

FIGURE A.
BASIC CONNECTIONS

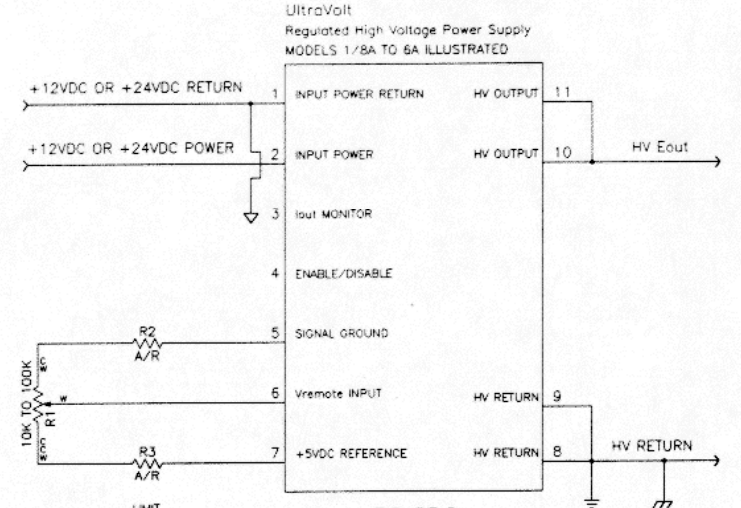


FIGURE B.
BASIC CONNECTIONS
WITH HIGH AND/OR LOW RANGE
ADJUST LIMIT RESISTORS

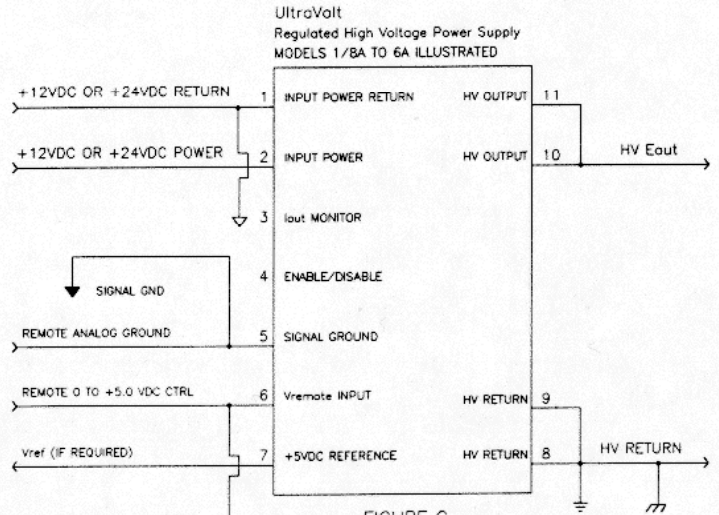


FIGURE C.
BASIC CONNECTIONS
REMOTE CONTROL FROM A UNIPOLAR
OP AMP OR COMPUTER CONTROLLED DAC
0 TO 5VDC OR 0 TO 10VDC CTRL

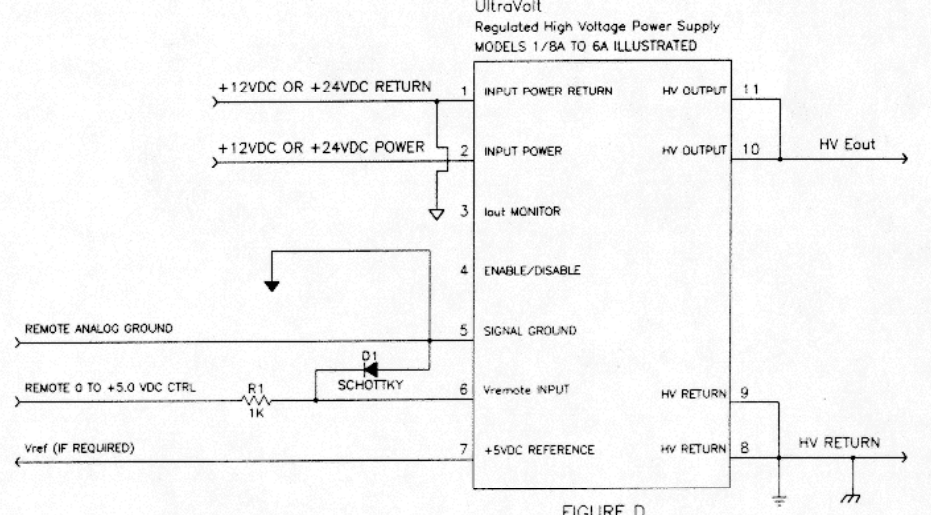


FIGURE D.
BASIC CONNECTIONS
REMOTE CONTROL FROM A BIPOLAR
RAIL TO RAIL OP AMP OR COMPUTER CONTROLLED DAC

NOTES: REFER TO UV APPLICATION NOTES FOR MORE DETAILED INFORMATION
UV HVPS POWER INPUT SHOULD NOT EXCEED +32VDC.
A 0.1µF TO 1.0µF CAPACITOR CAN BE ADDED FROM REMOTE ADJUST
TO SIGNAL GROUND IN HIGH NOISE ENVIRONMENTS.

UltraVolt, Inc.
CS9002
Ronkankoma, NY 11779
1-800-876-POWER

Title			
TYPICAL HVPS CONNECTIONS - OUTPUT PROGRAMMING			
Size	Number	Rev	
C	UV-HVPS-CONN-1	D	
Date	01/13/98	Drawn by	DJC
Filename	UV-CONN10.S01	Sheet	1 of 1

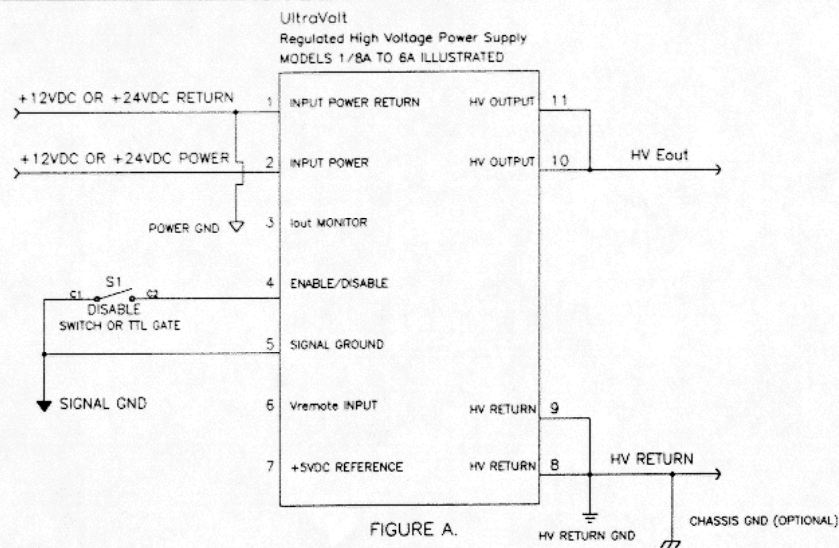


FIGURE A.
BASIC CONNECTIONS
DISABLE

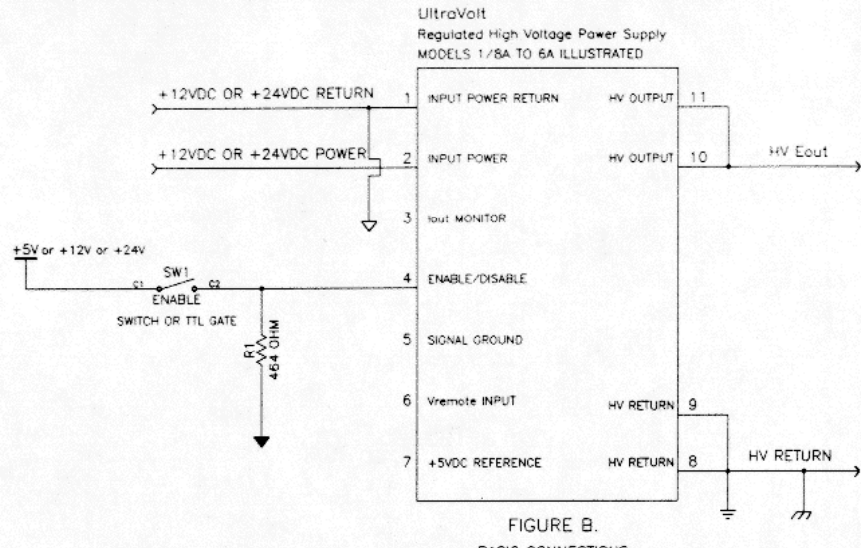


FIGURE B.
BASIC CONNECTIONS
ENABLE

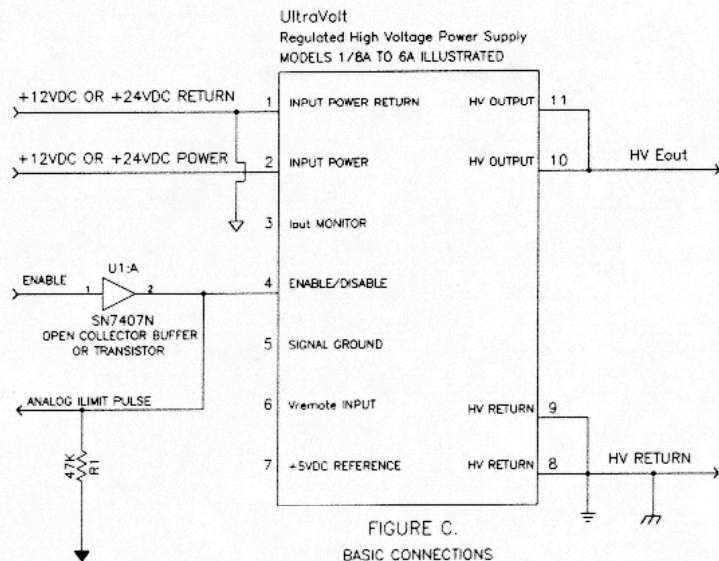


FIGURE C.
BASIC CONNECTIONS
DISABLE WITH ILIMIT TO AN EXTERNAL CIRCUIT

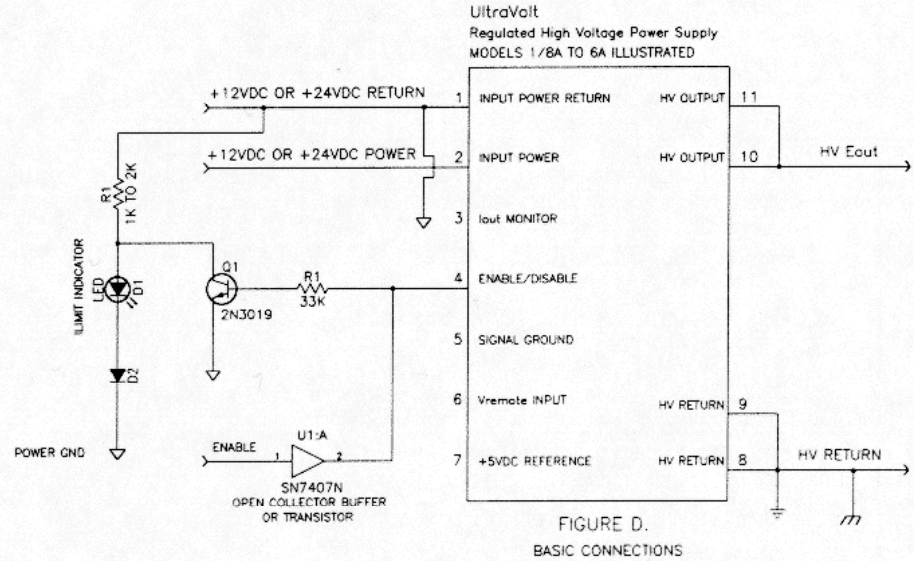


FIGURE D.
BASIC CONNECTIONS
DISABLE WITH AN ILIMIT INDICATOR

NOTES: REFER TO UV APPLICATION NOTES FOR MORE DETAILED INFORMATION
UV HVPS POWER INPUT SHOULD NOT EXCEED +32VDC.
A 0.1µF TO 1.0µF CAPACITOR CAN BE ADDED FROM REMOTE ADJUST
TO SIGNAL GROUND IN HIGH NOISE ENVIRONMENTS.

