Model 1572

Powered CAMAC Crate

INSTRUCTION MANUAL

December, 1998

*** SPECIAL OPTION ***

Model 1572-S001

Powered CAMAC Crate

January, 1988

***** SPECIAL OPTION *****

The Model 1572-S001 is the same as the Model 1572-P1C except the Dataway of the crate has been excluded. The power supply, cables and fan unit remain the same.

MLH:rem(1000 Ser. 2)
January 13, 1988

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1502/07/72 Powered CAMAC Crates

Powered CAMAC Crates 1502/07/72

Features - 1502 & 1572

- Mandatory voltage (+24, +6, -6, -24) available, all models
- All units also provide ±12V outputs
- Input voltage range selections on 1502
- Voltage and current metering

Features - 1507

- 11-slot capacity
- 350 W switching power supply
- Over-current and over-voltage protection
- Lightweight construction
- Desktop mounting
- Fold-down front rail for ease of module access

General Description *(Product specifications and descriptions subject to change without notice.)*

This series of powered CAMAC crates fully complies with CAMAC specification IEEE-583. Crates include the CAMAC Dataway with an 86-contact PC edge connector at each station. All units include one or more self-contained blowers as well as a power supply which converts the AC source to the mandatory DC CAMAC Dataway voltages (±6V and ±24V) and also provide the optional ±12V outputs.

TYPE SUMMARY
1502 25-Slot Crate
1507 11-Slot Crate
1572 25-Slot Crate, separate power supply

All crates in this series are arranged for 19-inch relay rack mounting and include module-mounting holes for CAMAC only. NIM holes are only available on certain options (refer to ORDERING INFORMATION) The Model 1502 is a full-featured, 25-station CAMAC crate. It includes a rear-mounted power supply and a front removable fan tray. The crate can deliver up to 525W of power. The power supply features ±6V outputs shared to 52A and ±24V outputs shared to 9A. The front panel of the fan tray includes an over-temperature warning LED, a switch-selected digital meter for monitoring all voltages and currents, and removable air-intake filters. Options are available with a rear I/O mounting bar for affixing 36-contact PC edge connectors and with a status bit on a rear LEMO connector. The Model 1572 is similar to the 1502 crate except that the power supply is mounted separately.

1507 Only

The Model 1507 CAMAC crate is an IEEE-583 compatible chassis with mounting positions for 11 modules. It includes a six-layer CAMAC Dataway with an 86-contact PC edge connector at each position, two self-contained blowers for module cooling, and a 350W switching power supply. This power supply accepts a 47 or 65 Hz AC input, ranging from either 100V to 130V or 200V to 260V.

Selection in input voltage range is made by a switch at the line connector. All supplies are regulated to limit changes in the output voltages to less than 0.2% for a change from no-load to a fully loaded state. Each supply has over-voltage and thermal shutdown protection. Over-current shutdown protection is also provided on the 6V and 24V supplies, and current limiting is used on the 12V supplies. Output ripple is less than 10 mV peak-to-peak on the 6V supplies, less than 50 mV peak-to-peak on the 12V supplies, and less than 75 mV peak-to-peak on the 24V supplies. The 1507 crate is primarily designed to house modules with front-panel mounted I/O connectors. Its small size and weight make it easy to move around a bench or desktop. A fold-down rail under the front of the enclosure facilitates access to module front panels.

Model	+24V	-24V	Shared to	+12V	-12V	Shared to	+6V	-6V	Shared to
1502/72	6A	6A	9A	3A	3A	6A	52A	52A	52A
1507	2.5A	2.5A		1.5A	1.5A		15A	15A	

NOTES:

1. On the 1502 and 1572, the ±V supplies are derived from the ±24V sources; therefore, the +12V load must be considered part of the +24V load and the -12V load.

2. All models provide current foldback limiting and over-voltage crowbar protection for all output voltages.

3. All power supplies are of the linear type, except for the 1507, which is a switching supply.

Ordering Information

Model	# of Slots	I/O Bar	Status Output	NIM Holes	Power Supply	Size (cm) (H/W/D)	Weight
1502-P3C	25	No	No	No	Self-Contained 525 Watts	31.1/48.3/55.9	36kg
1502-P3D		Yes	No				
1502-P3E		No	Yes				
1502-P3F		Yes	Yes				
1502-P3G		No	No	Yes			
1502-P3H		No	Yes				
1507-P3A	11	No	No	No	Self-Contained 350 Watts	31.8/30.0/38.8	11.4 kg
1507-P3B							
1572-P3C	25	No	No	No	Separate 525 Watts	31.1/48.3/29.9	36 kg
1572-P3D		Yes					
1572-P3E		No	Yes				
1572-P3F		Yes					

Notes:

1. The 1572 includes a separately mounted power supply: 22.2 cm (8 ¾ in) x 48.3 cm (19") x 38.1 cm (15").
2. When ordering, state the desired AC line voltage. The unit will be strapped and fused for that voltage.
3. Options are available with a rear I/O mounting bar for affixing 36-contact PC edge connectors. With this option, five sets of I/O adapter blocks are included (for five connectors). Additional adapter block kits can be ordered as Model 5962-Z1A (with five sets of blocks per kit).
4. Model 1507-P3A 11-slot Powered CAMAC Minicrate 120/220 V, 50/60 Hz
   Model 1507-P3B 11-slot Powered CAMAC Minicrate 120/220 V, 50/60 Hz, Rack mountable

Accessories

Model 5962-Z1A Adapter Kit for 36-contact Rear I/O Connectors (five sets of adapter blocks)
Model 1507-001 Rack mounting kit for Powered CAMAC Minicrate

Spares - Crate Subassemblies

Model 1502-110 Fan Unit
Model 1502-200 Power Supply (for - P2 only)
Model 1502-250 Power Supply (for - P3 only)
Model 1502-320 Crate

Model Number Updates - Please note the following changes:
Models 1510 and 1525 are no longer available

111802

1.0 UNPACKING AND VISUAL INSPECTION

The Model 1572 Powered CAMAC Crate includes the following units (See Figure 1):

1.	1572-150	Ventilation Unit
2.	1572-250	Power Supply with detached power cord
3.	1572-350	Crate Assembly

The 1572 is shipped in two cartons, one containing the crate assembly and the ventilation unit, and one containing the power supply. The A.C. power cord is packaged with the power supply.

1.1 Ventilation Unit Visual Inspection

Remove the ventilation unit from the crate assembly. This is accomplished by first loosening the two captive screws on the front panel (one on each side of the ventilation unit), and then sliding the ventilation unit forward.

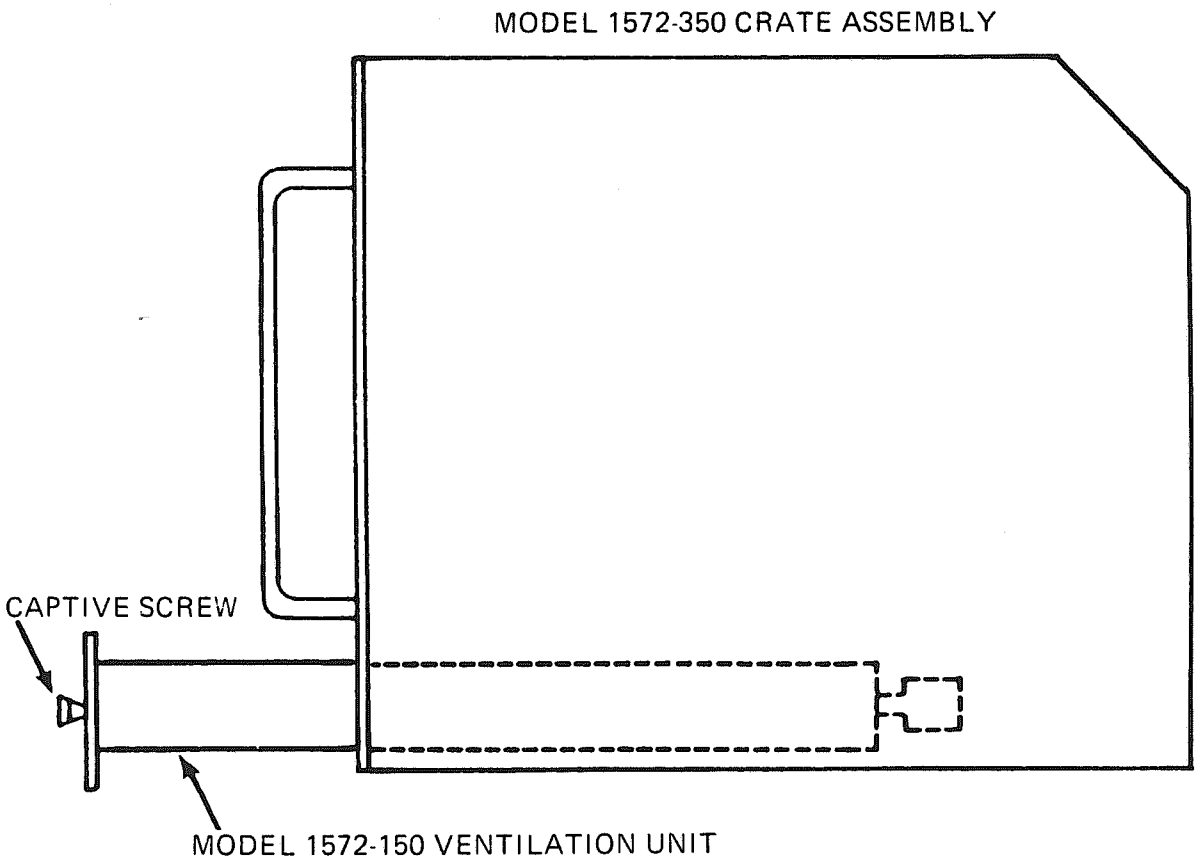
Inspect the ventilation unit for possible shipping damage. Check that the fan blades rotate freely. Assure that there is no other physical damage.

Replace the ventilation unit and tighten the two captive screws.

1.2 Power Supply Visual Inspection

The power supply can be inspected for shipping damage by loosening the six quarter-turn fasteners on the top cover. See Figure 2.

After the power supply visual inspection is completed, replace the top cover and tighten the six quarter-turn fasteners.



