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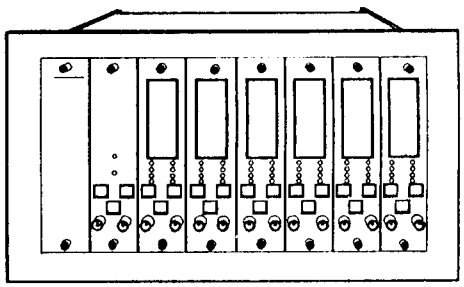
Find the *GE / Bently Nevada 3300/10-01-02-00* at our website: *Click HERE*

DOCUMENT NO. 80174

REV.	DATE

3300/10 POWER SUPPLY

BENTLY NEVADA



NOTICE

READ THE FOLLOWING BEFORE INSTALLING OR OPERATING EQUIPMENT.

Bently Nevada Corporation has attempted to identify areas of risk created by improper installation and/or operation of this product. These areas of information are noted as CAUTION or WARNING for your protection and for the safe and effective operation of this equipment. Read all instructions before installing or operating this product. Take particular attention to those areas designated by the following symbols.

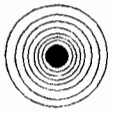
WARNING Hazardous Voltage

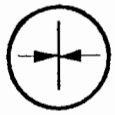
CAUTION Machine Protection Could Be Lost

SYMBOLS

Special symbols are used in the manual to illustrate specifics in the step-by-step process. For example:


PRESS


FLASHING


CONNECT


DISCONNECT

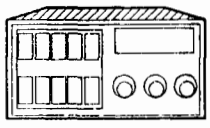

OBSERVE


SCREWDRIVER

TEST EQUIPMENT (Recommended)

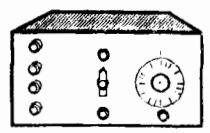
Digital Multimeter

4 1/2-Digit Display
0 to 1000 Vac/Vdc
0 to 10 megohms



Function Generator

Frequency Range
0.1 to 3 MHz
Offset= 10 Vdc



PSSYMPG

FOREWORD

This document is for maintenance personnel who install or maintain the 3300/10 Power Supply in a 3300 Instrument Rack. The information includes description, disassembly instructions, performance tests, recommended spare parts, field changeable options, specifications, and schematics. The procedure are presented in step-by-step graphic format.

RELATED DOCUMENTS

- 3300 Installation Instructions, 80172
- 3300 Troubleshooting Guide, 80173
- 3300 System Monitor, 80175
- Data Manager System, 43119-01
- Dynamic Data Manager System, 46390-01

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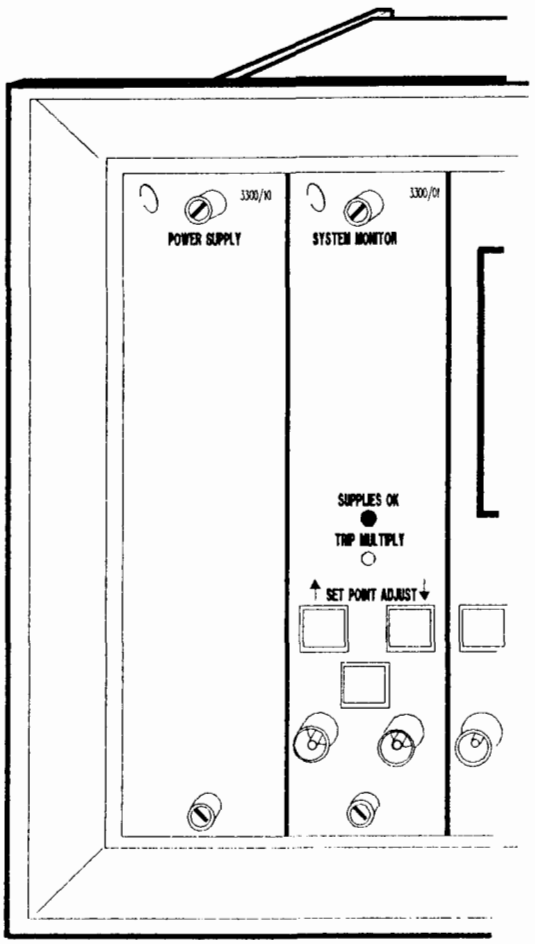
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TITLE	SECTION
POWER SUPPLY ASSEMBLY	1
OPTIONS	2
DISASSEMBLY PROCEDURE	3
FUSES	4
PERFORMANCE TESTING	5
INPUT VOLTAGE OPTION	6
PROGRAMMABLE OPTIONS	7
RECOMMENDED SPARE PARTS	8
SPECIFICATIONS	9
SCHEMATICS & DRAWINGS	10

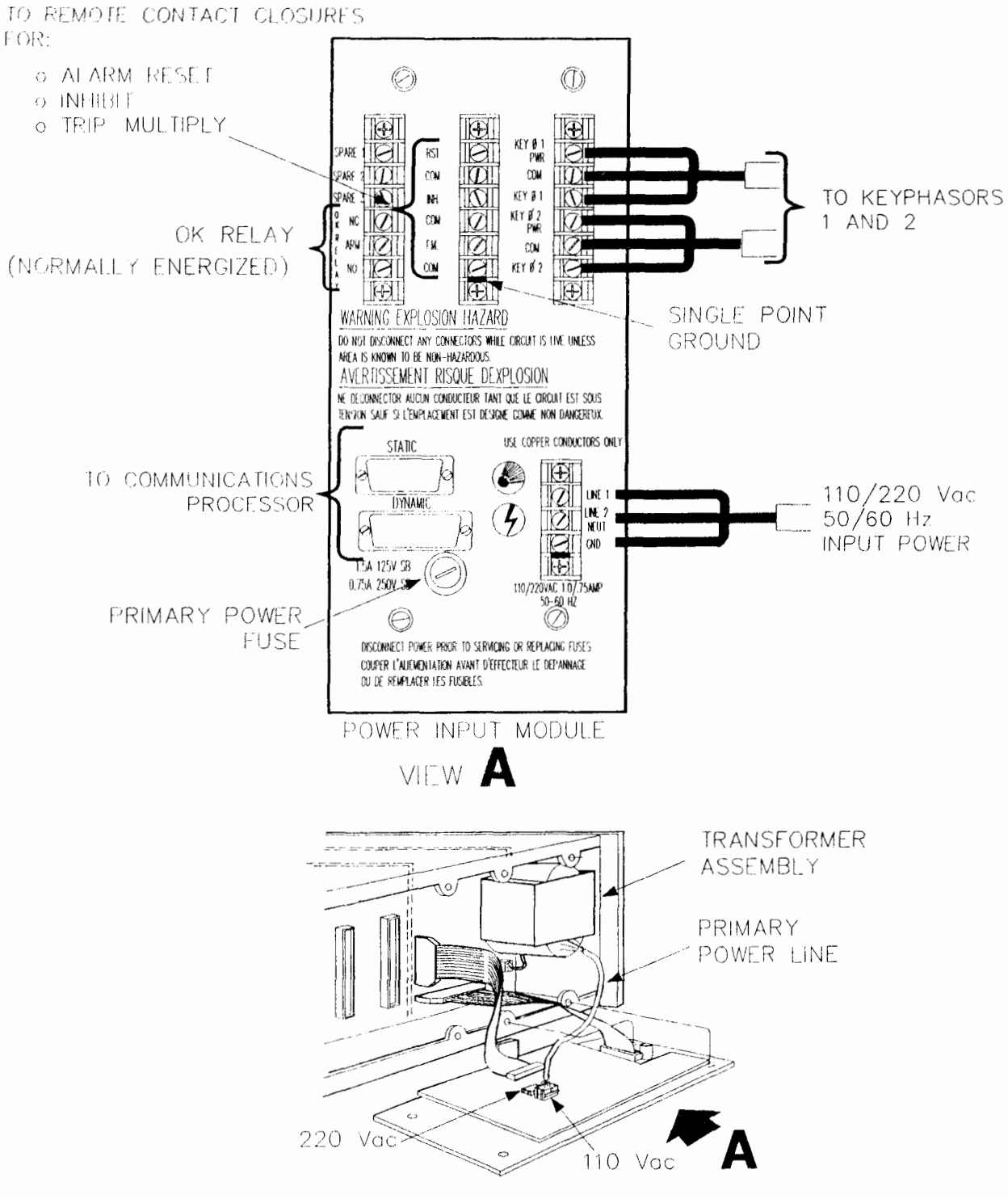
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1 POWER SUPPLY ASSEMBLY



PSSYS2

1 POWER SUPPLY ASSEMBLY [CONT.]



PSSYS

2 OPTIONS

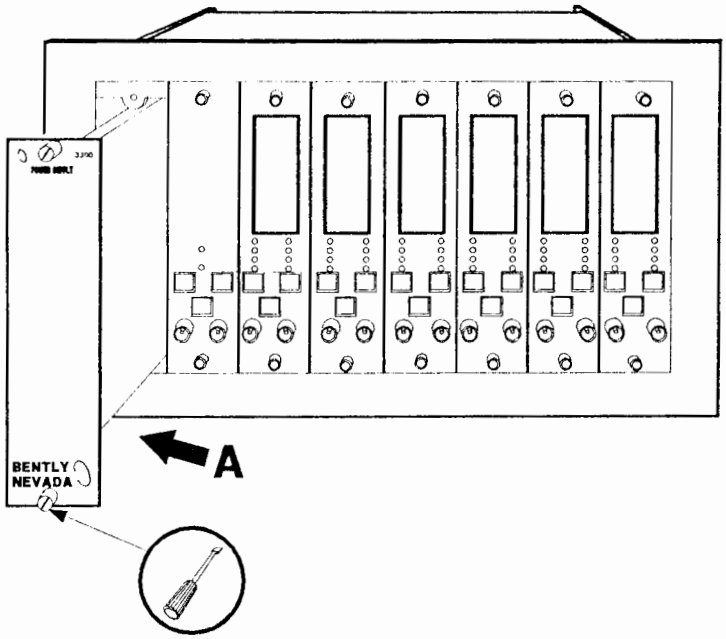
POWER SUPPLY PART NUMBER 3300/10	INPUT VOLTAGE AA	OK RELAY BB	APPROVALS CC	BARRIERS USED DD
	01=95 to 125 Vac, 50 TO 60 Hz 02=190 TO 250 Vac, 50 TO 60 Hz	01=5A EPOXY SEALED RELAY 02=5A HERMETICALLY SEALED RELAY	00=NONE 01=CSA 02=BASEEFA 03=CITY OF LA	00=NO 01=YES