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Title				TYPICAL HVPS CONNECTIONS - ENABLE/DISABLE	
Size	Number	UV-HVPS-CONN-2		Rev	C
Date	01/13/98	Drawn by	DJC		
Filename	UV-CON2C.S01	Sheet	1 of 1		

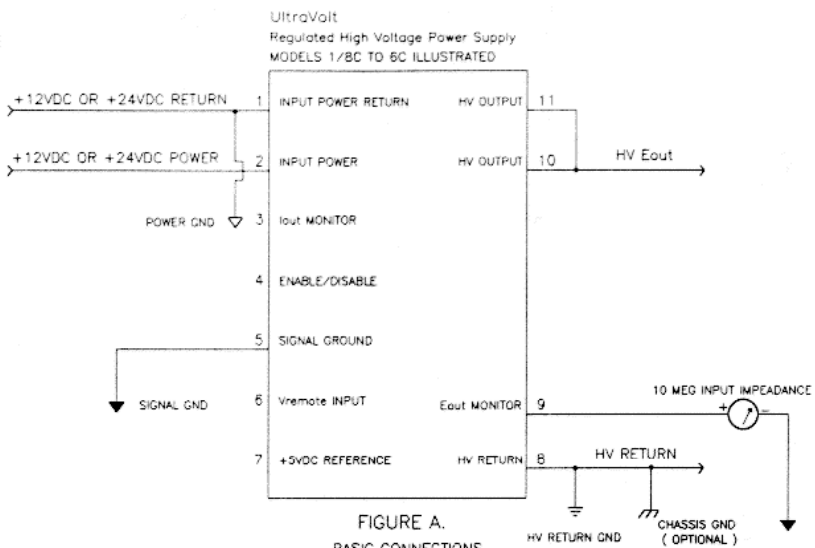


FIGURE A.
BASIC CONNECTIONS
100 : 1 OUTPUT VOLTAGE MONITOR
TO DRIVE A 10MEG DMM OR ADC

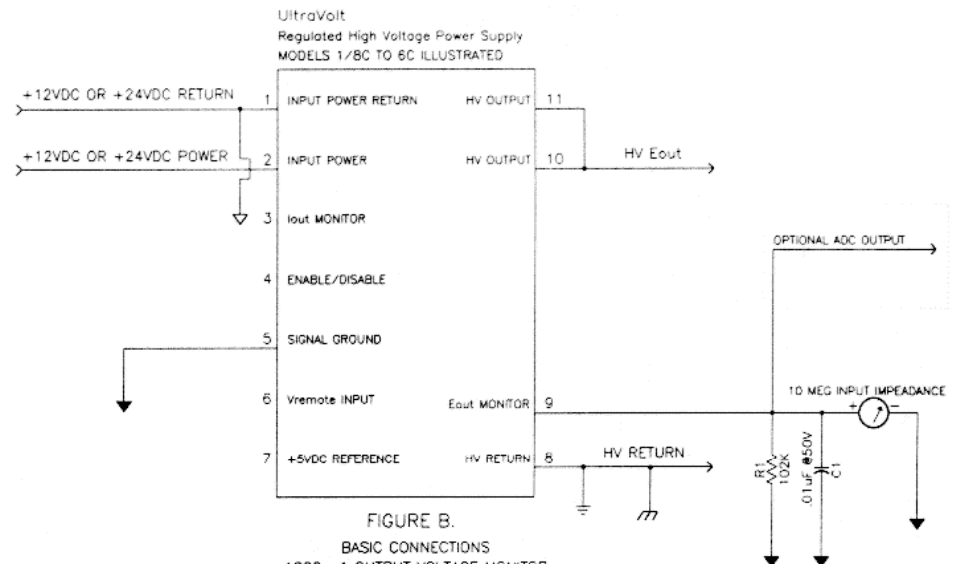


FIGURE B.
BASIC CONNECTIONS
1000 : 1 OUTPUT VOLTAGE MONITOR
TO DRIVE A 10MEG DMM OR ADC

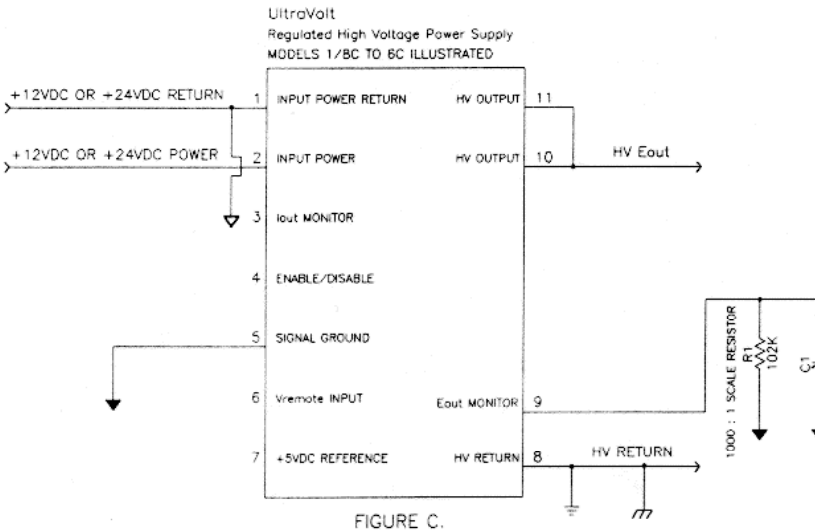
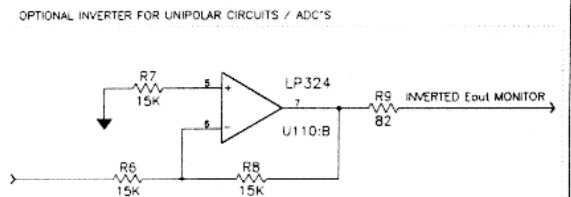


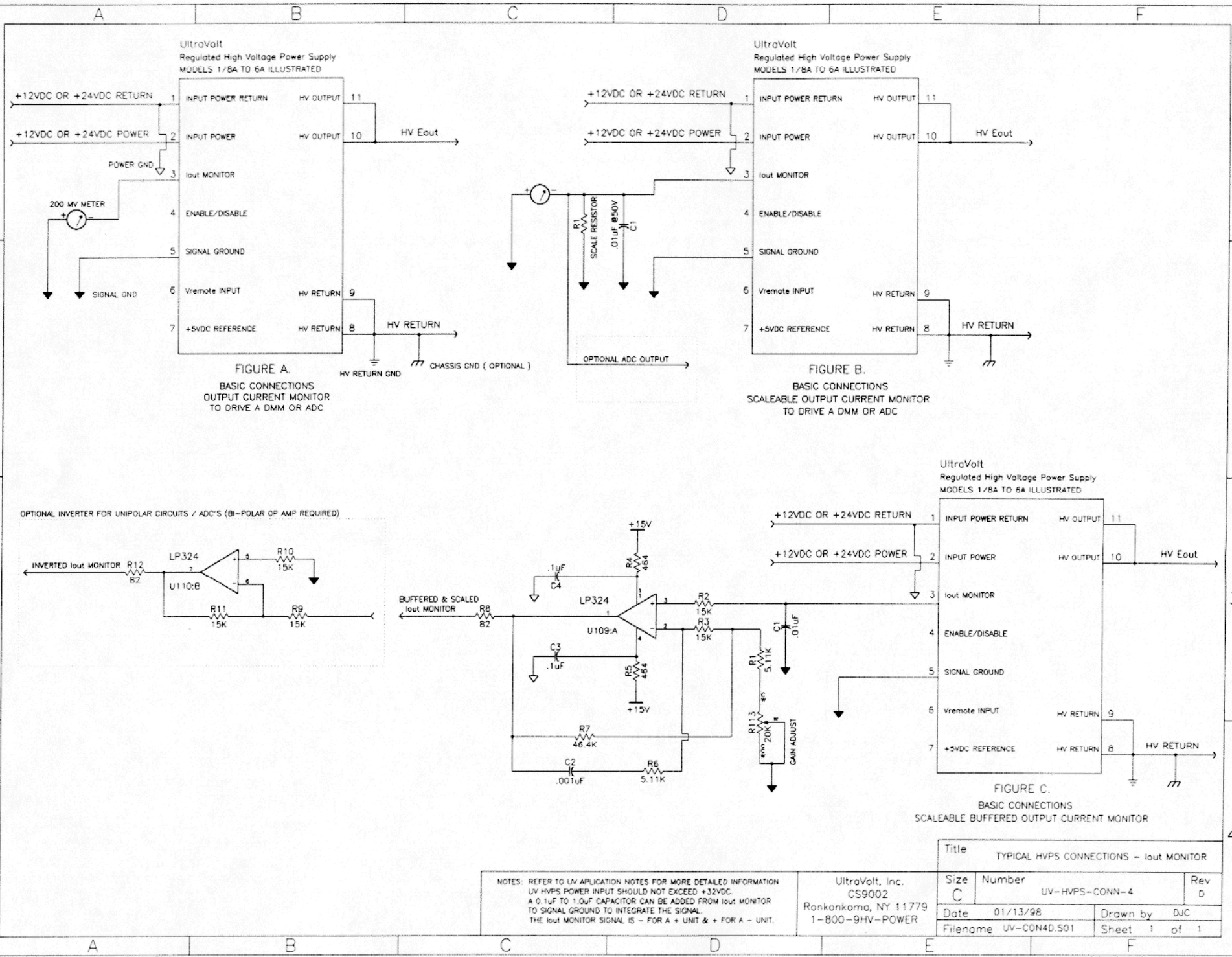
FIGURE C.
BASIC CONNECTIONS
SCALEABLE BUFFERED OUTPUT VOLTAGE MONITOR



NOTES: REFER TO UV APPLICATION NOTES FOR MORE DETAILED INFORMATION
UV HVPS POWER INPUT SHOULD NOT EXCEED +32VDC.
A 0.1uF TO 1.0uF CAPACITOR CAN BE ADDED FROM Eout MONITOR
TO SIGNAL GROUND TO INTEGRATE THE SIGNAL.

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Title			TYPICAL HVPS CONNECTIONS - Eout MONITOR		
Size	Number				Rev
C	UV-HVPS-CONN-3				D
Date	01/13/98	Drawn by	DJC		
Filename	UV-CONN3D.S01	Sheet	1 of 1		



UltraVolt
Regulated High Voltage Power Supply
MODELS 1/8A TO 6A ILLUSTRATED

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MODELS 1/8A TO 6A ILLUSTRATED

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Regulated High Voltage Power Supply
MODELS 1/8A TO 6A ILLUSTRATED

FIGURE A.

BASIC CONNECTIONS
OUTPUT CURRENT MONITOR
TO DRIVE A DMM OR ADC

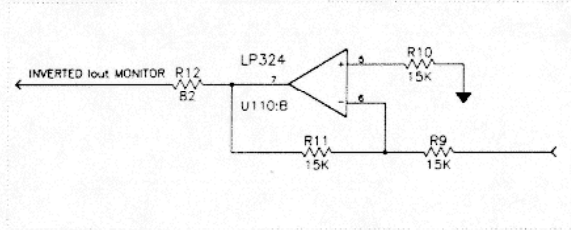
FIGURE B.

BASIC CONNECTIONS
SCALEABLE OUTPUT CURRENT MONITOR
TO DRIVE A DMM OR ADC

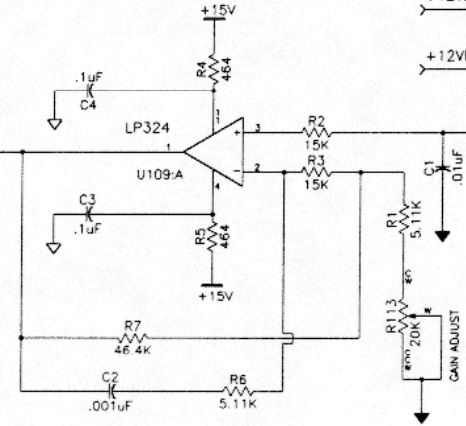
FIGURE C.

BASIC CONNECTIONS
SCALEABLE BUFFERED OUTPUT CURRENT MONITOR

OPTIONAL INVERTER FOR UNIPOLAR CIRCUITS / ADC'S (BI-POLAR OP AMP REQUIRED)



BUFFERED & SCALED
Iout MONITOR

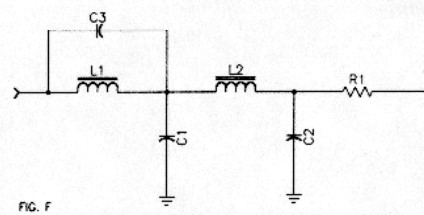
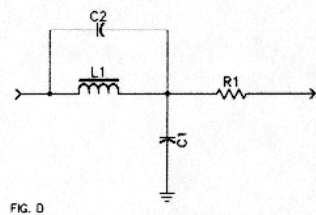
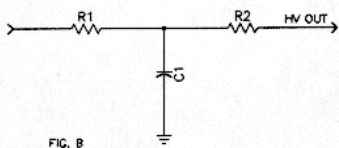
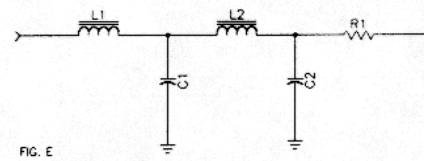
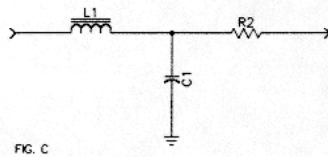
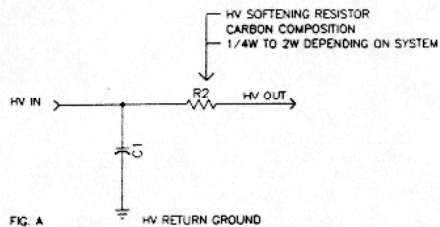


NOTES: REFER TO UV APPLICATION NOTES FOR MORE DETAILED INFORMATION
UV HVPS POWER INPUT SHOULD NOT EXCEED +32VDC.
A 0.1uF TO 1.0uF CAPACITOR CAN BE ADDED FROM Iout MONITOR
TO SIGNAL GROUND TO INTEGRATE THE SIGNAL.
THE Iout MONITOR SIGNAL IS - FOR A + UNIT & + FOR A - UNIT.

