ELGAR

AC POWER SOURCE

MODEL
1001SLE/1751SLE

SERVICE MANUAL

ELGAR ELECTRONICS CORPORATION
9250 Brown Deer Road
San Diego, CA 92121-2294
1-800-733-5427
Tel: (858) 450-0085
Fax: (858) 458-0267
Email: sales@elgar.com
www.elgar.com

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ELGAR TWO-YEAR WARRANTY

Elgar Electronics Corporation (hereinafter referred to as Elgar) warrants its products to be free from defects in material and workmanship. This warranty is effective for two years from the date of shipment of the product to the original purchaser. Liability of Elgar under this warranty shall exist provided that:

- the Buyer exposes the product to normal use and service and provides normal maintenance on the product;
- Elgar is promptly notified of defects by the Buyer and that notification occurs within the warranty period;
- the Buyer receives a Return Material Authorization (RMA) number from Elgar's Repair Department prior to the return of the product to Elgar for repair, phone 800-73-ELGAR (800-733-5427), ext. 2295;
- the Buyer returns the defective product in the original, or equivalent, shipping container;
- if, upon examination of such product by Elgar it is disclosed that, in fact, a defect in materials and/or workmanship does exist, that the defect in the product was not caused by improper conditions, misuse, or negligence; and,
- that Elgar QA seal and nameplates have not been altered or removed and the equipment has not been repaired or modified by anyone other than Elgar authorized personnel.

This warranty is exclusive and in lieu of all other warranties, expressed or implied, including, but not limited to, implied warranties of merchantability and fitness of the product to a particular purpose. Elgar, its agents, or representatives shall in no circumstance be liable for any direct, indirect, special, penal, or consequential loss or damage of any nature resulting from the malfunction of the product. Remedies under this warranty are expressly limited to repair or replacement of the product.

CONDITIONS OF WARRANTY

- To return a defective product, contact an Elgar representative or the Elgar factory for an RMA number. Unauthorized returns will not be accepted and will be returned at the shipper's expense.
- For Elgar products found to be defective within thirty days of receipt by the original purchaser, Elgar will absorb all ground freight charges for the repair. Products found defective within the warranty period, but beyond the initial thirty-day period, should be returned prepaid to Elgar for repair. Elgar will repair the unit and return it by ground freight pre-paid.
- Normal warranty service is performed at Elgar during the weekday hours of 7:30 am to 4:30 pm Pacific time. Warranty repair work requested to be accomplished outside of normal working hours will be subject to Elgar non-warranty service rates.
- Warranty field service is available on an emergency basis. Travel expenses (travel time, per diem expense, and related air fare) are the responsibility of the Buyer. A Buyer purchase order is required by Elgar prior to scheduling.
- A returned product found, upon inspection by Elgar, to be in specification is subject to an inspection fee and applicable freight charges.
- Equipment purchased in the United States carries only a United States warranty for which repair must be accomplished at the Elgar factory.

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SAFETY NOTICE

Before applying power to the system, verify that the unit is configured properly for the user's particular application.

WARNING!

HAZARDOUS VOLTAGES IN EXCESS OF 260 VRMS, 370V PEAK MAY BE PRESENT WHEN COVERS ARE REMOVED. QUALIFIED PERSONNEL MUST USE EXTREME CAUTION WHEN SERVICING THIS EQUIPMENT. CIRCUIT BOARDS, TEST POINTS, AND OUTPUT VOLTAGES MAY BE FLOATING ABOVE (BELOW) CHASSIS GROUND. INTERNALLY, IN ADDITION TO THE VOLTAGES MENTIONED ABOVE, DC POWER SUPPLY VOLTAGES OF ±60VDC MAY BE PRESENT. SUCH DC VOLTAGES ARE CAPABLE OF SHORT CIRCUIT CURRENTS OF UP TO SEVERAL HUNDRED AMPERES.

Installation and service must be performed by qualified personnel who are aware of dealing with attendant hazards.

Ensure that the AC power line ground is connected properly to the AC Power Source. Similarly, other power ground lines including those to application and maintenance equipment must be grounded properly for both personnel and equipment safety.

Always ensure that facility AC input power is de-energized prior to connecting or disconnecting the power cable(s) and/or installing or removing the unit from the AC Power Source. Similarly, the AC Power Source circuit breaker must be switched OFF (0) prior to connecting or disconnecting input and/or output power cable(s) and/or installing or removing the unit from the AC Power Source.

During normal operation, the operator does not have access to hazardous voltages within the chassis. However, depending on the user's application configuration, HIGH VOLTAGES HAZARDOUS TO HUMAN SAFETY may be generated normally on the output terminals. Ensure that the output power lines are labeled properly as to the safety hazards and that any inadvertent contact with hazardous voltages is eliminated. To guard against risk of electrical shock during open cover checks, do not touch any portion of the electrical circuits. Even when the power is off, capacitors can retain an electrical charge. Use safety glasses during open cover checks to avoid personal injury by any sudden failure of a component.

Some circuits are live even with the front panel circuit breaker of the AC Power Source turned OFF (0). Servicing, and even fuse verification as well as connecting wiring to the chassis must be accomplished with the power removed via external means. Some components that can hold a charge for a time after power has been removed, such as storage capacitors, are used in this equipment. These parts have discharging devices connected to provide a means for the discharge of voltages when the power is removed. Wait at least two minutes after removal of power to allow the discharging of these parts.

This equipment is designed to be operated in a manner specified by the manufacturer for both personnel and equipment safety. Operating this equipment in a manner NOT specified by the manufacturer, the protection provided by the equipment may be impaired.

SAFETY SYMBOLS

CAUTION
Risk of Electrical Shock

CAUTION
Refer to Accompanying Documents

Off (Supply)

Standby (Supply)

On (Supply)

Protective Conductor Terminal

Direct Current (DC)

Alternating Current (AC)

Three–Phase Alternating Current

LIST OF FIGURES

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1.1 INTRODUCTION

This section describes the Model 1001SLE/1751SLE Series AC Power Sources and associated circuit boards, assemblies and interconnecting signals. This section provides a sound basis for understanding the roles performed by the instrument electronics and should be a precursor to any troubleshooting or maintenance. The user should frequently refer to the schematics located in Section IV of this manual.

Topics of this section are well advanced of normal Operator/ Programmer activities. An understanding of both analog and digital design, associated devices, and terminology is necessary to fully understand the material presented in this section. For details of the inner workings of components, refer to the Individual Device Manufacturer's Data books.

Prior to the detailed level of discussion of the assemblies and boards within the power source, a top level system overview is provided. An under-standing of both top level and circuit activities is most valuable should the user find it necessary to investigate a suspected fault or malfunction within the power source.

If the power source has a PIP (Plug-In Programmable oscillator) installed, refer to the Service Manual covering the PIP being used and become familiar with the theory of operation. This understanding of the PIP theory of operation will enhance the user's understanding of the power source.

1.2 SYSTEM OVERVIEW

Figure 1-1 identifies the power amplifier functional relationships. The Preamplifier PC Board plugs into the motherboard. The preamplifier/power stage gain is stabilized and is determined by an AC feedback loop. Another feedback loop from transformer T3 controls regulation. To achieve an overall gain sufficient to produce the required power amplifier output voltages, a step-up transformer is employed. This step-up transformer, T2, is interposed between the power amplifier and the output load. Meter M1, a 0 to 300 VAC indicator, monitors the output voltage and is mounted on the front panel of the power source. Resistor R1, the front panel AMPLITUDE control, governs the input signal with a magnitude of approximately 2 VRMS. This signal is derived from either a plug-in oscillator module or from an external signal source.

1.3 INTERCONNECTION AND POWER SUPPLIES

(Refer to Schematic No. 6071076 for the 1001SLE, or to Schematic No. 6121045 for the 1751SLE.)

Input power enter at terminal block, TB1, on the rear panel of the power source. The input is passed through a line filter, and is applied to the input power circuit breaker, CB1, which breaks both sides of the input power line. The circuit breaker applies the input power to the primary of the input power transformer, T1, +8V power supply transformer, T5, and the cooling fan(s).

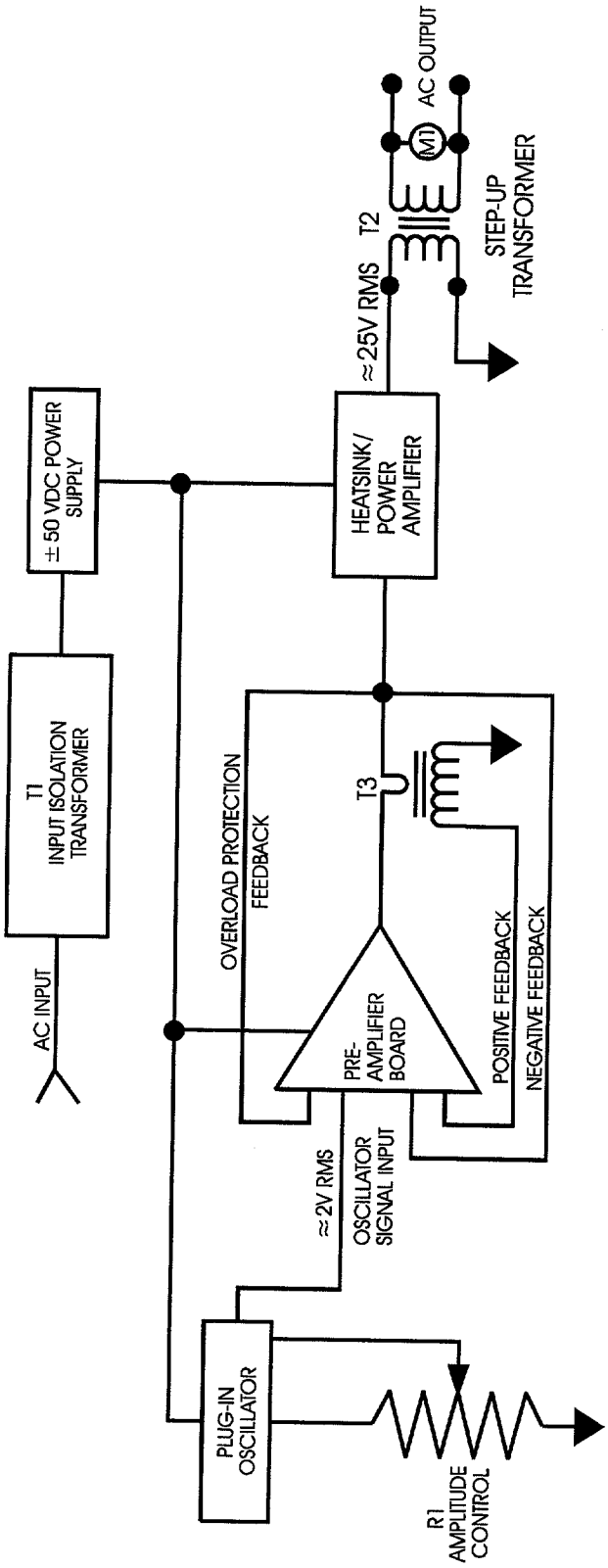

Figure 1-1. Model 1001SLE/1751SLE Simplified Block Diagram

The secondary of the input power transformer, T1, is applied to a full wave bridge rectifier, U1. After rectification, the voltage is filtered by capacitors C1 and C2 to make the +/-50VDC supplies required for the power amplifier. There are supply bleeder resistors attached to the C1 and C2 filter capacitors to discharge the filter capacitors after power is turned off. The secondary of the +8V power supply transformer, T5, is applied to a full wave bridge rectifier, U1. After rectification, the voltage is applied to the power indicator, DS1, and is also connected to the Motherboard to be used in the Plug-In oscillator module to create the +5VDC logic supply. This secondary is fused with a 2A Slo-Blo type fuse, F1, located next to T5 in the chassis.

The motherboard assembly interfaces with the oscillator, whether a plug-in or an external signal source. The preamplifier plugs into the motherboard.

The motherboard connectors are as follows:

- J1 allows the connection of AMPLITUDE control pot, R1 located on the front panel.
- J2 interfaces with the Upper and Lower Heatsink assemblies.
- J3 connects the Motherboard to the J1 connector located on the rear panel via a cable assembly (Part Number 5121051).
- J4 provides connections for the current transformer, T3, which controls regulation via feedback.
- J5 provides optional relay control connections, if configured.
- J6 allows for optional PIP voltage and current sense, if configured.
- J7 provides optional connections for the "T" Test option, which allows current monitoring and current limit programming, if configured.
- J8 provides optional connections for the "D" Disconnect option, and also allows connections for multi-amplifier system. Only found on the 5071077 Motherboard Assemblies, if configured.
- Connections E1, E2, and E3 provide optional Sync connections for PIP options via rear panel mounted BNC connectors, if equipped.

The motherboard includes several relays as follows:

- K1 is the optional 65/130V Range Drive relay, if configured.
- K2 is the oscillator signal disable relay.
- K3 is the optional 130/260V Range Drive relay, if configured.
- K4 is the optional "D" Disconnect Drive relay (found only on the 5071077 Motherboard Assemblies), if configured.
- K5 is the optional "D" Disconnect sense voltage relay (found only on the 5071077 Motherboard Assemblies), if configured.

Refer to Schematic Drawing No. 6071075 and 6071077 for more detail on the motherboard connections and relays.

The amplifier's output goes to transformer T2 where the voltage is stepped up to the required level for output on terminal block TB2. The T2 secondary winding are 4 individual 0-65VAC output windings. These winding are brought to an internal terminal block, TB3. The first two windings are jumpered in series for a 0-130VAC output. The remaining two windings are also series connected for 0-130VAC output. The two 0-130VAC outputs are brought to the rear panel output terminal block, TB2. TB2, via jumpers, determines the output voltage range of either 0-130VAC (parallel connected) or 0-260VAC (series connected) output voltage range. The output voltage is also available at the front panel binding posts E1 (Red), E2 (White), and E3 (Black). The 0 to 300 VAC Meter, M1, allows the output voltage to be monitored on the front panel.

1.4 PREAMPLIFIER

(Refer to Schematic No. 6070004.)

The preamplifier stabilizes the gain of the power source via an AC feedback loop. The preamplifier works with T3 to control regulation.

The preamplifier circuit embodies a first stage differential amplifier U1A/B, which receives its signal input from AMPLITUDE control, R1. The differential amplifier receives feedback from the output amplifier, thereby maintaining approximately zero DC offset to the output transformer. The emitter currents are supplied by R5 from the +12V supply, regulated by CR1. The output of U1B provides the base drive for Q1 which operates as a class A amplifier. Q1 supplies the base drive for common emitter driver Q5 and emitter follower Q4. Diodes CR2, CR3, and CR4 provide a small amount of forward bias to the output amplifier to minimize crossover distortion. Q4 and Q5 are drivers for the emitter followers on the power heatsink assemblies. Transistors Q2 and Q3 are part of a circuit designed to protect the power transistors on the power heatsink assemblies. Power transistor protection on the preamplifier is driven by feedback from the heatsink assemblies. Current flow in the upper half of the power heatsink is sampled by a resistor, R6, on the heatsink and applied through R29 of the preamplifier to the base of Q2. Q2 is the upper current limit transistor. When the voltage is sufficient to turn on Q2, Q2 conducts and diverts drive current from the base of Q4, thus preventing any further increase in output current. Simultaneously, the current in the lower half of the power heatsink is sampled by R7 on the motherboard. This voltage is applied through R31 of the preamplifier to the base of Q3. Q3 is the lower current limit transistor. When Q3 conducts it diverts drive current from the base of Q5, thus preventing any further increase in output current. The resistor diode network, in the base circuits of Q2 and Q3, senses the amplifier output voltage and modifies the bias voltages of Q2 and Q3 to further reduce the output current under short circuit or severe overload conditions. This prevents excess dissipation in the power transistors on the heatsink assembly. Negative AC feedback, from the power transistor's output, is fed back to the base of U1A through resistor R11. Capacitor C5, across R11, helps stabilize the amplifier against high frequency instabilities.

In order to maintain proper load regulation, the primary current of output transformer T2 is sensed by current sense transformer T3. As the load is applied to the output of the unit, a positive feedback signal is developed at the secondary of T3 and is applied across shunt resistor R27 and regulation adjustment potentiometer R26 of the preamplifier board. This signal is then applied to the input of the differential amplifier through R3. Capacitor C2 and resistor R2 make up a boost network which increases the positive feedback at higher output frequencies to maintain regulation. The preamplifier board operates from the positive and negative 50 VDC produced by chassis full wave bridge rectifier U1.

1.5 HEATSINK ASSEMBLIES

(Refer to Schematic No. 6920026 for the 1001SLE, or Schematic No. 6121024 for the Model 1751SLE.)

The heatsink assemblies are mounted in the wind tunnel and house the power transistors. The power transistors produce the necessary amplifier output current to feed the primary of chassis output transformer T2. T2 will subsequently step up the voltage to the required level for output (refer to Schematic Nos. 6071076 or 6121045, as required, for T2 circuitry). The resistors, in the emitter circuitry of each power transistor, ensure equal current sharing. The heatsink assembly is operated from positive and negative 50 VDC which is produced by chassis full wave bridge rectifier U1 and filter capacitors C1 and C2 (refer to Schematic Nos. 6071076 or 6121045, as required, for U1 circuitry). Thermal switch TK1, shown on the heatsink schematic, removes the drive signal from the amplifier, via the preamplifier, in the event of overheating. Overheating may occur from excessive load application or restricted airflow through the wind tunnel.

The preamplifier contains circuitry which protects the power transistors. Current flow is sampled in the upper heatsink by R6 and is sampled in the lower heatsink by chassis resistor R7. The voltage developed by these two sampling resistors is fed to the preamplifier current limit transistors Q2 and Q3.

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2.1 GENERAL

This section contains procedures for corrective maintenance of the Model 1001SLE/1751SLE AC Power Source. Information provided includes checkout, troubleshooting, disassembly for repair, and adjustments. A list of test equipment required for maintenance and adjustments is also included in this section. The Model 1001SLE/1751SLE is delivered with all adjustments and calibrations completed. Further adjustment should not be required unless a malfunction occurs and/or certain critical parts are replaced.

If the procedures of this section and the circuit descriptions contained in Section I do not provide sufficient information to locate and correct a malfunction, the assistance of the Elgar Customer Service Department should be requested. Equipment should not be returned to the Elgar factory without the express authorization of Elgar Corporation or its authorized representative. Elgar cannot assume the responsibility for equipment returned without authorization.

WARNING! Hazardous voltages are present when operating this equipment. Please read the Safety Notice at the beginning of this manual prior to installation, operation, or maintenance.

2.2 REQUIRED TEST EQUIPMENT

The test equipment required to conduct performance verification procedures and for troubleshooting is listed in Table 2-1. Substitute equipment may be employed provided the equipment meets the accuracy specifications of the equipment.

Table 2-1. Required Test Equipment

Name	Manufacturer and Model Number	Characteristics
Multimeter	Simpson Model 260	20,000 ohms/volt AC, DC, and ohms
Differential Voltmeter	Fluke Model 931AB	RMS Volts range to 1000 VAC
AC Ammeter	Fluke	With amp clamp
Power Variac		Capable of at least 30 amps
Oscilloscope	Tektronix Model 455/A2/B2	Dual trace oscilloscope, DC to 60 MHz
Probe	Tektronix Model 6105	X10 probe
Distortion Analyzer	Hewlett-Packard Model 333A	
Resistive Load	States Company (P/N 33525)	

WARNING! Remove power when performing maintenance on the unit. Failure to comply can result in serious electrical shock to individuals coming in contact with live voltages at exposed terminals when the unit is energized.

2.3 TROUBLESHOOTING ACCESS

Refer to Figures 2-1 and 2-2 (1001SLE) or Figures 2-3 and 2-4 (1751SLE) for major component locations. The assembly drawings in Section IV should be used to locate parts on board assemblies.

2.4 PERIODIC MAINTENANCE

The only periodic maintenance required by the power source is removing the dust and dirt which has accumulated during operation. Examine the power heatsinks as excessive dirt buildup in this area could cause overheating of the power transistors. A medium pressure air jet can aid in cleaning of the heatsinks. Also ensure that the preamplifier board and oscillator plug-in are clean.

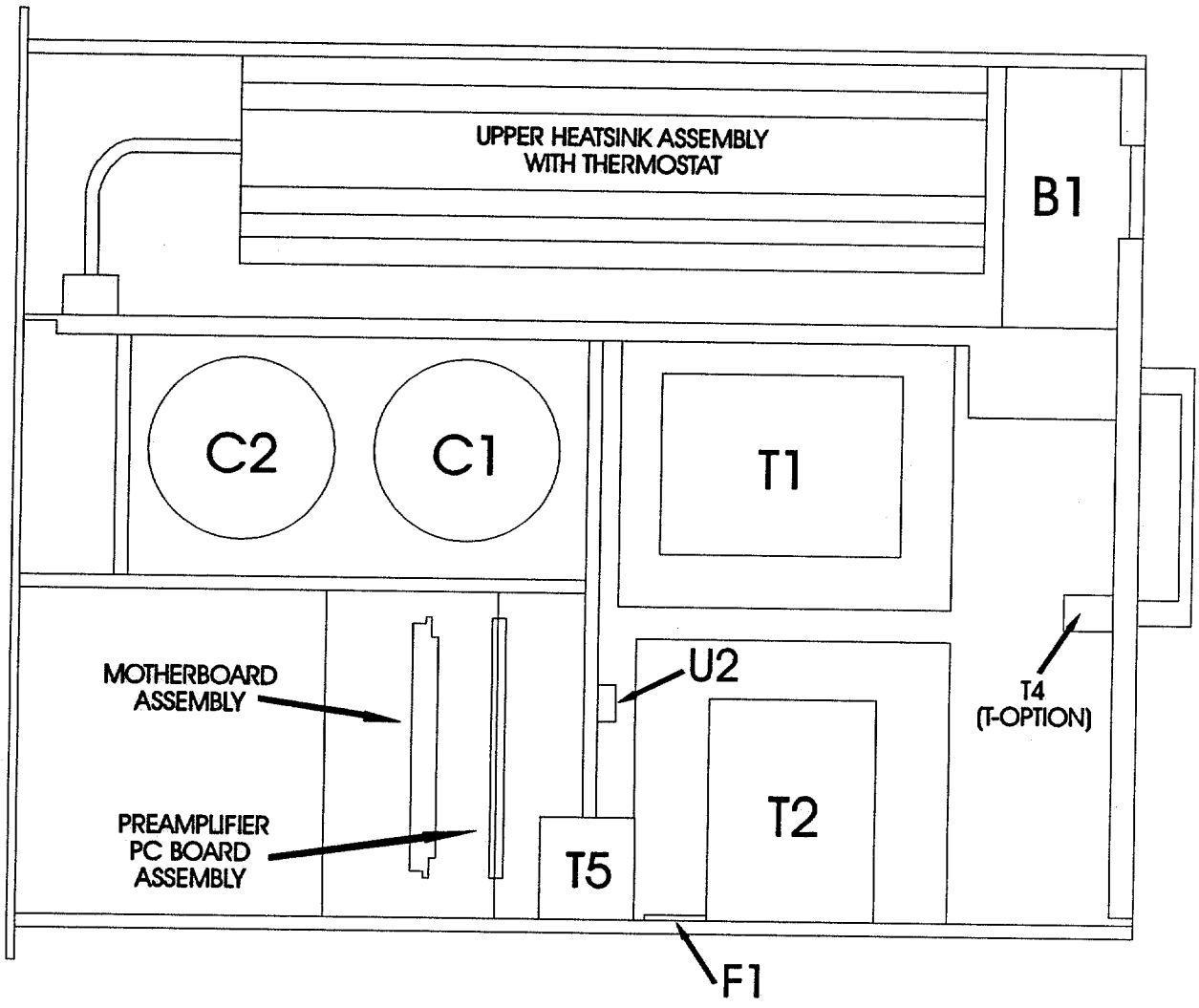

Figure 2-1. Model 1001SLE (Top View, Cover Removed)

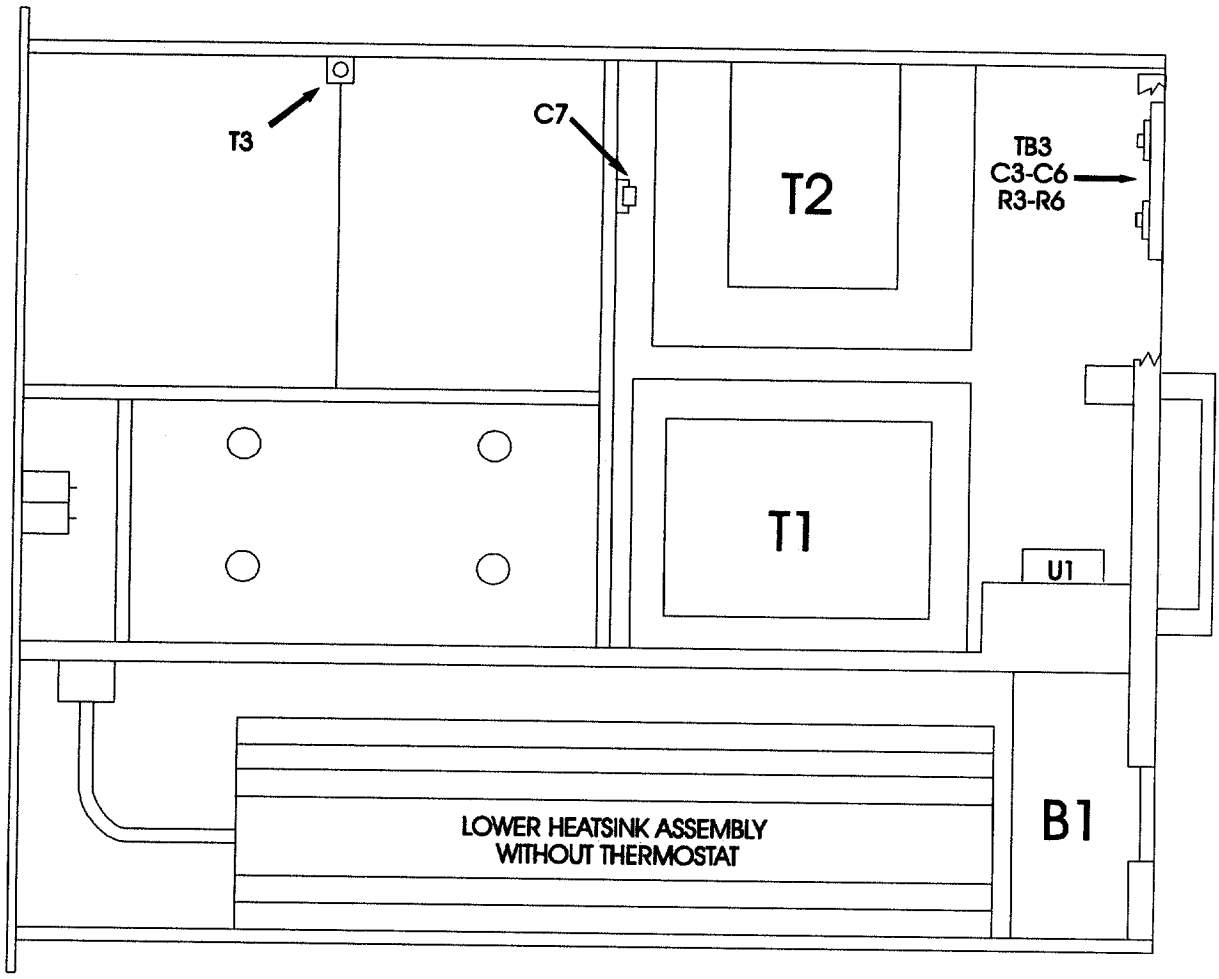

Figure 2-2. Model 1001SLE (Bottom View, Cover Removed)