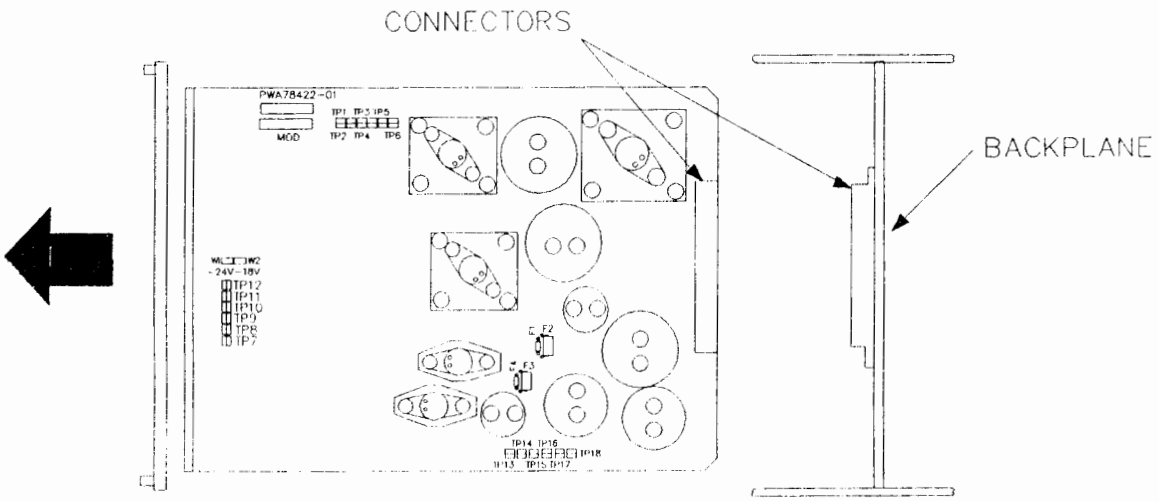
FIELD PROGRAMMABLE OPTIONS

TRANSDUCER OUTPUT VOLTAGE: SHIPPED AS -24 Vdc, FIELD PROGRAMMABLE TO -18 Vdc (SEE [7]).

3 DISASSEMBLY PROCEDURE

1. LOOSEN SCREWS AND PULL REGULATOR BOARD FROM RACK.





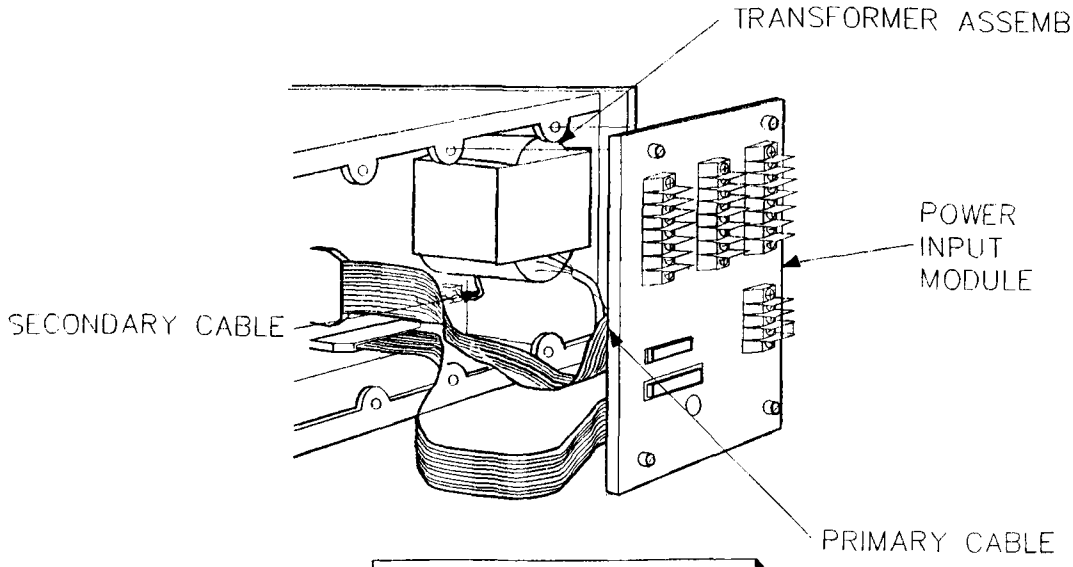
POWER SUPPLY REGULATOR BOARD

VIEW **A**

PSASS

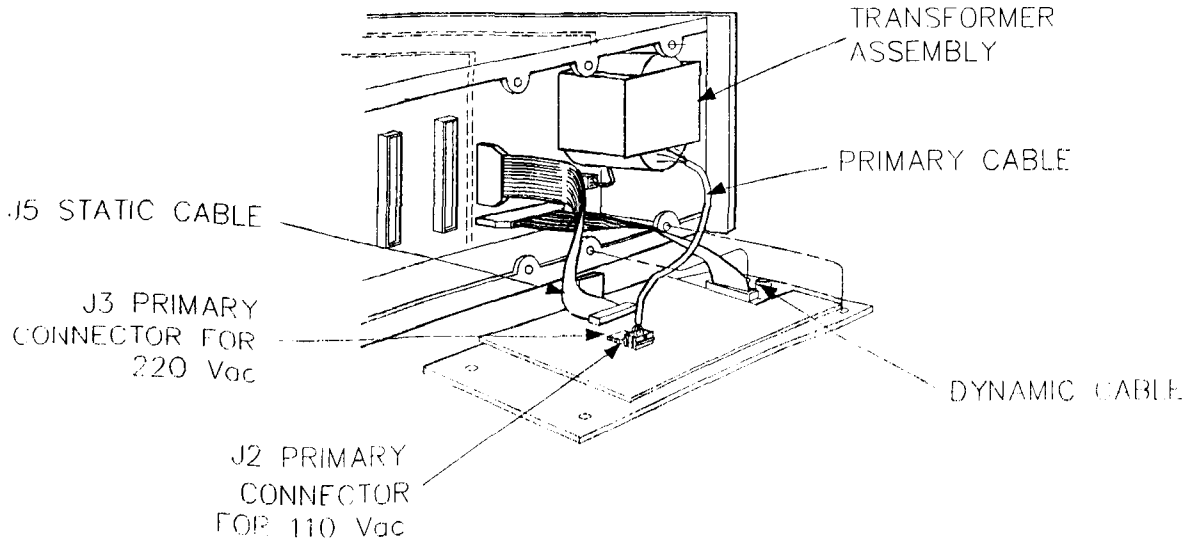
3 DISASSEMBLY PROCEDURE [CONT.]

2. TO GET TO TRANSFORMER ASSEMBLY AND CABLING, LOOSEN 4 SCREWS AND PULL POWER INPUT MODULE OUT FROM RACK.



WARNING

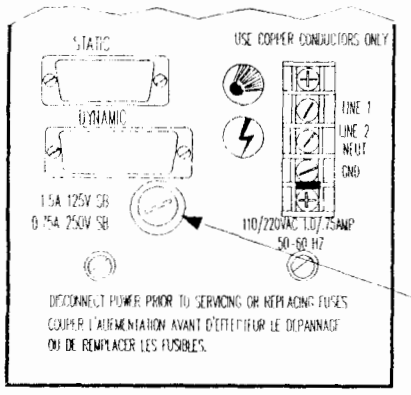
HIGH VOLTAGE IS PRESENT AT REAR OF RACK. ACCIDENTAL CONTACT WITH EXPOSED WIRING AND TERMINALS COULD CAUSE SERIOUS INJURY TO PERSONNEL.



PSINSTL

4 FUSES

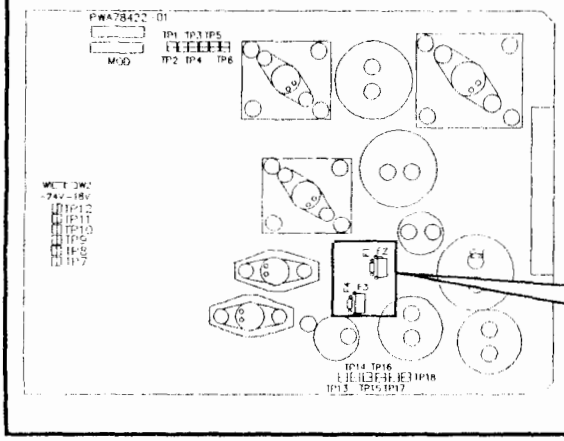
1. PRIMARY POWER FUSE IS LOCATED ON POWER INPUT MODULE.



- FOR 95 TO 125 Vac, 50 to 60 Hz, USE 1.5A, SB FUSE (PART NUMBER 01701500)
- FOR 190 TO 250 Vac, 50 TO 60 Hz, USE 0.75A, SB FUSE (PART NUMBER 01703118)

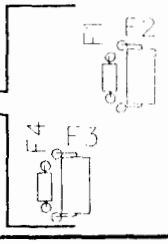
PRIMARY POWER FUSE (SEE [6])

2. TWO SECONDARY FUSES ARE LOCATED ON THE POWER REGULATOR BOARD. TO GET TO THE REGULATOR BOARD SEE [3].



SECONDARY FUSES (SEE [2])

- FOR CC=00, 01, OR 03 INSTALL F1 FOR +VRA AND F4, FOR −VRA
- FOR CC=02, REMOVE F1 AND F4 AND INSTALL F2 FOR +VRA AND F3 FOR −VRA.