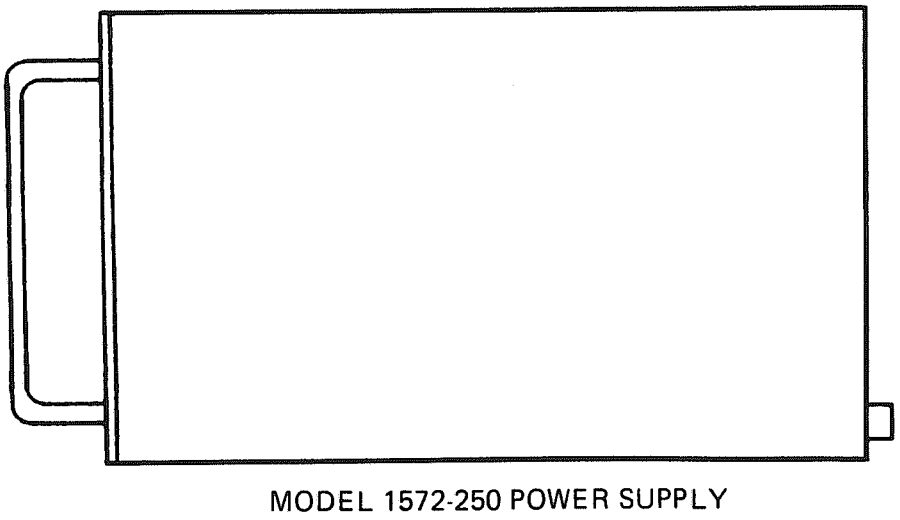


Figure 1 - Model 1572 Powered Crate Subassemblies

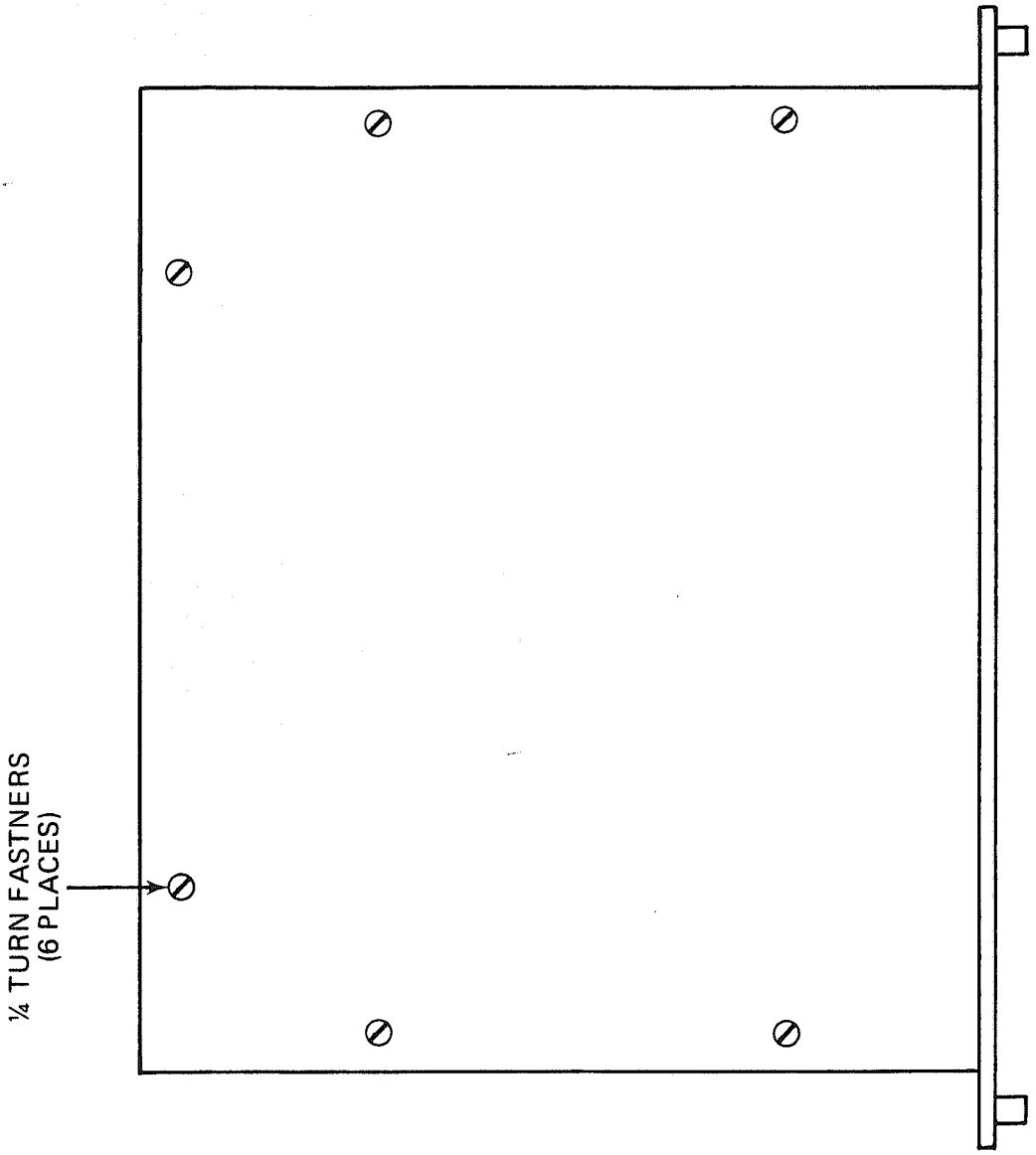


Figure 2 - Top View of Power Supply

1.3 Crate Assembly Visual Inspection

Check the crate assembly for possible shipping damage. View the Dataway connectors to be sure that there is no foreign matter in the contact area.

1.4 Power Supply Mounting

The 1572 was designed for separate rack mounting of the crate assembly/ventilation unit and the power supply. The crate requires 12-1/4 inches of space in a standard 19-inch equipment mounting rack, and is 11-3/4 inches deep. The power supply is 8-3/4 inches tall and 15 inches deep and can be mounted in the same rack. The crate assembly and power supply are connected by the Model 5860-N000 and Model 5860-P000 cable assemblies.

2.0 ELECTRICAL INSPECTION

Connect the power cord to the power supply receptacle and, **after assuring that the front panel power switch is off ("0")**, connect the power cord to the primary power. The power switch is located on the front panel of the power supply unit. See Figure 3.

Press the power switch to the ON ("1") position. Note the following:

1. The lamp on the power switch should be lighted.

2. The three ventilation unit fans should be rotating. (Check inside the crate.)

3. The power supply fans are rotating. (Check the right side of the power supply, as seen from the front, and the fan behind the power supply front panel air filter.)

4. The voltages should be checked on the power supply front-panel LCD meter as follows (Refer to Figure 3):

   a. Press the "E/I" button IN (Read voltage).

   b. Press the "+/-" button IN. (Selects "+".)

   c. Press the "24" button IN. Check the +24V supply (a reading of +23.6 to +24.4 volts).

d. Press the "12" button IN. Check the +12V supply (a reading of +11.80 to +12.20 volts).

e. Press the "6" button IN. Check the +6V supply (a reading of +5.94 to +6.06 volts).

f. Release the "+/-" button. (Selects "-".)

g. Repeat steps "c" through "e" to check the negative voltage supplies. The voltage ranges are the same except "-" instead of "+".

NOTE: The LCD meter on the front panel is accurate to within +/-5%.

Press the power switch OFF and remove the AC power plug.

3.0 TYPES OF INSTALLATIONS

The Model 1572 Powered CAMAC Crate can be used as a bench-top unit or mounted in any standard 19" equipment cabinet with a minimum depth of 29.9 cm (11-3/4 inches). The crate assembly has a front-panel height of 31.1 cm (12-1/4 inches). The power supply unit's dimensions are 22.2 cm x 48.3 cm x 38.1 cm (8-3/4 inches x 19 inches x 11-3/4 inches).

4.0 RACK-MOUNTING THE CRATE

For ease of handling, it is recommended that the crate assembly be mounted with the ventilation unit removed.

4.1 Ventilation Unit Removal

Remove the ventilation unit by first loosening the two captive screws on the front panel (one on each side), and then sliding the ventilation unit forward.

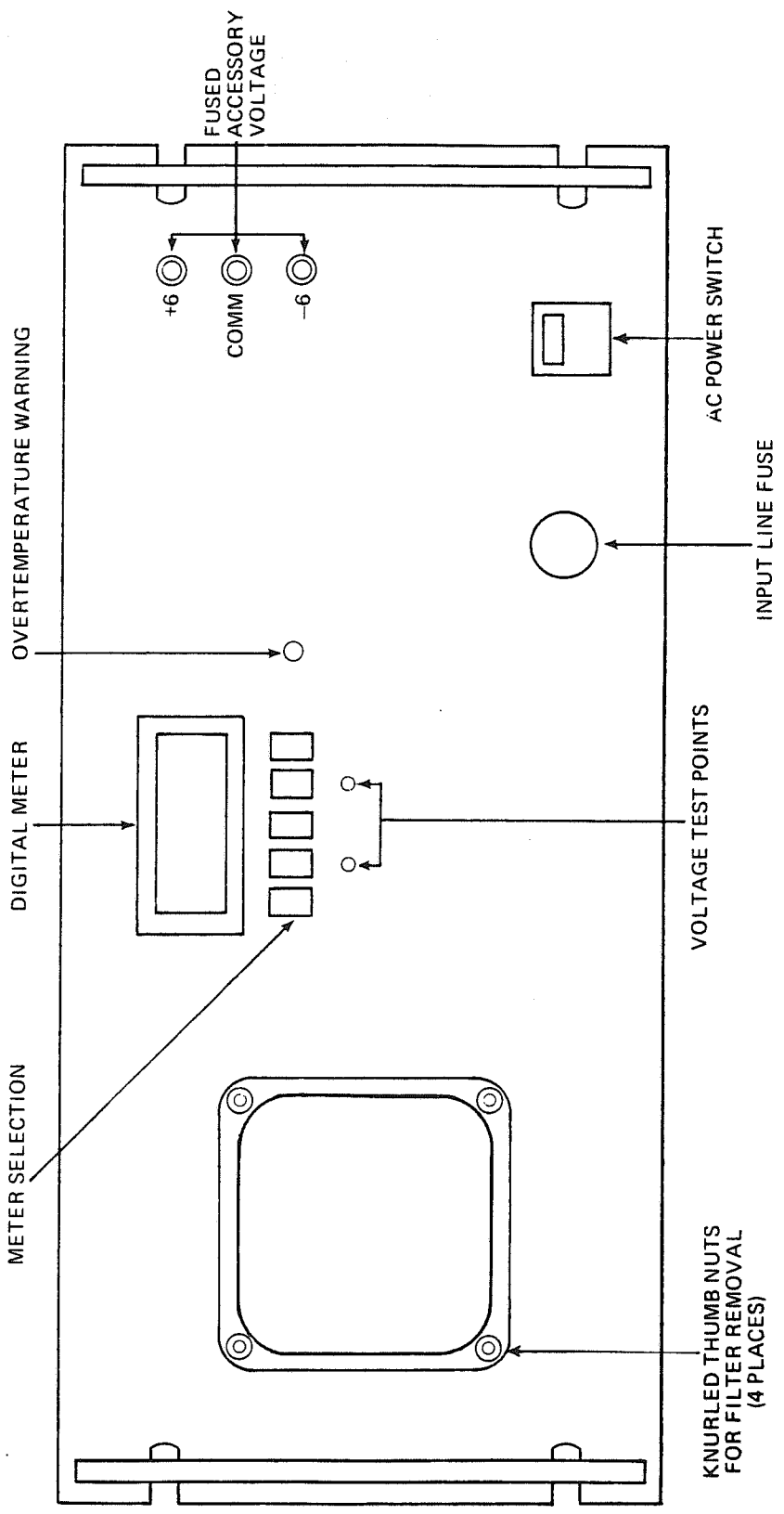


Figure 3 - Power Supply Unit Front Panel

4.4 Crate Mounting

Mount the crate to the 19" relay rack standards using 10-32 screws.