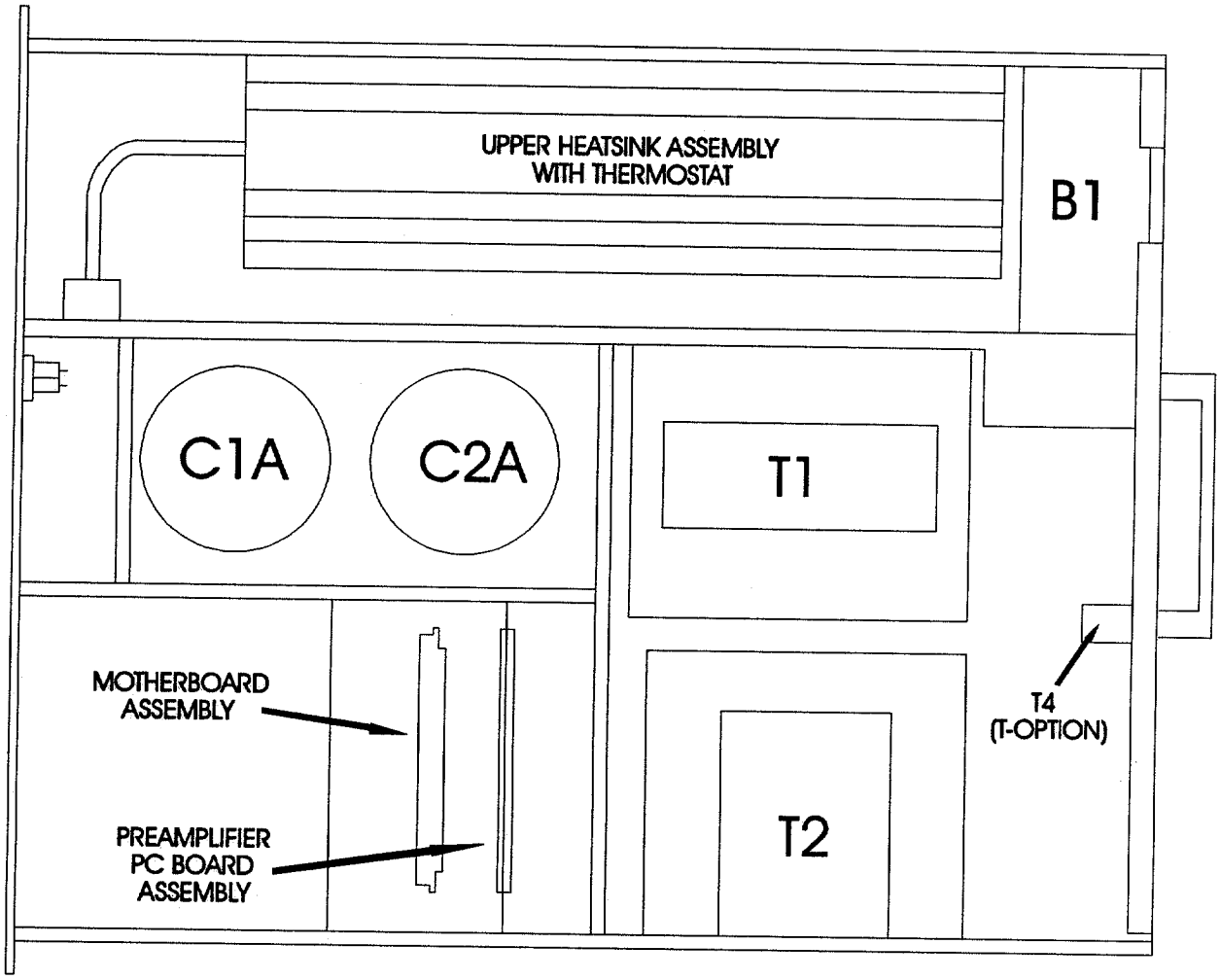

Figure 2-3. Model 1751SLE (Top View, Cover Removed)

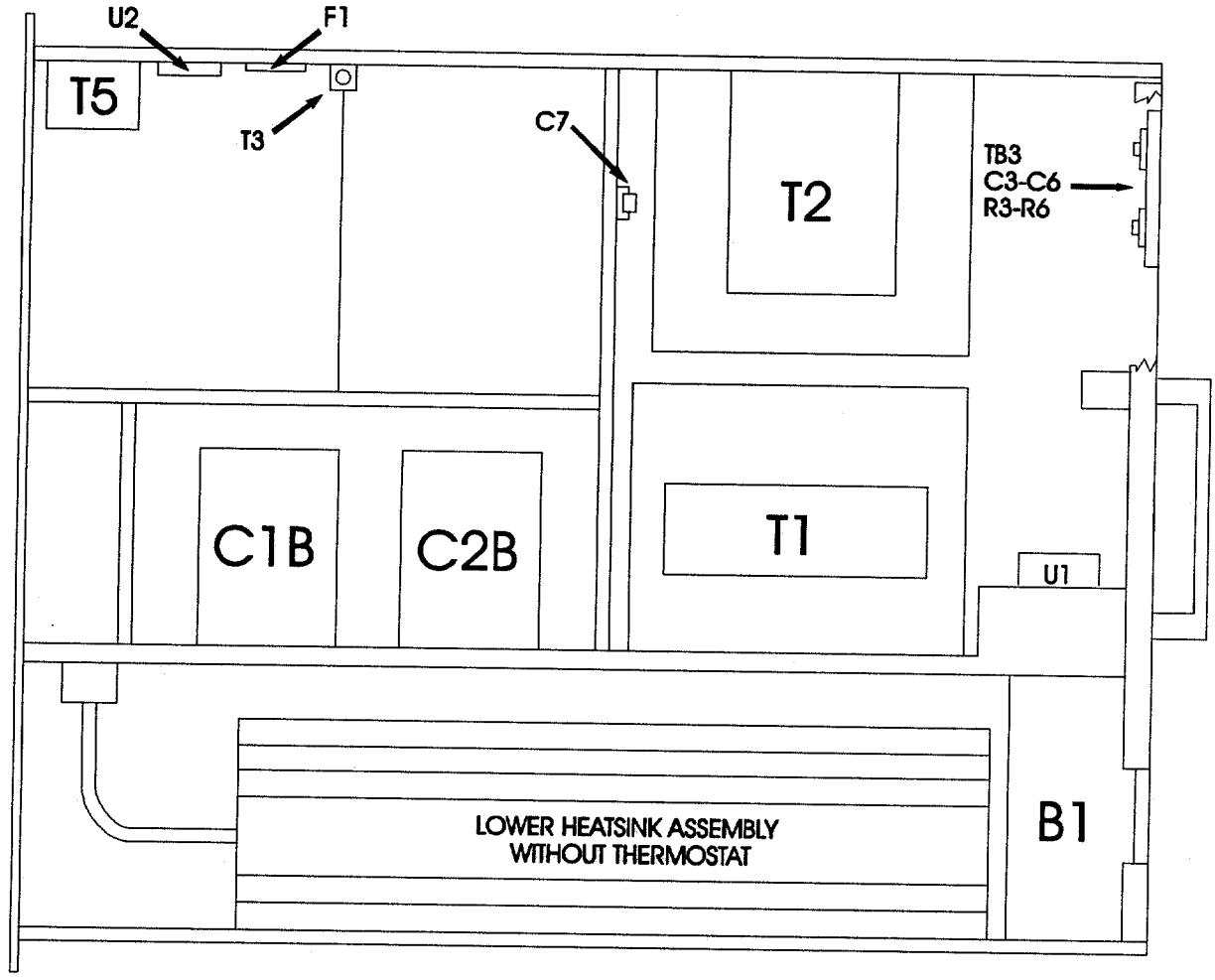

Figure 2-4. Model 1751SLE (Bottom View, Cover Removed)

2.5 *ADJUSTMENTS*

Test points and adjustment controls are conveniently provided at the top of the amplifier circuit board, accessible by removing the top cover of the power source (refer to Drawing No. 5070004). The test points are as follows:

TP1 Circuit Common - Brown

TP2 Amplifier Output - Red

TP3 Oscillator Signal - Orange

TP4 U1A Collector - Yellow

2.5.1 Output Regulation Adjustment

The regulation adjustment on the preamplifier, resistor R26, is set at the factory to provide ±1% load regulation over the full frequency range of the power source. The regulation may require readjustment if the load is highly reactive or if zero regulation is desired for a specific load and frequency.

To make this adjustment, perform the following:

1. Disconnect the load.
2. Read the output voltage.
3. Re-connect the load.
4. Adjust R26 until the same reading as in step 2. above is obtained.

NOTE: If the load is sufficiently heavy to cause current limit transistors Q2 and Q3 to conduct, the output voltage will be reduced, giving an indication of poor load regulation. Load voltage fall-off due to current limiting action should not be compensated by the regulation adjustment.

2.5.2 Current Limit Adjustment

The current limits have been preset at the factory such that the unit will deliver full rated power over the output voltage range. Readjustment of the limits should not be performed unless a malfunction has occurred in the unit and parts have been replaced to affect the current limit. The current limit adjustment may be checked by observing the waveform at TP2 with an oscilloscope.

Perform the following:

1. Set the oscilloscope sensitivity to 10 volts/cm.

2. Turn the unit on and adjust the output for 130VAC on the 0-130VAC output voltage range as indicated on the meter.

3. Connect a load as follows:

   a. A 11.27 Ohm load (11.53 Amps) to the output terminals of the 1001SLE (load must be capable of dissipating 1500W); or,

   b. A 6.44 Ohm load (20.19 Amps) to the output terminals of the 1751SLE (load must be capable of dissipating 2625W).

4. Adjust the current limit potentiometers clockwise until peak clipping is observed at TP2.

5. Adjust the limit potentiometers counter-clockwise until clipping just disappears.

2.6 TROUBLESHOOTING/FAULT SYMPTOMS

2.6.1 Circuit Breaker Trips

If the circuit breaker trips at no load, a fault in either the power transistors or the power rectifiers is indicated. Perform the following:

1. Unplug the heatsink assemblies and try the circuit breaker.

2. If it does not trip, look for a shorted power transistor (power transistors can be checked with an ohmmeter).

3. If the circuit breaker still trips, look for a shorted rectifier bridge.

4. If the rectifier bridge and filter are good, a fault in the power transformer or wiring harness probably exists.

2.6.2 Output Distortion

Overloading may cause output distortion. Check the load current waveform with an oscilloscope. An oscilloscope is recommended because some high crest factor loads may draw considerably more peak current than is indicated by a load ammeter.

2.6.3 Overheating

If overheating causes thermostat TK1 to close, the output voltage will fall to zero. Overheating may be caused by restricted airflow or environmental temperature greater than 50°C (122°F).

2.6.4 +8V Power Supply Failure

The T5, U2, and F1 circuit create the +8V supply that is used in the Plug-In oscillator module to create the +5VDC logic supply. This +8V supply also provides the power to the "POWER ON" indicator, DS1, located on the front panel of the AC Power Source. If the +8V power supply is not operating properly, the DS1 indicator will not come on although the cooling fan(s) are operating when the circuit breaker is turned on. An oscillator module will not output a drive signal under this condition either. Check the chassis mounted secondary fuse, F1, which should open in the event of excessive current draw in this circuit. Only replace fuse F1 with the same 2A Slo-Blo type fuse. Failure to do so, may result in additional damage to the unit.

2.7 REAR PANEL REMOVAL

Should troubleshooting and repair require better access to components located in the rear of the chassis, the panel mounting screws can be removed. Great care should be used when moving the rear panel; the wiring cannot be unattached. Therefore, the rear panel can only be moved 2" to 3" from its mounted position. Trying to move or force the rear panel further may result in damage to wiring and/or components in the rear of the chassis.

2.8 REPAIR AND REPLACEMENT

Generally, if parts are suspected of damage, the parts shall be checked with a multimeter for proper electrical value prior to replacement.

2.9 CIRCUIT BOARD ASSEMBLIES

Circuit board assemblies can be either repaired or replaced if either a part or the circuit card is damaged. De-energize the unit before removing any circuit board assembly. To remove a circuit board, remove the retainer hardware and pull straight up on the circuit board, taking care not to damage circuit components.

When re-installing a circuit board, carefully fit the edge of the circuit board in the connector and press firmly to seat. Re-attach the retainer hardware to ensure that the circuit board(s) are firmly mounted.

2.10 FACTORY REPAIR

Do not replace factory selected parts. If necessary to return an instrument to the factory for repair, contact the Elgar Service Department for shipment authorization. **DO NOT RETURN THE UNIT FOR REPAIR WITHOUT AUTHORIZATION.**

3.1 GENERAL

This section contains a listing of all part numbers used in the manufacture of the Model 1001SLE/1751SLE AC Power Source. Parts are located on the diagrams provided in Section IV and correlated on the parts list by using their reference designators and/or Elgar part number.

NOTE: Trimming capacitors are factory selected and their replacement is considered beyond the scope of customer maintenance.

3.2 SPARE PARTS ORDERING

When ordering spare parts, specify the part name, part number, manufacturer, component value, and rating. If complete assemblies are desired, contact:

ELGAR ELECTRONICS CORPORATION
Sales & Technical Support
9250 Brown Deer Road
San Diego, CA 92121-2294
1-800-733-5427
Tel: (858) 450-0085
Fax: (858) 458-0267
Email: sales@elgar.com
www.elgar.com

Specify the assembly number, instrument series number, and instrument name when ordering.

3.3 PARTS LIST

Parts list included in this section is listed in Table 3-1.

Table 3-1. Model 1001SLE/1751SLE Parts List

Part Number	Description
5070003-01	Heatsink Resistor Board Assembly
5070004-01	Preamplifier Board Assembly
5071007-04	Divider Assembly 1001SLE
5071014-01	Capacitor Assembly
5071014-BS	Capacitor Assembly, Basic
5071070-01	Filter Box Assembly 1001SLE
5071075-03	Motherboard Assembly SLE
5071076-01	Final Assembly 1001SLE
5071082-01	Rear Panel Assembly 1001SLE
5071083-01	Front Panel Assembly 1001SLE
5071084-01	Right Panel Assembly 1001SLE
5071085-01	Brace Plate Assembly 1001SLE
5071009-01	Brace Plate Assembly 1751SLE
5121010-03	Divider Assembly 1751SLE
5121024-01	Heatsink Assembly w/TK 1751SLE
5121024-02	Heatsink Assembly w/o TK 1751SLE
5121045-01	Final Assembly 1751SLE
5121047-02	Right Panel Assembly 1751SLE
5121048-01	Rear Panel Assembly 1751SLE
5121049-02	Front Panel Assembly 1751SLE
5920026-01	Heatsink Assembly w/TK 1001SLE
5920026-02	Heatsink Assembly w/o TK 1001SLE

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 110 ASSEMBLY, CALMEX - PCB

5070003-01 OPCODE: 4 REV: A HEATSINK RES BD ASSY A
MODEL:
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
9070003-01	PCB,HEATSINK RES BD	3	J	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
807-R22-05	RES,.22,5W,10%,WW,AXL	3	C	10	7.000	.980	EA	B	YN	7.000	0	0		00/00/00	99/99/99
807-5R6-05	RES,5.6,5W,5%,WW,AXL	3		11	1.000	.980	EA	B	YN	1.000	0	0		00/00/00	99/99/99
109-901-XX	TAB,FASTON,.25 IN,PC MNT	3	C	12	7.000	.980	EA	B	YN	7.000	0	0		00/00/00	99/99/99
109-106-84	PIN,SOCKET,PWB MNT,.040	3	C	13	16.000	.980	EA	B	YN	16.000	0	0		00/00/00	99/99/99
109-632-TX	STDF,SWG,6-32 X .125L,.25RD,TI	3	A	14	3.000	.980	EA	B	YN	3.000	0	0		00/00/00	99/99/99
6920026-01	SCHM HEATSINK 1001SL A	3	A	18	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 180 ASSEMBLY, ELGAR - PCB

5070004-01 OPCODE: 3 REV: E PREAMP BD ASSY, SL
MODEL:
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQP	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5070004	PWA,PREAMP-SL	0	E	1	.000	1.000	EA	P	YN	.000	0	0		09/06/96	99/99/99
6070004-01	SCHM, PREAMP BD SL A	3	A	9	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9070004-01	PREAMP PCB,SL/SX SERIES	3	F	12	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
820-470-05	CAP,47PF,500V,5%,MICA	3	B	15	1.000	1.000	EA	B	YN	1.000	0	0	C5	00/00/00	99/99/99
820-301-05	CAP,300PF,500V,5%,MICA	3	B	16	1.000	1.000	EA	B	YN	1.000	0	0	C6	00/00/00	99/99/99
822-682-11	CAP,.0068UF,100V,1%,FILM	3	B	17	1.000	1.000	EA	B	YN	1.000	0	0	C2 FSV	00/00/00	99/99/99
822-104-05	CAP,.10UF,200V,10%,FILM	3	G	18	2.000	1.000	EA	B	YN	2.000	0	0	C10,12	00/00/00	99/99/99
822-106-10	CAP,10UF,50V,10%,FILM	3	B	19	1.000	1.000	EA	B	YN	1.000	0	0	C1	00/00/00	99/99/99
822-223-05	CAP,.022UF,200V,10%,FILM	3	D	20	1.000	1.000	EA	B	YN	1.000	0	0	C3 FSV	00/00/00	99/99/99
823-227-61	CAP,220UF,10V,20%,TANT	3	D	21	1.000	1.000	EA	B	YN	1.000	0	0	C9	00/00/00	99/99/99
823-475-61	CAP,4.7UF,35V,20%,TANT	3	F	22	1.000	1.000	EA	B	YN	1.000	0	0	C4	00/00/00	99/99/99
824-506-71	CAP,50UF,50V,AL,AXL	3	E	24	1.000	1.000	EA	B	YN	1.000	0	0	C7	00/00/00	99/99/99
843-524-2X	DIODE,ZENER,12V,.5W,5%	3	B	26	1.000	1.000	EA	B	YN	1.000	0	0	CR1	00/00/00	99/99/99
845-400-4X	RECT,PWR,400V,1A,1N4004	3	C	27	7.000	1.000	EA	F	YN	7.000	0	0	CR2-8	00/00/00	99/99/99
851-150-01	INDUCTOR,150UH,SWD	3	D	33	1.000	1.000	EA	B	YN	1.000	0	0	L1	00/00/00	99/99/99
832-P29-07	XSTR,PNP,60V,.6A,PN2907A,TO92	3	F	36	1.000	1.000	EA	B	YN	1.000	0	0	Q3	00/00/00	99/99/99
835-364-3P	XSTR,NPN,30V,PN3643,TO-92	3	B	37	1.000	1.000	EA	B	YN	1.000	0	0	Q2	00/00/00	99/99/99
839-358-3X	XSTR,NPN,175V,2A,2N3583,TO-66	3	C	38	2.000	1.000	EA	B	YN	2.000	0	0	Q1,Q4	00/00/00	99/99/99
842-621-1X	XSTR,PNP,225V,2N6211,TO-66	3	F	39	1.000	1.000	EA	B	YN	1.000	0	0	Q5	00/00/00	99/99/99
849-381-0X	IC,DUAL,PNP,AMP,MATCHED	3	G	40	1.000	1.000	EA	B	YN	1.000	0	0	U1	00/00/00	99/99/99
802-101-05	RES,100,1/2W,2%,MF	3		44	4.000	1.000	EA	B	YN	4.000	0	0	R29,31,34,35	00/00/00	99/99/99
802-103-05	RES,10K,1/2W,2%,MF	3		45	2.000	1.000	EA	B	YN	2.000	0	0	R23,25	00/00/00	99/99/99
802-122-05	RES,1.2K,1/2W,2%,MF	3		46	1.000	1.000	EA	B	YN	1.000	0	0	R7	00/00/00	99/99/99
802-150-05	RES,15,1/2W,2%,MF	3		47	1.000	1.000	EA	B	YN	1.000	0	0	R27	00/00/00	99/99/99
802-470-05	RES,47,1/2W,2%,MF	3		48	1.000	1.000	EA	B	YN	1.000	0	0	R8	00/00/00	99/99/99
802-182-05	RES,1.8K,1/2W,2%,MF	3		49	1.000	1.000	EA	B	YN	1.000	0	0	R24	00/00/00	99/99/99
802-330-05	RES,33,1/2W,2%,MF	3		51	3.000	1.000	EA	B	YN	3.000	0	0	R10,14,15	00/00/00	99/99/99
802-4R7-05	RES,4.7,1/2W,5%,MF	3		52	2.000	1.000	EA	B	YN	2.000	0	0	R28,30	00/00/00	99/99/99
802-472-05	RES,4.7K,1/2W,2%,MF	3		53	3.000	1.000	EA	B	YN	3.000	0	0	R2,6,16	00/00/00	99/99/99
802-622-05	RES,6.2K,1/2W,2%,MF	3		54	1.000	1.000	EA	B	YN	1.000	0	0	R5	00/00/00	99/99/99
802-822-05	RES,8.2K,1/2W,2%,MF	3		56	1.000	1.000	EA	B	YN	1.000	0	0	R9	00/00/00	99/99/99
803-222-05	RES,2.2K,1W,5%	3		59	1.000	1.000	EA	B	YN	1.000	0	0	R4	00/00/00	99/99/99
804-222-05	RES,2.2K,2W,5%	3		60	2.000	1.000	EA	B	YN	2.000	0	0	R12,13	00/00/00	99/99/99
813-332-1F	RES,3.32K,1/4W,1%,70C,RN60,MF	3		67	1.000	1.000	EA	B	YN	1.000	0	0	R1	00/00/00	99/99/99
813-332-2F	RES,33.2K,1/4W,1%,70C,RN60,MF	3		68	1.000	1.000	EA	B	YN	1.000	0	0	R11	00/00/00	99/99/99
813-511-1F	RES,5.11K,1/4W,1%,70C,RN60,MF	3		69	1.000	1.000	EA	B	YN	1.000	0	0	R3	00/00/00	99/99/99
819-100-30	POT,10,1W,20T,PC	3	C	72	2.000	1.000	EA	B	YN	2.000	0	0	R32,33	00/00/00	99/99/99
819-102-30	POT,1.0K,1W,20T,PC MNT	3	E	73	1.000	1.000	EA	B	YN	1.000	0	0	R26	00/00/00	99/99/99
892-430-01	TP,430-108,BRN	3	B	75	1.000	1.000	EA	B	YN	1.000	0	0	TP1	00/00/00	99/99/99
892-430-02	TP,430-102,RED	3	B	76	1.000	1.000	EA	B	YN	1.000	0	0	TP2	00/00/00	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 180 ASSEMBLY, ELGAR - PCB

5070004-01 OPCODE: 3 REV: E PREAMP BD ASSY, SL
MODEL:
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
892-430-03	TP,430-106,ORG	3	B	77	1.000	1.000	EA	B	YN	1.000	0	0	TP3	00/00/00	99/99/99
892-430-04	TP,430-107,YEL	3	B	78	1.000	1.000	EA	B	YN	1.000	0	0	TP4	00/00/00	99/99/99
894-616-6C	HTSK,ALUM,BASE,T066	3	C	81	3.000	1.000	EA	B	YN	3.000	0	0		00/00/00	99/99/99
110CA04-07	SCREW,4-40 X .438,PPH	3		83	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111CE04-01	WASHER,4,INT LOCK	3		84	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
112CB04-01	NUT,4-40,HEX,STD,CS	3		85	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
109-633-BK	BRKT,L,.375L X .375L X .281W	3	B	87	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
110DA04-04	SCREW,6-32 X .250,PPH	3		88	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		89	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		90	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111CG04-01	WASHER,4,FLAT,SM OD	3		95	12.000	1.000	EA	F	YN	12.000	0	0		00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071007-04 OPCODE: 3 REV: A PANEL ASSY,DIVIDER-1001SLE
MODEL: 1001SLE
ECO NO: R1541
DATE OF LAST ECO: 07/09/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071007	DIVIDER ASSY 1001SL	3	C	0	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9071007-01	DIVIDER A	3	B	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5071074-01	XFMR ASSY, INPUT - AC	3	B	10	1.000	1.000	EA	M	YN	1.000	0	0	T1	00/00/00	99/99/99
109-217-0X	GROMMET,RUBBER,1/4ID 3/8 OD	3		12	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
847-100-AB	RECT,BRDG,100A,200V,1PH	3	C	14	1.000	1.000	EA	B	YN	1.000	0	0	U1	00/00/00	99/99/99
856-412-S1	CONN,12P,15A,PNL MNT,SKT	3	F	15	2.000	1.000	EA	B	YN	2.000	0	0	J6,7	00/00/00	99/99/99
810-R15-05	RES,.015,50W,5%,WW	3		16	1.000	1.000	EA	B	YN	1.000	0	0	R7	00/00/00	99/99/99
110CA04-06	SCREW,4-40 X .375,PPH	3		19	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111CE04-01	WASHER,4,INT LOCK	3		20	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		21	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		22	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		23	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		24	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
110HA04-08	SCREW,1/4-20 X .500,PPH	3		25	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111HC04-01	WASHER,1/4,SPLIT LOCK	3		26	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111HA04-01	WASHER,1/4,FLAT	3		27	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
894-FWB-TP	HTSK,ALUM,2.25X1.75IN	3	C	29	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL
AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071014-01 OPCODE: 3 REV: B CAPACITOR ASSY A
MODEL:
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071014-BS	CAPACITOR ASY BASIC A	3	B	9	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
826-403-75	CAP,40KUF,75V,AL,RAD	3	D	12	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071014-BS OPCODE: 3 REV: B CAPACITOR ASY BASIC A
MODEL:
ECO NO:
DATE OF LAST ECO: 00/00/00

