$10.00

acdc electronics

INSTALLATION
AND
OPERATION MANUAL

RSF SERIES

POWER SUPPLY MODULES

SINGLE OUTPUT
MULTIPLE OUTPUT

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10/82/1000

CAUTION

READ THIS MANUAL CAREFULLY BEFORE ATTEMPTING TO INSTALL OR OPERATE THE RSF SERIES POWER SUPPLIES

SAFETY PRECAUTIONS

1. Hook up power supply correctly. 115/230 VAC 60 Hz line voltages can be lethal. To avoid shock always use correct size and style lugs as described within; always install the input barrier strip cover. Use correct wire size as described and always replace blown fuses with the type specified.

2. Install power supply correctly. Use correct screw sizes for mounting. Screws must not penetrate the interior of the supply excessively to avoid shorting of internal components. Always use the ground connection provided to protect against shock hazard due to power line capacitive leakage.

3. Operate power supply safely. Power supplies generate heat; keep them away from combustible materials or atmosphere. Make sure liquid or metal shavings do not enter the supply to cause internal arcing which can be a fire hazard.

4. Maintain power supply safely. Only qualified personnel should service or repair the power supply. Beware of possible internal lethal voltages due to charged capacitors even though AC power is disconnected.

WARRANTY

When used within specified operating conditions, every catalog listed RSF Power Supply is warranted to be free from defects in materials and workmanship for a period of 2 years. This warranty shall not apply to any product or parts which have been subjected to misuse, accident or abnormal conditions of operation. This warranty covers all parts of the module, including semiconductors and capacitors. All terms of the guarantee are fully transferable when the power supply is sold as original equipment. If at any time the power supply is in need of warranty service, the purchaser should promptly notify ACDC or its authorized representative describing the conditions. The method and place of warranty service will be specified by ACDC at its sole discretion. Authorized returns for warranty service should be forwarded to the specified service location freight prepaid, where, without charge, the unit will be repaired. The sole obligation of ACDC and purchaser's exclusive remedy under this or any other warranty, expressed or implied, is the repair or replacement of defective modules as provided above. ACDC shall not be responsible for incidental or consequential damage, whether or not forseeable, caused by defects in the power supply. In warranty units requiring calibration or mechanical damage repair will be charged.

CLAIMS FOR DAMAGE

This instrument received comprehensive visual, mechanical and electrical inspection prior to shipment from the factory. Please examine it carefully for external damage or evidence of internal damage immediately upon receipt from the carrier and prior to operation. Claims for damage should be filed with the carrier with a copy of the report forwarded to ACDC. Advice of disposition and/or arrangement for repair or replacement of the instrument will be made by ACDC or its authorized representative. Please include model and serial numbers in all correspondence.

DOCUMENTATION POLICY

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SPECIFICATIONS

INPUT

Nominally 115/230 VAC. Operating range 90-132/180-264 VAC, 47-63 Hz, single phase. Externally switch changeable to 230 VAC.

INPUT (OPTION)

208 VAC, 47-63 HZ. Operating range 165-250 VAC.

AC INPUT FILTER

An optional internal filter may be ordered to meet FCC level A, Part 15, and/or a filter may be ordered to meet VDE 0871, level A.

INRUSH CURRENT

Soft start circuitry is provided to limit the power-up in-rush line current.

INPUT FUSING

Internal fuse, 15 amps.

EFFICIENCY

To 80% depending on output voltage, number of outputs and loading.

TURN-ON DELAY (MAIN OUTPUT)

Typical turn-on delay is 200-400 msec.

OUTPUT

SINGLE OUTPUT MODELS: Output is floating and isolated to withstand 500 VDC to case. Either negative or positive output terminal may be grounded. Zero to full load ratings as shown in table.

MULTI-OUTPUT MODELS: Outputs are isolated from each other and from case to withstand 500 VDC. Total combined output wattage rating per table. Individual output currents limited per table. The main output on multiple output units must have a minimum load of 10 amps to obtain full load current from the secondary outputs (RSF502, 503, 504 only).

VOLTAGE ADJUSTMENT

+/- 5% of nominal output (minimum adjustment range).

LINE AND LOAD REGULATION

MAIN OUTPUT: 0.2% +5 mV or 10 mV, whichever is greater, for input voltage ranges of 90-132/180-264 VAC or NL-FL change.

SECONDARY OUTPUTS: 0.2% +10 mV or 30 mV whichever is greater. Under local sense, add 1.5 mV/amps. See note ⚠

RIPPLE

MAIN OUTPUT: 0.2% RMS max or 10 mV, whichever is greater.

SECONDARY OUTPUT: 0.2% RMS max or 20 mV, whichever is greater.

NOISE

1% P/P max or 50 mV P/P, whichever is greater.

TEMPERATURE COEFFICIENT

0.02% per degree centigrade.

STABILITY

0.1% +5 mV or 10 mV, whichever is greater, for eight hour period following initial half hour warm-up.

TRANSIENT RESPONSE

Output voltage excursion less than 200 mV following a 25% load step. Slew rate maximum 5 amp per usec. Recovers to within 1% of the nominal output voltage in less than 500 usec.

OVERSHOOT

No turn-on or turn-off overshoot.

HOLDOVER STORAGE

Output voltage will stay within regulation for at least 30 msec after nominal line voltage is removed at full load. Refer to Figures 10-1, 10-2 and 10-3 for typical holdover storage as a function of loading and line voltage.

OVERLOAD PROTECTION (ALL OUTPUTS)

Current foldback overload protects against momentary overload. The overload is factory set at 105-120% of rated current. Short circuit protection is continuous without damage; the current is limited to approximately 30% of rated current. Recovery from overload or short circuit is automatic. ⚠

OVERVOLTAGE PROTECTION

The output power is removed when the output voltage exceeds an internally set trip point. OVP is factory set at 10-20% or 1-2 V above nominal output voltage, whichever is greater. Crowbar is an option on the main output, and standard on all secondary outputs. OVP protection is reset by recycling the AC input power. ⚠

NOTE ⚠

SEMI-REGULATED SECONDARY OUTPUTS CH. 4

a. All RSF semi-regulated outputs are protected against overload and output short circuit by a quick-acting 10 amp fuse.

b. Regulation is +/- 5% measured from 10% load to full average load; typically 0.4A to 4 amps with peak currents up to 6 amps.

c. Remote sensing and OVP protection are not available on the semi-regulated outputs.

SPECIFICATIONS (CONT)

REVERSE VOLTAGE PROTECTION

The outputs are protected against reverse voltage applied to the output terminals. Continuous operation up to rated current on the main output and up to 3 amps on secondary outputs.

OVERTEMPERATURE PROTECTION

When the internal temperature exceeds a maximum safe operating level, the output or outputs will shut down. Recovery from overtemperature is automatic.

REMOTE SENSING

Terminals are provided to maintain regulation at the loads, compensating for up to 0.5V total in the load cables. Not available on semi-regulated outputs.

INHIBIT (MAIN OUTPUT)(LOGIC "1")

The power supply outputs can be remotely programmed off by the application of a TTL high voltage signal, or optionally by closing the circuit between two accessible terminals.

MARGIN CHECK (MAIN OUTPUT)

The output voltage can be remotely programmed +/- 4% to +/- 6% for system margin checking by connecting the margin terminal to + sense or - sense.

TEMPERATURE

OPERATING: 0-71 degrees C ambient; full output to 50 degrees C; derate to 70% output at 71 degrees C.

STORAGE: 0-85 degrees C.

STANDARD OPTIONS

(-0001) AC POWER FAIL (LOGIC "0")

When the AC input voltage drops below the minimum level required to sustain the output(s), an optically-isolated NPN transistor will conduct. The transistor collector terminates at front-panel-mounted connector J1-5 and the emitter terminates at the main output (channel 1) front-panel stud (negative). The customer provides the collector pull-up resistor to a positive source of 25 VDC or less and must limit the source current to 2 mA or less to insure TTL saturation compatibility.

(-0002) CROWBAR (MAIN OUTPUT)

When excessive output voltage is detected, the OVP comparator shuts down (latches) the converter and triggers the SCR crowbar on (when installed) providing rapid discharge of the output. The SCR also provides momentary protection from external sources. Prolonged protection is not provided due to the SCR heatsink thermal limitation.

