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Optima-860
CAMAC Powered Crate
8/26/83

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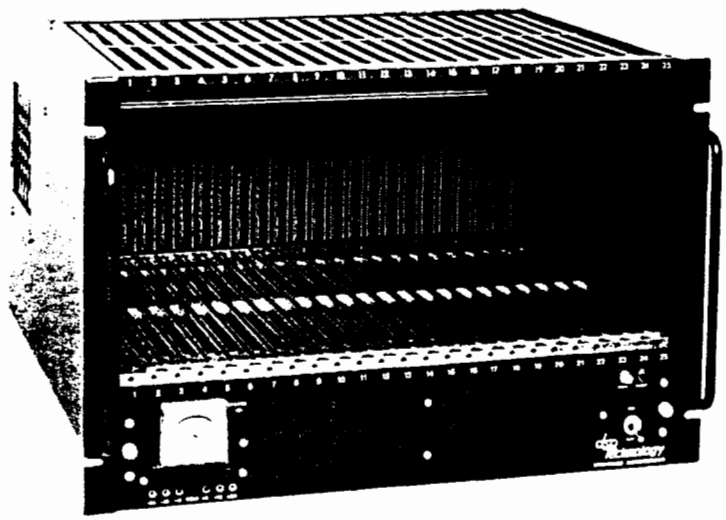
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Optima-860 Manual Revision Record

Warranty

DSP TECHNOLOGY
MODEL OPTIMA 860
Powered CAMAC Crate

The Optima 860 has set the industry standard for powered CAMAC crates. The Optima 860 continues to be the world's largest selling powered CAMAC crate because of its high quality, reliability and performance.



POWER FEATURES

- ±6V 60 Amps shared current (to 50A max on either +6V or -6V)
- ±24V 9 Amps shared current (to 6A max on either +24V or -24V)
- ±12V 3 Amps on either +12V or -12V (current shared with +24V)
- 500 Watts total output power
- New bottom air intake with optional air deflector and labtop mounting stand.
- New LCD front panel meter display and test jacks for output voltages and currents.

GENERAL FEATURES

- New bottom air intake with optional air deflector and labtop mounting stand.
- Reinforced steel crate construction with cast aluminum, non-galling, electroless nickel-plated module guide rails for long and rugged life.
- Modular power supply has demonstrated superior reliability and performance.
- Integral support shelf and quick release mechanism allows no-tool, single-handed power supply removal.
- Slide-out three-fan blower tray for module ventilation features low-noise, venturi-type, ball-bearing fans (over 400 CFM rating) combined with large air intake openings both in front and on the bottom provides unmatched standard cooling capacity for enhanced module performance and maximum life.
- New LCD front panel meter display and test jacks for output voltages and currents. Provides thorough protection on all circuits and outputs:
  - Overvoltage Protection
  - Overcurrent Protection
  - Thermal Protection
- Exceeds all CAMAC (IEEE 583-1982) and ESONE report, EUR 4100e, Type CP-1 power supply requirements for:
  - Regulation
  - Ripple and Noise
  - Long-Term Stability

DESCRIPTION

The Optima 860 CAMAC (IEEE-583, Computer Automated Measurement and Control) powered crate is an assembly made up of three basic components: the crate, the power supply, and the blower drawer. The blower section and power supply can be removed without disturbing or removing the crate from the rack, or dismantling cabling from the modules.

The crate houses the removable blower tray, supports the power supply, and incorporates the Dataway bus. The crate assembly is constructed of reinforced steel and precision-cast aluminum upper and lower guides for long, rugged, trouble-free use. Full-depth, self-centering module insertion guide rails insure smooth insertion, removal, and the proper alignment of CAMAC modules with their Dataway connectors.

Only the highest quality components go into the modular construction of DSP's power supplies. Rigorous quality assurance procedures and standards are followed throughout the manufacturing process including a 48-hour burn-in and final test under load conditions. Additional features include "at-a-glance" fuse visibility and a separate cooling system. Further, the power supply's modular construction assures ease of maintenance and minimum downtime should repair become necessary. All outputs of the power supply are protected from overvoltage and overcurrent. No damage to the power supply results if there is a continuous short circuit. A thermal warning and a thermal cutoff switch protect the power supply whenever the internal temperature exceeds a safe limit.

The slide-out fan tray features three low-vibration, low noise, venturi-type ball-bearing fans rated at a 134 CFM each.

Large air-intake opening (both in front and on the bottom)
High-adhesion dust filters
LCD front meter display and test jacks for voltage and current
Crate power switch

TECHNICAL SPECIFICATIONS

MECHANICAL:

Width:	19.0 in. (rack mount)
Height:	12.3 in.
Depth:	21.6 in. behind front panel (22.4 in. overall)
Weight:	88 lb. (shipping weight: 101 lb.)

ELECTRICAL:

Input: 115V + 10%/ -12% Vac, 50 -60 Hz nominal (standard) (100, 220 Vac optional)

Output, voltage and current: ±6V at 0A to 50A, current shared to 60A
±24V at 0A to 6A, current shared to 9A
±12V at 0A to 3A
current shared with 24V output

Output Power: 500W at 25°C, derated to 450W at 50°C

NOTE:

OUTPUT POWER is the sum of two groups of output voltages multiplied by their respective load currents. The sum of the two groups must not exceed 550W at 25°C and must be derated to 500W at 50°C.

GROUP 1 OUTPUTS: +6V, +24V, and ±12V combined output power must not exceed 400W at 25°C. The ±12V output currents are considered +24V outputs for power calculations.

GROUP 2 OUTPUTS: -6V and -24V combined output power must not exceed 400W at 25°C and 375W at 50°C.

Overvoltage Protection: All output voltages are protected by silicon control rectifiers (SCR) that can be activated by ac line transients, large load-current changes, or internal circuit failure.

Overcurrent Short Circuit Protection: The outputs of the power supply are protected against over-current and short circuits by fold-back type current-limiting circuits which cause the output current to be reduced to a low-safe value.

Thermal Protection: Two thermal switches are mounted on each of the two heat sinks. One thermal switch on each heat sink disconnects the main power; one turns on the overload indicator on the front panel of the blower.

Metering: ±6V and ±24V and current, LCD display
Test Jacks: All output voltages
Line and Load Regulation: ±0.2% for ±6 and ±24V outputs 2.0% for ±12 V output
Ripple and Noise: 15mV peak to peak, 50MHz bandwidth, 50mV on ±12V outputs
Transient Recovery: 50 micro-seconds, typical
Long-term Stability: Less than 0.2% for 24 hr. after 1 hr. warm-up (constant ambient temperature)
Temperature Coefficient: 0.02%/°C maximum

ENVIRONMENTAL:

Operating Temperature: 0°C to 50°C (32°F to 122°F) at less than 90% relative humidity. Options:

1) NIM holes - Jacking screw holes for NIM modules in both upper and lower guide grills.
2) Viking blocks - set of 12 blocks accommodate 36-pin Viking card-edge connectors (required with DSP's QUANTROL E-200 series ADC Modules).
3) NIM holes and Viking blocks
4) 230 Vac, 50 Hz
5) 100 Vac, 50 Hz
6) Six fans
7) RM-800 rack mount power supply
8) Status monitor bit: Optimal monitoring of all outputs and thermal overloads. Provides single relay contact closure.
9) Triangle Air Deflector and Intake Duct - - convenient labtop mounting.

Optima-860
CAMAC Powered Crate
8/26/83

FEATURES:

- Positive-support, quick-disconnect power supply
- Status-bit option
- Maximum air flow with venturi-type ball-bearing fans
- Partitioned fan tray for baffling air flow properly
- At-a-glance fuse visibility
- Easily replaced high-adhesion dust filters
- Separate cooling fan for power supply
- Cast-precision-machined, non-galling guides
- Self-centering module-insertion guides
- Full-depth-grill casting
- Low-vibration, low-noise operation
- Metering for voltage and current
- Overvoltage and current limiting

GENERAL DESCRIPTION:

The Optima-860 CAMAC (IEEE-583, Computer Automated Measurement and Control) powered crate is an assembly made up of three basic units: the crate, the power supply, and the blower drawer. Unless specified otherwise in this manual, physical and electrical specifications of the Optima-860 meet or exceed the requirements of a Type CP-1 power supply and ESONE report EUR 4100e.

The crate assembly is constructed of steel and precision cast-aluminum upper and lower racks for long, trouble-free use. Only the highest quality components are employed throughout for high operational reliability. The power supply's modular construction assures ease of maintenance and minimum downtime.

The precision construction of the crate allows CAMAC modules to be inserted and removed while the power supply is on, thereby minimizing the downtime required to replace defective modules.

All outputs of the power supply are protected from overvoltage and overcurrent. No damage to the power supply results if there is a continuous short-circuit. A thermal warning and a thermal-cutoff switch protect the power supply whenever the internal temperature exceeds a safe limit.

Optional features include 12-V output, 100-Vac or 230-Vac operation, and a voltage monitor that provides a status bit whenever any output voltage deviates from the normal output level or if there is a thermal overload.

TECHNICAL SPECIFICATIONS:

Mechanical:

- Width: 22.4 in.
- Height: 12.3 in.
- Depth: 21.6 in. behind front panel
- Weight: 88 lb

Electrical:

- Input:
  115 V +10%/−12% Vac, 60 Hz, standard
  230 V +10%/−12% Vac, 47 Hz to 64 Hz, optional
  100 V +10%/−12% Vac, 47 Hz to 64 Hz, optional
- Output voltage and current:
  ±6 V at 0 A to 50 A, current shared to 60 A total
  ±24 V at 0 A to 6 A, current shared to 9 A total
  ±12 V at 0 A to 3 A, current shared to 24 V output
- Output power: 550 W at 25°C derated to 500 W at 50°C

NOTE

OUTPUT POWER is the sum of two groups of output voltages multiplied by their respective load currents. The sum of the two groups MUST NOT EXCEED 550 W at 25°C and must be derated to 500 W at 50°C.

Group 1 outputs: +6 V, +24 V, and ±12 V combined output power must not exceed 400 W at 25°C. The ±12 V output currents are considered +24 V outputs for power calculations.

Group 2 outputs: −6 V and −24 V combined output power must not exceed 400 W at 25°C and 375 W at 50°C.

- Line and load regulation:
  ±0.2% for ±6-V and ±24-V outputs
  2.0% for ±12-V output
- Ripple and noise: 10 mV peak to peak, 50-MHz bandwidth
- Transient recovery: 50 microseconds, typical
- Long-term stability: less than 0.2% for 24 hr after 1 hr warmup (constant ambient temperature)
- Temperature coefficient: 0.02%/°C, maximum
- Remote sensing: ±6-V, ±24-V outputs
- Circuit protection: fuses on pass transistors and on main ac power lines
- Overload protection: overload and overcurrent protection on all outputs
- Thermal protection: both heat sinks sensed for overtemperature; thermal overload indicator on front panel of blower; overtemperature sensor on heat sinks to cut off power
- Metering: ±6 V and ±24 V and current
- Test jacks: all output voltages

- Status-bit monitor: optional monitoring of all outputs and thermal overload overtemperature; and provides relay contact closure when limits are exceeded
- Blower air flow: over 300 ft^3/min with unloaded crate

Environmental:

- Operating temperature: 0°C to 50°C (32°F to 122°F) at less than 90% relative humidity

OPERATING INSTRUCTIONS:

Installation:

Before the crate is mounted in the rack, the power supply must first be removed. After the crate is mounted, the power supply can be reinstalled as shown in drawing No. 106816, Power Supply Removal Diagram. The ac-line cord must be connected to 115 Vac, 60 Hz.

Turn-On:

The power supply must not be turned on until Dataway PG-26 has been connected to the power supply as shown in drawing No. 106816. Although no damage results from turning on the power prematurely, one or more regulators can go into overvoltage.

When the power is turned on, the amber light on the front panel of the blower comes on, and the front-panel meter indicates the proper output voltages. If any output voltage reads low, it is necessary to check the meter for current. If there is current flow, the related output is probably in overvoltage. If so, the power must be shut off for about 10 seconds. If the condition persists when the power is turned on again, the fuse(s) should be checked for that output voltage. Fuses, which are located under the cover at the rear of the power supply, are visible through a plastic window (see drawing No. 106812). A blown fuse, which usually indicates an internal circuit failure, should not be replaced without first checking pass transistors.

The maximum power is 550 W. Exceeding this maximum load can cause damage to the power supply.

NOTE

OUTPUT POWER is the sum of two groups of output voltages multiplied by their respective load currents. The sum of the two groups MUST NOT EXCEED 550 W at 25°C and must be derated to 500 W at 50°C.

Group 1 outputs: +6 V, +24 V, and ±12 V combined output power must not exceed 400 W at 25°C. The ±12 V output currents are considered +24 V outputs for power calculations.

Group 2 outputs: −6 V and −24 V combined output power must not exceed 400 W at 25°C and 375 W at 50°C.

Overvoltage:

All output voltages are protected by overvoltage circuits that can be activated by ac line transients, large load-current changes, or internal circuit failure. When an overvoltage circuit is activated, a silicon control rectifier (SCR) is turned on, placing a short circuit across the load. The overcurrent protection circuits limit the current to a safe value. The ac power must be turned off for approximately 10 seconds to deactivate the overvoltage circuit.

Overcurrent Short Circuit:

The outputs of the power supply are protected against overcurrent and short circuits by fold-back-type current-limiting circuits. A load beyond the current trip point causes the output current to be reduced to a low, safe value.

The current trip level for each output is set approximately 10% over the maximum current. On the ±6-V outputs, the current trip level must NEVER be set higher than 10% over the maximum current; otherwise, the power supply is damaged.

Voltage Adjustment:

Voltage adjustment potentiometers for the ±6-V and ±24-V outputs are located at the rear of the power supply (see drawing No. 106812, Major Feature Callout). Each potentiometer allows a minimum adjustment of 2%. The output voltage should be measured at the Dataway when making voltage adjustments.

Blower Front-Panel Test Jacks:

Adjacent to the meter on the front panel of the blower are test jacks for measuring the approximate voltage of the Dataway. The test jacks must not be used to measure the power supply regulation or ripple.

Thermal Overload:

Four thermal switches incorporated in the design of the power supply protect it from overloads. Two of these thermal switches are mounted on each of the two heat sinks.

If either heat sink overheats, one of its thermal switches disconnects the main power. One thermal switch on each heat sink turns on the thermal overload indicator on the front panel of the blower if excessive power is being drawn from the heat sink or if the heatsink overheats from inadequate air flow or too high an ambient temperature. The other thermal switch disconnects the main power if a maximum safe heat sink is reached.

CIRCUIT DESCRIPTION:

General:

The different sections of the Optima 860 are shown in drawing No. 106808, PCS 800 Series Block Diagram.

The blower section contains the voltage and current monitoring circuitry and meter, the overtemperature indicator, the output test jacks, the ac power on/off switch, and the status-bit option. The crate houses the blower and contains the Dataway. The power supply contains all the circuitry and components for the regulated output voltages.

Drawing No. 106812 shows the location of all controls, indicators, and mechanical features.

Blower Section:

The blower section is described in drawing No. 106810, Simplifed Blower Block Diagram; drawing No. SD280100, Schematic Blower Chassis; drawing No. 288500, Assembly Meter Board; and drawing No. SD288500, Schematic Meter PCB. The blower schematic drawing shows the interconnection between the power supply and the blower and blower fans. It also shows the interconnections to the meter printed-circuit board.

The meter printed-circuit board contains the voltage-input metering switch, associated voltage-drop resistors, and calibration potentiometers R2, R3, R4, R5, and R6. R2 is set for a meter indication of 6 V when the +6-V pushbutton has been selected. Once this setting is properly made, the remaining voltages are calibrated. R3, R4, R5, and R6 are the current calibration potentiometer for ±6 and ±24 currents. These are adjusted to make the meter read the same as the load current at full load.

The status-bit option is shown on drawing No. 106565, Schematic Status Bit Option; and drawing No. 106567, Assembly PCB Status Bit Option. All voltages (±6, ±12, and ±24) are added in a precision resistor network, and the results are compared to precision voltage references. Two differential comparators monitor plus and minus output voltages. The output of the comparator drives the output relay through a relay driver circuit called Q1-Q2. Relay K1 is energized when a fault is present. R11 and R16 provide plus and minus voltage sensitivities, respectively, and are factory set to cause the status bit change when any input voltage changes more than ±1.5% from the nominal.

Power Supply:

Drawing No. BD106960, Block Diagram PS200/800 Power Supply, shows the basic elements of the power supply and their relation to the crate or the blower. The two heat sinks and associated regulator printed-circuit board are subassemblies that can be removed easily.

Drawing No. SD106961, Schematic Chassis Wiring PS200/800 Power Supply, shows the interconnections for the blower, the crate, the power supply transformer, the rectifiers, the filters with associated fusing, and the fan circuitry. The drawing also shows connections to the removable heat sinks assemblies.

The outputs of the transformer T1 feed full-wave rectifiers with capacitor filtering. Drawing No. MD106947, Major Component Diagram PS200/800, shows the location of all chassis components and subassemblies.

Heat-Sink Assemblies:

There are two heat-sink assemblies: the positive heat-sink assembly containing all the circuitry for +6-V, +24-V, and ±12-V outputs; and the negative heat-sink assembly containing all the circuitry for −6-V and −24-V outputs. Both heatsinks, which plug into the chassis wiring, are readily accessible for maintenance. The negative heat-sink assembly can be extended easily out of the chassis to allow for hot testing on both sides of the assembly.

Positive Heat-Sink Assembly:

Drawing No. 106962, Assembly Positive Heat Sink Power Supply PS200/800, shows the location of all the compenents in the assembly. Drawing No. SD106963, Schematic Regulator, shows the entire circuitry of the heat-sink assembly. The heat-sink assembly contains the pass-transistor circuitry, the driver, the regulator, and the overvoltage and overcurrent circuitry for the +6-V, +24-V, and ±12-V outputs.

Each regulator circuit utilizes a precision voltage regulator integrated circuit (IC) 723, which includes a stable voltage reference and overcurrent circuitry. A voltage divider across the output of each supply feeds the precision regulator IC. The output of the regulator IC is connected to a series of driver transistors, which in turn drive the series pass transistor (no drive transistor is required in the ±12-V outputs). The precision regulator for the +6-V output derives its supply voltage from the +24 V in order to satisfy the minimum 12-V input-to-output of the regulator IC.

Each pass transistor and power driver is individually fused. These fuses, which are visible through the windows in the rear cover, are located along the outer edge of the regulator printed-circuit board for easy access and removal. The fuses are used to protect the power supply in case of a pass transistor or circuit failure. If a fuse blows, a new fuse must not be inserted until after the pass transistor has been checked. Failure to do so can lead to additional circuit failure.

The positive output overcurrent circuits utilize the precision regulator overcurrent capability. The load current is sensed by series low-value resistors whose output voltage turns on the overcurrent circuit of the regulator IC when the maximum load current is reached. Current foldback limiting is achieved in the positive regulators by R11 and R13, providing a positive feedback current to pin 2 of the regulator IC. The current limit trip point is present at the factory and should not need adjusting.

The current-limiting circuitry of the −12-V output incorporates a separate transistor Q15 that senses the voltage across the current sense resistor. When turned on because of an overcurrent, the output of Q15 shorts out the base of another pass transistor Q14. Positive feedback is provided through R75 to the current-limit sensing transistor Q15.

Both the +6-V and the +24-V outputs contain overvoltage protection sensors, which turn on the SCR crowbars if an overvoltage occurs. The +6-V and the +24-V outputs are set to crowbar approximately 7 V and 26 V, respectively. The ±12-V outputs utilize the overvoltage circuits of the ±24-V outputs by coupling through the voltage-dropping zener diodes CR1 and CR3. Once an SCR has been turned on, the power supply must be off for approximately 10 seconds to reset the SCR.

Both the +6-V and the +24-V output driver circuits incorporate frequency-shaping networks R67-C18 and R68-C19 to achieve a high degree of stability.

Negative Heat-Sink Assembly:

The negative heat-sink assembly is similar to the positive heat-sink assembly and also plugs into the chassis wiring (see drawing No. 106965, Assembly Neg Heat Sink, and drawing No. SD106966, Schematic Regulator −6 and −24 Vdc). The heat-sink assembly contains the pass transistors, the drivers, the regulators, and the overvoltage and overcurrent circuitry for the −6-V and −24-V outputs.

Because of the negative output, the precision voltage regulator U1 and U3 are operated in the inverted mode. Except for the current trip circuitry, the negative and the positive circuits are essentially the same. Whereas the positive circuits utilize the internal overcurrent circuit of the regulator IC, the negative circuits incorporate external current-limiting transistors Q8 and Q13. When the voltage across the sense resistor R11 or R32 and R33 exceeds the bias required to turn on Q8 or Q13, the base-to-emitter voltage of the drive transistor Q7 and Q12 is reduced, causing the output voltage to fall almost to zero volts. Each current trip circuit has current foldback limiting by biasing Q8 and Q13 to a more negative source.

The current-limiting trip point is preset at the factory and should not require field adjustment.

CAMAC Crate:

The crate houses the removable blower tray, supports the power supply, and incorporates the type of Dataway bus developed by the University of California Lawrence Berkeley Laboratory. Precision cast-and-machined guide rails insure the proper alignment of CAMAC modules with their Dataway connectors.

Drawing No. 106697, Dataway Wiring, shows the power buses and power-and-sense wiring to and from the Dataway.

SERVICE AND MAINTENANCE:

The modular design of the power supply (see drawing No. MD106947) makes manufacturing, repair, and maintenance easy to do.

If the user does not have personnel qualified to handle repairs, the defective assembly can be removed and returned to the factory. A replacement assembly usually can be shipped within 24 hr.

Heat-Sink Assemblies:

The two heat-sinks are plug-in assemblies that can be easily removed for replacement or repair (see regulator schematics drawing No. SD106963 or drawing No. SD106966).

The positive heat-sink assembly is adjacent to the top of the power supply, and all of its components are easily accessible (see drawing No. MD106947). All IC's and low-powered transistors are mounted in sockets. If the heat sink has to be removed, the cables are first disconnected from the printed-circuit board and the thermal switches, then four mounting screws holding the heat sink to the base plate can be removed. Two guide pins align the heat-sink hole to the mounting-plate holes, making it easy to reinstall the positive heat sink.

The negative heat sink is located below the positive heat sink. Two guide pins extend from the mounting plate through the heat sink, allowing the negative heat sink to be pulled out for live troubleshooting. In the extended position. all components are readily accessible. As with the positive heat sink, all integrated circuits and low-powered transistors are mounted on sockets. A second set of support-pin holes, which protrude only part way through the fins of the negative heat sink, provide a solid, fixed, and extended support for the heat sink. By sliding the heat sink off the mounting guide holes and over to the troubleshooting holes, the heat sink is held in place in the extended position.

To extend or remove the negative heat sink, the four mounting screws holding the heat sink to the base plate are removed first.

NOTE

Do not test the negative heat sink under full power except for brief moments, because the heat sink is not being properly cooled in the extended position.

Fans and Filters:

The blower fans are the lifetime-lubricated type. The filters should be inspected periodically and cleaned by immersion in soap and warm water. A filter can be removed easily pulling it out from the panel; it is replaced by tucking it back in.

Fuses:

Fuses other than the two main line fuses protect the power supply. These fuses are in series with each pass transistor and normally do not blow unless a pass transistor or a driver transistor has shorted.

NOTE

These fuses must not be replaced without first checking for transistor shorts. To do so can result in circuitry damage.

Test Points:

Test jacks for all output voltages are provided on the front panel. Because the test jacks are connected to regulator sense leads and through 2.2 kilohm resistors, the jacks must not be used to test power-supply regulation or ripple and noise. These measurements must be made where the sense leads are terminated on the Dataway.

Voltage Adjustment:

Voltage-adjustment potentiometers are provided for each regulator on the regulator printed-circuit board. The ±6-V and ±24-V adjustments are accessible through the rear of the power supply.

Overcurrent:

The overcurrent trip points are factory set at 5% to 10% above the rated output current. The adjustment potentiometers are R33 and R66 on the positive heat sink and R12 and R34 on the negative heat sink. The ±6-V output current fold-back trip points are set by adjusting the potentiometer until the output voltage starts to drop off at 5% to 10% above the maximum load current. The ±24-V output current adjustment potentiometers are adjusted for a 0.5-A to 1.0-A current with the output shorted.

REPLACEABLE PARTS:

NOTE

Readily available standard componets have been used with this unit whenever possible. Special components or subassemblies, however, can be obtained directly from Standard Engineering.