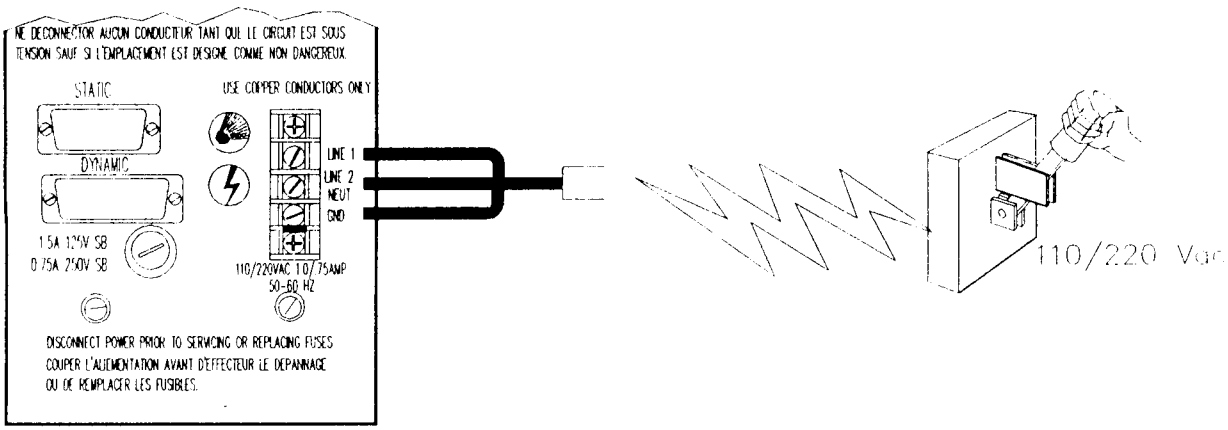


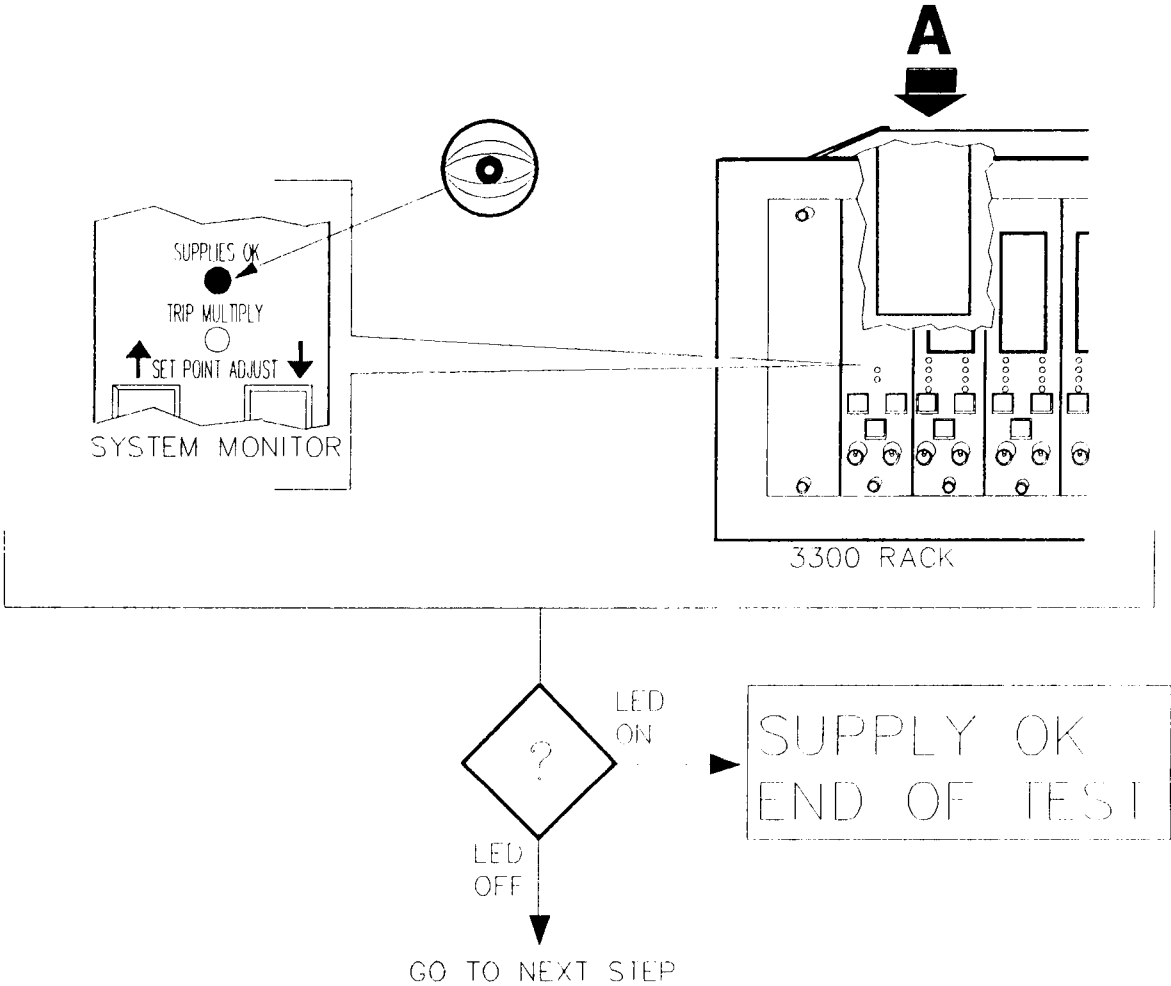
FUSE USAGE TABLE	
F1=	01710222
F2=	01710239
F3=	01710239
F4=	01710222

FUSLOCA

5 PERFORMANCE TESTING

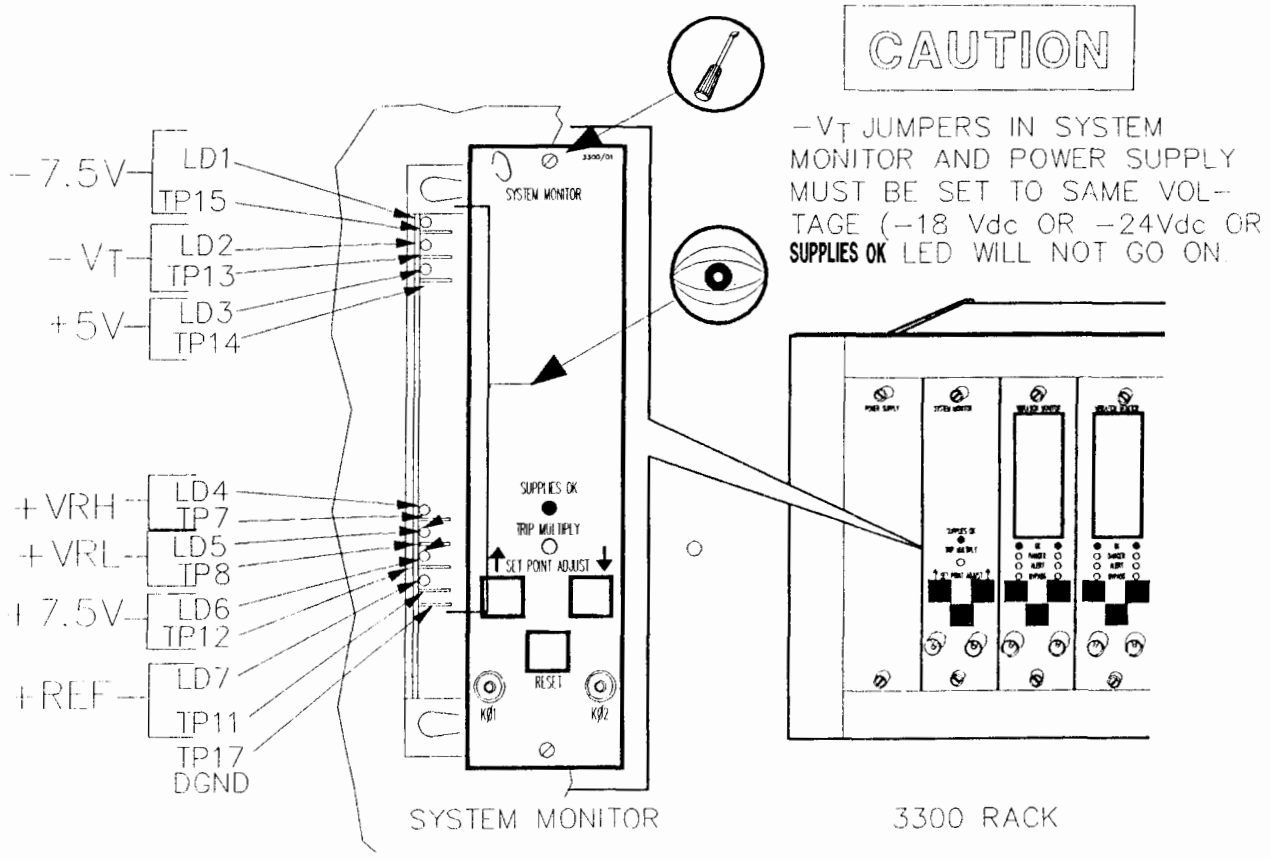
1. APPLY POWER TO RACK AND OBSERVE **SUPPLIES OK** LED ON SYSTEM MONITOR.

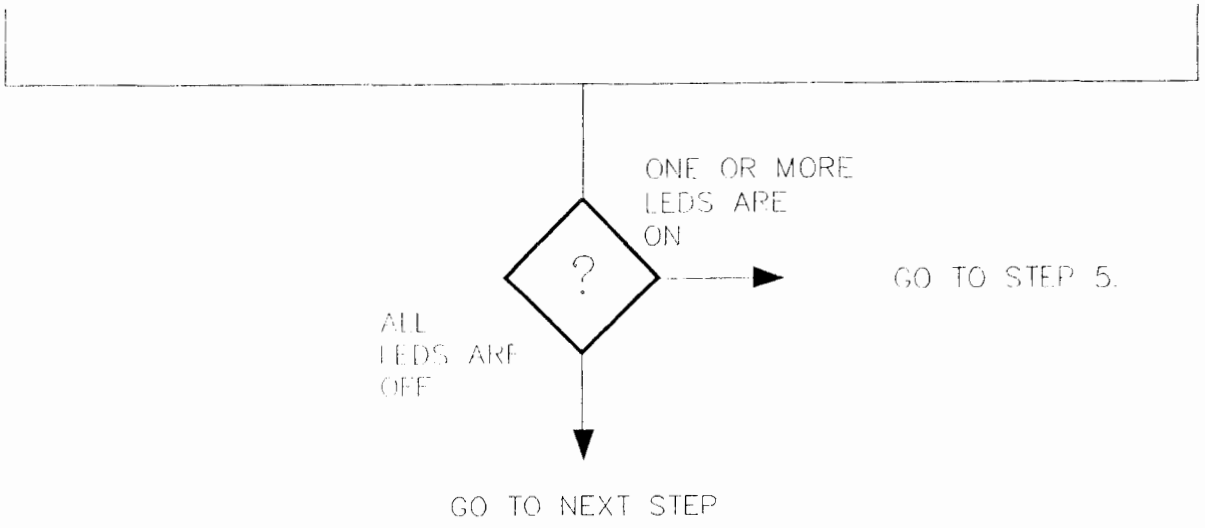




5 PERFORMANCE TESTING [CONT.]

2. LOOSEN SYSTEM MONITOR FRONT PANEL SCREWS AND MOVE PANEL TO THE RIGHT. OBSERVE LEDS 1 THROUGH 7 ON SYSTEM MONITOR CIRCUIT BOARD.