4.5 Power Supply Mounting

Mount the power supply to the 19" relay rack standards using 10-32 screws and connect the 5860-N000 and 5860-P000 cable assemblies between the crate, fan-unit and power supply.

4.6 Voltage Check

Perform a final voltage check as done earlier under **Section 2.0, ELECTRICAL INSPECTION** (Page 6).

5.0 OPERATION

The powered crate is now ready for use. Modules and crate controller(s) may now be added for the particular application.

CAUTION: Turn the crate power OFF when inserting or removing CAMAC modules to avoid possible damage caused by momentary misalignment of contacts.

5.1 Voltage/Current Metering

The six supply voltages can be monitored with the power supply front-panel LCD meter as done earlier under **Section 2.0, ELECTRICAL INSPECTION** (Page 6). The load currents can be monitored in a similar manner, but with the "E/I" button released. The maximum load is shown as follows:

POWER VOLTAGE	MAXIMUM LOAD	SHARED TO
+24 Volt Supply	6 amperes	9 amperes
-24 Volt Supply	6 amperes . .	
+12 Volt Supply	3 amperes	Note 2
-12 Volt Supply	3 amperes	Note 2
+6 Volt Supply	52 amperes	52 amperes
-6 Volt Supply	52 amperes . .	

Notes:

1. The maximum load on +24V and -24V **combined** shall be 9 amperes; on the +6V and -6V **combined** shall be 52 amperes.

2. The +12V and -12V supplies are derived from the +/-24V supplies. Therefore, the sum of the loads for the +12V, -12V, +24V, and -24V supplies must not exceed 9 amperes.

5.2 Temperature Warning/Cut-off

The power supply front-panel temperature warning LED indicates that the ambient temperature is too high, the shared load is too heavy, or the power supply airflow (on the sides of the crate) is blocked. If the temperature increases further, the AC power is cut off (power switch lamp OFF). When the power supply cools, the AC power is restored. If the condition still exists, the crate will "cycle" ON and OFF.

5.3 Low Dataway Voltage

If one or more of the six voltage sources is very low (and the power supply is not defective), the following cause(s) may be present:

1. A transient from the AC power source or external I/O has caused the power supply to "crowbar" (when a momentary overvoltage is sensed). To reset the crowbar(s), turn the power switch OFF for 30 seconds. Note that the overvoltage sensing on the +/-12 volt supplies "crowbars" the associated 24 volt supply.

2. The power supply entered current foldback limiting because the current load was exceeded. Refer to the chart under **Item 5.1, Voltage/Current Metering**. Note that the current readings will be below the maximum after "foldback". The overload must be removed to reset the foldback limiting.

The overload must be removed.

CAUTION: Turn the crate power OFF when inserting or removing CAMAC modules to avoid possible damage caused by momentary misalignment of contacts.

6.0 STATUS BIT OPTION

The Model 1572 is available with a status bit option (Model 1572-P1E and 1572-P1F). This option provides a relay contact closure if one or more of the power supply voltages is out of range or the temperature warning has been activated. A normally-closed relay contact is used so that the "alarm" state is indicated if power to the crate is turned off. If supplied, the output signal appears on a one-pin LEMO connector at the rear of the power supply.

7.0 I/O MOUNTING BAR OPTION

The Model 1572 is available with a rear I/O mounting bar option (Model 1572-P1D and 1572-P1F). This option includes a rear mounting bar and five sets of adapter blocks for mounting 36-contact PC-edge connectors (Model 5960-Z1A or 5960-Z1B). If more than five PC-edge connectors are to be mounted, additional blocks can be ordered as a Model 5962-Z1A Adapter Kit (five sets of adapter blocks per kit).

If the crate assembly does not contain the rear I/O mounting bar (Model 1572-P1C or 1572-P1E) and it is desired to mount 36-contact I/O connectors, contact the factory regarding purchase of the mounting bar and adapter kit.

8.0 ADDITIONAL USE OF DATAWAY LINES

Figure 16 shows the Dataway connections for slots 1 to 24 (normal stations, with one to the left as viewed from the front) and slot 25 (the control stations).

There are five "patch lines", P1 to P5. Lines P1 and P2 are each "jumpered" on the Dataway through all slots, while P3 to P5 have no connections and may be wire-wrapped on the rear of the Dataway to meet the user's needs. Care must be exercised in the application of these "free use" lines to assure that one module is not using the "jumpered" P2 line for one purpose and a second module for another purpose.

Dataway contact 40 (Y1 Source) is connected to 38R (-6 Volts). Dataway contact 42 (Y2 Source) is connected to 42R (+6 Volts). These connections are standard as of July 29, 1991, for the Model 1572 CAMAC Crate.

9.0 COOLING MAINTENANCE

The power supply contains its own fans (with an air filter on the power supply front panel). Be sure that air flow is not obstructed. The modules in the crate are cooled with three fans in the ventilation unit and air is drawn through two filters on the front of the ventilation unit.

The filters and fans should be cleaned periodically to maintain air flow through the modules.

The filter grilles are easily removed with the quarter-turn fasteners ("silver" screws). The filter foam can be cleaned by immersing in warm, soapy water.

The power supply filter screen can be removed by loosening the four thumb nuts, holding the filter to the panel.

10.0 CIRCUIT OPERATION

The AC input and rectifier circuits are shown in Figures 4 through 6. These figures show the power supply arranged for operation from 100 volts, 120 volts or 220 volts, 50-60 Hz. Voltage selection is made by the appropriate voltage jumper plug.

All fans are operated at 120 volts. They remain across the "120 V" taps of the transformer, regardless of the primary voltage selection.

The +6 volt and -6 volt raw (unregulated) supplies are derived from one winding, while the +24 volt raw supplies are derived from a second winding. The boost voltage for powering the regulators is supplied from a third transformer winding.

Two normally closed thermostats, one on the "positive" heatsink and one on the "negative" heatsink, are set to open at 105 degrees C. These thermostats protect the pass transistors from damage due to overheating by breaking the primary supply path. A third thermostat, set to close at 90 degrees C, is mounted on the transformer and used to drive the over-temperature warning LED on the ventilation unit front panel.

10.1 Internal Regulator Voltage Sources

The B470 regulator card provides regulation for all six power supply voltages. The regulator circuits are powered internally from a +32 volt source or -32 volt source (for the positive and negative regulators, respectively). Refer to Figure 5. A 35 V RMS voltage is applied from the transformer boost winding and rectified by CR4. The +46 V and -46 V sources are derived and regulated by Q10 and Q11, respectively, with their associated zener diodes. Thus, the +32 V and -32 sources are generated. Additionally, Q12 and CR5 supply voltage to the -6 V and -24 V SCR control circuits only when the +32 volt source is above +12 volts (during turn-on) to prevent false triggering of the SCRs.

10.2 Positive Regulator Operation

Since all three positive regulators are basically the same, the following discussion will refer only to the +6V regulator (Refer to Figure 6), and the reader may appropriately translate the information to the +12V and +24V regulators (Refer to Figures 7 and 8).

The output voltage of regulator U1 is determined by R6, PT2 (voltage adjustment potentiometer), and R9. The resistor values are selected based on a feedback

voltage of 1.8V to Pin 6 of the LM305. Capacitors C14 and C1 are required to suppress oscillations in the feedback loop. Capacitor C5 compensates the internal regulator circuitry to make stability independent for all loading conditions. The output current of the LM305 is increased by the Darlington transistor pair which drives the five +6V pass transistors through isolation resistors (all on the heatsink assembly). Remote voltage sensing at the crate eliminates the effect of resistance in the power cable. This is accomplished by returning crate ground and +6V to the LM305 Pins 4 and 6 respectively (via the R9, PT2, R6 resistor divider). Resistors R4 and R5 provide a low ohmic sense line connection when the crate is disconnected. However, the power supply may "crowbar" on power-up without external sense line connections due to the slow charge rate on C14.

Foldback current limiting is used to protect the +6V regulator from overloads. Pins 10 and 11 on SG3543 (IC "A") are the inputs to the current limit circuitry. The voltage divider formed by R11, PT1 (+6V current limit adjustment potentiometer), and R12 is used to set the maximum level of output current. As the voltage across the 0.01 ohm current sensing resistor (on the heatsink assembly) rises above the threshold set by R10, the SG3543 begins drawing current from LM305 V_{OUT}, thus reducing the output voltage and current.

Potentiometer PT1 is factory adjusted for current foldback limit; this should not be turned unless test equipment is available to properly readjust the maximum current foldback point. The same is true for PT3 and PT5 on the +12V and +24V regulators, respectively.

A crossbar is used to prevent excessive voltage on the crate Dataway. Resistors R1, R2, and R3 form a voltage divider from +6V to ground. The two center taps of this divider are applied to the voltage-sensing inputs of SG3543 (IC "A" Pins 6 and 7). IC SG3543 senses any overvoltage condition and drives the SCR gate (on the heatsink) with +32V through R8. With +32V applied to its gate, the SCR conducts, causing a sufficient amount of current to flow through the current limit resistor to cause the regulator to go into current limiting. If the power supply is defective and cannot current-limit (as with a 2N3771 with a punch-through short circuit from emitter to collector), one or more of the 12 ampere fuses will "blow". In addition to turning on the SCR, the SG3543 provides the optional status bit signal when the voltage is above or below limit.

10.3 Negative Regulator Operation

Since all three negative regulators are basically the same, the following discussion will refer only to the -6V regulator (Refer to Figure 9), and the reader may appropriately translate the information to the -12V and -24V regulators (Refer to Figure 10 and 11).

The output voltage of regulator U5 is linearly dependent on the value of PT10 (voltage adjustment potentiometer) and R52 giving approximately 2V for each 1000 ohms of resistance. This scale factor is set by R55. The output current of the LM304 is increased by the Darlington transistor pair which drives the five -6V pass transistors through isolation resistors (all on the heatsink assembly). Remote voltage sensing at the crate eliminates the effect of resistance in the

power cable. This is accomplished by returning crate ground and -6V to the LM304 pins 9 and 8, respectively. Resistors R47 and R53 provide a low ohmic sense line connection when the crate is disconnected. However, the power supply may "crowbar" on power-up without external sense line connections due to the slow charge of C36.

A considerable amount of power, under full load conditions, is dissipated in the series pass transistors. If the output is shorted, this dissipation could damage the pass transistors. Foldback current limiting is used to prevent this situation. With current limiting, the available output current decreases as the maximum load is exceeded and the output voltage is reduced.

Normally, Q4 is held in a non-conducting state by voltage divider R57, R56, and PT9 (current limit adjustment potentiometer). However, when the voltage across the 0.01 ohm current limit resistor (located on the heatsink) increases to where the emitter of Q4 becomes approximately 0.6 volts more positive than the base, Q4 turns on and begins to shunt base drive from the Darlington pair transistor. This causes an increase in the output current of the LM304, and it will go into current limiting at a current determined by R54. Transistor Q5 is connected as a diode and provides an offset voltage that tracks the emitter-base conduction voltage variation of Q4 with temperature.