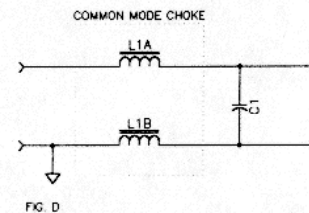
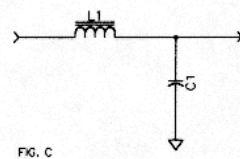
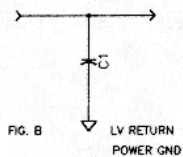
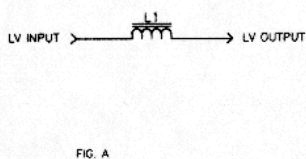
UltraVolt, Inc.
CS9002
Ranckonkoma, NY 11779
1-800-9HV-POWER

Title				TYPICAL HVPS CONNECTIONS - Iout MONITOR	
Size	Number			Rev	
C	UV-HVPS-CONN-4			D	
Date	01/13/98	Drawn by	DJC		
Filename	UV-CON4D.S01	Sheet	1 of 1		

OUTPUT FILTERS:



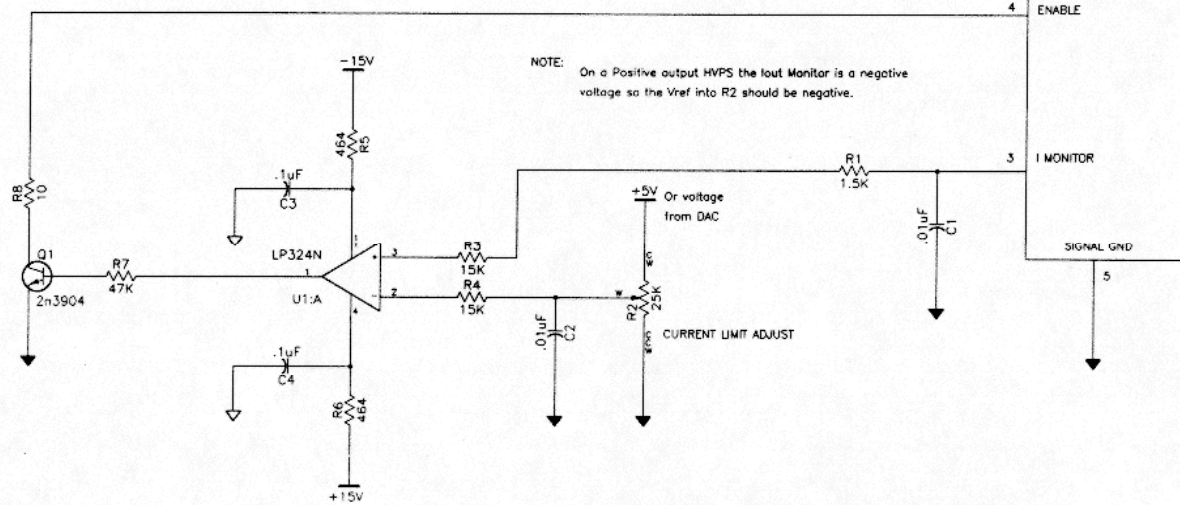
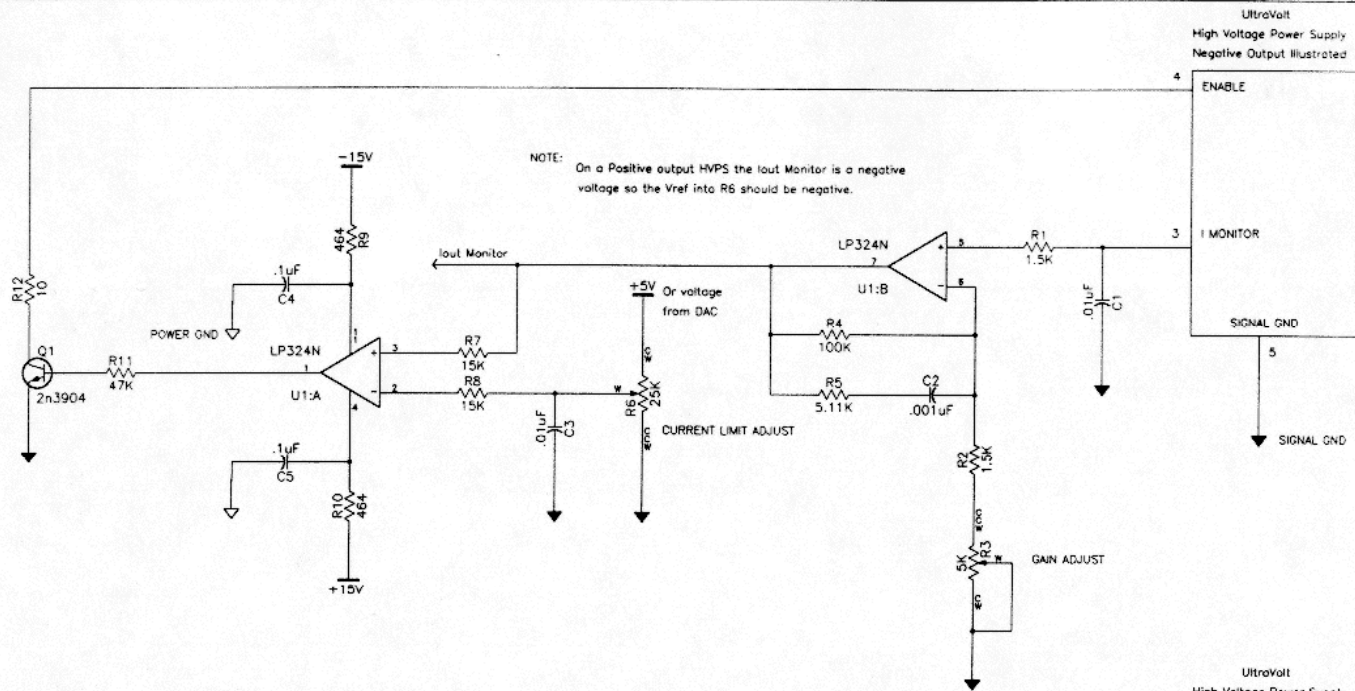
INPUT FILTERS:



NOTES: ALL HV FILTERS SHOULD HAVE A HV SOFTENING RESISTOR.
 ALL FILTER COMPONENTS SHOULD BE RATED FOR MAX CURRENT AT MAX TEMPERATURE.
 ALL UV HVPS'S ARE EQUIPPED WITH AN INTERNAL INPUT L-C FILTER.
 ALL UV HVPS'S ARE EQUIPPED WITH AN INTERNAL OUTPUT L-C-R FILTER.
 INPUT FILTER CAPACITORS SHOULD BE LOW ESR ELECTROLYTICS & MAY BE BYPASSED WITH A CERAMIC .1 OR .01 μ F CAPACITOR.

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Title				TYPICAL HVPS CONNECTIONS	
EXTERNAL INPUT & OUTPUT FILTERS				Size	Number
				C	UV-HVPS-CONN-5
				Rev	D
Date		01/19/98		Drawn by	
Filename		UV-COIN501		Sheet 1 of 1	



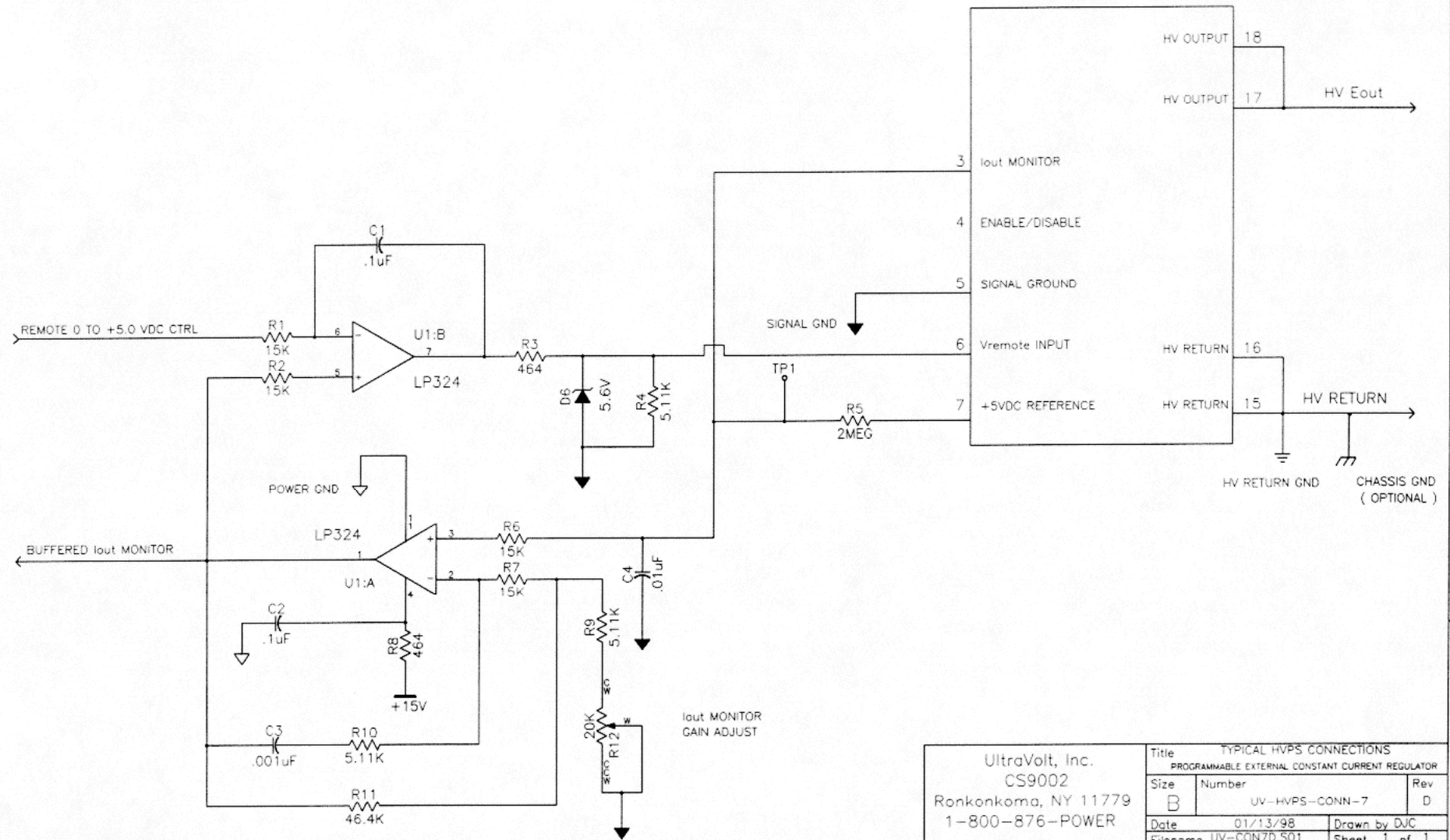
NOTES:
REFER TO UV APPLICATION NOTE 13 FOR Iout MONITOR SCALE FACTORS
UNUSED OP AMP INPUT SHOULD BE PULLED LOW

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Title			
TYPICAL HVPS CONNECTIONS PROGRAMMABLE EXTERNAL CURRENT LIMIT			
Size	Number	Rev	
C	UV-HVPS-CONN-6	0	
Date	01/19/98	Drawn by	mc
Filename	UV-CONN6.S01	Sheet	1 of 1