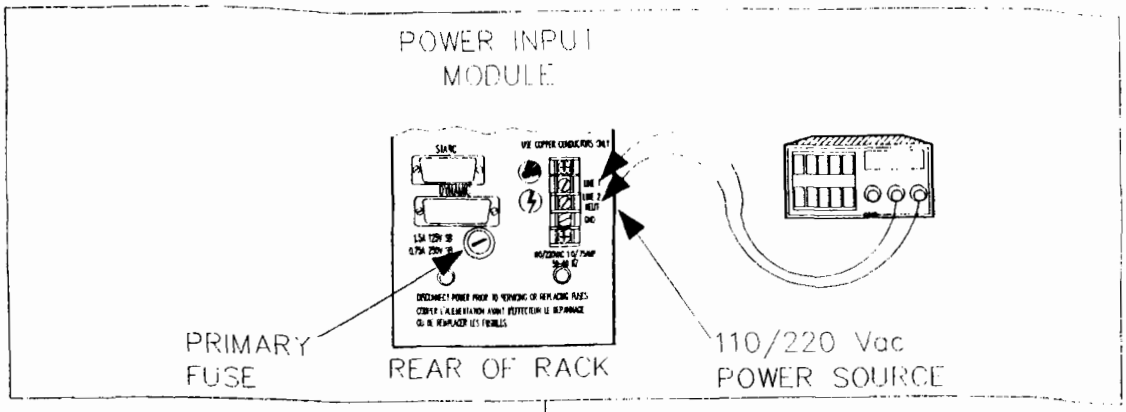




PSPT2

5 PERFORMANCE TESTING [CONT.]

3. CHECK PRIMARY INPUT POWER AND PRIMARY POWER FUSE.



CAUTION

DISCONNECT PRIMARY POWER BEFORE REPAIRS OR FUSE REPLACEMENT !

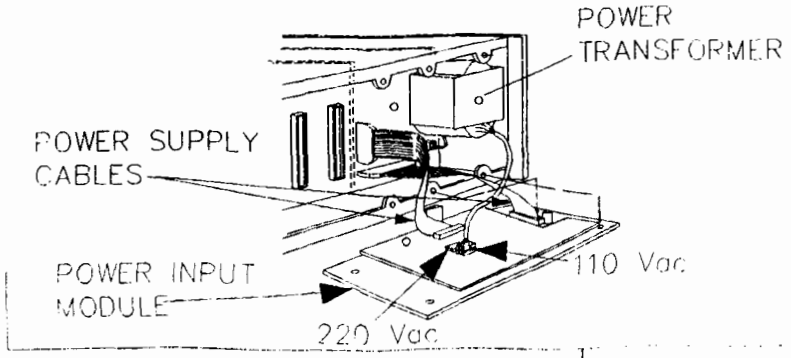
?

NOT OK

REPAIR PRIMARY POWER SOURCE OR REPLACE FUSE

OK

4. DISCONNECT RACK FROM PRIMARY AC POWER. LOOSEN POWER INPUT MODULE SCREWS AND PULL MODULE AWAY FROM RACK AS FAR AS CABLES WILL ALLOW (SEE 3). ENSURE THAT CABLING BETWEEN MODULE, POWER TRANSFORMER AND BACKPLANE IS CORRECT AND PROPERLY SECURED. ALSO CHECK THAT CORRECT INPUT VOLTAGE PLUG IS SELECTED.



CAUTION

DISCONNECT PRIMARY POWER BEFORE REMOVING OR CHECKING POWER INPUT MODULE !

?

NO CABLING ERRORS

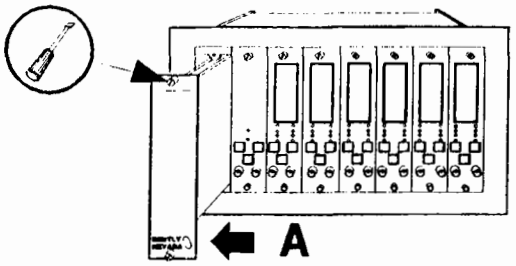
REPLACE TRANSFORMER

CABLING ERROR

REPAIR CABLING

5 PERFORMANCE TESTING [CONT.]

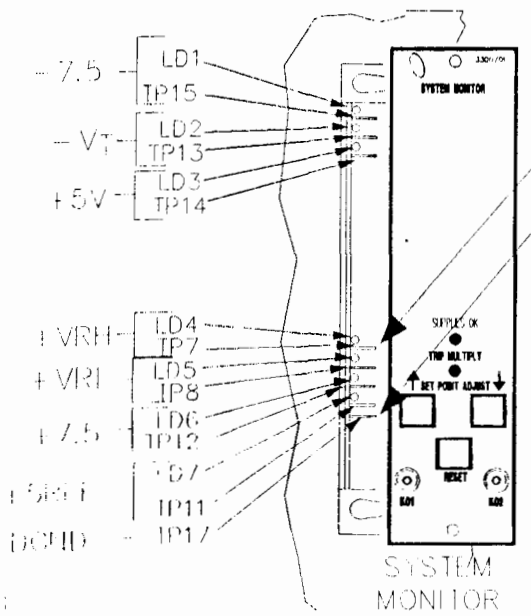
5. REMOVE REGULATOR BOARD FROM RACK (SEE [3]) AND EXAMINE THE TWO SECONDARY FUSES. (SEE [4].)

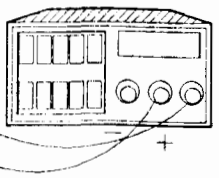


? FUSE BAD → REPLACE DEFECTIVE SECONDARY FUSE

FUSES OK

6. MEASURE DC VOLTAGE AT TEST POINTS ON SYSTEM MONITOR BOARD. ALL VOLTAGES SHOULD MEET LISTED TOLERANCES.





VOLTAGE	TP	TOLERANCE Vdc
+VRH	TP7	+22.55 ± 6.05
+VRL	TP8	+11.22 ± 3.09
+7.5V	TP12	+ 7.50 ± 0.1
+5V	TP14	+ 5.00 ± 0.05
+5V REF	TP11	+ 5.00 ± 0.009
-7.5V	TP15	- 7.50 ± 0.1
$-V_1$ (*)	TP13	-17.90 ± 0.4
	TP13	-23.75 ± 0.45

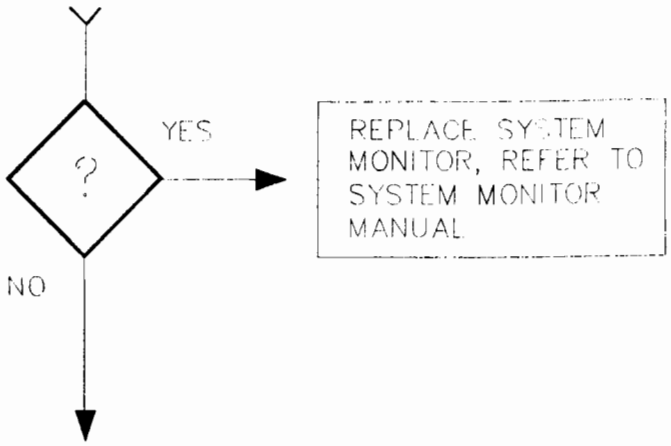
* OPTION DEPENDENT (SEE [7])

GO TO NEXT STEP

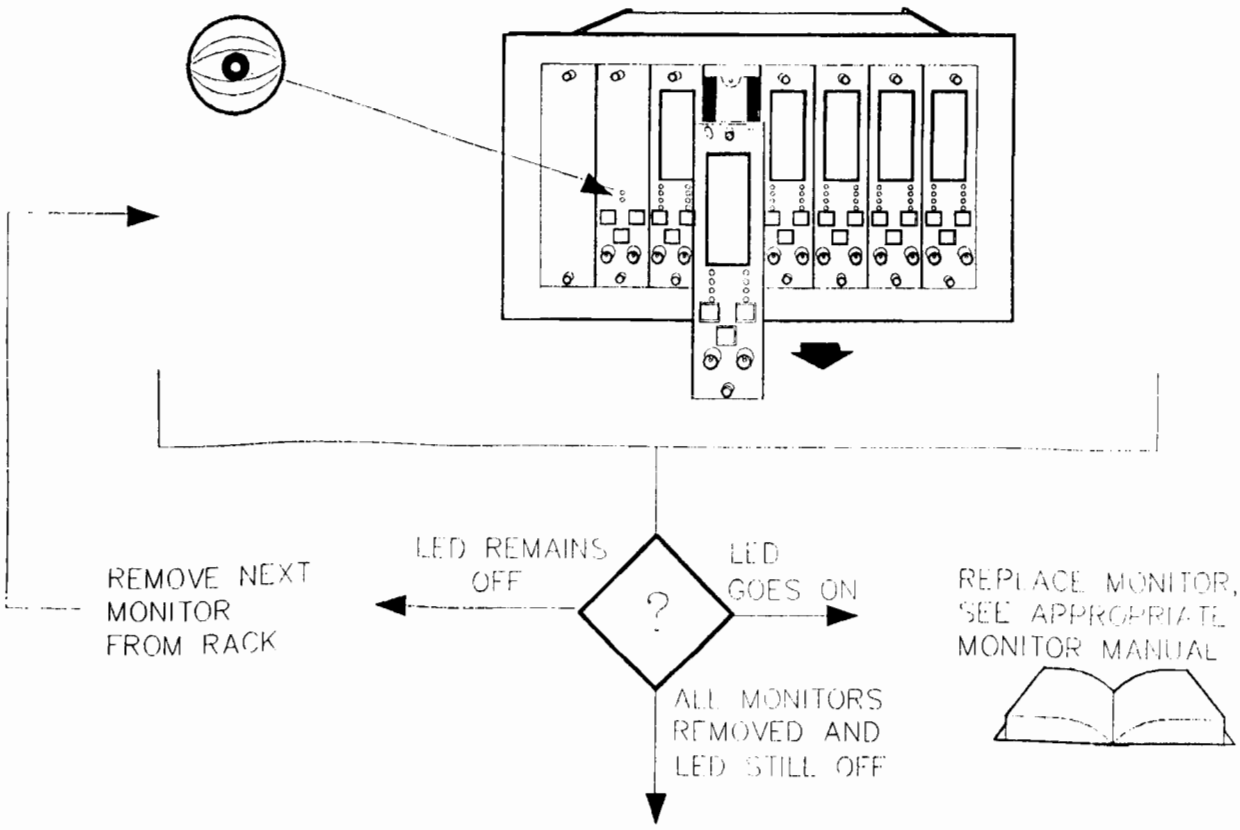
PSPT4

5 PERFORMANCE TESTING [CONT.]

7. ALL SYSTEM MONITOR TEST POINT VOLTAGES MEET TOLERANCES LISTED IN STEP 6.



8. PULL ONE MONITOR AT A TIME OUT FROM RACK TO DISENGAGE MONITOR FROM BACKPLANE (APPROXIMATELY 2 INCHES). OBSERVE SYSTEM MONITOR **SUPPLIES OK** LED AFTER REMOVING EACH MONITOR FROM RACK.