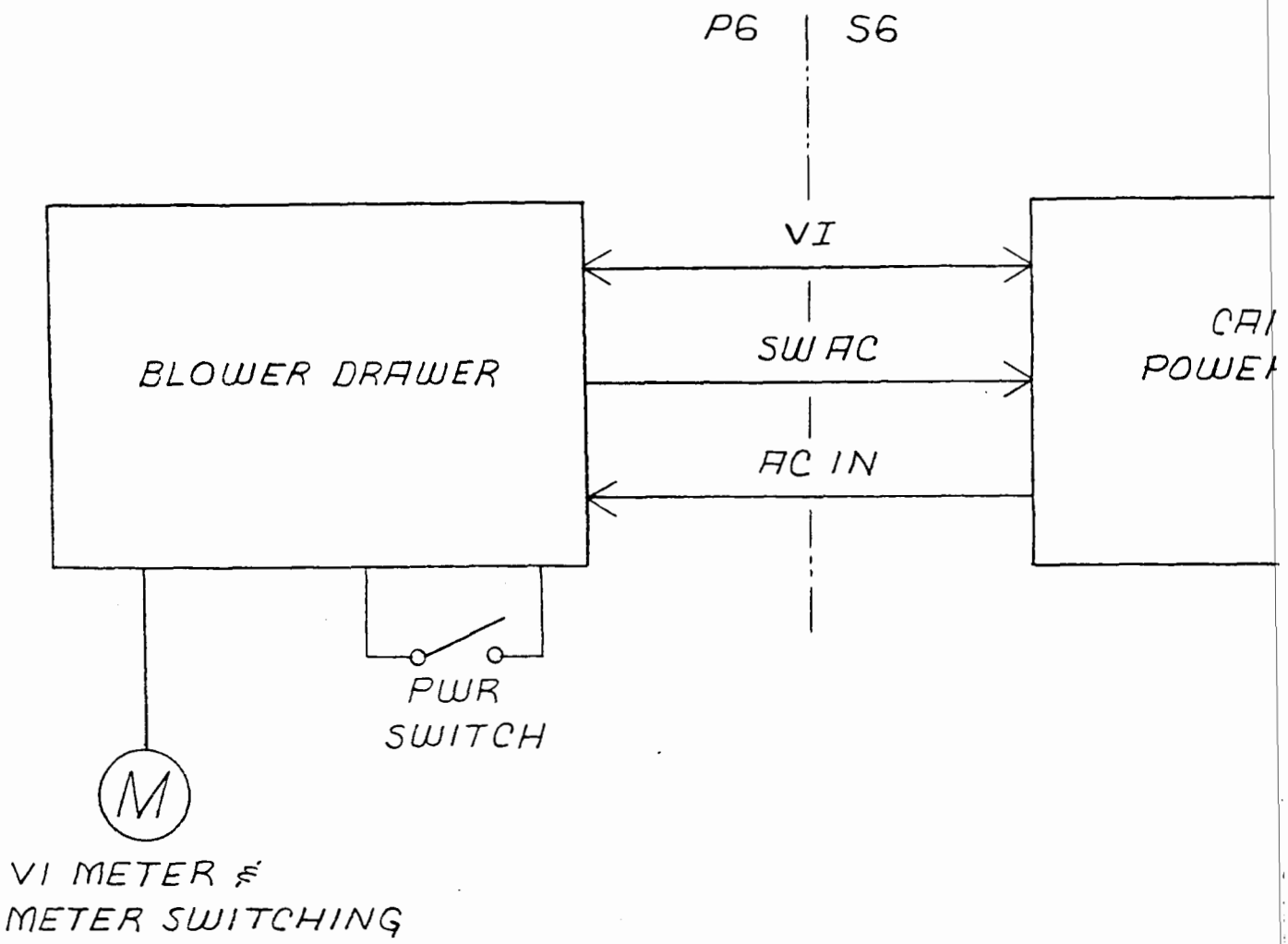
When ordering parts, the information below should always be included:

- Standard Engineering part number
- Description of part, including circuit reference
- Model and serial number of unit
- Complete description, function, and location of part (if part is not listed)

Assembly No.	Assembly Name
106962	Positive Heat Sink Assembly
106965	Negative Heat Sink Assembly
288500	PCB Assembly, Meter
106567	Status Monitor Assembly Option

Optima-860 Manual Revision Record:

Date:	Description:	SEC Reference:
11/30/81	Supersedes manual dated 9/24/81	--
4/13/82	Supersedes manual dated 3/8/82	--
6/3/82	Added warning for output power	--
9/17/82	Updated drawings	--
8/19/83	Updated drawings and text	ECO#427 affecting crates with serial No. 5000 and above



SYM	DESCRIPTION	DATE	APPROVAL
B	SEE DCO 009	6-1-82	

REVISIONS

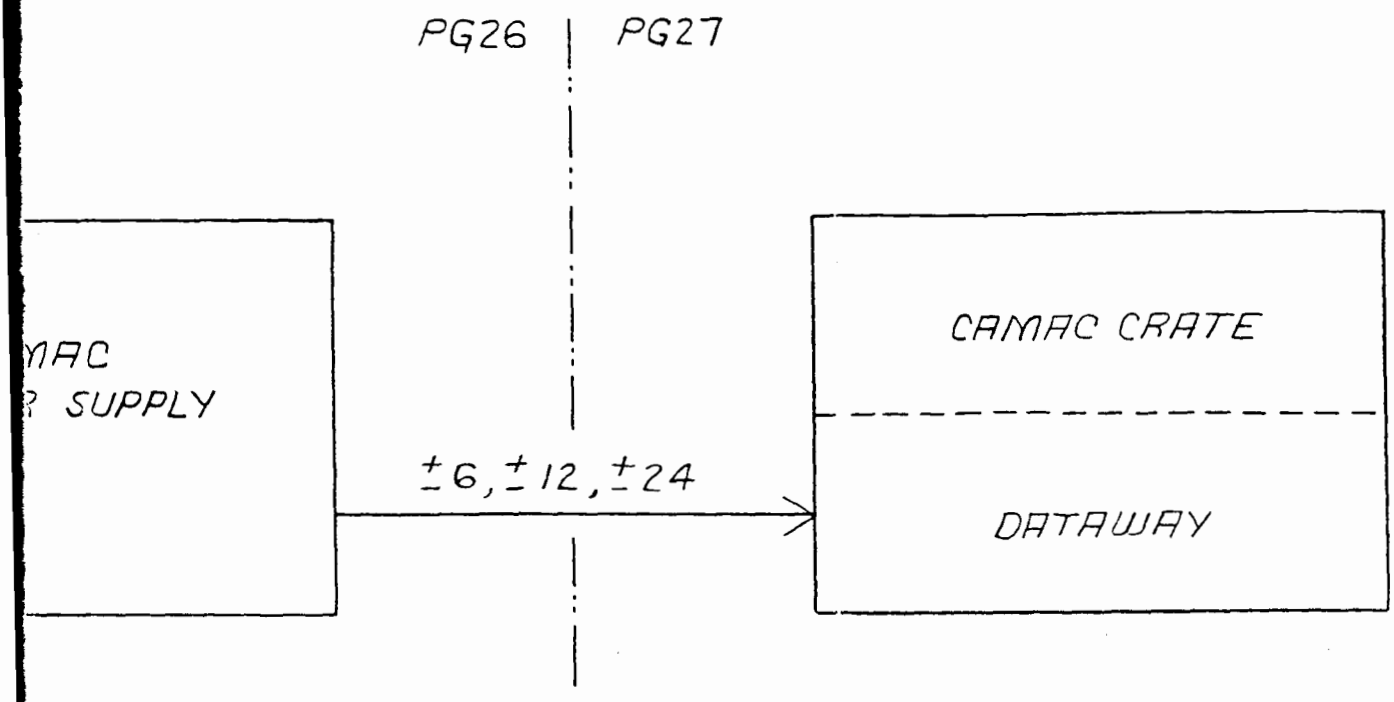
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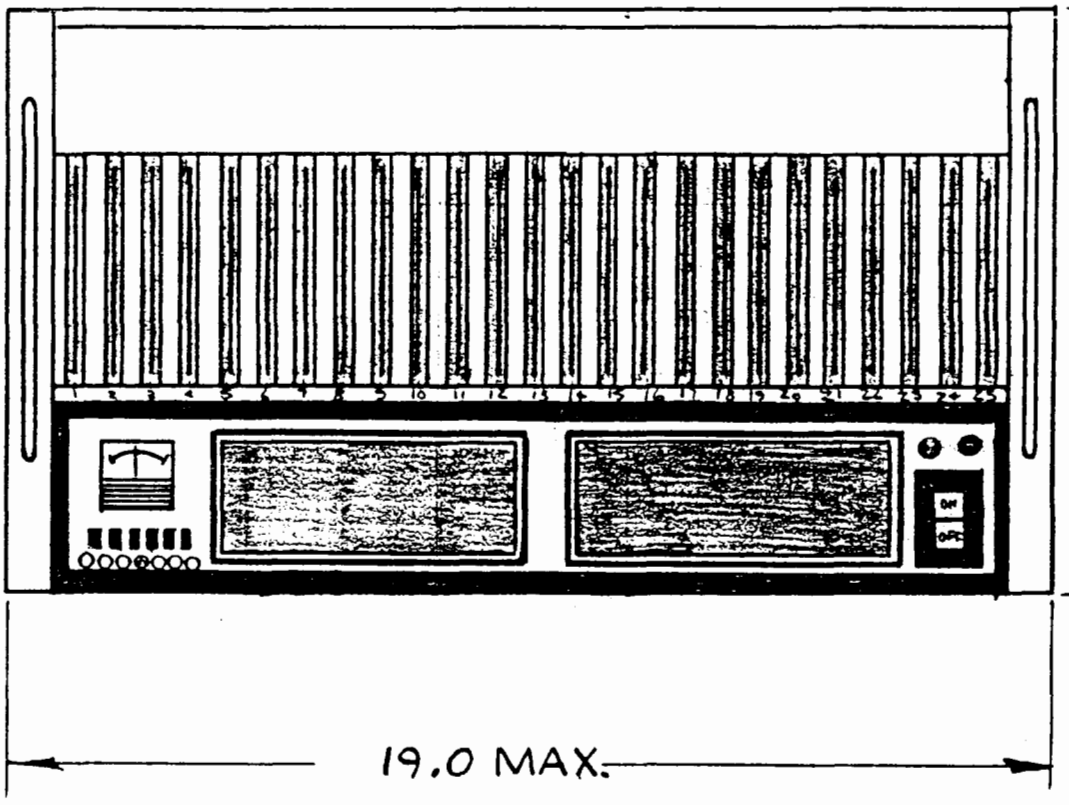
XX±. ~

SCALE:

NEXT
ASS'Y.

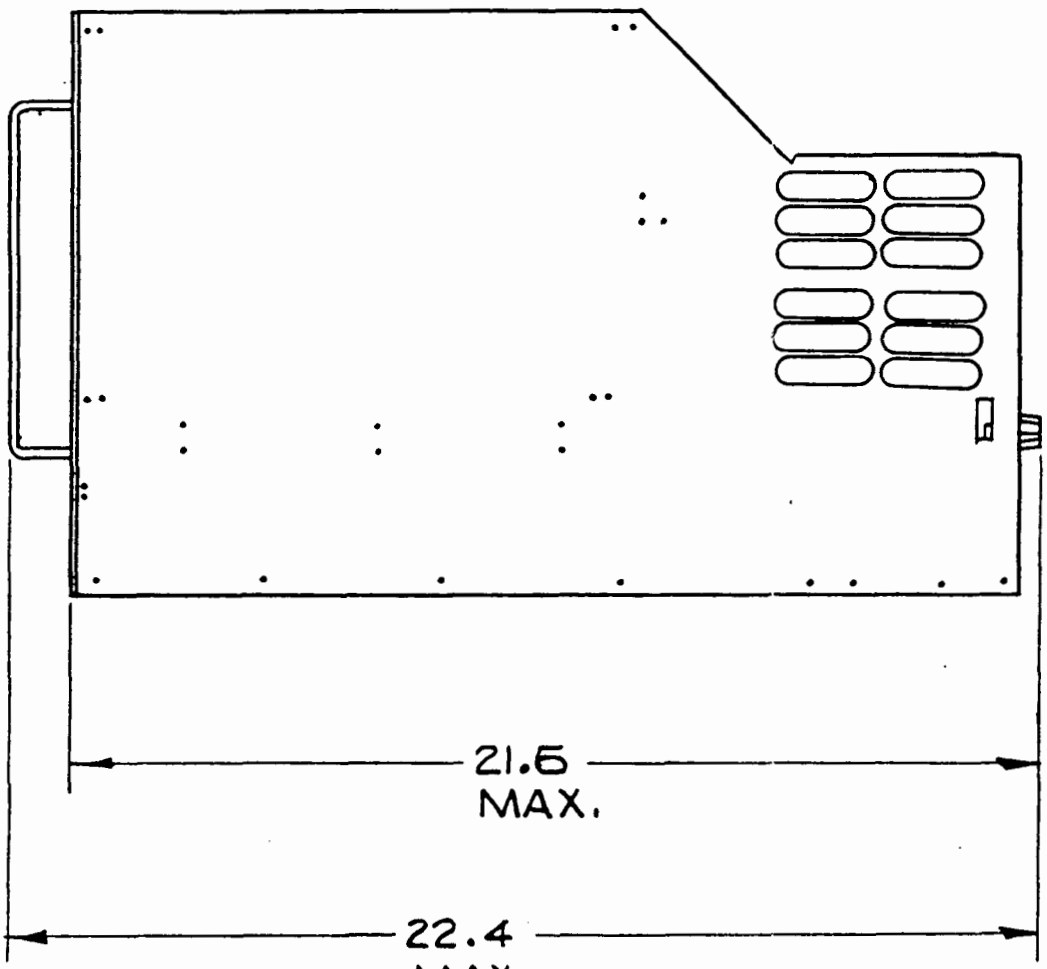


~	TITLE PCS BLOCK DIAGRAM			dsp TECHNOLOGY INC.		
SIONAL TOLERANCES S OTHERWISE NOTED						
CIMAL	ANG.	DESIGN		DATE		SIZE: B
XXX±. ~	± ~	DRAWN	c.c. hannett	DATE	6-1-82	DRAWING NUMBER: 106808
~ NO. REQ'D.		CHECK		DATE		ISSUE: B
~		APPRO		DATE		SHEET / OF /



NOTE : ALL DIMENSIONS ARE IN INCHES.

C	ECO # 518
B	ECO 502
SYM	DESCRIPTION
	REVISIONS



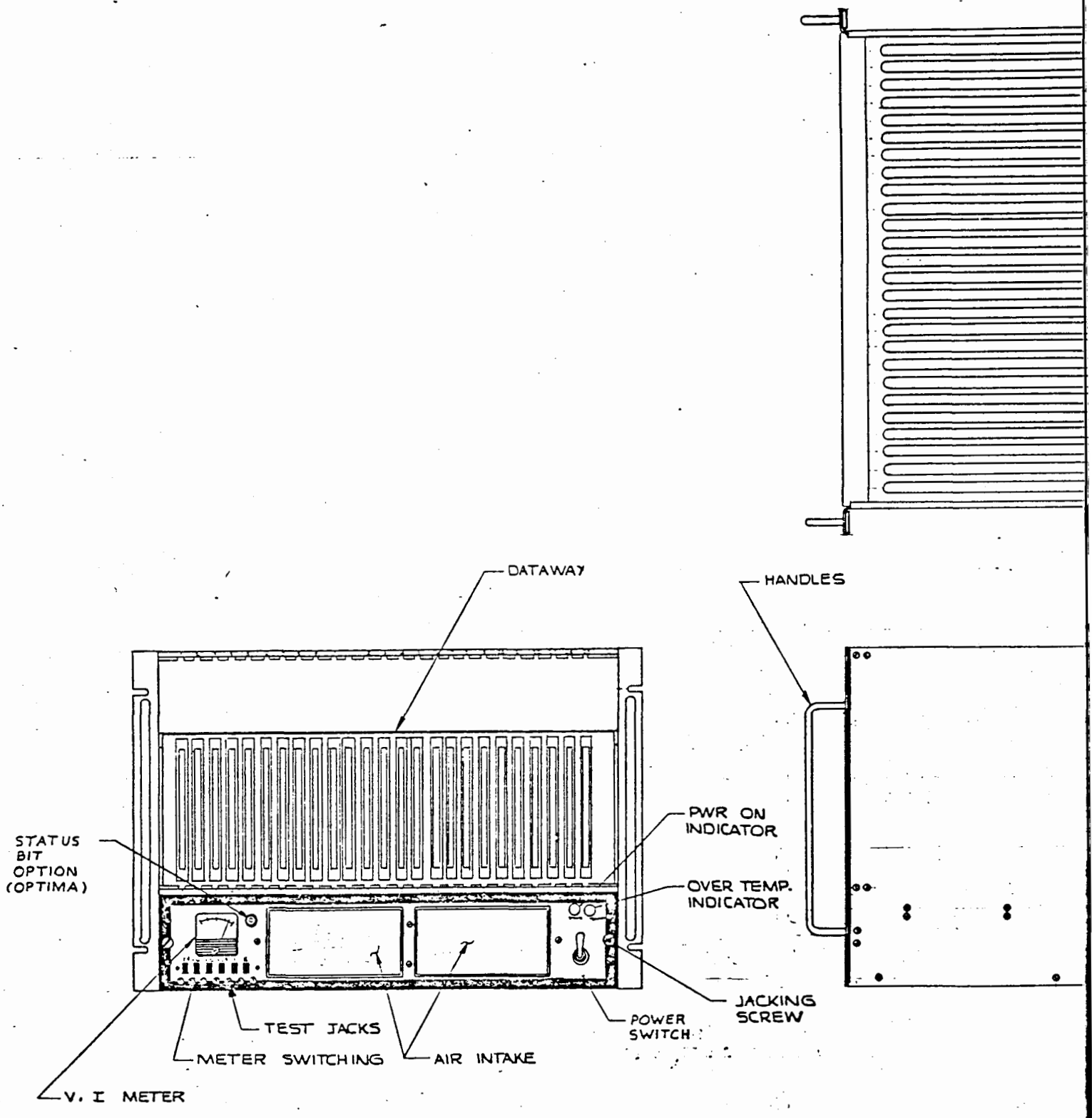
4-6-84	
2/13/84	
DATE	APPROVAL

TITLE: OUT LINE DIMENSIONS

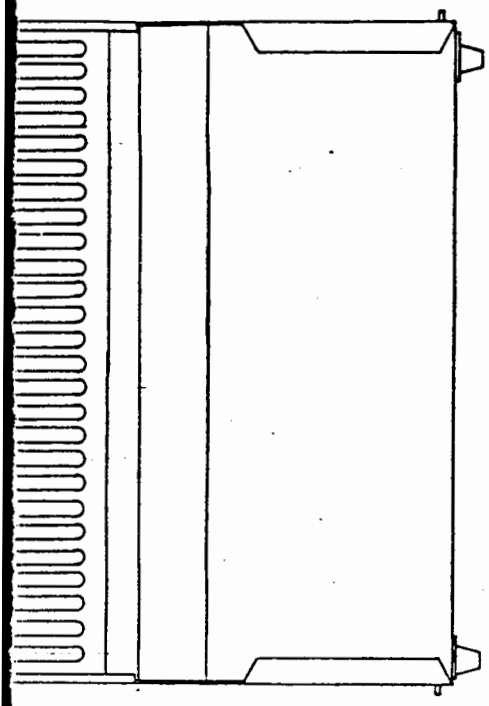
CAMAC CRATE

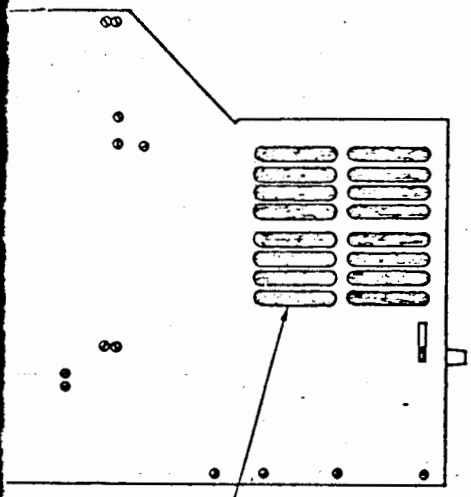
dsp TECHNOLOGY INC.

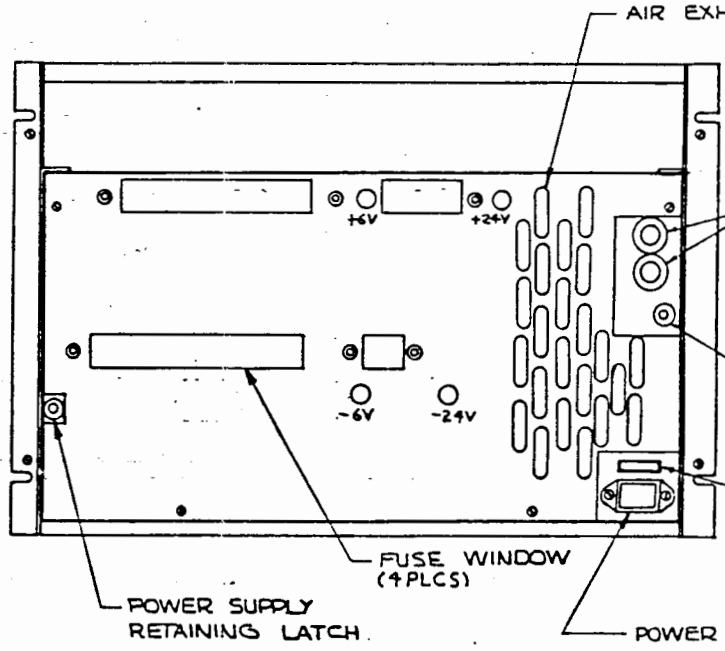
DESIGN		DATE	11-5-79	SIZE	DRAWING NUMBER	ISSUE
DRAWN	FRANK	DATE	9-14-79	B	106809	C
CHECK		DATE	11-5-79			
APPRO		DATE	11/5/79	SHEET 1 OF 1		


DATAWAY
HANDLES
STATUS BIT OPTION (OPTIMA)
PWR ON INDICATOR
OVER TEMP. INDICATOR
JACKING SCREW
POWER SWITCH
TEST JACKS
METER SWITCHING
AIR INTAKE
V. I METER

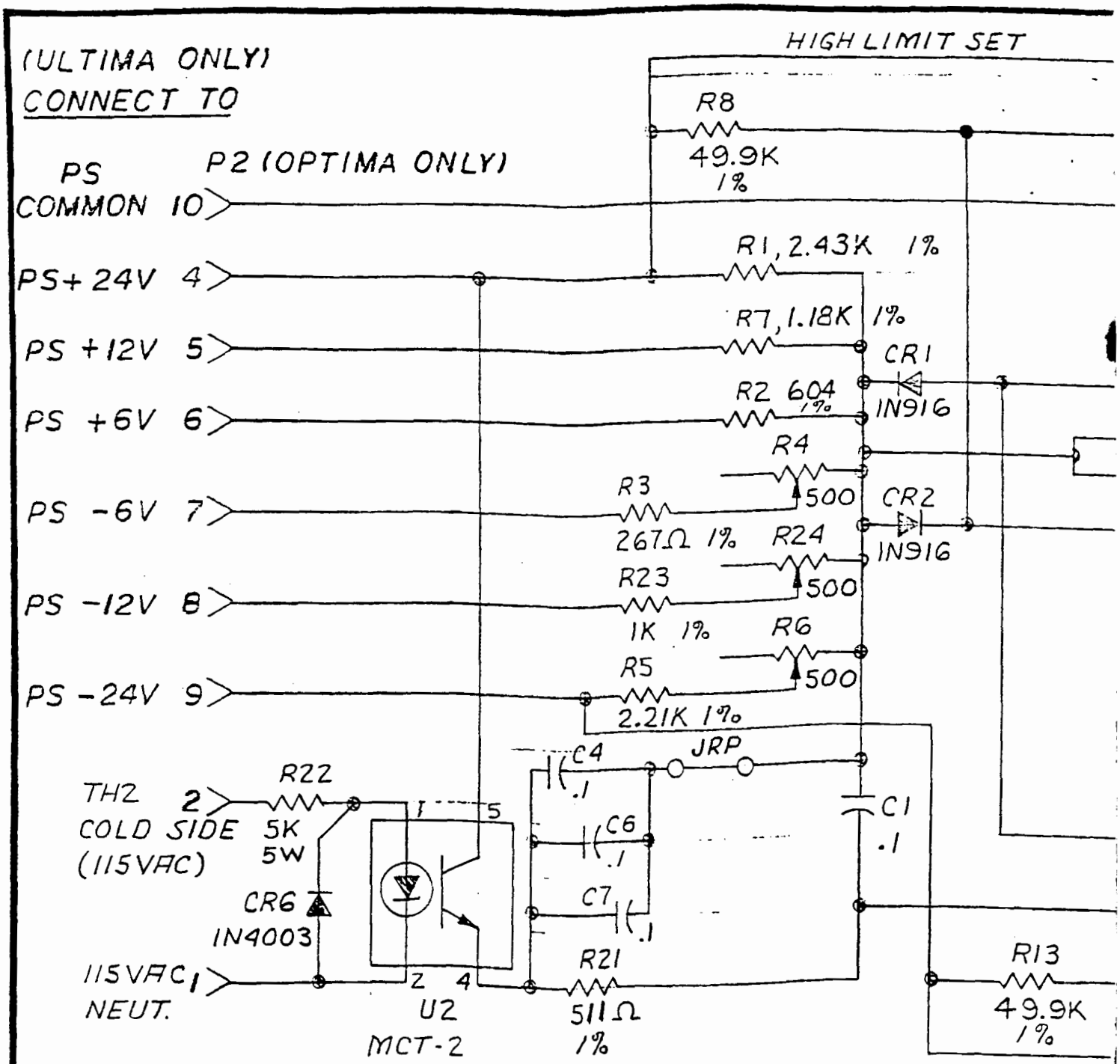
REVISIONS				
LTR	DESCRIPTION	BY	APPROVAL	DATE
1	PROTO RELEASE			
A	PRODUCTION RELEASE			11-5-79
A1	ECO 427			8-15-80
B	ECO # 518			4-6-81







TITLE MAJOR FEATURE CALL-OUT CAMAC PCS				dsp TECHNOLOGY INC.			
DESIGN		DATE	11-5-79	SIZE	DRAWING NUMBER		ISSUE
DRAWN	FRANK	DATE	9-20-79	D	106812		B
CHECK		DATE	11-5-79				
APPRO		DATE	11-5-79	SHEET 1 OF 1			



SYM	DESCRIPTION	DATE	APPROVAL
C6	SEE ECO # 663	3-20-83	
C5	R1 WAS 2.43Ω IS 2.43K	8-25-83	
C4	MANUAL UPDATE, ECO 427	8-15-83	
C3	SEE ECN #1133	1-29-83	
C2	U1 WAS MCT11C, U2 WAS MCT26	3-22-82	ech
C1	C5 VALUE WAS 120, 35V	3-15-82	ech
C	REDRAWN PER ECO 196	11-2-81	

REVISIONS

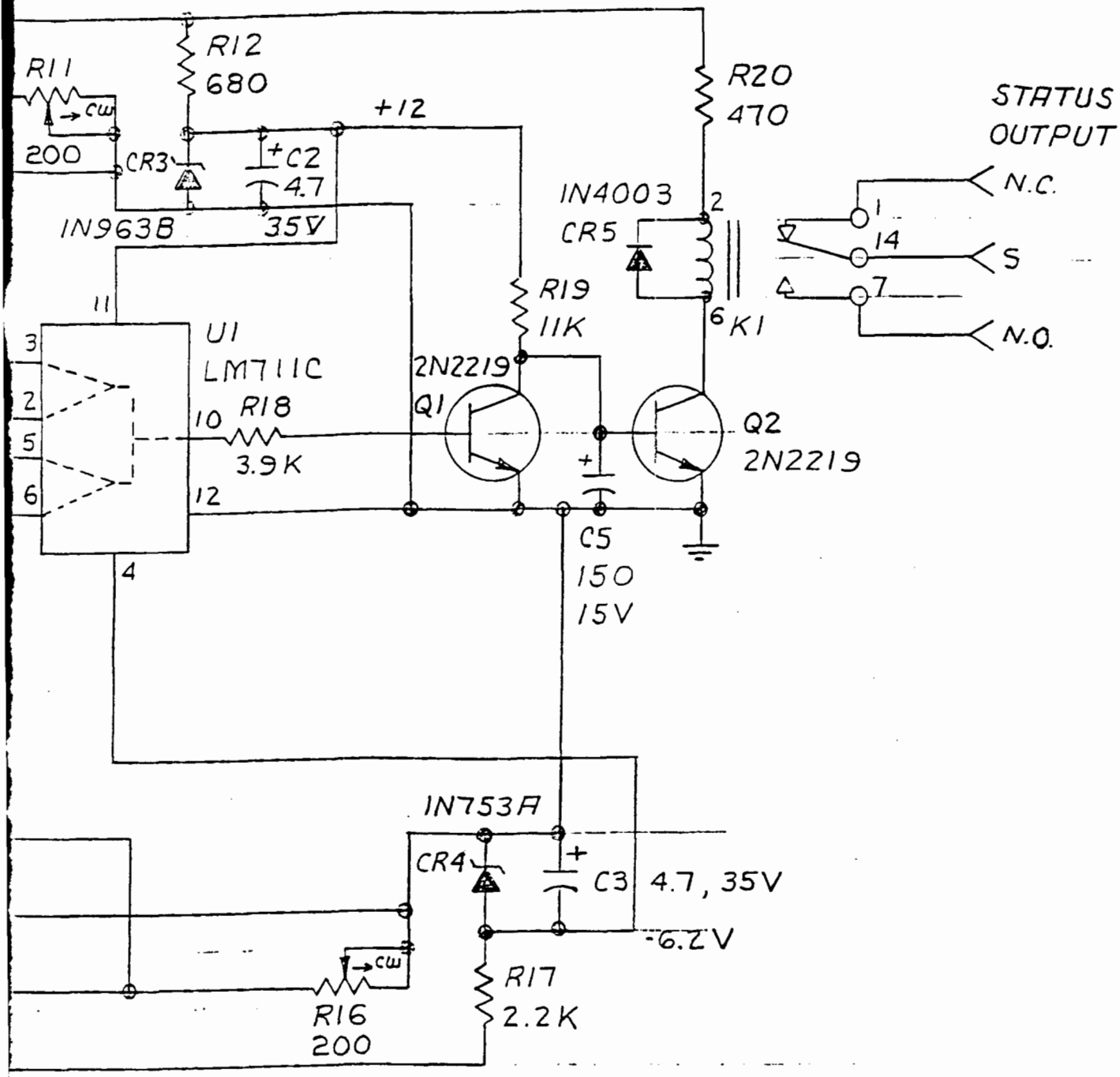
FINISH

DIMEN UNLES D

XX±.

SCALE:

NEXT ASS'Y.