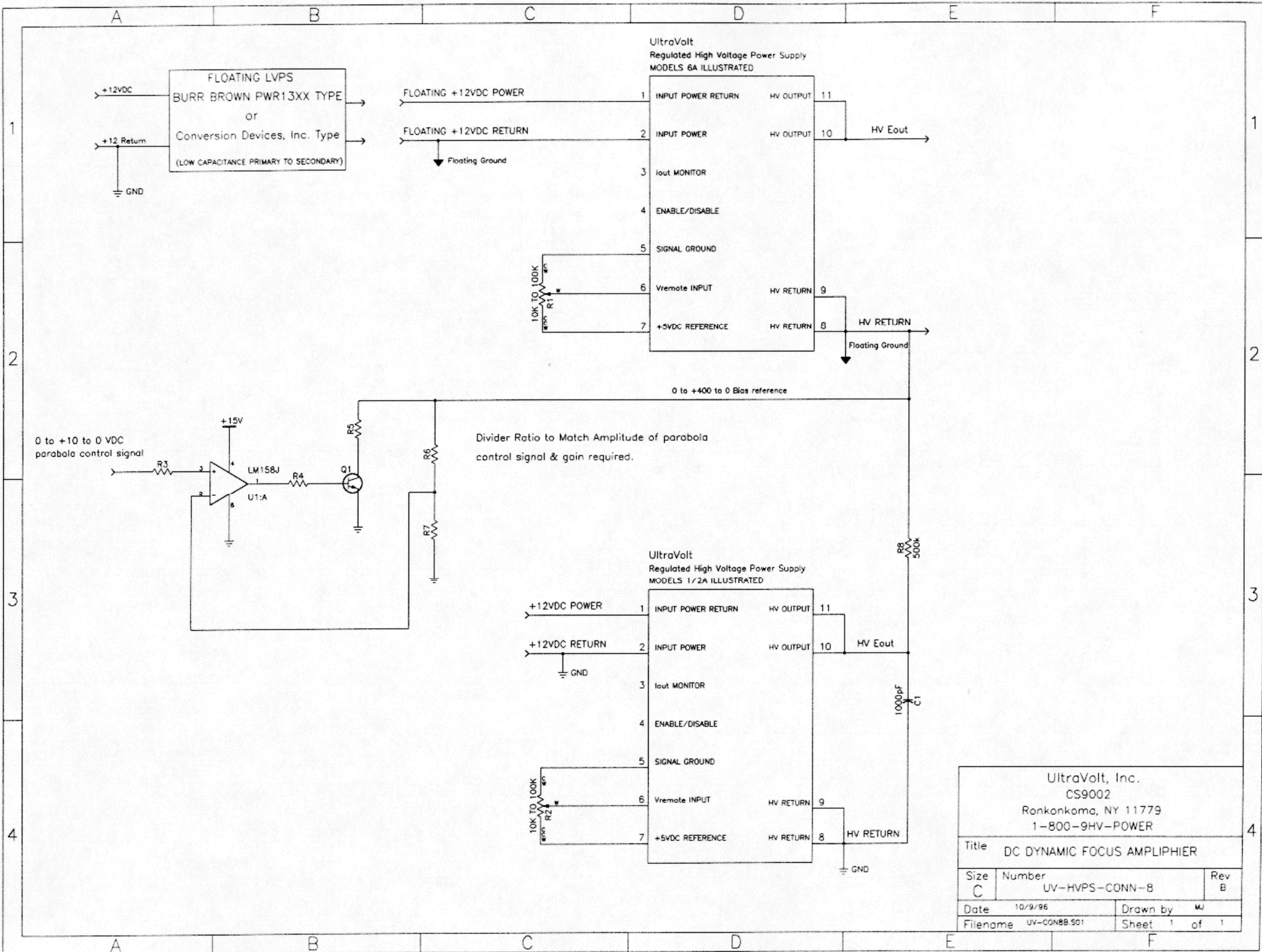
NOTES: THIS IS A NEGATIVE HVPS CONSTANT CURRENT REGULATOR EXAMPLE
 IF A POSITIVE HVPS IS USED THE CIRCUIT SHOULD BE ADJUSTED
 ACORDINGLY.

UltraVolt
 Regulated High Voltage Power Supply
 MODELS 1/80 TO 60 60W/125W/250W ILLUSTRATED

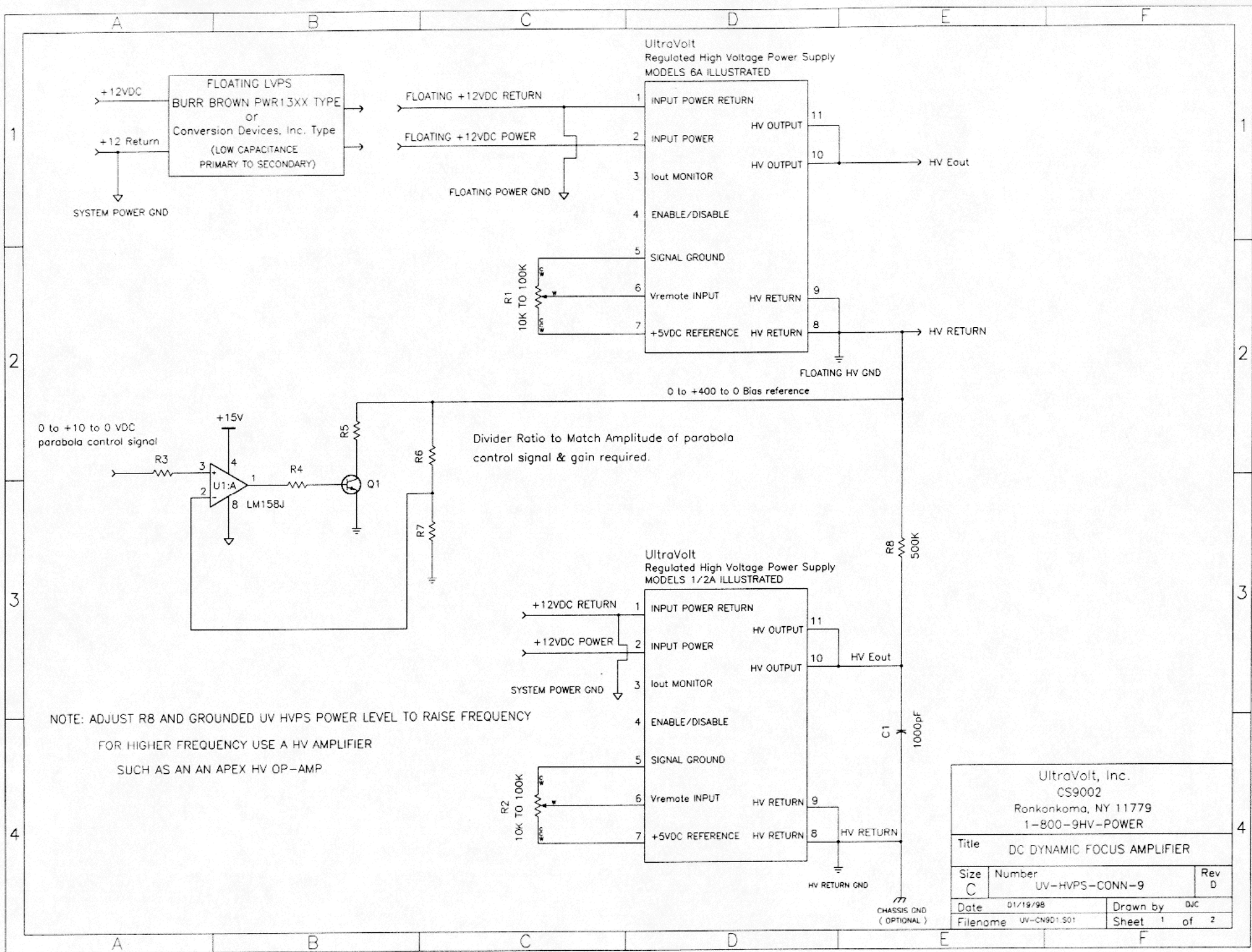


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Title			TYPICAL HVPS CONNECTIONS		
PROGRAMMABLE EXTERNAL CONSTANT CURRENT REGULATOR					
Size	Number	Rev			
B	UV-HVPS-CONN-7	D			
Date	01/13/98	Drawn by	DJC		
Filename	UV-CON7D.S01	Sheet	1 of 1		



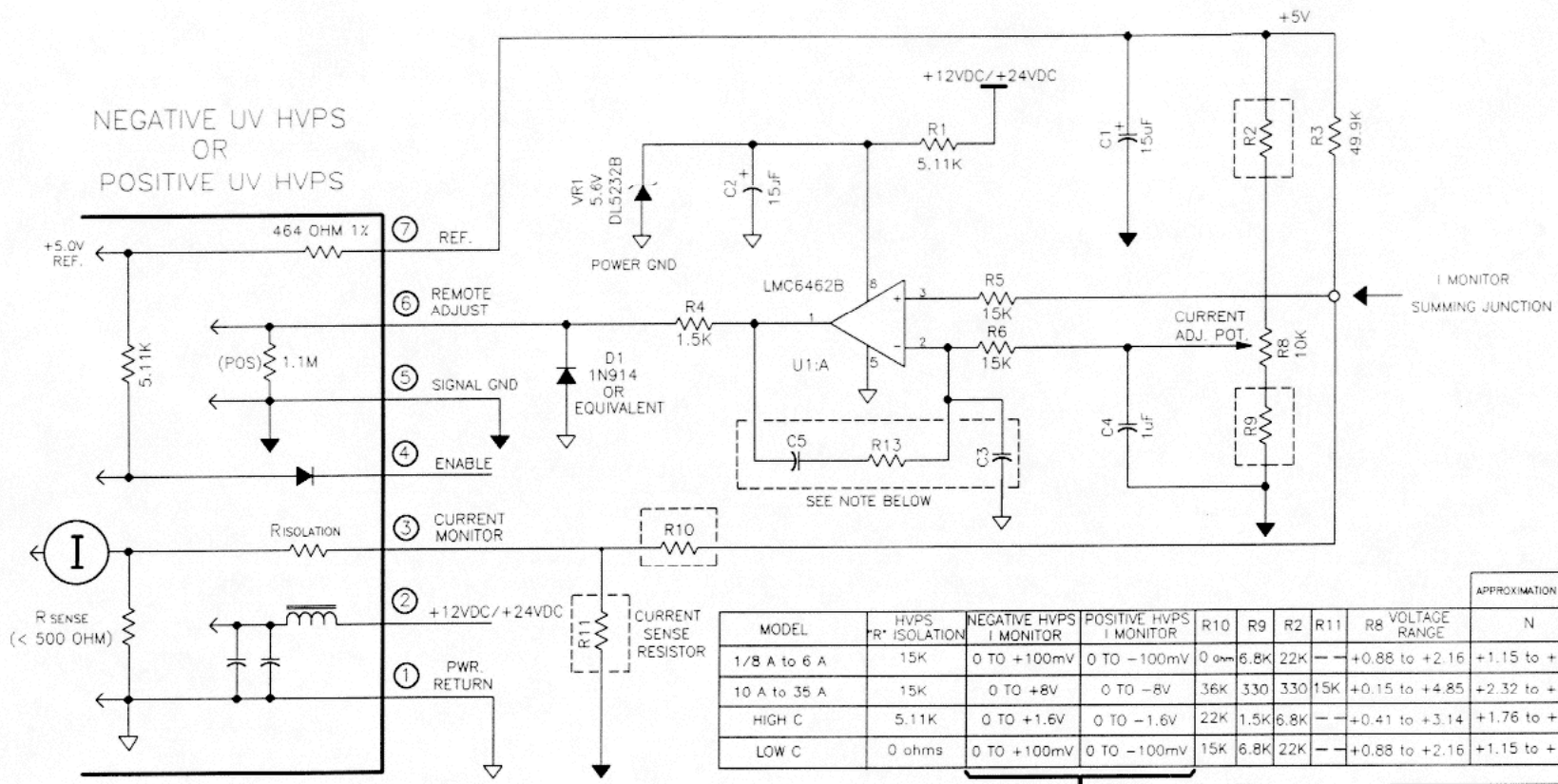
UltraVolt, Inc. CS9002 Ronkonkoma, NY 11779 1-800-9HV-POWER		
Title	DC DYNAMIC FOCUS AMPLIFIER	
Size	Number	Rev
C	UV-HVPS-CONN-8	B
Date	10/9/96	Drawn by
Filename	UV-CONN8.S01	MJ
	Sheet	1 of 1



NOTE: ADJUST R8 AND GROUNDED UV HVPS POWER LEVEL TO RAISE FREQUENCY
 FOR HIGHER FREQUENCY USE A HV AMPLIFIER
 SUCH AS AN APEX HV OP-AMP

UltraVolt, Inc. CS9002 Ronkonkoma, NY 11779 1-800-9HV-POWER		
Title DC DYNAMIC FOCUS AMPLIFIER		
Size C	Number UV-HVPS-CONN-9	Rev D
Date 01/19/98	Drawn by DJC	
Filename UV-CN901.S01	Sheet 1 of 2	

REV.	DESCRIPTIONS.	CHKD.	APPVD.	DATE
A	INITIAL RELEASE.	SH	FG	5/01/97
B	REVISED EDITION.	SH	FG	10/07/98
C	REVISED EDITION.	SH	FG	1-4-98



MODEL	HVPS ISOLATION R*	NEGATIVE HVPS I MONITOR		POSITIVE HVPS I MONITOR		R10		R9		R2		R11		R8 VOLTAGE RANGE		APPROXIMATION OF SUMMING JUNCTION VOLTAGE	
		N	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P
1/8 A to 6 A	15K	0 TO +100mV	0 TO -100mV	0 ohms	6.8K	22K	--	+0.88 to +2.16	+1.15 to +1.23	+1.15 to +1.07							
10 A to 35 A	15K	0 TO +8V	0 TO -8V	36K	330	330	15K	+0.15 to +4.85	+2.32 to +4.47	+2.32 to +0.20							
HIGH C	5.11K	0 TO +1.6V	0 TO -1.6V	22K	1.5K	6.8K	--	+0.41 to +3.14	+1.76 to +2.79	+1.76 to +0.71							
LOW C	0 ohms	0 TO +100mV	0 TO -100mV	15K	6.8K	22K	--	+0.88 to +2.16	+1.15 to +1.23	+1.15 to +1.07							

NOTE: TYPICAL VALUES FOR AC COMPENSATION NETWORK ARE: C5(.01 uF), C3(.001 uF), R13(100K).

