Scheme N/A
Test Report Form No. : Test Report Form(s) Originator..... : Master TRF..... :	IEC60950_1F SGS Fimko Ltd Dated 2014-02
Copyright © 2014 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. 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 :	Linear AC/DC power supply
Trade Mark	 <small>a bel group</small>
Manufacturer	Same as Applicant
Model/Type reference	Models HN5-9/OVP, HN12-5.1, HN15-4.5, HN24-3.6, HN28-3 and CP323, (may be followed by suffix –A. Suffixes after the first hyphen may be replaced by -5XX or -7XX where X is 0-9. Model name may be followed by “G” or SXXX or combinations of different options; where X is from 0-9, indicating non-safety critical options).
Ratings	Input:
HN5-9/OVP..... :	100/120Vac, 2.0A, 220/230/240Vac,1.0A, 50/60 Hz
HN12-5.1..... :	100/120Vac, 2.0A, 220/230/240Vac,1.0A, 50/60 Hz
HN15-4.5..... :	100/120Vac, 2.0A, 220/230/240Vac,1.0A, 50/60 Hz
HN24-3.6..... :	100/120Vac, 2.0A, 220/230/240Vac,1.0A, 50/60 Hz
HN28-3..... :	100/120Vac, 3.0A, 220/230/240Vac,1.5A, 50/60 Hz
CP323..... :	100/120Vac, 4.0A, 220/230/240Vac,2.0A, 50/60 Hz

Testing procedure and testing location:

CB Testing Laboratory:	Nemko USA Inc.
Testing location/ address	2210 Faraday Ave. Suite 150, Carlsbad, CA 92008, USA

Associated CB Testing Laboratory:	
Testing location/ address	
Tested by (name + signature)..... :	Eli Madrigal 
Approved by (name + signature)..... :	Jeff Busch 

Report History:
Original report

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

- Attachment 1:** European Group Differences and National Deviations 76 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.
- Attachment 2:** Miscellaneous Documentation, e.g. Photos, User's Manual, Schematics, etc. 15 pages
 (Not for publication – Engineering use only)

Summary of testing

General	All comments relate to all models, unless specifically stated.
Power supply	These equipment are open frame, Class I AC/DC Linear power supplies with universal AC input and single DC voltage output for building-in. This report covers multiple models and all comments / tests apply to all models unless otherwise indicated. Testing was conducted on various models as indicated.
1.5, 3.2.5; Power supply cord set.	A power supply cord set is not provided with the power supply. A power supply cord set, complying with the national regulations of the country in which the product is to be sold, shall be provided with the end-use equipment.
1.7.2; Safety instructions.	Instructions and equipment markings related to safety are to be provided in a language, which is acceptable in the country in which the equipment is to be sold. English language verified.
1.7.2.4; IT power distribution systems.	The equipment complies with the requirements for connection to the Norwegian IT power systems. The following information should be given (but is not required) in the installation instruction: "This product is also designed for IT power system with Phase to Phase voltage 230V."
2.7.4; Number and location of protective devices.	In Norway, IT power distribution system is used. Equipment with a single protective device is accepted in Norway. Other countries may have additional requirements.
2.7.6; Warning to service personnel.	After operation of the protective device, the equipment is still under voltage if it is connected to an IT-power system. A warning is required for service personnel. Norway does not require this warning.
5.2: Electric Strength test	Increased test voltages for Basic insulation applied to the equipment, based on measured working voltages.

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

Summary of compliance with National Differences:
List of countries addressed Australia (AU), Canada (CA), Denmark (DK), Finland (FI), Germany (DE), Ireland (IE), Israel (IS), Japan (JP), Korea (KR), Norway (NO), Singapore (SG), Spain (ES), Sweden (SE), Switzerland (CH), United Kingdom (GB), United States of America (US), Ukraine (UK)
Additional National Differences not published by the IECCE: Singapore: Consumer Protection Information Booklet, 2002 Edition, (Ver. 4.1).
Austria (AT) and Slovenia (SI) have been considered per European Group Differences and National Differences.
<input checked="" type="checkbox"/> The product fulfils the requirements of: 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.

HN5-9/OVP-AG
 OUTPUT: 5VDC
 AT 9A

EXTERNAL FUSE REQUIRED

Q2

Q1

Q3

CR4

AC INPUT	50/60Hz			
	100	120	220	230/240
FOR USE AT	1&3, 2&4	1&3, 2&4	2&3	2&3
JUMPER	1&3, 2&4	1&3, 2&4	2&3	2&3
APPLY AC	1&5	1&4	1&5	1&4
MAX CURRENT/ FUSE RATING	2 A		1 A	

HN12-5.1-AG
 OUTPUT: 12VDC
 AT 5.1A

EXTERNAL FUSE REQUIRED

Q2

Q1

Q3

AC INPUT	50/60Hz			
	100	120	220	230/240
FOR USE AT	1&3, 2&4	1&3, 2&4	2&3	2&3
JUMPER	1&3, 2&4	1&3, 2&4	2&3	2&3
APPLY AC	1&5	1&4	1&5	1&4
MAX CURRENT/ FUSE RATING	2 A		1 A	