W LIMIT SET

~	TITLE SCHEMATIC, STATUS BIT OPTION			dsp Technology Inc	
SIONAL TOLERANCES S OTHERWISE NOTED					
ECIMAL · ANG.	DESIGN		DATE	SIZE	DRAWING NUMBER / ISSUE
XXX±. ~ ± ~	DRAWN e.c.hannett		DATE 11-2-81	B	106565 C6
~ NO. REQ'D. ~	CHECK		DATE		
106717	APPRO		DATE	SHEET 1 OF 1	

NOTES

1. DO NOT MOUNT SCREWS (37), SPACERS (38) AND WASHERS (40) AT THIS TIME. KEEP WITH KIT FOR SUBSEQUENT ASSEMBLY.

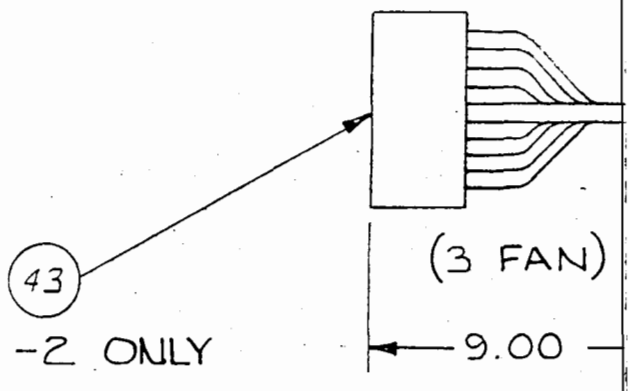
20 AWG BUS WIRE SLEEVED

CONN PIN	COLOR	P.C.B
1	BRN	AC LOW
2	RED	HI TEMP
3		
4	YEL	+24
5	GRN	+12
6	BLU	+6
7	VIO	-6
8	GRY	-12
9	WHT	-24
10	BLK	COM

-2 VERSION

LEMO

LUG	BLK	NC	13"
CENTER	RED	S	13"



SYM	DESCRIPTION	DATE	APPROVAL
C5	SEE ECO# 1001	6/1/87	m.c.
C4	SEE ECO# 590	7/15/85	
C4	SEE ECO# 575	3/11/85	
C3	SEE ECN 1133	1-29-83	
C2	ADD -2 VERSION - ITEM 43	6-9-82	ech
C1	C5 VALUE WAS 120, 35V	3-15-82	ech
C	PRODUCTION RELEASE ECO196	11-6-81	

REVISIONS

MATERIAL
SEE PL106567

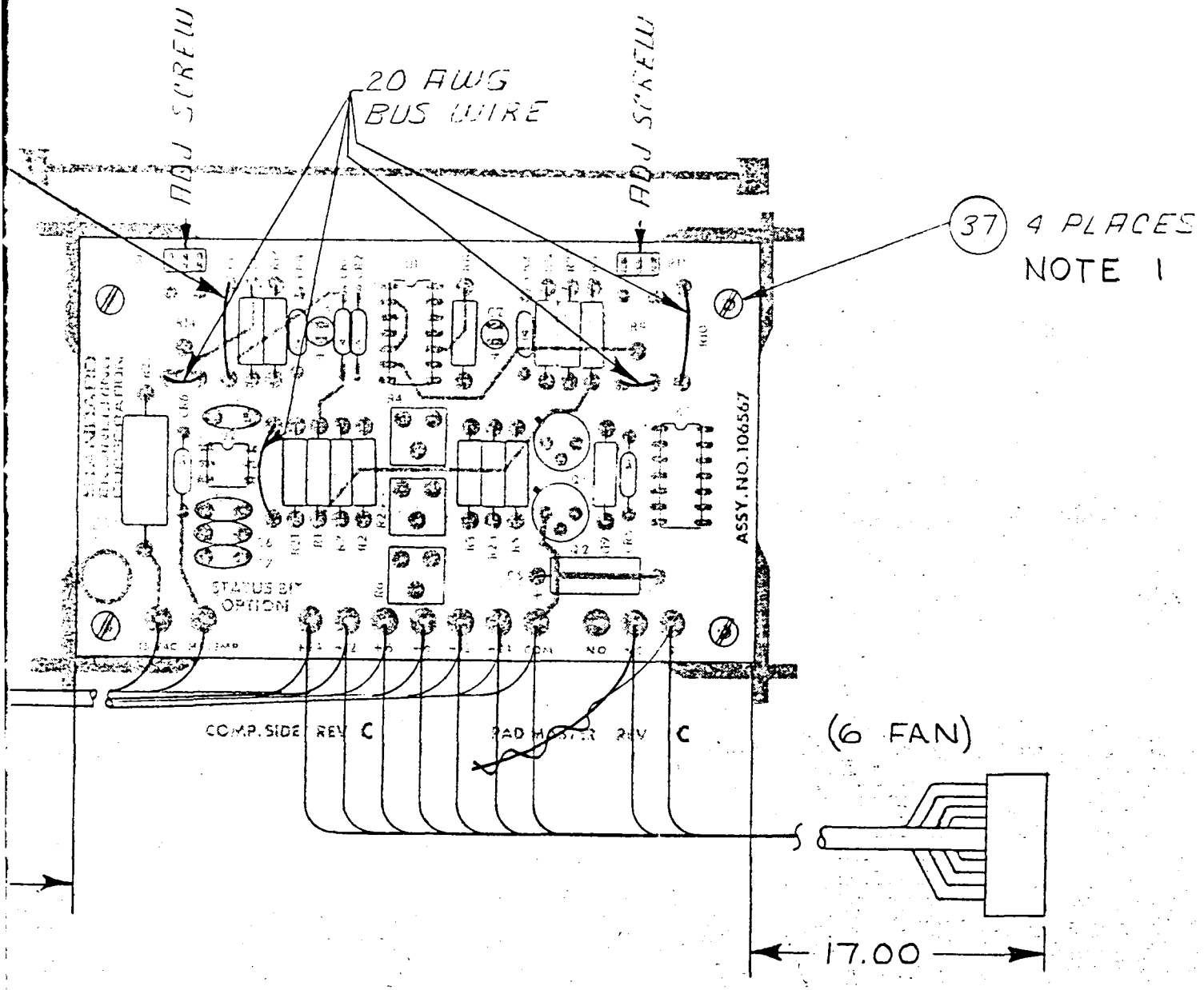
FINISH

DIM UNI

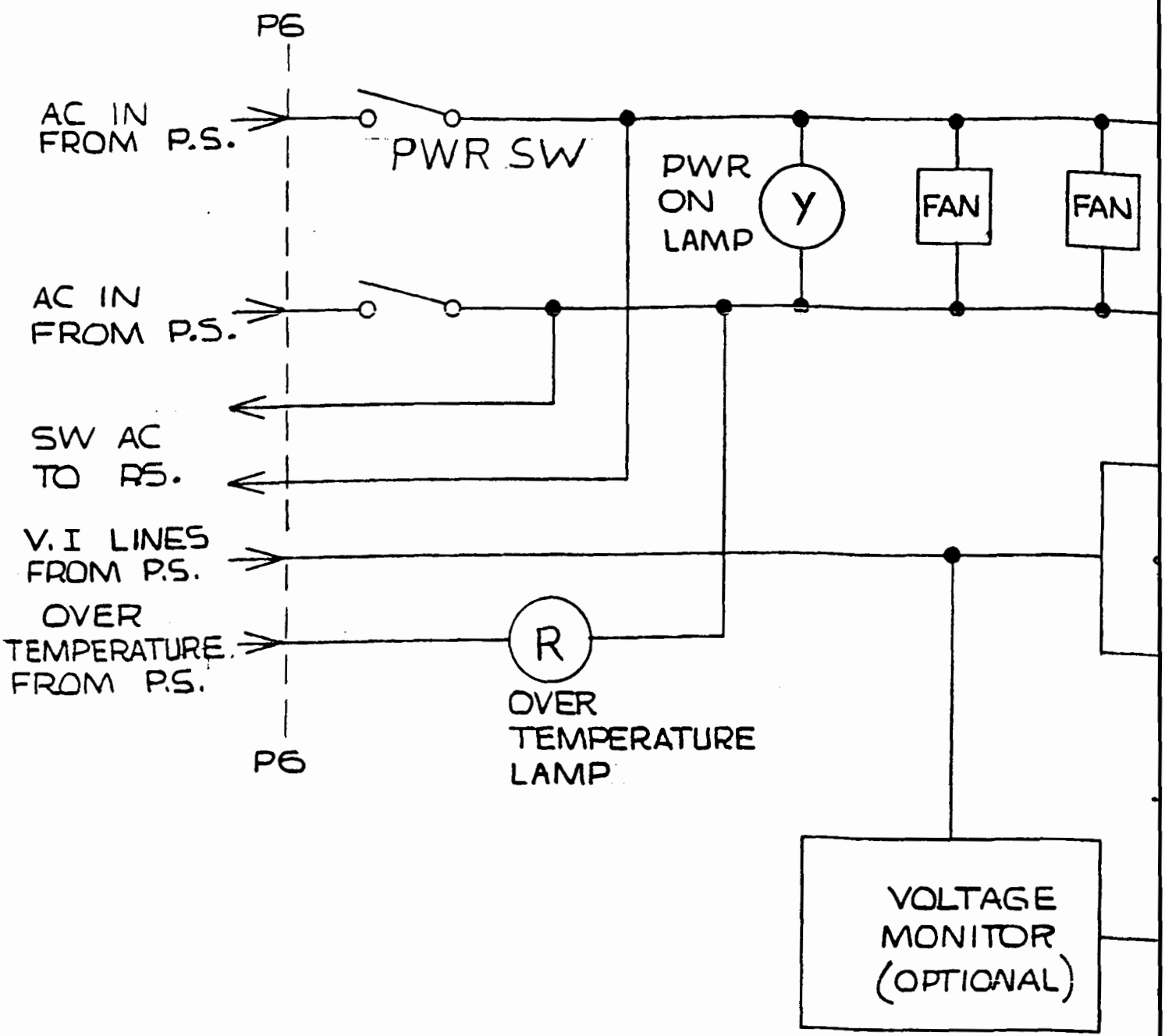
XX·

SCALE

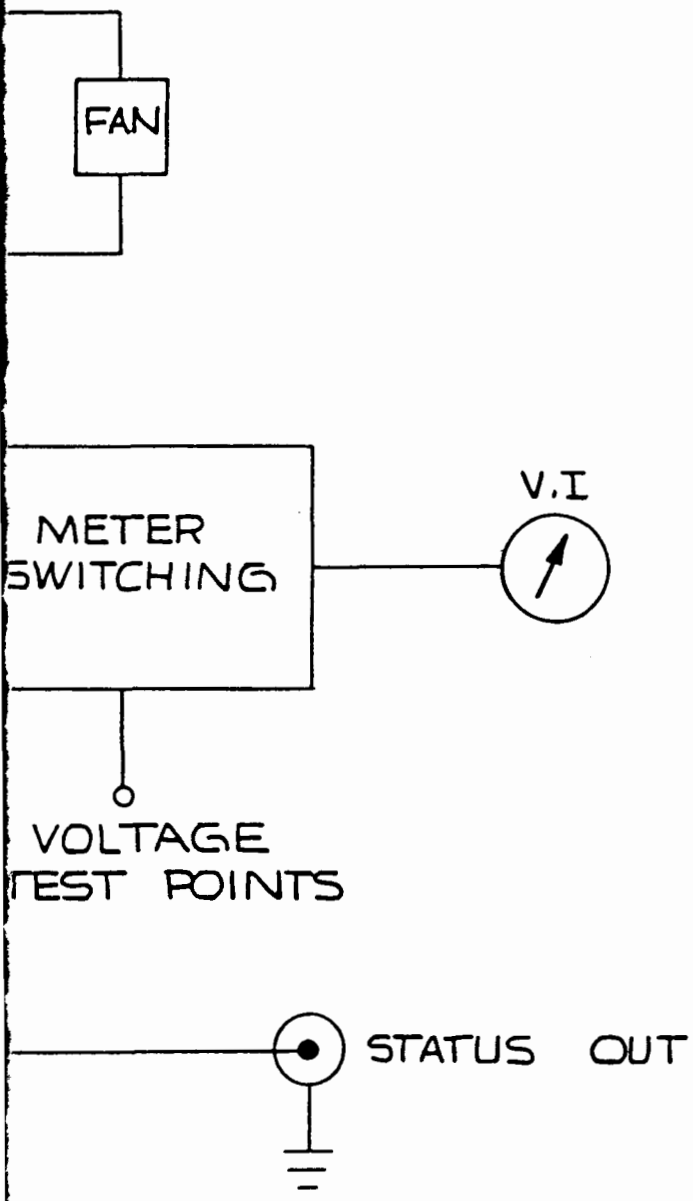
NEXT ASSY



~	TITLE ASSEMBLY P.C.E. STATUS BIT OPTION			DSP TECHNOLOGY INC.	
DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED: DECIMAL XXX ~ ANG ~	DESIGN		DATE	SIZE	DRAWING NUMBER	ISSUE
1:1 NO SPEED ~	DRAWN	C.C. Hammett	DATE 11-6-81	E	106557	C5
106717	CHECK		DATE			
	APPRO		DATE 11 NOV 81	SHEET 1 OF 1		



SYM	DESCRIPTION	
	REVISIONS	
B	ECO #518	4
A1	MANUAL UPDATE, ECO 427	8
A	PRODUCTION RELEASE	11
2	PROTOTYPE	10



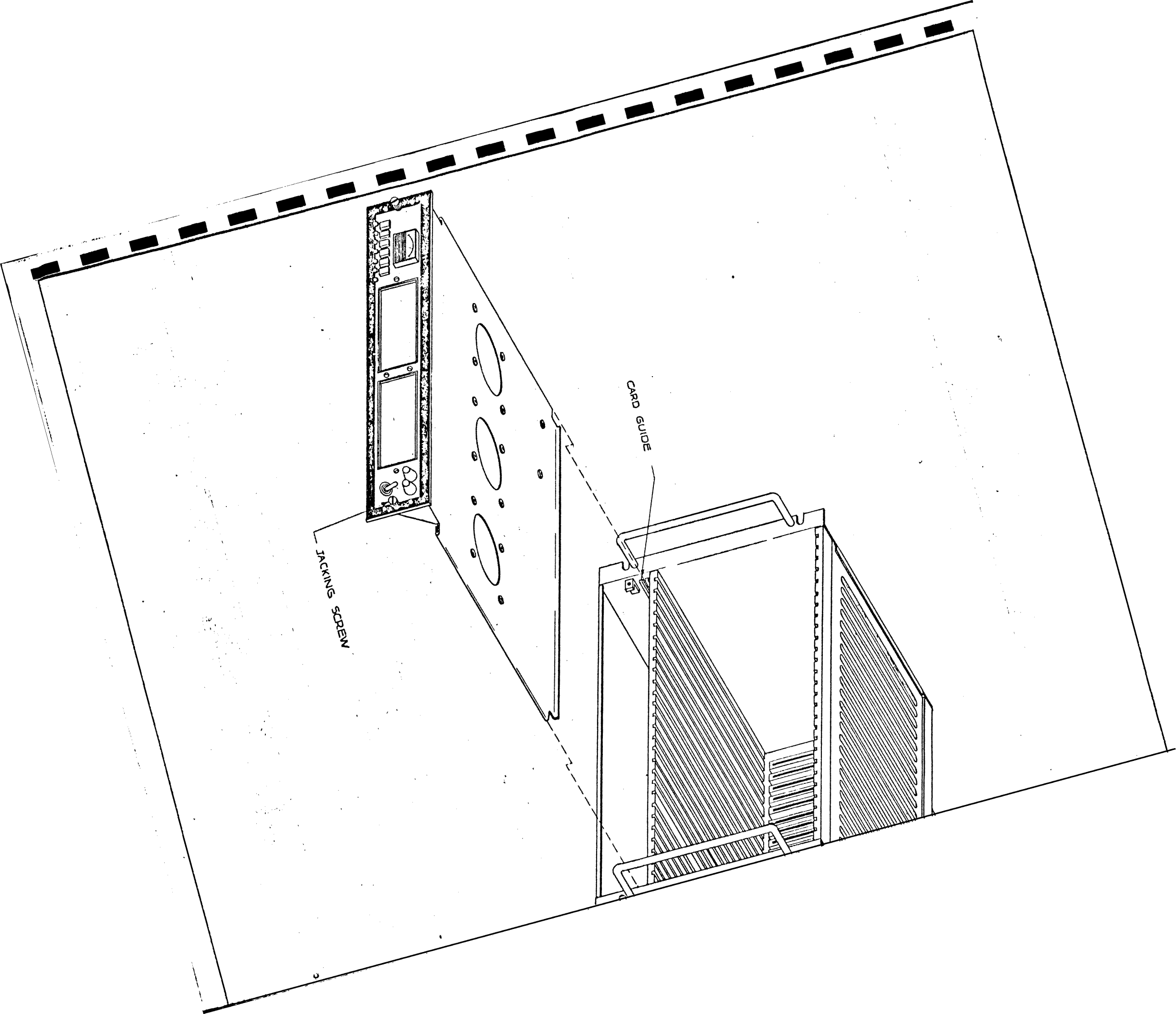
-6-84	
-15-85	
S-79	
-12-79	
DATE	APPRO

TITLE SIMPLIFIED BLOWER BLOCK DIAGRAM

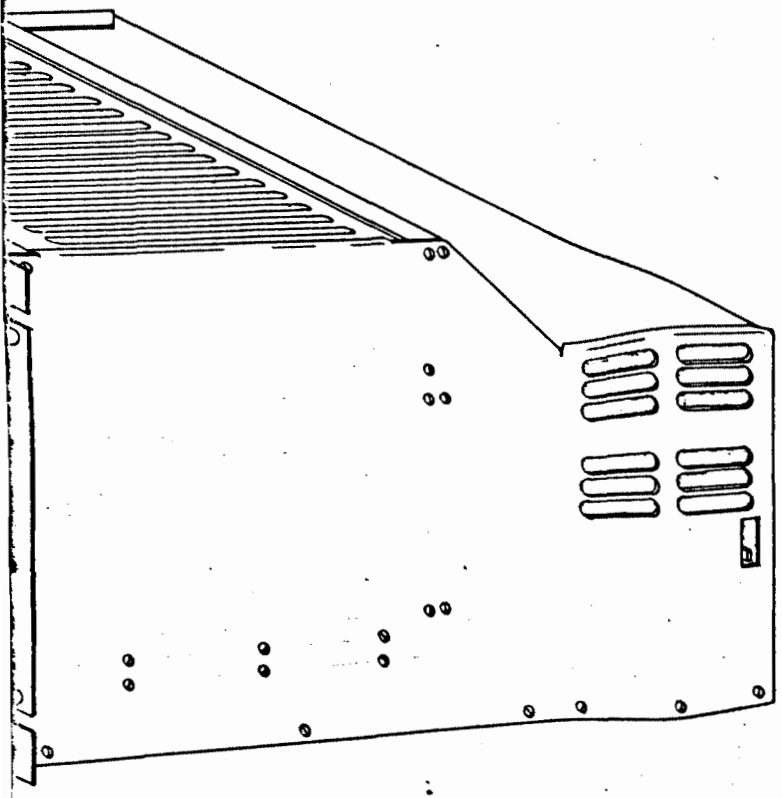
CAMAC SERIES

dsp TECHNOLOGY INC.

DESIGN		DATE	11-5-79	SIZE	DRAWING NUMBER	ISSUE
DRAWN	FRANK	DATE	9-11-79	B	106810	B
CHECK		DATE	10-12-9			
APPRO		DATE	10/12/79	SHEET 1 OF 1		


CARD GUIDE
JACKING SCREW

REVISIONS				
LTR	DESCRIPTION	BY	APPROVAL	DATE
1	PROTOTYPE RELEASE			
A	PRODUCTION RELEASE			11-5-79
A_1	ECO 427 - NEW SWITCH			8-15-83
B	ECO # 518			4-6-84



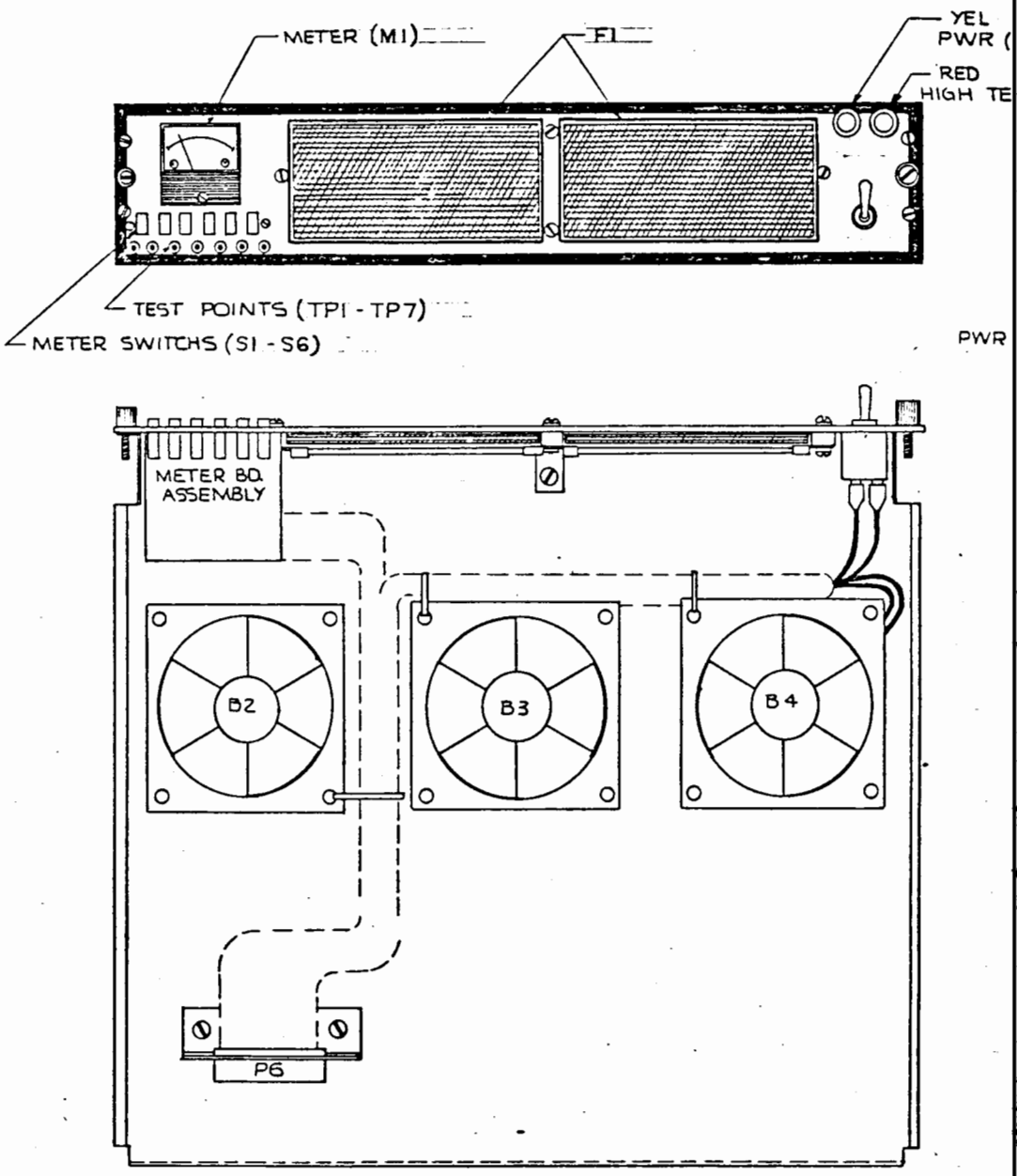
TO REMOVE BLOWER:

1. UNPLUG POWER CORD
2. UNSCREW BLOWER FRONT PANEL JACKING SCREWS (SEE CALLOUT.)
3. PULL BLOWER TRAY OUT.

TO INSTALL BLOWER:

1. UNPLUG POWER CORD.
2. PUSH BLOWER TRAY INTO GROOVES AS SHOWN.
3. TIGHTEN JACKING SCREWS INTO CRATE.
4. PLUG IN POWER CORD.

TITLE					
BLOWER REMOVAL DIAGRAM CAMAC SERIES			dsp TECHNOLOGY INC.		
DESIGN		DATE 11-5-79	SIZE	DRAWING NUMBER	ISSUE
DRAWN FRANK		DATE 9-21-79	D	106813	B
CHECK		DATE 11-5-79			
APPRO		DATE	SHEET 1 OF 1		

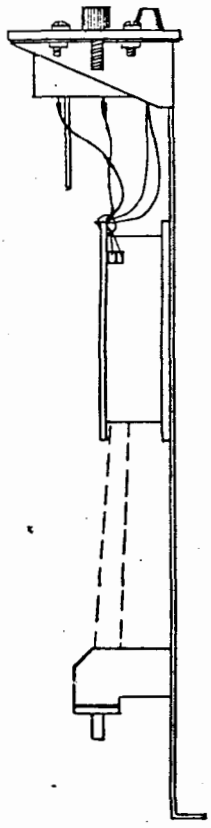

METER (M1)
F1
YEL
PWR (
RED
HIGH TE
TEST POINTS (TP1 - TP7)
METER SWITCHS (S1 - S6)
PWR
METER BD. ASSEMBLY
B2
B3
B4
P6

REVISIONS				
LTR	DESCRIPTION	BY	APPROVAL	DATE
1	PROTO RELEASE			
2	PROTOTYPE	ech		
A	PRODUCTION RELEASE			11-5-79
A1	ECO #27 - DWG REINSTATED			2-15-83
B	ECO # 518			4-6-84

I2)

MP (I1)

SW (S1)

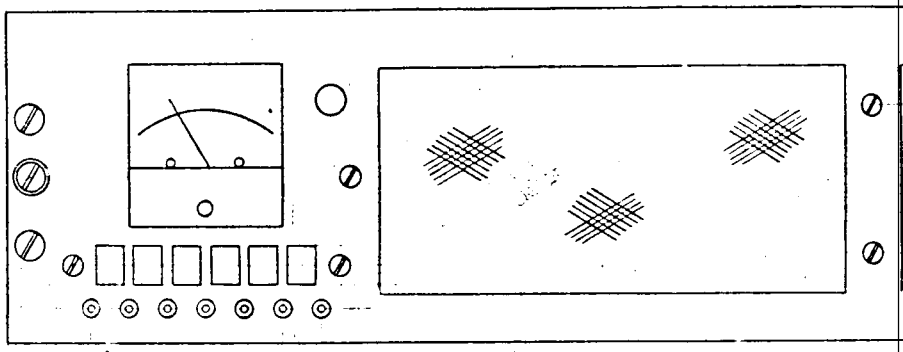


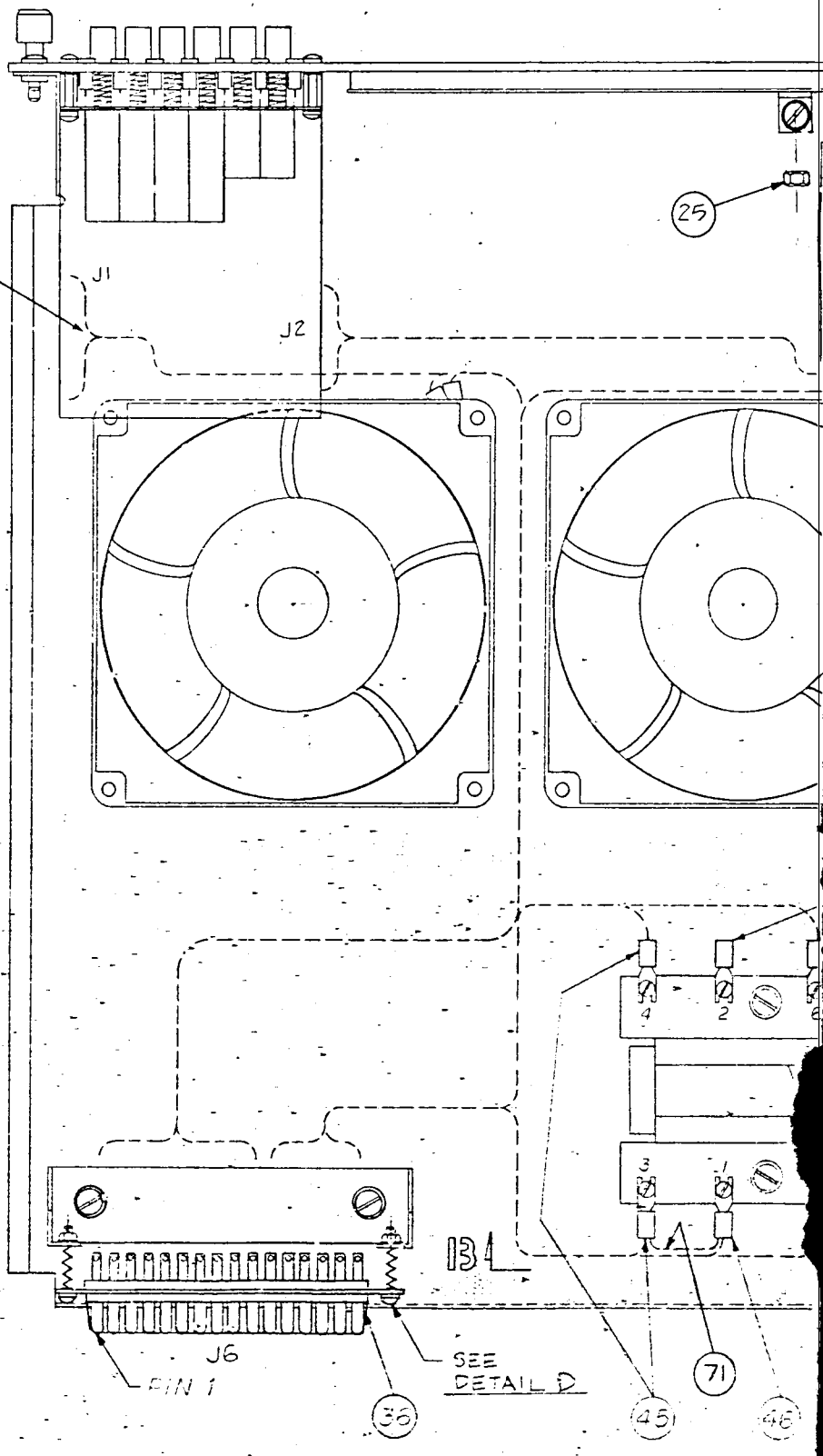
TITLE	BLOWER, MAJOR COMPONENT DIAGRAM CAMAC SERIES		
DESIGN	[signature]	DATE	11-5-79
DRAWN	FRANK	DATE	10-9-79
CHECK	[signature]	DATE	10-12-79
APPRO	[signature]	DATE	10/12/79

dsp TECHNOLOGY INC.

