

File E100527
Project 89ME13168

November 30, 1989

REPORT

on

COMPONENT - POWER SUPPLY

Victor Corp.
Andover, MA

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DESCRIPTION

PRODUCT COVERED:

Component - Power Supplies, Mega Module Series, Model Nos. VI-abccc-deee-
*xx. VI may be replaced with IP. Refer to Ill. 3.

GENERAL CHARACTER AND USE:

This product is a switching type power supply incorporating semiconductor components in the primary circuit. It is provided with input and output terminals for connection to the end use equipment. The power supply has been * investigated to the Standard for Information Technology Equipment including Electrical Business Equipment, CAN/CSA C22.2 No. 60950-00, UL60950, CAN/CSA C22.2 No. 950-95, UL1950 Third Edition, UL 1012, Standard for Power Supplies, Sixth Edition and UL 544, Standard for Medical and Dental Equipment, Third Edition.

The Mega Modules are dc-dc power supplies consisting of 1 to 3 Recognized (QQFU2) Vicor dc-dc converter modules combined together to provide 1 to 3 outputs. A Mega Module provides a single output. Input voltage varies based *on dc-dc converters selected and can be between 300 V dc and 12 V dc. Output voltages can be between 48 V dc and 2 V dc. Output powers can be between 600 W (single output) and 25 W for each output.

NOMENCLATURE BREAKDOWN:

See Ill. 3.

ELECTRICAL RATINGS:

See Ill. 3.

File E100527

Vol. 1 Sec. 10
and Report

*Pages 2,3

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R E P L A C E M E N T P A G E

The above referenced pages have been deleted from this Report.

ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

For use only in or with electronic data processing equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

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

1. These components have been judged on the basis of the required spacings in the Fifth Edition of the Standard for Information Processing and Business Equipment, UL 478, and UL 1950, First Edition, which covers the end-use product for which the component was designed.

2. The power supply should be installed in compliance with the enclosure, mounting, spacings, temperature, casualty, and segregation requirements of the ultimate application.

3. The Normal Temperature Test was conducted under the unspecified air temperatures and yielding a temperature on the aluminum baseplate as indicated below:

<u>*Mega Model Series +</u>	<u>Number of dc-dc Modules</u>	<u>Forced Air Ambient, °C</u>	<u>Max Base Plate Temperature, °C</u>
VI-LXXXX-XXXX	1	50	70
VI-MXXXX-XXXX, and VI-PXXXX-XXXX	2	50	80
VI-NXXXX-XXXX, VI-QXXXX-XXXX, and VI-RXXXX-XXXX	3	40	75

+ Where X is any number, letter, or optional.

The baseplate temperature should be measured in the end-use, and should not exceed 85° to ensure that transformer T1 is within a 65°C rise limitation.

* 4. Secondary outputs 5 V - 40 V have been investigated for secondary interconnection and are compliant with SELV requirements in the configurations described in this report. Secondary outputs 48 V - 95 V are nonSELV outputs.

5. The input and output terminals are not acceptable for field connections and are only intended for connection to mating connectors of internal wiring inside the end-use machine. The acceptability of these and the mating connectors relative to secureness, insulating materials, and temperature should be considered.

6. The "Gate In" and "Gate Out" terminals are in low voltage primary connected circuits.

7. All testing was conducted using the input fusing specified below. This fusing is not provided as part of the module and must be provided in the end-use.

<u>Megal Master + Series No.</u>	<u>Max Input Fuse</u>
VI-X6XXX-XXXX	5 A, 250 V
VI-X5XXX-XXXX	10 A, 125 V
VI-X4XXX-XXXX	20 A, 60 V
VI-X3XXX-XXXX	25 A, 60 V
VI-X2XXX-XXXX	25 A, 60 V

+ Where X can be any number, or optional

8. Leakage current measurements should be performed in the end use application.

9. For Medical and Dental applications, evaluation of these devices assumed dc supply being isolated from the utility source. If this is not the case, then all Abnormal Tests should be repeated and followed by a Dielectric Withstand Test and leakage current measurements.

10. Based on Paragraph 35 1A of the Standard for Telephone Equipment, UL 1459, these products are acceptable for use with Telephone Equipment.

CONSTRUCTION DETAILS:

General - The design, shape, and arrangement of parts shall be as illustrated except where variations are specifically described. See Ills. 1-3 for schematic.

Spacings - Min spacings between live parts of opposite polarity and between live and dead-metal parts shall be as indicated below.

Spacing Other Than at Field Wiring Terminals

Potential Involved Volts V rms (Peak)	Min Spacings, in (mm)	
	Over Surface	Through Air
0-50 (0-70.7)	3/64 (1.2) b	3/64 (1.2) b
51-125 (72.1-176.8)	1/16 (1.6) b	1/16 (1.6) b
126-250 (178.2-353.5)	3/32 (2.4) b	3/32 (2.4) b

- b - On printed wiring boards, their connectors, and board mounted electrical components, wired on the load side of line filters or similar voltage-peak reduction networks and components, a min spacing of 0.023 in (0.58 mm) plus 0.0002 in (0.005 mm) per volt peak shall be maintained over the surface and through air between uninsulated live parts and any other uninsulated live parts and any other uninsulated conductive part (live or dead) not of the same polarity.

Marking - All markings are located on outer chassis and are ink-stamped or applied with self-adhesive label. Marking includes Vicor, model number and ratings.

Sealants - Provided on internal components for limiting vibration, Type ECCOSIL SC71 by Emerson and Cuming or Type NUVA-SIL 88 Loctite. Not relied upon for securement of components.

Internal Wiring - Unless otherwise specified, all internal wiring is Recognized Component appliance wiring material (AVLV2), rated 300 V, 105°C min, and shall be PVC, TFE, PTFE, FEP or neoprene insulated, or shall be surface marked "VW-1".

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and Report

Mechanical Assembly - Unless otherwise stated, all enclosure parts and component mounting assemblies are secured by welding or thread forming screws or machine screws provided with nuts and lockwashers.

Soldered Connections - All soldered connections are mechanically secured before soldering. When hand soldered, leads on printed circuit boards are bent over prior to soldering.

Exception - Printed circuit board assemblies that are wave soldered.

Electrical Tubing and Sleeving - Recognized Component tubing (YDPU2) and/or sleeving (UZFT2) rated 300 V, 105°C minimum, VW-1 min.

Printed Wiring Boards - Unless otherwise specified, all boards are Recognized Components (ZPMV2), suitable for the solder time and temperature used by the manufacturer, and having a minimum flame rating of 94V-0 and an operating temperature rating of at least 105°C.

Corrosion Protection - Parts are of corrosion resistant material or plated or painted as corrosion protection.

Tolerances - Unless specified otherwise, all indicated dimensions are nominal.

Differences Between Models - All models are a packaging of one, two, or three Recognized (QQFUZ) Vicor, dc-dc power converters, which are interconnected to provide varying input voltage, number of outputs, and output ratings.