Potentiometer PT9 is factory adjusted for current foldback limit; this should not be turned unless test equipment is available to properly readjust the maximum current foldback point. The same is true for PT7 and PT12 on the -12V and -24V regulators, respectively.

Component failure in the regulator circuits could cause the voltage on the Dataway to become excessive, thereby causing possible damage. A voltage crowbar is used to prevent this problem. Resistors R48, R49, and R50 form a voltage divider between -6V and a +5V reference (U7). The two taps on this divider are applied to the inputs of IC "E" (the SG3542 voltage monitor) and IC "D" (the LM339 voltage comparator). The SG3542 senses any overvoltage condition and drives the gate of the SCR (located on the heatsink) toward ground by providing current to the emitter of Q3. With a ground potential on its gate, the SCR conducts, causing a sufficient amount of current to flow through the current limit resistor to cause the regulator to go into current limiting. In addition to turning on the SCR, the SG3542 provides the optional status bit signal when the voltage is above limit. The LM339 is used to provide the status bit signal when the voltage is below limit.

If the power supply is defective and cannot current limit (as with a 2N3771 with a punch-through short circuit from emitter to collector), one or more of the 12 ampere fuses will "blow".

10.4 Derived Voltage for the ±12 Volt Supplies

On both the +12V and -12V supplies, the respective 24V regulated voltage is used as the raw supply (Refer to Figures 7 and 10); therefore, a current-sharing arrangements exists between the 12V supply and associated 24V supply. Further, when the 24V regulator decreases its voltage because of an over-current or over-

voltage condition, it reflects into the 12V regulator, giving the appearance that the 12V regulator is also faulty. This shutdown ability is utilized in the 12V crowbar circuit. The 12V voltage monitoring circuit triggers the associated 24V crowbar if the 12V output reaches its high limit, thus both the 12V and 24V outputs are lowered.

10.5 Status Bit Option

Each of the regulator circuits provides a signal if that regulator is not within voltage limits. If the status bit option is provided, these signals (OR'd as "STATUS BIT" on the regulator card) will cause transistor Q1 on the status bit card to turn OFF and Relay RY1 to release, causing a closed path to the status bit LEMO (Refer to Figure 12). Additionally, if the temperature warning thermostat closes, transistor Q2 turns ON, forcing Q1 OFF, asserting the closed status indication.

10.6 Regulator/Dataway Connections

Figure 13 shows the wiring from the +6V and +24V "raw" voltage supplies and the regulator card, through the "Positive Heatsink", to the Dataway. Note that the -12 volt pass transistor is on this heatsink, but derives its power from the -24 volt source (on the "Negative Heatsink"). This path is "jumpered" via the Negative Heatsink Dataway connector (J5).

Figure 14 shows the wiring from the -6V and -24V "raw" voltage supplies and the regulator card, through the Negative Heatsink to the Dataway.

10.7 Ventilation Unit Circuit Description

The ventilation unit contains the three crate fans, power switch, high temperature lamp, and voltage/current metering circuits (Refer to Figure 15).

The liquid-crystal meter is powered from a nominal 9.1 volt source (zener-regulated) derived from a small power transformer, rectifier and filter capacitor.

The voltage/current to be metered is selected by the ganged switches. These switches also select the range (via the voltage divider) and decimal point (with transistor Q1).

The voltage monitor test points are connected to the supply selected and monitors voltage regardless of the E/I switch setting. The return jack (RET) is always connected to Dataway common (contacts 43, 43R) regardless of the ± selection. A DVM (or 20,000 ohms/volt MINIMUM VOM) is recommended because of the 2200 ohm series resistor (for protection in case the test points are short-circuited).