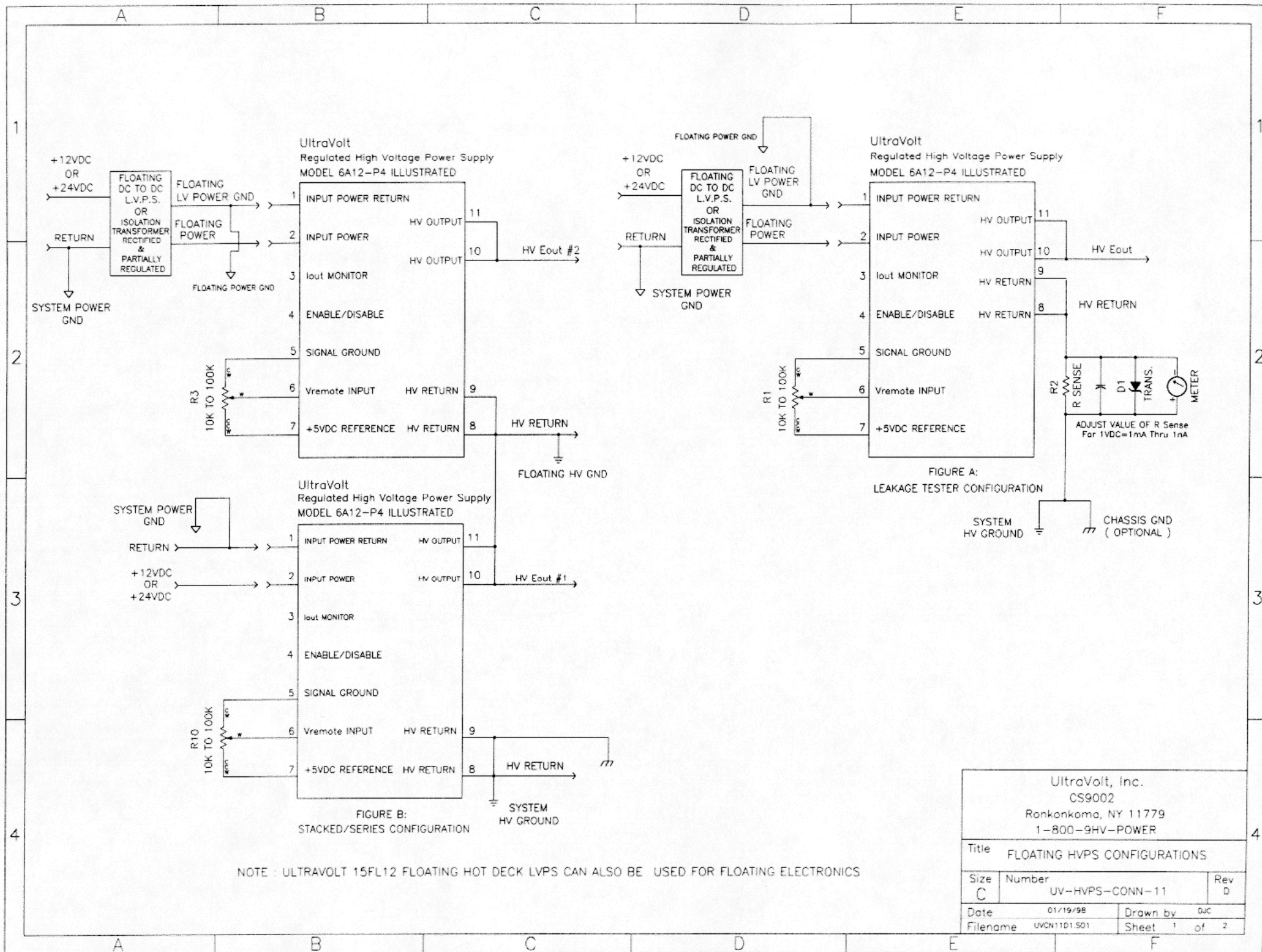
NOTE: THIS FULL RANGE IS NOT IN USE BY ALL MODELS.

UltraVolt, Inc.
CS9002
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1-800-9HV-POWER

Title: BASIC EXTERNAL CONSTANT CURRENT REGULATOR

Size: B Number: UV-HVPS-CONN-10 Rev: C

Date: 10/07/98 Drawn by: DJC
Filename: UVCON10C.S01 Sheet: 1 of 1



NOTE : ULTRAVOLT 15FL12 FLOATING HOT DECK LVPS CAN ALSO BE USED FOR FLOATING ELECTRONICS

UltraVolt, Inc. CS9002 Ronkonkoma, NY 11779 1-800-9HV-POWER		
Title FLOATING HVPS CONFIGURATIONS		
Size C	Number UV-HVPS-CONN-11	Rev D
Date 01/19/98	Drawn by DJC	
Filename UVCN11D1.S01	Sheet 1 of 2	

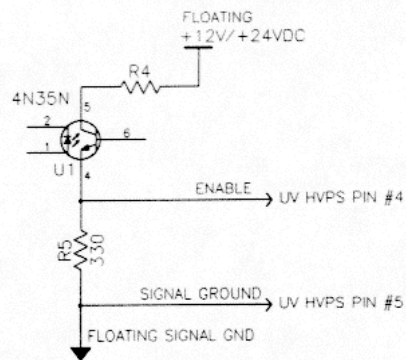


FIGURE C-1:
FLOATING HVPS CONTROLS
REMOTE ENABLE

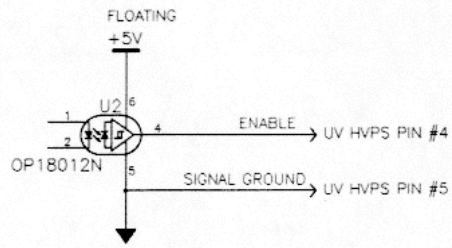


FIGURE C-2:
FLOATING HVPS CONTROLS
REMOTE ENABLE

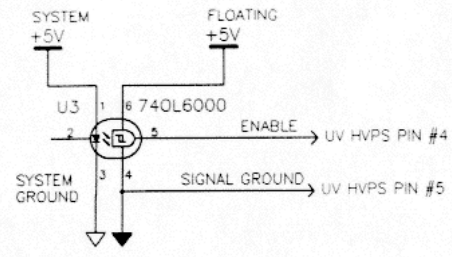


FIGURE C-3:
FLOATING HVPS CONTROLS
REMOTE ENABLE

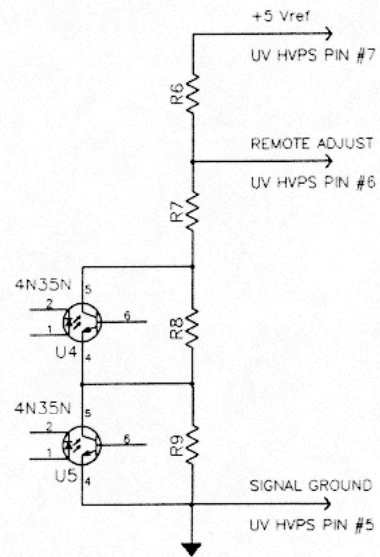


FIGURE C-4:
FLOATING HVPS CONTROLS
REMOTE PROGRAMMING
4 PRESET STEPS

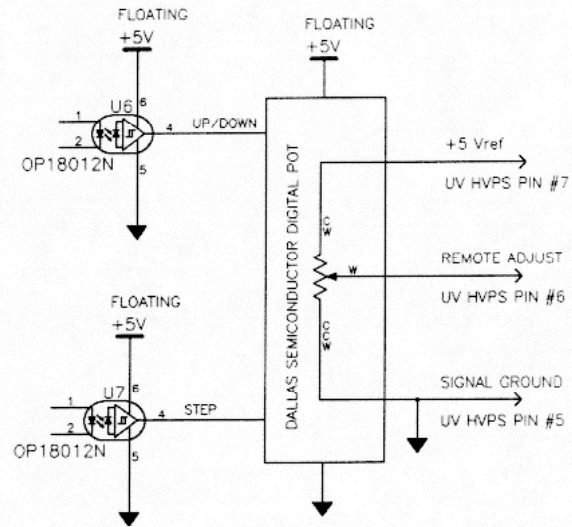
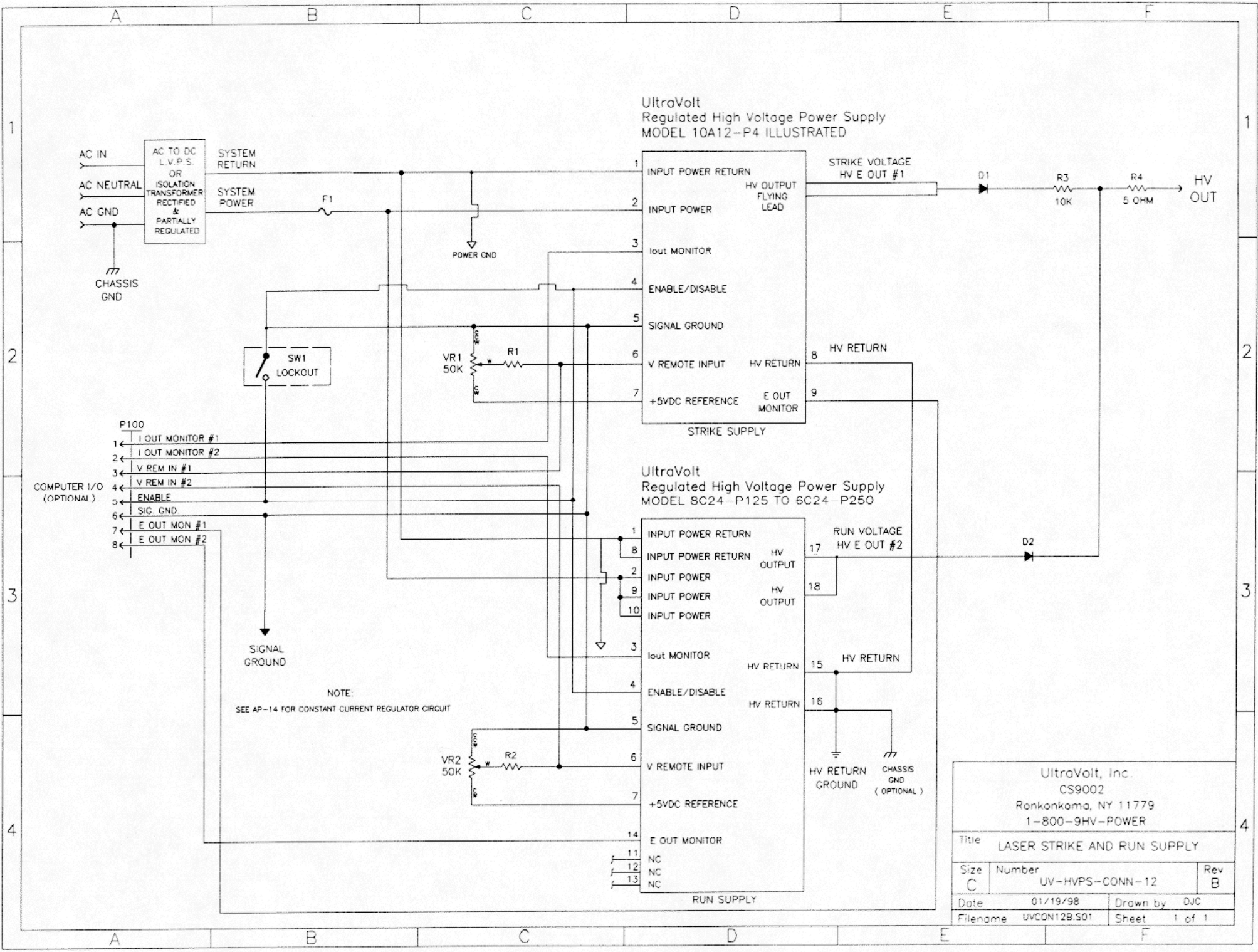
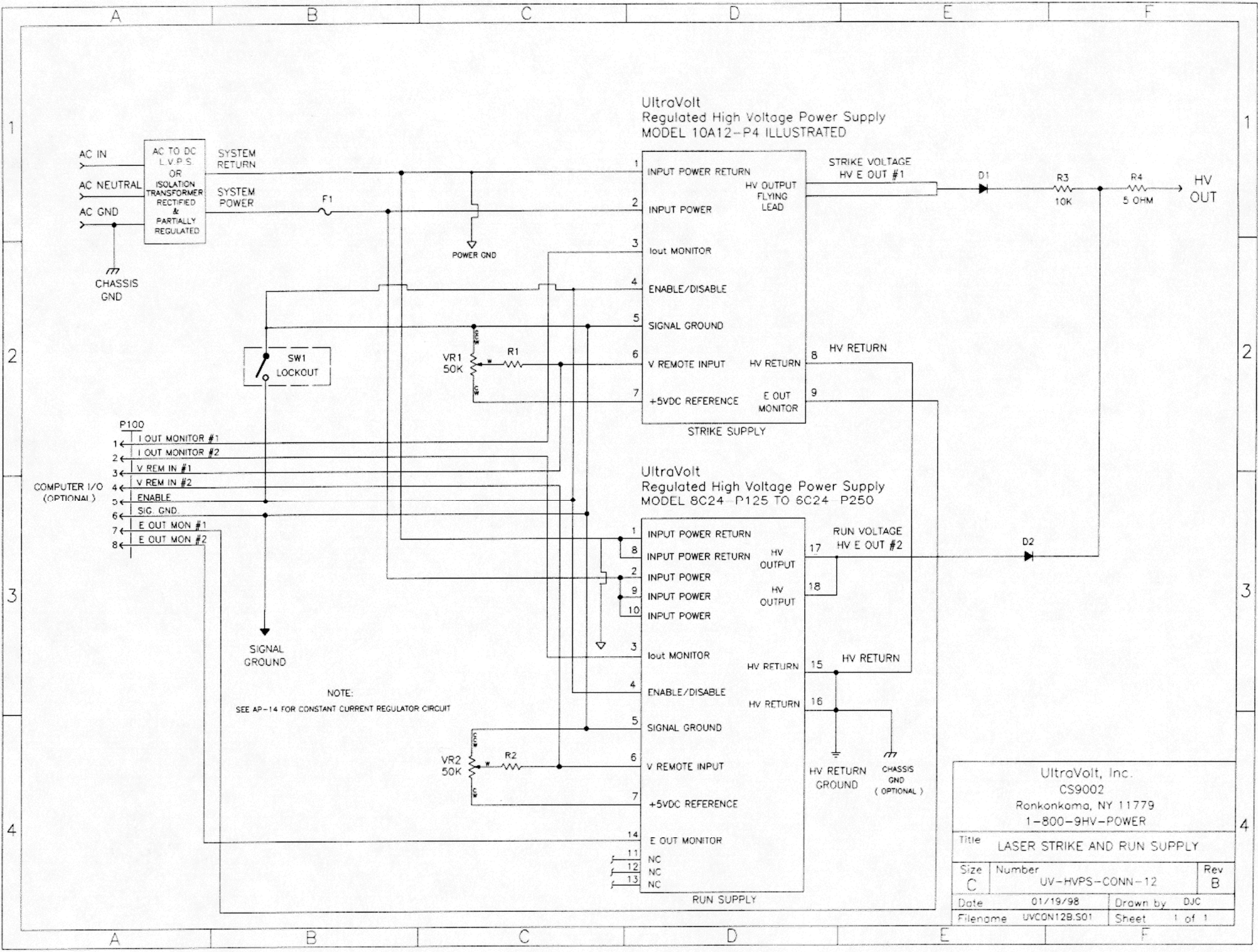