(-0008) VDE 0804 ISOLATION

The unit is designed to meet VDE 0804 voltage breakdown. Option provides for verification testing of:

3535 VDC Input to Output
2121 VDC Input to Chassis
707 VDC Output to Chassis

(-0016) OUTPUT-OUT-OF-TOLERANCE (MAIN OUTPUT)(LOGIC "1")

The main output is monitored for both under and over-voltage. Comparator limits are set at +/- 4V +/- 1% of nominal. An optically-isolated open-collector NPN transistor will conduct if the main output is within tolerance. The transistor collector terminates at J1-3 and the emitter terminates at the Ch. #1 (negative) output stud. The customer provides the collector pull-up resistor to a positive source of 25 VDC or less and must limit the source current to 2 mA or less to ensure TTL saturation compatibility.

(-0064) FRONT AIR EXHAUST

The internal fan is reversed to exhaust air out the front panel.

(-0128) INHIBIT (LOGIC "0")(ALL OUTPUTS)

Units are shipped with the standard feature inhibit (logic "1") which requires application of 5 VDC maximum between front-panel-mounted connector (J1-4 and J1-6.

(-0128) option inhibits all outputs for a switch and relay closure between front-mounted connector J1-4 and J1-6. This option is not TTL compatible.

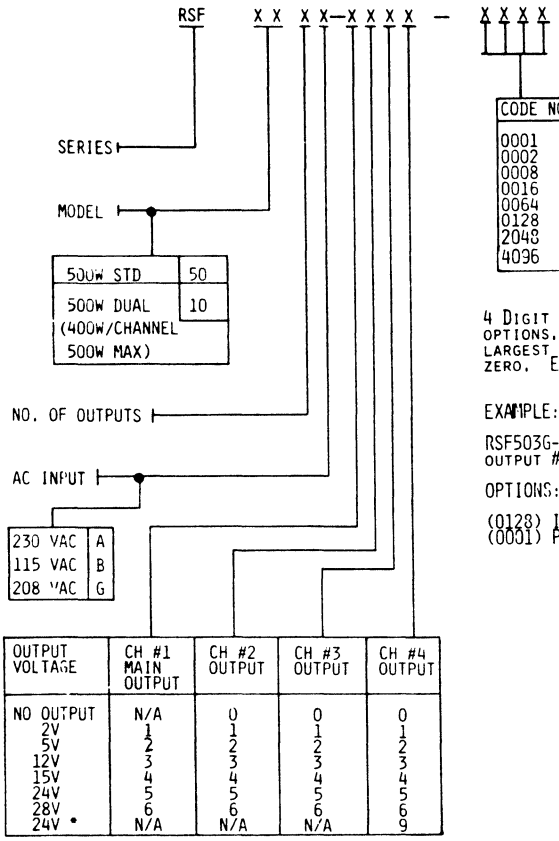
(-2048) EMI FILTER (FCC)

A filter is added to the input module to allow unit to meet the requirements of FCC regulation, Part 15, Class "A", for conducted EMI.

(-4096) EMI FILTER (VDE/FCC)

A filter is added to the input module to allow the unit to meet the requirements of both FCC (option -2048) and VDE 0871/6.78, limit "A" for conducted EMI.

MODEL NUMBER STRUCTURE



OUTPUT VOLTAGE	CH #1 MAIN OUTPUT	CH #2 OUTPUT	CH #3 OUTPUT	CH #4 OUTPUT
NO OUTPUT	N/A	0	0	0
2V	1	1	1	1
5V	2	2	2	2
12V	3	3	3	3
15V	4	4	4	4
24V	5	5	5	5
28V	6	6	6	6
24V •	N/A	N/A	N/A	9

• Semi regulated 4A average 6A peak.

CODE NO.	STANDARD OPTIONS
0001	AC Power Fail
0002	Crowbar, Main Output
0008	VDE, 0804 Isolation
0016	Output Out-of-Tolerance
0064	Front Air Exhaust
0128	Inhibit (Logic 0) All Outputs
2048	EMI Filter, FCC Part 15, "A"
4096	EMI Filter, VDE 0871/6.78, "A"

4 Digit dash numbers equal the sum of all required options. To decode options dash no. subtract the largest possible option code number and repeat to zero. Each subtrahend equals one option.

EXAMPLE:

RSF503G-2340-0131 Triple output, 208 VAC
output #1:5V, #2:12V, #3:15V

OPTIONS:

(0128) Inhibit (Logic 0), (0002) Crowbar main, (0001) Power Fail.

STANDARD VOLTAGE, CURRENT RATINGS

1 RSF501	SINGLE OUTPUT UNIT
OUTPUT VOLTAGE	MAX OUTPUT CURRENT
2V	100 AMPS
5V	100 AMPS
12V	42 AMPS
15V	35 AMPS
24V	21 AMPS
28V	18 AMPS

1 Total output power 500 Watts max.

1 RSF502	DUAL OUTPUT UNIT	
OUTPUT VOLTAGE	MAX OUTPUT CURRENT CH #1	MAX OUTPUT CURRENT CH #2
2V	80A	16A
5V	80A	16A
12V	33A	16A
15V	27A	14A
24V	17A	8A
28V	15A	7A

1 Total output power 500 Watts max.

1 RSF503 TRIPLE OUTPUT / RSF504 QUAD OUTPUT		3		
OUTPUT VOLTAGE	MAX OUTPUT CURRENT CH #1	MAX OUTPUT CURRENT CH #2&3	MAX CURRENT CH #4 REGULATED	MAX CURRENT CH #4 SEMI-REG
2	80A	2 8A	5A	N/A
5	80A	8A	5A	N/A
12	33A	8A	2A	N/A
15	27A	7A	2A	N/A
24	17A	4A	1A	N/A
28	15A	3.5A	1A	N/A
24	---	---	--	4A(6A PK)

1 Max total output power 500 Watts.
2 Choice of any 2 outputs.
3 Total output power of CH #2, 3, 4 is 200 Watts max. Main output is rated 400 Watts maximum.

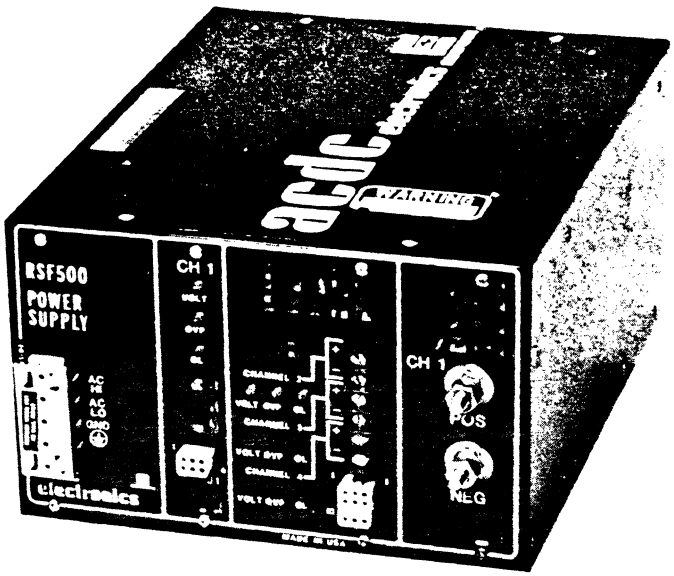
1 RSF102	DUAL OUTPUT UNIT 2	
OUTPUT VOLTAGE	MAX OUTPUT CURRENT CH #1	MAX OUTPUT CURRENT CH #2
2V	80A	80A
5V	80A	80A
12V	33A	33A
15V	27A	27A
24V	17A	17A
28V	15A	15A