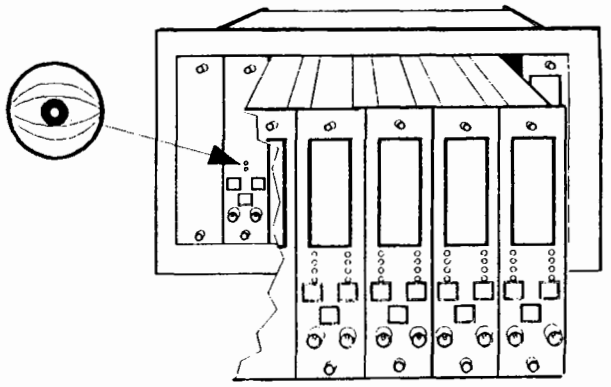


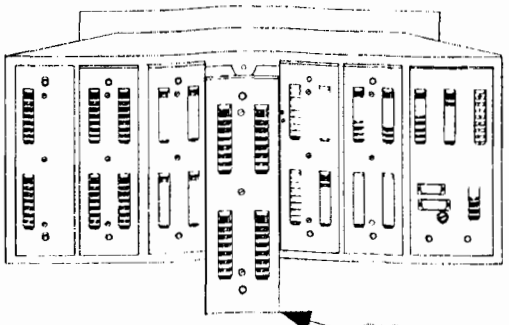
5 PERFORMANCE TESTING [CONT.]

9. REMOVE ONE SIGNAL INPUT MODULE AT A TIME FROM REAR OR RACK. OBSERVE SYSTEM MONITOR **SUPPLIES OK** LED AFTER REMOVING EACH MODULE FROM RACK. (DO NOT REINSTALL MONITORS REMOVED IN STEP 8 UNTIL PROBLEM HAS BEEN ISOLATED TO A PARTICULAR MODULE.)

WARNING

HIGH VOLTAGE PRESENT. ACCIDENTAL CONTACT WITH TERMINALS OR EXPOSED WIRING COULD CAUSE INJURY TO PERSONNEL.





PSPT6

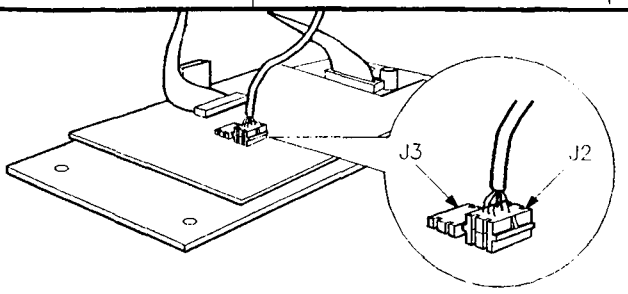
6 INPUT VOLTAGE OPTION

1. TO CHANGE INPUT VOLTAGE OPTION, DISENGAGE POWER INPUT MODULE FROM RACK (SEE [3]). CONNECT CABLE FROM TRANSFORMER TO APPROPRIATE CONNECTOR ON CIRCUIT BOARD AS INDICATED IN FOLLOWING TABLE.

WARNING

HIGH VOLTAGE LEVELS ARE PRESENT AT REAR OF RACK. ACCIDENTAL CONTACT WITH EXPOSED WIRING AND TERMINALS COULD CAUSE SERIOUS INJURY TO PERSONNEL.

VOLTAGE	CONNECTOR	FUSE
110 Vac, 50 TO 60 Hz	J2	SEE [4]
220 Vac, 50 to 60 Hz	J3	SEE [4]

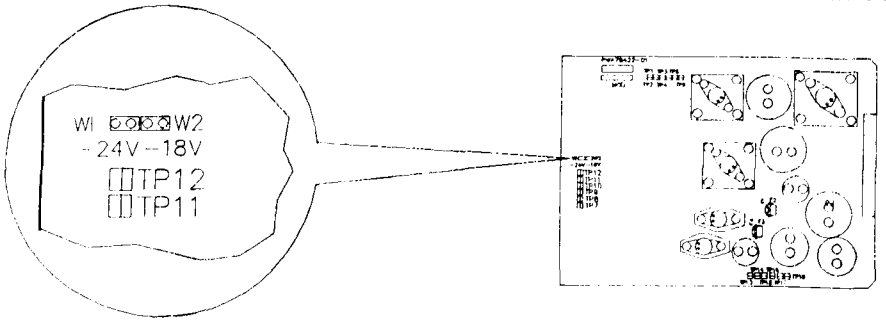


7 PROGRAMMABLE OPTIONS

TRANSDUCER VOLTAGE ($-V_T$)

TO CHANGE TRANSDUCER VOLTAGE ($-V_T$) ON POWER SUPPLY REGULATOR BOARD, DISENGAGE REGULATOR BOARD FROM RACK (SEE [3]) AND CHANGE JUMPER AS FOLLOWS:

VOLTAGE (VT)	JUMPER
−24 VDC	W1
−18 VDC	W2



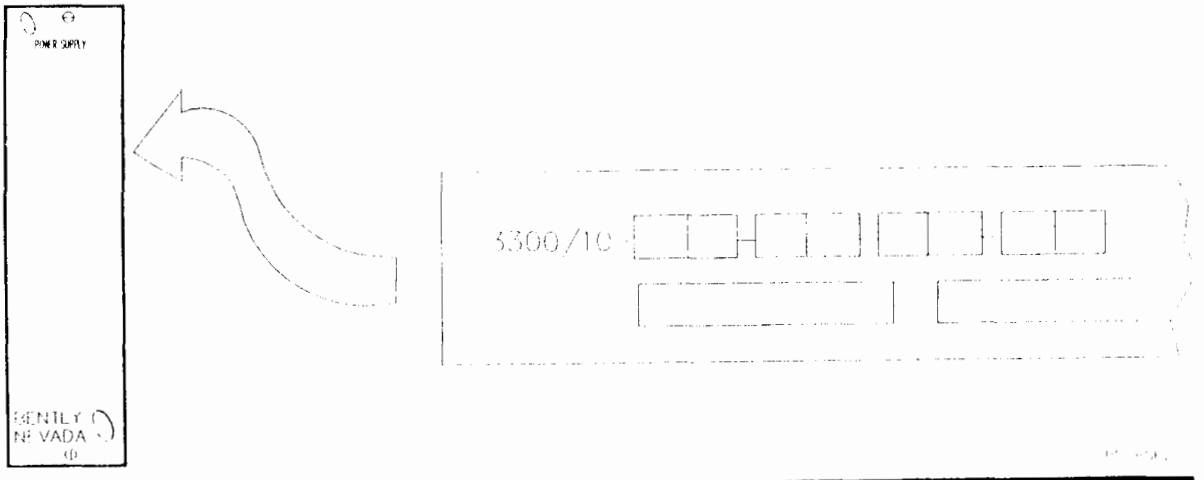
NOTE

REFER TO SYSTEM MONITOR MANUAL FOR $-V_T$ JUMPER REQUIREMENTS OF SYSTEM MONITOR CIRCUIT BOARD.

8 RECOMMENDED SPARE PARTS

QTY PER MON	DESCRIPTION	PART NUMBER
	POWER SUPPLY	3300/10-[ ][ ][ ][ ][ ][ ][ ][ ]
1	FUSE	01701500 [0][1] 01703118 [0][2]
1	REGULATOR BOARD	78422-01 [0][1] 78422-01 [0][2] 78422-02 [0][3] 78422-01 [0][4]
1	POWER INPUT MODULE EPOXY SEALED RELAY HERMETICALLY SEALED RELAY	78432-01 [0][1] 78432-02 [0][2]
1	TRANSFORMER	79687-01

TO ORDER REPLACEMENT PARTS, SPECIFY THE COMPLETE PART NUMBER ACCORDING TO THIS TABLE AS INDICATED ON IDENTIFICATION DECAL. IF THE POWER SUPPLY HAS BEEN MODIFIED, SPECIFY THE MODIFICATION NUMBER ON THE PARTS ORDER. CUSTOMER MUST SET PROGRAMMABLE OPTIONS. POWER SUPPLY SHIPPED AS SHOWN IN [2]. IF IN DOUBT ABOUT THE PART NUMBER, CALL YOUR BENTLY NEVADA CORPORATION REPRESENTATIVE BEFORE ORDERING THE PART.



