

## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)
<b>Certification Type:</b>	Component Recognition
<b>CCN:</b>	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
<b>Product:</b>	AC/DC Converter
<b>Model:</b>	LH20-13B03, LH20-13B05, LH20-13B09, LH20-13B12, LH20-13B15, LH20-13B24, LH25-13B03, LH25-13B05, LH25-13B09, LH25-13B12, LH25-13B15, LH25-13B18NP, LH25-13B24, LH25-13B48
<b>Rating:</b>	Input:100-277Vac, 50-60Hz, 0.6A Output rating: See enclosure 7-01 for detail ratings.
<b>Applicant Name and Address:</b>	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD 5 KEHUI ST 1 KEHUI DEVELOPMENT CENTER SCIENCE AVE, GUANGZHOU SCIENCE CITY LUOGANG DISTRICT GUANGZHOU GUANGDONG 510000 CHINA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

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Reviewed by: Dean Baker

**Supporting Documentation**

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
  - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
  - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
  - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

**Product Description**

The subject unit is a AC/DC switching mode building-in power supply. All electronic components mounted on PWB and housed with plastic enclosure.

**Model Differences**

All Models in this series are identical to each other except for model designation, output rating and some secondary components. See Enclosure/ Miscellaneous 7-01 for details.

**Technical Considerations**

- 1. Equipment mobility : for building-in
- 1. Connection to the mains : To be considered in end system
- 1. Operating condition : continuous
- 1. Access location : operator accessible
- 1. Over voltage category (OVC) : OVC II
- 1. Mains supply tolerance (%) or absolute mains supply values : +10%, -10% (Declared by Manufacturer)
- 1. Tested for IT power systems : No
- 1. IT testing, phase-phase voltage (V) : N/A
- 1. Class of equipment : Class I (earthed)
- 1. Considered current rating of protective device as part of the building installation (A) : 20 A
- 1. Pollution degree (PD) : PD 2
- 1. IP protection class : IP X0
- 1. Altitude of operation (m) : less than 2000 meters
- 1. Altitude of test laboratory (m) : less than 2000 meters
- 1. Mass of equipment (kg) : 0.12Kg
- 1. The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 70 degree C(32% full load); 50 degree C(full load)

1. The means of connection to the mains supply is: To be considered in end system
1. The product is intended for use on the following power systems: TN
1. The equipment disconnect device is considered to be: To be considered in end system
1. The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY1 Secondary,
1. The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): output terminal
1. The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
1. An external UL Recognized fuse, rated 300 Vac/3.15A is connected between mains and unit for all tests.

**Engineering Conditions of Acceptability**

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

1. The following Production-Line tests are conducted for this product: Electric Strength
1. The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 600 Vpk, 308 Vrms ,
1. The following secondary output circuits are SELV: DC output of all models described in Models and Ratings
1. The following secondary output circuits are at non-hazardous energy levels: DC output of all models described in Models and Ratings,
1. The following secondary output circuits are Limited Current Circuits: CY1 Secondary,
1. The following secondary output circuits are supplied by a Limited Power Source: Output terminal
1. The power supply terminals and/or connectors are: Not investigated for field wiring
1. The maximum investigated branch circuit rating is: 20 A
1. The investigated Pollution Degree is: 2
1. The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): T1, T2, T3, T4 (Class B) ,
1. The following end-product enclosures are required: Mechanical, Fire, Electrical
1. The equipment is suitable for direct connection to: AC mains supply
1. Insulation between primary and secondary circuits complies with the requirements for: reinforced insulation.

**Additional Information**

N/A

**Markings and instructions**

Clause Title	Marking or Instruction Details
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number

Power rating - Model	Model Number
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
L.P.S Marking	Optional marked with "L.P.S" or "Limited Power Source".

**Special Instructions to UL Representative**

Inspect the transformer(s) listed in Production-Line Testing Requirements (Electric Strength Test Special Constructions) per AA1.1- (C). When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in Production-Line Testing Requirements (Electric Strength Test Special Constructions) be conducted at the component manufacturer.

**Production-Line Testing Requirements**

**Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.**

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All models	T1, T2, T3, T4	--	primary to secondary	300 0	4242	1s

**Earthing Continuity Test Exemptions - This test is not required for the following models:**

all model

**Electric Strength Test Exemptions - This test is not required for the following models:**

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**Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:**

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**Sample and Test Specifics for Follow-Up Tests at UL**

Model	Component	Material	Test	Sample(s)	Test Specifics
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