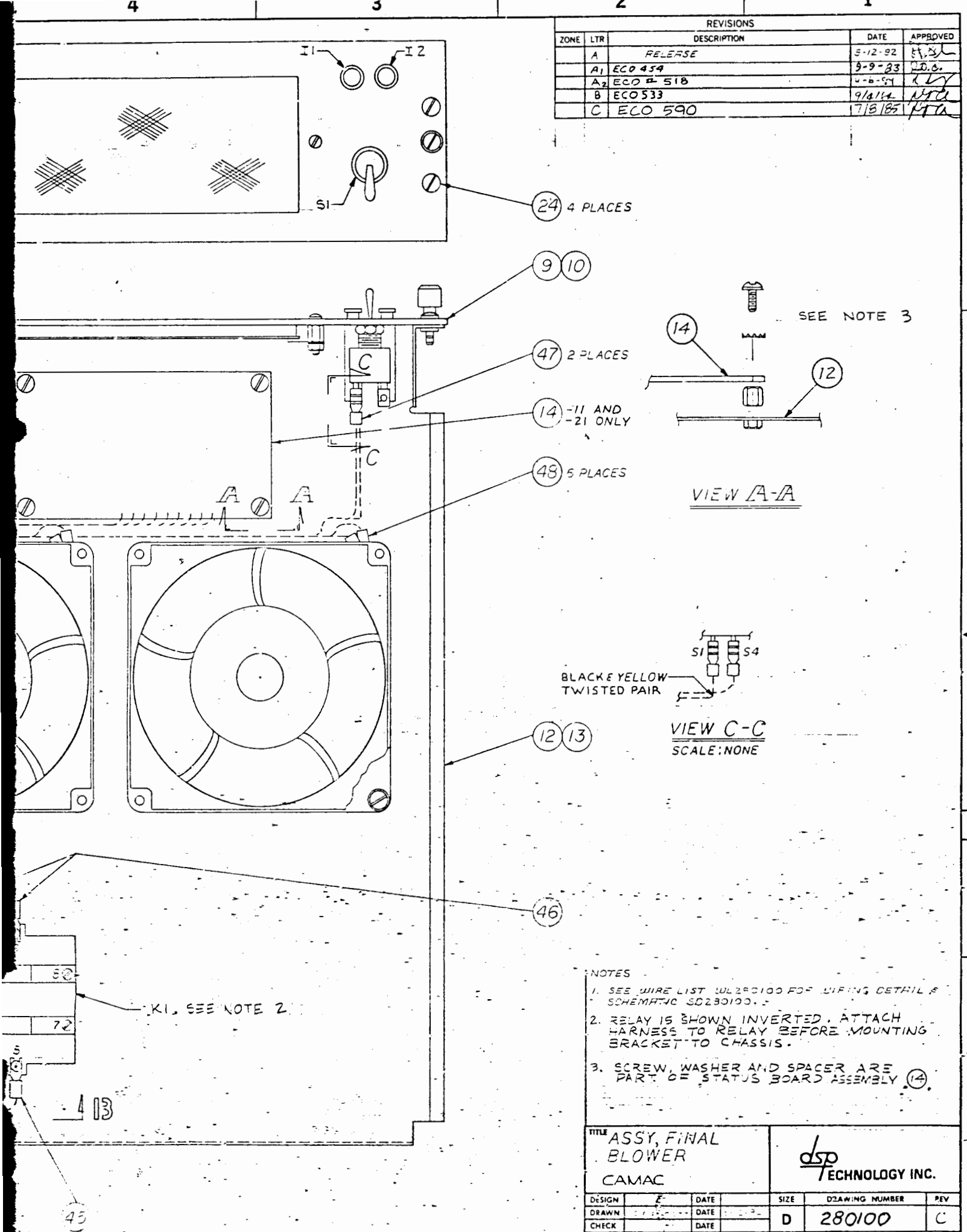
SIZE	DRAWING NUMBER	ISSUE
D	106829	B

SHEET 1 OF 1




32
25
J1
J2
31
2 PL
19
20
17
24
27
33
2 PL
12
VIEW 13-13
22
36
25
28
30
26
12
DETAIL D
NO SCALE
2 PL
J6
PIN 1
SEE
DETAIL D
13
36
45
71
46

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	RELEASE	5-12-82	
	A1	ECO 454	9-9-83	
	A2	ECO # 518	4-6-84	
	B	ECO 533	9/6/84	
	C	ECO 590	7/8/85	

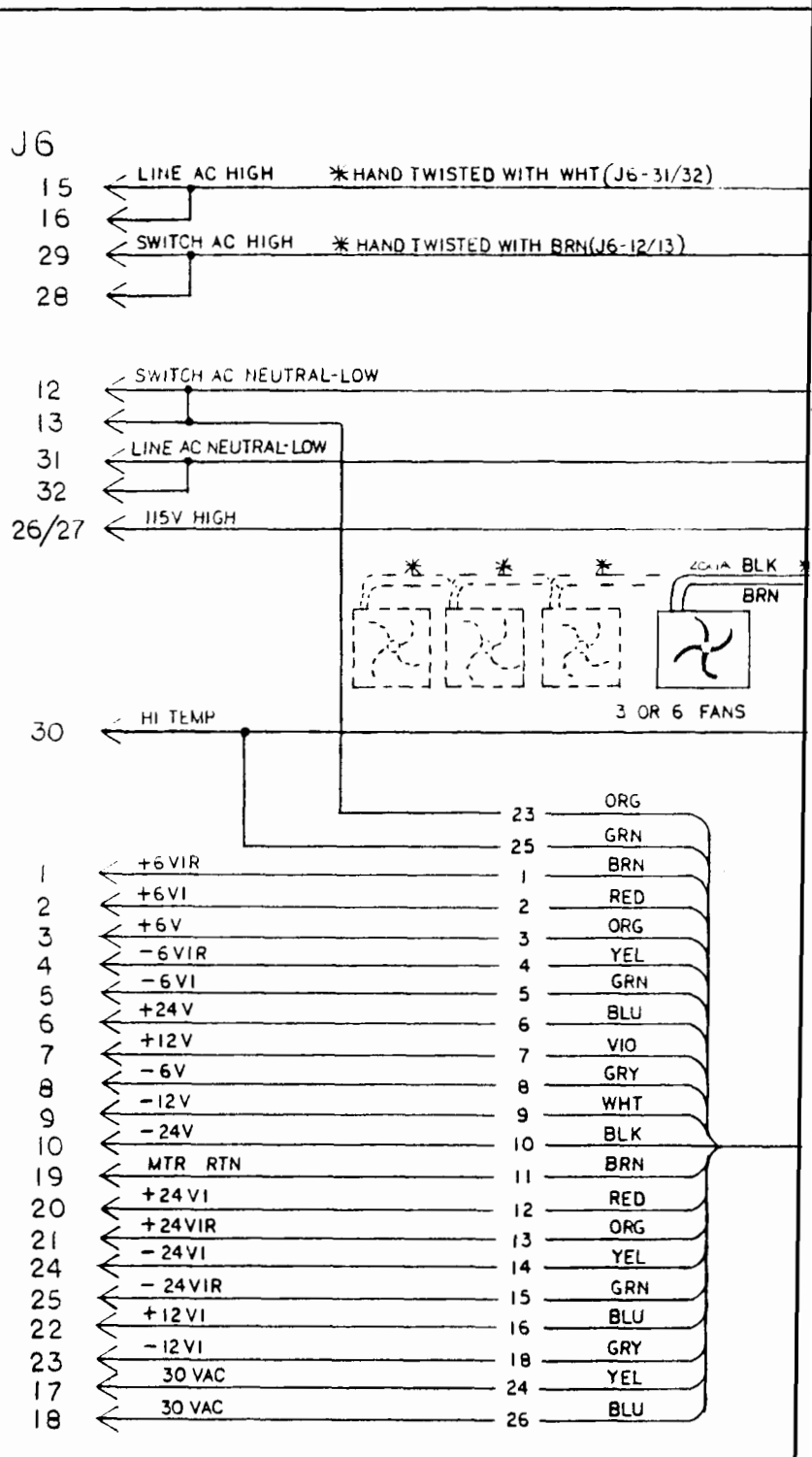


NOTES

1. SEE WIRE LIST WL280100 FOR WIRING DETAIL & SCHEMATIC SD280100.
2. RELAY IS SHOWN INVERTED. ATTACH HARNESS TO RELAY BEFORE MOUNTING BRACKET TO CHASSIS.
3. SCREW, WASHER AND SPACER ARE PART OF STATUS BOARD ASSEMBLY (14).

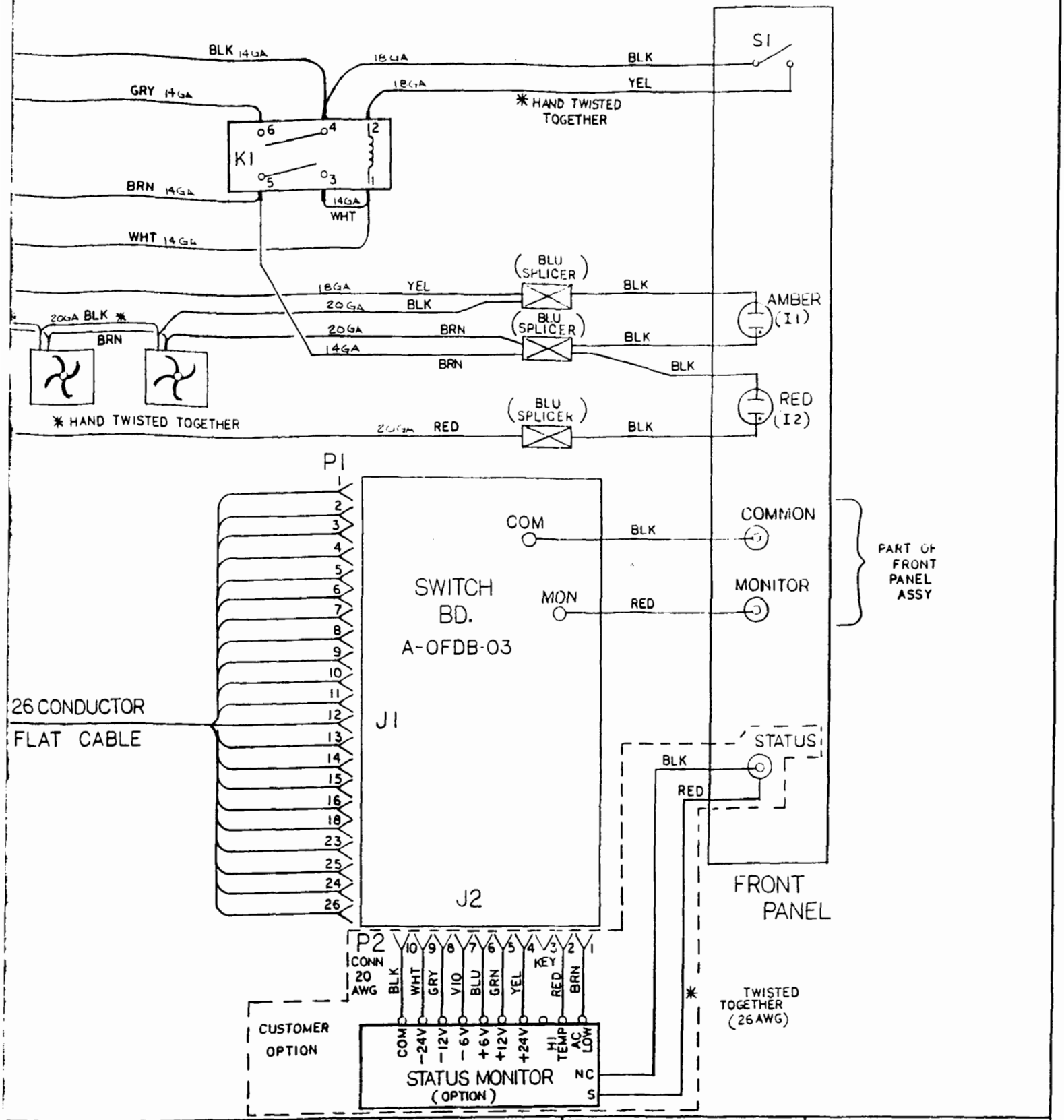
TITLE					
ASSY, FINAL BLOWER CAMAC					
DESIGN	E.	DATE		SIZE	DRAWING NUMBER	REV
DRAWN		DATE		D	280100	C
CHECK		DATE			
APPVD		DATE		SCALE	SHEET OF

dsp TECHNOLOGY INC.

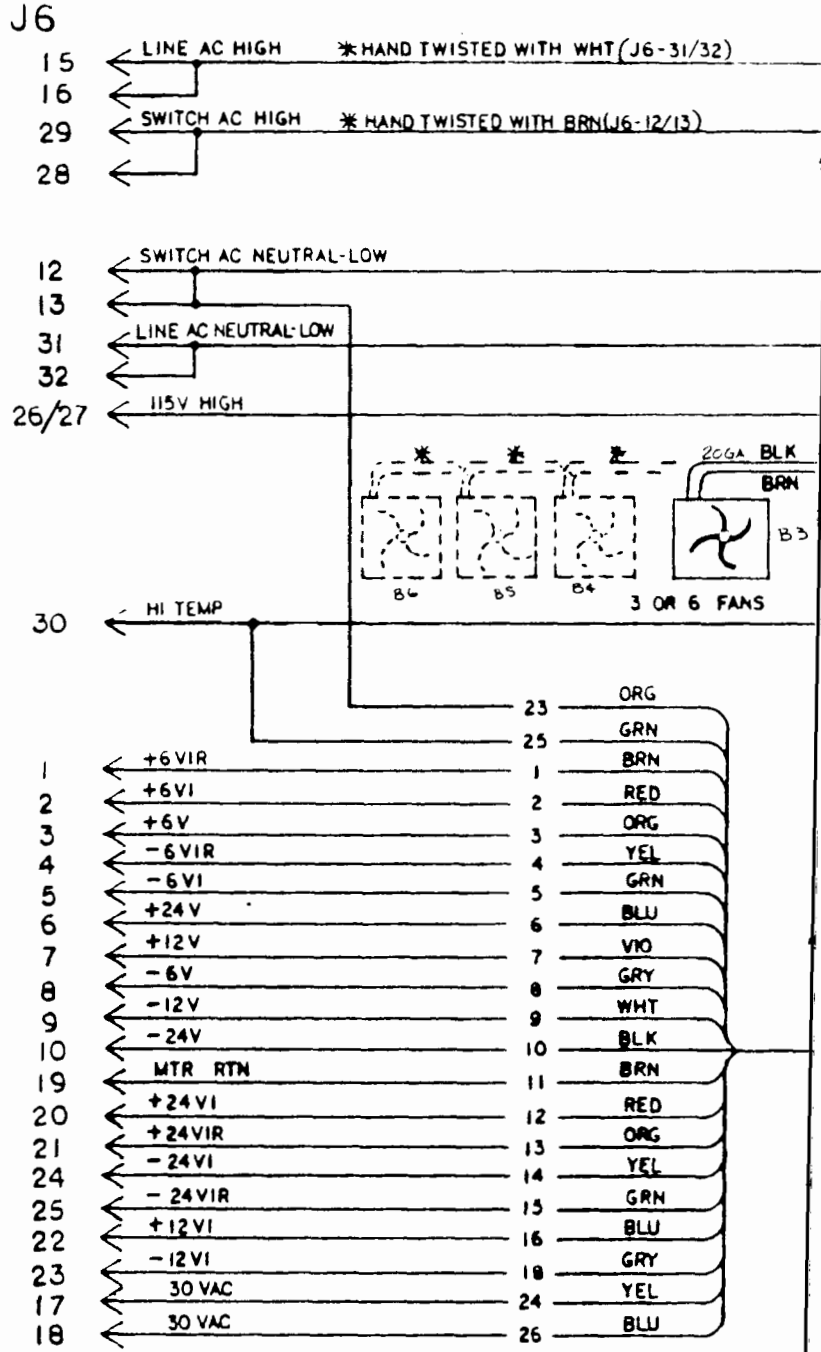


SYM	DESCRIPTION
A	PRODUCTION RELEASE

REVISION



			MATERIAL	FINISH	TITLE	dsp Technology			
			HEAT TREAT	DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED	SCHEMATIC: BLOWER CHASSIS 115V				
			WEIGHT	DECIMAL / ANG.					
			MISC.	XX± / XXX± / ±	DESIGN		DATE	JOB NO.	
				SCALE / NO REQ'D	DETAIL C.RUIGOMEZ	DATE 8-6-86	SIZE	DRAWING NUMBER	ISSUE
	DATE	APPROVAL		NEXT ASSY	CHECK	DATE	C	A-OFDB-SD	A
S					APPRO	DATE			



NOTES

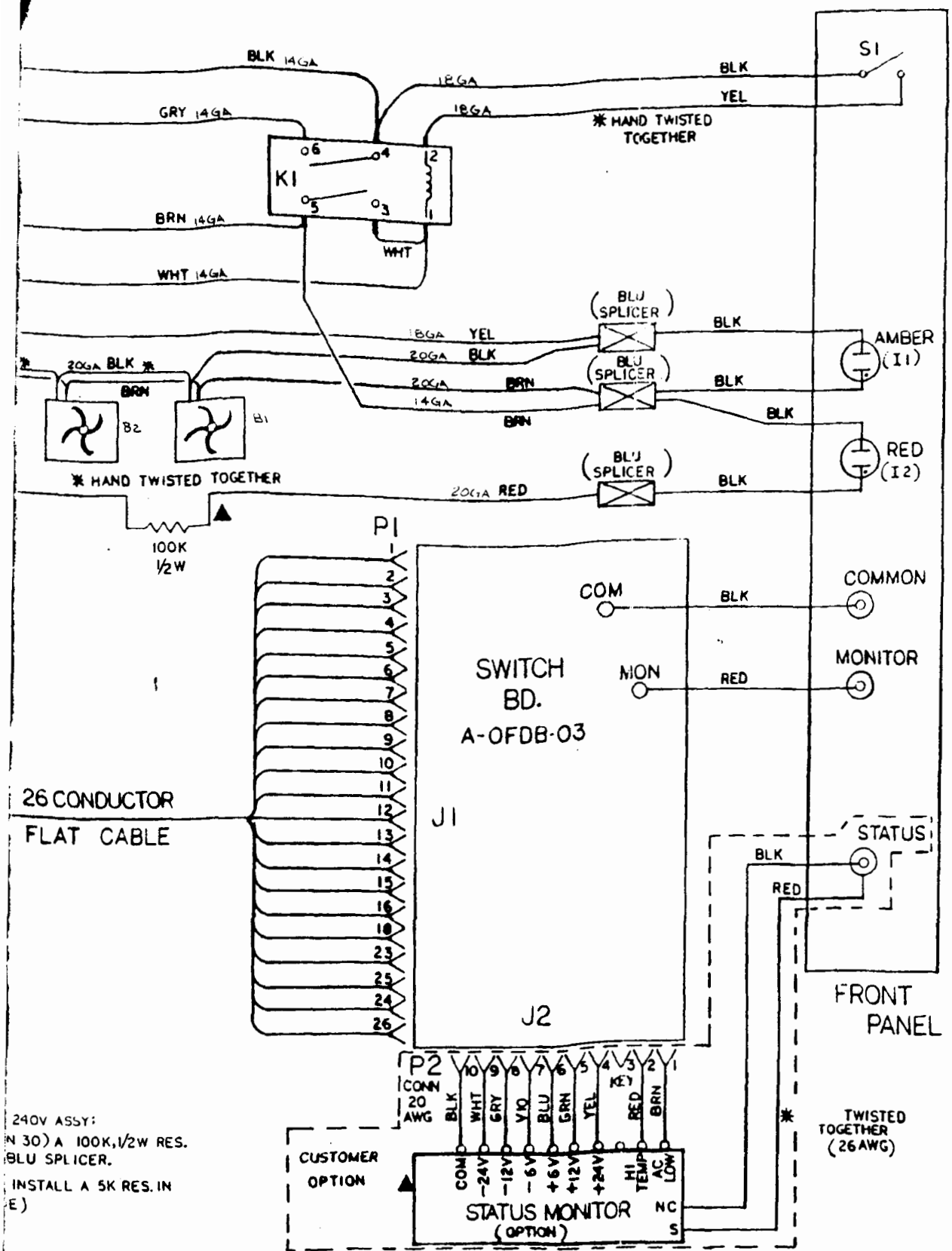
1 THE FOLLOWING TO BE ADDED TO

a. SPLICE INTO RED WIRE (J6 PI
THEN CONTINUE RED WIRE TO

b. IF STATUS BD. IS REQUIRED -
SERIES WITH R22 (SAME VALU

SYM	DESCRIPTION
A	PRODUCTION RELEAS

REVISIO



240V ASSY:
N 30) A 100K, 1/2W RES.
BLU SPLICER.
INSTALL A 5K RES. IN
E)

	DATE	APPROVAL
NS		

MATERIAL
HEAT TREAT
WEIGHT
MISC.

FINISH
DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED
DECIMAL ANG.
XXs ± XXXs ± ±
SCALE NO REQ'D
NEXT ASS'Y

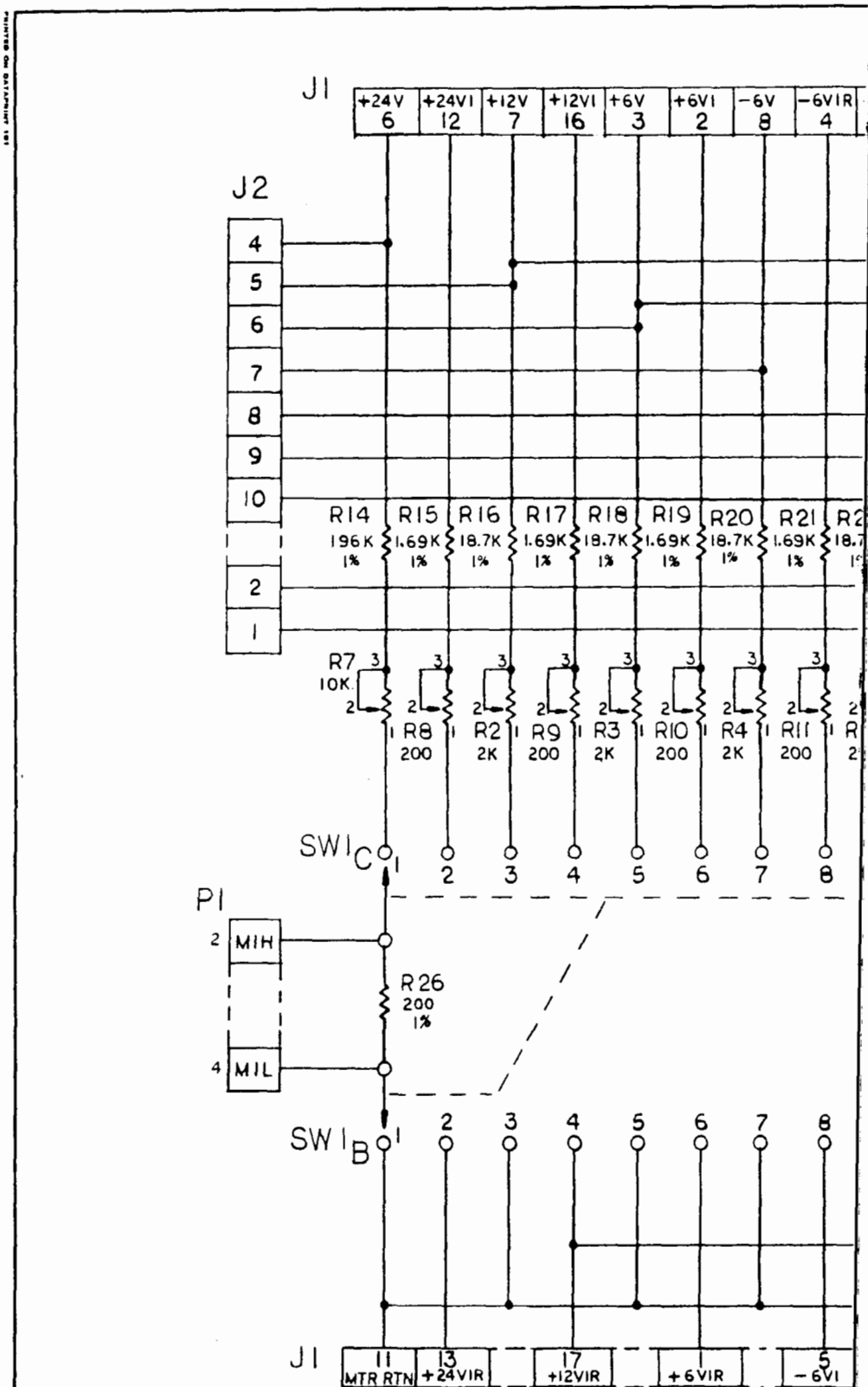
TITLE
SCHEMATIC:
BLOWER CHASSIS
240V

DESIGN		DATE	
DETAIL	C. RUIGOMEZ	DATE	8-6-86
CHECK		DATE	
APPRO		DATE	

dso Technology

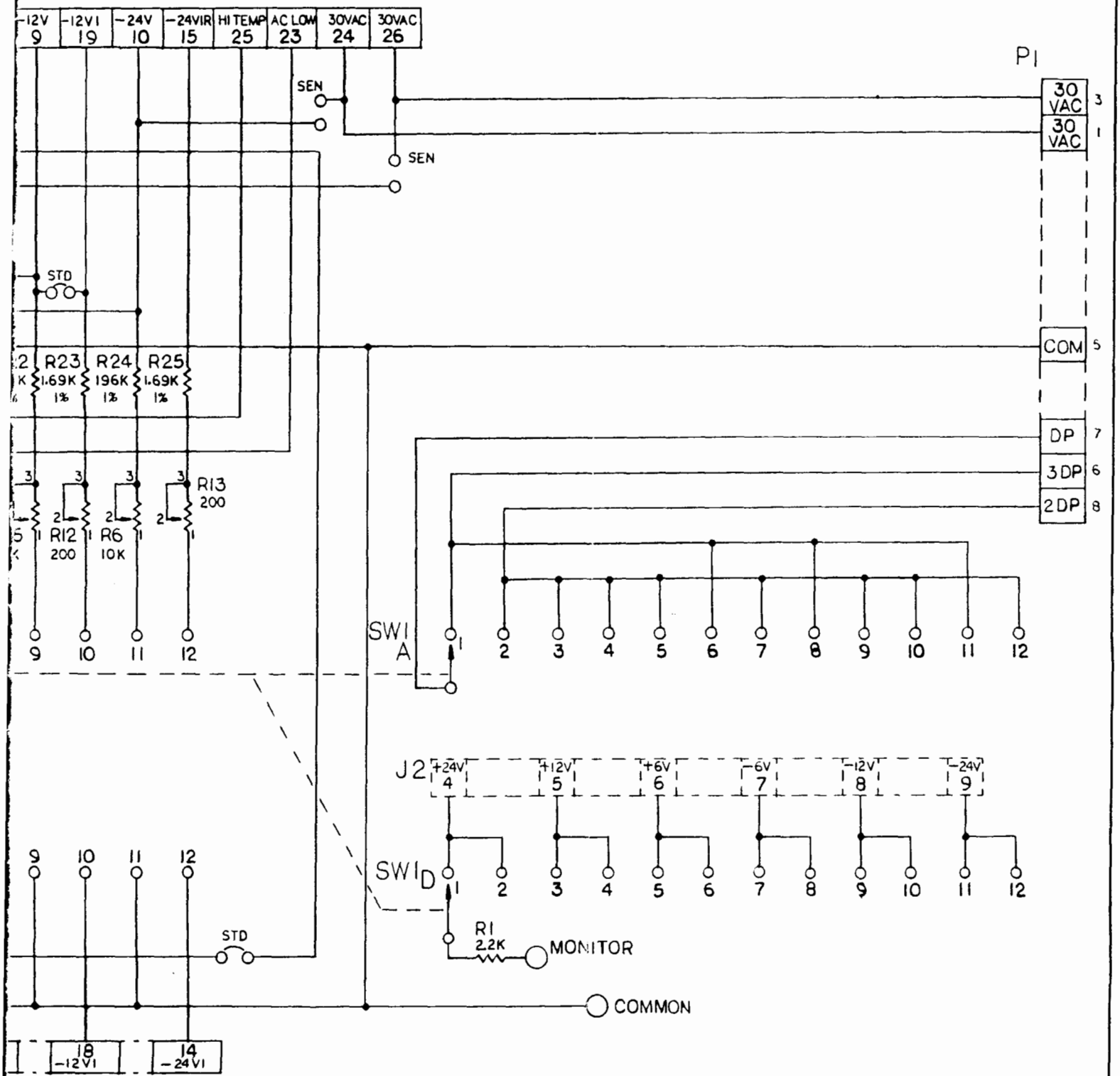
JOB NO.