FIGURE C-5:
FLOATING HVPS CONTROLS
REMOTE PROGRAMMING
64 TO 512 STEPS
(USE A DAC FOR 256 TO 4096 STEPS)

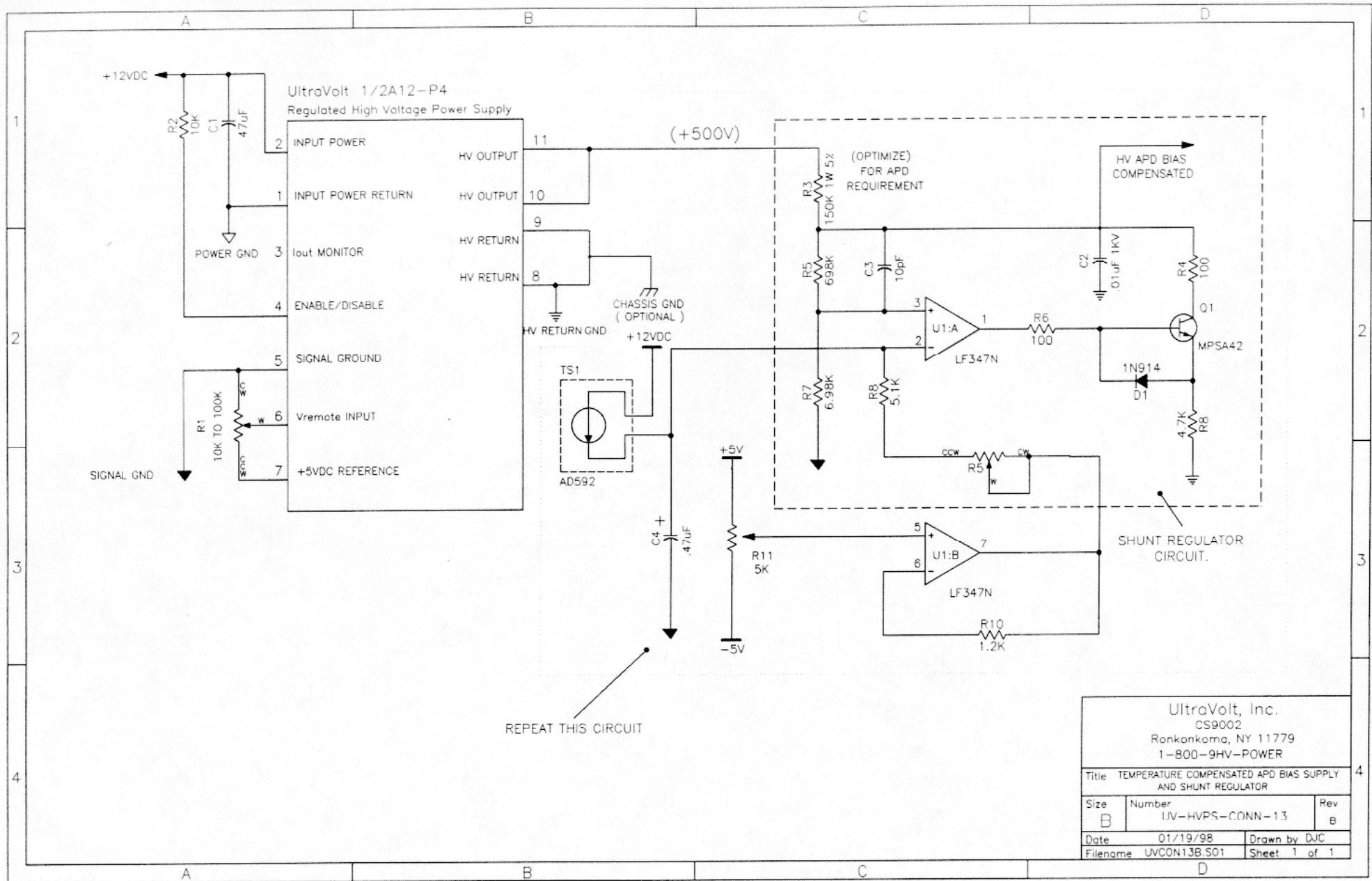
UltraVolt, Inc. CS9002 Ronkonkoma, NY 11779 1-800-9HV-POWER		
Title FLOATING HVPS CONFIGURATIONS		
Size B	Number UV-HVPS-CONN-11	Rev D
Date 01/19/98	Drawn by DJC	
Filename UVCN1102.S01	Sheet 2 of 2	



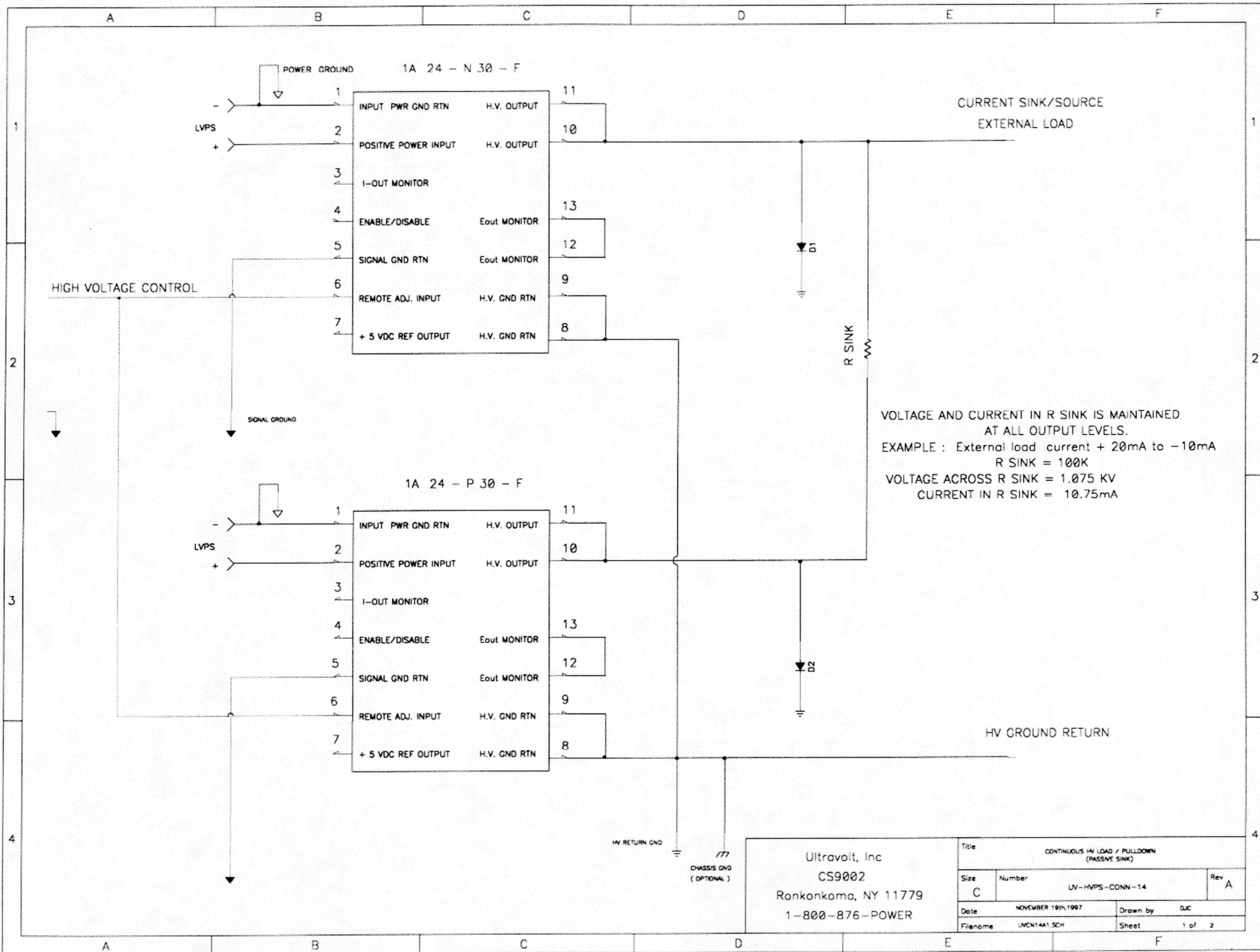
UltraVolt, Inc. CS9002 Ronkonkoma, NY 11779 1-800-9HV-POWER		
Title	LASER STRIKE AND RUN SUPPLY	
Size	Number	Rev
C	UV-HVPS-CONN-12	B
Date	01/19/98	Drawn by DJC
Filename	UVCON12B.S01	Sheet 1 of 1



UltraVolt, Inc. CS9002 Ronkonkoma, NY 11779 1-800-9HV-POWER		
Title	LASER STRIKE AND RUN SUPPLY	
Size	Number	Rev
C	UV-HVPS-CONN-12	B
Date	01/19/98	Drawn by DJC
Filename	UVCON12B.S01	Sheet 1 of 1