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
9071014-01	BRACKET, CAPACITOR A	3	A	13	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
896-CMC-48	CLAMP,CAP,RND,VERT,3IN,DIA	3	B	14	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
808-102-05	RES,1.0K,10W,5%,WW,AXL	3		17	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		19	5.000	1.000	EA	F	YN	5.000	0	0		00/00/00	99/99/99
110EA04-10	SCREW,8-32 X .625,PPH	3		20	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
110GH04-06	SCREW,10-32 X .375,SBH	3		21	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		23	5.000	1.000	EA	F	YN	5.000	0	0		00/00/00	99/99/99
111EA04-01	WASHER,8,FLAT,SML OD-.375,ZINC	3		24	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111EE04-01	WASHER,8,INT LOCK	3		25	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		26	5.000	1.000	EA	F	YN	5.000	0	0		00/00/00	99/99/99
112EB04-01	NUT,8-32,HEX,STD,CS	3		27	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
1070400-04	LUG,#10,SOLDER,INT LOCK,ANGLE	3	B	28	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071070-01 OPCODE: 3 REV: B FLTR ASSY,INPUT-751/1001/1203
MODEL:
ECO NO: N970473
DATE OF LAST ECO: 05/27/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071070	FLTR ASSY,INPUT-751/1001/1203	3	B	0	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9071070-01	BOX,IN FILT 751/1001/1203SL/SX	3	C	1	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
2071070-01	A/W,INPUT FILTER BOX-SL/SX	3	C	2	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
880-20K-1X	FILTER,LINE,20AAC	3	A	3	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
893-30A-3P	TERM BLK,3P,30A,600V,FEED-THRU	3	A	4	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
109-210-10	STDF,6-32 X .875L,.25HX,AL	3	A	5	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		6	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		7	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
110DA04-10	SCREW,6-32 X .625,PPH	3	A	8	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		9	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
1070116-03	LUG,QDC,MALE,14-16AWG	3	A	10	5.000	1.000	EA	F	YN	5.000	0	0		05/27/97	99/99/99
107-240-15	LUG,#10,RING,12-10AWG	3		11	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
107-240-10	LUG,#10,RING,16-14AWG	3	B	12	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
1130310-99	WIRE,10AWG,600V,WHT,UL,105C	3		13	.000	1.000	FT	F	YN	.000	0	0	AR	00/00/00	99/99/99
1130316-54	WIRE,16AWG,600V,GRN/YEL,UL,105	3		14	.000	1.000	FT	F	YN	.000	0	0	AR	00/00/00	99/99/99
9071071-01	COVER,TB 3PIN LARGE SL/SX	3	A	15	.000	1.000	EA	B	YN	.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		16	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
107-240-09	LUG,#6,RING,16-14AWG	3	B	17	1.000	1.000	EA	F	YN	1.000	0	0	E4	00/00/00	99/99/99
1130312-54	WIRE,12AWG,600V,GRN/YEL,UL,105	3	-	18	.000	1.000	EA	F	YN	.000	0	0	AR	00/00/00	99/99/99
111FC20-01	WASHER,10,SPLIT LOCK,SS	3		19	1.000	1.000	EA	F	YN	1.000	0	0		05/27/97	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 180 ASSEMBLY, ELGAR - PCB

5071075-03 OPCODE: 3 REV: D PWA, MOTHER-SLE
MODEL: SL SERIES
ECO NO: N990897
DATE OF LAST ECO: 09/17/99

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
9071075-01	PWB, MOTHER BOARD	3	E	1	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
6071075	SCHEM, MOTHER BOARD	3	C	2	.000	1.000	EA	P	YN	.000	0	0	REF	00/00/00	99/99/99
5071075	PWA, MOTHER BOARD	3	C	3	.000	1.000	EA	P	YN	.000	0	0	REF	00/00/00	99/99/99
2071075-01	A/W, MOTHER BOARD	3	C	4	.000	1.000	EA	P	YN	.000	0	0	REF	00/00/00	99/99/99
109-423-61	LABEL,1.5 X .25,WHT,155C,W/ADH	0	A	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
804-152-05	RES,1.5K,2W,5%	3	-	10	2.000	1.000	EA	B	YN	2.000	0	0	R1,2	00/00/00	99/99/99
816-536-3F	RES,536K,1/2W,1%,RN65,MF	3		11	4.000	1.000	EA	B	YN	4.000	0	0	R9-12	05/23/97	99/99/99
818-390-3E	RES,390K,1/4W,1%,25PPM	3		12	6.000	1.000	EA	B	YN	6.000	0	0	R3-8	05/23/97	99/99/99
821-104-CK	CAP,.10UF,50V,10%,CER	3	A	16	2.000	1.000	EA	F	YN	2.000	0	0	C1,2	00/00/00	99/99/99
842-TIP-29	XSTR,NPN,80V,TIP29B,TO-220	3	C	20	1.000	1.000	EA	B	YN	1.000	0	0	Q1	00/00/00	99/99/99
842-TIP-30	XSTR,PNP,80V,1A,TIP30B,TO-220	3	D	22	1.000	1.000	EA	B	YN	1.000	0	0	Q2	00/00/00	99/99/99
843-536-3B	DIODE,ZENER,30V,5W,5%,IN5363B	3	A	26	2.000	1.000	EA	B	YN	2.000	0	0	CR1,2	00/00/00	99/99/99
845-400-4X	RECT,PWR,400V,1A,1N4004	3	C	28	1.000	1.000	EA	F	YN	1.000	0	0	CR3	00/00/00	99/99/99
856-199-02	CONN,2P,HDR,4A,250V,.156,VERT	0	-	32	1.000	1.000	EA	B	YN	1.000	0	0	J9	09/17/99	99/99/99
856-199-03	CONN,3P,HDR,4A,250V,.156,VERT	3	-	34	1.000	1.000	EA	B	YN	1.000	0	0	J7	09/17/99	99/99/99
856-199-04	CONN,4P,HDR,4A,250V,.156,VERT	0	-	36	1.000	1.000	EA	B	YN	1.000	0	0	J5	09/17/99	99/99/99
856-199-06	CONN,6P,HDR,4A,250V,.156,VERT	0	-	38	1.000	1.000	EA	B	YN	1.000	0	0	J4	09/17/99	99/99/99
856-199-07	CONN,7P,HDR,4A,250V,.156,VERT	0	-	40	1.000	1.000	EA	B	YN	1.000	0	0	J1	09/17/99	99/99/99
856-199-08	CONN,8P,HDR,4A,250V,.156,VERT	0	-	42	3.000	1.000	EA	B	YN	3.000	0	0	J2,3A,3B	09/17/99	99/99/99
856-199-10	CONN,10P,HDR,4A,250V,.156,VERT	0	-	44	1.000	1.000	EA	B	YN	1.000	0	0	J6	09/17/99	99/99/99
856-220-91	CONN,44P,EDGE CARD,R/A,PC MNT	3	A	48	1.000	1.000	EA	B	YN	1.000	0	0	XA1	00/00/00	99/99/99
856-22P-PC	CONN,22P,44P,EDGE CARD,PC MNT	3	A	50	1.000	1.000	EA	B	YN	1.000	0	0	XA2	00/00/00	99/99/99
861-700-24	RELAY,3A,24VDC,4PDT	3	A	56	1.000	1.000	EA	B	YN	1.000	0	0	K2	00/00/00	99/99/99
894-563-2B	HTSK,TO220,TIN	3	A	60	2.000	1.000	EA	B	YN	2.000	0	0	XQ1,2	00/00/00	99/99/99
109-632-TX	STDF,SWG,6-32 X .125L,.25RD,TI	3	A	70	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
110CA20-06	SCREW,4-40 X .375,PPH,SS	3		71	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
110CA20-04	SCREW,4-40 X .250,PPH,SS	3		72	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111CG20-01	WASHER,4,FLAT,SM OD,SS	3		74	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111CC20-01	WASHER,4,SPLIT LOCK,SS	3		76	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
112CB20-01	NUT,4-40,HEX,SS	3		78	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 140 ASSEMBLY, ELGAR - FGI

5071076-01 OPCODE: 3 REV: B FINAL ASSY - 1001SLE-21
MODEL: SL/SX
ECO NO: N970676
DATE OF LAST ECO: 07/01/97

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071076	FINAL ASSY - 1001SLE	3	B	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
5071083-01	PANEL ASSY,FRONT - 1001SLE	3	A	9	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5071082-01	PANEL ASSY,REAR - 1001SLE	3	B	10	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
9071005-01	SIDE PANEL LEFT A	3	B	11	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5071084-01	PANEL ASSY,RIGHT - 1001SLE	3	B	12	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5071007-04	PANEL ASSY,DIVIDER-1001SLE	3	A	13	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5071033-01	OSC TRAY ASSY SLSERIESA	3	C	14	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5071014-01	CAPACITOR ASSY A	3	B	15	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5920026-01	H-SINK W/TK 1001SL A	3	F	16	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
5920026-02	H-SINK W0/TK 1001SL A	3	F	17	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
5070004-01	PREAMP BD ASSY, SL	3	E	18	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
H071076-01	KIT,HARNESS - 1001SLE	3	C	19	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
5071085-01	PLATE ASSY,BRACE - 1001SLE	3	A	20	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5071075-03	PWA, MOTHER-SLE	3	D	21	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
110EF04-04	SCREW,8-32 X .250,PFH,82D	3		23	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
110DF04-06	SCREW,6-32 X .375,PFH,82D	3		24	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		25	12.000	1.000	EA	F	YN	12.000	0	0		00/00/00	99/99/99
110EA04-04	SCREW,8-32 X .250,PPH	3		26	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
110EA04-06	SCREW,8-32 X .375,PPH	3		27	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110EF04-06	SCREW,8-32 X .375,PFH,82D	3		28	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		29	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		31	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		32	12.000	1.000	EA	F	YN	12.000	0	0		00/00/00	99/99/99
9071050-01	SHIELD HS SL/SX NMX A	3	A	33	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
A071076-01	SHIP KIT - 1001SLE	3	A	35	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
6920026-01	SCHM HEATSINK 1001SL A	3	A	38	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
6070004-01	SCHM, PREAMP BD SL A	3	A	39	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
6071076	INTCONN DIAGRAM - 1001SLE	3	B	41	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
W071076-01	WIRELIST,CHASSIS - 1001SLE	3	A	42	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
T071076-01	ATP, FINAL ASSY - 1001SLE	3	X1	44	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
1006813-01	SPEC-751/1001/1751SL A	3	A	45	.000	1.000	EA	P	YN	.000	0	0	REF	00/00/00	99/99/99
M071076-01	MANUAL,OPERATOR - 1001SLE	3	A	46	.000	1.000	EA	P	YN	.000	0	0	REF	00/00/00	99/99/99
5970008-01	CABLE ASSY	3	C	50	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
5970009-01	CABLE ASSY A	3	A	51	1.000	1.000	EA	M	YN	1.000	0	0	MBJ1 TO R1 ,DS1 MBJ2 TO J6 ,7	00/00/00	99/99/99
5121051-01	CABLE ASSY,REAR PANEL-SL/SX	3	B	53	1.000	1.000	EA	M	YN	1.000	0	0	MBJ3 TO J1	00/00/00	99/99/99
M071076-02	MANUAL,SERVICE - 1001SLE	3	A	54	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9961200-01	LABEL,SERIAL TAG,THERMAL	0	B	56	1.000	1.000	EA	X	YN	1.000	0	0		07/01/97	99/99/99
9161295-01	LABEL,CE CERTIFICATION	3	A	57	1.000	1.000	EA	B	YN	1.000	0	0		07/01/97	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071082-01 OPCODE: 3 REV: B PANEL ASSY,REAR - 1001SLE
MODEL: SL/SX
ECO NO: N970473
DATE OF LAST ECO: 05/27/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071082	PANEL ASSY,REAR - 1001SLE	3	B	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9071082-01	PANEL REAR - 1001SLE	3	C	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9960019-01	LABEL G.P.I.B COVER	3	C	10	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9961198-01	LABEL, SERIAL TAG	3	A	11	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
822-224-06	CAP,.22UF,600V,10%,FILM	3	C	12	4.000	1.000	EA	B	YN	4.000	0	0		00/00/00	99/99/99
853-550-6X	GUARD,FAN,RND,6.38 IN	3	B	13	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
853-230-01	FAN,220-230VAC,200-235CFM,VDE	3	B	14	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
863-505-25	HANDLE,4.87L,1.06H,ALUM,CLR	3	E	15	1.000	1.000	EA	B	YN	1.000	0	0	B1	00/00/00	99/99/99
893-141-08	TERM BLK,8P,20A,14AWG,1100RMS	3	B	16	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
893-601-JX	JUMPER,TERM BLOCK,.438 SPACING	0	A	17	4.000	1.000	EA	B	YN	4.000	0	0		00/00/00	99/99/99
893-20A-5P	TERM BLK,5P,20A,INS	3	B	18	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
893-30A-5P	TERM BLK,5P,30A,600V,FEED-THRU	3	A	19	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
893-142-J2	TERM BLK,JUMPER,.56 CNTR	3	A	20	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
807-5R6-05	RES,5.6,5W,5%,WW,AXL	3		21	4.000	1.000	EA	B	YN	4.000	0	0		00/00/00	99/99/99
899-973-8A	STDF,6-32 X .375L,.25HX,M/F,SS	3	C	22	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
109-839-7S	STDF,6-32 X .750L,.31HX,F/F,SS	3	A	23	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
110DA04-10	SCREW,6-32 X .625,PPH	3	A	24	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
1070400-02	LUG,#6,SOLDER,INT LOCK,ANGLE	3	B	26	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110GA04-07	SCREW,10-32 X .438,PPH	3		27	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		31	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		35	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		36	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
111FC04-01	WASHER,10,SPLIT LOCK	3		39	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
109-309-2X	PLUG,HOLE,.500,NYLON,BLK	3		41	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
995-SLV-10	SLEEVING,#22,CLR VINYL	3	-	43	1.500	1.000	EA	F	YN	1.500	0	0		00/00/00	99/99/99
995-431-27	SLVG,.187,SHRINK,TYPE1,BLK	3	A	44	.500	1.000	FT	F	YN	.500	0	0		00/00/00	99/99/99
5071070-01	FLTR ASSY,INPUT-751/1001/1203	3	B	45	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
110DS04-05	SCREW,6-32 X .312,SEMS,PPH,CS	0	B	46	5.000	1.000	EA	F	YN	5.000	0	0		00/00/00	99/99/99
9211630-01	BRKT,MTG,FERRITE BLOCK-VXP3000	0	C	47	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
109-FBK-13	CORE,FERRITE,BLOCK,SET W/CLIP	3	B	48	1.000	1.000	PR	B	YN	1.000	0	0		00/00/00	99/99/99
110CS04-06	SCREW,4-40 X .375,SEMS,PPH,CS	0	A	49	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111EC20-01	WASHER,8,SPLIT LOCK,SS	3		50	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
109-093-00	GROMMET,FLEX STRIP,.093 NYLON	0	A	51	1.000	1.000	FT	B	YN	1.000	0	0		05/27/97	99/99/99
														05/27/97	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071083-01 OPCODE: 3 REV: A PANEL ASSY,FRONT - 1001SLE
MODEL: AC SL/SX
ECO NO: R1219
DATE OF LAST ECO: 03/10/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071083	PANEL ASSY,FRONT - 1001SLE	3	A	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9071083-01	PANEL,FRONT - 751/1001	3	A	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9261015-01	BRACKET COVER SUPPORT C	3	A	10	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
852-203-46	CBR,20A,2P,50/60HZ,VDE	3	A	11	1.000	1.000	EA	B	YN	1.000	0	0	CB1	00/00/00	99/99/99
854-219-12	LAMP,12V,SOLID-SATE,VERT,GRN	0	A	12	1.000	1.000	EA	B	YN	1.000	0	0	DS1	00/00/00	99/99/99
857-300-82	METER,0-300VAC,RECTIFIED	3	A	13	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
819-103-53	POT,10K,2W,10T,PNL	3	B	14	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
891-030-00	BINDING POST,30A,PNL MNT,BLK	3	D	15	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
891-030-02	BINDING POST,30A,PNL MNT,RED	3	D	16	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
891-030-09	BINDING POST,30A,1KV,WHT	3	B	17	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
863-505-25	HANDLE,4.87L,1.06H,ALUM,CLR	3	E	18	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
914-239-20	METER MOUNT MODEL 82T	3	B	19	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		21	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		22	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		23	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
110GF04-08	SCREW,10-32 X .500,PFH,82D,CS	3		24	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
109-181-XX	NUT,LOCK,POT,.25 SHAFT	3	C	25	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9121050-03	LABEL,NAME PLATE - SLE/SXE	3	A	26	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
111ME04-01	WASHER,7/16,INT TOOTH LOCK	3	A	29	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071084-01 OPCODE: 3 REV: B PANEL ASSY,RIGHT - 1001SLE
MODEL: SL
ECO NO: N970473
DATE OF LAST ECO: 05/27/97

OP: ORDER POLICY CODE
REQ: N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071084	PANEL ASSY,RIGHT - 1001SLE	3	B	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
893-56X-XX	TERM STRIP,6P,.375IN,LUG TYPE	3	A	2	2.000	1.000	EA	B	YN	2.000	0	0	TS1,2	00/00/00	99/99/99
807-301-05	RES,300,5W,5%,WW,AXL	3		3	7.000	1.000	EA	B	YN	7.000	0	0	R9-15	00/00/00	99/99/99
9071084-01	PANEL, RIGHT SIDE - 751/1001	3	C	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
850-412-25	XFMR,PWR,115/230V,25VA,VDE	0	A	10	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5071073-01	XFMR ASSY,OUTPUT-1001SL	3	A	12	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
991-260-90	CURRENT XFMR U.L.MAT A	3	H	13	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
110EF04-06	SCREW,8-32 X .375,PFH,82D	3		14	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111FA04-01	WASHER,10,FLAT	3		15	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
112EB04-01	NUT,8-32,HEX,STD,CS	3		16	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		17	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
110HA04-10	SCREW,1/4-20 X .625 PPH	3		18	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		20	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
109-961-2X	ADHSV,SMALL SCREW,THREADLCK222	3	B	22	.000	1.000	EA	F	YN	.000	0	0	AR	05/27/97	99/99/99
110CA04-06	SCREW,4-40 X .375,PPH	3		24	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
9071086-01	SHIELD,XFMR - 1001SLE	3	B	25	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
111CC04-01	WASHER,4,SPLIT LOCK	3		26	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
112CB04-01	NUT,4-40,HEX,STD,CS	3		27	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111CA04-01	WASHER,4,FLAT	3		28	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071085-01 OPCODE: 3 REV: A PLATE ASSY,BRACE - 1001SLE
MODEL:
ECO NO: R1219
DATE OF LAST ECO: 03/10/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071085	PLATE ASSY,BRACE - 1001SLE	3	A	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9071085-01	PLATE,BRACE - 1001SLE	3	A	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
847-990-3X	RECT,BRDG,1PH,200V,30A	3	D	11	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
995-SLV-10	SLEEVING,#22,CLR VINYL	3	-	12	.500	1.000	EA	F	YN	.500	0	0		00/00/00	99/99/99
822-104-06	CAP,.10UF,600V,10%,FILM	3	B	13	1.000	1.000	EA	B	YN	1.000	0	0	C7	00/00/00	99/99/99
1070400-02	LUG,#6,SOLDER,INT LOCK,ANGLE	3	B	15	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
1070400-05	LUG,#1/4,SOLDER,INT LOCK,FLAT	3	B	16	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
109-420-SW	WASHER,SHLDR,#1/4,.625 OD,NYL	3		18	2.000	1.000	EA	F	YN	2.000	0	0	NYLON	00/00/00	99/99/99
110EA04-14	SCREW,8-32 X .875,PPH	3		19	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
111EA90-01	WASHER,8,FLAT,SML OD-.375	3		20	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
110HB10-24	SCREW,1/4-20 X 1.50,SPH,BRS	3		21	1.000	1.000	EA	F	YN	1.000	0	0	BRASS	00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		22	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
111HA10-01	WASHER,1/4,FLAT,BRS	3		24	3.000	1.000	EA	F	YN	3.000	0	0	BRASS	00/00/00	99/99/99
111HE10-01	WASHER,1/4,INT STAR,BRS	3		25	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		27	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
112HB10-01	NUT,1/4-20,HEX,BRS	3		28	3.000	1.000	EA	F	YN	3.000	0	0	BRASS	00/00/00	99/99/99
109-961-22	THERMAL COMPOUND	3	A	30	.000	1.000	EA	F	YN	.000	0	0		00/00/00	99/99/99

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5071009-01 OPCODE: 3 REV: C BRACE PLATE ASSY
MODEL:
ECO NO: N950482
DATE OF LAST ECO: 06/29/95

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5071009	BRACE PLATE ASSY	0	B	1	.000	1.000	EA	P	YN	.000	0	0		08/01/96	99/99/99
9071009-01	BRACE PLATE A	3	B	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
995-SLV-10	SLEEVING,#22,CLR VINYL	3	-	12	.500	1.000	EA	F	YN	.500	0	0		00/00/00	99/99/99
822-104-06	CAP,.10UF,600V,10%,FILM	3	B	13	1.000	1.000	EA	B	YN	1.000	0	0	C7	00/00/00	99/99/99
1070400-02	LUG,#6,SOLDER,INT LOCK,ANGLE	3	B	15	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
1070400-05	LUG,#1/4,SOLDER,INT LOCK,FLAT	3	B	16	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
109-420-SW	WASHER,SHLDR,#1/4,.625 OD,NYL	3		18	2.000	1.000	EA	F	YN	2.000	0	0	NYLON	00/00/00	99/99/99
110HB10-24	SCREW,1/4-20 X 1.50,SPH,BRS	3		21	1.000	1.000	EA	F	YN	1.000	0	0	BRASS	00/00/00	99/99/99
111HA10-01	WASHER,1/4,FLAT,BRS	3		24	3.000	1.000	EA	F	YN	3.000	0	0	BRASS	00/00/00	99/99/99
111HE10-01	WASHER,1/4,INT STAR,BRS	3		25	2.000	1.000	EA	F	YN	2.000	0	0		06/29/95	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		27	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
112HB10-01	NUT,1/4-20,HEX,BRS	3		28	3.000	1.000	EA	F	YN	3.000	0	0	BRASS	00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5121010-03 OPCODE: 3 REV: A DIVIDER ASSY - 1751SLE
MODEL:
ECO NO: R1219
DATE OF LAST ECO: 03/10/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
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PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQF	PREP CODE	DAYS OFFSET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5121010	DIVIDER ASSY,1751SL	3	C	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9121010-01	DIVIDER 1751SL/SX A	3	D	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5121044-01	XFMR ASSY, INPUT 1751SL/SX	3	B	10	1.000	1.000	EA	M	YN	1.000	0	0	T1	00/00/00	99/99/99
109-217-0X	GROMMET,RUBBER,1/4ID 3/8 OD	3		12	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
847-100-AB	RECT,BRDG,100A,200V,1PH	3	C	14	2.000	1.000	EA	B	YN	2.000	0	0	U1A,U1B	00/00/00	99/99/99
856-412-S1	CONN,12P,15A,PNL MNT,SKT	3	F	15	4.000	1.000	EA	B	YN	4.000	0	0	J6A,6B,7A,7B	00/00/00	99/99/99
810-R15-05	RES,.015,50W,5%,WW	3		16	2.000	1.000	EA	B	YN	2.000	0	0	R7A,R7B	00/00/00	99/99/99
896-CMC-48	CLAMP,CAP,RND,VERT,3IN,DIA	3	B	18	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
110CA04-06	SCREW,4-40 X .375,PPH	3		19	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111CE04-01	WASHER,4,INT LOCK	3		20	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		21	18.000	1.000	EA	F	YN	18.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		22	18.000	1.000	EA	F	YN	18.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		23	10.000	1.000	EA	F	YN	10.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		24	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110HA04-08	SCREW,1/4-20 X .500,PPH	3		25	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111HC04-01	WASHER,1/4,SPLIT LOCK	3		26	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111HA04-01	WASHER,1/4,FLAT	3		27	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
826-273-75	CAP,27KUF,75V,-10/+75%,AL,RAD	3	H	30	2.000	1.000	EA	B	YN	2.000	0	0	C1B,2B	00/00/00	99/99/99
110EA04-10	SCREW,8-32 X .625,PPH	3		32	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111EA04-01	WASHER,8,FLAT,SML OD-.375,ZINC	3		33	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111EE04-01	WASHER,8,INT LOCK	3		34	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
112EB04-01	NUT,8-32,HEX,STD,CS	3		35	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 150 ASSEMBLY, ELGAR - HEATSINK

5121024-01 OPCODE: 3 REV: B HS ASSY W/TK 1751SL A
MODEL: SL/SX
ECO NO: N990078
DATE OF LAST ECO: 01/28/99

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
9920026-01	HEATSINK-8 TO3, 14" A	3	C	9	4.000	1.000	EA	B	YN	4.000	0	0		00/00/00	99/99/99
9121011-01	MTG PLATE-HS 1751SL A	3	A	10	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5070003-01	HEATSINK RES BD ASSY A	4	A	11	4.000	1.000	EA	M	YN	4.000	0	0	RB1-4	00/00/00	99/99/99
5970022-01	CBL-H/S SL SERIES	3	E	12	2.000	1.000	EA	M	YN	2.000	0	0		00/00/00	99/99/99
841-V62-59	XSTR,NPN,16A,170V,SELECT,TO3	3	G	13	32.000	1.000	EA	B	YN	32.000	0	0	Q1-32	00/00/00	99/99/99
845-368-DX	RECT,PWR,200V,20A	3	D	14	4.000	1.000	EA	B	YN	4.000	0	0	CR1-4	00/00/00	99/99/99
861-340-0X	THERMOSTAT,SW,NO,CLS,200F	3	B	15	1.000	1.000	EA	B	YN	1.000	0	0	TK1	00/00/00	99/99/99
895-KT5-3X	TERM TAB,1/4,45DEG,.032	3	D	16	8.000	1.000	EA	B	YN	8.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		17	20.000	1.000	EA	F	YN	20.000	0	0		00/00/00	99/99/99
110DA04-08	SCREW,6-32 X .500,PPH	3		18	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
896-TY2-3M	TIE WRAP,4.51 INCH LNTH	3	B	19	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
109-C80-91	NUT,6-32,MTG CLIP	3		20	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		21	64.000	1.000	EA	F	YN	64.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		22	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
111DC04-01	WASHER,6,SPLIT LOCK	3		23	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
109-844-3X	STDF,8-32 X .500L,.25HX,F/F,AL	3	B	24	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
110EA04-06	SCREW,8-32 X .375,PPH	3		25	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111EA04-01	WASHER,8,FLAT,SML OD-.375,ZINC	3		26	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		27	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		28	84.000	1.000	EA	F	YN	84.000	0	0		00/00/00	99/99/99
6121024-01	SCHEM HS ASSY 1751SL A	3	A	29	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
107-233-09	LUG,QDC,16-14AWG,FEM,.250,NYL	3	D	30	4.000	1.000	EA	F	YN	4.000	0	0		01/28/99	99/99/99
110CA04-04	SCREW,4-40 X .250,PPH	3		31	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111CE04-01	WASHER,4,INT LOCK	3		32	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
1130216-99	WIRE,16AWG,300V,WHT,UL,80C	3		35	1.000	1.000	FT	F	YN	1.000	0	0		00/00/00	99/99/99
1130222-99	WIRE,22AWG,300V,WHT,UL,105C	3	A	36	1.000	1.000	FT	F	YN	1.000	0	0		00/00/00	99/99/99
109-961-22	THERMAL COMPOUND	3	A	37	.000	1.000	EA	F	YN	.000	0	0	AS REQUIRED	00/00/00	99/99/99
111HE04-01	WASHER,1/4,INT STAR	3		38	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
112HB04-01	NUT,1/4-20,HEX,CS	3		39	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 150 ASSEMBLY, ELGAR - HEATSINK