SIZE	DRAWING NUMBER	ISSUE
C	A-OFDB-SD	A



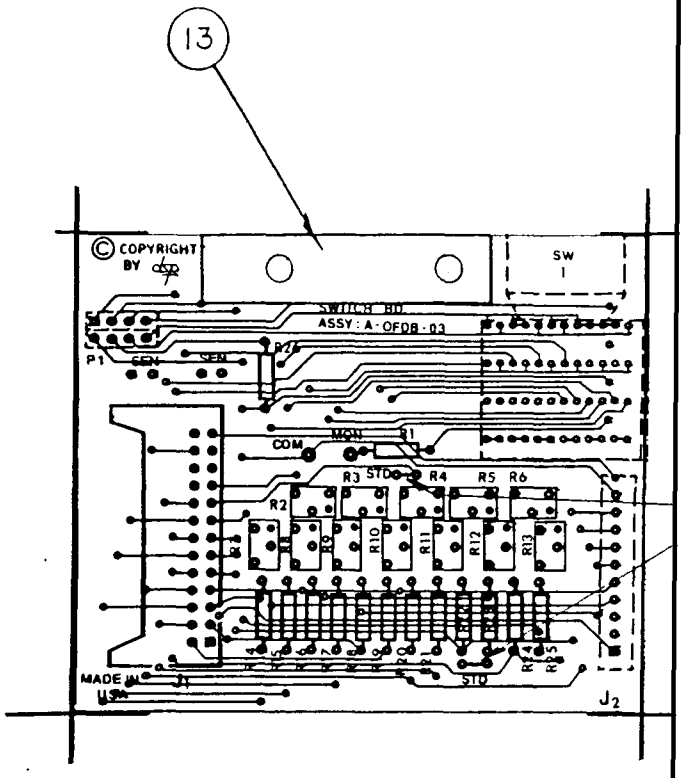
SYM	DESCRIPTION
C	REDESIGN RELEASE
B	REDESIGN RELEASE
A	RELEASE

REVISION



			MATERIAL	FINISH	TITLE						
					SCHEMATIC : SWITCH BOARD A-OFDB-03 (STANDARD)				DSP TECH		
			HEAT TREAT	DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED							
			WEIGHT	DECIMAL	ANG.						
			MISC.	XX± XXX±	±						
	DATE	APPROVAL		SCALE	NO REQ'D	DESIGN		DATE		JOB NO.		
						DETAIL	C. RUIGOMEZ	DATE	8-1-86	SIZE	DRAWING NUMBER	ISSUE
				NEXT ASS'Y		CHECK		DATE		C	A-OFDB-03SD	C
						APPRO		DATE				

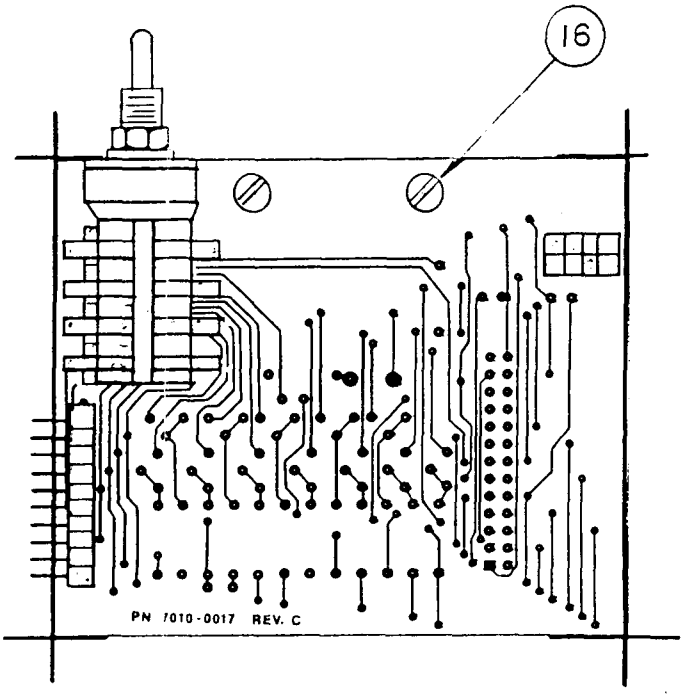
PRINTED ON DATAPRINT 101



COMPONENT SIDE

SYM	DESCRIPTION
C	REDESIGNED RELEASE

REVISIONS



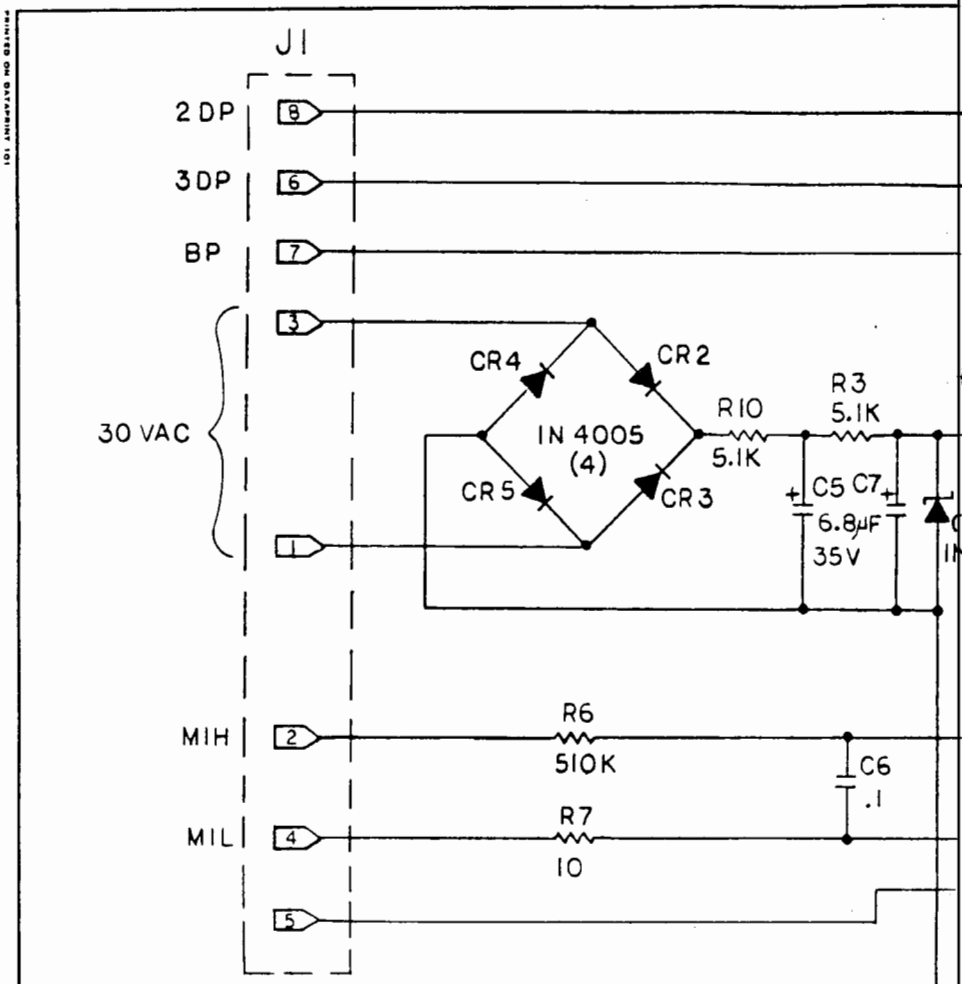
SOLDER SIDE

1

NOTES:

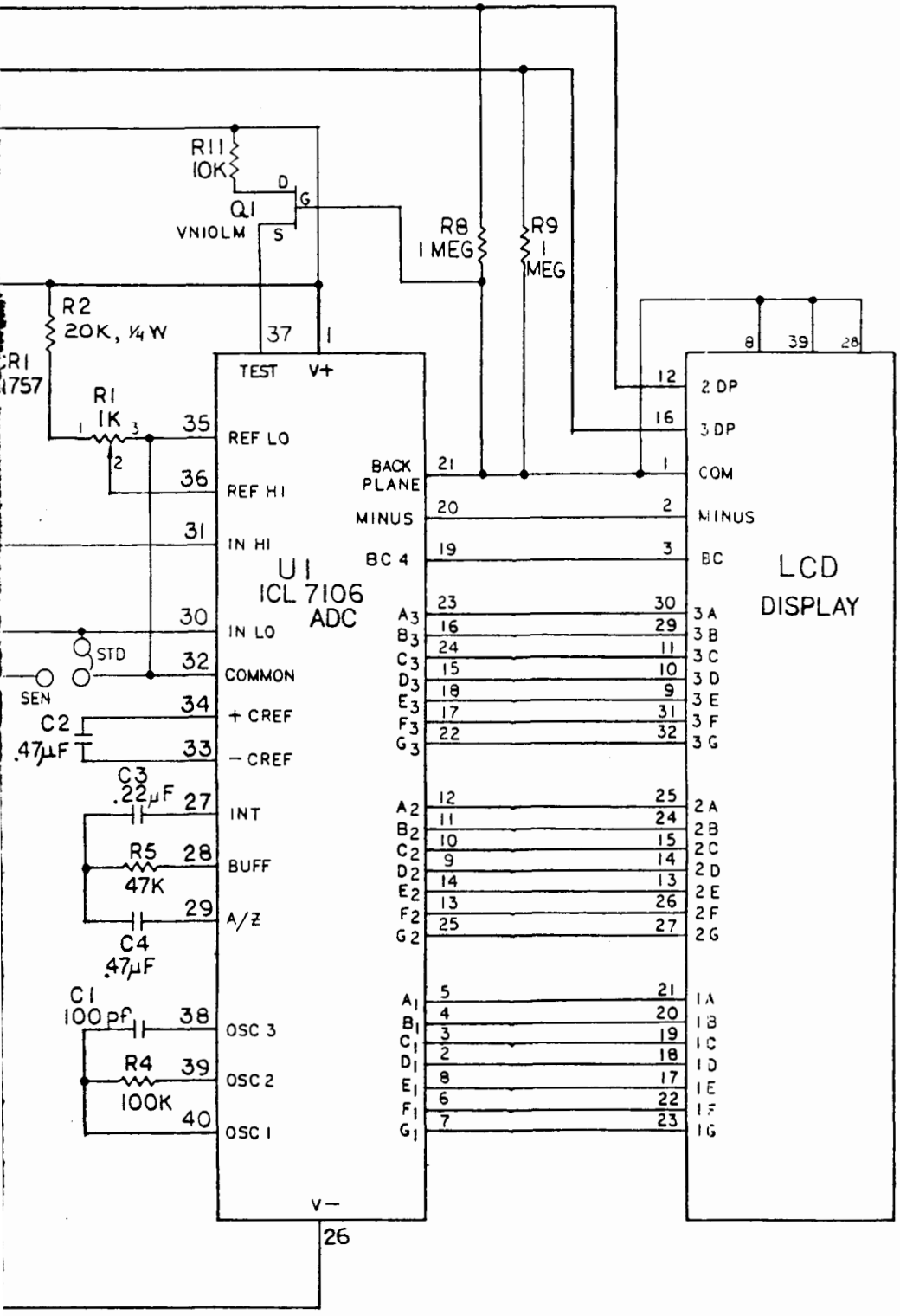
1. JUMPER AS SHOWN FOR STANDARD POSITION USING 26 AWG BUS WIRE (2PLCS)

			MATERIAL	FINISH	TITLE						
			HEAT TREAT	DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED	ASSY: SWITCH BD. (STANDARD)				DSP TECH		
			WEIGHT	DECIMAL / ANG.					JOB NO.		
			MISC.	XX± / XXX± / ±	DESIGN		DATE		SIZE	DRAWING NUMBER	ISSUE
	DATE	APPROVAL		SCALE / NO REQ'D	DETAIL	C. RUIGOMEZ	DATE	11-4-86	C	A-OFDB-03-AD	C
				NEXT ASS'Y	CHECK		DATE				
					APPRO		DATE				



SYM	DESCRIPTION
C	SEE ECO # 1003
C	ECO # 1002
A	PRODUCTION RELEASE

REVISIO



7-22-87		
7-2-87		
	DATE	APPROVAL

NS

MATERIAL

HEAT TREAT

WEIGHT

MISC.

FINISH

DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED

DECIMAL		ANG.
XX±	XXX±	±

SCALE | NO REQ'D

NEXT ASSY

TITLE

SCHEMATIC:

DISPLAY BOARD

A-OFDB-02 (STANDARD)

DSP TECH

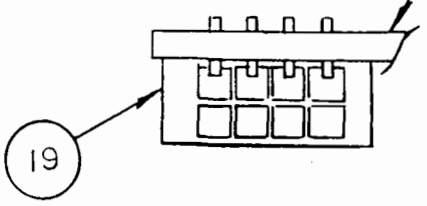
DESIGN		DATE	
DETAIL	C. RUGOMER	DATE	7-30-86
CHECK		DATE	
APPRO		DATE	1-20-87

JOB NO.

SIZE	DRAWING NUMBER	ISSUE
C	A-OFDB-02-SD	C

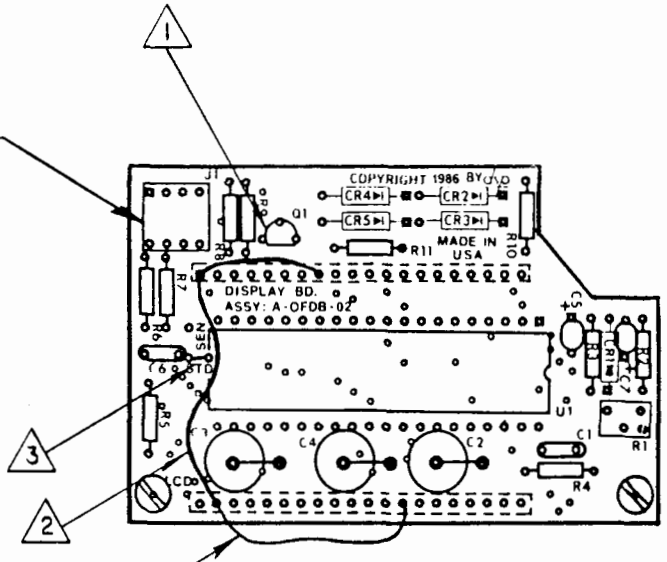
PRINTED ON OFFSHORT 181

P.C.E
(SC



DETAIL A

SEE
DETAIL A



COMPONENT SIDE

SYM	DESCRIPTION
C	SEE ECO # 1003
C	REDESIGNED / ECO 66
B	REDESIGNED
A	

REVISION

N3814

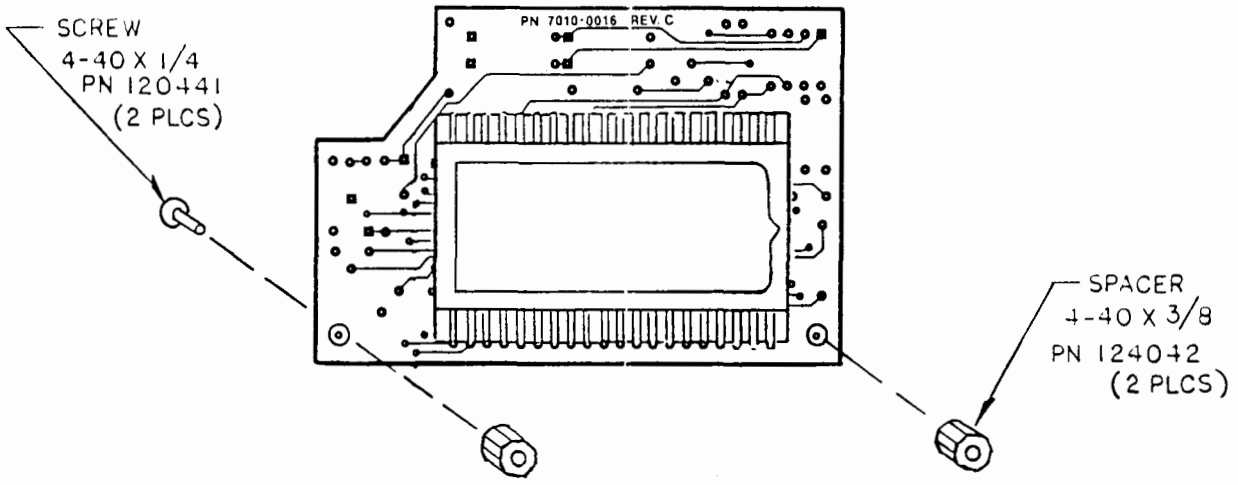
BOARD
OLDER SIDE)

NOTES:

1. SILKSCREEN IS WRONG-INSTALL Q1 WITH FLAT SIDE TOWARD TOP OF BOARD.

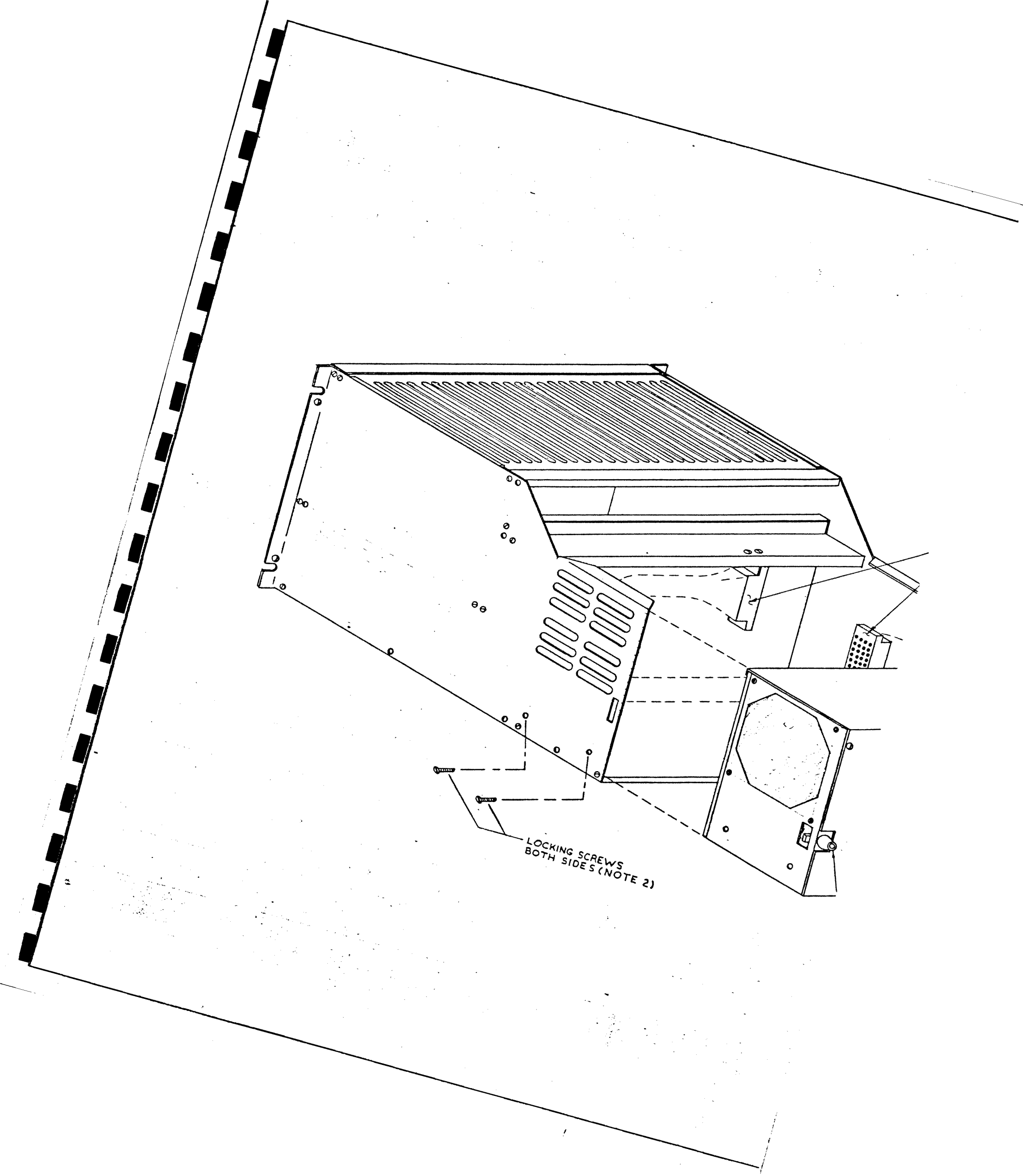
2. ADD JUMPERS AS SHOWN:
   LCD-PIN 8 TO PIN 1
   PIN 1 TO PIN 39
   PIN 28 TO PIN 39
   USE 30 AWG KYNAR WIRE.

3. JUMPER AS SHOWN FOR STANDARD POSITION USING 26 AWG BUS WIRE.



SOLDER SIDE

			MATERIAL	FINISH	TITLE					
	9-22-87	mc	HEAT TREAT	DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED	ASSY: DISPLAY BD. (STANDARD)			DSP TECH		
5			WEIGHT	DECIMAL / ANG						
			MISC.	XX± / XXX± / ±	DESIGN		DATE	JOB NO.		
	DATE	APPROVAL		SCALE / NO REQ'D	DETAIL C. RUIGOMEZ	DATE 11-4-86		SIZE	DRAWING NUMBER	ISSUE
S				NEXT ASS'Y	CHECK	DATE		C	A-0FDB-02-AD	C
					APPRO	DATE 1/20/87				


LOCKING SCREWS
BOTH SIDES (NOTE 2)

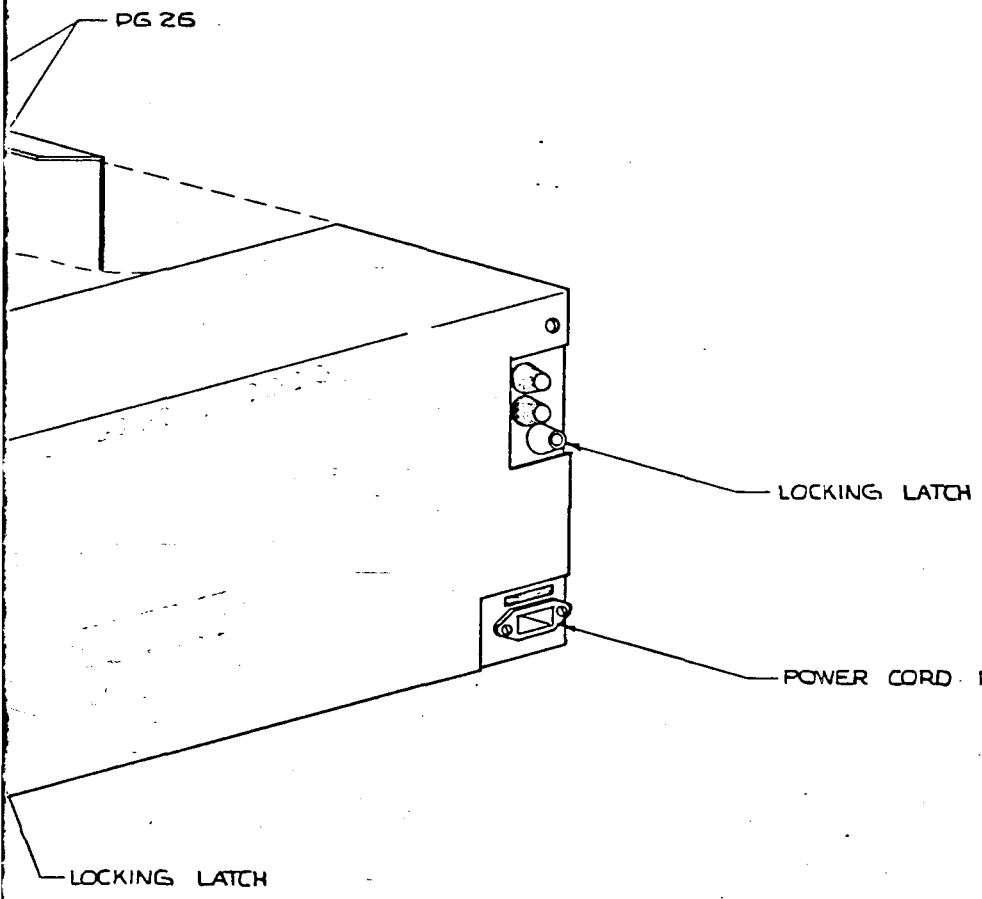
REVISIONS				
LTR	DESCRIPTION	BY	APPROVAL	DATE
1	PROTO RELEASE			
A	PRODUCTION RELEASE			11-5-79
A1	RELEASE PER ECN 1003	ccn		7-13-81
B	ECO 453		D.E.	9-6-83
C	REVISED PER ECO # 518			4-6-84

TO REMOVE POWER SUPPLY :

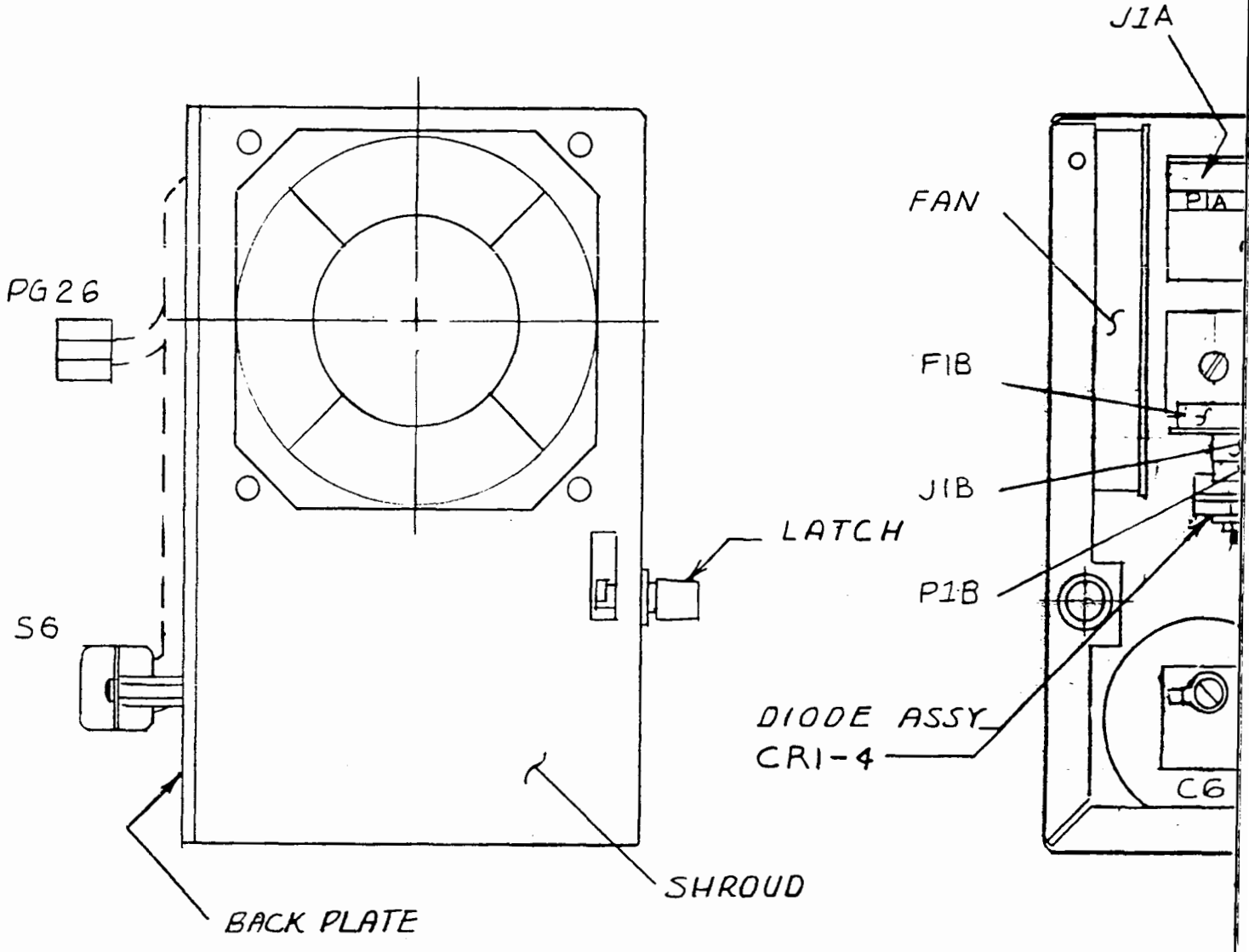
1. UNPLUG POWER CORD.
2. REMOVE THE 4 LOCKING SCREWS HOLDING PS TO CRATE SIDES.
3. RELEASE POWER SUPPLY LOCKING LATCHES UNTIL LATCH ARMS DISENGAGE CRATE.
4. PULL POWER SUPPLY OUT UNTIL SUFFICENT ROOM IS AVAILABLE TO DISCONNECT PG-26
   CAUTION: DO NOT PULL POWER SUPPLY TO FAR OUT.
5. DISCONNECT PG-26
6. PULL POWER SUPPLY OUT FROM SUPPORTING SHELF.