9 SPECIFICATIONS

POWER INPUT

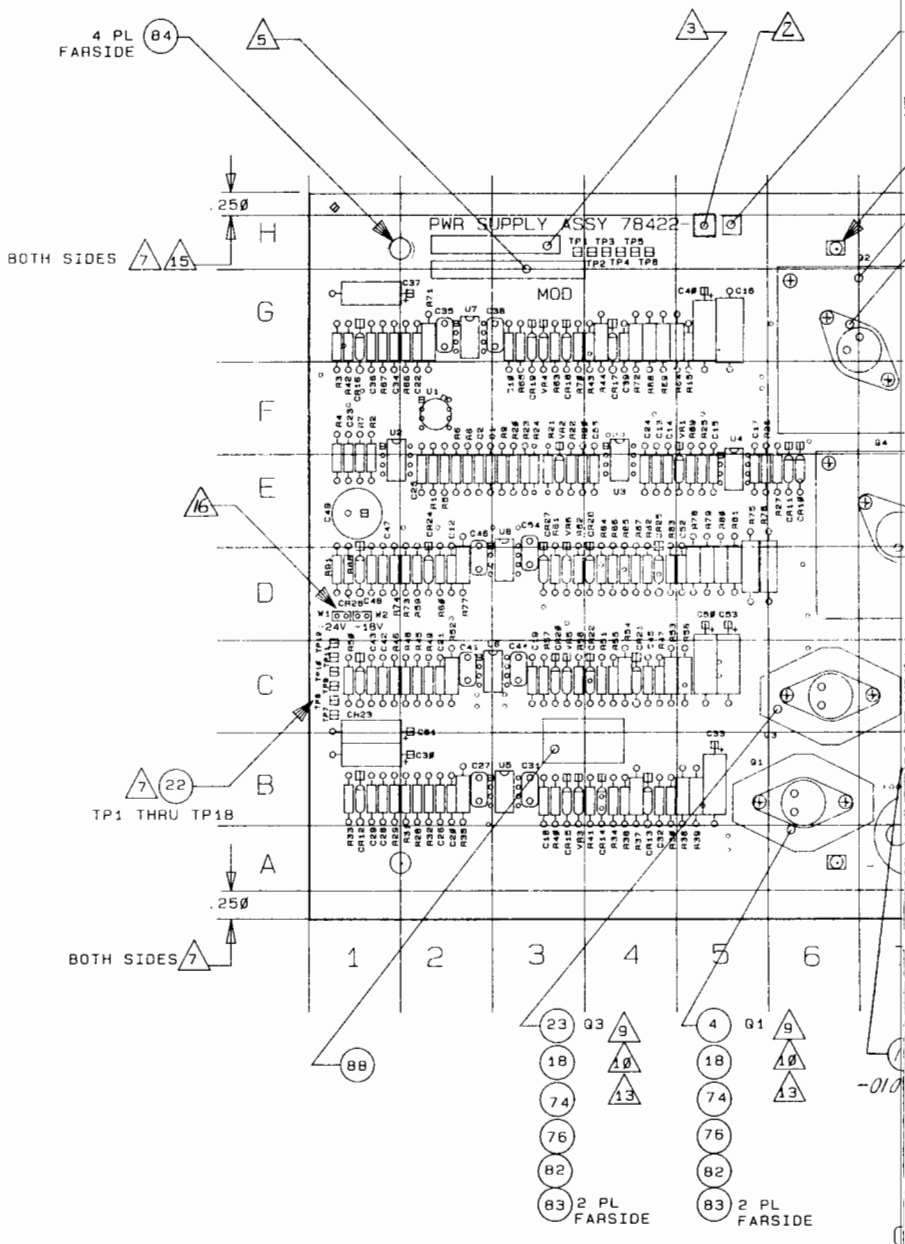
110 Vac Option	95 to 125 Vac, Single Phase, 50 to 60 Hz, @0.6 A, maximum
220 Vac Option	190 to 250 Vac, Single Phase, 50 to 60 Hz, @0.3 A, maximum
Maximum Start Up Surge	26 A Peak, or 12 A rms for one cycle
Surge Suppression	Clamp Voltage 285 to 300 rms Peak Surge Current 100 A maximum for 6 msec
Average Power Dissipation	60 W

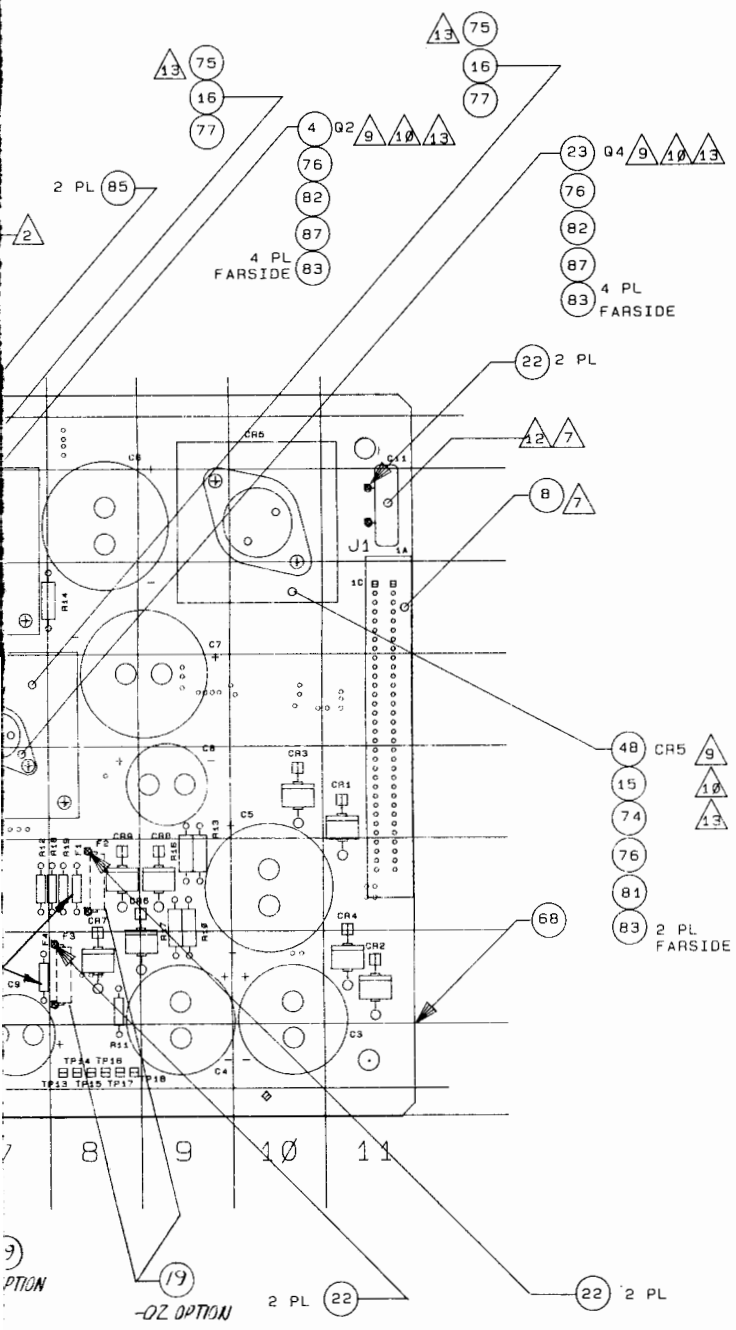
ENVIRONMENTAL

Operating Temperature	+32°F to +149°F (0°C to +65°C)
Storage Temperature	-40°F to +185°F (-40°C to +85°C)
Humidity	0 to 95%, noncondensing

10 SCHEMATICS & DRAWINGS

PROPRIETARY NOTICE - THE DATA CONTAINED HEREIN IS PROPRIETARY TO BENTLY NEVADA CORPORATION AND SHALL NOT BE DUPLICATED, USED OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS FURNISHED WITHOUT THE EXPRESS PERMISSION OF BENTLY NEVADA CORP.