5121024-02 OPCODE: 3 REV: B H/S ASY W0/TK 1751SL A
MODEL: SL/SX
ECO NO: N990078
DATE OF LAST ECO: 01/28/99

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
9920026-01	HEATSINK-8 TO3, 14" A	3	C	9	4.000	1.000	EA	B	YN	4.000	0	0		00/00/00	99/99/99
9121011-01	MTG PLATE-HS 1751SL A	3	A	10	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5070003-01	HEATSINK RES BD ASSY A	4	A	11	4.000	1.000	EA	M	YN	4.000	0	0	RB1-4	00/00/00	99/99/99
5970022-01	CBL-H/S SL SERIES	3	E	12	2.000	1.000	EA	M	YN	2.000	0	0		00/00/00	99/99/99
841-V62-59	XSTR,NPN,16A,170V,SELECT,TO3	3	G	13	32.000	1.000	EA	B	YN	32.000	0	0	Q1-32	00/00/00	99/99/99
845-368-DX	RECT,PWR,200V,20A	3	D	14	4.000	1.000	EA	B	YN	4.000	0	0	CR1-4	00/00/00	99/99/99
895-KT5-3X	TERM TAB,1/4,45DEG,.032	3	D	16	8.000	1.000	EA	B	YN	8.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		17	20.000	1.000	EA	F	YN	20.000	0	0		00/00/00	99/99/99
110DA04-08	SCREW,6-32 X .500,PPH	3		18	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
896-TY2-3M	TIE WRAP,4.51 INCH LNTH	3	B	19	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
109-C80-91	NUT,6-32,MTG CLIP	3		20	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		21	64.000	1.000	EA	F	YN	64.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		22	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
111DC04-01	WASHER,6,SPLIT LOCK	3		23	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
109-844-3X	STDF,8-32 X .500L,.25HX,F/F,AL	3	B	24	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
110EA04-06	SCREW,8-32 X .375,PPH	3		25	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111EA04-01	WASHER,8,FLAT,SML OD-.375,ZINC	3		26	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		27	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		28	84.000	1.000	EA	F	YN	84.000	0	0		00/00/00	99/99/99
6121024-01	SCHEM HS ASSY 1751SL A	3	A	29	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
107-233-09	LUG,QDC,16-14AWG,FEM,.250,NYL	3	D	30	4.000	1.000	EA	F	YN	4.000	0	0		01/28/99	99/99/99
1130216-99	WIRE,16AWG,300V,WHT,UL,80C	3		35	1.000	1.000	FT	F	YN	1.000	0	0		00/00/00	99/99/99
109-961-22	THERMAL COMPOUND	3	A	37	.000	1.000	EA	F	YN	.000	0	0	AS REQUIRE D	00/00/00	99/99/99
111HE04-01	WASHER,1/4,INT STAR	3		38	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
112HB04-01	NUT,1/4-20,HEX,CS	3		39	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 140 ASSEMBLY, ELGAR - FGI

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

5121045-01 OPCODE: 3 REV: C FINAL ASSY - 1751SLE 21
MODEL: SL/SX
ECO NO: N970676
DATE OF LAST ECO: 07/01/97

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQ	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5121045	FINAL ASSY - 1751SLE	3	B	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
5121049-02	PANEL ASSY,FRONT - 1751SLE/SXE	3	C	9	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5121048-01	PANEL ASSY, REAR-1751SLE/SXE	3	C	10	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
9121008-01	LEFT SIDE PNL 1751SL A	3	D	11	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5121047-02	PANEL ASSY,RIGHT-1751SLE/SXE	3	A	12	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5121010-03	DIVIDER ASSY - 1751SLE	3	A	13	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5071033-01	OSC TRAY ASSY SLSERIESA	3	C	14	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5071014-01	CAPACITOR ASSY A	3	B	15	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
5121024-01	HS ASSY W/TK 1751SL A	3	B	16	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
5121024-02	H/S ASY W0/TK 1751SL A	3	B	17	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
5070004-01	PREAMP BD ASSY, SL	3	E	18	1.000	1.000	EA	M	YN	1.000	0	0	(SL)	00/00/00	99/99/99
5071075-03	PWA, MOTHER-SLE	3	D	19	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
5071009-01	BRACE PLATE ASSY	3	C	21	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
9071009-01	BRACE PLATE A	3	B	22	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
110EF04-04	SCREW,8-32 X .250,PFH,82D	3		23	12.000	1.000	EA	F	YN	12.000	0	0		00/00/00	99/99/99
110DF04-06	SCREW,6-32 X .375,PFH,82D	3		24	10.000	1.000	EA	F	YN	10.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		25	12.000	1.000	EA	F	YN	12.000	0	0		00/00/00	99/99/99
110EA04-04	SCREW,8-32 X .250,PPH	3		26	12.000	1.000	EA	F	YN	12.000	0	0		00/00/00	99/99/99
110EA04-06	SCREW,8-32 X .375,PPH	3		27	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
110EF04-06	SCREW,8-32 X .375,PFH,82D	3		28	16.000	1.000	EA	F	YN	16.000	0	0		00/00/00	99/99/99
110CA04-05	SCREW,4-40 X .312,PPH	3		29	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		31	12.000	1.000	EA	F	YN	12.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		32	20.000	1.000	EA	F	YN	20.000	0	0		00/00/00	99/99/99
9071050-01	SHIELD HS SL/SX NMX A	3	A	33	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
A121045-01	SHIP KIT - 1751SLE	3	A	35	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
H121045-01	KIT,HARNESS - 1751SLE	3	C	36	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
6121024-01	SCHEM HS ASSY 1751SL A	3	A	38	.000	1.000	EA	P	YN	.000	0	0	REF	00/00/00	99/99/99
6070004-01	SCHM, PREAMP BD SL A	3	A	39	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
6121045	INTCONN DIAG - 1751SLE	3	B	41	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
W121045-01	WIRELIST,CHAS ASSY - 1751SLE	3	A	42	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
T071076-01	ATP, FINAL ASSY - 1001SLE	3	X1	44	.000	1.000	EA	P	YN	.000	0	0		05/27/97	99/99/99
M071076-01	MANUAL,OPERATOR - 1001SLE	3	A	46	.000	1.000	EA	P	YN	.000	0	0		05/27/97	99/99/99
5970008-01	CABLE ASSY	3	C	50	1.000	1.000	EA	M	YN	1.000	0	0	MBJ1 TO R1 ,DS1	00/00/00	99/99/99
5970009-01	CABLE ASSY A	3	A	51	1.000	1.000	EA	M	YN	1.000	0	0	MBJ2 TO J6 , 7	00/00/00	99/99/99
5121051-01	CABLE ASSY,REAR PANEL-SL/SX	3	B	53	1.000	1.000	EA	M	YN	1.000	0	0	MBJ3 TO J1	00/00/00	99/99/99
M071076-02	MANUAL,SERVICE - 1001SLE	3	A	54	.000	1.000	EA	P	YN	.000	0	0		05/27/97	99/99/99
9961200-01	LABEL,SERIAL TAG,THERMAL	0	B	56	1.000	1.000	EA	X	YN	1.000	0	0		07/01/97	99/99/99
9161295-01	LABEL,CE CERTIFICATION	3	A	57	1.000	1.000	EA	B	YN	1.000	0	0		07/01/97	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5121047-02 OPCODE: 3 REV: A PANEL ASSY,RIGHT-1751SLE/SXE
MODEL:
ECO NO: R1219
DATE OF LAST ECO: 03/10/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5121047	PANEL ASSY,RIGHT-1751SLE/SXE	3	A	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
893-56X-XX	TERM STRIP,6P,.375IN,LUG TYPE	3	A	2	2.000	1.000	EA	B	YN	2.000	0	0	TS1,2	00/00/00	99/99/99
807-301-05	RES,300,5W,5%,WW,AXL	3		3	7.000	1.000	EA	B	YN	7.000	0	0	R9-15	00/00/00	99/99/99
9121009-01	RT SIDE PNL 1751SL A	3	J	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5121043-01	XFMR ASSY,OUTPUT-1751SL/SX	3	B	12	1.000	1.000	EA	M	YN	1.000	0	0	T2	00/00/00	99/99/99
991-260-90	CURRENT XFMR U.L.MAT A	3	H	13	1.000	1.000	EA	B	YN	1.000	0	0	T3	00/00/00	99/99/99
110DF04-05	SCREW,6-32 X .312,PFH,82D	3		16	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		17	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
110HA04-10	SCREW,1/4-20 X .625 PPH	3		18	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		20	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111HA04-01	WASHER,1/4,FLAT	3		21	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111HC04-01	WASHER,1/4,SPLIT LOCK	3		22	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
112HB04-01	NUT,1/4-20,HEX,CS	3		25	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
5070009-01	PCB ASSY HI CURRENT A	3	C	27	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
850-412-25	XFMR,PWR,115/230V,25VA,VDE	0	A	28	1.000	1.000	EA	B	YN	1.000	0	0	T5	00/00/00	99/99/99
847-990-3X	RECT,BRDG,1PH,200V,30A	3	D	29	1.000	1.000	EA	B	YN	1.000	0	0	UA2	00/00/00	99/99/99
110DF04-06	SCREW,6-32 X .375,PFH,82D	3		30	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		31	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		32	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
112EA04-01	NUT,8-32,HEX,SMALL,CS	3		33	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
111EA04-01	WASHER,8,FLAT,SML OD-.375,ZINC	3		34	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		35	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
110EA04-14	SCREW,8-32 X .875,PPH	3		36	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99
109-961-22	THERMAL COMPOUND	3	A	40	.000	1.000	EA	F	YN	.000	0	0		00/00/00	99/99/99
110CA04-06	SCREW,4-40 X .375,PPH	3		41	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111CA04-01	WASHER,4,FLAT	3		42	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111CC04-01	WASHER,4,SPLIT LOCK	3		43	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
112CB04-01	NUT,4-40,HEX,STD,CS	3		44	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5121048-01 OPCODE: 3 REV: C PANEL ASSY, REAR-1751SLE/SXE
MODEL:
ECO NO: N970473
DATE OF LAST ECO: 05/27/97

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQF	PREP CODE	DAYS OFFSET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5121048	PANEL ASSY, REAR-1751SLE/SXE	3	B	1	.000	1.000	EA	P	YN	.000	0	0		08/01/96	99/99/99
5121041-01	FLTR ASSY,INPUT PWR-1751SL/SX	3	B	2	1.000	1.000	EA	X	YN	1.000	0	0		00/00/00	99/99/99
109-FBK-13	CORE,FERRITE,BLOCK,SET W/CLIP	3	B	3	1.000	1.000	PR	B	YN	1.000	0	0		00/00/00	99/99/99
9211630-01	BRKT,MTG,FERRITE BLOCK-VXP3000	0	C	4	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
110DS04-05	SCREW,6-32 X .312,SEMS,PPH,CS	0	B	5	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
9161175-05	LABEL,OUTPUT,SAFETY GND	0	A	6	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9121048-01	PANEL, REAR - 1751 SLE/SXE	3	B	9	1.000	1.000	EA	B	YN	1.000	0	0		04/10/97	99/99/99
9960019-01	LABEL G.P.I.B COVER	3	C	10	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9961198-01	LABEL, SERIAL TAG	3	A	11	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
853-550-6X	GUARD,FAN,RND,6.38 IN	3	B	13	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
853-230-01	FAN,220-230VAC,200-235CFM,VDE	3	B	14	2.000	1.000	EA	B	YN	2.000	0	0	B1	00/00/00	99/99/99
863-505-25	HANDLE,4.87L,1.06H,ALUM,CLR	3	E	15	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
893-141-08	TERM BLK,8P,20A,14AWG,1100RMS	3	B	16	.000	1.000	EA	B	YN	.000	0	0	REF TB3	00/00/00	99/99/99
893-601-JX	JUMPER,TERM BLOCK,.438 SPACING	0	A	17	2.000	1.000	EA	B	YN	2.000	0	0	FOR TB3	00/00/00	99/99/99
893-30A-5P	TERM BLK,5P,30A,600V,FEED-THRU	3	A	19	1.000	1.000	EA	B	YN	1.000	0	0	TB1 & TB2	00/00/00	99/99/99
893-142-J2	TERM BLK,JUMPER,.56 CNTR	3	A	20	2.000	1.000	EA	B	YN	2.000	0	0	FOR TB1 & TB2	00/00/00	99/99/99
822-224-06	CAP,.22UF,600V,10%,FILM	3	C	21	4.000	1.000	EA	B	YN	4.000	0	0	C3-C6	00/00/00	99/99/99
109-839-7S	STDF,6-32 X .750L,.31HX,F/F,SS	3	A	23	2.000	1.000	EA	B	YN	2.000	0	0	FOR TB1 & TB2	00/00/00	99/99/99
110DA04-10	SCREW,6-32 X .625,PPH	3	A	24	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
1070400-02	LUG,#6,SOLDER,INT LOCK,ANGLE	3	B	26	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110GA04-07	SCREW,10-32 X .438,PPH	3		27	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
807-5R6-05	RES,5.6,5W,5%,WW,AXL	3		29	4.000	1.000	EA	B	YN	4.000	0	0	R3,4,5,6	00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		31	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		36	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		37	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111FC04-01	WASHER,10,SPLIT LOCK	3		39	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
109-309-2X	PLUG,HOLE,.500,NYLON,BLK	3		41	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
995-SLV-10	SLEEVING,#22,CLR VINYL	3	-	43	1.500	1.000	EA	F	YN	1.500	0	0		00/00/00	99/99/99
111DC04-01	WASHER,6,SPLIT LOCK	3		44	1.000	1.000	EA	F	YN	1.000	0	0		05/27/97	99/99/99
109-093-00	GROMMET,FLEX STRIP,.093 NYLON	0	A	45	1.000	1.000	FT	B	YN	1.000	0	0		05/27/97	99/99/99
110EA04-10	SCREW,8-32 X .625,PPH	3		46	4.000	1.000	EA	F	YN	4.000	0	0		05/27/97	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		47	4.000	1.000	EA	F	YN	4.000	0	0		05/27/97	99/99/99
112EB04-01	NUT,8-32,HEX,STD,CS	3		48	4.000	1.000	EA	F	YN	4.000	0	0		05/27/97	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 550 PHANTOM

5121049-02 OPCODE: 3 REV: C PANEL ASSY,FRONT - 1751SLE/SXE
MODEL: AC SL/SX
ECO NO: N980937
DATE OF LAST ECO: 09/02/98

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5121049	PANEL ASSY,FRONT - 1751SLE/SXE	3	A	1	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
9121049-01	PANEL,FRONT - 1751SLE/SXE	3	B	9	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9261015-01	BRACKET COVER SUPPORT C	3	A	10	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
852-303-46	CBR,30A,2P,50/60HZ,VDE	3	A	11	1.000	1.000	EA	B	YN	1.000	0	0	CB1	05/27/97	99/99/99
854-219-12	LAMP,12V,SOLID-SATE,VERT,GRN	0	A	12	1.000	1.000	EA	B	YN	1.000	0	0	DS1	00/00/00	99/99/99
857-300-82	METER,0-300VAC,RECTIFIED	3	A	13	1.000	1.000	EA	B	YN	1.000	0	0	M1	00/00/00	99/99/99
819-103-53	POT,10K,2W,10T,PNL	3	B	14	1.000	1.000	EA	B	YN	1.000	0	0	R1	00/00/00	99/99/99
891-030-00	BINDING POST,30A,PNL MNT,BLK	3	D	15	1.000	1.000	EA	B	YN	1.000	0	0	E3	00/00/00	99/99/99
891-030-02	BINDING POST,30A,PNL MNT,RED	3	D	16	1.000	1.000	EA	B	YN	1.000	0	0	E1	00/00/00	99/99/99
891-030-09	BINDING POST,30A,1KV,WHT	3	B	17	1.000	1.000	EA	B	YN	1.000	0	0	E2	00/00/00	99/99/99
863-525-25	HANDLE,7.62L,10-32,CHROME	3	E	18	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
914-239-20	METER MOUNT MODEL 82T	3	B	19	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		21	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		22	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
112DB04-01	NUT,6-32,HEX,CS	3		23	6.000	1.000	EA	F	YN	6.000	0	0		00/00/00	99/99/99
110GF04-08	SCREW,10-32 X .500,PFH,82D,CS	3		24	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
109-181-XX	NUT,LOCK,POT,.25 SHAFT	3	C	25	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
9121050-02	LABEL,NAME PLATE - SLE/SXE	3	A	26	1.000	1.000	EA	B	YN	1.000	0	0		09/02/98	99/99/99
111ME04-01	WASHER,7/16,INT TOOTH LOCK	3	A	27	1.000	1.000	EA	F	YN	1.000	0	0		00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL
AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 150 ASSEMBLY, ELGAR - HEATSINK

5920026-01 OPCODE: 3 REV: F H-SINK W/TK 1001SL A
MODEL: SL/SX
ECO NO: N990471
DATE OF LAST ECO: 04/30/99

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REQP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5920026	HTSK ASSY, W/TK-1001SL	0	D	1	.000	1.000	EA	P	YN	.000	0	0		09/06/96	99/99/99
9920026-01	HEATSINK-8 TO3, 14" A	3	C	9	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
9071010-01	MTG PLATE HEATSINK A	3	A	10	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5070003-01	HEATSINK RES BD ASSY A	4	A	11	2.000	1.000	EA	M	YN	2.000	0	0	RB1,2	00/00/00	99/99/99
5970022-01	CBL-H/S SL SERIES	3	E	12	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
841-V62-59	XSTR,NPN,16A,170V,SELECT,TO3	3	G	13	16.000	1.000	EA	B	YN	16.000	0	0	Q1-16	00/00/00	99/99/99
845-368-DX	RECT,PWR,200V,20A	3	D	14	2.000	1.000	EA	B	YN	2.000	0	0	CR1,2	00/00/00	99/99/99
861-340-0X	THERMOSTAT,SW,NO,CLS,200F	3	B	15	1.000	1.000	EA	B	YN	1.000	0	0	TK1	00/00/00	99/99/99
895-KT5-3X	TERM TAB,1/4,45DEG,.032	3	D	16	4.000	1.000	EA	B	YN	4.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		17	10.000	1.000	EA	F	YN	10.000	0	0		00/00/00	99/99/99
110DA04-08	SCREW,6-32 X .500,PPH	3		18	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
896-TY2-3M	TIE WRAP,4.51 INCH LNTH	3	B	19	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
109-C80-91	NUT,6-32,MTG CLIP	3		20	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		21	32.000	1.000	EA	F	YN	32.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		22	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
111DC04-01	WASHER,6,SPLIT LOCK	3		23	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
109-844-3X	STDF,8-32 X .500L,.25HX,F/F,AL	3	B	24	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
110EA04-06	SCREW,8-32 X .375,PPH	3		25	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111EA04-01	WASHER,8,FLAT,SML OD-.375,ZINC	3		26	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		27	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		28	42.000	1.000	EA	F	YN	42.000	0	0		00/00/00	99/99/99
6920026-01	SCHM HEATSINK 1001SL A	3	A	29	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
110CA04-04	SCREW,4-40 X .250,PPH	3		31	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
111CE04-01	WASHER,4,INT LOCK	3		32	2.000	1.000	EA	F	YN	2.000	0	0		00/00/00	99/99/99
107-233-09	LUG,QDC,16-14AWG,FEM,.250,NYL	3	D	34	2.000	1.000	EA	F	YN	2.000	0	0		11/25/98	99/99/99
1130216-99	WIRE,16AWG,300V,WHT,UL,80C	3		35	.500	1.000	FT	F	YN	.500	0	0		00/00/00	99/99/99
1130222-99	WIRE,22AWG,300V,WHT,UL,105C	3	A	36	1.000	1.000	FT	F	YN	1.000	0	0		00/00/00	99/99/99
894-T03-TP	HTSK,ALUM,SUBSTRAT,T03	3	B	37	16.000	1.000	EA	B	YN	16.000	0	0		00/00/00	99/99/99
111FE04-01	WASHER,10,INT LOCK	3		38	2.000	1.000	EA	F	YN	2.000	0	0		04/30/99	99/99/99
112GB04-01	NUT,10-32,HEX,STD,CS	3		39	2.000	1.000	EA	F	YN	2.000	0	0		04/30/99	99/99/99
894-D04-TP	HTSK,ALUM,SUBSTRAT,D04	3	B	40	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99

DISTRIBUTION: DEBBIEF -

BILL OF MATERIAL

AS OF 11/03/99

CLASS CODE GROUP: 1 COMMODITY CLASS
CLASS CODE: 150 ASSEMBLY, ELGAR - HEATSINK

5920026-02 OPCODE: 3 REV: F H-SINK W0/TK 1001SL A
MODEL: SL/SX
ECO NO: N990471
DATE OF LAST ECO: 04/30/99

OP: ORDER POLICY CODE
REQ:N=PART OPTIONAL
Y=PART REQUIRED
PF: N=PART DOES NOT PRINT ON SALES ORDER
Y=PART PRINTS ON SALES ORDER W/O PRICE
P=PART PRINTS ON SALES ORDER WITH PRICE

PART NUMBER	DESCRIPTION	OP	RV	ITEM NO.	QTY PER ASSEMBLY	YIELD FACTR	UM	SC	REP QF	PREP CODE	DAYS OFF SET	SEQ	REFERENCE DESIGNATOR	EFFECTIV DATE	OBSOLETE DATE
5920026	HTSK ASSY, W/TK-1001SL	0	D	1	.000	1.000	EA	P	YN	.000	0	0		09/06/96	99/99/99
9920026-01	HEATSINK-8 TO3, 14" A	3	C	9	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99
9071010-01	MTG PLATE HEATSINK A	3	A	10	1.000	1.000	EA	B	YN	1.000	0	0		00/00/00	99/99/99
5070003-01	HEATSINK RES BD ASSY A	4	A	11	2.000	1.000	EA	M	YN	2.000	0	0	RB1,2	00/00/00	99/99/99
5970022-01	CBL-H/S SL SERIES	3	E	12	1.000	1.000	EA	M	YN	1.000	0	0		00/00/00	99/99/99
841-V62-59	XSTR,NPN,16A,170V,SELECT,TO3	3	G	13	16.000	1.000	EA	B	YN	16.000	0	0	Q1-16	00/00/00	99/99/99
845-368-DX	RECT,PWR,200V,20A	3	D	14	2.000	1.000	EA	B	YN	2.000	0	0	CR1,2	00/00/00	99/99/99
895-KT5-3X	TERM TAB,1/4,45DEG,.032	3	D	16	4.000	1.000	EA	B	YN	4.000	0	0		00/00/00	99/99/99
110DA04-06	SCREW,6-32 X .375,PPH	3		17	10.000	1.000	EA	F	YN	10.000	0	0		00/00/00	99/99/99
110DA04-08	SCREW,6-32 X .500,PPH	3		18	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
896-TY2-3M	TIE WRAP,4.51 INCH LNTH	3	B	19	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
109-C80-91	NUT,6-32,MTG CLIP	3		20	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
110DA04-05	SCREW,6-32 X .312,PPH	3		21	32.000	1.000	EA	F	YN	32.000	0	0		00/00/00	99/99/99
111DA04-01	WASHER,6,FLAT	3		22	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
111DC04-01	WASHER,6,SPLIT LOCK	3		23	8.000	1.000	EA	F	YN	8.000	0	0		00/00/00	99/99/99
109-844-3X	STDF,8-32 X .500L,.25HX,F/F,AL	3	B	24	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
110EA04-06	SCREW,8-32 X .375,PPH	3		25	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111EA04-01	WASHER,8,FLAT,SML OD-.375,ZINC	3		26	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111EC04-01	WASHER,8,SPLIT LOCK	3		27	4.000	1.000	EA	F	YN	4.000	0	0		00/00/00	99/99/99
111DE04-01	WASHER,6,INT LOCK	3		28	42.000	1.000	EA	F	YN	42.000	0	0		00/00/00	99/99/99
6920026-01	SCHM HEATSINK 1001SL A	3	A	29	.000	1.000	EA	P	YN	.000	0	0		00/00/00	99/99/99
107-233-09	LUG,QDC,16-14AWG,FEM,.250,NYL	3	D	34	2.000	1.000	EA	F	YN	2.000	0	0		11/25/98	99/99/99
1130216-99	WIRE,16AWG,300V,WHT,UL,80C	3		35	.500	1.000	FT	F	YN	.500	0	0		00/00/00	99/99/99
894-T03-TP	HTSK,ALUM,SUBSTRAT,T03	3	B	37	16.000	1.000	EA	B	YN	16.000	0	0		00/00/00	99/99/99
111FE04-01	WASHER,10,INT LOCK	3		38	2.000	1.000	EA	F	YN	2.000	0	0		04/30/99	99/99/99
112GB04-01	NUT,10-32,HEX,STD,CS	3		39	2.000	1.000	EA	F	YN	2.000	0	0		04/30/99	99/99/99
894-D04-TP	HTSK,ALUM,SUBSTRAT,D04	3	B	40	2.000	1.000	EA	B	YN	2.000	0	0		00/00/00	99/99/99

4.1 GENERAL

This section contains the schematic diagrams and parts layout diagrams for the Model 1001SLE/1751SLE AC Power Source. The schematic diagrams should be used to understand the theory of operation and as an aid in troubleshooting the unit.

Components identified as "trim" or "FSV" are factory selected parts whose values are determined at the time of final checkout.

4.2 DIAGRAMS

Table 4-1 provides a list of the diagrams included in this section.