1 Total output power 500 Watts maximum.

2 Each output rated 400 Watts maximum.

RECEIVING & INSPECTION INSTRUCTIONS

USING ACDC ELECTRONIC LOAD



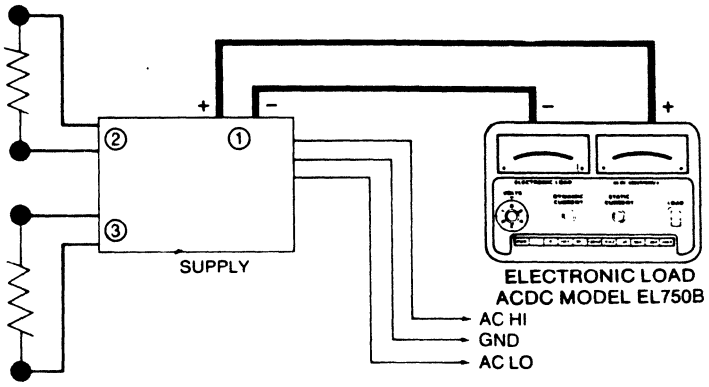


FIG. 7-1

VISUAL AND ELECTRICAL INSPECTION

1. Upon receiving the power supply, insure the case has not been damaged through shipping.
2. With a screwdriver, secure any case screws that may have worked loose.
3. Inspect barrier strip and output posts for damage.
4. Connect supply and electronic load (ACDC Model EL750B) as shown in Figure 7-1. Set load controls as follows:

   EL750B
   Power switch **in**
   R mode switch **in**
   Dynamic load **off** (switch in)
   Current range switch to appropriate scale*
   Voltage set potentiometer to appropriate scale*
   Static current potentiometer to counter clockwise
   Load switch **off**

5. Apply proper input AC voltage. The DC voltmeter on the EL750B should read voltage as supplied by the supply. Any error can be corrected by adjusting the voltage potentiometer located on the front panel.
6. Turn the load switch **on** and gradually increase the load current. Foldback should occur at approximately 110% of unit's rated output; the overload adjustment is preset at the factory. Variation from this value can be made with the overload potentiometer.

* Refer to EL750B instruction manual.

INSPECTION & TEST PROCEDURE

PHYSICAL
Check unit for any physical damage, check that the cover has not been damaged, possibly causing a short to the internal components.

DIELECTRIC BREAKDOWN TEST
There shall be no breakdown between AC input to ground and AC input to output at 1500 VDC.

INSULATION RESISTANCE TEST
Insulation resistance between input to ground, input to output, or output to ground at 500 VDC should be 10 megohms minimum.

TEST PROCEDURE
Connect power supply as shown in figure 8-1. Tests are conducted under local sense conditions. See hook-up instructions for remote sense connections.
Apply AC input slowly to nominal AC input voltage and check for nominal DC output voltage at no load.

VOLTAGE ADJUSTMENT
Adjust output voltage with potentiometer labeled (volts adj.). Verify the specified adjustment range (±5%). Adjust to nominal output voltage.

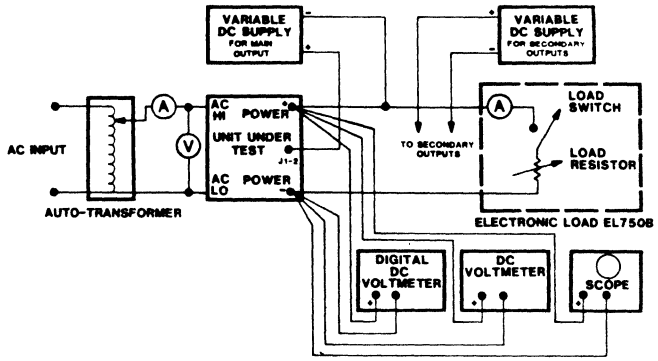
REGULATION
With input voltage at nominal, measure the change in output voltage as the load is changed from no load to full load. Regulation limit is 0.1% +5mv or 10mv, whichever is greater. Secondary outputs are 0.2% +10mv or 30mv, whichever is greater, plus 1.5mv per amp under local sense.
Load supply to full load and measure change in output voltage as input AC voltage is changed ±10%.
Regulation limits are as above.

RIPPLE AND NOISE
Vary the AC input voltage from minimum to maximum and the load from no load to full load. Monitor the ripple voltage. Main output: 0.2% RMS max or 10mv whichever is greater. Secondary output: 0.2% RMS max or 20mv whichever is greater.
Noise is 1% p-p max or 50mv, whichever is greater.

OVERLOAD
With AC input voltage at nominal, increase the load current until the output voltage decreases and ripple increases. The maximum current should be 100 to 120% of rated output. Reduce load current to rated value. See specifications for overload settings on multiple output units.

OVERVOLTAGE
With nominal AC input and no load, adjust an external DC supply (current limited to approximately 3A) to the lower limit of the OVP specification. Remove DC supply connection and verify that the power supply has not been tripped. Reconnect DC supply and adjust to the upper limit of the specification. Remove DC supply and verify that the power supply output drops to zero. The trip point must be 10% to 20% or 1 to 2 volts (whichever is greater) above the nominal output voltage. Remove AC input to reset OVP latch. NOTE: If a crowbar SCR is installed, it will pull the external DC supply low at the trip-point voltage. Secondary outputs have SCR crowbar.

SHORT CIRCUIT
With nominal AC input and no load, short the output terminals for a short period of time. Remove the short and the output should recover to nominal output voltage.



PERFORMANCE AND ADJUSTMENT TEST SET-UP
FIGURE 8-1

REQUIRED TEST EQUIPMENT
AC power source: (VARIAC) 0-240 VAC and 0-30 Amps, Example: DIGITAL GRW30MT3A.

DC differential voltmeter: 0-100 VDC with 1mv F.S. sensitivity. Example: HICKOK 3400-3.

AC voltmeter: 10mv and 30mv RMS range. Example: Hewlettt Packard MOD. 400F.

Variable resistor: Appropriate resistance and wattage rating. NOTE: ACDC electronics manufacturers an electronic load (EL750B) with meter ranges of 0-60 VDC voltmeter, 0-10-50-100-200A ammeter, and maximum loading power of 750 watts.

Megometer: 50 to 500 VDC. Example: General Radio MOD. 1862.

Oscilloscope: 5mv peak-to-peak vertical sensitivity. Bandwidth 30 MHz minimum range. Example: Tektronix MOD. 5440.

Volt-Ohm-Multimeter: Example: Triplett MOD 630NA.

Lab Supply: 0-40 VDC, 5A current limited. Example HP 6291A.

HOOKUP INSTRUCTIONS (CONT)

AC INPUT

Connect the AC line to the AC input barrier strip; always connect the 3rd (green) wire ground to the GND terminal on the input barrier strip. The RSF series comes standard with a 115V/230V AC selector switch (access through top cover). For 208 VAC operation, an internal wire must be moved from E5 (230 VAC) to E4 (208 VAC), and S1 must be set in the 230 VAC position. The changes for 208 VAC operation require removal of the cover to provide access to the input module. (Figure 10-1).

**********CAUTION**********

OUTPUT STUD CONNECTIONS MUST BE TIGHT BEFORE APPLYING AC INPUT POWER.

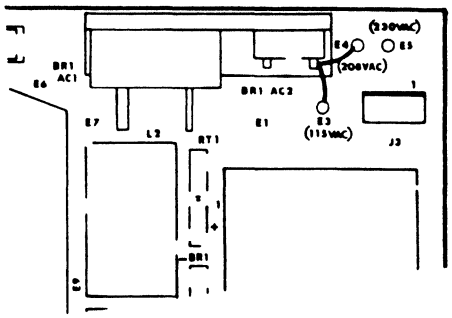


FIGURE 10-1

MARGIN

Margining of the main output voltage +/- 5% is accomplished by connecting pins J1-2 to J1-1 for +5% (high margin) and J1-2 to J1-4 for -5% (low margin). (Figure 10-2).

NOTE: The RSF102 models have +/- 5% margin on channel #2; use J2 same as J1. (Figure 10-2).

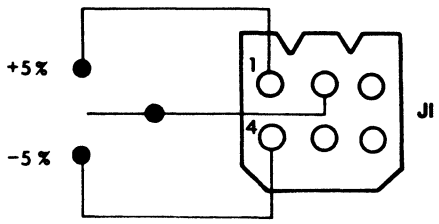


FIGURE 10-2

INHIBIT-MAIN OUTPUT CH. #1

Standard inhibit "1" requires the application of 5 VDC maximum between J1-6 (+) and J1-4, (or the negative output stud). Typical threshold is 2.0 VDC. When the main output (Ch. #1) is inhibited, all other outputs are also inhibited. (Figure 10-3). Optional inhibit (-0128) logic "0" requires a switch or relay closure between J1-6 and J1-4 (or the negative output stud). (Figure 10-4).