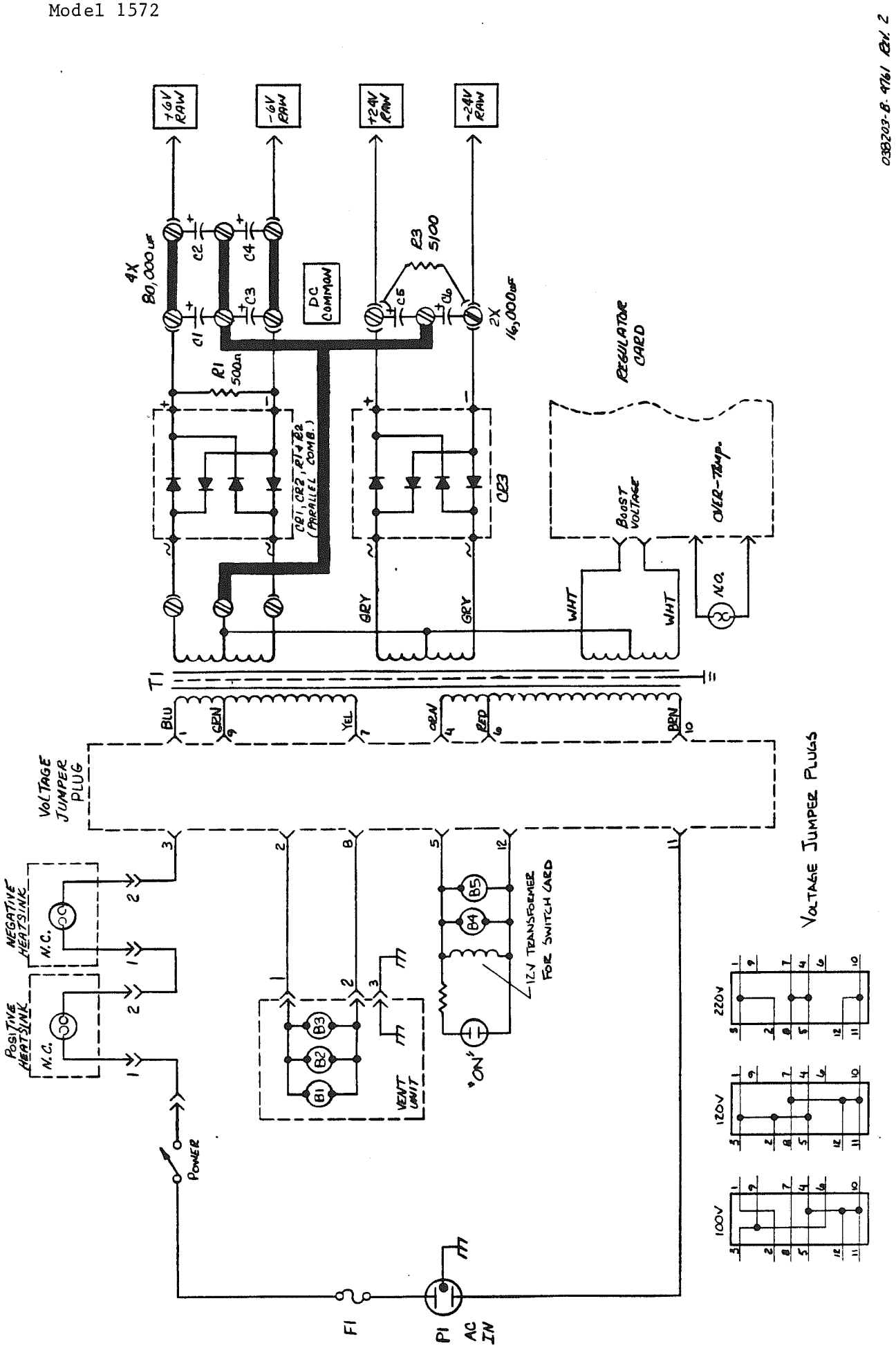


FIGURE 4 - INPUT/RECTIFIER CIRCUIT

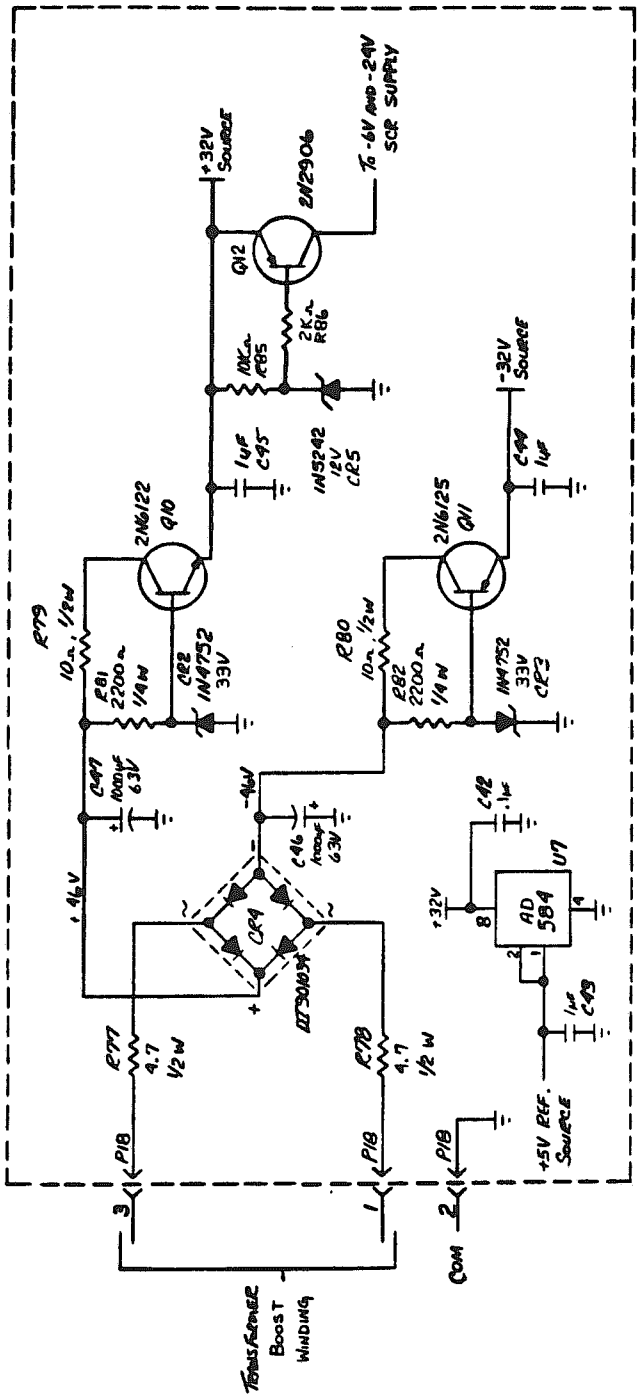


FIGURE 5 - BOOST VOLTAGE REGULATORS

INTERNAL REGULATOR VOLTAGE SOURCE
032175-8-4039 REV. 3