Table 4-1. Model 1001SLE/1751SLE Diagram List

Document Number	Description
5070003	Heatsink Resistor Board Assembly
5070004	Preamplifier Board Assembly
6070004	Preamplifier Board Schematic
5071007	Divider Assembly 1001SLE
5071009	Brace Plate Assembly 1751SLE
5071014	Capacitor Assembly
5071070	Filter Box Assembly 1001SLE
5071075	Motherboard Assembly SLE
6071075	Motherboard Schematic
5071076	Final Assembly 1001SLE
6071076	Interconnect Schematic 1001SLE
5071082	Rear Panel Assembly 1001SLE
5071083	Front Panel Assembly 1001SLE
5071084	Right Panel Assembly 1001SLE
5071085	Brace Plate Assembly 1001SLE
5121010	Divider Assembly 1751SLE
5121024	Heatsink Assembly 1751SLE
6121024	Heatsink Schematic 1751SLE
5121045	Final Assembly 1751SLE
6121045	Interconnect Schematic 1751SLE
5121047	Right Panel Assembly 1751SLE
5121048	Rear Panel Assembly 1751SLE
5121049	Front Panel Assembly 1751SLE
5920026	Heatsink Assembly 1001SLE
6920026	Heatsink Schematic 1001SLE

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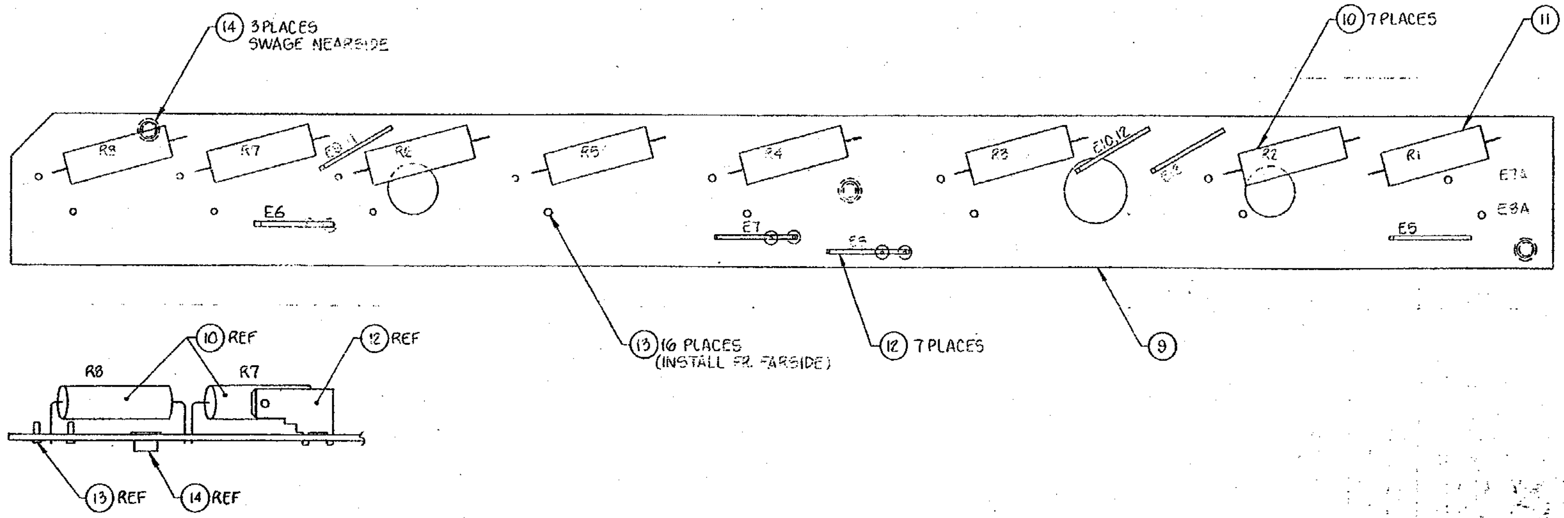


-01 ASSY SHOWN

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

NEXT ASSY	USED ON
5920026-01	501 SL
	1001 SL

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS .XX ± .03 .XXX ± .010 FRACTIONS ± 1/32 ANGLES ± 1/2° DO NOT SCALE THIS DRAWING

MATERIAL:

FINISH:

CONTRACT NO.		
FIRST MADE FOR:		
APPROVAL		DATE
DRAWN	CJ	7/3/85
CHECKED	[signature]	7/9/85
PROJ ENG	[signature]	10-22-85
QA REL		

ELGAR

HEATSINK RESISTOR BD. ASSY.

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	25965	5070003	A

SCALE 2X SHEET 3 OF 3

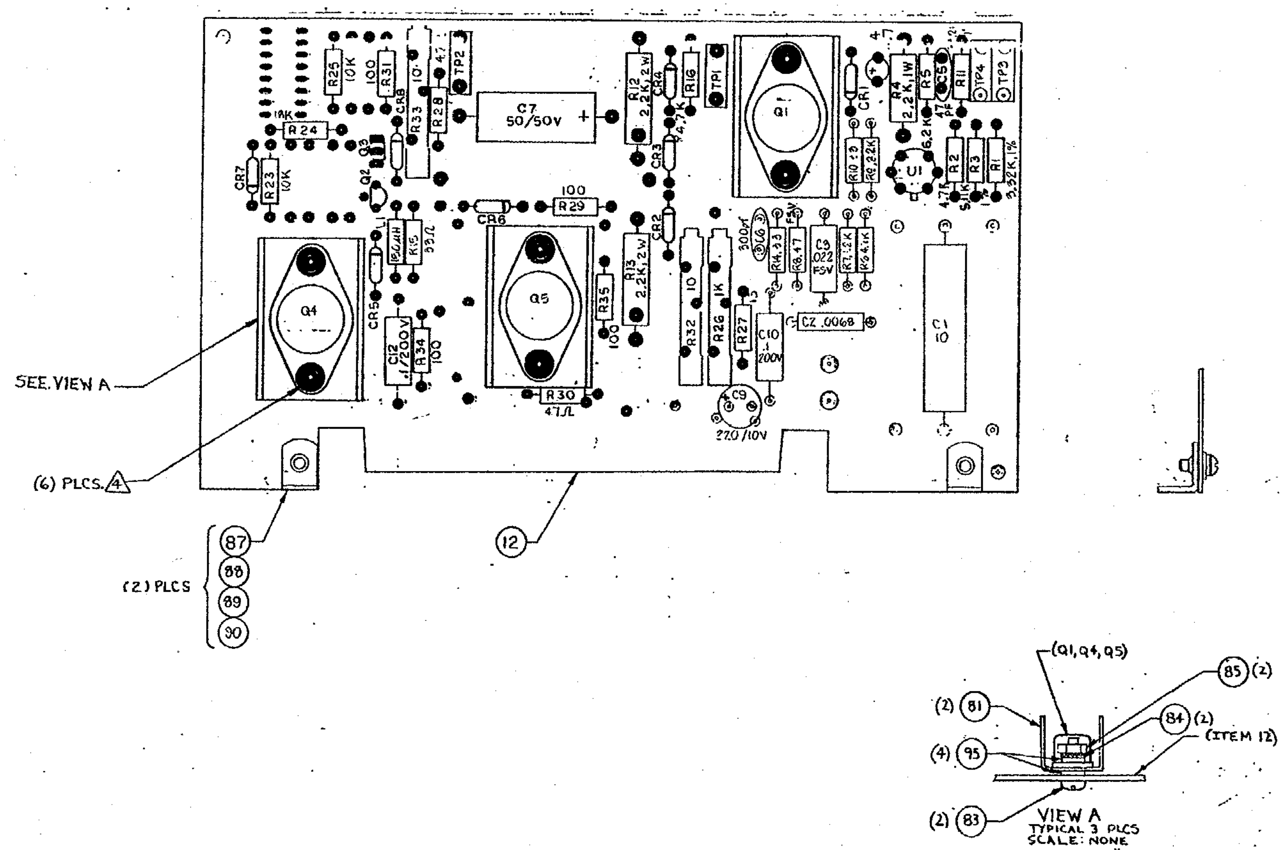
2. USE SCHEMATIC 6920026.

1. (Δ) NEXT ASSY #5920026-01 REQUIRES TWO HEATSINK RESISTOR BOARDS.

NOTES: UNLESS OTHERWISE SPECIFIED.

ELGAR 990 317 PCA

ellows_Wed 11/03/99 2:02:06 PM



-01 SHOWN

4 TORQUE SCREWS 4.5 ± .5 IN/LBS.
3. ALL CAPACITORS ARE IN MICROFARADS.
2. DELETED.

1. ALL RESISTORS ARE IN OHMS, 1/2 W, 5%.
NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	-	REVISED AND REDRAWN PER ECN		

ELGAR	
PREAMP BD ASSY SL SERIES	
SIZE: D	CODE IDENT NO: 25965
DRAWING NO: 5070004	REV: E

APPROVAL		DATE
DRAWN	GCC	6-14-85
CHECKED		10-28-85
PROJ ENG		
QA-REL		

NEXT ASSY	USED ON
	SL SERIES
APPLICATION	

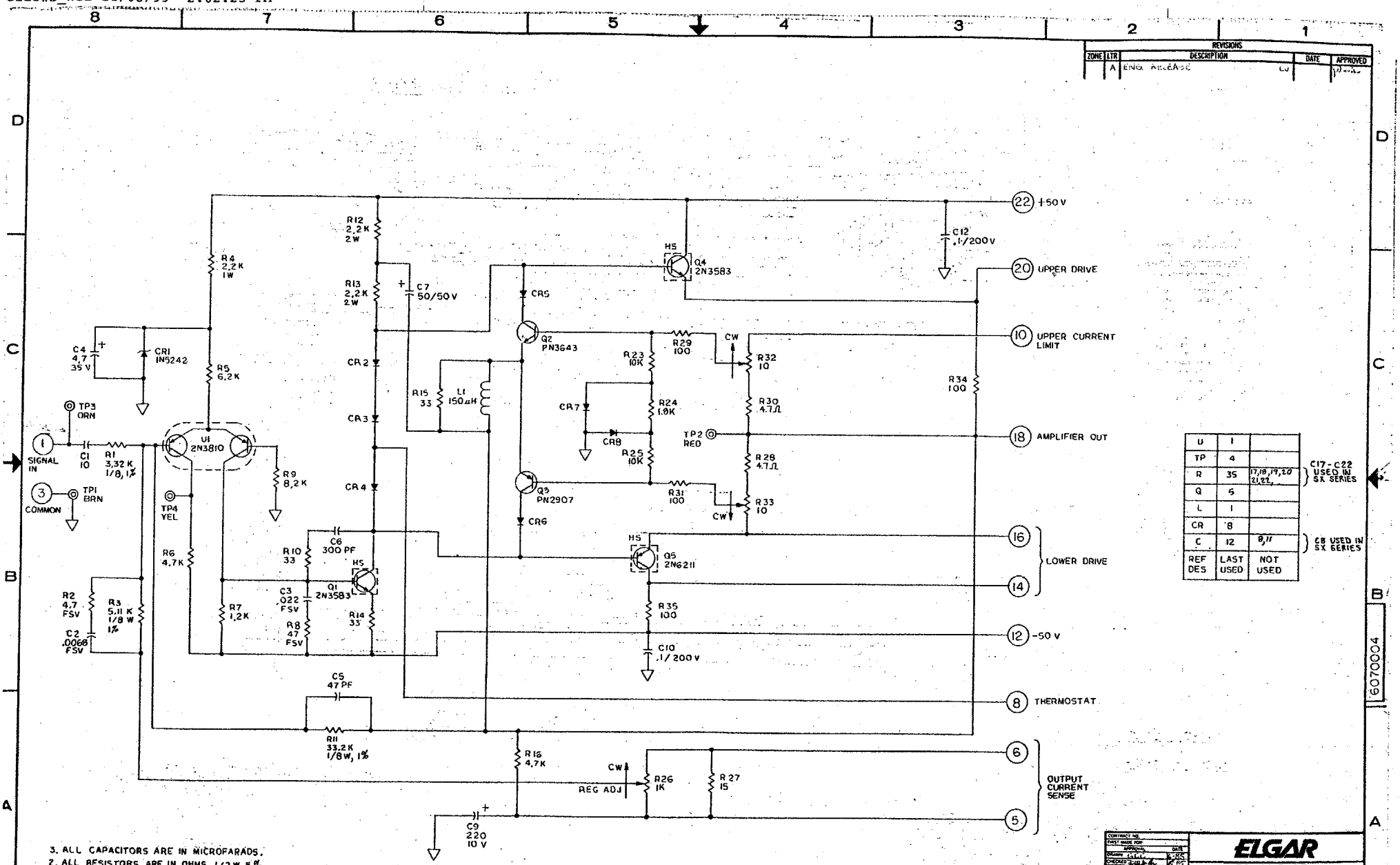
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS XX ± .03 XXX ± .010 FRACTIONS ± 1/32 ANGLES ± 1/2° DO NOT SCALE THIS DRAWING

MATERIAL:

FINISH

5070004

ellows_Wed 11/03/99 2:02:25 PM



U	1	
TP	4	
R	35	17,18,19,20,21,22, } C17-C22 USED IN SX SERIES
Q	5	
L	1	
CR	8	
C	12	8,11 } C8 USED IN SX SERIES
REF DES	LAST USED	NOT USED

3. ALL CAPACITORS ARE IN MICROFARADS.
2. ALL RESISTORS ARE IN OHMS, 1/2 W, 5%.
1. ALL DIODES ARE IN4004.
NOTES: UNLESS OTHERWISE SPECIFIED

ELGAR

PREAMP BD SCHEMATIC

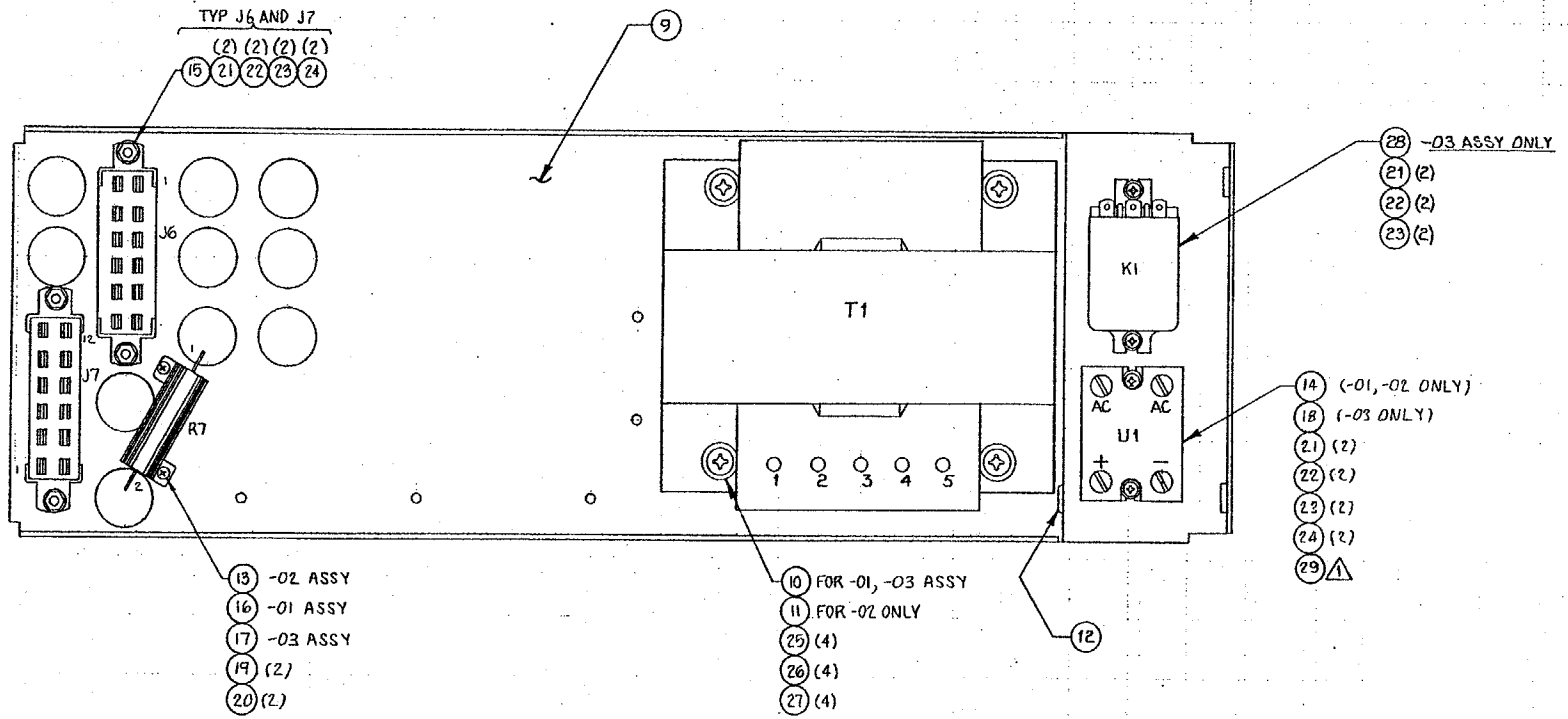
SL SERIES

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	25965	6070004	A

SCALE | SHEET 1 OF 1

6070004

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	C	REVISED PER ECN N970133	6-11-99	



-01, -02, - 03, AND -04 ASSY SHOWN

1 INSTALL ITEM 29 UNDER U1 BRIDGE

NOTES: UNLESS OTHERWISE SPECIFIED.

	1001 SLE		
	1001 SX		
	751 SL		
	1001 SL		
NEXT ASSY.	USED ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:
DECIMALS: .XX ± .03, .XXX ± .010 | FRACTIONS: ± 1/32 | ANGLES: ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL:
FINISH:

CONTRACT NO.
FIRST MADE FOR:

APPROVAL		DATE
DRAWN	CJ	5-30-02
CHECKED		6-17-03
PROJ ENG		9-26-03
QA-REL		

ELGAR

DIVIDER ASSY.

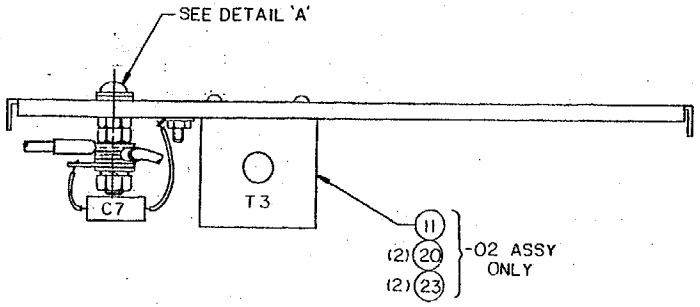
SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	25965	5071007	C

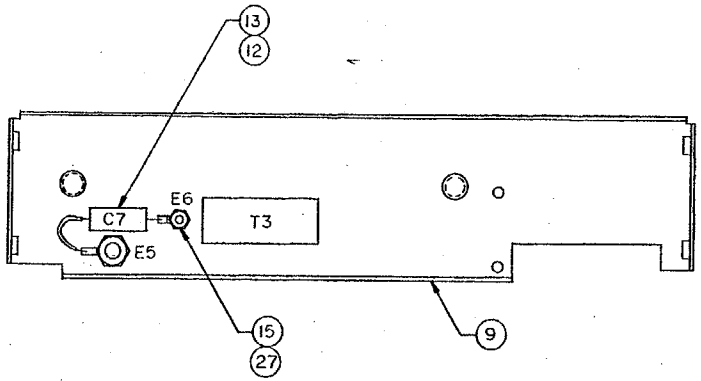
SCALE FULL | SHEET 1 OF 1

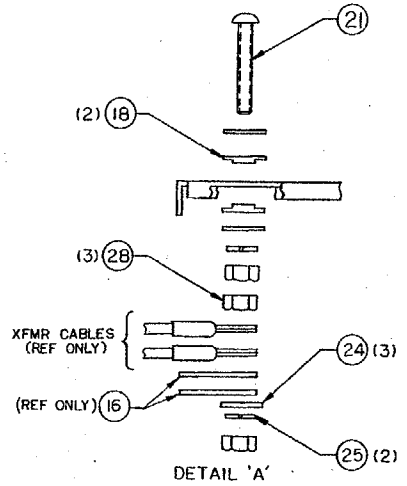
5071007

ELGAR PRO 313 90A

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B	REVISE AND REDRAWN PER ECN 7938	7-29-99	A. Staff







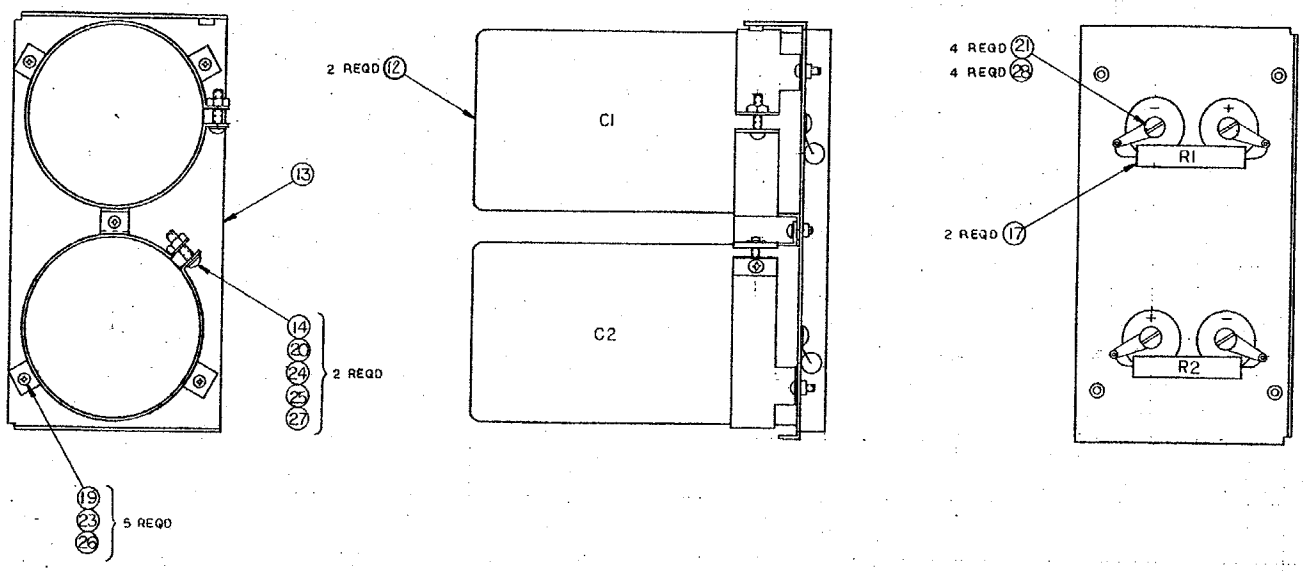
5071009

-02 ASSY
-01 ASSY

NOTES: UNLESS OTHERWISE SPECIFIED

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS .XX ± .03, .XXX ± .010; FRACTIONS ± 1/32; ANGLES ± 1/2°. DO NOT SCALE THIS DRAWING	CONTRACT NO.	ELGAR			
			FIRST MADE FOR:	BRACE PLATE ASSY			
	SL SERIES		APPROVAL	DATE			
	SX SERIES		DRAWN GCC	11-14-95			
NEXT ASSY	USED ON		CHECKED A. Staff	11-14-95			
APPLICATION			PROJ ENG [illegible]	11/15/95			
		MATERIAL:	QA/REL [illegible]	11/20/95			
		FINISH:			SIZE D	CODE IDENT. NO. 25965	DRAWING NO. 5071009
					SCALE 1:1	SHEET 1 OF 1	REV B

REVISIONS			
ZONE	LTR	DESCRIPTION	DA
		SEE SHEET 1	



⚠ MOUNT 'C1' TO ITEM 13 BEFORE MOUNTING 'C2'.

NOTES: UNLESS OTHERWISE SPECIFIED

5071026-01	NOT SL
5091023-01	391 SL
5121024-01	1751 SL
5071026-01	751 SL
5051027-01	501 SL
5071001-01	1001 SL
NEXT ASSY.	USED ON
APPLICATION	

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS: XX ± .03, XXX ± .010 — FRACTIONS: ± 1/32 — ANGLES: ± 1/2°
DO NOT SCALE THIS DRAWING

MATERIAL:

FINISH:

CONTRACT NO.
FIRST MADE FOR:

APPROVAL		DATE
DRAWN	GCC	8-5-85
CHECKED		8/6/85
PROJ ENG		8-25-85
QA-REL		

ELGAR

CAPACITOR ASSY

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	25965	5071014	B

SCALE 1:1 SHEET 5 OF 5

5071014

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	2-13-97	G. STAPP
	B	REVISED PER ECN N979473	8/8/97	STAPP

NOTES: UNLESS OTHERWISE SPECIFIED.

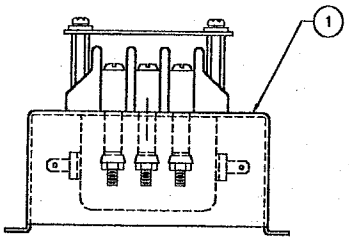
1. WIRE ASSEMBLY PER WIRE TABLE.

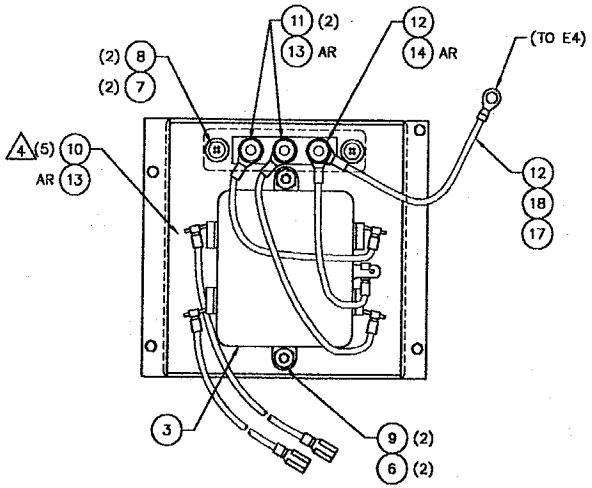
△2 IDENTIFY LEADS ENDS WITH "TO" DESTINATION INFO.

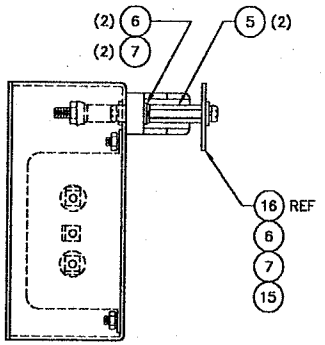
△3 IDENTIFY WITH ASSY NO AND LATEST REV.

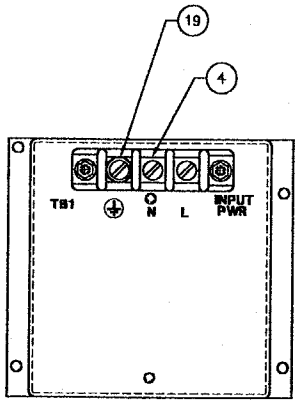
△4 SOLDER LUG (ITEM 10) TO TERMINALS.