NOTE: The RSF102 Ch. #2 may be inhibited in the same manner as Ch. #1 as long as channel #1 is enabled. Use J2-6 and J2-4 for channel #2.

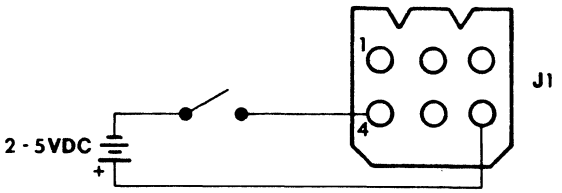


FIGURE 10-3

INHIBIT-SECONDARY OUTPUTS

Ch. #2, #3, #4. (RSF502,503,504).

The inhibits for the secondary outputs are an unadvertized option. The inhibit logic "1" is a maximum of +5V from the inhibit (J2) pin to - sense (J2). (Figure 10-5).

Inhibit logic "0" is a switch or relay closure between the same pins as logic "1". (Figure 10-6).

NOTE: Either logic state is TTL compatible, and each output can be inhibited independently or in parallel.

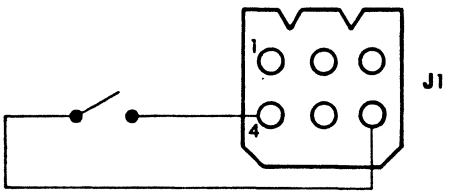


FIGURE 10-4

REMOTE VOLTAGE ADJUST-CH.#1 ONLY

A 10K ohm pot may be used to adjust the main output +/- 5%. (Figure 10-7).

NOTE: The RSF102 may also be hooked-up in this manner at J2; use same pins as J1.

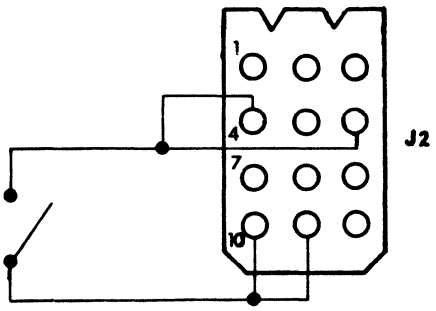


FIGURE 10-6

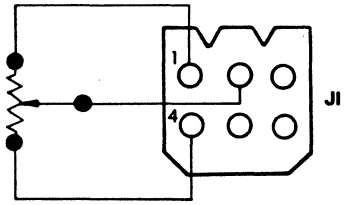


FIGURE 10-7

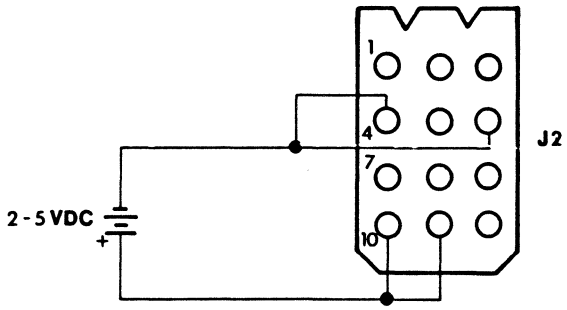


FIGURE 10-5

ADJUSTMENT PROCEDURES

GENERAL

The adjustment potentiometers for the main output (Ch. #1) and for the secondary outputs (Ch. #2, #3, #4) are located on the front panel. There are three adjustment potentiometers for each channel: output voltage, overload, and overvoltage. The 115/230 VAC selector switch is located through the top of the cover.

CAUTION

CHECK THE SWITCH POSITION BEFORE THE APPLICATION OF AC POWER OR INTERNAL DAMAGE COULD RESULT.

OVERLOAD

The overload potentiometers marked O.L. are factory set and should not require further adjustment. If readjustment is deemed necessary, the following procedure should be strictly adhered to.

If the power supplies are to be operated in direct parallel, main output (Ch. #1) only, special overload settings are required. Consult factory for additional information.

NOTE: Typically, in direct parallel mode, the O.L. must be set at 100-105% of nominal rated and the crowbar option(-0002) must not be installed.

MAIN OUTPUT, CHANNEL 1

A. Connect the power supply as shown in Figure 8-1.
B. Set the AC input voltage to nominal.
C. Carefully set the Ch.#1 O.L. pot fully clockwise.
D. For single-output units, load the output to 105-120% of rated output current (see Page 6 for maximum current ratings). Adjust O.L. pot counterclockwise until the output just starts to lose regulation.
E. For multi-output units (except RSF102) set the secondary outputs to no load; set the main output power between 550 and 600 watts; adjust the O.L. pot counterclockwise in the same manner as the single output unit. When the secondaries are loaded, the main output overload (foldback point) will automatically be reduced to stay within 550-600 watts. Example: With 200 watts of secondary power the main output will overload at approximately 300-350 watts.
F. An RSF102 has two independent 400 watt channels, but the combined output power must not exceed 500 watts. The O.L. adjustments must be made with one channel loaded at a time. Set Ch. #2 to no load and set the Ch. #1 output to foldback at 440-480 watts. Repeat for Ch. #2 with Ch. #1 at no load. See Page 6 for the maximum rated output current.

SECONDARY OUTPUTS, CH. #2, #3, #4

A. Set the main output at approximately 50% of rated output current.
B. To set the secondary outputs, turn the overload pots fully clockwise and load (one output at a time) the output current to within 105-120% of rated. (See Page 6 for max current ratings). Adjust the O.L. pot slowly counterclockwise until the output under test just starts to lose regulation. Repeat procedure for the other secondary outputs.

OVERVOLTAGE PROTECTION

The overvoltage pots are factory set at 110-120% of the nominal output voltage and should not require further adjustment. If readjustment is deemed necessary, the procedure should be adhered to.

A. **MAIN OUTPUT, CH. #1**

1. Connect the test equipment per Figure 8-1 and set the OVP pot fully clockwise.
2. To adjust the main output OVP, connect the variable DC supply to J1-2 (margin terminal) with respect to the positive output terminal (Ch. #1). Set all outputs to no load, and slowly adjust the variable DC supply from zero volts up slowly until the output under test is within the OVP trip range. Adjust the OVP pot counterclockwise slowly until the main output voltage is removed.
3. To reset the OVP, remove the DC variable supply and recycle the AC input power.

B. **SECONDARY OUTPUTS, CH. #2, #3, #4 (EXCEPT RSF102)**

The secondary outputs have a "Crowbar" SCR that removes the output power to 2.0 volts or less.

1. Adjust the output current on the main output to 10 amps minimum and adjust the secondary OVP pot (one channel at a time) fully clockwise.
2. Set all secondary output currents to no load and pre-set the variable DC supply to approximately the same voltage as the output to be tested.
3. Connect the DC supply across the output terminals, observing the polarity, and slowly raise the variable supply until the output is within the OVP trip window.
4. Slowly adjust the OVP pot counterclockwise until the output voltage is removed.
5. To reset, remove a lead from the DC supply and recycle the AC input power.
6. Check all secondary channels in the same manner described.

NOTE: To adjust the Ch. #2 OVP on an RSF102, use the same procedure as the main output, but connect the variable DC supply to J2-2 with respect to the positive output stud for channel #2.

POWER FAIL OPTION(-0001)LOGIC "0"

Access to the power fail adjustment potentiometer is through the "P.F." hole in the top cover. The power fail threshold and reset signal is factory set at 86-90/172-180 (VAC) with all outputs loaded to nominal output current.

1. Connect a scope probe to J1-5 with respect to J1-4. Also connect a 5.1K resistor from J1-5 to an external +12V source.
2. The power fail signal shall be a logic "1" when the AC input voltage is above the threshold or reset levels.
3. To set, adjust the AC line to the lower end of the threshold window and adjust the power fail pot so that the signal just goes low. Slowly raise the AC input voltage and check the P.F. reset (back to a logic "1") level. The reset level should be back to a logic "1" before the AC input reaches the upper threshold limit. If not, reset the P.F. pot R17.