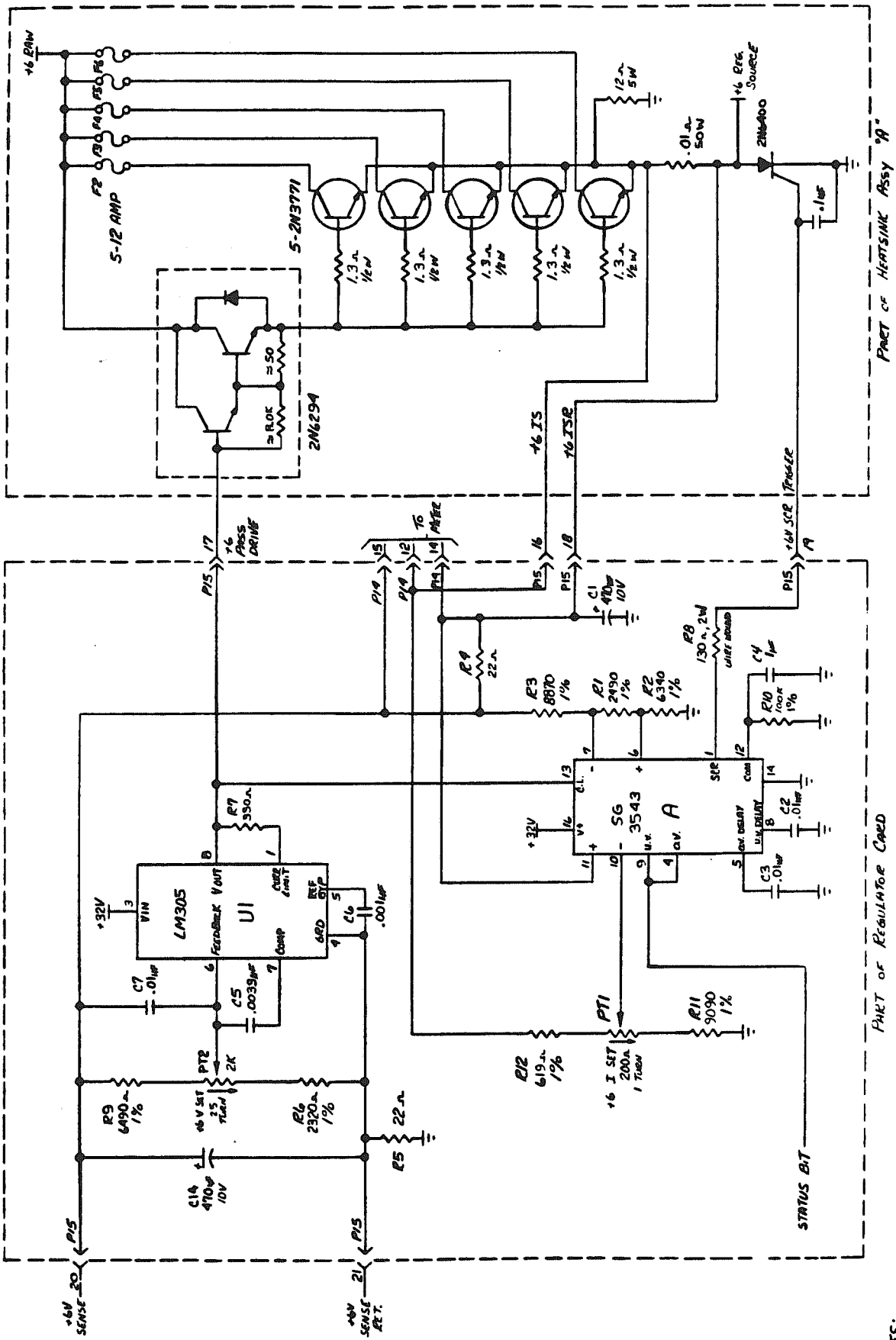


FIGURE 6 - +6 VOLT REGULATOR

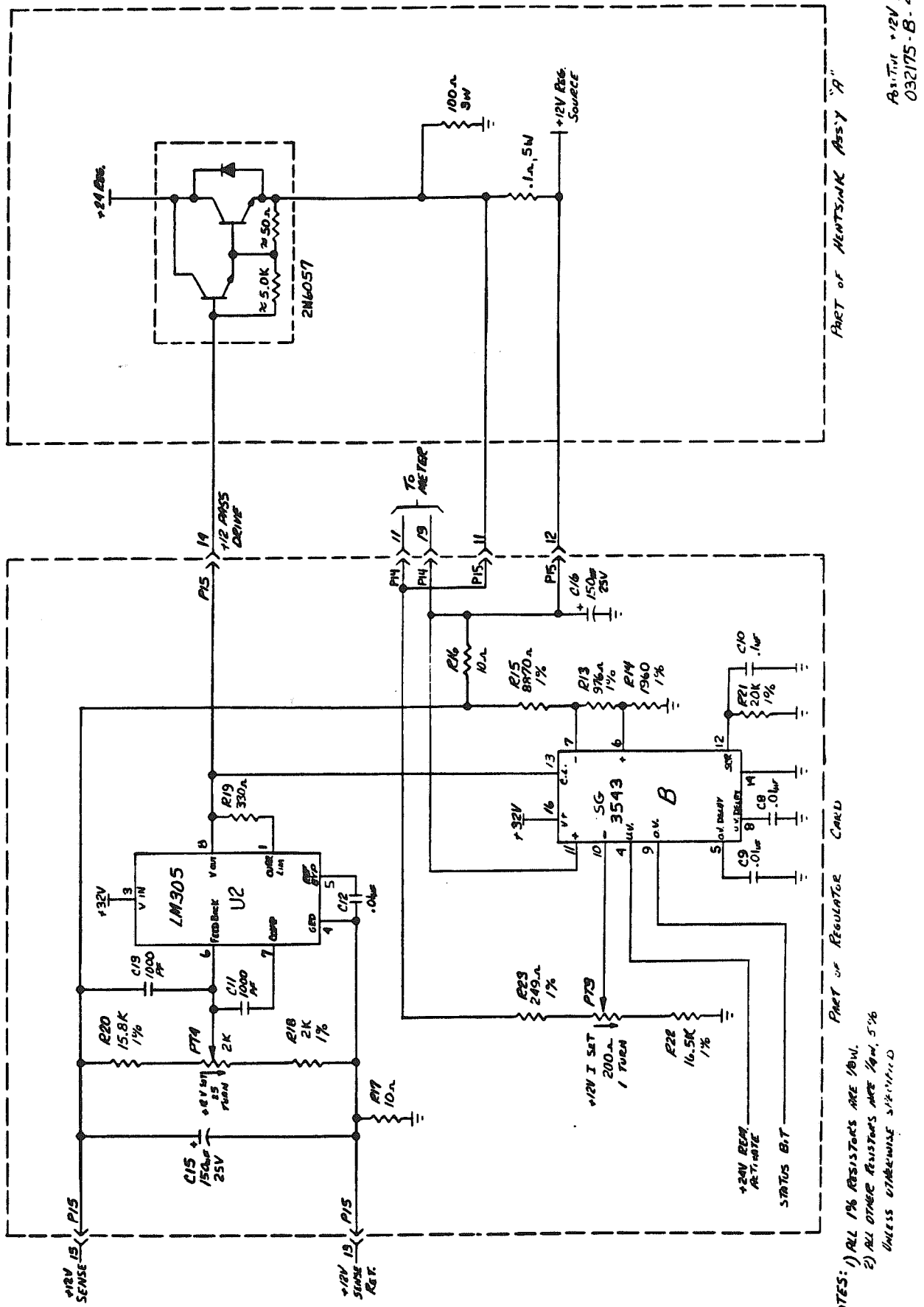


FIGURE 7 - +12 VOLT REGULATOR

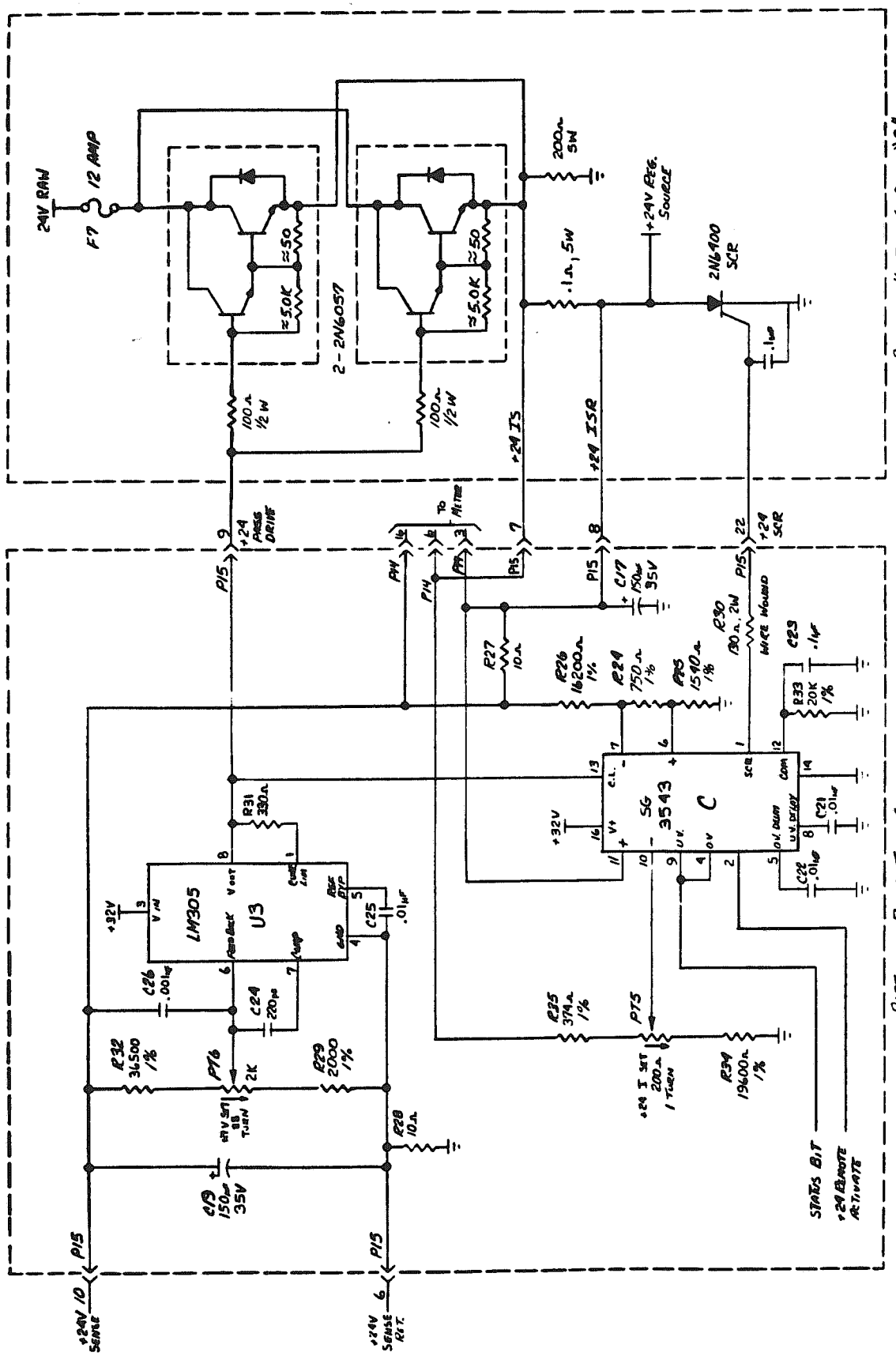


FIGURE 8 - +24 VOLT REGULATOR