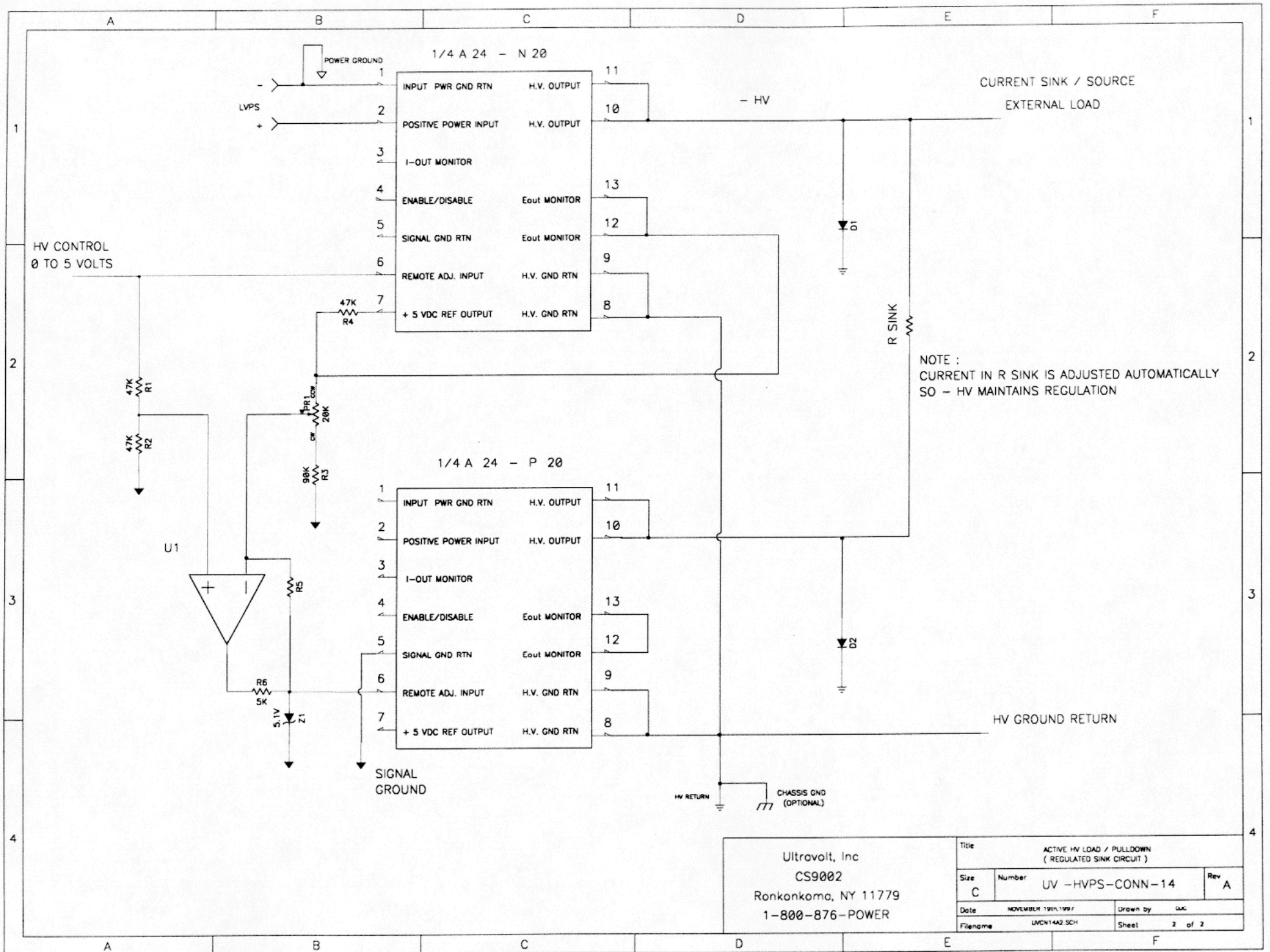


UltraVolt, Inc. CS9002 Ronkoma, NY 11779 1-800-9HV-POWER		
Title	TEMPERATURE COMPENSATED APD BIAS SUPPLY AND SHUNT REGULATOR	
Size	Number	Rev
B	1V-HVPS-CONN-13	B
Date	01/19/98	Drawn by DJC
Filename	UVCON13B.S01	Sheet 1 of 1



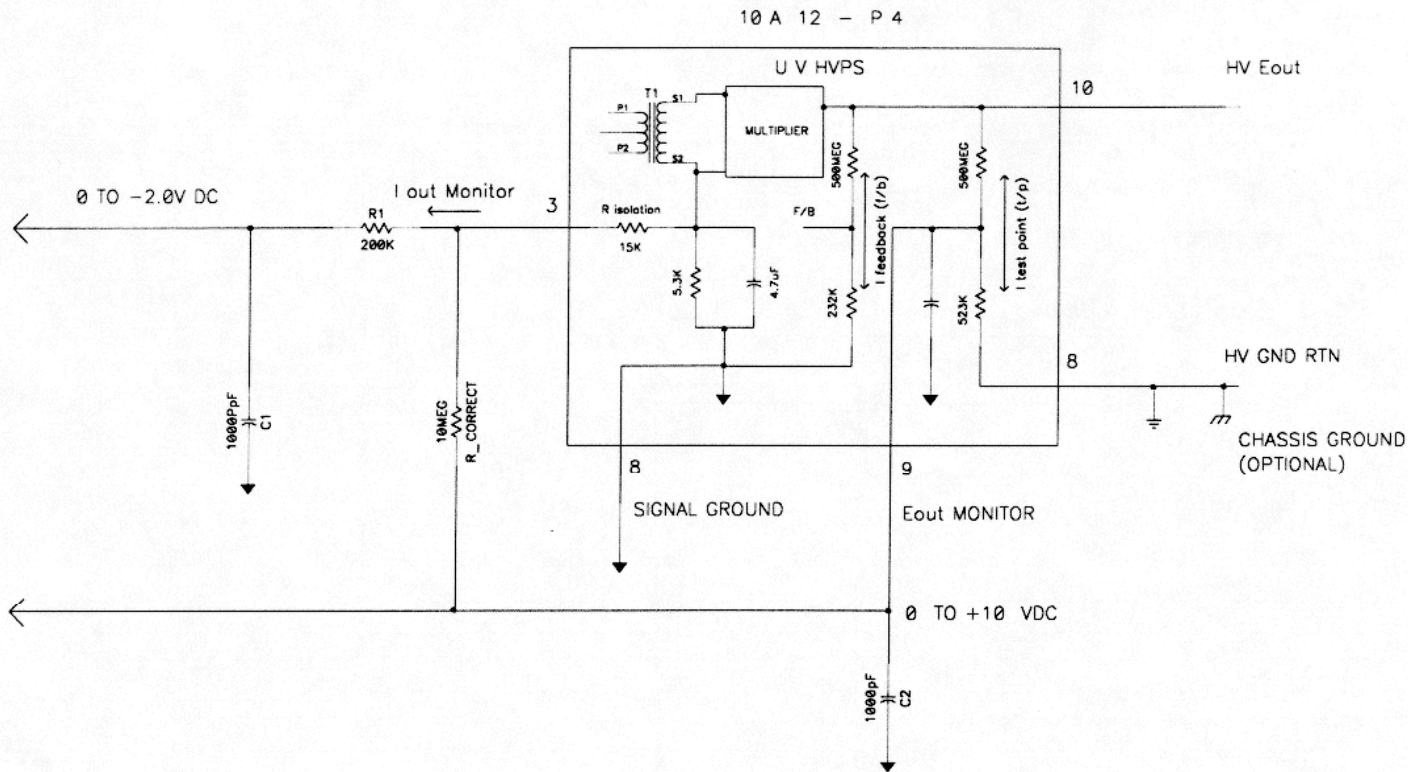
Ultravolt, Inc
 CS9002
 Ronkonkoma, NY 11779
 1-800-876-POWER

Title				CONTINUOUS HV LOAD / PULLDOWN (PASSIVE SINK)	
Size	Number	LV-HVPS-CONN-14		Rev	A
C					
Date	NOVEMBER 19th, 1997	Drawn by	DJC		
Filename	UMCN14A1.SCH	Sheet	1 of 2		



Ultravolt, Inc
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 Ronkonkoma, NY 11779
 1-800-876-POWER

Title		ACTIVE HV LOAD / PULLDOWN (REGULATED SINK CIRCUIT)	
Size	Number	Rev	
C	UV -HVPS-CONN-14	A	
Date	NOVEMBER 19TH, 1997	Drawn by	WJC
Filename	UVCN1402.SCH	Sheet	2 of 2



$$(I_{f/b} + I_{t/p}) * R_{sense} = E_{error}$$

$$\frac{10KV}{500Meg + 523K} = I_{f/b} = 0.000020 = 20\mu A$$

$$(20\mu A + 20\mu A) * 5.3K = E_{error} = 212mV$$

$$\frac{E_{error}}{R_{isolation}} = I_{correction}$$

$$\frac{10KV}{500 Meg + 523K} = I_{t/p} = 0.000020 = 20\mu A$$

$$\frac{212mV}{215K} = I_{correction} = 0.986\mu A$$

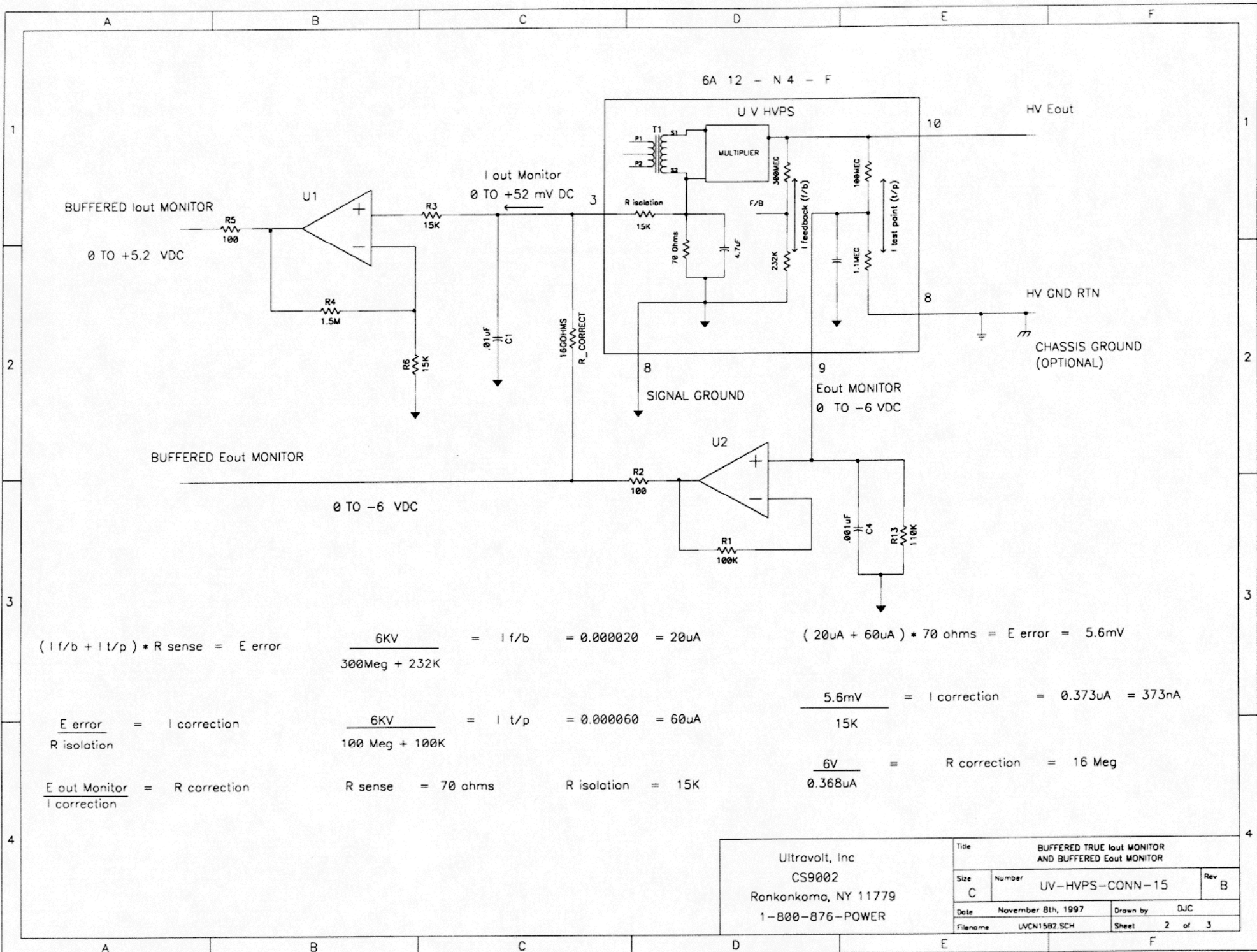
$$\frac{E_{out Monitor}}{I_{correction}} = R_{correction}$$

$$R_{sense} = 5.3K \quad R_{isolation} = 15K + 200K = 215K$$

$$\frac{10V}{0.986\mu A} = R_{correction} = 10.14 Meg$$

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Title			BUFFERED TRUE Iout MONITOR AND BUFFERED Eout MONITOR		
Size	Number			Rev	
C	UV-HVPS-CONN-15			B	
Date	November 8th, 1997	Drawn by	DJC		
Filename	UVCN15B1.SCH	Sheet	1 of 3		