OUTPUT-OUT-OF-TOLERANCE OPTION(-0016)LOGIC "0" (MAIN OUTPUT ONLY)

Access to the output-out-of-tolerance potentiometer is through the "O.O.T." hole in the top cover. The O.O.T. signal is factory set at +/-3% to +/-5% of the nominal output voltage.

1. Connect a scope probe to J1-3 with respect to J1-4. Also connect a 5.1K resistor from J1-3 to an external +12V source.
2. The O.O.T. signal shall be a logic "1" when the output voltage on Ch. #1 is within tolerance. All O.O.T. adjustments are made with all outputs at no load, nominal line.
3. To adjust the O.O.T. signal, lower the output voltage on Ch. #1 to within the 3-5% window and adjust R16 through the top cover until the O.O.T. signal just goes low. Raise the Ch. #1 output voltage to above the 3-5%. The O.O.T. signal shall change to a logic "1". Raise the Ch. #1 output voltage slowly toward the upper 3-5% window and the O.O.T. shall remain a logic "1" until the upper 3-5% window is reached and then change to a logic "0".

APPLICATION NOTES

INPUT

The input current of a power supply is normally not sinusoidal and the peak-to-RMS ratio can be as high as 10:1. If an auto transformer or isolation transformer is used, it must be rated at 200% of the rated RMS power supply current to avoid saturation, current limiting and AC line distortion. When connecting AC to a power supply, the input cable should have a wire that is rated to carry the rated current. The IZ drop of the total cable should be limited to less than 1% of the nominal AC input voltage.

FUSING (EXTERNAL)

Figure 12-1 shows the estimated ratio of AC input current to DC load current for output voltages of typical ACDC power supplies. Fuse ratings should be approximately 50% higher than the value determined from the chart for 115V input. For 230V AC input, multiply calculated fuse rating by 0.5; for 208V AC multiply by 0.6.

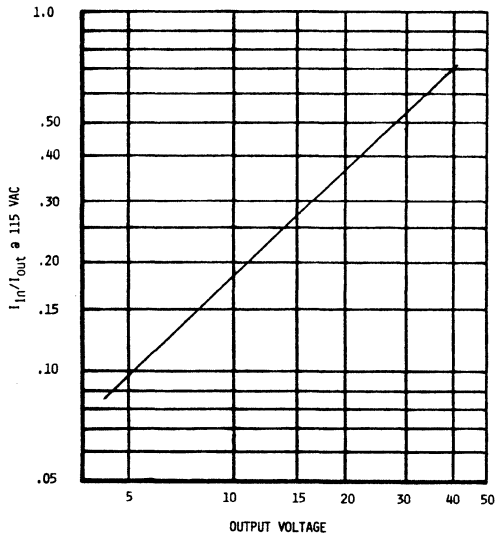


FIGURE 12-1

EXAMPLE:

Using RSF501 power supply: with 5V/100A output, the ratio I in/I out is 0.0976. Input current is 0.0976 x 100 = 9.76A. Use a 15 amp fuse when operating at 115V AC input.

OUTPUT

Reference Hook-Up Instructions, page 9, for proper termination. Improper connection of sense leads is one of the most serious application problems.

The load line must be selected to limit the voltage drop within the power supply capability. The voltage drop in the power leads reduces the voltage available at the load and can affect the current limit circuit.

The load line has a significant effect on the output impedance and transient response. Load line termination may be required for stability and low output impedance at high frequency. A capacitance of 100mF/Amp is suggested.

The current limit circuit is foldback type. The current limit is normally 105-120% of rated current.

Start problems could result on some motor, solenoid or filament leads which exhibit a high ratio of 10-to-1 between actual load and starting impedance. This problem can be corrected by adjustment of the short circuit current. The short circuit current should not be adjusted above 50% of rated current. Factory adjustment.

Duty cycle loading problems could result if peak loading is higher than the overload set point even though average current draw is less than rated current because current is limited on an instantaneous not average basis.

The outputs are floating. Either positive or negative can be grounded. The outputs are isolated from the chassis and can be floated at 500V DC maximum.

THERMAL CONSIDERATIONS

Virtually every power supply (with efficiency less than 100%) will dissipate power into its environment. In order to operate properly without overheating, its environment must be capable of removing this unwanted heat. The following steps provide a guideline toward providing a proper environment for the power supply.

A. Provide adequate ventilation. The RSF supplies are a series of fan-cooled, switching power supplies. Unobstructed flow of air through the chassis is mandatory for the supply to operate at rated load and temperature. Air inlet perforations are provided. End perforations should be kept clear.

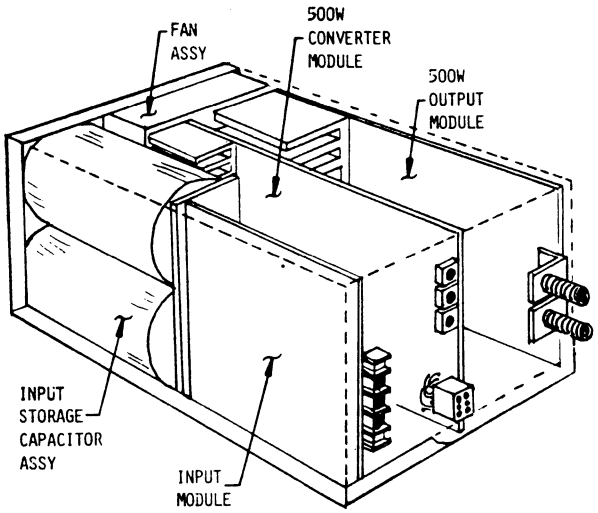
B. Other heat generating devices near the power supply may affect the ambient air of the supply and must be taken into account.

C. The RSF series is full-load rated at 50 degrees Celcius, derated linearly to 70% at 71 degrees Celcius. To be effective, the forced air must flow through the chassis to prevent a build-up of internal temperature. Air must exit freely.

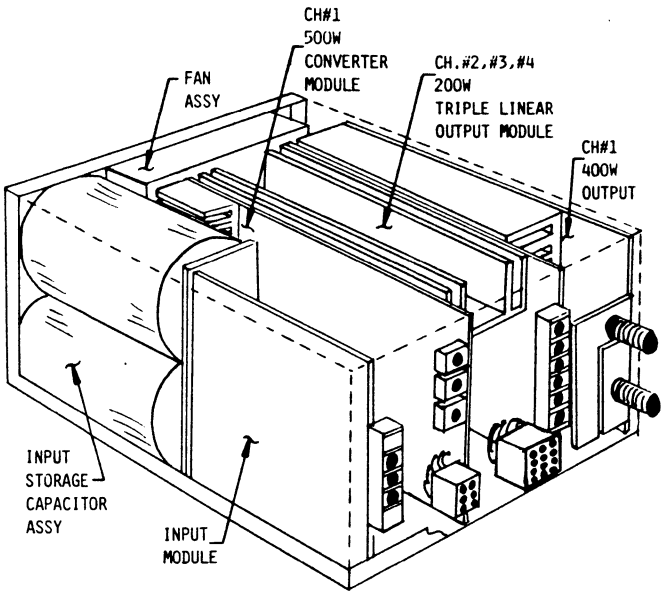
D. The RSF series is protected against internal over-temperature conditions and will automatically shut off in such conditions. Recovery from an over-temperature condition is automatic when the temperature is reduced to a safe operating level.

