DESCRIPTION

PRODUCT COVERED:

USR, CNR - Switching Power Supply, Medical and Dental, Model GLM65-X and G2M65-X where X is any number from 12 thru 48, GLM65-5, GLM65-12-115, GLM65-15-118 and MSP1788. GLM65-X may be followed by suffix (-C) to indicate optional chassis cover. May or may not be followed by an optional –XXX which indicates value added processes not related to safety. May be followed by an optional "G" which indicates compliance with RoHS. (RoHS compliance has not been evaluated by UL.)

ELECTRICAL RATINGS:

Input: 100-240 V ac, 50/60 Hz, 1.5 A.

Output: Maximum watts = 65 W (68 W at 48 V output)
Maximum current = 5.4 A
Maximum volts = 48 V

GLM65-5: 5.1 V, 11 A with 50 LFM airflow
5.1 V, 9 A convection cooled

(See Ill. 4 for details)

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

USR - indicates investigation to the Standard Medical Electrical Equipment, UL 60601-1, First Edition.

CNR - indicates investigation to the Canadian Standard CSA C22.2 No. 601.1.

For use in product where the acceptability of the combination is determined by Underwriters Laboratories Inc.

This product was evaluated to the First Edition of the Standard For Medical Electrical Equipment, Part 1: General Requirements for Safety, UL 60601-1 and Canadian Standard CSA C22.2 No. 601.1. An insulation diagram is provided as ILL. 3.

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

1. This component has been judged on the basis of the required spacings in the First Edition of the Standards for Medical Electrical Equipment, Part 1: General Requirements for Safety, UL 60601-1 and CSA C22.2 No. 601-1, which covers the end use product for which the component is designed.

2. The component shall be installed in compliance with the enclosure, mounting, spacing, casualty markings and segregation requirements of the end-use application.

3. Consideration should be given to measuring the temperature on power electronic components and transformer windings when the power supply is installed in the end-use equipment.

4. The input/output connectors are not acceptable for field connections, they are only intended for connection to mating connectors of internal wiring inside the end-use machine. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF).

5. The component should be properly bonded to Protective Earth in the end-use equipment.

6. **The isolation transformer, T2 complies with Class 155 limits, and T3 complies with Class 105 limits except on GLM28 and G2M28 Alternate Construction where T3 has been removed.**

7. Leakage current testing should be repeated in the end product application.

8. The GLM65 and G2M65 Series were evaluated as Reinforced insulation between primary and secondary; basic insulation between primary to ground (GLM65 Series only).

9. The GLM65 Series power supply has been evaluated as Class I, and G2M65 Series has been evaluated as Class II, continuous operation, ordinary equipment and has not been evaluated for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide.

10. This product provides fusing in the line input lead only. Need for fusing of the neutral lead should be considered in the end product.

CONSTRUCTION DETAILS:

See Section General, Construction Details.

Trace Layout - Field Representative to insure that the trace layout has not changed. See Ill. 1.

Model MSP1788 is similar to GLM65-15.9, except it has a slightly larger secondary heatsink.

Alternate PWB trace layout for G2M65 Series is similar to the current G2M65 PWB with CR14 and CR15 added.

Model GLM65-12-115 is a GLM65-12 with the Y capacitors C22 and C23 value reduced from 220pF to 150 pF.

GLM65-28 and G2M65-28 alternate construction is electronically identical to the GLM65-28 already approved, except for the following:

Components T3, C11, C12, R11, R17, CR6, CR7, CR12, L2 and C17 have been removed.
L2 is replaced with resistor rated 100 Ω, C17 is replaced with resistor rated 330 Ω, and W2 is added.
Components Q1, R9 and Q3 are changed.

GLM65-15-118 is identical to the GLM65-15 already approved except that the capacitance value of C1 (X-Cap) was changed from 0.1µF to 0.33µF.