Copy of marking plate: (continued)

POWER SOLUTIONS & PROTECTION
a bel group

HN15-4.5-AG
OUTPUT: 15VDC
AT 4.5A

EXTERNAL FUSE REQUIRED
EXT

Q2

Q1

Q3

FOR USE AT	AC INPUT, 50/60Hz			
	100	120	220	230/240
JUMPER	1&3, 2&4	1&3, 2&4	2&3	2&3
APPLY AC	1&5	1&4	1&5	1&4
MAX CURRENT/ FUSE RATING	2 A		1 A	

POWER SOLUTIONS & PROTECTION
a bel group

HN24-3.6-AG
OUTPUT: 24VDC
AT 3.6A

EXTERNAL FUSE REQUIRED
EXT


Q2

Q1

Q3


FOR USE AT	AC INPUT, 50/60Hz			
	100	120	220	230/240
JUMPER	1&3, 2&4	1&3, 2&4	2&3	2&3
APPLY AC	1&5	1&4	1&5	1&4
MAX CURRENT/ FUSE RATING	2 A		1 A	

Copy of marking plate: (continued)





POWER SOLUTIONS & PROTECTION
a bel group


HN28-3-AG
OUTPUT: 28VDC
AT 3A

EXTERNAL FUSE REQUIRED
EXT 

Q2

Q1



Q3

AC INPUT	50/60Hz			
	100	120	220	230/240
FOR USE AT				
JUMPER	1&3, 2&4	1&3, 2&4	2&3	2&3
APPLY AC	1&5	1&4	1&5	1&4
MAX CURRENT/ FUSE RATING	2 A		1 A	

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, Nemko routine L227 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, and Nemko routine L220. The instrumentation accuracy is within limits agreed by IEC EE-CTL (ref. Nemko routine L227).

Test item particulars:	
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary [X] 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 [X] not directly connected to the mains Evaluated for 2000m, Class I Switch mode power supply for building-in. To be evaluated in the end use.
Operating condition	[X] continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I [X] 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	[X] Yes (Norway only) <input type="checkbox"/> No
IT testing, phase-phase voltage (V)	230
Class of equipment	[X] 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)	To be determined at end use
Pollution degree (PD)	<input type="checkbox"/> PD 1 [X] PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	2000 m
Altitude of test laboratory (m)	94m, sea level
Mass of equipment (kg)	2.7 kg
Temperature, Ambient (°C).....	50°C maximum

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	June 2015
Date (s) of performance of tests	June 2015

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 6.2.5 of IEC 60950-1:

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.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
--	--

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

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

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

General product information:

This test report is based on a TUV SUD test report Ref. No. 095-1000015272-000 with appended CB cert Ref. No. DE 3 -58887, evaluated to the requirements of IEC 60950-1:2005 2nd ed. + A1:2009.

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.
 The report also includes an upgrade to IEC 60950-1:2005 (Sec. Ed) + Am1:2009 + Am2:2013.

For continuity, data from the original TUV report is included in this report, along with the additional evaluation referenced.

These linear power supply models are open frame AC to DC power supplies. The models were evaluated for use at 25°C and 50°C ambient. The units were loaded to 100% of normal rated load with 60Hz inputs and de-rated by 10% with 50 Hz inputs over the specified range from 25 to 50°C. An external protective device is required for each model.

Input voltages of 230 Vac and 240 Vac have the same transformer configuration. No tests done at 230

Evaluated power supplies do not include any mains circuitry other than the transformer. All Mains to Ground (Basic) and Mains to Secondary (Reinforced) shall be evaluated in the end use system.

ADDITIONAL RATINGS INFORMATION:

Model:	Required input fuse A	Input (AC)			Output:	
		Vac	A	Hz	Vdc	A/Apk
HN5-9/OVP	2.0 1.0	100 / 120 220 / 230 / 240	2.0 1.0	50/60	5	9.0
HN12-5.1	2.0 1.0	100 / 120 220 / 230 / 240	2.0 1.0	50/60	12 -5 24	5.1
HN15-4.5	2.0 1.0	100 / 120 220 / 230 / 240	2.0 1.0	50/60	15	4.5
HN24-3.6	2.0 1.0	100 / 120 220 / 230 / 240	2.0 1.0	50/60	24	3.6
HN28-3	2.0 1.0	100 / 120 220 / 230 / 240	3.0 1.5	50/60	28	3.0
CP323	2.0 1.0	100 / 120 220 / 230 / 240	4.0 2.0	50/60	5 12	2.0 4.0

CONDITIONS OF ACCEPTABILITY:

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

The unit requires:

- 1) A reliable ground (protective earth) connection at end product.
- 2) A suitable electrical and fire enclosure at end use.
- 3) External fusing as specified in the Installation Instructions.

Abbreviations used in the report:

- | | | | |
|--|------|----------------------------------|-------|
| - 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