MODULE ASSEMBLY

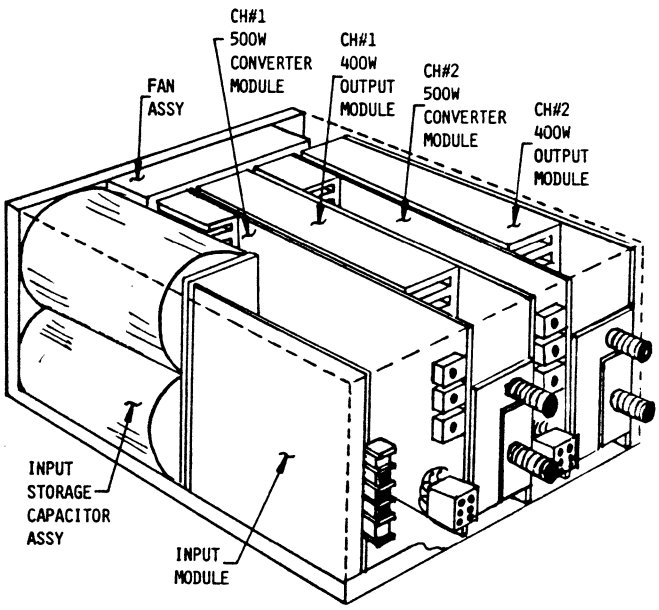
RSF501
SINGLE OUTPUT

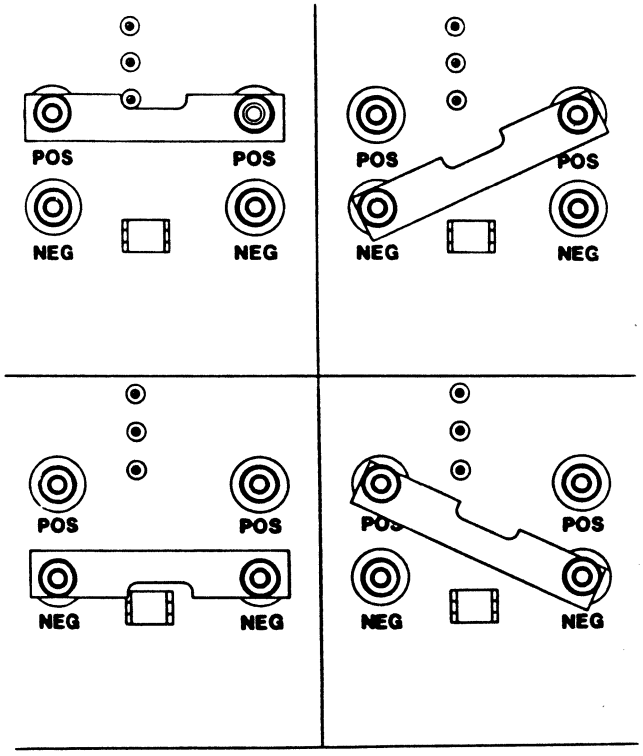


RSF502, 503, 504
DUAL, TRIPLE, QUAD OUTPUTS



RSF 102
DUAL, HIGH POWER

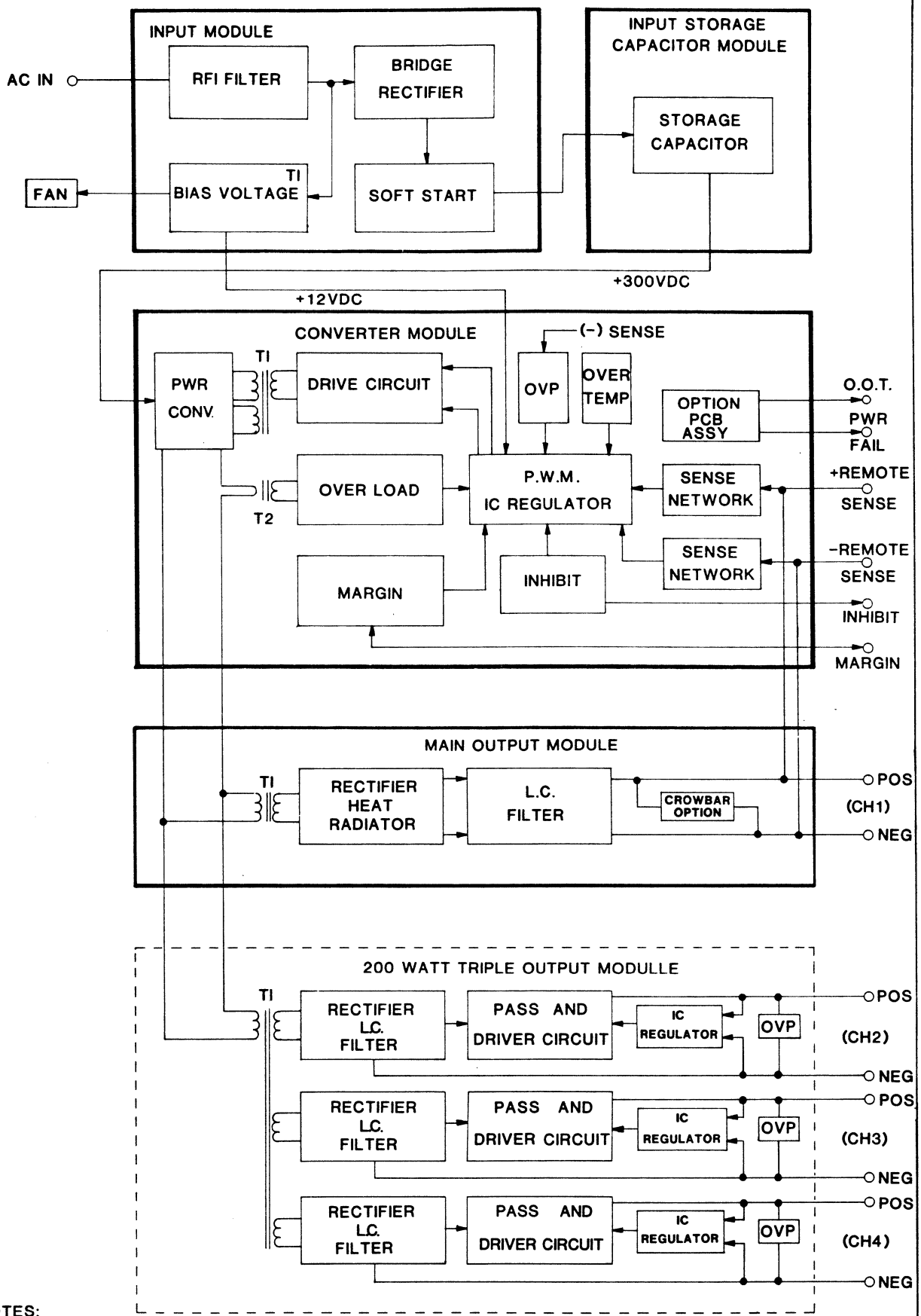




RSF102 BUS BARS

P/N 70-845-000

RSF500 SERIES
BLOCK DIAGRAM



NOTES:

THE RSF102 USES ONE INPUT MODULE , ONE STORAGE CAPACITOR MODULE ,TWO CONVERTER MODULES, AND 2MAIN OUTPUT MODULES.

CIRCUIT DESCRIPTION

Reference diagrams used for the description of the RSF series 20 KHz power supplies are the functional block diagram and detailed schematics. The design of this series of 500 watt power supplies is comprised of sub-modular building blocks, arranged in various configurations to produce a wide range of voltages and currents in two package sizes. The modules are designated as follows:

1. Input Module
2. Input Storage Capacitor Module
3. Fan Assembly
4. Converter Module
5. Main Output Module (Ch. #1)
6. 200 Watt Triple-Output Module (Ch. #2, Ch. #3, and Ch. #4)
7. Interconnecting Strip Assembly

INPUT MODULE

The AC line voltage is applied to the input barrier strip and is fuse protected by F1. A common-mode filter is provided to reduce interfering signals to or from the power supply. The filter components are L1, C1, and C2.

The full-wave rectifier bridge (BR1) converts the AC line voltage to 300 VDC nominal. Two diodes of the bridge rectifier (BR1) act as a full-wave voltage doubler for 115 VAC input (AC voltage selector switch S1 set for 115 VAC) to maintain the 300 VDC bus. for 230 VAC input operation, slide the AC input selector switch to 230 VAC; this will maintain the 300 VDC bus voltage applied to the storage capacitors C4 and C5. For 208 VAC operation move the wire from S1-4 to the PCB pad marked "208". (Switch in 230 V position).

The soft start circuitry is comprised of RT1 and RT2. These thermistors limit the peak inrush current to an acceptable level during application of the AC input voltage.

A DC bias voltage is generated from the AC line via T1. This transformer has a dual function. The primary is tapped in order to operate the cooling fan (B1) at 115 VAC regardless of the AC input voltage. Secondly, T1 steps down the AC input voltage in order to generate a DC bias voltage (12 VDC). CR1, CR2, CR3, and CR4 make a full-wave bridge, and C3 filters the output to produce an unregulated 12V DC bias voltage. CR5 and CR6 are used to monitor the AC line voltage for the optional power fail circuit located on the converter module.