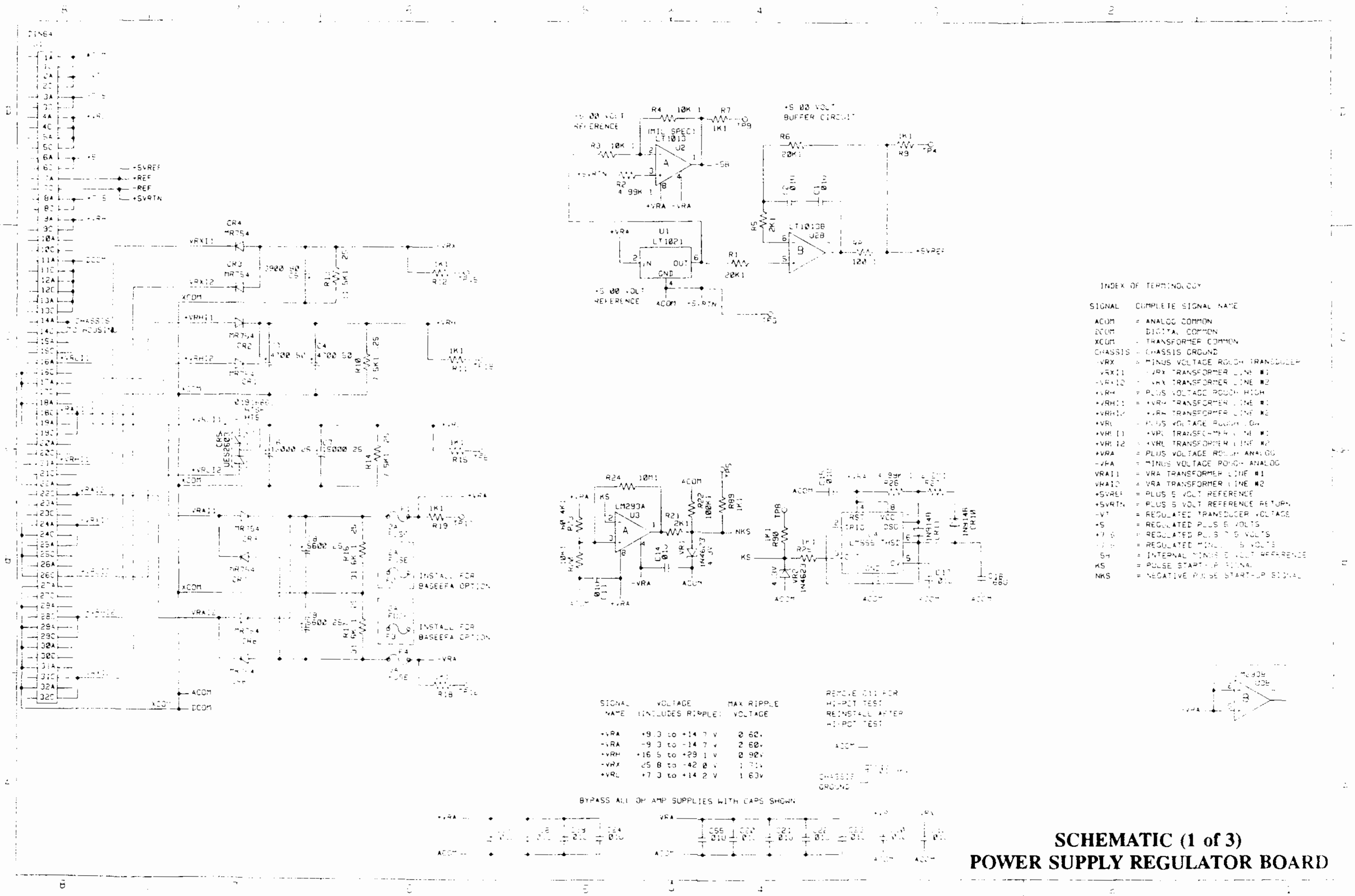


COMPONENT SIDE

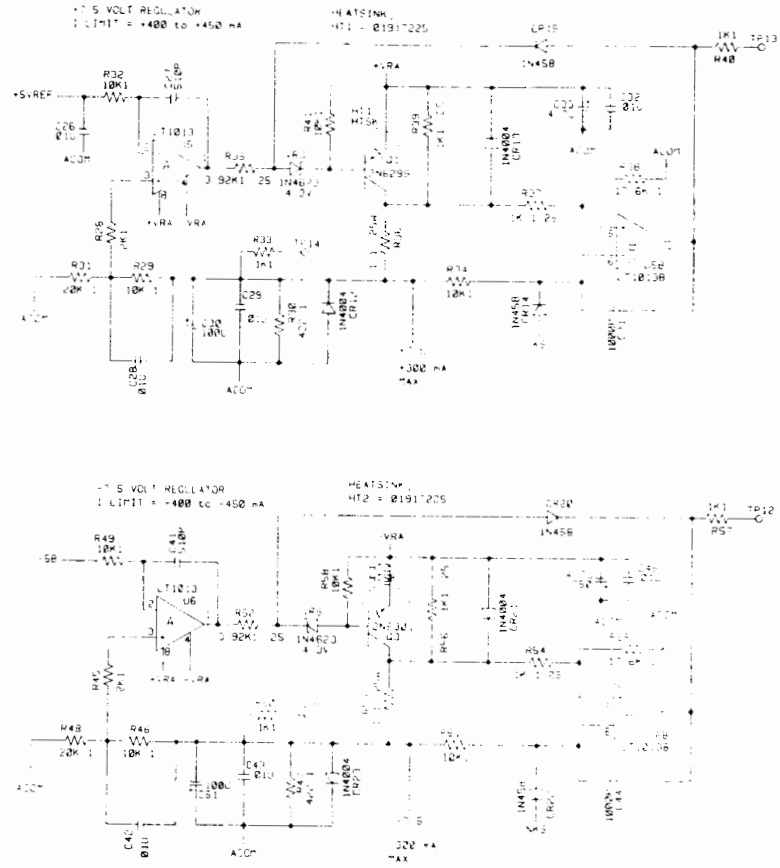
ATTENTION

OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE
DEVICES

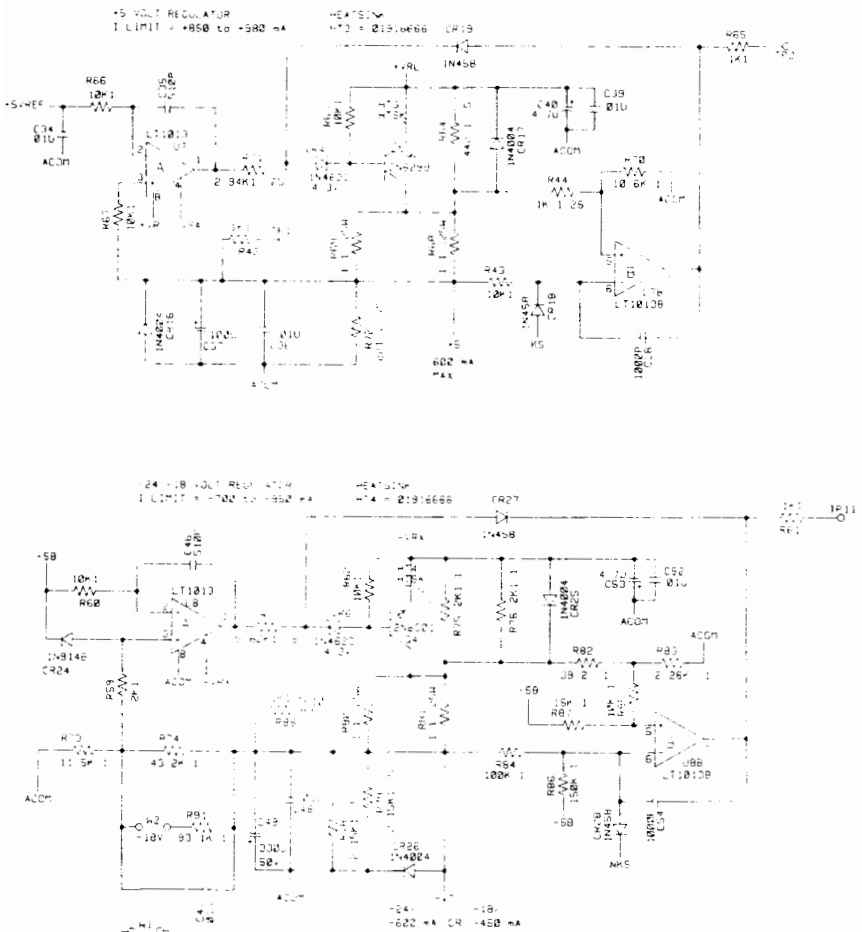
PRINTED WIRING ASSEMBLY
POWER SUPPLY REGULATOR BOARD



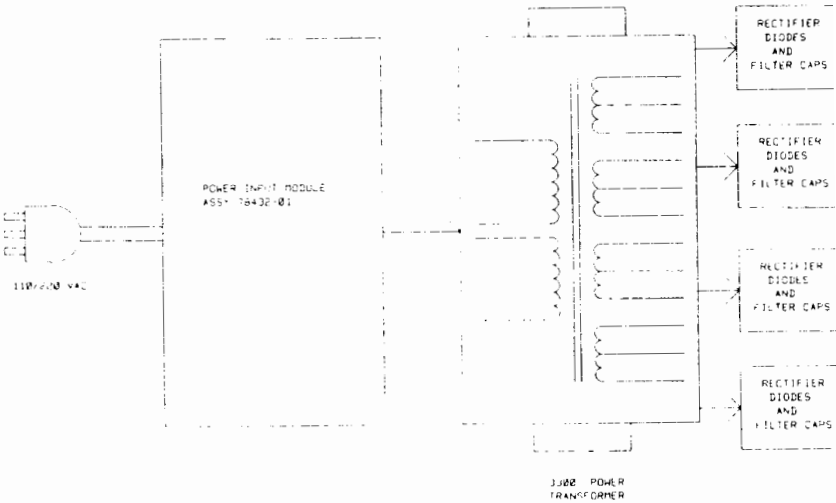
SCHEMATIC (1 of 3)
POWER SUPPLY REGULATOR BOARD

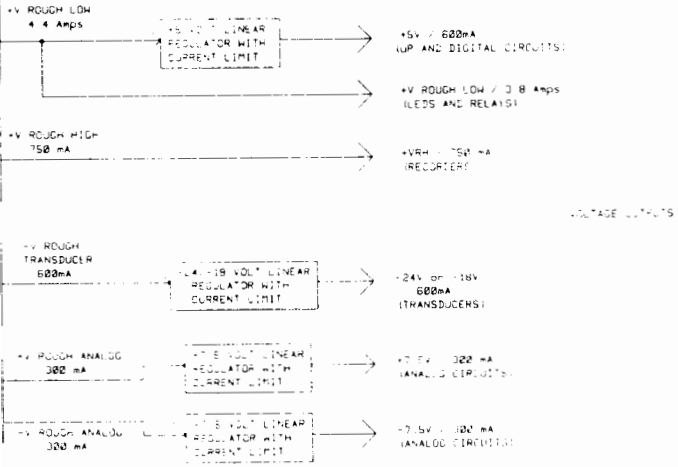

+7.5 VOLT REGULATOR
I LIMIT = +400 to +450 mA
HEATSINK
HT1 = 0191225
+5VREF
R32
10K1
R26
10
ACOM
T1D13
U6
R33
3.92K1
2S
1N4623
4.3V
+VRA
VRA
R35
1K1
R31
20K
R29
10K
R33
1K1
T1D14
C29
2.2
C30
100L
C28
.01D
ACOM
R38
1K1
R39
1K5
1N4004
CR13
R37
1K1
2S
1N6295
CR15
1N458
CR16
C32
.01D
ALOM
R36
1K1
2S
C31
.01D
U6B
TL038
R34
10K1
1N458
CR17
100K1
1%
+300 mA
MAX
TP13
1K1
R40

+7.5 VOLT REGULATOR
I LIMIT = +400 to +450 mA
HEATSINK
HT2 = 0191225
-5B
R43
10K1
C41
.01D
T1D13
U6
R50
3.92K1
2S
1N4623
4.3V
+VRA
-VRA
VRA
R45
1K1
R48
20K
R46
10K
1K1
C43
.01D
100L
C42
.01D
ACOM
R38
1K1
R39
1K5
1N4004
CR12
C40
.01D
1N458
CR14
R54
1K1
2S
C39
.01D
U6A
TL038
R52
10K1
1%
1N458
CR18
100K1
1%
320 mA
MAX
TP12
1K1
R51

