



333 Pfingsten Road
Northbrook, Illinois 60062-2096
(847) 272-8800
FAX No. (847) 272-8129
MCI Mail No. 254-3343
Telex No. 6502543343



File E181848
Project 95NK30863

July 18, 1996

REPORT

on

COMPONENT - POWER SUPPLIES FOR USE IN
HAZARDOUS LOCATIONS

Vicor Corporation
Andover, MA

Copyright © 1996 Underwriters Laboratories Inc.

Underwriters Laboratories Inc. authorizes the above named company to reproduce this Report provided it is reproduced in its entirety.

Underwriters Laboratories Inc. authorizes the above named company to reproduce that portion of this Report consisting of this Cover Page through Page 2.

MJA/KM:ash
NKDLS

A not-for-profit organization
dedicated to public safety and
committed to quality service

DESCRIPTION

PRODUCT COVERED:

USL, CNL *Flat Pac Series, Model VI or IP, followed by L, M, N, P, Q or R; followed by A, F or U; followed by up to three numbers or letters, which may be Z, Y, O, X, W, V, T, R, M, 1, P, 2, N, 3, L, J, K, 4, H, F, D or B; followed by C, I, M or E; followed by up to three numbers or letters which may be M, P, Q, S, U, V, W, X, Y or Z; followed by two optional digits 00 through 99.

*Class I, Groups A, B, C and D, Div. 2 Hazardous Locations only.

GENERAL CHARACTER AND USE:

The Flat Pac Series is built using up to three R/C (QQBK2) Vicor dc-dc output voltage modules which provide primary to secondary isolation. It can be configured by selecting the desired output voltages of the modules and paralleling of similar outputs to provide the output configuration described in the Nomenclature section of this Report (up to three outputs). Units with the same number of modules share the same front end primary circuitry. They are intended to be factory wired within electronic data processing equipment.

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

* USL - The power supplies were investigated for compliance with the Standard for Electrical Equipment For Use in Class I and Class II, Division 2 and Class III Hazardous (Classified) Locations, UL 1604, Information Processing and Business Equipment, UL 478, Fifth Edition, and the Standard for Information Technology Equipment Including Electrical Business Equipment, UL 1950, Second Edition (No. D3 Deviations) and the Standard for Telephone Equipment, UL 1459, Second Edition.

* CNL - The power supplies were investigated for compliance with Standard C22.2 No. 213-M1987, Non-Incendive Electrical Equipment For Use In Class I, Div. 2 Hazardous Locations.

*

NOMENCLATURE BREAKDOWN:

Refer to ILL. 14.

ELECTRICAL RATINGS:

Refer to ILL. 14.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE USE):

CNL indicates investigation to Canadian Standard C22.2 No. 2130M1987.

USL indicates investigation to United States Standards listed above.

Conditions of Acceptability -

1. The supplies should be installed within an enclosure so that the exposed current-carrying parts (wiring terminals) are suitably enclosed.

2. The Temperature Test should be conducted in the end application to determine a T Code.

3. The need for the following instructions shall be determined in the end application.

- A. SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C AND D.
- B. WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, CLASS II, DIVISION 2.
- C. WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE HAZARDOUS.
- D. WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES.



VI - a b c c c - d e e e - x x

FlatPAC Family

VI Product Type
VI (Vicor),
IP (Vicor Japan)

a Product Configurations

L = 1 module, 1 output	5.0 / 2.5 A
M = Up to 2 modules, 1 output	9.5 / 6.0 A
N = Up to 3 modules, 1 output	13.5 / 8.0 A
P = Up to 2 modules, 2 outputs	9.5 / 6.0 A
Q = Up to 3 modules, 2 outputs	13.5 / 8.0 A
R = Up to 3 modules, 3 outputs	13.5 / 8.0 A

Input Current (Max)

b Input Type
F = Strappable
A = AutoRanging
U = Universal

d Product Grade

C = Commercial -20C to 85C	100-120 / 200-240 V, 47-63 Hz
I = Industrial -40C to 85C	100-120 / 200-240 V, 47-440 Hz
M = Military -55C to 85C	100-120 / 200-240 V, 47-440 Hz
E = Economy 0C to 85C	100-120 / 200-240 V, 47-63 Hz

Input Voltage

e Output Power

Vout ≥ 5V	Vout ≤ 5V
M = 600W	120A
P = 450W	90A
Q = 400W	80A
S = 300W	60A
U = 200W	40A
V = 150W	30A
W = 100W	20A
X = 75W	15A
Y = 50W	10A
Z = 25W	5A

c Output voltage (Vdc) Nominal

Z = 2.0	2 = 15.0
Y = 3.3	N = 18.5
O = 5.0	3 = 24.0
X = 5.2	L = 28.0
W = 5.5	J = 36.0
V = 5.8	K = 40.0
T = 6.5	4 = 48.0
R = 7.5	H = 52.0
M = 10.0	F = 72.0
I = 12.0	D = 85.0
P = 13.8	B = 95.0

Customer Specials (remove items d, and e)
XX = 0-999, Denotes non-safety related changes.

Customer Options
XX = 0-999, Denotes unique labels or testing per customer request.

LL Option
XX = LL, Denotes Low Leakage. May be provided with "-xxx" to denote 0-999, for non-safety related component changes

Example
VI-PA01-CUX-234
P = Up to 2 modules, 2 outputs, A = AutoRanging, 0 = 5Vdc, 1 = 12Vdc, C = Commercial product Grade
U = Output 1 @ 200W, X = Output 2 @ 75W, 234 = Customer Label

REV	0
DEC	99
UNDE	5
LABOR	IC.