INPUT STORAGE CAPACITOR MODULE

The 300 VDC bus voltage from BR1 is received by the input storage capacitors. These capacitors, C4 and C5, are used as a raw DC filter and to provide for an extended "hold over storage" time. F2 protects against abnormal loading of the 300 VDC bus.

CONVERTER MODULE

The converter module circuitry converts the high DC voltage (300 VDC) to a pulse-width-controlled 20 KHz source. The switching transistors that generate the 20 KHz power are Q4 and Q5 connected in a half bridge configuration. These bi-polar transistors have associated components necessary for controlling their on/off switching characteristics.

The pulse width and 20 KHz timing signals are controlled by the pulse-width-modulated control circuits primarily contained in a monolithic integrated circuit designated IC2. This IC contains most of the necessary functions required for the switching regulator control and it accepts signals from voltage sense, overload, overvoltage, margin, overtemperature and inhibit control. The output voltage adjustment control is set via R21, accessible to the user from the front of the power supply.

The outputs from IC2 are staggered pulses that are applied directly to T1. These outputs have a controlled "fixed" dead time set by R26. The 20 KHz frequency is primarily set by C11 and R34. The drive transformer T1 couples the pulse-by-pulse drive power level to the power converter "switching" transistors, turning them on and off at the proper duty cycle required to satisfy the output power demand. Two jumpers, JP3 and JP4, are proportional drive loops that aid the "kick-start" drive pulses in providing enough drive to support the demand.

The overload protection circuit limits the maximum allowable output current to a safe operating level. When an overload is reached, "foldback" occurs reducing the output current to approximately 30% of rated output power at short circuit. The circuit consists of T2 for peak current detection, and rectification to a DC level by CR4, CR5, CR6, and CR7. Adjustment of the DC level is by R6 into the base of the overload transistor Q2. Q2 turns on when the DC level becomes too high. A speedup circuit is used to aid Q2 in the event of sharp peak currents. These components are CR8, CR9, C5 and R14. The overload circuit senses the current from not only the main output module, but also from the 200 watt triple output module (in multiple output units) simultaneously to hold the maximum unit power level to just over 500 watts. The overload circuitry controls a signal level to the PWM (IC1) limiting the pulse width to the power switching transistors.

The overvoltage protection circuit is comprised of IC1, Q3, and associated components. This circuit removes the output power when the overvoltage set point (R15 adjustment) is exceeded due to either a component failure within the power supply, or an external voltage being applied across the main output terminals. This protection is accomplished by shutting off the PWM IC (IC2) via CR11, and by a back-up system turning off the master 20 KHz "clock" sync pulse via CR13 and R33. An optional "crowbar" SCR is also triggered to rapidly discharge the output capacitor. To reset, the input AC voltage must be recycled. The set point is factory adjusted and will automatically remain the same for local or remote sensing due to the sensing network.

Overtemperature protection is standard on all models. If an overtemperature condition occurs, a dual thermistor arrangement shuts off the PWM IC (IC2). One thermistor monitors the ambient temperature inside the unit (RT2) while RT1 senses the movement of air in case of a fan failure or obstructed air flow to the power supply. Recovery from an overtemperature condition is automatic when a safe operating level is reached.

CIRCUIT DESCRIPTION (CONT)

The sense network is an array of resistors, capacitors and diodes to provide the proper feedback to the PWM IC (IC2) to overcome the output power line drop during remote sensing. This network provides AC signal feedback as well as DC offset and protects against accidental opening or shorting of the remote sense wires. This circuit provides "automatic" local sensing when the remote leads are not used. The components for the main output positive sense are R1, R2, CR2, CR29, and C2; and for the negative sense R3, R4, and C3.

Margining the main output is accomplished by connecting R27 to either the positive sense (J1-1) "margin high" or to the negative sense (J1-4) "margin low".

Inhibit of the main output is achieved by a TTL logic "1" applied to J1-6 with respect to either J1-4 or the negative output stud. The logic "1" signal turns on Q1, is damped by C21, and is connected to the PWM (IC2) through JP-5 for a complete shutdown of the output power. Optional logic "0" is offered, and is the reverse of logic "1" inhibit; R5 is installed and JP-5 is removed.

MAIN OUTPUT MODULE, CHANNEL 1

The main output module receives the 20 KHz high-voltage pulse-width-controlled converter output and transforms it down to the proper voltage required for the specific output. The reduced 20 KHz voltage is rectified and filtered to provide the correct DC output voltage as regulated by the PWM (IC2) the power converter circuits. The transformer, T1, is a step-down power transformer; CR1 and CR2 make up a full-wave center-tapped rectifier; L1, L2, C3 and C4 comprise the output LC filter. SCR1 is the optional "crowbar" for overvoltage protection.

200 WATT TRIPLE OUTPUT MODULE CHANNELS 2, 3 AND 4

The triple output module is capable of supplying 200 watts of output power, and is comprised of three isolated output voltages as listed in the specification tabulations. These regulated or semi-regulated outputs tap into the main output (Ch. #1) regulating loop at the 20 KHz high-voltage pulse-width-controlled converter output. The common transformer (T1) in this module transforms the high voltage down to the proper level, depending on the output voltages required. This voltage is rectified by CR1, CR6, and CR11, and filtered by C4, L1 (Ch. #2), C13, L2, (Ch. #3) and C22, L3 (Ch. #4). The "raw DC" voltage is fed to the pass transistors Q2, Q4 and Q6, which are driven by Q1, Q3, and Q5. T1 provides a small bias winding. The voltage is rectified by CR2, CR7, and CR12 and filtered by C3, C12, and C21 to provide drive bias.

The three regulated control PCB's are identical circuits and are programmable as to voltage, overload, and overvoltage settings. IC1 is the integrated circuit responsible for the signal to the drive transistor, thus regulating to the required output voltage.

The overload circuit is comprised of one half of IC2, R7 (Ch. #2), R14 (Ch. #3), and R21 (Ch. #4). The O.L. adjustment pot is R2. A voltage is developed across R7, R14 or R21 as the output current increases. When a maximum level is detected by IC2 "foldback" occurs and the drive via IC1 is reduced so that the maximum current is limited to approximately 30% of rated at short circuit. Recovery from overload or short circuit is automatic.

The overvoltage circuit has a "crowbar" SCR (standard) and on OVP detection circuit comprised of divider resistors fed into the other half of IC2. The factory OVP adjustment is made by R21. When an overvoltage condition is detected by IC2, Q2 turns on firing SCR1 ("crowbar") and, via R25 and CR9, shuts off the IC regulator (IC1). To reset after an OVP condition, the AC input power must be recycled.

The inhibit option (Ch. #2, #3, #4) circuit is contained on the regulator PCB's and can be programmed for either logic "0" or logic "1" (TTL compatible).

The remote sense circuitry is similar to the main output Ch. #1. When the remote sense leads are not used, sensing automatically reverts back to local sense.

TROUBLE? HAVE YOU CHECKED THE FOLLOWING PROBLEM AREAS?

A. NO OUTPUT

1. Is the AC input fuse intact? Does the fan turn?
2. Is the AC input line connected? Is it connected properly? Right voltage? Is the line circuit breaker tripped?
3. Is the output shorted? (Either internally or externally?)
4. Is the OVP circuit tripped? Turn voltage adjust pot fully counterclockwise and recycle AC input power.
5. Is the safe operating temperature being exceeded? (See specification) Is the power supply adequately ventilated? (See application considerations).

B. HIGH OR POORLY REGULATED OUTPUT

1. Are one or more sense leads disconnected? (Remote Sense leads).
2. Are the load cables too small or long and thus inserting resistance between the supply and load causing poor regulation? (See Remote Sense hookup).
3. Is the output voltage adjusted properly? (See adjustment procedure).
4. Is the supply output in a (+) margin mode?

C. LOW OUTPUT OR HIGH RIPPLE

1. Is there an excessive load causing the output to go into overload foldback current limiting? (See specification).
2. Is the output voltage adjusted improperly? (See adjustment procedure).
3. Is the output in a foldback lockout mode due to a high starting load surge?
4. Is the output in a (-) margin mode?
5. Are the Sense leads connected incorrectly? (Remote Sense)
6. Are all high current connections properly tightened?