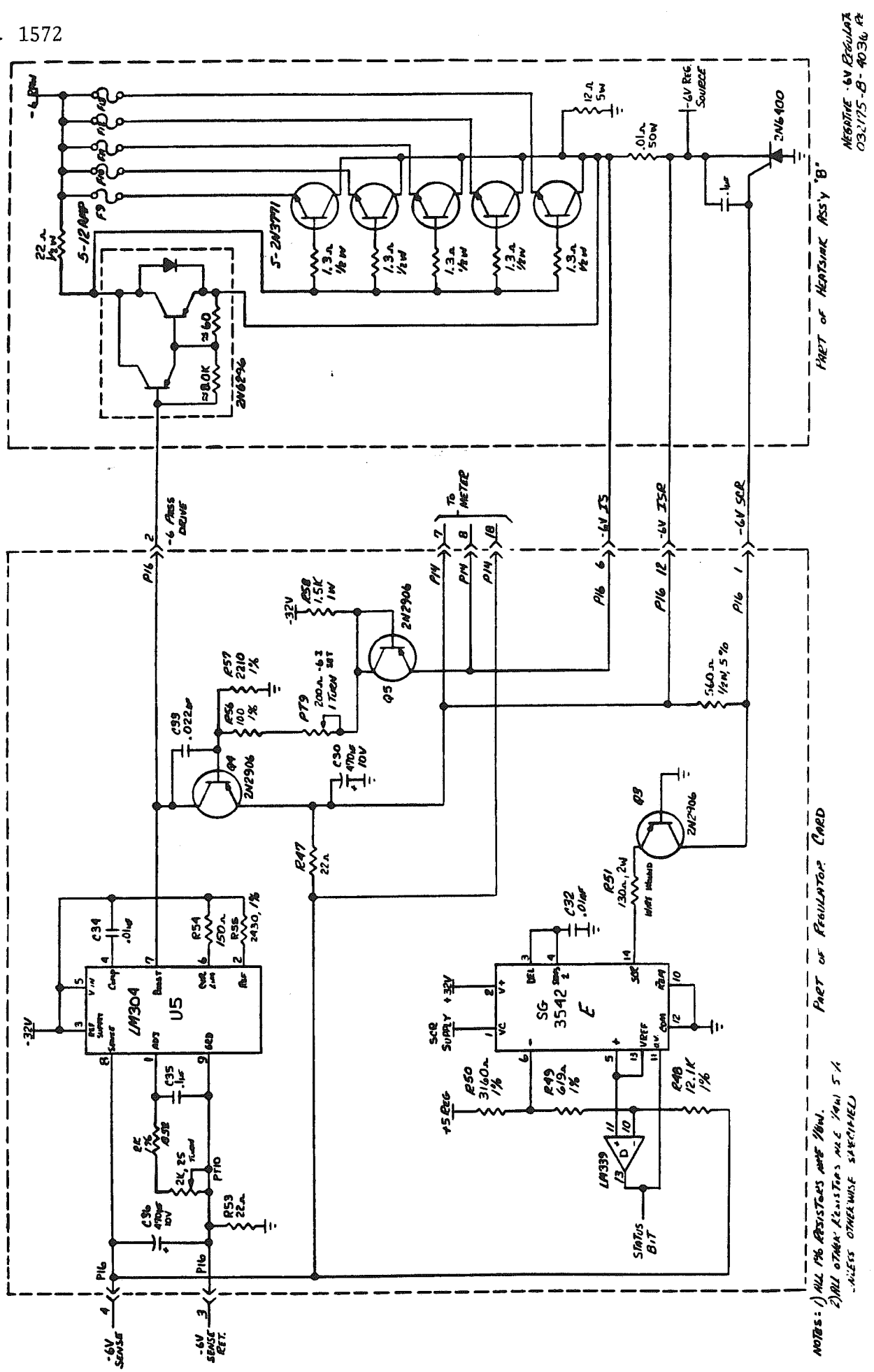


FIGURE 9 - -6 VOLT REGULATOR

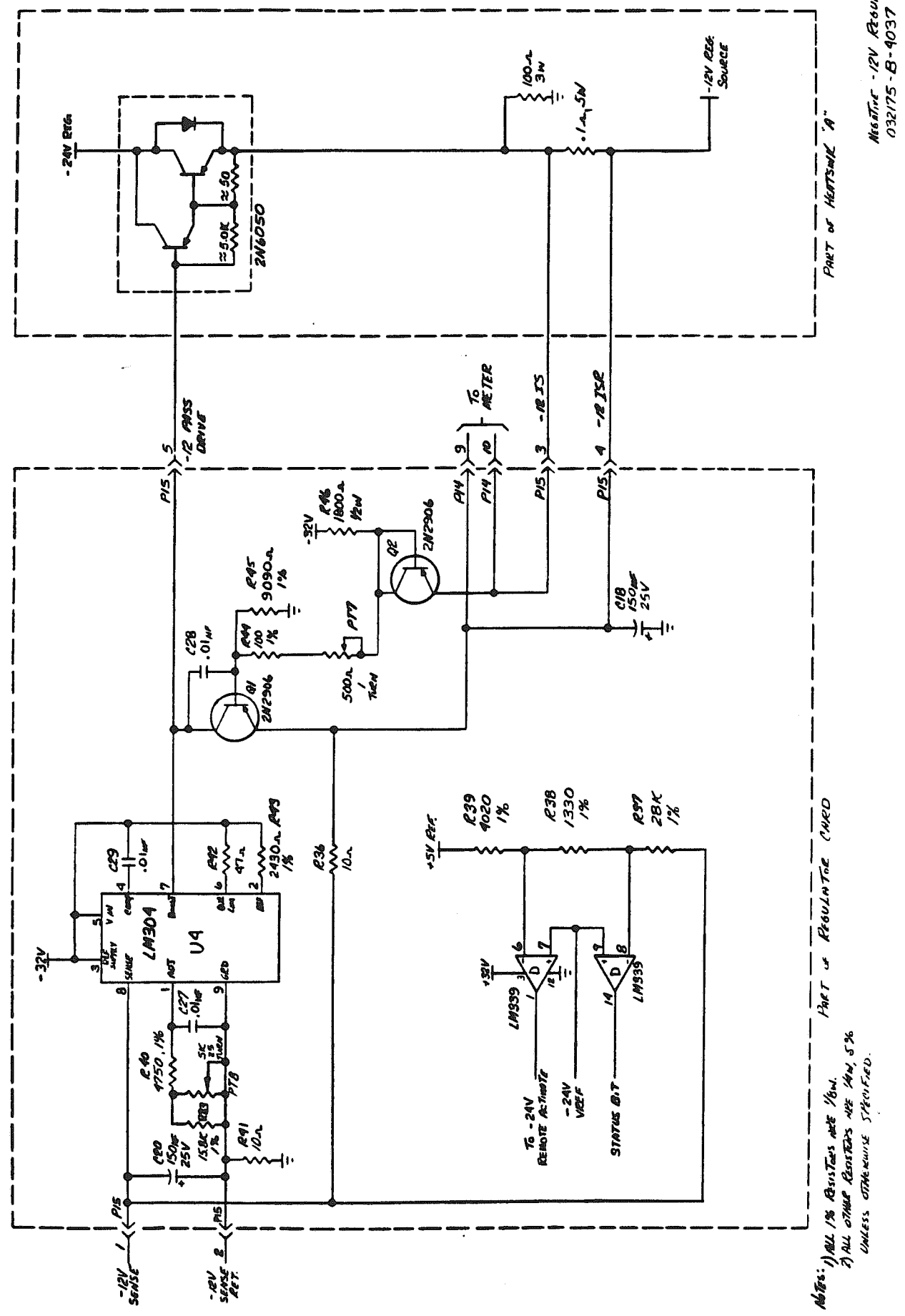


FIGURE 10 - -12 VOLT REGULATOR

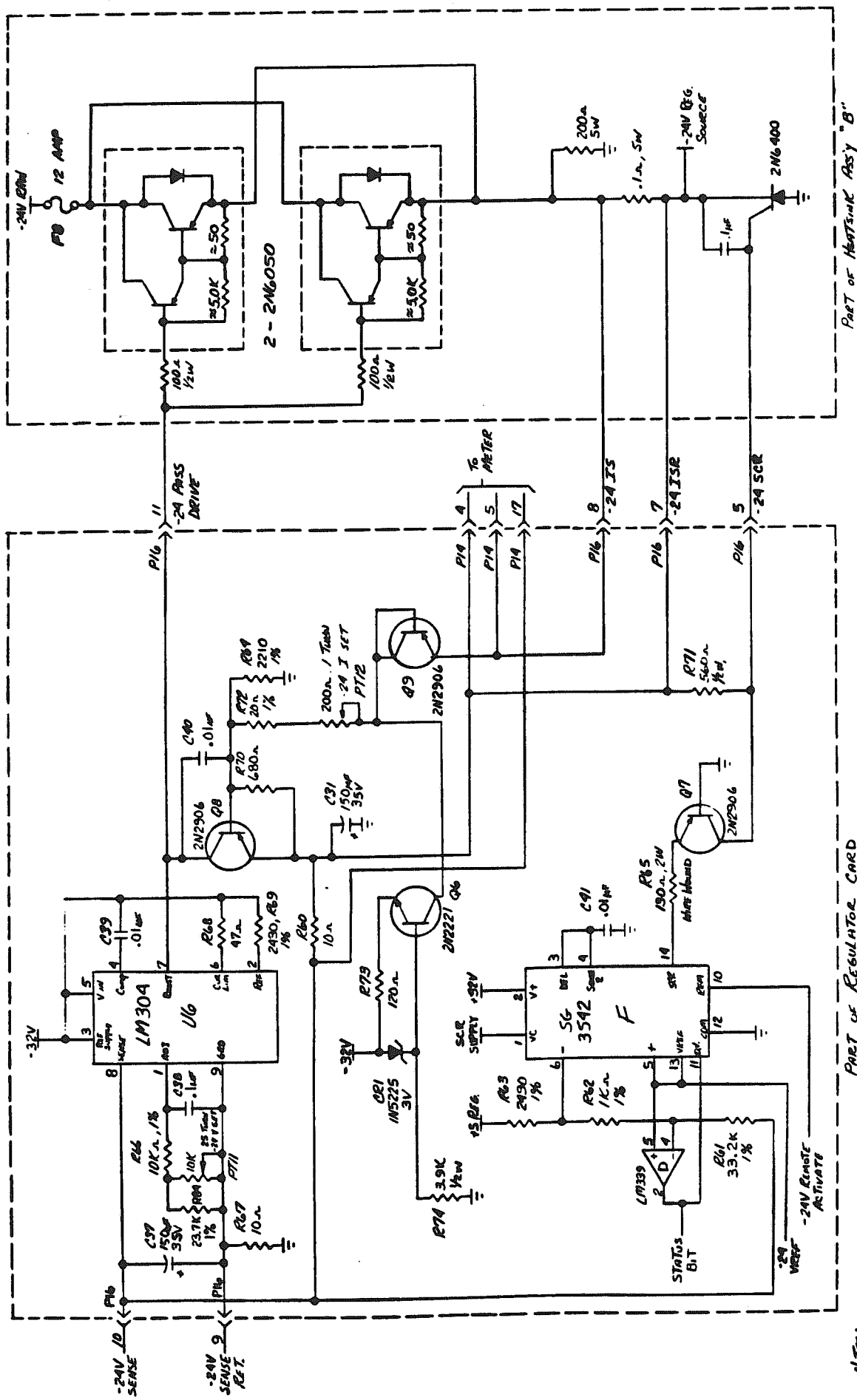
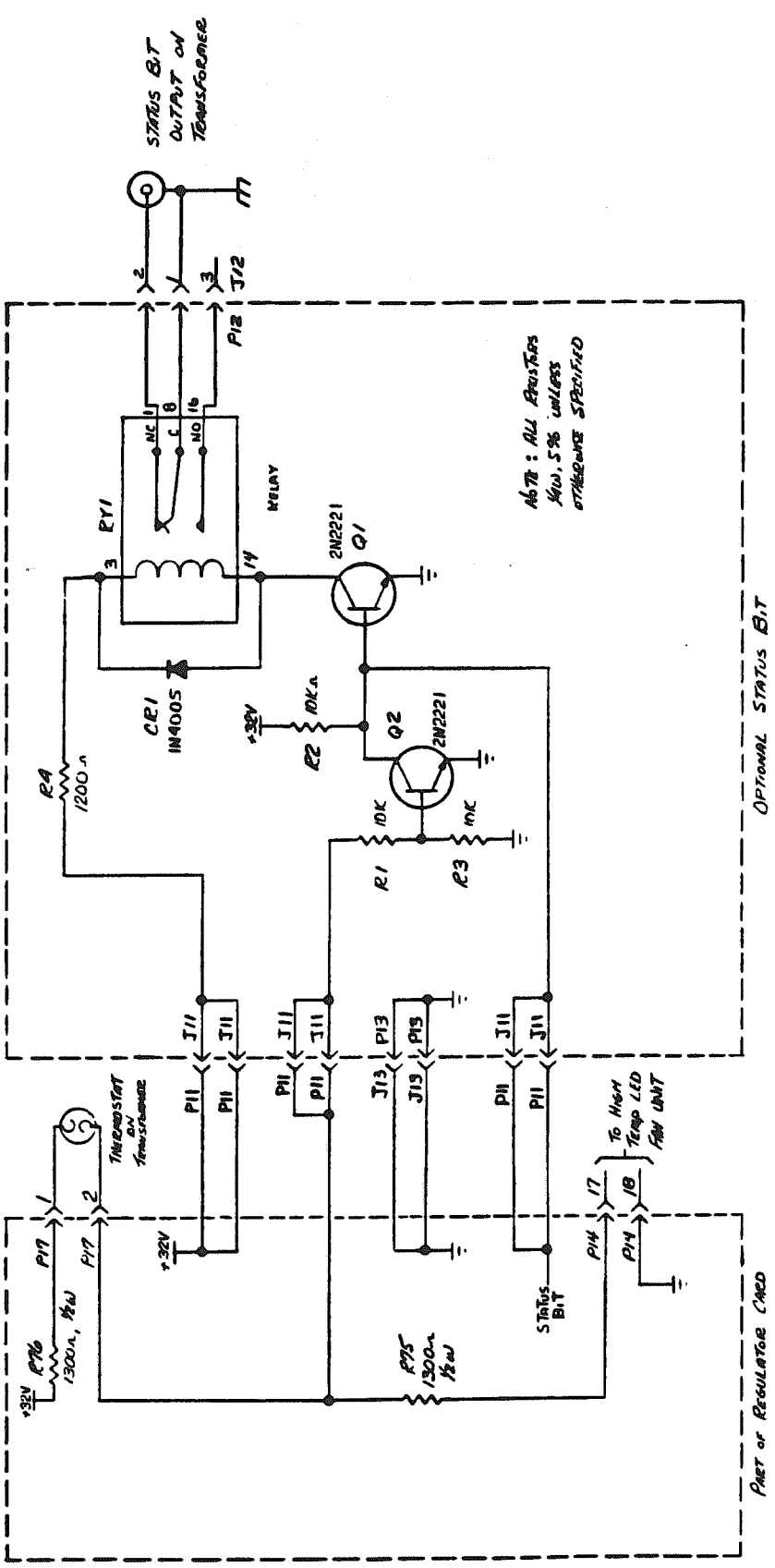


