

## UL TEST REPORT AND PROCEDURE

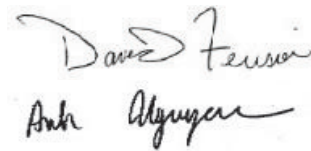
<b>Standard:</b>	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
<b>Certification Type:</b>	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
<b>CCN:</b>	QQGQ, QQGQ7
<b>Product:</b>	PoE Injectors
<b>Model:</b>	PENT1080X1X2X3X4X5; where X1 = A, B, C, or D; X2 = 56; X3 = 00-99, X4 = F, N, or Q; and X5 = 0-9.
<b>Rating:</b>	Input: 100-240 V ac, 1.8 A, 50-60 Hz  Output: 56 Vdc, 1.42 A
<b>Applicant Name and Address:</b>	SL POWER ELECTRONICS CORP BLDG A 6050 KING ST VENTURA CA 93003 UNITED STATES

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 Underwriters Laboratories Inc. ('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.

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

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**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**

AC to DC Switching Power Supplies, that are also known as PoE Injectors. The products described in this report are Special Application - Functional Earthing, and Class II power supplies, that provide Power over Ethernet (PoE) to other devices. They are intended to transfer data and power to another device, and do not connect to outside plant (intra-building). Each unit has two outputs ports (RJ-45 type connectors).

**Model Differences**

Model Designation -

PENT1080X1X2X3X4X5; where X1 = A, B, C, or D; X2 = 56; X3 = 00-99, X4 = F, N, or Q; X5 = 0-9.

X1 = PoE options A, B, C, D

X2 = Output voltage - 56V

X3 = 00-99 non safety related

X4 = appliance inlet: F - Special Application - Functional Earthing (C14), N - Class II (C8), Q - Class II (C18)

X5 = 0-9 non safety related

Differences between Special Application -

-Functional Earthing, and Class II models:

Functional Earthing units are provided with a three pin appliance inlet, suffix "F". Functional Earthing units are provided with a conductor that terminates at the earthing terminal of the appliance inlet, and terminates at primary location "H3" on the PWB.

-Class II units are provided with a two pin appliance inlet, suffix "N" or "Q". Class II units do not utilize the Functional Earthing conductor.

PoE options A, B, C, D have alternate components in SELV, which do not affect safety considerations.

**Technical Considerations**

- Equipment mobility : transportable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : operator accessible

- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : Yes
- IT testing, phase-phase voltage (V) : 230
- Class of equipment : Special Application - Functional Earthing, and Class II
- Considered current rating (A) : 20 A (Branch Circuit)
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 2000
- Altitude of test laboratory (m) : less than 2000
- Mass of equipment (kg) : 0.4
- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 40°C
- The means of connection to the mains supply is: Detachable power cord, Pluggable A
- The product is intended for use on the following power systems: TN, IT
- The equipment disconnect device is considered to be: Appliance inlet
- The product was investigated to the following additional standards: EN 60950-1:2006 + Amendment 11 (2009) (which includes all European national differences, including those specified in this test report).
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All outputs (56 Vdc outputs)
- The following are available from the Applicant upon request: Specific data sheets for LED indicators that are class I and operate at wavelength in the 400-710 nm range., Installation (Safety) Instructions / Manual
- The output ports (RJ-45 connectors) were not evaluated for connection to outside plant, and should

only be connected to Power Over Ethernet (PoE) networks and devices that do not directly exit the building.

- Some models employ Functional Earthing per 2.6.2. As anticipated by the NOTE for 1.2.4, it does not conform to one of the common Classes (I, II, or III). The following insulation is provided between the primary and accessible dead metal parts and circuits: Reinforced.

**Additional Information**


Samples of Models PENT1080A5600N01, PENT1080B5600Q01, and PENT1080D5600N01 were tested and considered representative of all other models in the series.

The Applicant has requested that the Electrical Schematics not be included in this report for proprietary purposes. Electrical Schematics can be obtained from the Applicant upon request.

Nameplate labels provided in this report are for reference, and are considered representative of the entire series.

PoE not for outside plant (or intra-bulding) - The installation instructions indicates that the unit is to be connected only to PoE networks without routing to the outside plant.

**Markings and instructions**

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Power rating - Class II symbol	Symbol for Class II construction  (60417-2-IEC-5172)
Limited Power Source (LPS) Marking	Optional. "LPS" or "Limited Power Source" maybe marked on the unit.
Installation Instructions for Power	The installation instructions shall indicate that the unit is to be connected only to Power Over Ethernet or PoE networks, without routing to the outside plant.