TO INSTALL:

1. REVERSE ABOVE PROCEDURE. BE SURE TO TIGHTEN LOCKING LATCHES SECURELY.



TITLE POWER SUPPLY REMOVAL DIAGRAM CAMAC SERIES				dsp TECHNOLOGY INC.			
DESIGN	[illegible]	DATE	11-5-79	SIZE	DRAWING NUMBER		ISSUE
DRAWN	FRANK	DATE	9-24-79	D	106816		C
CHECK	LD	DATE	11-5-79				
APPRO	[illegible]	DATE	[illegible]	SHEET	1 OF 1		



SYM	DESCRIPTION	DATE	APPROVAL
B	ECO # 518	4-6-84	
A1	MANUAL UPDATE, ECO 427	8-15-83	
A	RELEASE	7-14-81	

REVISIONS

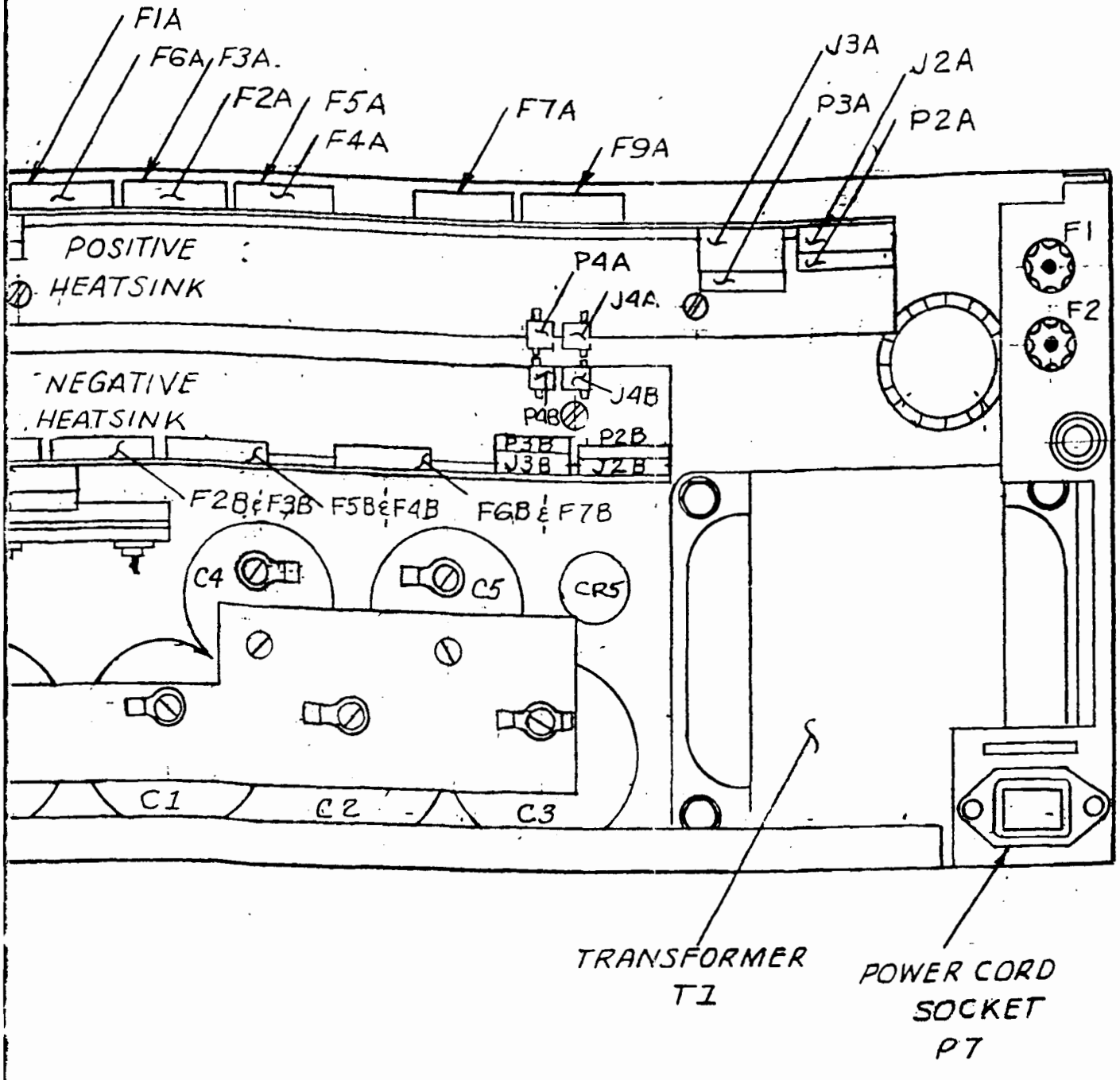
FINISH

DIMEN
UNLES
D

XX±.

SCALE:

NEXT
ASS'Y.



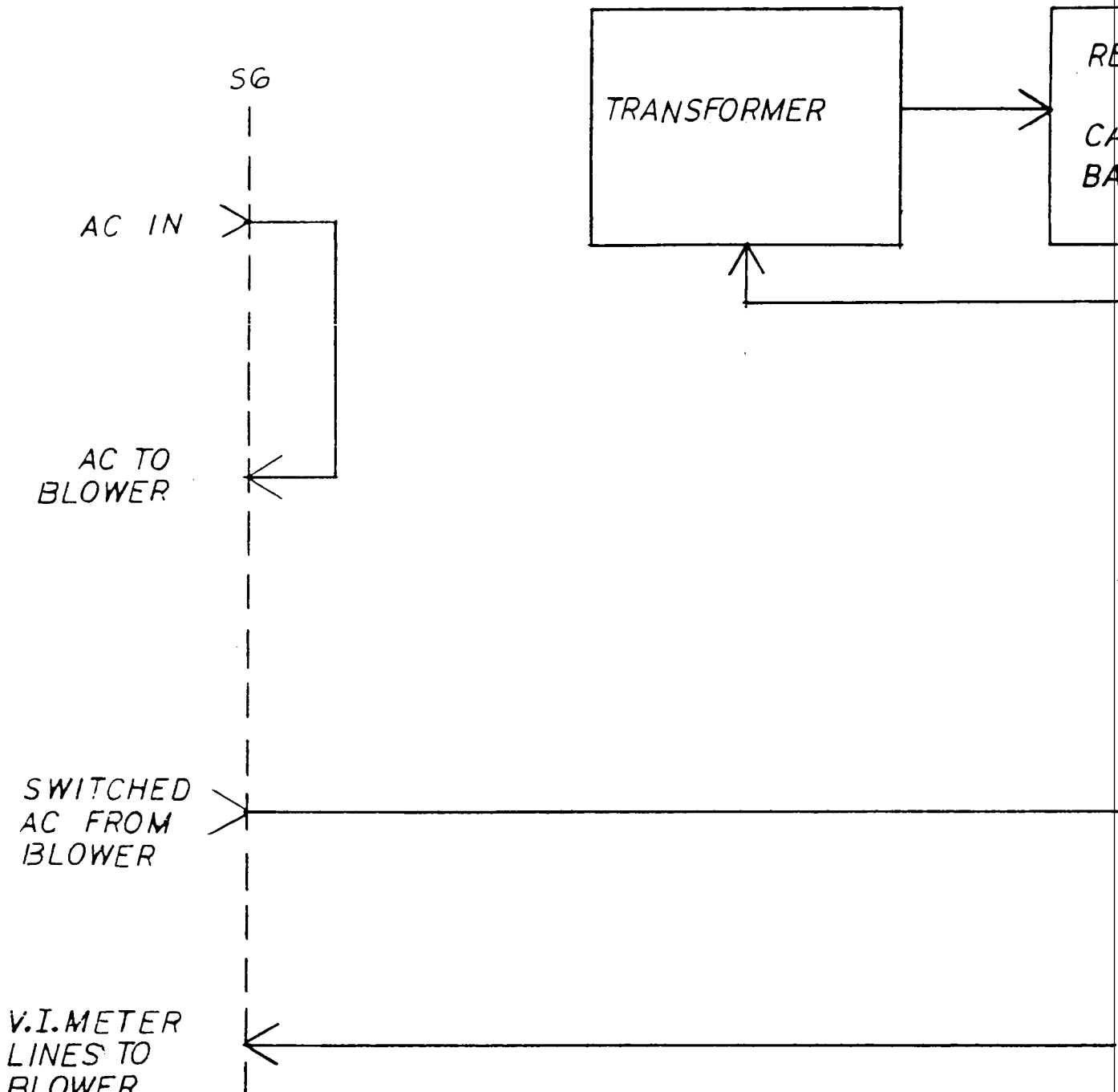
TITLE: MAJOR COMPONENT DIAGRAM CAMAC POWER SUPPLY					
DESIGN		DATE		SIZE: B	DRAWING NUMBER: MD106947	ISSUE: B
DRAWN	mcamboy	DATE	6-24-81		
CHECK		DATE	7/14/81		
APPRO		DATE	7/24/81	SHEET / OF /	

dsp TECHNOLOGY INC.

SIONAL TOLERANCES
S OTHERWISE NOTED

DECIMAL	ANG.
XXX±	±

NO. REQ'D.

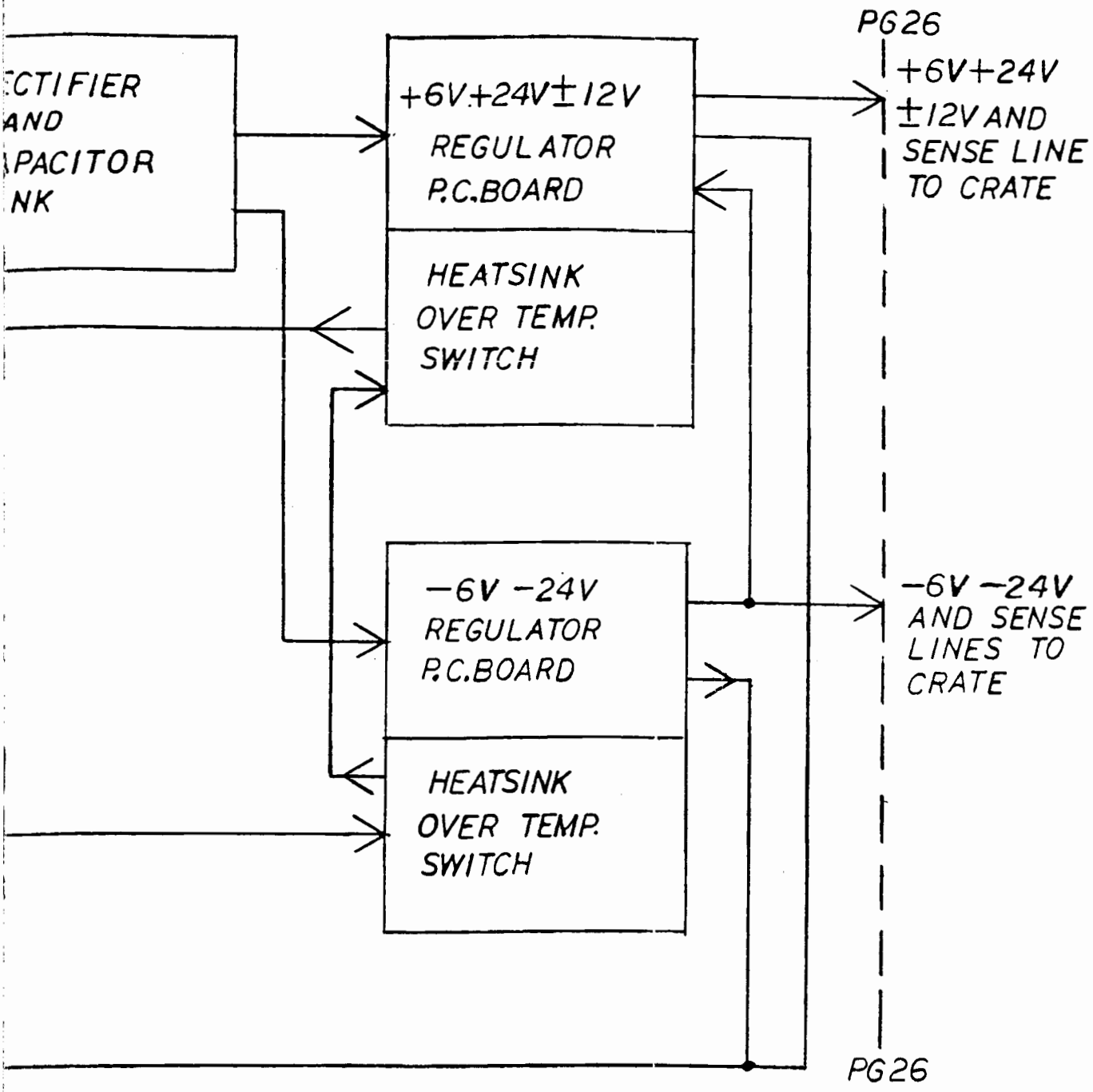


SYM	DESCRIPTION	DATE	APPROVAL
C	ECO #518	4-6-84	
B1	MANUAL UPDATE, ECO 427	8-15-83	
B	PER DCO 009	6-1-82	
A	RELESE	7-14-81	

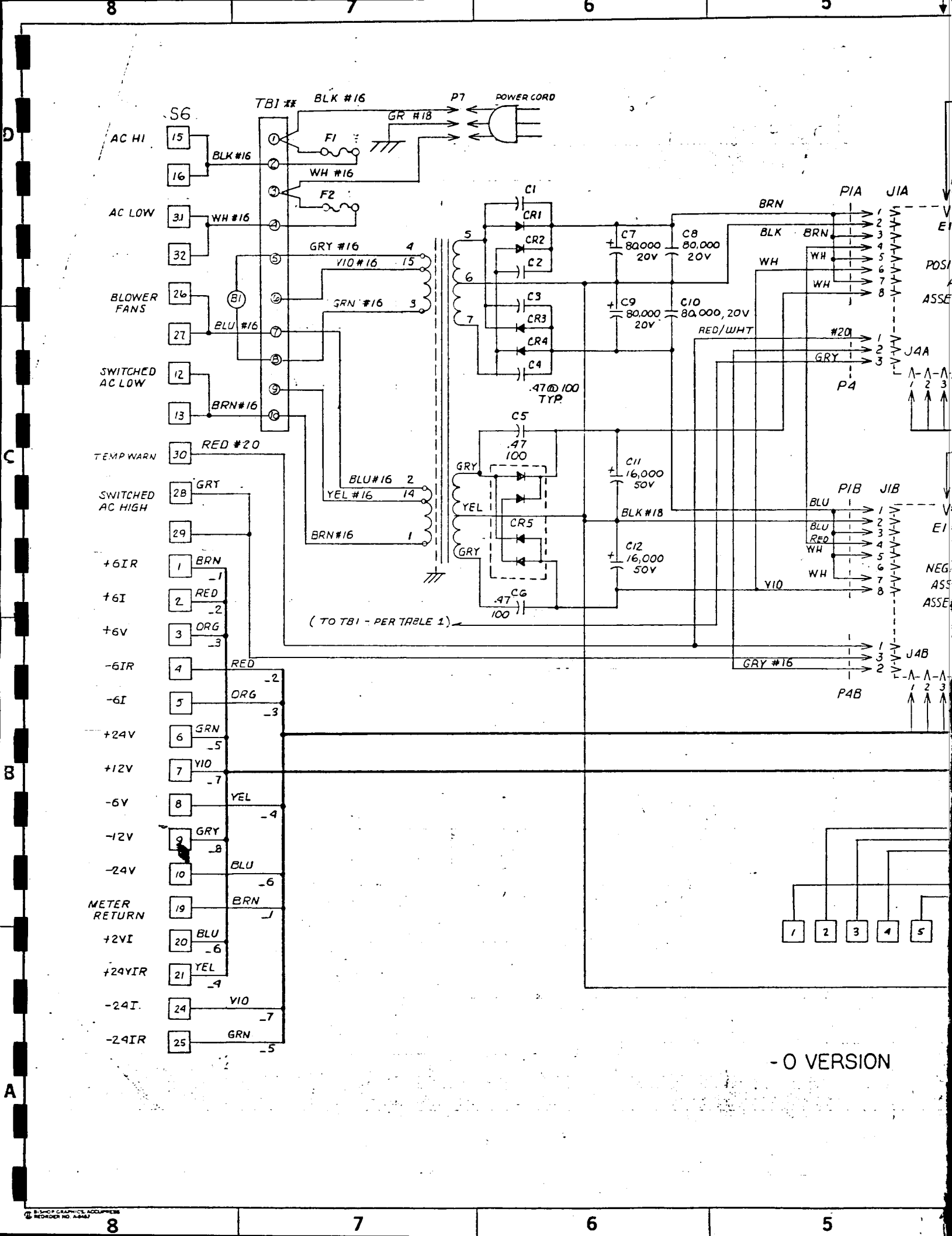
REVISIONS

FINISH

DIMENSI
UNLESS
DEC
XX±.
SCALE:
NEXT
ASS'Y.



ONAL TOLERANCES OTHERWISE NOTED		TITLE BLOCK DIAGRAM CAMAC POWER SUPPLY		dsp TECHNOLOGY INC.		
MAL	ANG.	DESIGN	DATE	SIZE	DRAWING NUMBER	ISSUE
XXX±.	±	DRAWN Eur	DATE 6-9-81	B	BD106960	C
NO. REQ'D.		CHECK JT	DATE 7-14-81			
		APPRO	DATE 22 Sep 81	SHEET 1 OF 1		


S6
TB1 **
BLK #16
P7
POWER CORD
GR #18
F1
F2
WH #16
AC HI
AC LOW
BLK #16
WH #16
BLOWER FANS
B1
GRY #16
VIO #16
GRN #16
BLU #16
SWITCHED AC LOW
BRN #16
TEMP WARN
RED #20
SWITCHED AC HIGH
GRY
BLU #16
YEL #16
BRN #16
C1
CR1
CR2
C2
C3
CR3
CR4
C4
.47 @ 100 TYP
C5
.47
100
CR5
C6
C7 80,000 20V
C8 80,000 20V
C9 80,000 20V
C10 80,000, 20V
C11 16,000 50V
C12 16,000 50V
BLK #18
RED/WHT
VIO
GRY #16
P1A
J1A
P4
J4A
P1B
J1B
P4B
J4B
BRN
BLK
WH
#20
BLU
RED
+6IR
+6I
+6V
-6IR
-6I
+24V
+12V
-6V
-12V
-24V
METER RETURN
+12VI
+24VIR
-24I
-24IR
(TO TB1 - PER TABLE 1)
-0 VERSION

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE		PL
	B	ECN # 1013	22 SEPT 81	
	B1	DRAWING ERROR	5-27-82	
	C	PER DCO 009	6-1-82	
	C1	SEE ECO # 0258	3-17-83	
	D	ECO 381 ADDED SHEET 2	6-16-83	
	D1	REVISED PER ECO # 518	4-6-84	

PG 26

BRN #16 (y) +6V
BRN #16 (w) +6V
BRN #16 (L) +6V
BRN #16 (u) +6V
ORG #16 (CC) +12V
GRY #18 (HH) +24V
BLK/GRY #20 (DD) +24RS
VIO #16 (q) -12V
BRN/WH (s) +6VS
GRY/WH #20 (FF) +24VS
BLK/BRN #20 (r) +6RS
YEL #16 (n) -6V
YEL #16 (k) -6V
YEL #16 (h) -6V
YEL #16 (A) -6V
BLK/WH #20 (X) -24S
YEL/WH #20 (e) -6S
BLK/YEL #20 (f) -6RS
WH #18 (W) -24V
BLK/WH #20 (Z) -24RS

RED
ORG
YEL
BRN
GRN
BLK #16

(x) (P) (EE) (Y) (V) (m) (M) (N) (t) (AA) (B) (J)

E2 J2 P2 — 12 pins
TIVE HEATSINK
SSEMBLY A
MBLY NO. 106963
J3A — 4 5 6 7 8 9 10

E2 E3 J2B P2B — 12 pins
TIVE HEATSINK
EMBLY B
MBLY NO. 106966
J3B — 4 5 6 7 8 9 10

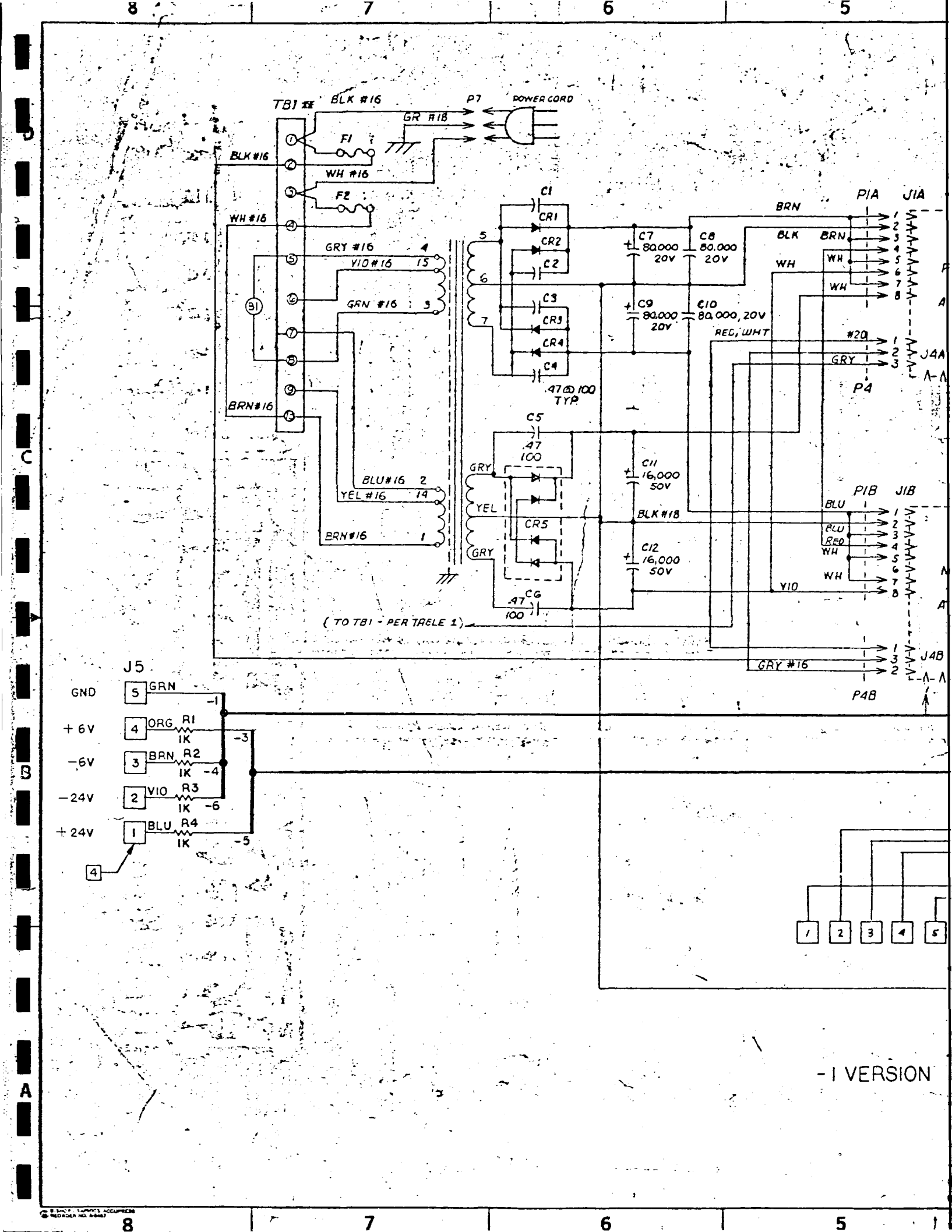
3. FOR ADDITIONAL NOTES & -1 VERSION SEE SHT 2.
2. CR1 CR2 CR3 & CR4 MAY BE REPLACED BY PACKAGED BRIDGE RECTIFER AT OPTION OF FACTORY.
1. C1 AND C2 ARE FACTORY OPTIONAL.
NOTE:

TABLE 1
JUMPER TABLE FOR AC INPUT VOLTAGES

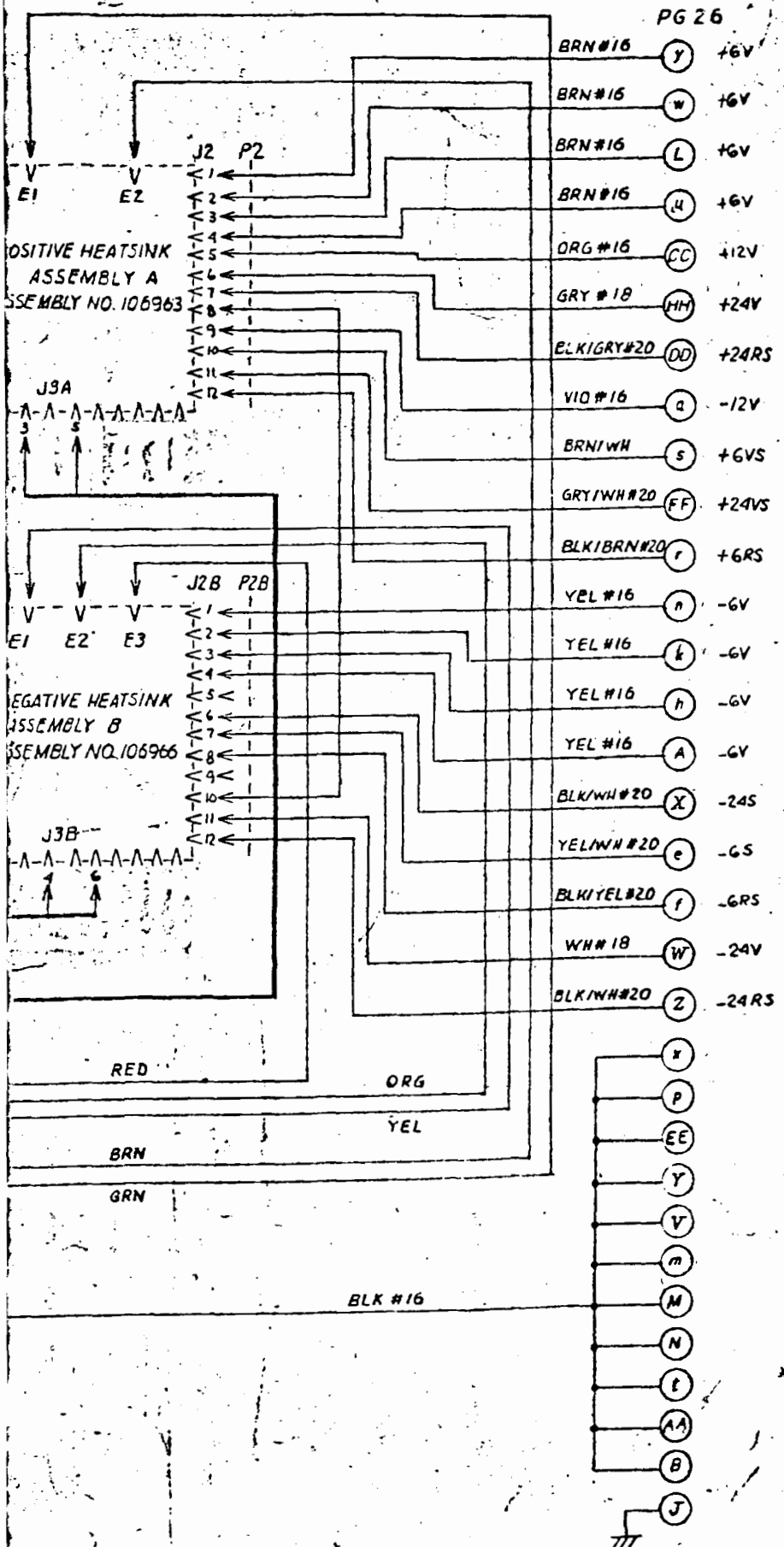
115VAC	100VAC	230VAC
10–9, 8–7, 6–5 (J4A-3)	10–9, 8–7, 6 (J4A-3)	10, 9, 8–7, 6, 5 (J4A-3)

** BARRIER STRIP IS SEC MANUFACTURING OPTION AND MAY BE REPLACED BY HARD WIRING

TITLE: SCHEMATIC CHASSIS WIRING CAMAC POWER SUPPLY		dsp TECHNOLOGY INC.	
DESIGN		DATE	
DRAWN	M.T. AMESBY	DATE	9-8-81
CHECK		DATE	
APPVD		DATE	
SIZE: D	DRAWING NUMBER: SD106961	REV: D1	
SCALE	SHEET 1 OF 2		


TB1
BLK #16
GR #18
P7
POWER CORD
F1
F2
BLK #16
WH #16
WH #16
GRY #16
YIO #16
GRN #16
BRN #16
BLU #16
YEL #16
BRN #16
C1
CR1
CR2
C2
C3
CR3
CR4
C4
.47 @ 100 TYP
C5
.47 100
CR5
C6
.47 100
C7 80,000 20V
C8 80,000 20V
C9 80,000 20V
C10 80,000, 20V
C11 16,000 50V
C12 16,000 50V
RED, WHT
BLK #18
YIO
(TO TB1 - PER TABLE 1)
P1A
J1A
P4
J4A
P1B
J1B
P4B
J4B
BRN
BLK
WH
#20
GRY
BLU
GRY #16
J5
GND
+6V
-6V
-24V
+24V
GRN
ORG R1 1K
BRN R2 1K
VIO R3 1K
BLU R4 1K
-1
-3
-4
-6
-5
-I VERSION

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
		SEE SHT 1		



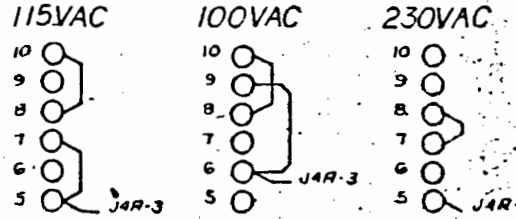
4 PIN 1 ON J5 IS INDICATED BY THE POINTED END.

3. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.
2. CR1 CR2 CR3 & CR4 MAY BE REPLACED BY PACKAGED BRIDGE RECTIFER AT OPTION OF FACTORY.
1. C1 AND C2 ARE FACTORY OPTIONAL.

NOTE:
1

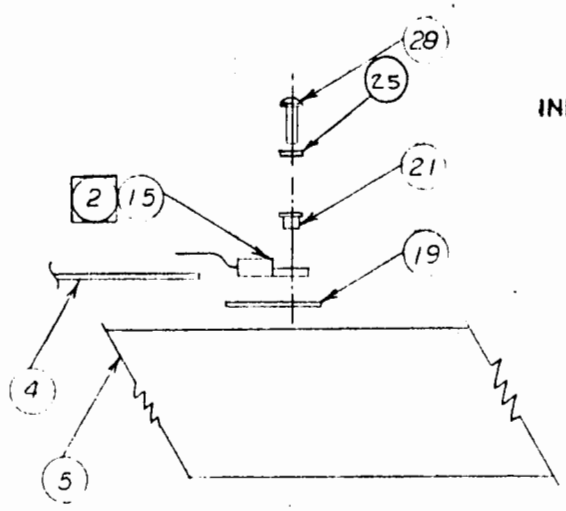
TABLE 1

JUMPER TABLE FOR AC INPUT VOLTAGES



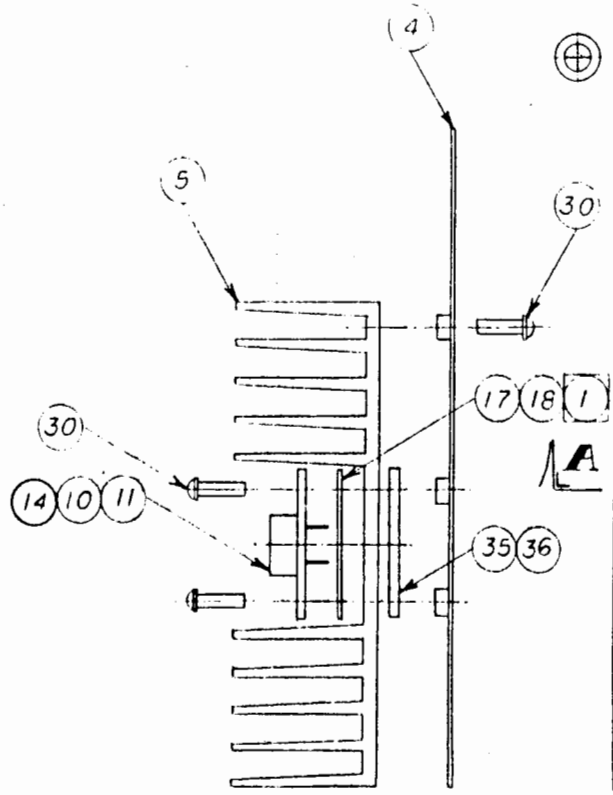
** BARRIER STRIP IS SEC MANUFACTURING OPTION AND MAY BE REPLACED BY HARD WIRING

TITLE	SCHEMATIC CHASSIS WIRING CAMAC POWER SUPPLY			dsp TECHNOLOGY INC.		
DESIGN		DATE		SIZE	DRAWING NUMBER	REV
DRAWN	D. McGUIRE	DATE	5-26-83	D	SD106961	D1
CHECK		DATE				
APPVD		DATE		SCALE		SHEET 2 OF 2



DETAIL A

INDICATES PIN 1



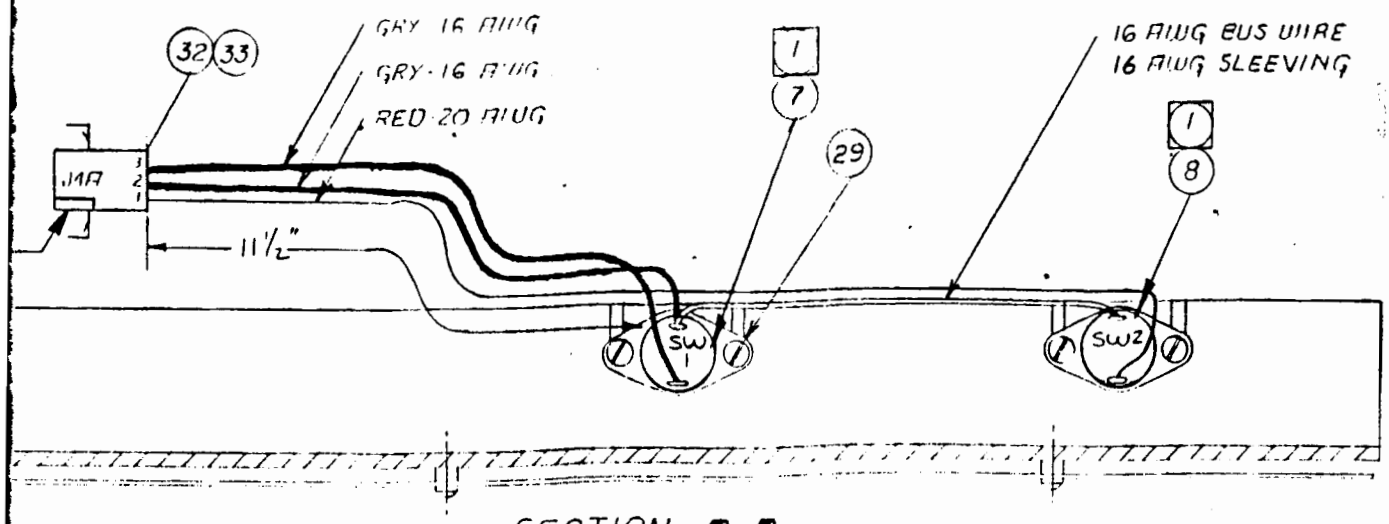
NOTES:

1. USE HEATSINK COMPOUND ON ITEMS 7-9, 14, 15, 17 & 18.
2. FORM LEADS TO LAY FLAT ON P.C.B.
3. ITEM 19 NOT TO EXTEND PAST EDGE OF HEATSINK
4. -1 VERSION FOR Q1-Q5 USE 2N3771 ON 850 P/S.
   -2 VERSION FOR Q1-Q5 USE 2N5685 ON 885 P/S.

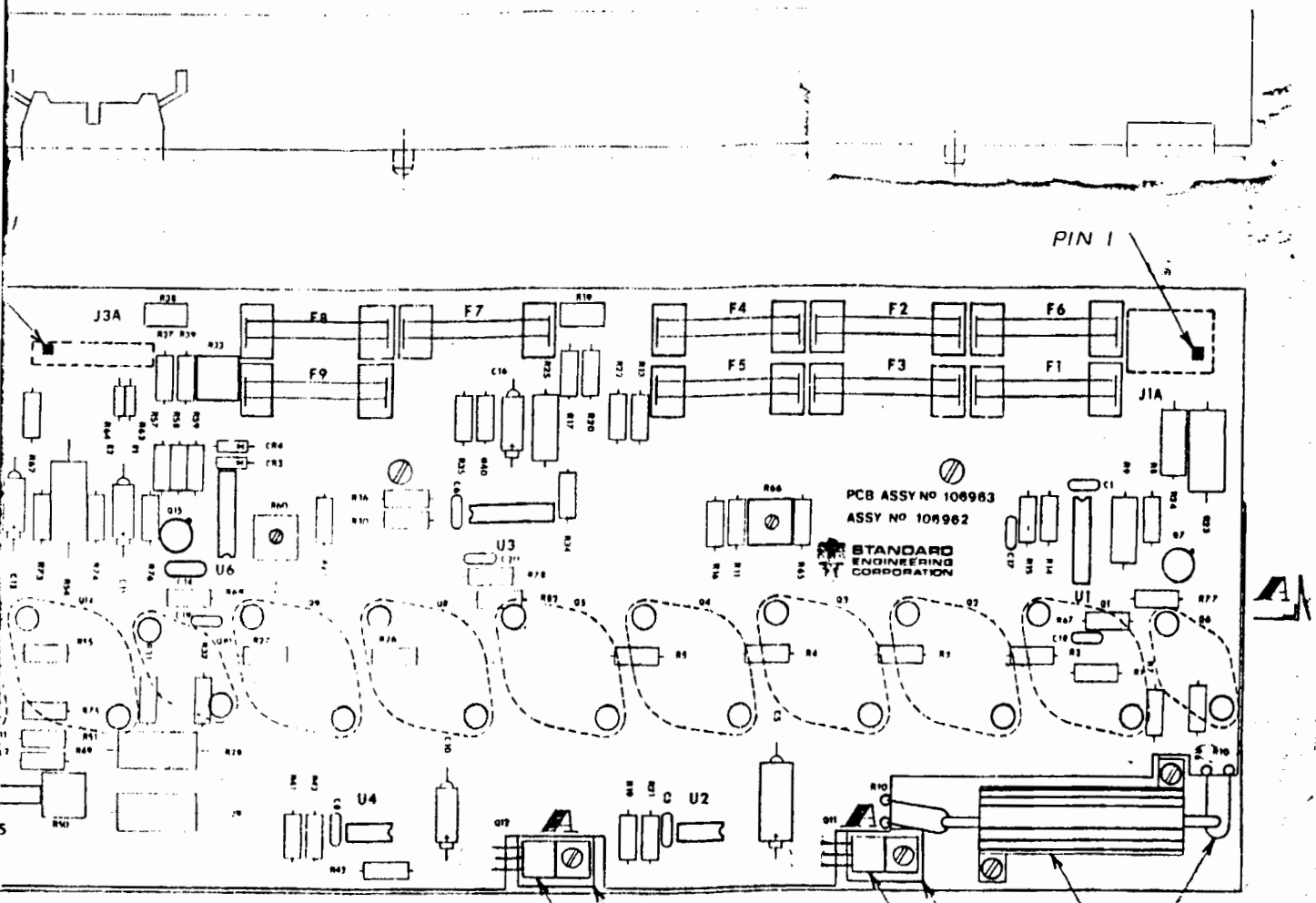
-1 VERSION 850 POWE
-2 VERSION 885 POWE

SYM	DESCRIPTION
D	ECO
C3	ECO # 518
C2	ECO 430
C1	ADDED ITEM 14 PER ECO 222
C	CHANGED PER ECO 218
B	PRODUCTION RELEASE ECO

REVISIONS



SECTION A-A



R SUPPLY
R SUPPLY

SILKSCREEN
106964 REV D

	4-6-91	
	4-6-83	
	4-26-83	
	9-30-82	
	7-29-82	
602	12-2-81	
	DATE	APPROVAL

MATERIAL
SEE PARTS LIST
PL 106962

FINISH
~

DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED

DECIMAL		ANG
XX± ~	XXX± ~	± ~

SCALE 1/1 NO REQ'D

NEXT ASSY 106981/280011
280008

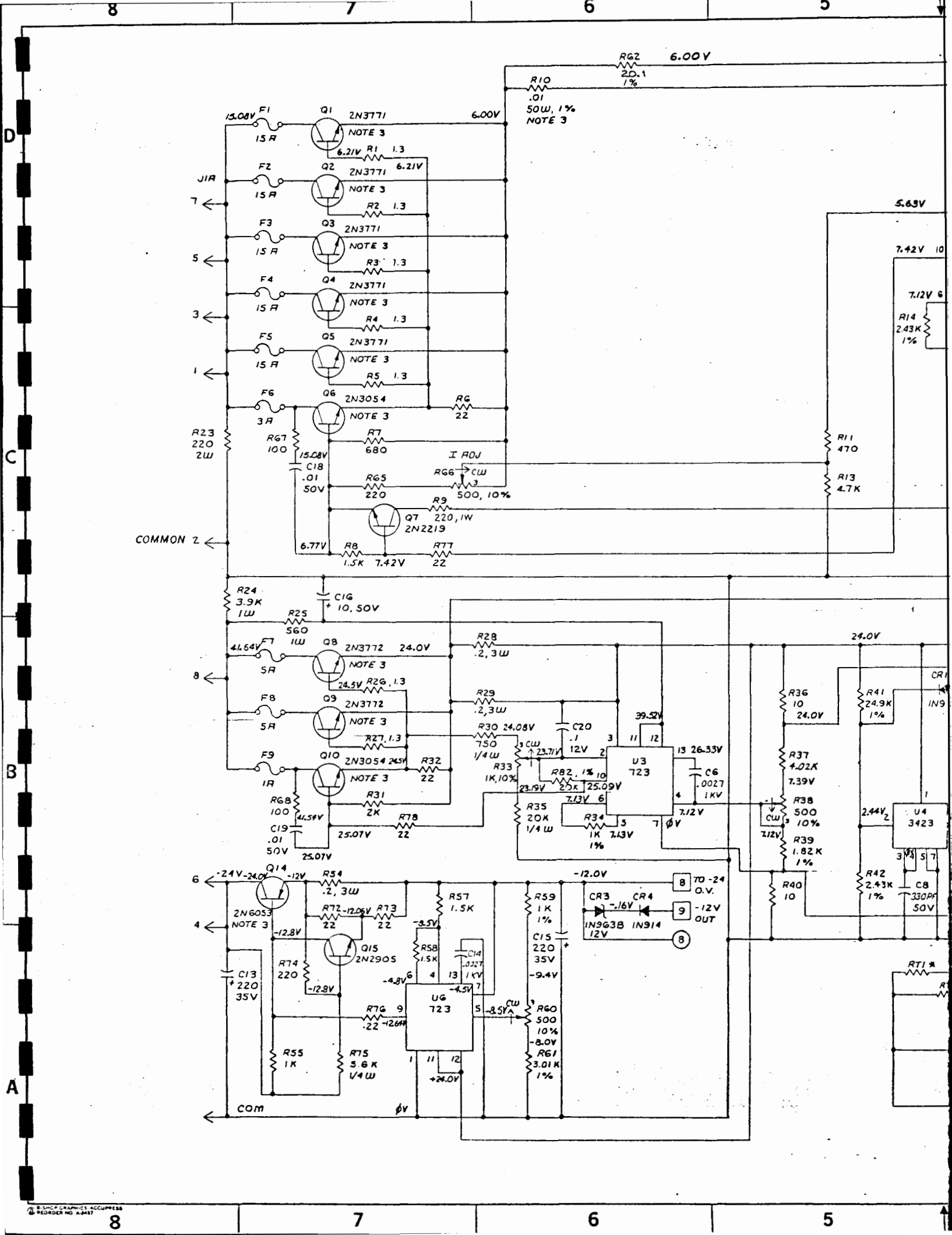
TITLE ASSEMBLY, POSITIVE HEATSINK POWER SUPPLY CAMAC

DESIGN		DATE	
DRAWN	cc barnett	DATE	12-2-81
CHECK	~	DATE	
APPD	1	DATE	17 Jan 82

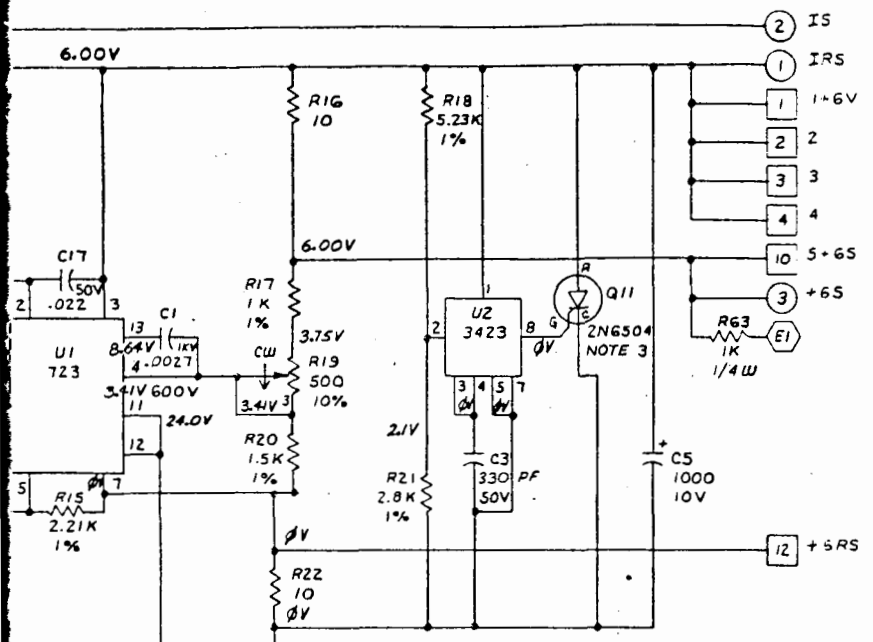
DSP TECHNOLOGY INC

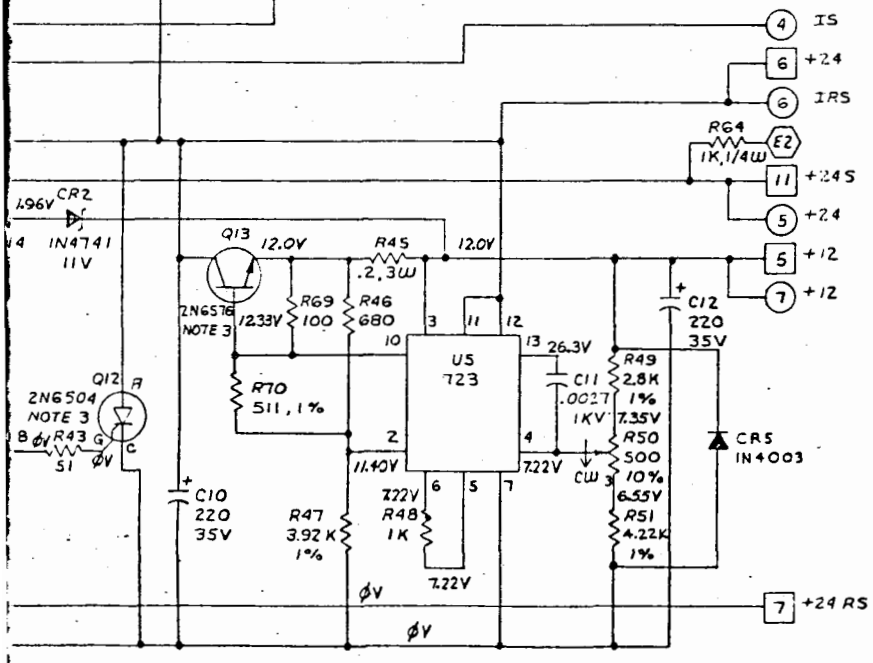
SIZE	DRAWING NUMBER	ISSUE
C	106962	D

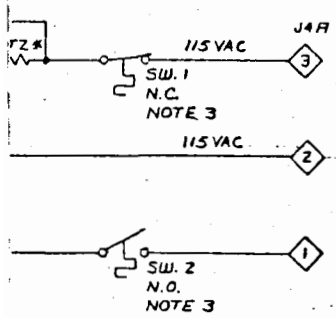
SHEET 1 OF 1


RG2 6.00V
20.1 1%
R10 .01 50W, 1% NOTE 3
15.08V F1 15A Q1 2N3771 NOTE 3 6.00V
6.21V R1 1.3
F2 15A Q2 2N3771 NOTE 3 6.21V
R2 1.3
F3 15A Q3 2N3771 NOTE 3
R3 1.3
F4 15A Q4 2N3771 NOTE 3
R4 1.3
F5 15A Q5 2N3771 NOTE 3
R5 1.3
F6 3A Q6 2N3054 NOTE 3
RG 22
R7 680
R23 220 2W
RG7 100
15.08V C18 .01 50V
I ADJ
RG6 CW 500, 10%
RG5 220
R9 220, 1W
Q7 2N2219
COMMON 2
6.77V R8 1.5K 7.42V
R77 22
5.63V
7.42V 10
7.12V 6
R14 2.43K 1%
R11 470
R13 4.7K
R24 3.9K 1W
C16 10, 50V
R25 560 1W
41.64V F7 5A Q8 2N3772 24.0V NOTE 3
24.5V RG, 1.3
F8 5A Q9 2N3772 NOTE 3
R27, 1.3
F9 1A Q10 2N3054 24.5V NOTE 3
R32 22
RG8 100
41.54V C19 .01 50V
R31 2K
25.07V R78 22
25.07V
R28 .2, 3W
R29 .2, 3W
R30 24.08V 750 1/4W
23.71V CW
R33 1K, 10%
C20 .1 12V
39.52V
U3 723
R82, 1% 20K
23.19V 25.09V
7.13V
R35 20K 1/4W
R34 1K 1% 7.13V
26.33V
C6 .0027 1KV
7.12V
ØV
24.0V
R36 10 24.0V
R37 4.02K 7.39V
R38 500 10%
7.12V
R39 1.82K 1%
R40 10
R41 24.9K 1%
CR1 IN9
2.44V
U4 3423
R42 2.43K 1%
C8 330PF 50V
-24V -24.0V Q14 2N6053 NOTE 3 -12V
R54 .2, 3W
-12.0V
8 TO -24 O.V.
CR3 -.16V CR4
9 -12V OUT
IN9638 12V IN914
8
R72 -12.06V R73 22 22
R57 1.5K
R59 1K 1%
C15 220 35V
-9.4V
-12.8V
Q15 2N2905
R58 1.5K
-8.5V
C14 .0027 1KV
-4.8V
-4.5V
U6 723
R74 220
C13 220 35V
R76 .22 -12.64V
-8.5V CW
R60 500 10%
-8.0V
R61 3.01K 1%
+24.0V
R55 1K
R75 5.6K 1/4W
COM
ØV
RT1*

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B	PRODUCTION RELEASE	12-3-81	
	B1	ADD NOTE #6	4-26-82	
	C	RELEASE PER ECO 218	5-18-82	
	C1	CHANGED Q8 & Q9 FROM 2N3771 TO 2N3772 PER ECO222	9-30-82	
	C2	CHANGED R37 VALUE FROM 4.2K TO 4.02K	11-9-82	
	C3	ADDED VOLTAGES & CONDITIONS	3-7-83	
	D	ECO 440	8-26-83	D.C.
	D1	ECO 951	9-6-83	D.C.
	D2	REVISED PER ECO # 521	4-16-84	R.L.







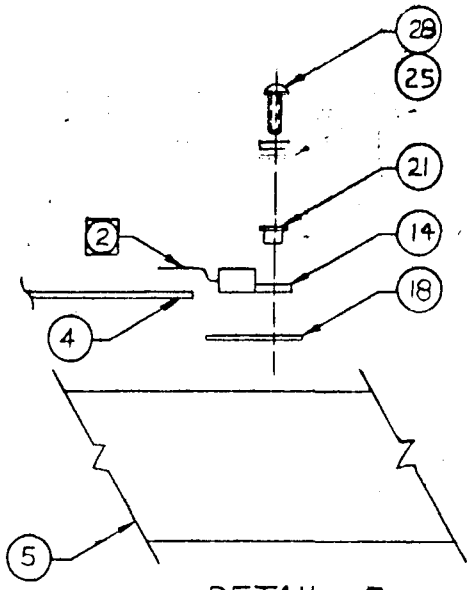
CONDITIONS: (OF TEST VOLTAGES SHOWN)

1. OUTPUT ADJUSTED TO 6.00V AND 24.00V.
2. NO LOAD ON OUTPUTS.
3. 115 VAC 60 H_Z INPUT.
4. ALL VOLTAGES WITH RESPECT TO COMMON.

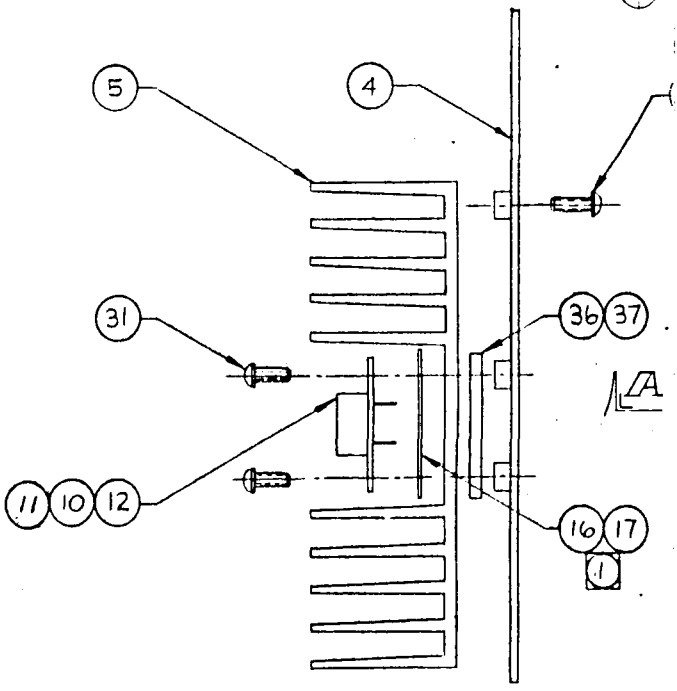
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS ARE 1/2 W, 5% & VALUES ARE IN OHMS.
2. ALL CAPACITOR VALUES ARE IN MICRO FARADS.
3. COMPONENT IS MOUNTED DIRECTLY TO THE HEATSINK. SEE PARTS LIST PL106962.
4. ±12V CIRCUITS ARE OPTIONAL
5. > INDICATES J1A
   □ INDICATES J2A
   ○ INDICATES J3A
   ◇ INDICATES J4A
   ⬡ INDICATES WIRE WRAP PIN ON P.C.B.