$$(I_{f/b} + I_{t/p}) * R_{sense} = E_{error}$$

$$\frac{6KV}{300Meg + 232K} = I_{f/b} = 0.000020 = 20\mu A$$

$$(20\mu A + 60\mu A) * 70\text{ ohms} = E_{error} = 5.6mV$$

$$\frac{E_{error}}{R_{isolation}} = I_{correction}$$

$$\frac{5.6mV}{15K} = I_{correction} = 0.373\mu A = 373nA$$

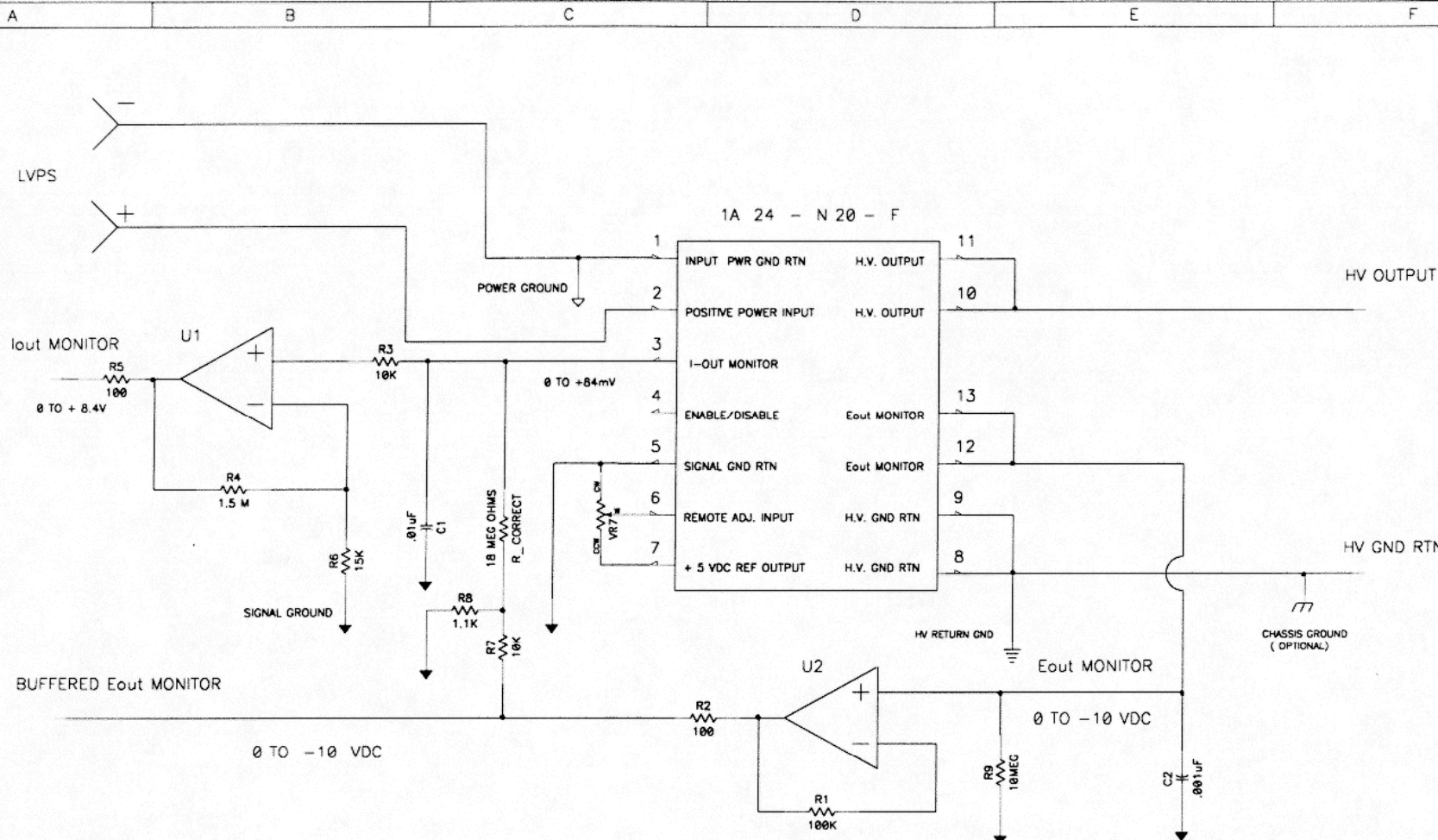
$$\frac{E_{out\ Monitor}}{I_{correction}} = R_{correction}$$

$$\frac{6V}{0.368\mu A} = R_{correction} = 16\text{ Meg}$$

$$\frac{6KV}{100\text{ Meg} + 100K} = I_{t/p} = 0.000060 = 60\mu A$$

$$R_{sense} = 70\text{ ohms} \quad R_{isolation} = 15K$$

Ultravolt, Inc CS9002 Ronkonkoma, NY 11779 1-800-876-POWER				Title BUFFERED TRUE Iout MONITOR AND BUFFERED Eout MONITOR	
Size C	Number UV-HVPS-CONN-15	Rev B			
Date November 8th, 1997	Drawn by DJC				
Filename LVCN15B2.SCH	Sheet 2 of 3				

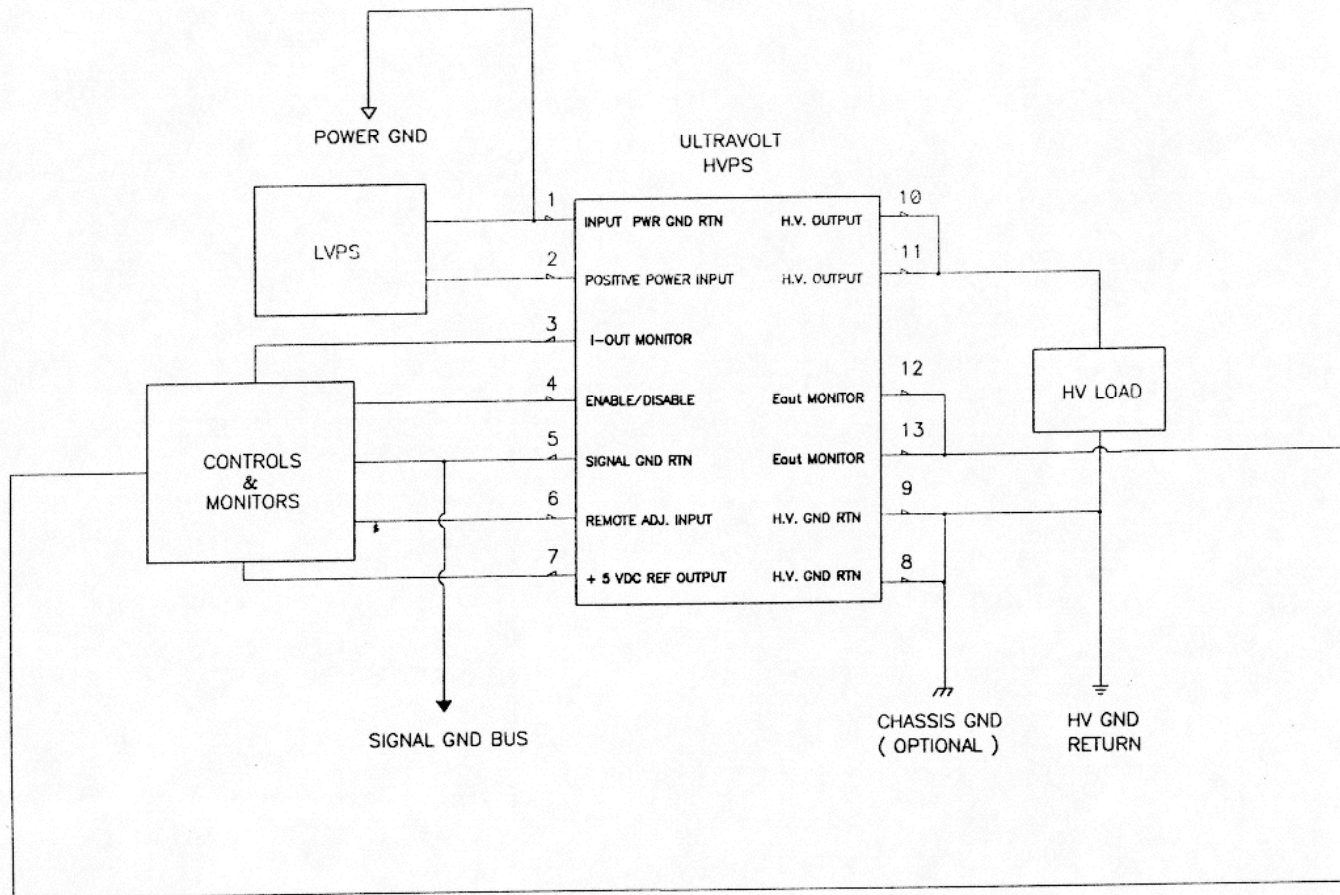


$$(I f/b + I t/p) \cdot R \text{ sense} = E \text{ error} \quad \frac{1KV}{10 \text{ Meg} + 46.6K} = I f/b = 0.0000995 = 99.5\mu A \quad (99.5\mu A + 98.9\mu A) \cdot 4.2 \text{ ohms} = E \text{ error} = 0.83mV$$

$$\frac{E \text{ error}}{R \text{ isolation}} = I \text{ correction} \quad \frac{1KV}{10 \text{ Meg} + 102K} = I t/p = 0.0000989 = 98.9\mu A \quad \frac{0.83mV}{15K} = I \text{ correction} = 0.055\mu A = 55nA$$

$$\frac{E \text{ out Monitor}}{I \text{ correction}} = R \text{ correction} \quad R \text{ sense} = 4.2\text{ohms} \quad R \text{ isolation} = 15K \quad \frac{10V}{0.055\mu A} = R \text{ correction} = 181\text{Meg}$$

Ultravolt, Inc			
CS9002			
Ronkonkoma, NY 11779			
1-800-876-POWER			
Title		BUFFERED TRUE I out MONITOR AND BUFFERED E out MONITOR	
Size	Number	Rev	B
C	UV-HVPS-CONN-15		
Date	November 8th, 1997	Drawn by	DJC
Filename	UVCN15B3.SCH	Sheet	3 of 3

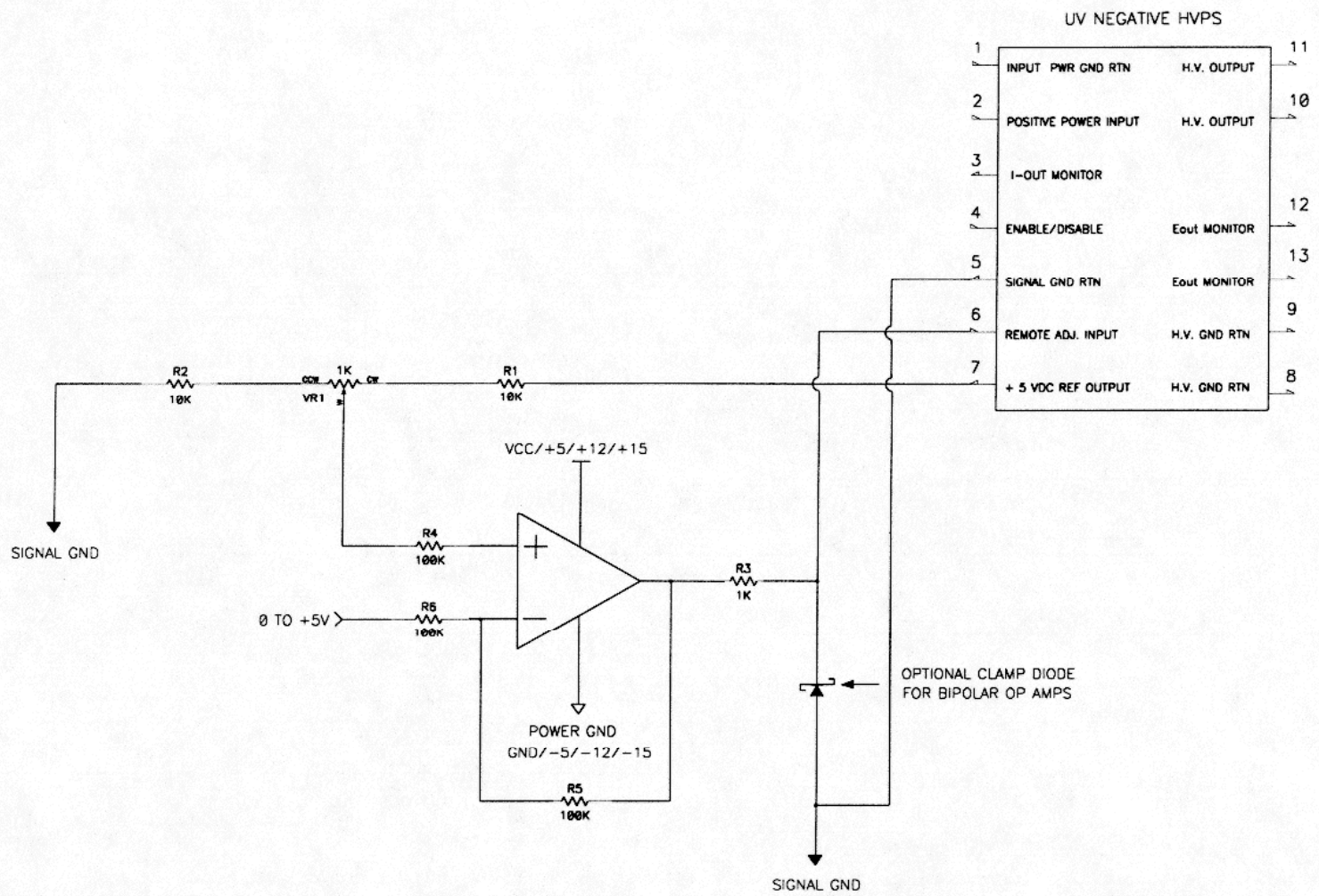


Ultravolt, Inc
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 Ronkonkoma, NY 11779
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Title				RECOMMENDED HVPS GROUNDING CONFIGURATION	
Size	Number			Rev	
C	UV-HVPS-CONN-16			A	
Date	02/13/98	Drawn by	PS		
Filename	UVCON16A.SCH	Sheet	1 of 1		

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Ultravolt, Inc CS9002 Ronkonkoma, NY 11779 1-800-876-POWER			Title SIMPLE INVERTER DRIVE FOR NEGATIVE HVPS	
			Size C	Number UV-HVPS-CONN-17
Date 01/27/98		Drawn by SH		
Filename UVCON17A.SCH		Sheet 1 of 1		

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