WIRE TABLE				
FROM	TO	LENGTH	ITEM	
TB1–GND	FL1–GND	3.5	14	
TB1–GND	E4 CHAS GND	5.0	18	△2
TB1–N	FL1–LINE LO	3.5	13	
TB1–L	FL1–LINE HI	3.5	13	
FL1–LOAD HI	CB1–A–LINE	32.0	13	△2
FL1–LOAD LO	CB1–B–LINE	32.0	13	△2









-01

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	CONTRACT NO.		ELGAR	
		DECIMALS FRACTIONS ANGLES .XX ± .03 ± 1/32 ± 1/2° .XXX ±.010	FIRST MADE FOR:			
		DO NOT SCALE THIS DRAWING	APPROVAL	DATE	FILTER ASSY, INPUT POWER 751/1001/1203 SL	
5071076	1001 SLE	MATERIAL:	DRAWN A. A. BOORMAN	2-13-97		
NEXT ASSY.	USED ON		CHECKED JEFF TRAYNOR	2-13-97		
APPLICATION			ENGINEER DAN DOUCHER	2-13-97		
		FINISH:	QA-REL QUANG LE	2-13-97	SIZE D	CODE IDENT. NO. 25965
					DWG. NO. 5071070	REV B
					SCALE 1/1	SHEET 1 OF 1

ellows_Wed 11/03/99 2:04:04 PM

NOTES: UNLESS OTHERWISE SPECIFIED

1. INTERPRET DRAWING IN ACCORDANCE WITH DOD-STD-100.

2. THIS DRAWING USED IN CONJUNCTION WITH SCHEMATIC DIAGRAM 6071075.

3. MAXIMUM LEAD TIP PROTRUSION .06 (SOLDER SIDE).

4. IDENTIFY WITH PWA NUMBER, REVISION, AND SERIAL NUMBER USING LABEL (ITEM 9).

5. ABBREVIATIONS IN ACCORDANCE WITH MIL-STD-12.

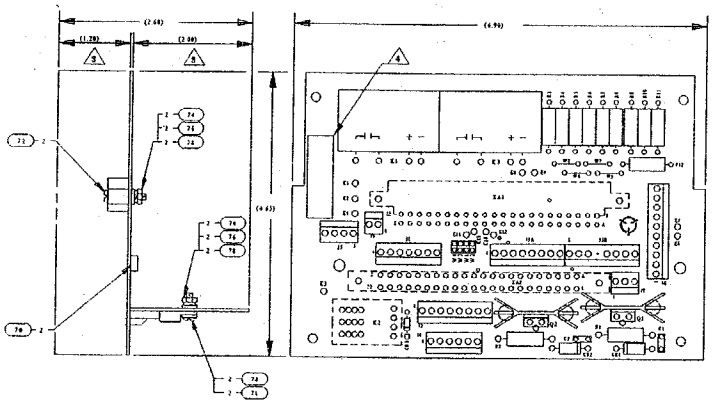
6. WORKMANSHIP IN ACCORDANCE WITH ELGAR DOCUMENT 0050004.

7. ELECTROSTATIC DISCHARGE CONTROL PROGRAM FOR PROTECTION OF ELECTRICAL AND ELECTRONIC PARTS, ASSEMBLIES AND EQUIPMENT PER IP 0460007-01.

8. MAXIMUM COMPONENT HEIGHT.

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	01	PILOT REL PER DRN PR1270	2/26/97	PRESTON
	A	PROD REL PER ECN N970308 RH4/25/97	4/29/97	PRESTON
	B	REVISED PER ECN N970439 RH 5/28/97	5/28/97	PRESTON
	C	REVISED PER ECN N970605 JW 6/9/97		



SILKSCREEN LAY1
SILKSCR+REFDES+
BRDOUT+NW2

SEE SEPARATE PARTS LIST

CAUTION
SENSITIVE ELECTRONIC DEVICES

5071008	SL SERIES
NEXT ASSY	USED ON

APPLICATION

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS FRACTIONS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL:
FINISH:

CONTRACT NO.		
FIRST MADE FOR:		
APPROVAL		DATE
DRAWN	JW	2/24/97
CHECKED	PRESTON	2/26/97
ELECT ENG	D.DOUGHER	2/26/97
PROJ ENG		
MECH ENG		
QA (REL)		

ELGAR

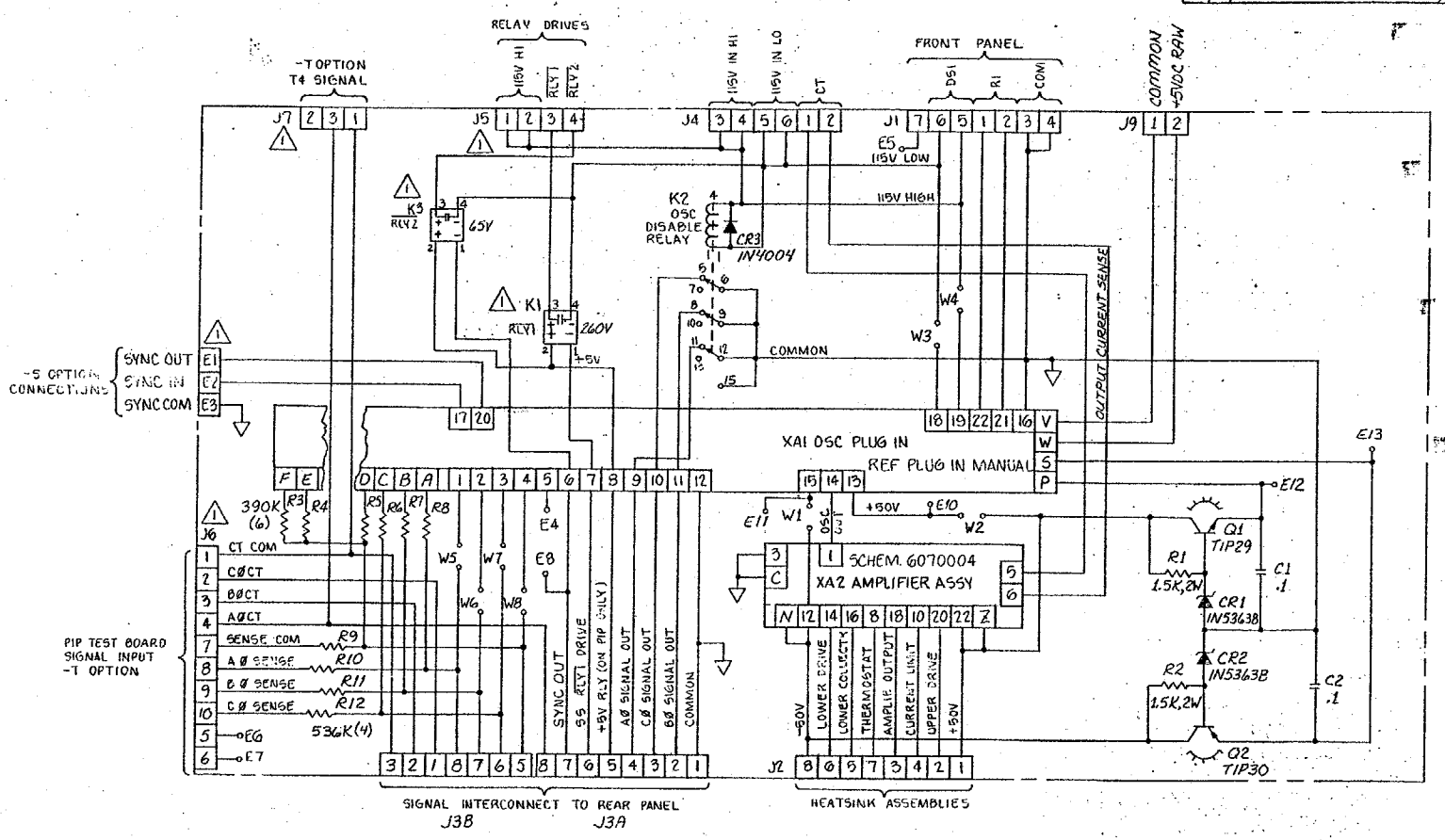
PRINTED WIRING ASSEMBLY, MOTHER

SIZE	CODE IDENT NO.	DRAWING NO	REV
D	25965	5071075	C

SCALE NONE SHEET 1 OF 1

ellows_Wed 11/03/99 2:04:27 PM

ZONE	LTR	REVISIONS DESCRIPTION	DATE	APPROVED
	01	PILOT REL PER DCN PR1270	2/26/97	
	A	PROD RELEASE PER ECN N970208	4/9/97	
	B	REVISED PER ECN N970427	7/7/97	
	C	REVISED PER ECN N970905	9/19/97	



REFERENCE DESIG	
LAST USED	NOT USED
C2	
CR3	
E13	
K3	K4,5
R12	
XA2	
W8	
J9	
Q2	

⚠1 SPECIAL FUNCTIONS, -T, -S AND RANGE OPTIONS.

NOTES: UNLESS OTHERWISE SPECIFIED

ELGAR

MOTHER BD WITH OPTIONS

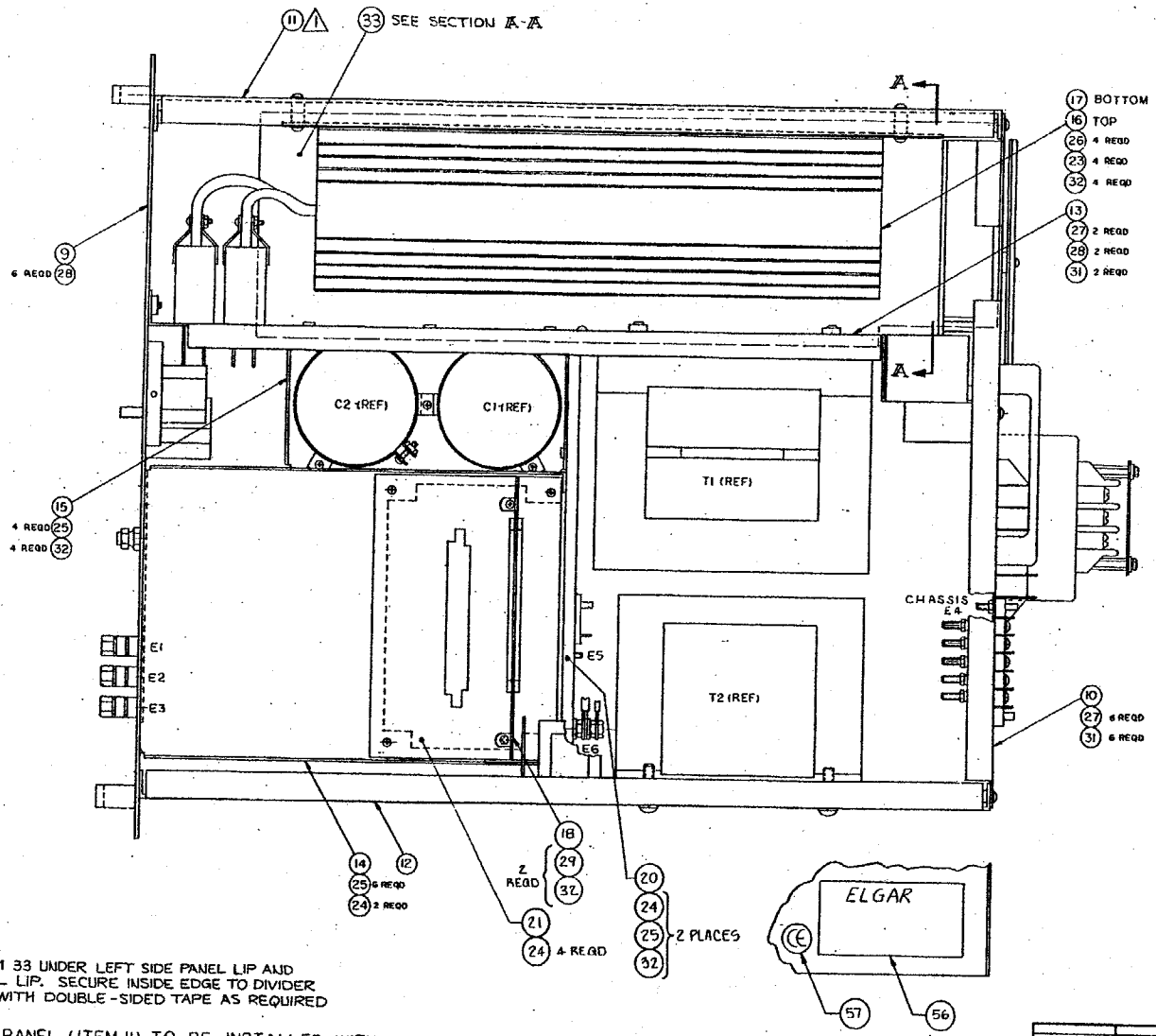
SL/SX SERIES

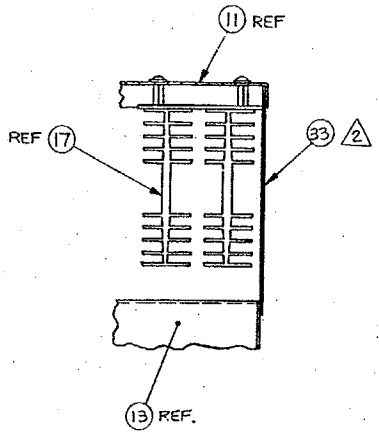
SIZE D | CAGE IDENT. NO. 25965 | DRAWING NO. 6071075 | REV C

SCALE NONE | SHEET 1 OF 1

6071075

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	PROD REL PER DRN R1219	3/4/97	
B	REVISED PER ECN N9706716	8-5-97	





SECTION A-A
NO SCALE

-01 ASSY SHOWN

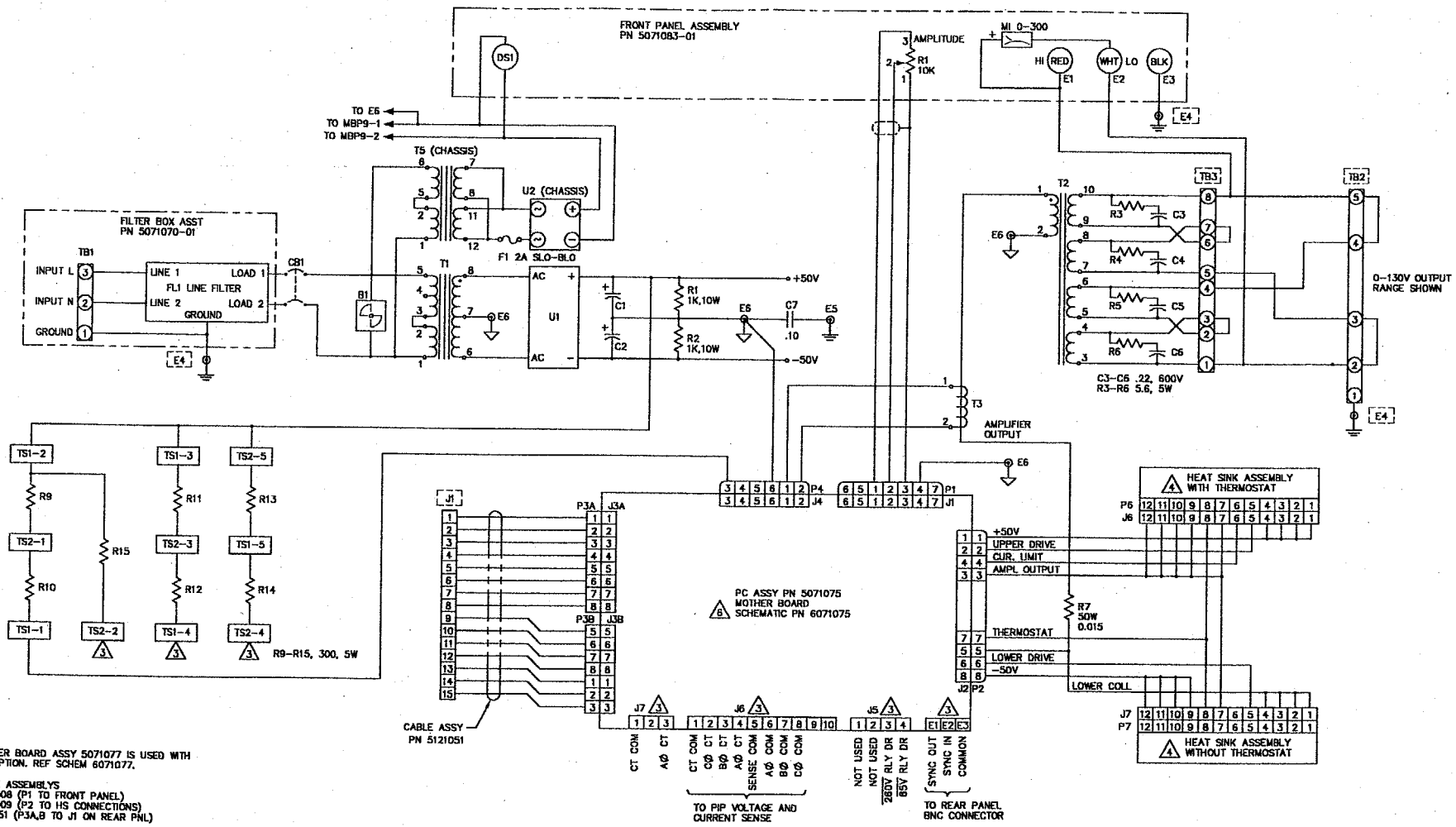
⚠2 INSERT ITEM 33 UNDER LEFT SIDE PANEL LIP AND REAR PANEL LIP. SECURE INSIDE EDGE TO DIVIDER PANEL LIP WITH DOUBLE-SIDED TAPE AS REQUIRED

⚠1 LEFT SIDE PANEL (ITEM 11) TO BE INSTALLED WITH AIR HOLES TOWARD FRONT OF UNIT.

NOTES: UNLESS OTHERWISE SPECIFIED

ELGAR		
FINAL ASSY 1001 SLE		
1001 SL	SIZE D	CODE IDENT. NO 25965
	DRAWING NO 5071076	REV B
	SCALE 1:1	SHEET 1 OF 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	1-21-97	G. STAPP
	B	REVISED PER ECN N970356 CO	7/16/97	STAPP



6 MOTHER BOARD ASSY 5071077 IS USED WITH -D OPTION. REF SCHEM 6071077.

5. CABLE ASSEMBLYS
5970008 (P1 TO FRONT PANEL)
5970009 (P2 TO HS CONNECTIONS)
5121051 (P3A,B TO J1 ON REAR PNL)

4 HEAT SINK ASSEMBLYS
5920026-01 WITH THERMOSTAT
5920026-02 WITHOUT THERMOSTAT
USE SCHEMATIC 6920026-01.

3 SPECIAL FUNCTIONS.

2. RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS. REFER TO PARTS LIST FOR VALUE NOT SPECIFIED.

1. SYMBOL [ ] DENOTES REAR PANEL LOCATION.

NOTES: UNLESS OTHERWISE SPECIFIED.

NEXT ASSY.	USED ON	CONTRACT NO.	
	1001 SLE	FIRST MADE FOR:	
APPLICATION		APPROVAL	DATE
		DRAWN A. A. BROOKINS	1-21-97
		CHECKED JEFF THAYNOR	1-21-97
		ENGINEER DAN DOUGHER	1-21-97
		QA-REL QUANG LE	1-21-97

ELGAR

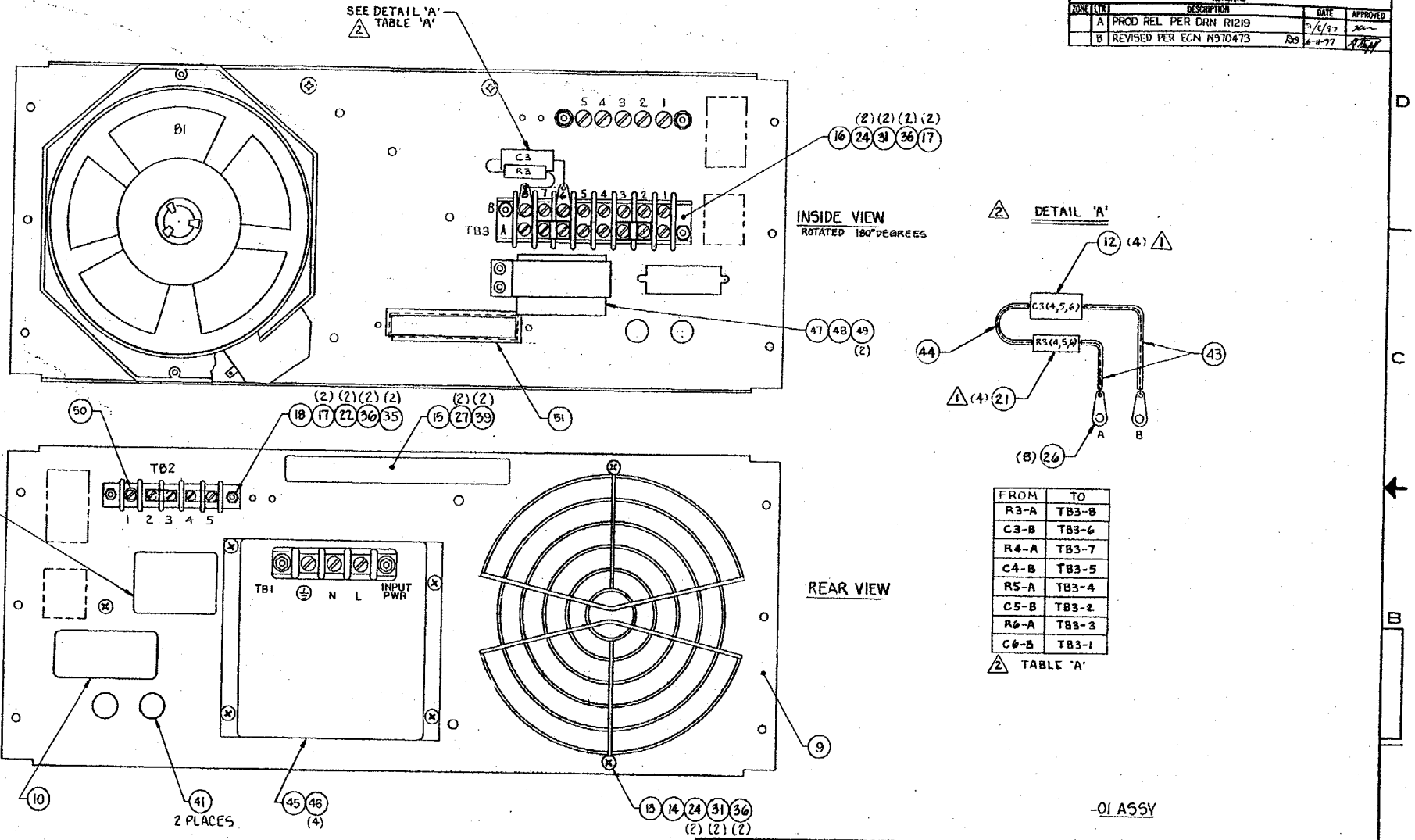
INTERCONNECT DIAGRAM

SIZE	CODE IDENT. NO.	DWG. NO.	REV
D	25965	6071076	B

SCALE NONE SHEET 1 OF 1

tellows_Wed 11/03/99 2:05:15 PM

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	9/6/97	
	B	REVISED PER ECN N970473 RS	4-11-97	



FROM	TO
R3-A	TB3-8
C3-B	TB3-6
R4-A	TB3-7
C4-B	TB3-5
R5-A	TB3-4
C5-B	TB3-2
R6-A	TB3-3
C6-B	TB3-1

2 TABLE 'A'

-01 ASSY

2 DETAIL 'A' AND TABLE 'A' TYPICAL FOR FOR C3,R3 THRU C6,R6.

1 USE MINIMUM LEAD LENGTH.

NOTES: UNLESS OTHERWISE SPECIFIED.

NEXT ASSY.	USED ON		
APPLICATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS .XX ± .02, .XXX ± .010; FRACTIONS ± 1/32; ANGLES ± 1/2°. DO NOT SCALE THIS DRAWING.

MATERIAL:

FINISH:

CONTRACT NO.		
FIRST MADE FOR:		
APPROVAL		DATE
DRAWN	AAB	1-31-97
CHECKED	J.TRATNACK	2-3-97
PROJ ENG		3-4-97
QA REL		2/5/97

ELGAR

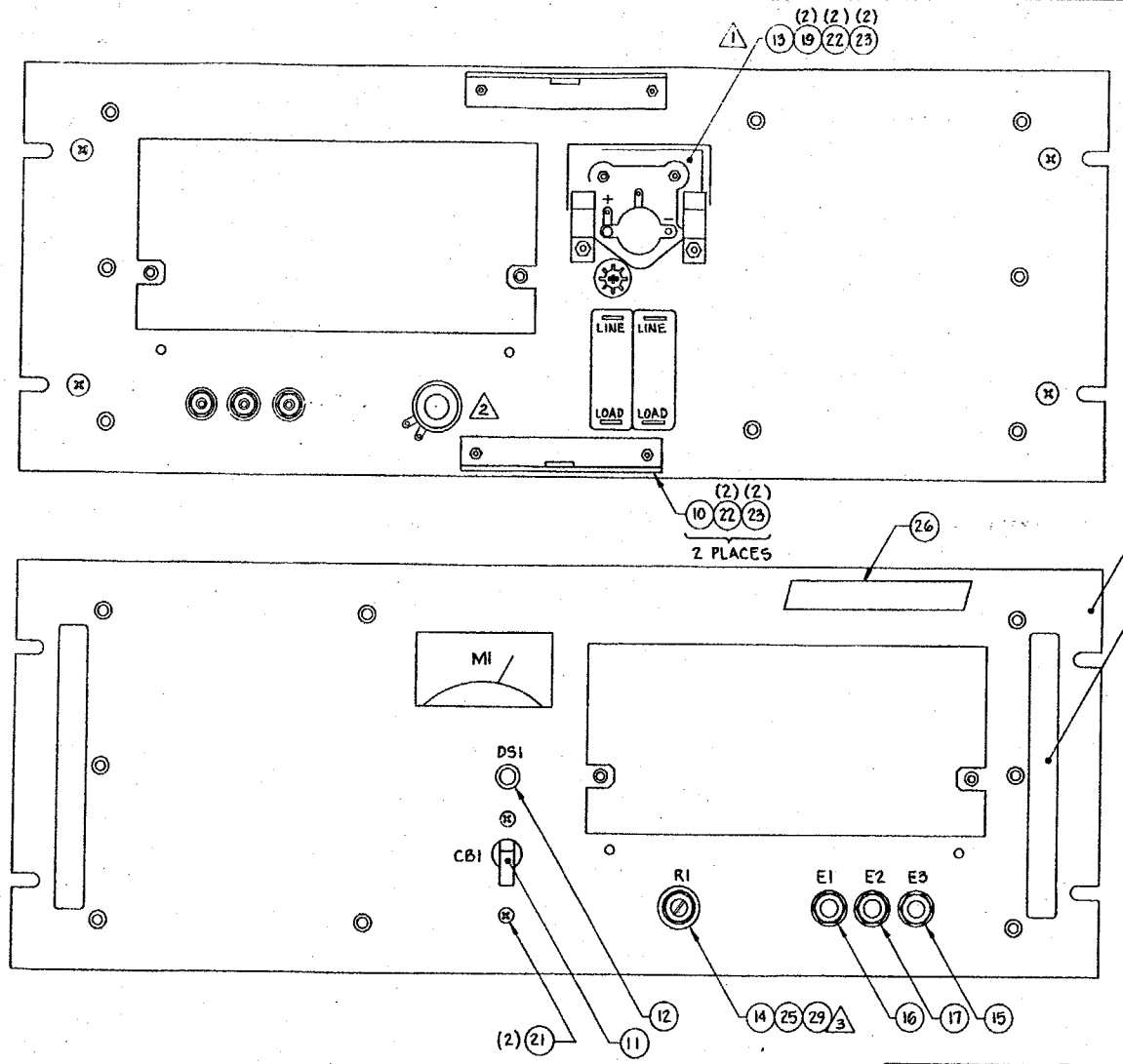
REAR PANEL ASSY.