FIGURE 11 - -24 VOLT REGULATOR



STATUS BIT REV 2
032175-B-9040

FIGURE 12 - STATUS BIT OPTION

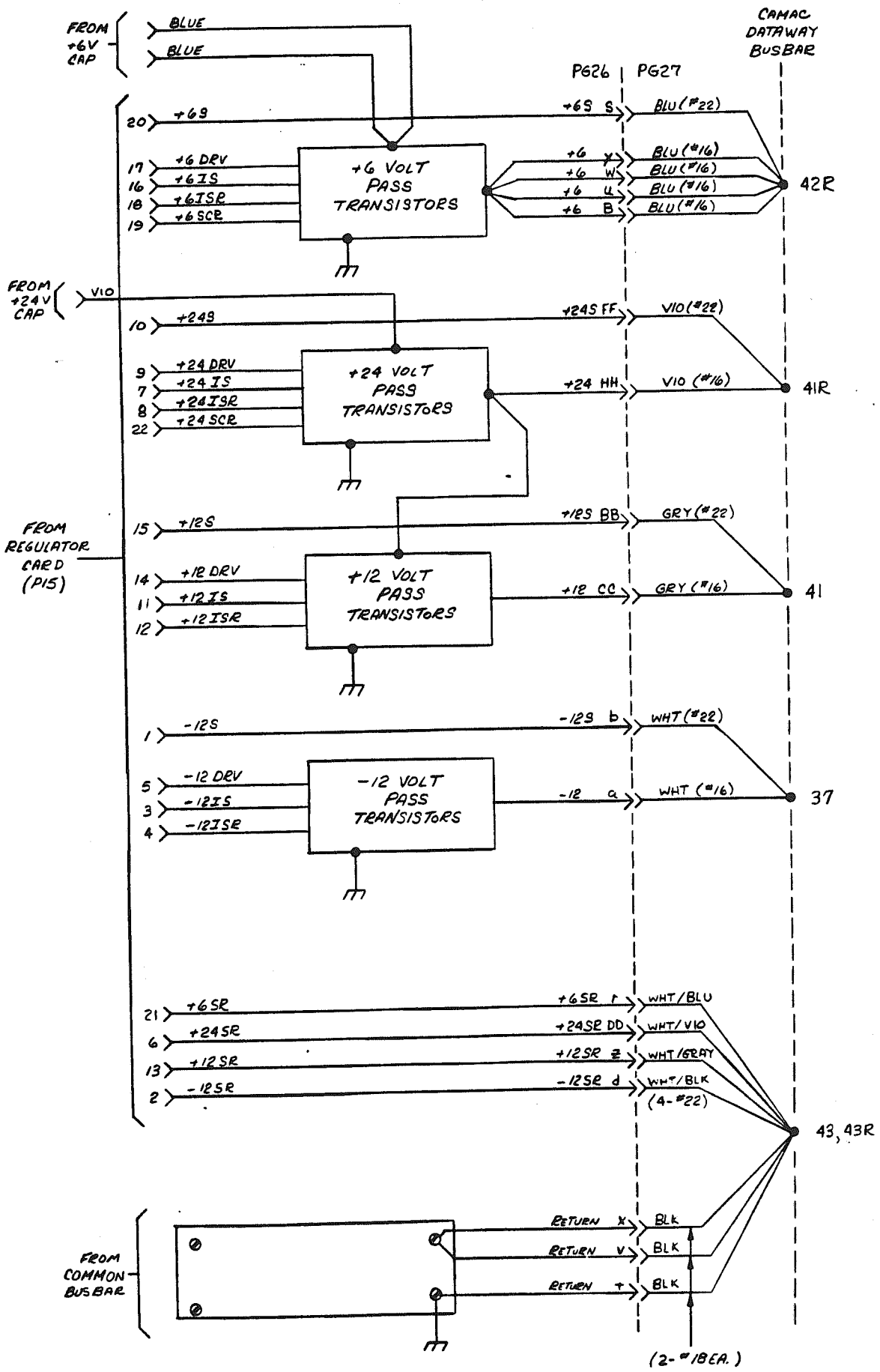


Figure 13 - Positive Heatsink Connections

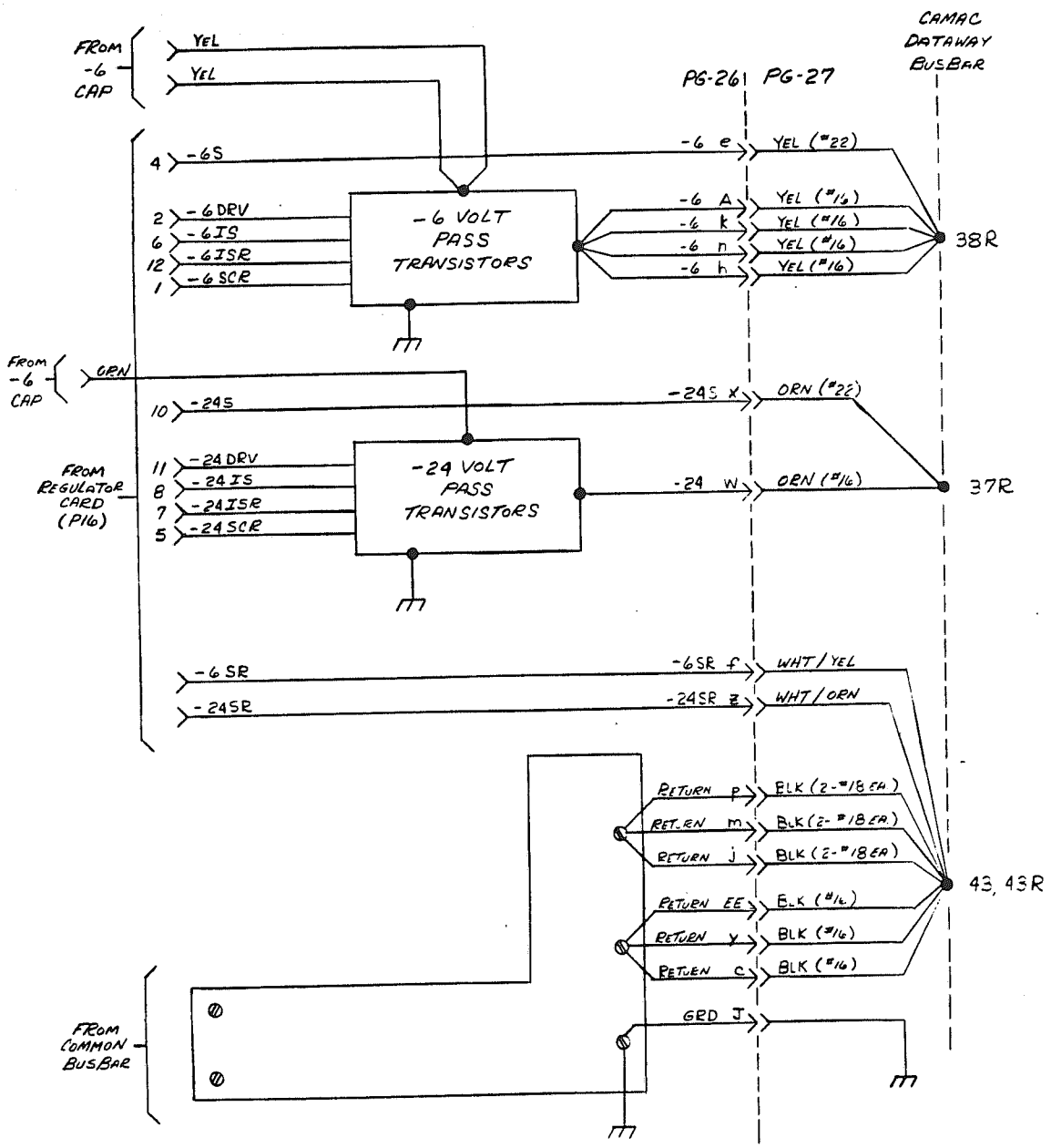


Figure 14 - Negative Heatsink Connections

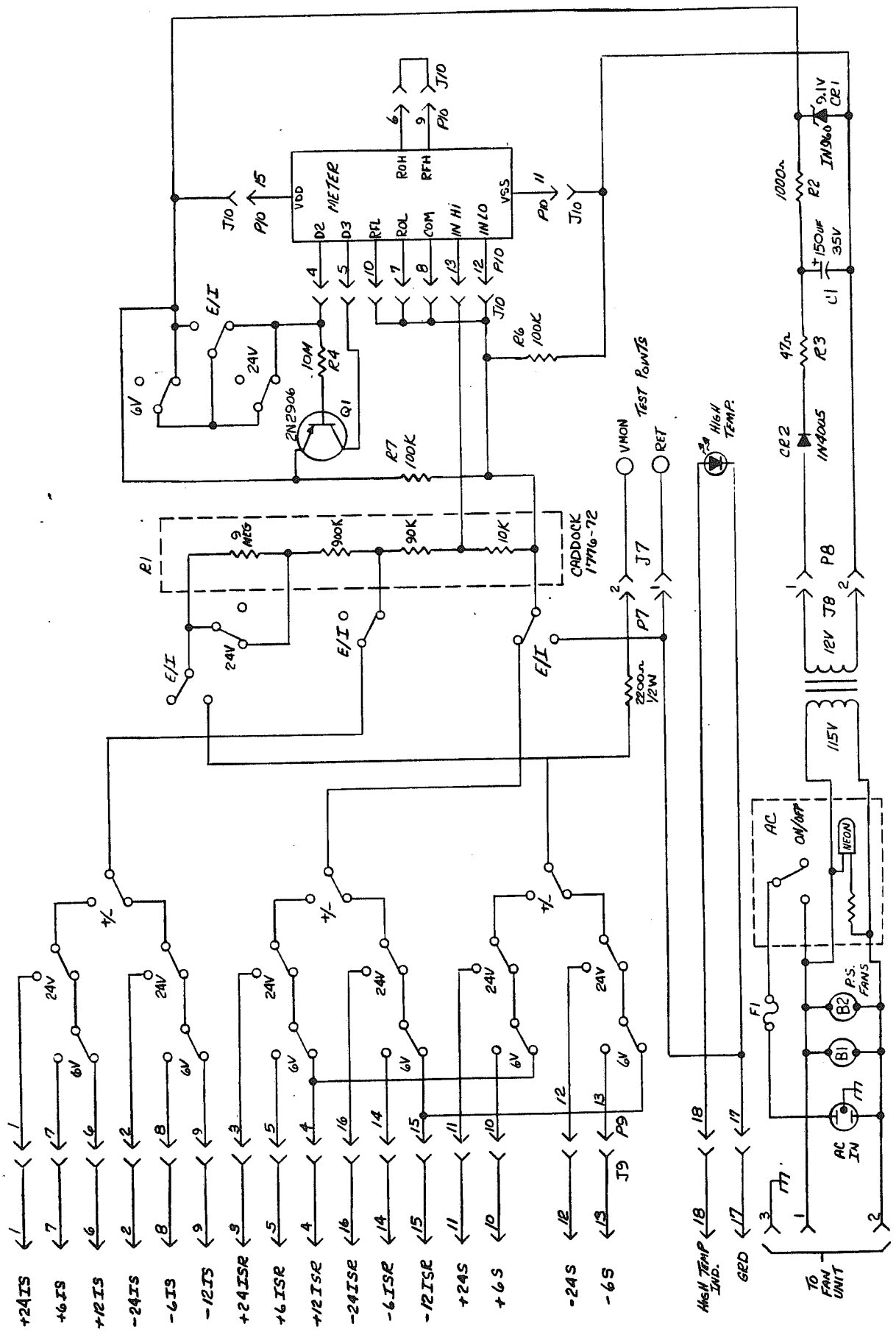


Figure 15 - Power Supply Unit Wiring

(Viewed from front of crate)

NORMAL STATION				CONTROL STATION			
	Pin Nos.				Pin Nos.		
P1	1	1R	B	P1	1	1R	B
P2	2	2R	F16	P2	2	2R	F16
P3	3	3R	F8	P3	3	3R	F8
P4	4	4R	F4	P4	4	4R	F4
P5	5	5R	F2	P5	5	5R	F2
X	6	6R	F1	X	6	6R	F1
I	7	7R	A8	I	7	7R	A8
C	8	8R	A4	C	8	8R	A4
N	9	9R	A2	P6	9	9R	A2
L	10	10R	A1	P7	10	10R	A1
S1	11	11R	Z	S1	11	11R	Z
S2	12	12R	Q	S2	12	12R	Q
W24	13	13R	W23	L24	13	13R	N24
W22	14	14R	W21	L23	14	14R	N23
W20	15	15R	W19	L22	15	15R	N22
W18	16	16R	W17	L21	16	16R	N21
W16	17	17R	W15	L20	17	17R	N20
W14	18	18R	W13	L19	18	18R	N19
W12	19	19R	W11	L18	19	19R	N18
W10	20	20R	W9	L17	20	20R	N17
W8	21	21R	W7	L16	21	21R	N16
W6	22	22R	W5	L15	22	22R	N15
W4	23	23R	W3	L14	23	23R	N14
W2	24	24R	W1	L13	24	24R	N13
R24	25	25R	R23	L12	25	25R	N12
R22	26	26R	R21	L11	26	26R	N11
R20	27	27R	R19	L10	27	27R	N10
R18	28	28R	R17	L9	28	28R	N9
R16	29	29R	R15	L8	29	29R	N8
R14	30	30R	R13	L7	30	30R	N7
R12	31	31R	R11	L6	31	31R	N6
R10	32	32R	R9	L5	32	32R	N5
R8	33	33R	R7	L4	33	33R	N4
R6	34	34R	R5	L3	34	34R	N3
R4	35	35R	R3	L2	35	35R	N2
R2	36	36R	R1	L1	36	36R	N1
−12V	37	37R	−24V	−12V	37	37R	−24V
−	38	38R	−6V	−	38	38R	−6V
−	39	39R	−	−	39	39R	−
Y1	40	40R	E	Y1	40	40R	E
+12V	41	41R	+24V	+12V	41	41R	+24V
Y2	42	42R	+6V	Y2	42	42R	+6V
0V	43	43R	0V	0V	43	43R	0V

FIGURE 16 CAMAC DATAWAY CONNECTIONS

11.0 CALIBRATION

The six power supply voltages can be calibrated by adjusting the appropriate multi-turn potentiometer on the regulator card in the power supply. Loosen the five quarter-turn fasteners on the rear cover of the power supply to gain access to the adjustments. Refer to Figure 17 for the location of each potentiometer (marked "V" on the drawing). A digital voltmeter can be connected to the monitor test points at the front of the crate. Voltage selection is made by the pushbuttons above the monitor test points.

The current foldback potentiometers (marked "I" on the drawing) are set at the factory to approximately 5 percent above the limit.

CAUTION: **The current foldback should not be adjusted in the field without the proper variable load boxes.**

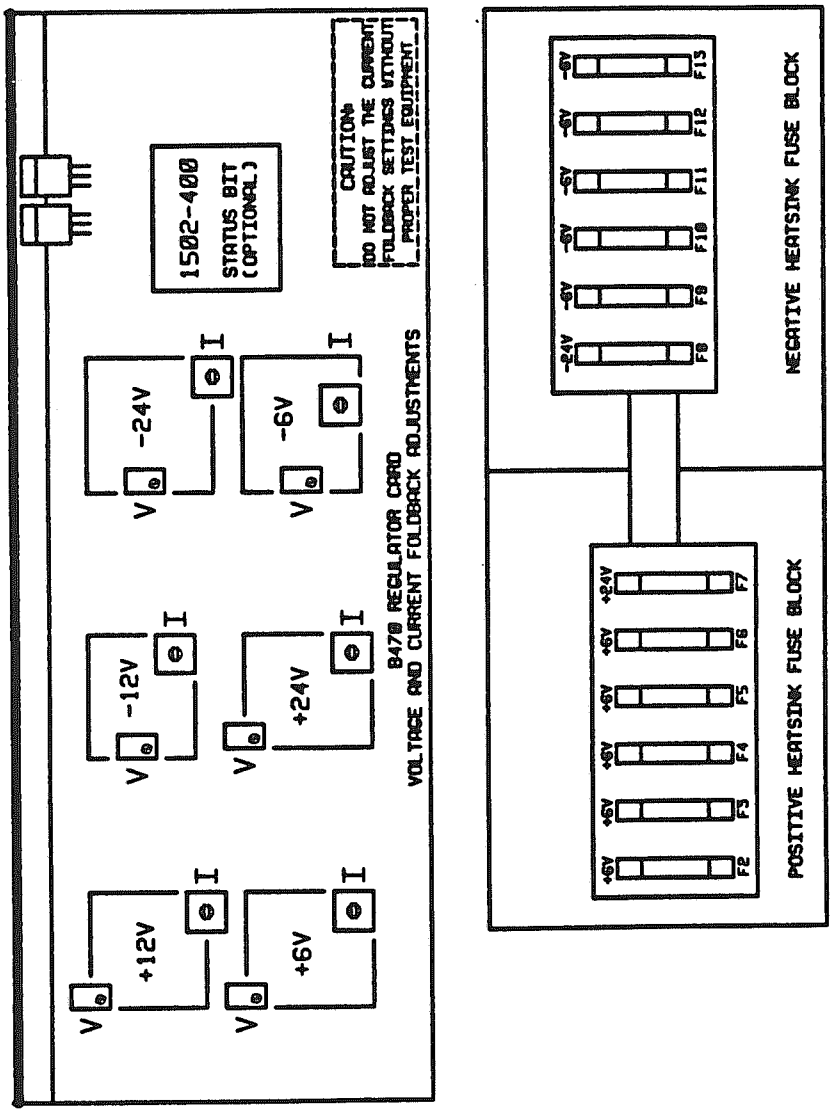


FIGURE 17 - FUSE AND ADJUSTMENT POTENTIOMETER LOCATIONS