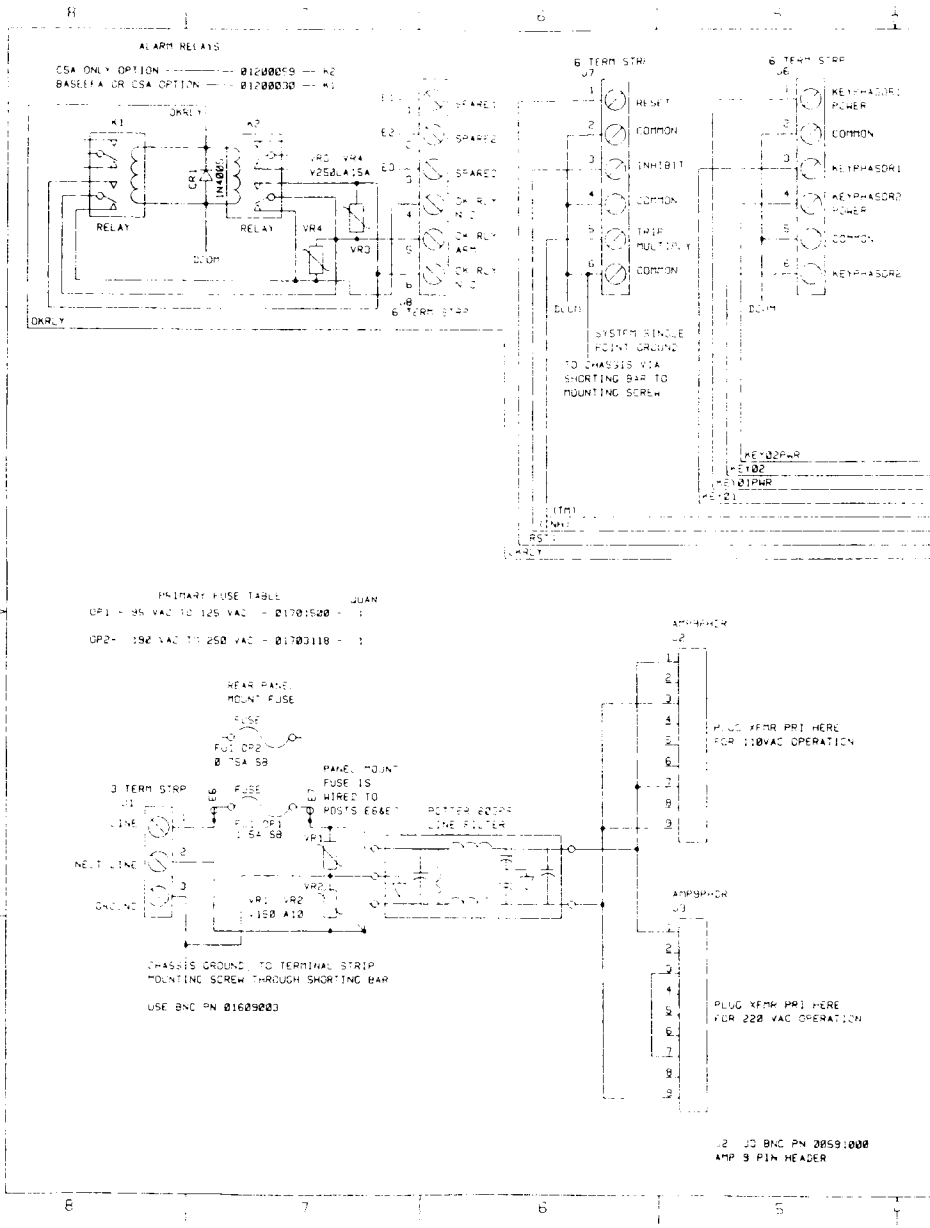


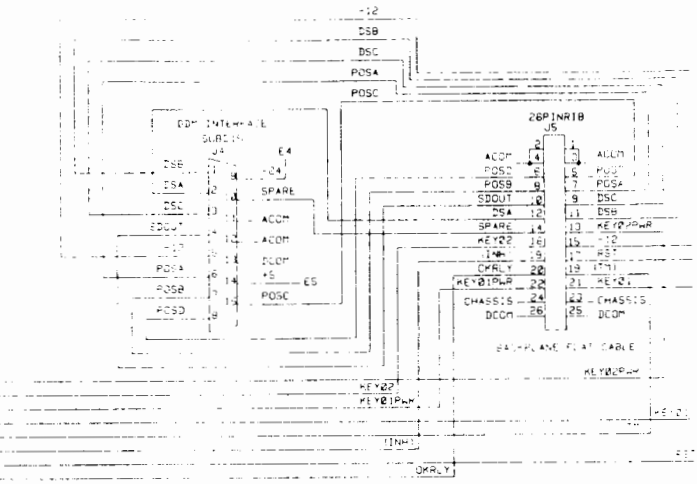
SCHEMATIC (2 of 3)
POWER SUPPLY REGULATOR BOARD


RECTIFIER DIODES AND FILTER CAPS
RECTIFIER DIODES AND FILTER CAPS
RECTIFIER DIODES AND FILTER CAPS
RECTIFIER DIODES AND FILTER CAPS
POWER INPUT MODULE ASS'Y 5843281
115V/230 VAC
T100 POWER TRANSFORMER



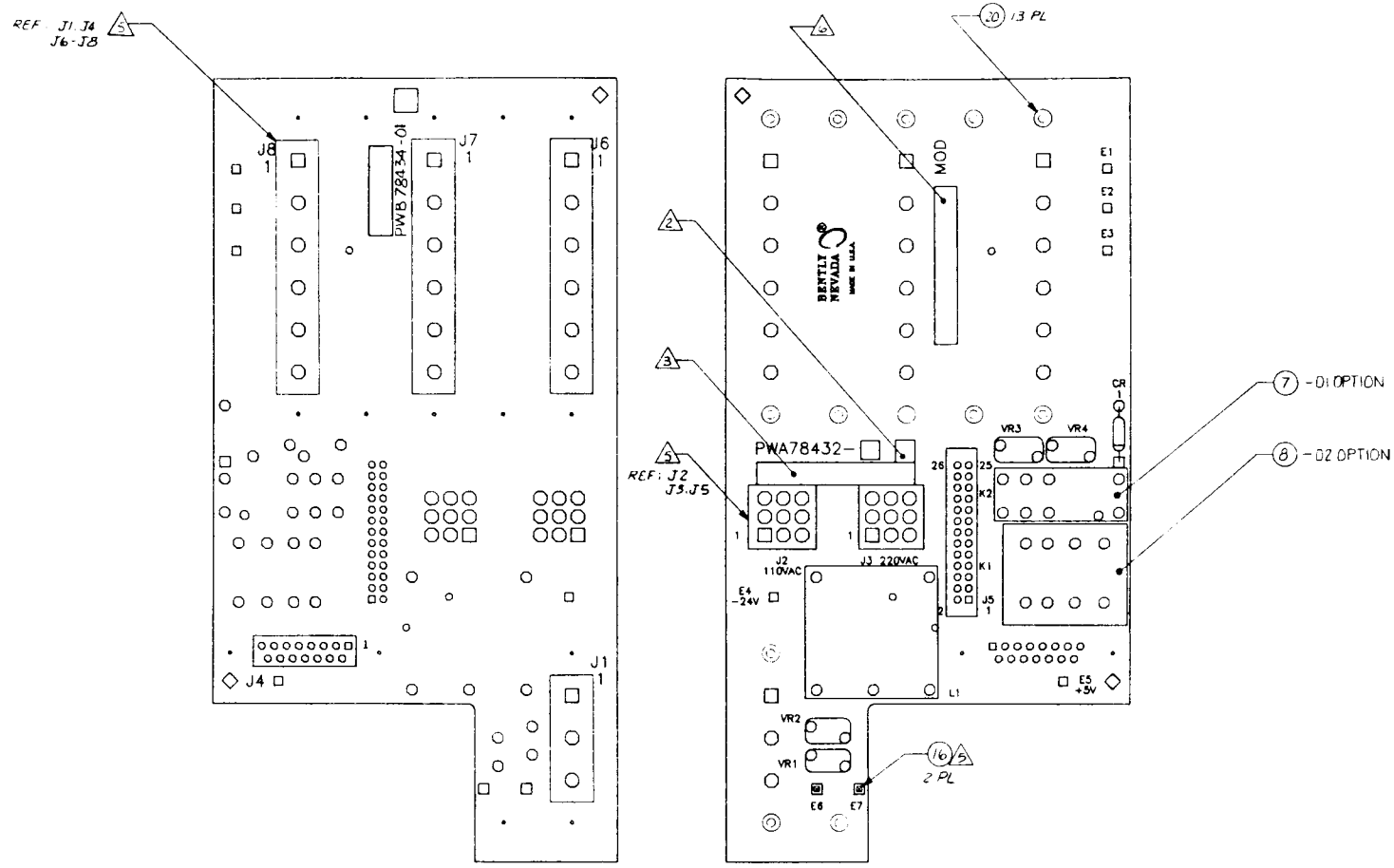
SCHEMATIC (3 of 3)
POWER SUPPLY REGULATOR BOARD


ALARM RELAYS
CSA ONLY OPTION ——— 01200059 — K2
BASEEFA OR CSA OPTION — 01200030 — K1
OKRLY
K1
K2
RELAY
RELAY
CR1
1N4001
DIODE
VR3 VR4
V250LA15A
VR4
VR3
SPARE1
SPARE2
SPARE3
OK RLY NO
OK RLY COM
OK RLY NC
6 TERM STRIP
6 TERM STRIP
RESET
COMMON
(NH)BIT
COMMON
TRIP MULTIPLY
COMMON
DCOM
SYSTEM SINGLE POINT GROUND
TO CHASSIS VIA SHORTING BAR TO MOUNTING SCREW
6 TERM STRIP
KEYPHASOR1 POWER
COMMON
KEYPHASOR1
KEYPHASOR2 POWER
COMMON
KEYPHASOR2
DCOM
KEY02PWR
KEY02
KEY01PWR
KEY01
(TM)
RST
RST
PRIMARY FUSE TABLE
QUAN
OP1 - 95 VAC TO 125 VAC - 01701520 - 1
OP2 - 192 VAC TO 250 VAC - 01703118 - 1
REAR PANEL MOUNT FUSE
FUSE
FUT OP2
0.75A SB
PANEL MOUNT FUSE IS WIRED TO POSTS E6&E7
3 TERM STRIP
J1
LINE
NEUT LINE
GROUND
E6
FUSE
FUT OP1
1.5A SB
E7
VR1
VR2
VR1 VR2
180 A10
POWER ENTRY LINE FILTER
AMP/MPM
J2
PLUG XFMR PRI HERE FOR 110VAC OPERATION
AMP/MPM
J3
PLUG XFMR PRI HERE FOR 220 VAC OPERATION
J2 J3 BNC PN 2059000
AMP 9 PIN HEADER
CHASSIS GROUND TO TERMINAL STRIP MOUNTING SCREW THROUGH SHORTING BAR
USE BNC PN 01609003



SIGNAL	COMPLETE SIGNAL NAME
ACOM	ANALOG COMMON
DCOM	DIGITAL COMMON
DKRLY	DK RELAY DRIVE
DK RLY N.C	DK RELAY NORMALLY CLOSED
DK RLY ARM	DK RELAY ARM
DK RLY N.O	DK RELAY NORMALLY OPEN
(RST)	SYSTEM RESET
(INH)	ALARM INHIBIT
(TM)	TRIP MULTIPLY
DSA DSB DSC	DATA SELECT A, B, C
SDOUT	STATUS DATA OUT
+12	DATA MANAGER +12 VDC
POSA POSB	RACK POSITION A, B
POSC POSD	RACK POSITION C, D
-24	DATA MANAGER -24VDC
+5	DATA MANAGER +5VDC

SCHEMATIC
POWER INPUT MODULE



PRINTED WIRING ASSEMBLY
POWER INPUT MODULE

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