SIZE	CODE IDENT. NO.	DRAWING NO	REV
D	25965	5071082	B

SCALE FULL SHEET 1 OF 1

tellows_Wed 11/03/99 2:05:31 PM

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	3/4/97	



-01 ASSY 1001SLE

3 DISCARD VENDOR SUPPLIED WASHER AND USE LOCK WASHER PN 1111ME04-01.

2 INSTALL STAR WASHER THIS SIDE. SUPPLIED W/ITEM 14.

1 METER CONNECTIONS:
POSITIVE TERMINAL - SOLDER LUG
NEGATIVE TERMINAL - RESISTOR.

NOTES: UNLESS OTHERWISE SPECIFIED.

NEXT ASSY.	1001SLE	USED ON			
APPLICATION					

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS .XX ± .03, .XXX ± .010; FRACTIONS ± 1/32; ANGLES ± 1/2°. DO NOT SCALE THIS DRAWING.

MATERIAL:

FINISH:

CONTRACT NO.		
FIRST MADE FOR:		
APPROVAL		DATE
DRAWN	AAB	1-21-97
CHECKED	J. TSAMMER	1-28-97
PROJ ENG		3-4-97
QA-REL		3/5/97

ELGAR

FRONT PANEL ASSY.

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	25965	5071083	A

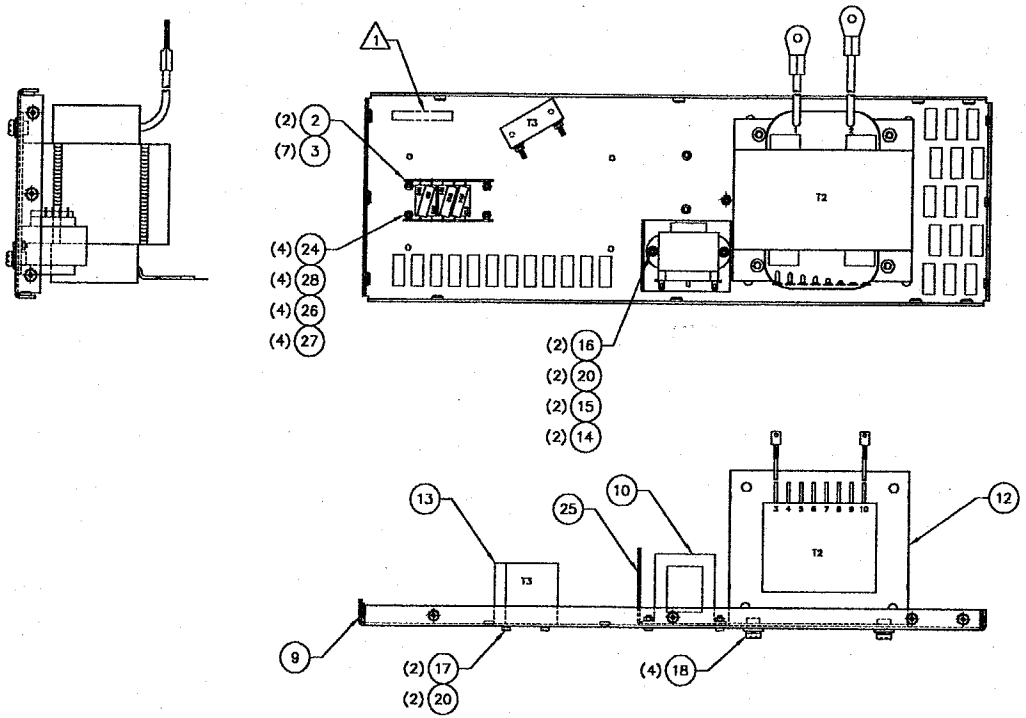
SCALE FULL SHEET 1 OF 1

ellows_Wgd 11/03/99 2:05:47 PM

NOTES: UNLESS OTHERWISE SPECIFIED.

1. IDENTIFY WITH ELGAR PART NUMBER AND REVISION APPROX AS SHOWN.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	2-13-97	G. STAPP
	B	REVISED PER ECN N970473 DO	6/9/97	STAPP



-01 ASSY

SEE SEPARATE PARTS LIST

5071076	1001SLE
NEXT ASSY.	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS FRACTIONS ANGLES
.XX ± .03 ± 1/32 ± 1/2°
.XXX ±.010
DO NOT SCALE THIS DRAWING

MATERIAL:

FINISH:

CONTRACT NO.		
FIRST MADE FOR:		
APPROVAL		DATE
DRAWN	A. A. BIGORRA	1-15-97
CHECKED	JEFF TRAYNOR	1-16-97
ENGINEER	DAN DOUGHER	1-16-97
QA-REL	GUANG LE	1-18-97

SEE DOCUMENT CONTROL FOR ORIGINAL SIGNATURES

ELGAR

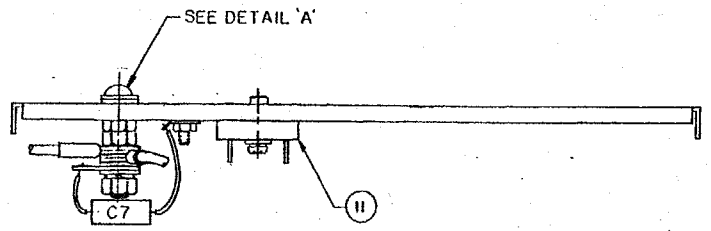
PANEL ASSY, RIGHT SIDE

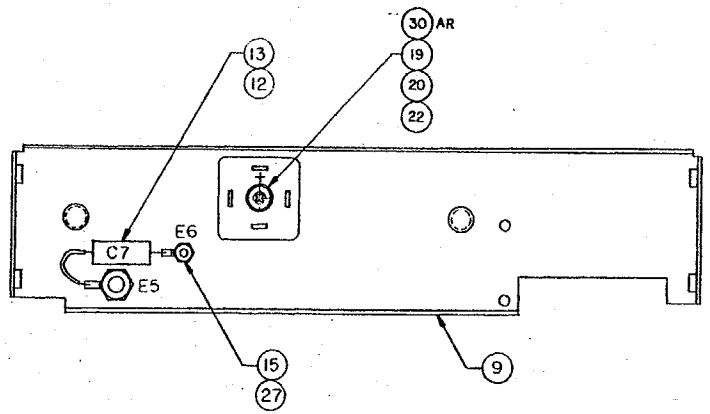
SIZE	CODE IDENT. NO.	DWG. NO.	REV
D	25965	5071084	B

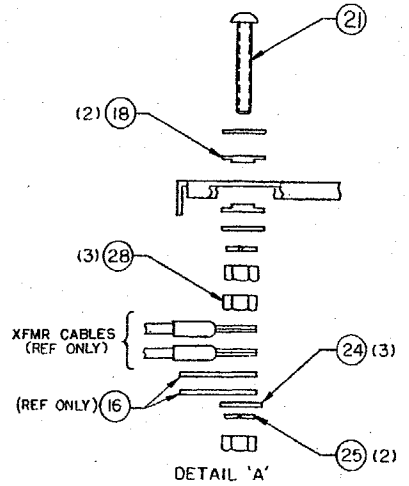
SCALE 1/1 SHEET 1 OF 1

tellows_Wed 11/03/99 2:06:01 PM

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	3/4/97	







DETAIL 'A'

— 01 ASSY

NOTES: UNLESS OTHERWISE SPECIFIED

5071076	1001 GLE.
NEXT ASSY.	USED ON
APPLICATION	

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MATERIAL:

FINISH:

CONTRACT NO.

FIRST MADE FOR:

APPROVAL		DATE
DRAWN	AAB	1-27-97
CHECKED	J.TRAYNOR	2-5-97
PROJ ENG		3-4-97
QA-REL		3/5/97

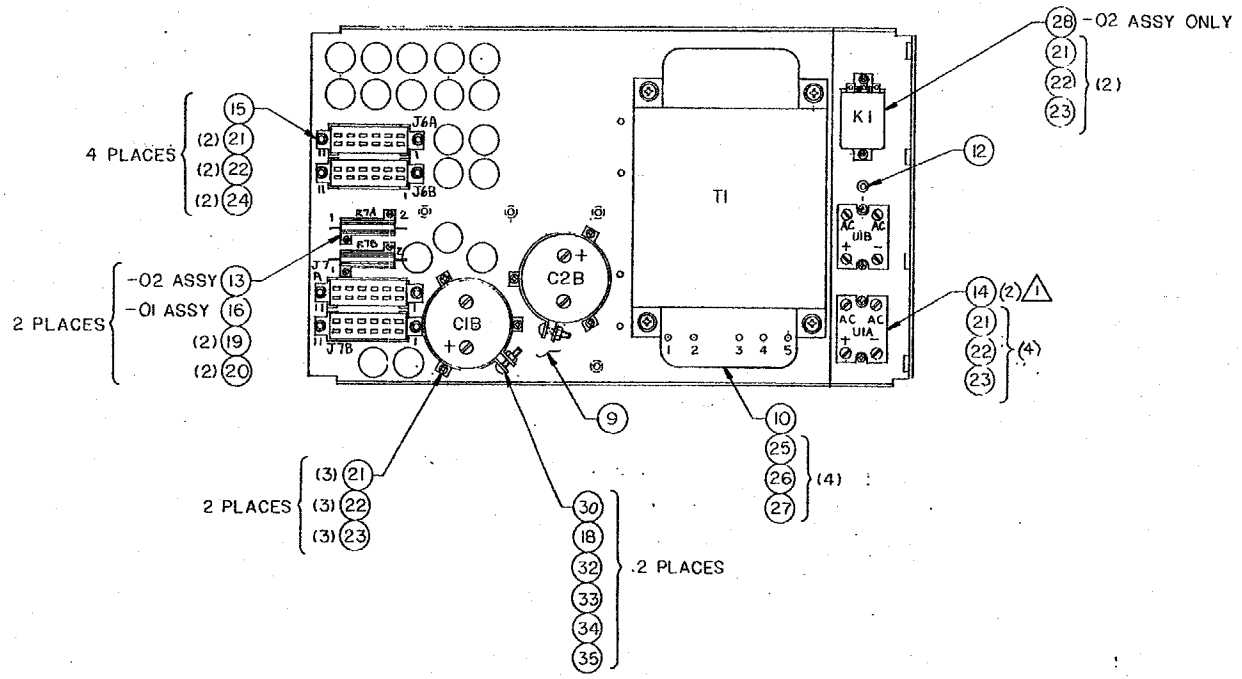
ELGAR

BRACE PLATE ASSY

SIZE	CODE IDENT. NO.	DRAWING NO.	REV
D	25965	5071085	A

SCALE | SHEET

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	C	REVISED PER ECN N970133	6-11-97	



⚠1 APPLY A THIN COAT OF THERMAL COMPOUND TO BOTTOM OF DIODE BRIGE MODULE, ITEM 14 BEFORE MOUNTING.

NOTES: UNLESS OTHERWISE SPECIFIED

-04 ASSY
-03 ASSY
-02 ASSY
-01 ASSY

5121004-01	1751 SL / SX	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS FRACTIONS ANGLES .XX ± .03 ± 1/32 ± 1/2° .XXX ± .010 DO NOT SCALE THIS DRAWING	CONTRACT NO			ELGAR	
NEXT ASSY	USED ON	MATERIAL	FIRST MADE FOR				
APPLICATION			APPROVAL		DATE		
			DRAWN	GCC	11-1-85	DIVIDER ASSY	
			CHECKED	MRS	11-20-85		
			PROJ ENG	MRS	4-24		
			QA-REL				
		FINISH				SIZE D / CODE IDENT NO 25965 / DRAWING NO 5121010 / REV C	
						SCALE 1:2	SHEET 1 OF 1

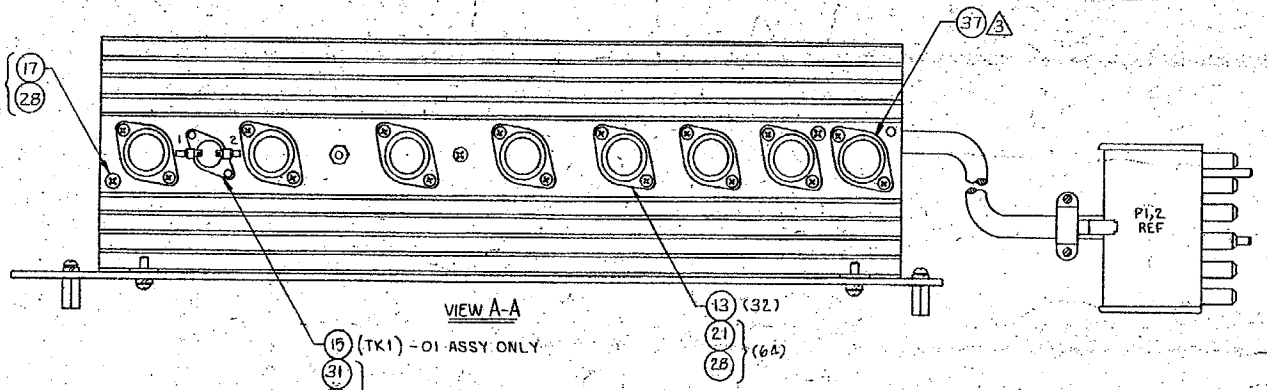
5121010

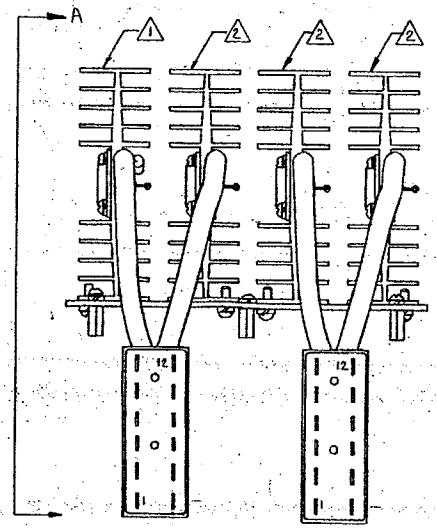
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B	REVISED PER ECN N990078 BG	2-5-99	

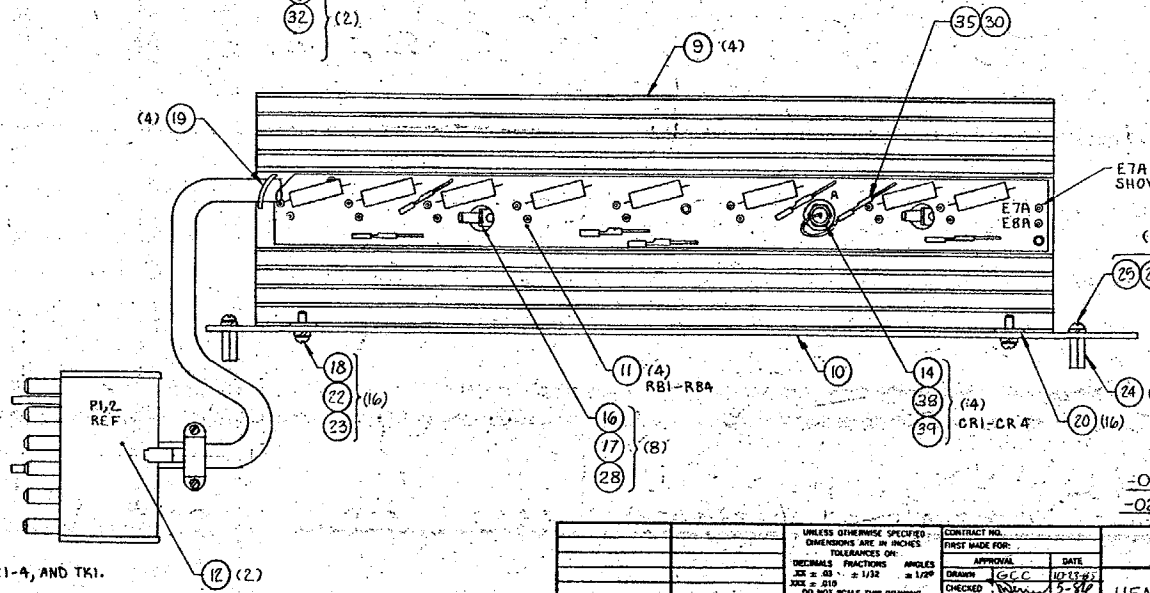
WIRE LIST

FROM CONN P1 WIRE NO.	TO	FROM CONN P2 WIRE NO.	TO
1	RB1-E1	1	RB3-E1
2	RB1-E2	2	RB3-E2
3	RB2-E3	3	RB4-E3
4	RB2-E4	4	RB4-E4
5	RB1-E5	5	RB3-E5
5	RB2-E5	5	RB4-E5
6	RB1-E6	6	RB3-E6
7	RB1-E7	7	RB3-E7
8	RB1-E8	8	RB3-E8
9	RB1-E9	9	RB3-E9
10	RB1-E10	10	RB3-E10
11	RB2-E11	11	RB4-E11
12	RB2-E12	12	RB4-E12

FROM	GA	TO	LENGTH	
TK1-1	22	RB1-E7A	5"	(36)
TK1-2	22	RB1-E8A	7"	
CR1-A	16	RB1-E13	3"	(35)
CR2-A	16	RB2-E13	3"	
CR3-A	16	RB3-E13	3"	
CR4-A	16	RB4-E13	3"	







-01 ASSY WITH TK1
-02 ASSY WITHOUT TK1

(3) APPLY THERMOCOMPOUND A/R UNDER Q1-32, CR1-4, AND TK1.
(2) RESISTOR BD '2', '3' AND '4' (RB2,3,4) LOCATED ON THESE HEATSINKS.
(1) RESISTOR BD '1' (RB1) LOCATED ON THIS HEATSINK.

NOTES: UNLESS OTHERWISE SPECIFIED

5121004-01 NEXT ASSY.	1751 SL USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON:
DECIMALS FRACTIONS ANGLES
.XX ± .03 ± 1/32 ± 1/2°
.XXX ± .010
DO NOT SCALE THIS DRAWING
MATERIAL:
FINISH:

CONTRACT NO.		
FIRST MADE FOR:		
APPROVAL		DATE
DRAWN	GCC	10-13-99
CHECKED		11-5-99
PROJ ENG		11-20-99
QA REL		

ELGAR

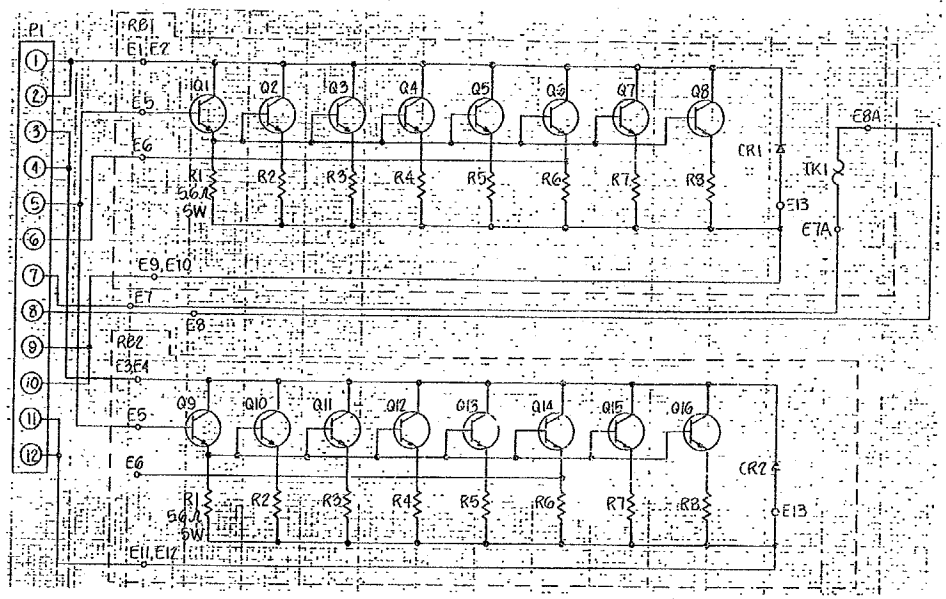
HEATSINK ASSY

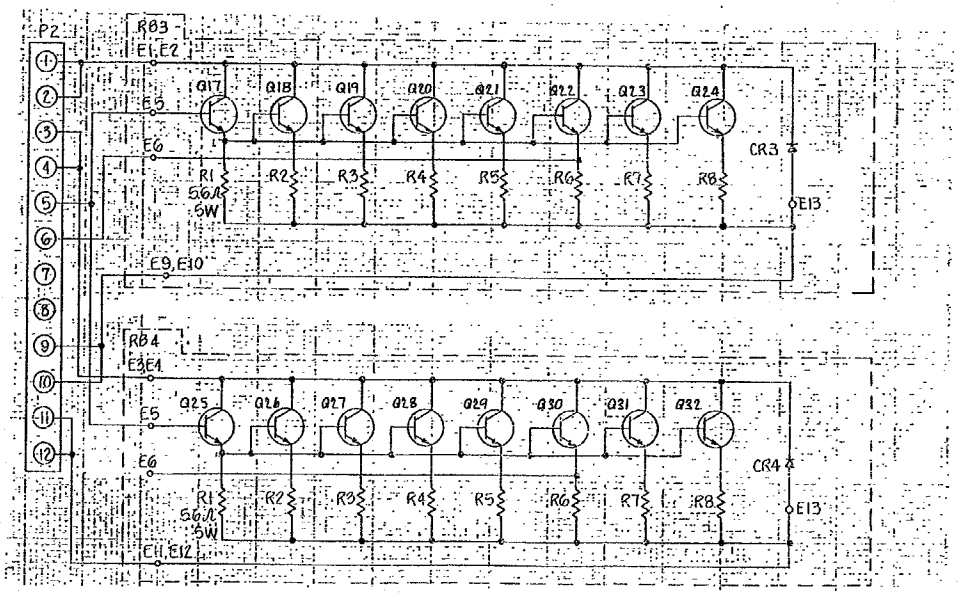
SIZE	CODE IDENT. NO.	DRAWING NO	REV
D	25965	5121024	B

SCALE FULL SHEET 1 OF 1

5121024

ellows_wed 11/03/99 2:06:41 PM





ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	ENG RELEASE GCC 5-16-86	5-28-86	JJL

REVISIONS

2. ALL TRANSISTORS ARE 2N6259.
1. ALL RESISTORS ARE .22 Ω, 5W, 5%.
NOTES: UNLESS OTHERWISE SPECIFIED

-01 (WITH TK) SHOWN
-02 (WITHOUT TK)

ELGAR

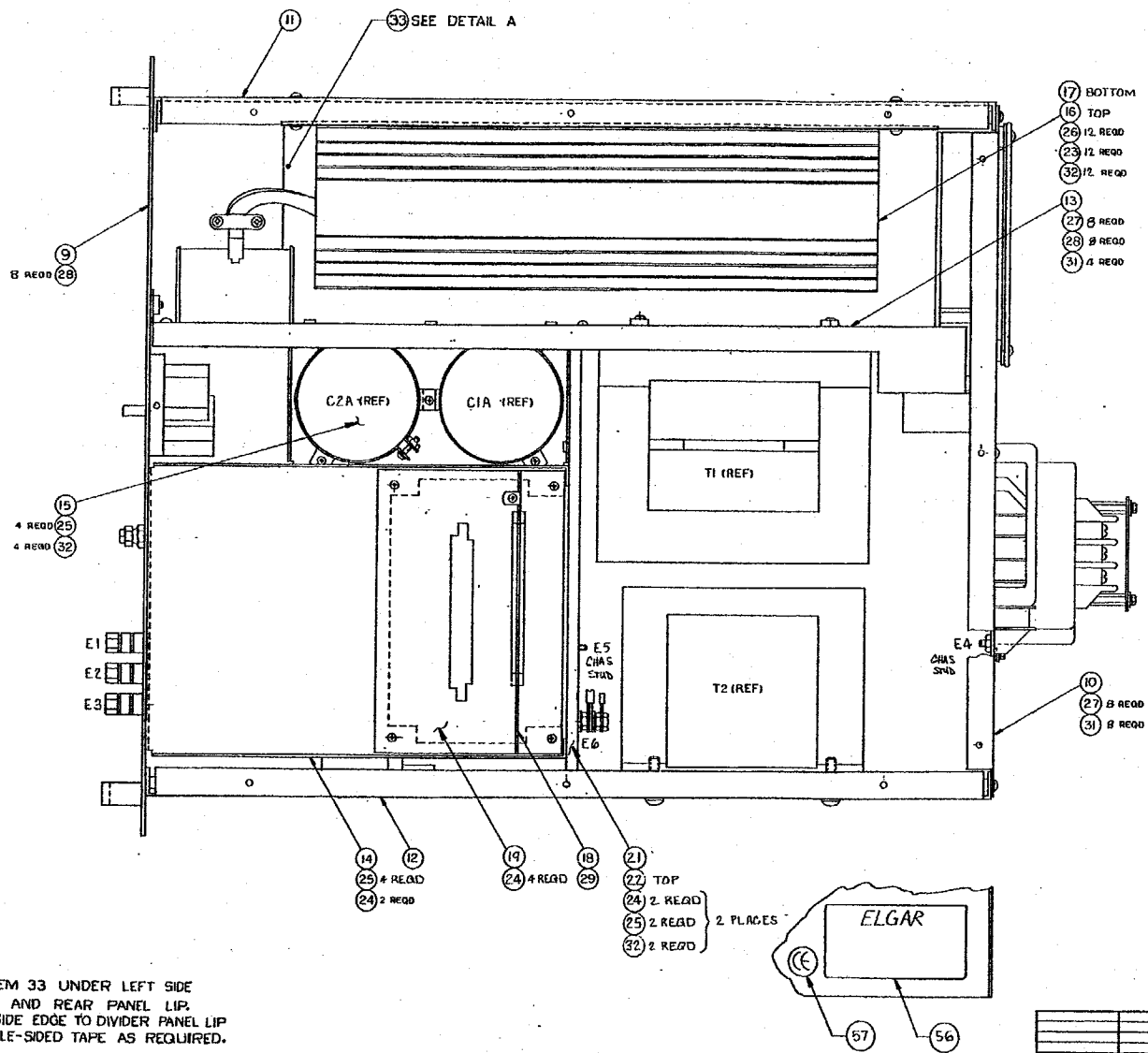
HEATSINK SCHEMATIC

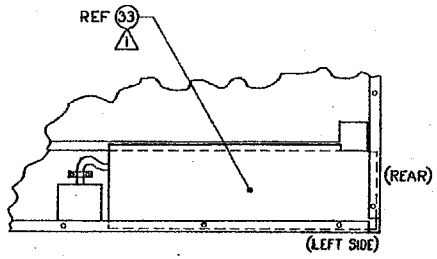
SIZE	CODE IDENT NO.	DRAWING NO.	REV
D	25965	G12 1024	A