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Product Service

CERTIFICATE

No. B 06 06 59743 003

Holder of Certificate: **SL Power Electronics, Corp.**
6050 King Drive Bldg A
Ventura CA 93003
USA

Production Facility(ies): 16784, 52962

Certification Mark:

Product: **Medical power supplies (AC/DC Switching Power Supplies)**

Model(s): **GLM65-x Series, G2M65-x Series and, MSP1788, GLM65-12-115, GLM65-15-118 (For further model information, please see attachment)**

Parameters:

Rated Input Voltage:	100-240 V AC
Rated Frequency:	50/60 Hz
Rated Input Current:	1.5A
Protection Class:	I (GLM65-x Series, MSP1788, GLM65-12-115, GLM65-15-118)
Protection Class:	II (G2M65-x Series)
Rated Output Voltage:	See attachment
Rated Output Current:	See attachment

Please see attachment for additional information, and Conditions of Acceptability.

Tested according to: EN 60601-1/A13:1996

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. See also notes overleaf.

Test report no.: SI304187-101, MOD3

Date, 2006-07-05

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Product Service

ATTACHMENT TO CERTIFICATE NO. B 06 06 59743 003 FOR SL POWER ELECTRONICS, CORP.

GLM65-x Series, GLM65-12-115, GLM65-15-118, MSP1788 and G2M65-x Series

GLM65-x SERIES models are Protection Class I power supplies, and are similar to each other differing only on secondary circuitry unless otherwise stated.

G2M65-x SERIES models are Protection Class II power supply, and are similar to the GLM65-x Series differing only in the secondary circuits unless otherwise stated.

In both series':

-x, which is any number from 5 through 48, which represents the output voltage rating.

Models may be followed by additional suffixes:

-YYY, which indicates value added processes not related to safety.
May be any number from 001 thru 999, except –115 that is used for custom model GLM65-12-115 and –118 that is used for custom model GLM65-15-118.

-C, which indicated an optional Chassis/Cover; Available for the GLM65 Series only

G Option, which indicates compliances with RoHS

CUSTOM MODELS:

GLM65-12-115 is the same as GLM65-12-... except that C22 & C23 changed from 220pF Y-Cap to a 150pF Y-Cap.

GLM65-15-118 is the same as GLM65-15-... except that C1 changed from 0.1μF X-Cap to a 0.33μ F X-Cap

MSP1788 is the same as GLM65-15-... except that output is 15.9 VDC / 4.0 A.

CLASSIFICATION:

1. Protection against electric shock is Class I for GLM65-x Series, including GLM65-12-115, GLM65-15-118, MSP1788, and;
   Protection against electric shock is Class II for G2M65-x Series.
2. Mode of operation = Continuous
3. Degree of protection against electric shock = Signal output or intermediate
4. Protection against harmful ingress of water = Ordinary (no protection)
5. Have not been evaluated for use in the presence of a flammable anaesthetic mixture with air, oxygen, or nitrous oxide. This evaluation is to be made on the end equipment by the OEM.

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DC OUTPUT RATINGS:

Model	Output Voltage	Output Current
GLM65-5 G2M65-5	5.1	11
GLM65-12 G2M65-12 GLM65-12-115	12	5.5
GLM65-15 G2M65-15 GLM65-15-118	15	4.3
GLM65-18 G2M65-18	18	3.6
GLM65-24 G2M65-24	24	2.7
GLM65-28 G2M65-28	28	2.3
GLM65-48 G2M65-48	48	1.35
MSP 1788	15.9 V	4.0 A

CONDITIONS OF ACCEPTABILITY:

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

The following must be evaluated at end use:

1) Fire and mechanical **enclosure** must be provided.
2) **A reliable ground** (Protective Earth) connection.
3) **Operating Altitude**: -152.4 m to 3 048 m (-500 ft to 10 000 ft)
4) **Operating Ambient Temperature:** 0 °C to 50 °C (32 °F to 122 °F)
5) **Operating Relative Humidity**: 96%, no condensation.
6) **Storage:** -40 °C to +85 °C. Units should be allowed to warm-up under non-condensing conditions before application of power.
7) Model GLM65-5... maximum output current with 50 LFM external airflow: 11 A – 9 A with convection cooling.

This Certificate and Attachments issued under project number: SI600002-110.

Report Number: SI304187-103, MOD3

2006-07-05