TITLE: SCHEMATIC, REGULATOR, +6, +24 & ±12 Vdc					dsp TECHNOLOGY INC.	
DESIGN	[illegible]	DATE		SIZE	DRAWING NUMBER	REV
DRAWN	K. Channell	DATE	12 3 81	D	SD106963	D2
CHECK	[illegible]	DATE	[illegible]			
APPVD	[illegible]	DATE	[illegible]	SCALE —	SHEET 1	OF 1



DETAIL A



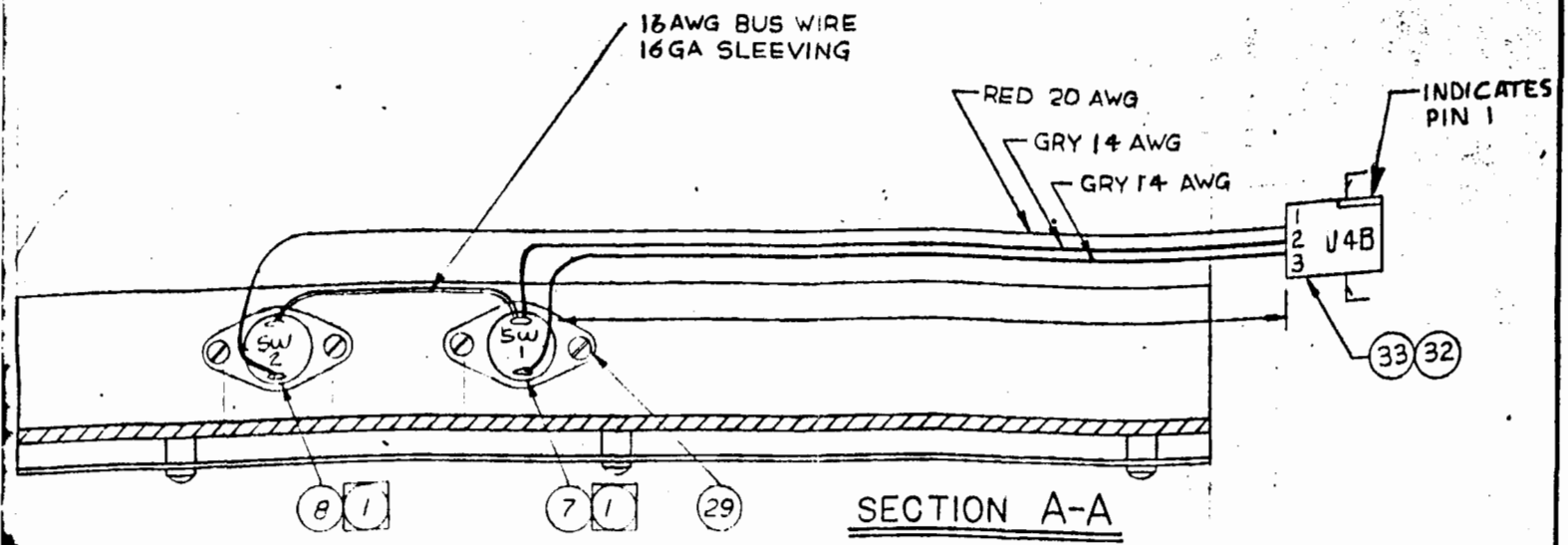
NOTES:

1. USE HEATSINK COMPOUND ON ITEMS 7,8, 14,16,17, &20.
2. FORM LEADS TO LAY FLAT ON P.C.B.
3. ■ INDICATES PIN 1
4. -1 VERSION FOR Q1-Q5 USE 2N3771 ON 850 P/S.
   -2 VERSION FOR Q1-Q5 USE 2N5685 ON 885 P/S.

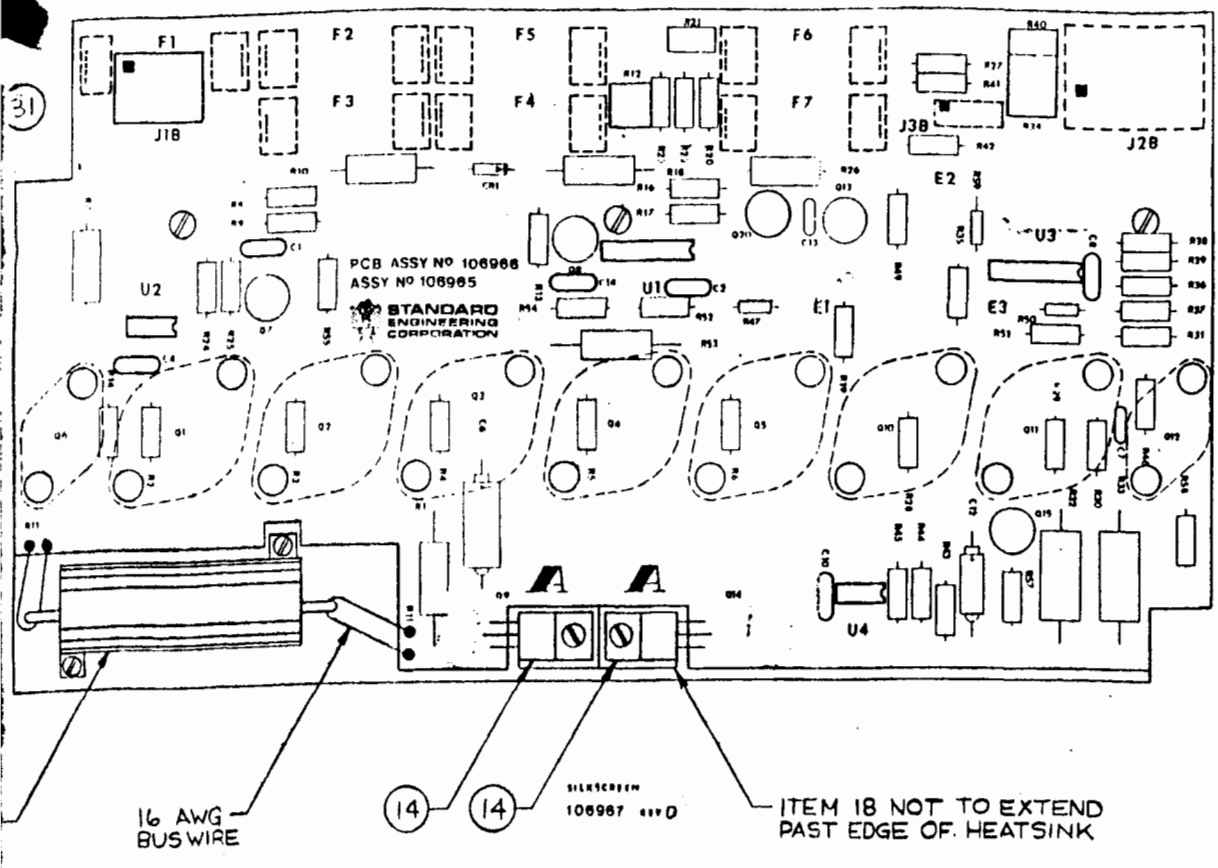
20
1

SYM	DESCRIPTION
D	ECO
C4	ECO # 518
C3	ECO 339
C2	CHANGED QTY FROM 7 TO 5 ITEM 10
C1	ADDED ITEM 11 PER ECO 222
C	CHANGED PER ECO 219
B	PRODUCTION RELEASE ECO 2

REVISIONS



SECTION A-A



-1 VERSION 850 POWER SUPPLY
-2 VERSION 885 POWER SUPPLY

	DATE	APPROVAL
	4-6-83	
	4-26-83	
	3-16-83	
	9-30-82	
	7-29-82	
03	12-2 81	

MATERIAL: SEE PL106965

FINISH

DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED
DECIMAL: XX± .1, XXX± .05; ANG ±1°
SCALE 1:1 NO REQ'D
NEXT ASSY 106981/2804/11 280008

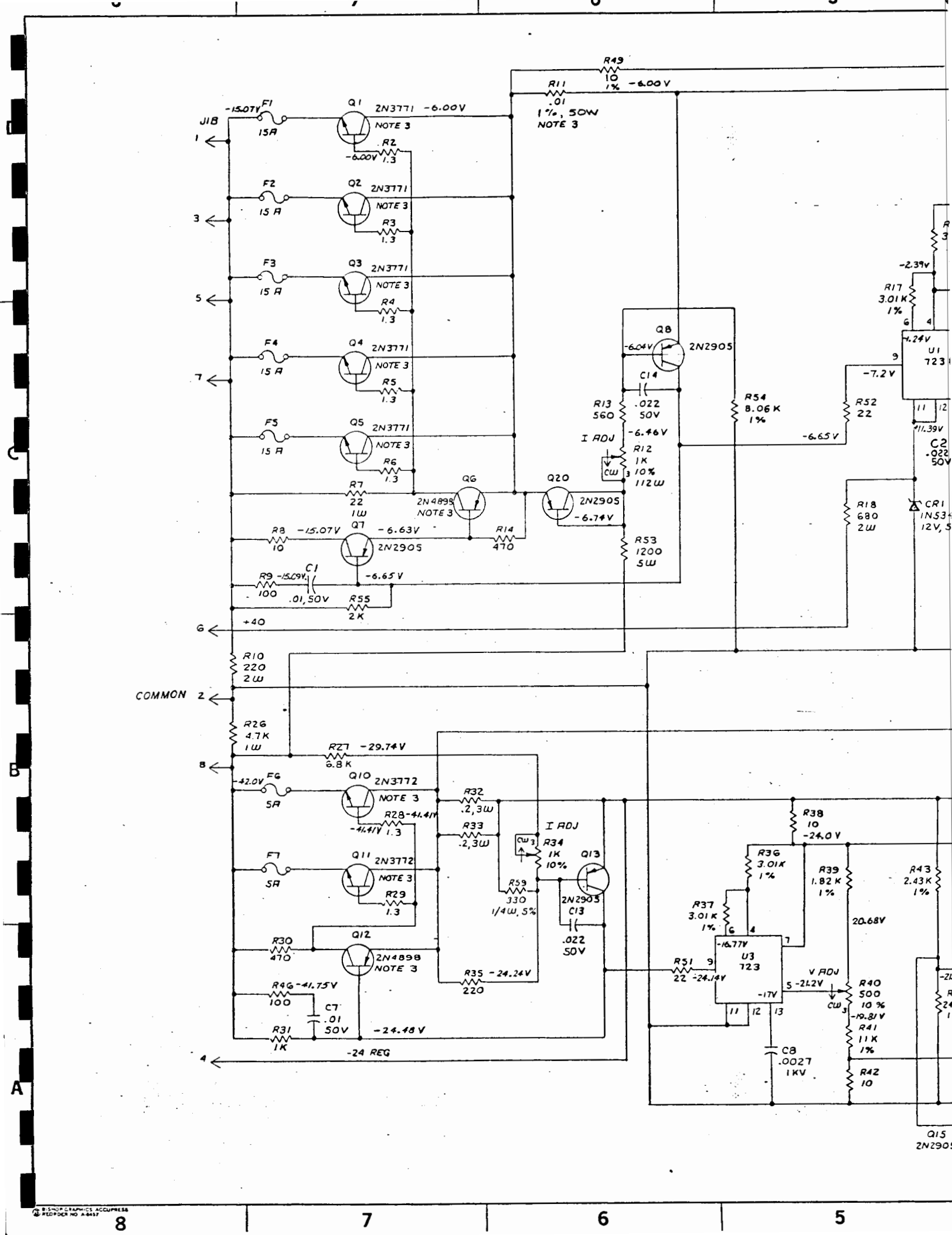
TITLE: ASSEMBLY, NEG. HEATSINK CAMAC

DESIGN		DATE	
DRAWN	e.c.hannett	DATE	12-2-81
CHECK	JT	DATE	12-4-81
APPRO		DATE	12/7/81

DSP TECHNOLOGY INC.

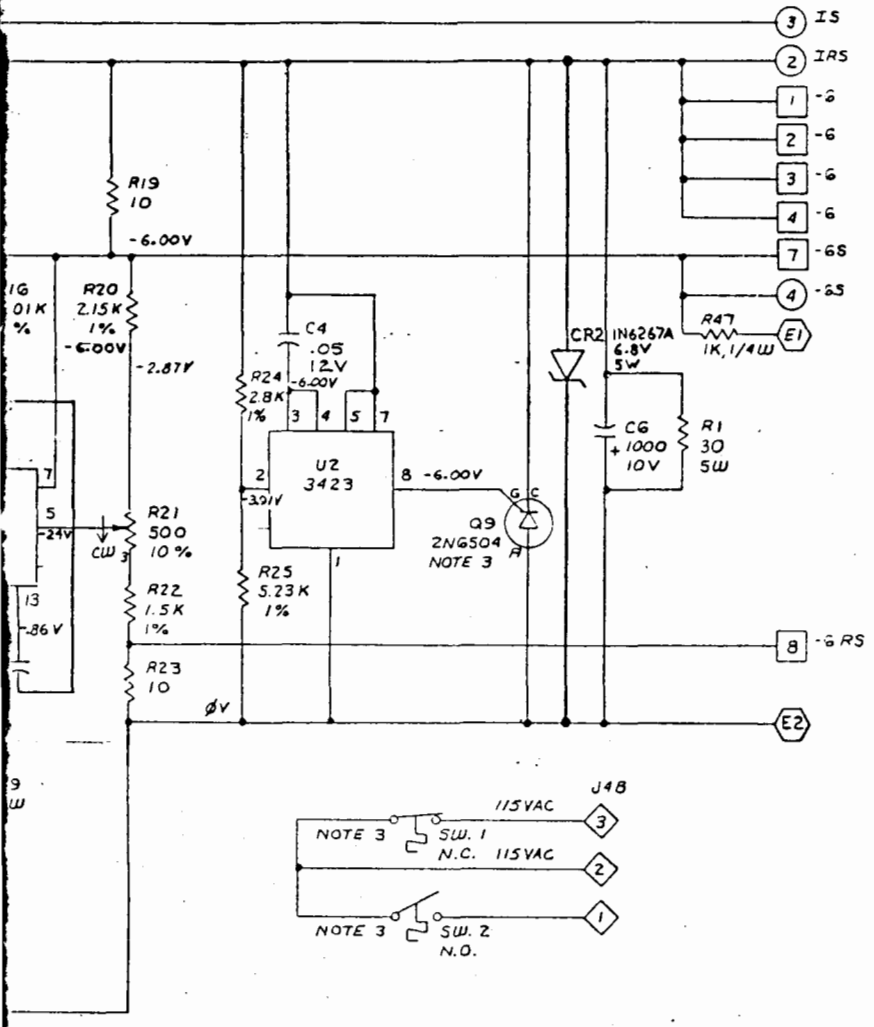
SIZE	DRAWING NUMBER	ISSUE
C	106965	D

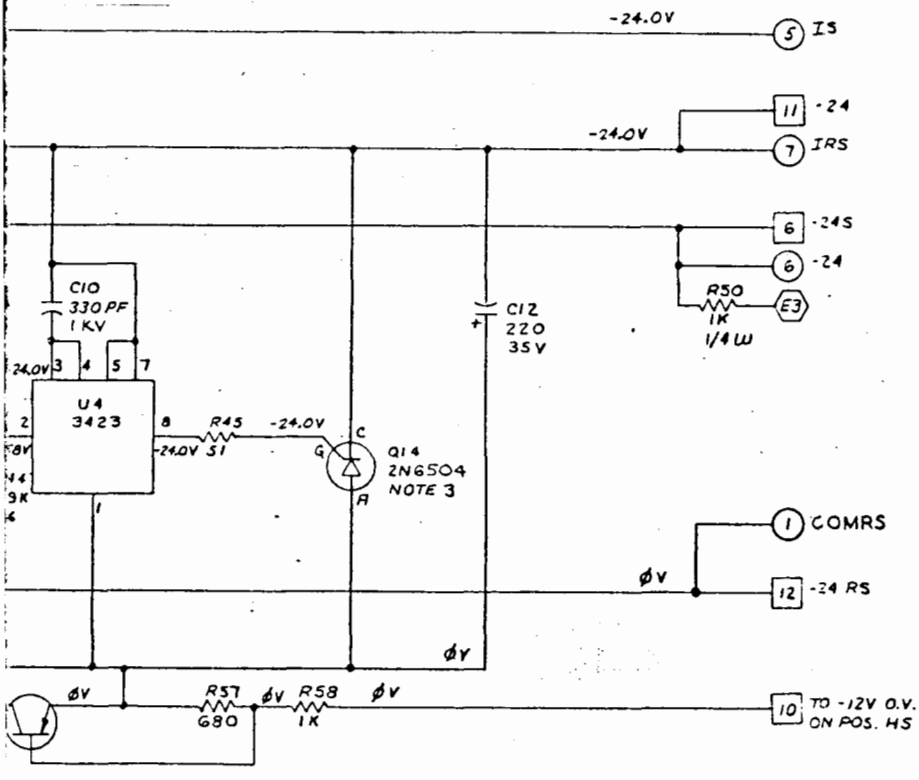
SHEET 1 OF 1



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REORDER NO A-8457

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B	PRODUCTION RELEASE ECO 203	12-3-81	
	C	RELEASE - SEE ECO # 219	5-18-82	
	C_1	CHANGED Q10 & Q11 FROM 2N3771 TO 2N3772 PER ECO 222	9-30-82	
	C_2	ADDED VOLTAGES & CONDITIONS	3-7-83	
	D	ECN 1183 - ECO 385	6-21-83	
	D1	REVISED PER ECO # 521	4-16-84	





CONDITIONS: (OF TEST VOLTAGES SHOWN)

1. OUTPUTS ADJUSTED TO -6.00V AND -24.00 V.
2. NO LOADS ON OUTPUTS.
3. 115 VAC 60 H_z INPUT.
4. ALL VOLTAGES WITH RESPECT TO COMMON.

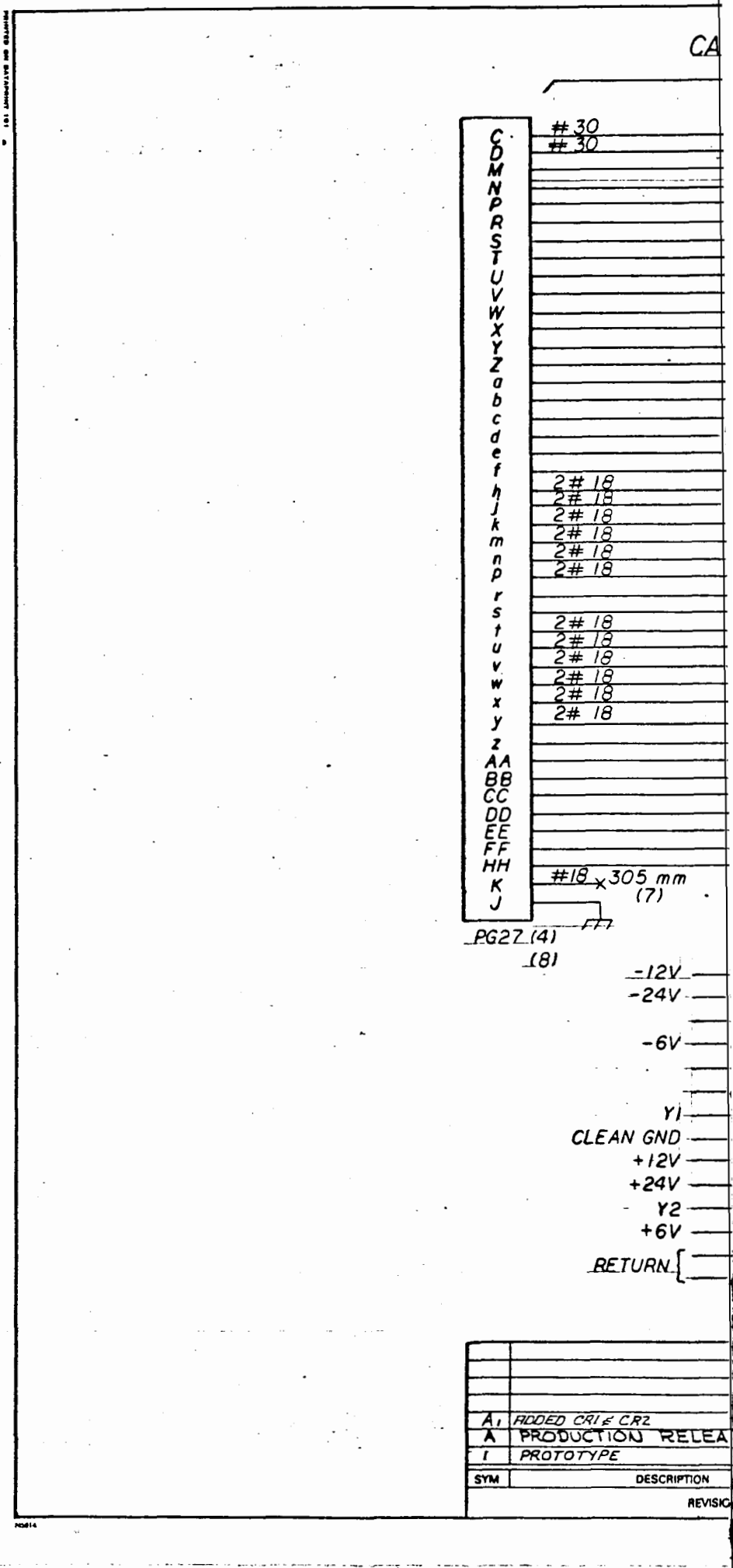
NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS ARE 1/2 W, 5% & VALUES ARE IN OHMS.
2. ALL CAPACITOR VALUES ARE IN MICRO FARADS.
3. COMPONENT IS MOUNTED DIRECTLY TO THE HEATSINK. SEE PARTS LIST PL106965.
4. > INDICATES J1B
   □ INDICATES J2B
   ○ INDICATES J3B
   ◇ INDICATES J4B
   ⬡ INDICATES WIRE WRAP PIN ON P.C.B.

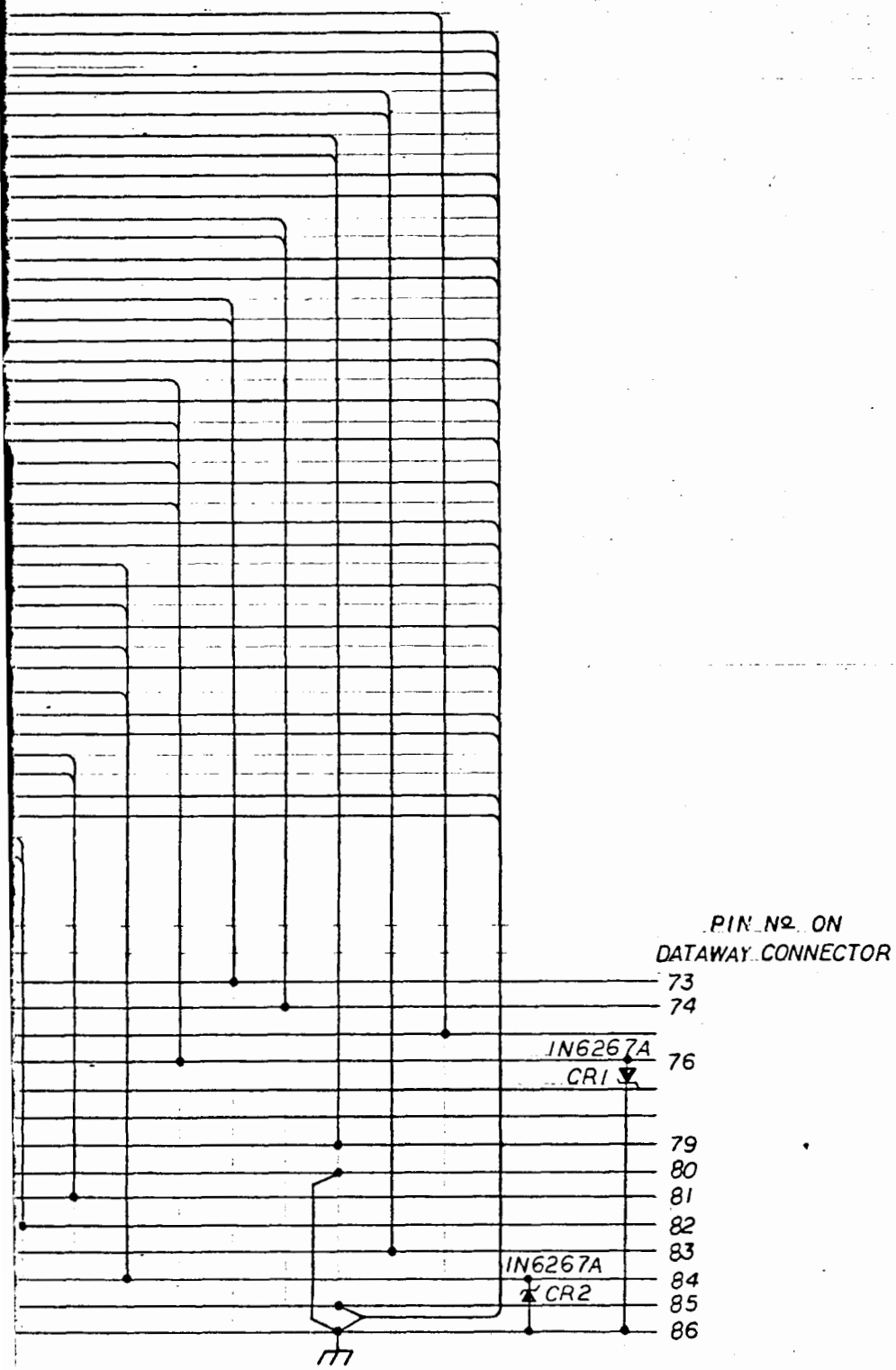
TITLE: SCHEMATIC, REGULATOR, -6 AND -24 Vdc

dsp TECHNOLOGY INC.

DESIGN		DATE		SIZE	DRAWING NUMBER	REV
DRAWN		DATE	12-4-81	D	SD106966	D1
CHECK		DATE	12-5-81			
APPVD		DATE		SCALE —	SHEET 1 OF 1	


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2# 18
2# 18
2# 18
#18 x 305 mm
(7)
PG27 (4)
(8)
-12V
-24V
-6V
Y1
CLEAN GND
+12V
+24V
Y2
+6V
RETURN
A1 ADDED CR1 & CR2
A PRODUCTION RELEA
1 PROTOTYPE
SYM
DESCRIPTION
REVISIO

MAC CRATE WIRING (2)



	3-15-82	cch
SE	11-5-79	[illegible]
	10-12-79	[illegible]
	DATE	APPROVAL

NS

MATERIAL	—
HEAT TREAT	
WEIGHT	
MISC.	

FINISH	—
DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED	
DECIMAL	ANG.
XX± XXX±	±
SCALE —	NO REQ'D
NEXT ASSY	—

TITLE: DATAWAY WIRING

DESIGN		DATE	
DETAIL	e.c.hannett	DATE	10-12-79
CHECK	[illegible]	DATE	10-12-79
APPRO	[illegible]	DATE	10/12/79

DSP TECHNOLOGY INC.

JOB NO.		
SIZE	DRAWING NUMBER	ISSUE
C	106697	A1

dsp Technology Inc.

PRODUCT WARRANTY

(Excludes Software)

DSP TECHNOLOGY ("DSP") warrants its products to be free from defects in material and workmanship and to meet DSP's performance specifications. The warranty period is one year from the date of shipment to the buyer. The warranty is limited by the paragraphs below.

RETURN TO FACTORY

If a buyer discovers a defect in a DSP product covered by this agreement, buyer's exclusive remedy is to ship the product back to DSP's Fremont factory, where DSP will, at its option, either repair or replace the product. This remedy applies if DSP receives the returned product on or before the tenth day after the expiration of the warranty period and the buyer notifies DSP of the defect before returning the product.

COST TO BUYER OF REPAIRS OR REPLACEMENT

Buyer must prepay freight charges to DSP. DSP will pay standard return freight to buyer. Buyer will be charged for premium freight if that method of transport is requested by buyer. There is no other charge for repair or replacement during the warranty period.

TRANSFERRABLE WARRANTIES

In addition to the foregoing warranty, DSP also provides the buyer the transferrable warranty, if any, provided to DSP by the manufacturers of other products such as terminals and disk systems supplied by SEC as part of a total system.

LIMITATION OF WARRANTY AND LIABILITY

The foregoing constitutes DSP's entire warranty, expressed, implied, and/or statutory (except as to title), and to any other party for any breach of such warranty and for damages, whether direct, special, incidental, or consequential. Other than as expressly provided in this document, no warranties expressed or implied, including any warranty of merchantability or fitness for a particular purpose are made. No employee, representative, or agent or seller has any authority expressed or implied to alter or supplement the terms of this warranty.

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