SCALE NONE SHEET 1 OF 1

612 1024

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	1/16/97	
	B	REVISED PER ECN N9706766	3-5-97	





DETAIL A
(BOTTOM VIEW)
SCALE: 1/4

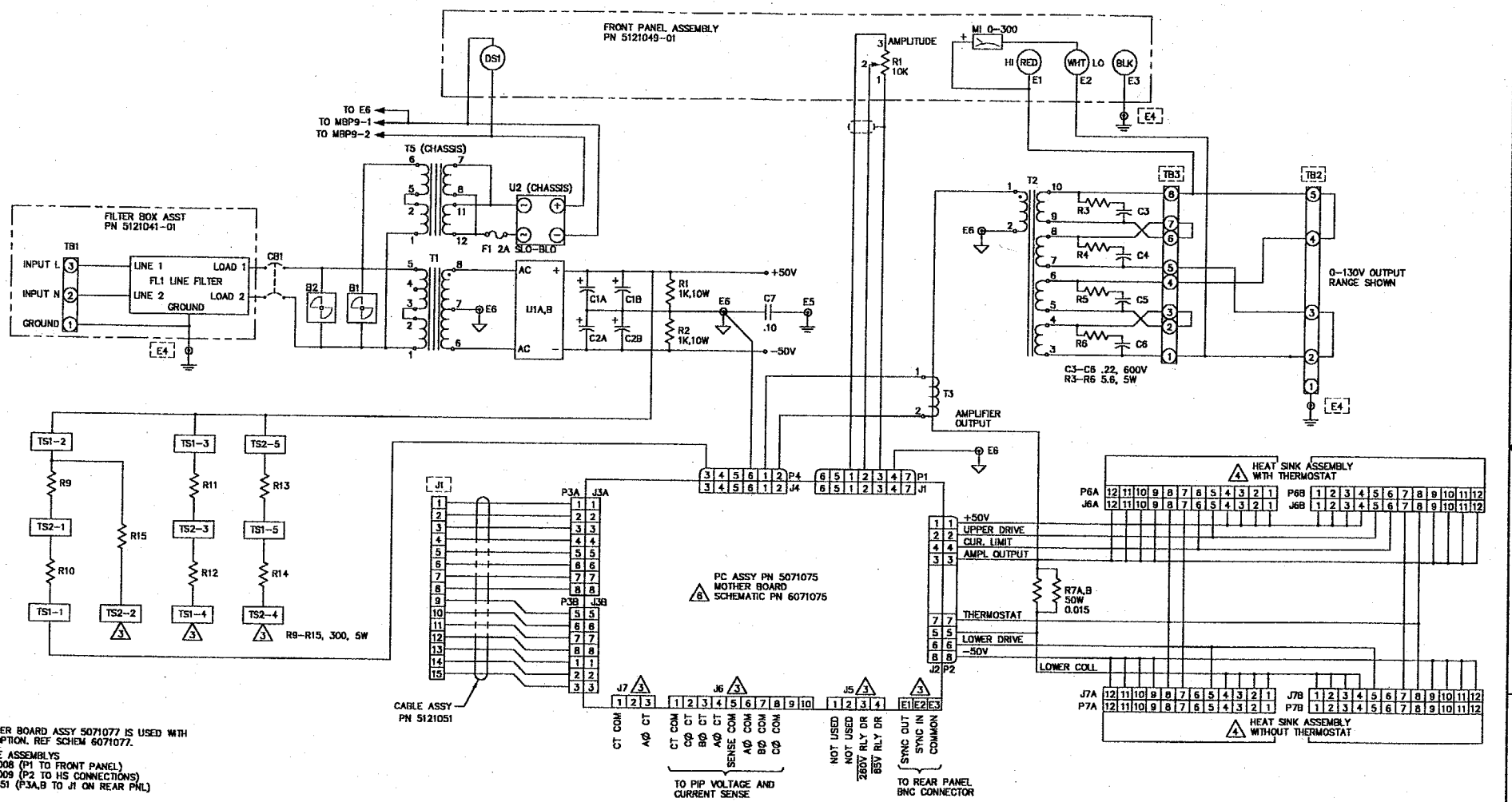
-01 ASSY SHOWN

⚠ INSERT ITEM 33 UNDER LEFT SIDE PANEL LIP AND REAR PANEL LIP. SECURE INSIDE EDGE TO DIVIDER PANEL LIP WITH DOUBLE-SIDED TAPE AS REQUIRED.

NOTES: UNLESS OTHERWISE SPECIFIED

SLE SERIES		ELGAR	
		FINAL ASSY 1751 SLE	
		SIZE D	CODE IDENT NO 25965
		DRAWING NO 5121045	REV B
		SCALE 1:1	SHEET 1 OF 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	1-21-97	G. STAPP
	B	REVISED PER ECN N970356	7/16/97	STAPP



6 MOTHER BOARD ASSY 5071077 IS USED WITH -D OPTION. REF SCHEM 6071077.

5. CABLE ASSEMBLYS
5970008 (P1 TO FRONT PANEL)
5970009 (P2 TO HS CONNECTIONS)
5121051 (P3A,B TO J1 ON REAR PNL)

4 HEAT SINK ASSEMBLYS
5121026-01 WITH THERMOSTAT
5121026-02 WITHOUT THERMOSTAT
USE SCHEMATIC 6120026-01.

3 SPECIAL FUNCTIONS.

2. RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS. REFER TO PARTS LIST FOR VALUE NOT SPECIFIED.

1. SYMBOL [ ] DENOTES REAR PANEL LOCATION.

NOTES: UNLESS OTHERWISE SPECIFIED.

NEXT ASSY.	USED ON
	1751SLE

APPLICATION

CONTRACT NO.		
FIRST MADE FOR:		
APPROVAL		DATE
DRAWN	A. A. INCORNIA	1-21-97
CHECKED	JEFF TRAYNOR	1-21-97
ENGINEER	DAN GOUGHER	1-21-97
QA-REL	QUANG LE	1-21-97

ELGAR

INTERCONNECT DIAGRAM

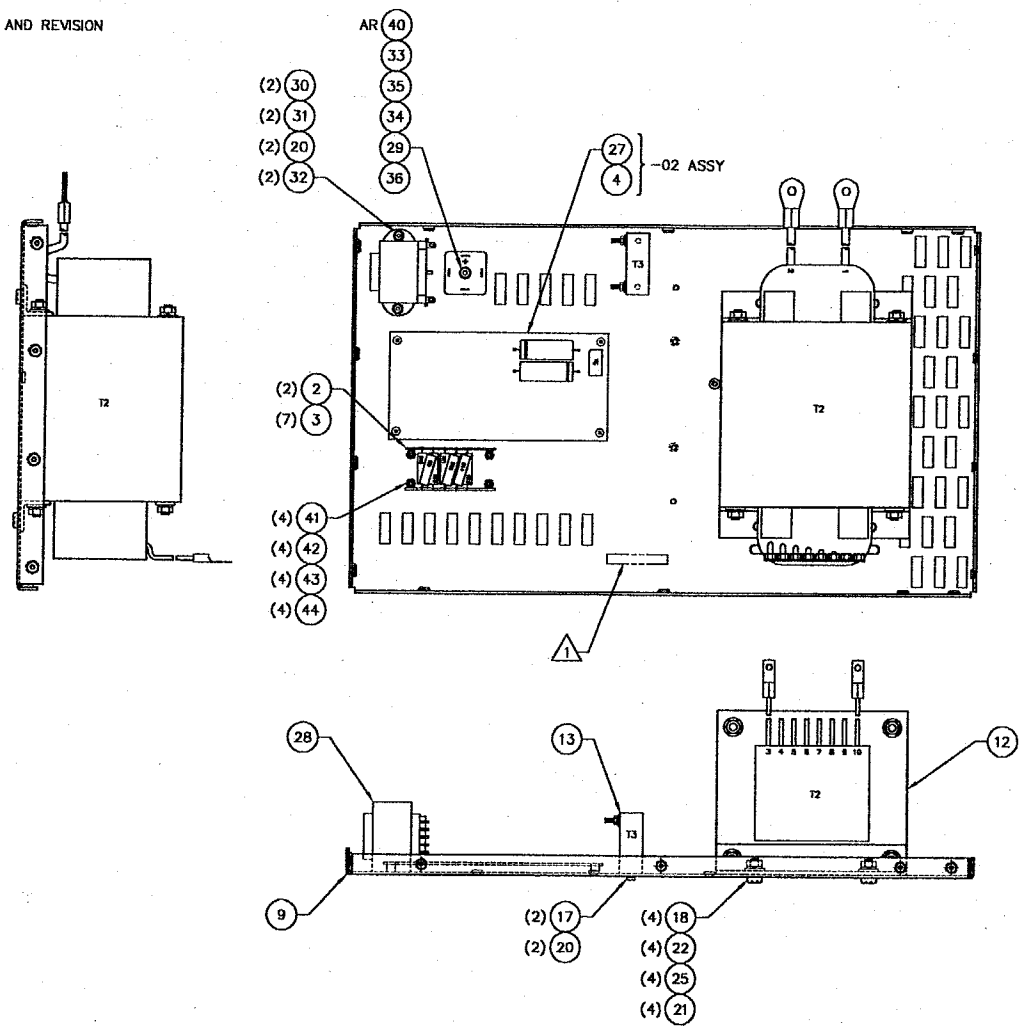
SIZE	CODE IDENT. NO.	DWG. NO.	REV
D	25965	6121045	B

SCALE NONE SHEET 1 OF 1

NOTES: UNLESS OTHERWISE SPECIFIED.

1. IDENTIFY WITH ELGAR PART NUMBER AND REVISION APPROX AS SHOWN.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	2-13-97	G. STAPP



-01
-02 ASSY SHOWN

SEE SEPARATE PARTS LIST

5121045	1751 SLE
5121046	1751 SXE
NEXT ASSY.	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± .03 .XXX ± .010
FRACTIONS ± 1/32
ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING

MATERIAL:

FINISH:

CONTRACT NO.
FIRST MADE FOR:

APPROVAL		DATE
DRAWN	A. A. BIGORNIA	1-15-97
CHECKED	JEFF TRAYNOR	1-16-97
ENGINEER	DAN DOUGHER	1-16-97
QA-REL	CHANG LE	1-16-97

SEE DOCUMENT CONTROL FOR ORIGINAL SIGNATURES

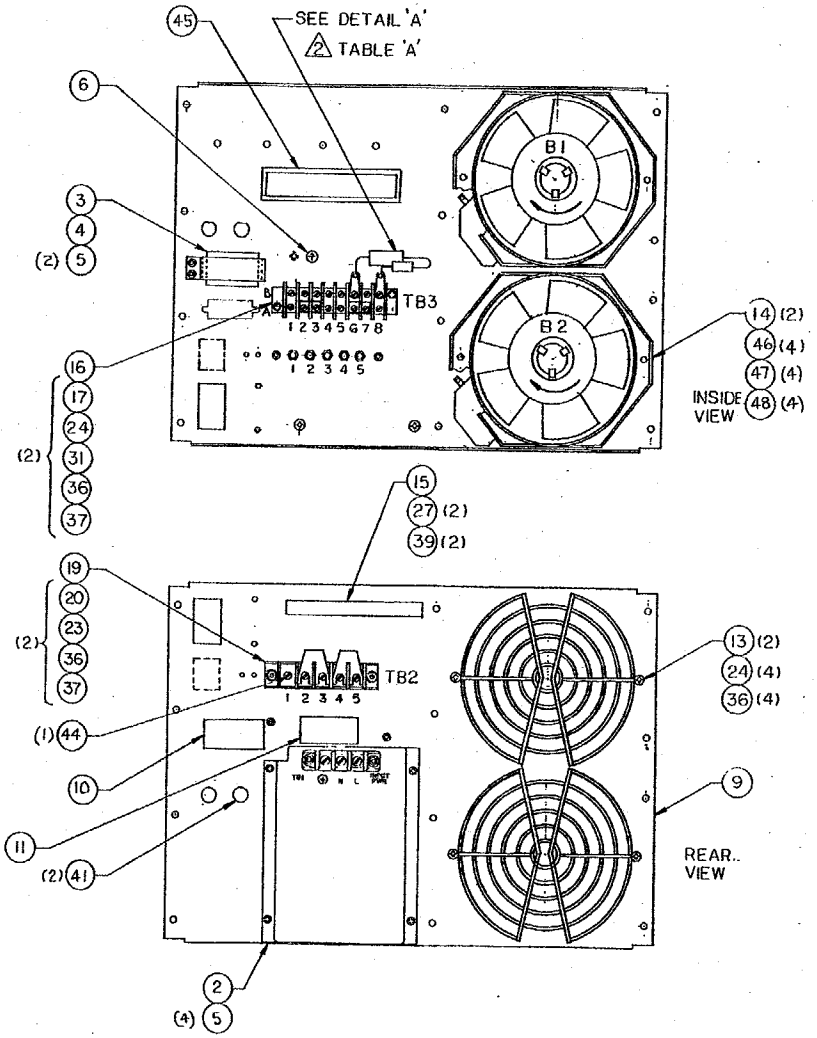
ELGAR

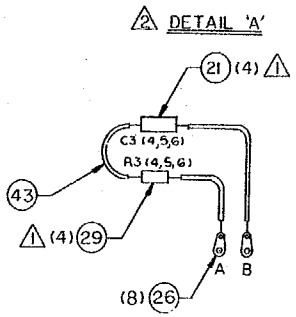
PANEL ASSY, RIGHT SIDE

SIZE	CODE IDENT. NO.	DWG. NO.	REV
D	25965	5121047	A

SCALE 1/1 SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	2/6/97	
	B	REVISED PER ECN N970473	4-11-97	





FROM	TO
R3-A	TB3-8
C3-B	TB3-6
R4-A	TB3-7
C4-B	TB3-5
R5-A	TB3-4
C5-B	TB3-2
R6-A	TB3-3
C6-B	TB3-1

2 TABLE 'A'

-01 ASSY

2 DETAIL 'A' AND TABLE 'A' TYPICAL FOR C3R3 THRU C6R6.
1 USE MINIMUM LEAD LENGTH.
NOTES: UNLESS OTHERWISE SPECIFIED

5121046	1751 SAE
5121045	1751 SLE
NEXT ASSY	USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± .03 .XXX ± .010 FRACTIONS ± 1/32 ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL:
FINISH

CONTRACT NO
FIRST MADE FOR

APPROVAL		DATE
DRAWN	AA	1-11-97
CHECKED	J.TROWBRIDGE	1-28-97
PROJ ENG		3-4-97
QA-REL		3/5/97

ELGAR

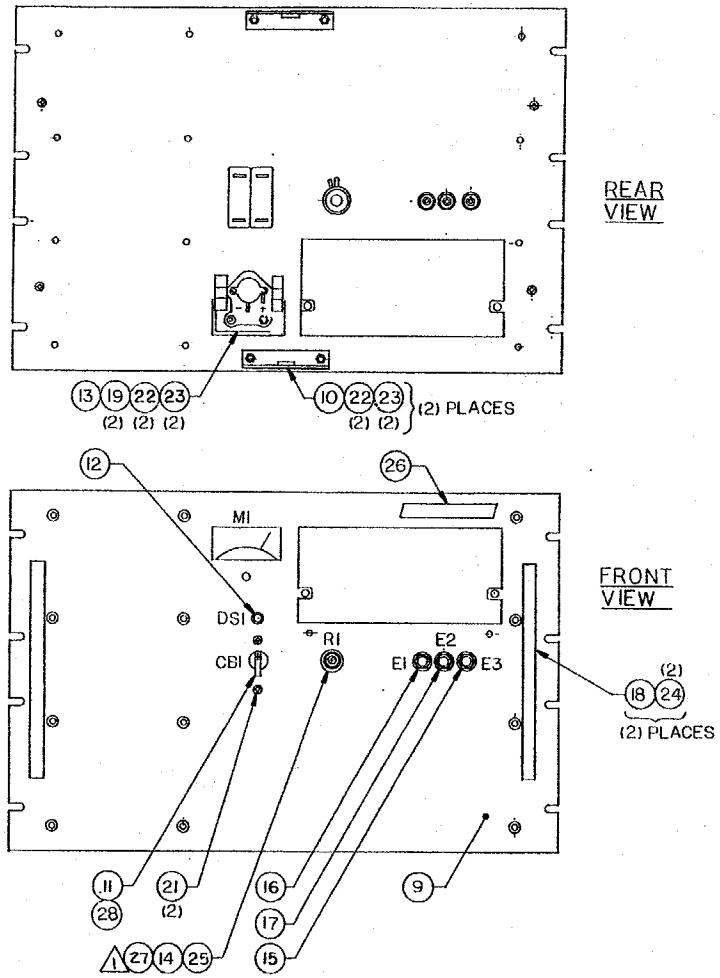
REAR PANEL ASSY

SIZE	CODE IDENT. NO	DRAWING NO	REV
D	25965	5121048	B

SCALE 1:2 SHEET 1 OF 1

ELGAR PRO 213 70A

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PROD REL PER DRN R1219	3/4/97	



-02 ASSY
-01 ASSY

1. DISCARD VENDOR SUPPLIED WASHER AND USE LOCK WASHER PN 1111ME04-01.

NOTES:

5121025	1751 SXE
5121004	1751 SLE
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: XX ± .03, XXX ± .010
FRACTIONS: ± 1/32
ANGLES: ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL
FINISH

CONTRACT NO.
FIRST MADE FOR.

APPROVAL		DATE
DRAWN	A.A.Pimentel	1-20-97
CHECKED	J.TRATNIK	1-20-97
PROJ ENG	[illegible]	3-4-97
QA-REL	[illegible]	3/5/97

ELGAR

FRONT PANEL ASSY

SIZE	CODE IDENT NO	DRAWING NO	REV
D	25965	5121049	A

SCALE 1:2 SHEET 1 OF 1

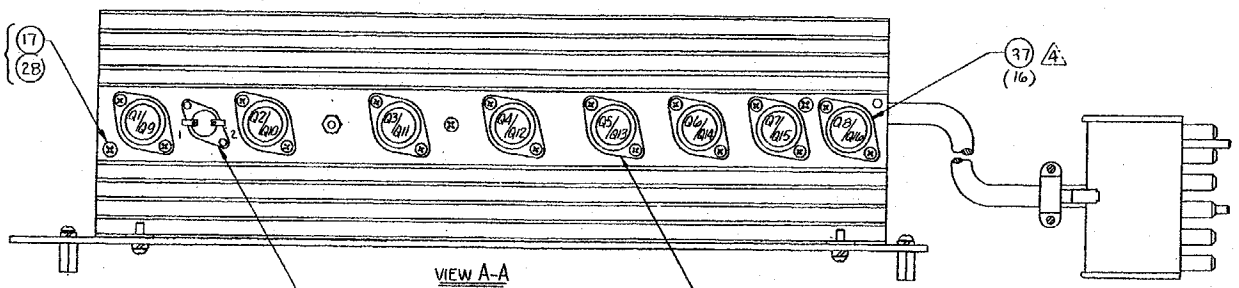
ELGAR PRO 313 90A

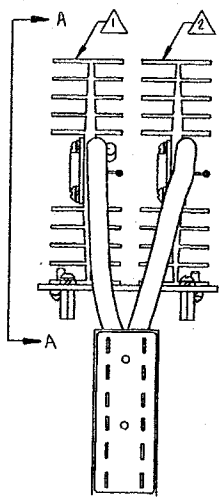
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	D	REVISED AND REDRAWN PER ECN N950497	7-12-99	

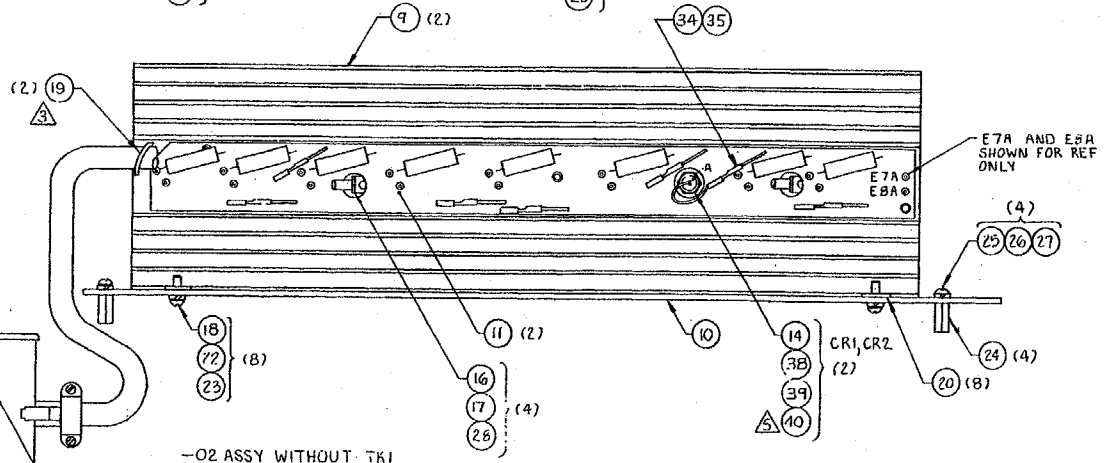
WIRE LIST ⚠1 ⚠2

FROM CONNECTOR WIRE NO. (ITEM 12)	TO
E1	RB1-E1
E2	RB1-E2
E3	RB2-E3
E4	RB2-E4
E5A	RB2-E5
E5B	RB2-E5
E6	RB1-E6
E7	RB1-E7
E8	RB1-E8
E9	RB1-E9
E10	RB1-E10
E11	RB2-E11
E12	RB2-E12

FROM	GA	TO	LENGTH	
TK1-1	22 GA	RB1-E7A	5"	(36) ⚠6
TK1-2	22 GA	RB1-E8A	7"	
CR1-A	16 GA	RB1-E13	3"	(35)
CR2-A	16 GA	RB2-E13	3"	







-02 ASSY WITHOUT TK1
-01 ASSY WITH TK1

⚠3 USE ITEM 19 TO SECURE CABLE WIRING.
⚠2 RESISTOR OD #2 (RB2) LOCATED ON THIS HEATSINK.
⚠1 RESISTOR OD #1 (RB1) LOCATED ON THIS HEATSINK.

⚠6 SOLDER LEADS TO TK1
⚠5 INSTALL ITEM 40 THIS SIDE
⚠4 INSTALL ITEM 37 UNDER TRANSISTORS THIS SIDE

NOTES: UNLESS OTHERWISE SPECIFIED.

5071111-01	1001 SL
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: XX ± .03, XXX ± .010
FRACTIONS ± 1/32
ANGLES ± 1/2°
DO NOT SCALE THIS DRAWING
MATERIAL
FINISH

CONTRACT NO
FIRST MADE FOR

APPROVAL		DATE
DRAWN	C.J.	6/25/99
CHECKED		6/28/99
PROJ ENG		6-28-99
QA-REL		

ELGAR

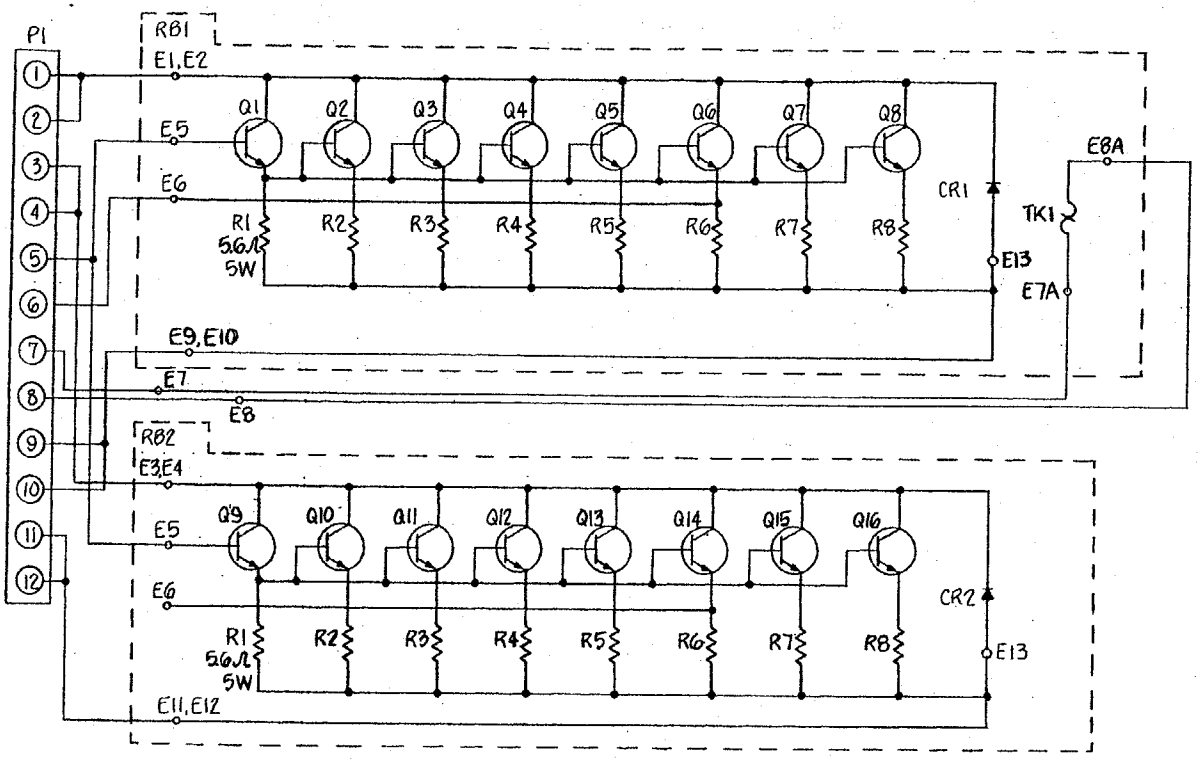
HEATSINK ASSY.

SIZE	CODE IDENT NO	DRAWING NO	REV
D	25965	5920026	D

SCALE FULL SHEET 1 OF 1

9920026

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	ENG. REL CJ	10-25-85	JHatch



6920026

2. ALL TRANSISTORS ARE 2N6259.
1. ALL RESISTORS ARE .22Ω, 5W, 5%.

NOTES: UNLESS OTHERWISE SPECIFIED.

	1001 SL
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03, .XXX ± .010
FRACTIONS: ± 1/32
ANGLES: ± 1/2°
DO NOT SCALE THIS DRAWING

MATERIAL:

FINISH:

CONTRACT NO.
FIRST MADE FOR:

APPROVAL		DATE
DRAWN	CJ	6/13/85
CHECKED		7-9-85
PROJ ENG		8-20-85
QA REL		

ELGAR

HEATSINK SCHEMATIC

SIZE	CODE IDENT. NO	DRAWING NO.	REV
C	25965	6920026	A

SCALE NONE | SHEET 1 OF 1

ELGAR 990 314 908