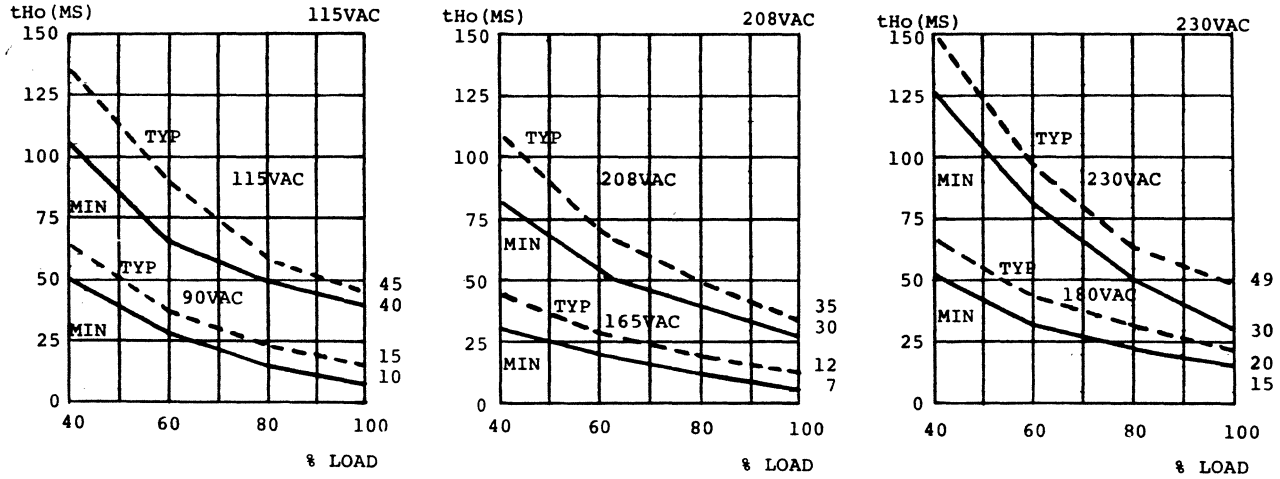
D. POOR AUXILIARY (CH. 2, 3, 4) OUTPUT PERFORMANCE

1. Is the main output loaded at least 10% of total power? (See specifications).
2. Is the power supply power limited? Is the sum of power drawn from each output exceeding the maximum rating? (See specifications).
3. Is the main output OVP tripped or inhibited? If so, it will shut off all outputs.
4. Is the OVP circuit on an output tripped? Turn voltage adjust pot fully counterclockwise and recycle AC input power.

HOLD-OVER STORAGE

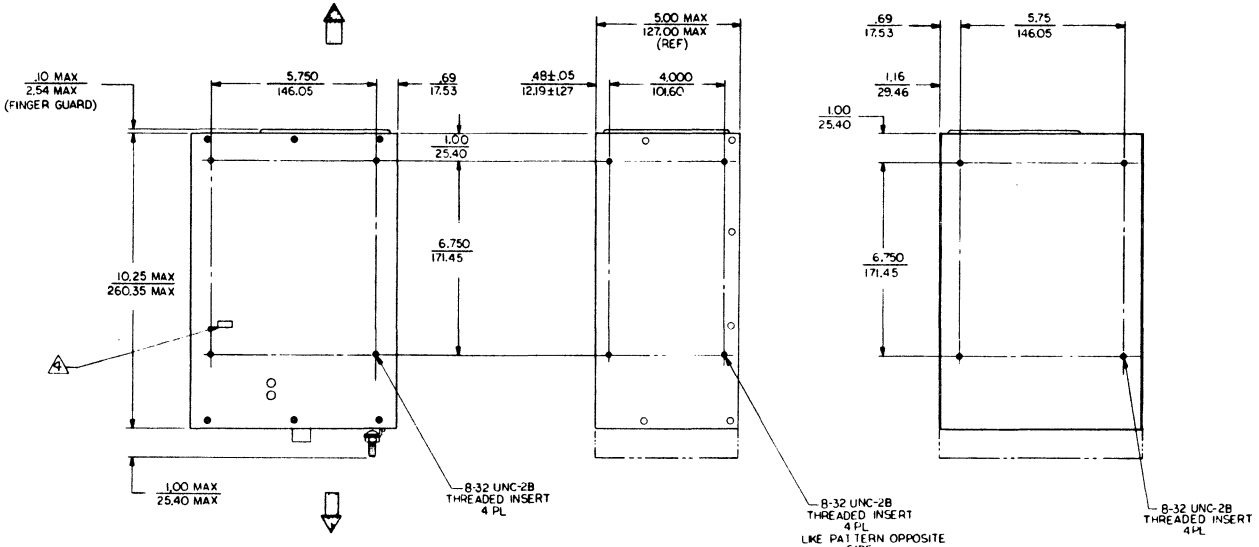
RSF SERIES

HOLDOVER STORAGE TIME AS A FUNCTION OF LOAD

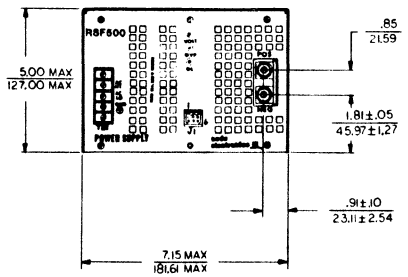


REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D
	A	INITIAL RELEASE.		

AIR FLOW STANDARD



AIR FLOW OPTIONAL



MAIN OUTPUT J1	
PIN #	CKT
1	+ SENSE
2	MARGIN (+5,-5)
3 *	OUT-OF-TOLERANCE
4	- SENSE
5 *	POWERFAIL
6	INHIBIT

*POLARITY POSITIVE WITH RESPECT TO NEGATIVE OUTPUT.

NOTES:

1. MOUNTING DATA:
   - 1.1 CHASSIS MATL: ZINC PLATED C.R.S
   - 1.2 MOUNTING PROVISIONS:
     - (16) 8-32 INTERNAL NUTS
     - MAX TORQUE: 15 IN-LB
     - SCREW PENETRATION: .22 MAX
   - 1.3 WEIGHT: 12.5 LBS MAX, 12.0 LBS TYPICAL
2. ELECTRICAL TERMINATIONS:
   - 2.1 INPUT- BARRIER TYPE
     - THREE NO. 6-32 X ¼ B.H. SCREWS
     - MAX TORQUE: 10 IN-LB
     - ACCEPTS UP TO 5/16 INCH WIDE TERMINALS
     - COVER: PROTECTIVE COVER PROVIDED
   - 2.2 MAIN OUTPUT CONTROL CONNECTOR (J1)
     - 6 POSITION. MOLEX NO. 09-06-1061
     - MATES WITH MOLEX NO. 09-06-2061
   - 2.3 MAIN OUTPUT STUDS
     - (2) ⅜-10 UNC-2A
     - MAX TORQUE: 60 IN-LB
     - HEX NUT, WASHER & LOCK WASHER PROVIDED
3. ADJUSTMENT ACCESS: (FRONT PANEL)
   - EXTERNAL ACCESS FOR VOLTAGE ADJUSTMENT, OVERLOAD & OVP ARE FACTORY SET

4. INPUT VOLTAGE SELECTOR SWITCH: 115/230 VAC

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO
LIST OF MATERIAL OR PARTS LIST				

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS ±1/32 ANGLES ±1/2°

MATERIAL

FINISH

DRAWN	G F	6/13/11
CHECK		
MECH		
PROJ		
PROJ		6/23/11
APPROVED		

acdc electronics
OCEANSIDE, CALIFORNIA

TITLE
OUTLINE
POWER SUPPLY
RSF 501

DIMENSIONS	TOLERANCE
INCHES	.XX ±.02 .XXX ±.010
MILLIMETERS	.XX ±.50

NEXT ASSY | USED ON
APPLICATION

FIRST USED ON 99109

SIZE	CODE IDENT NO	DWG NO	REV
D	08742	70-[illegible]5-720	A

SCALE — | SHEET 1 OF 1

RSF 501

REVISIONS				
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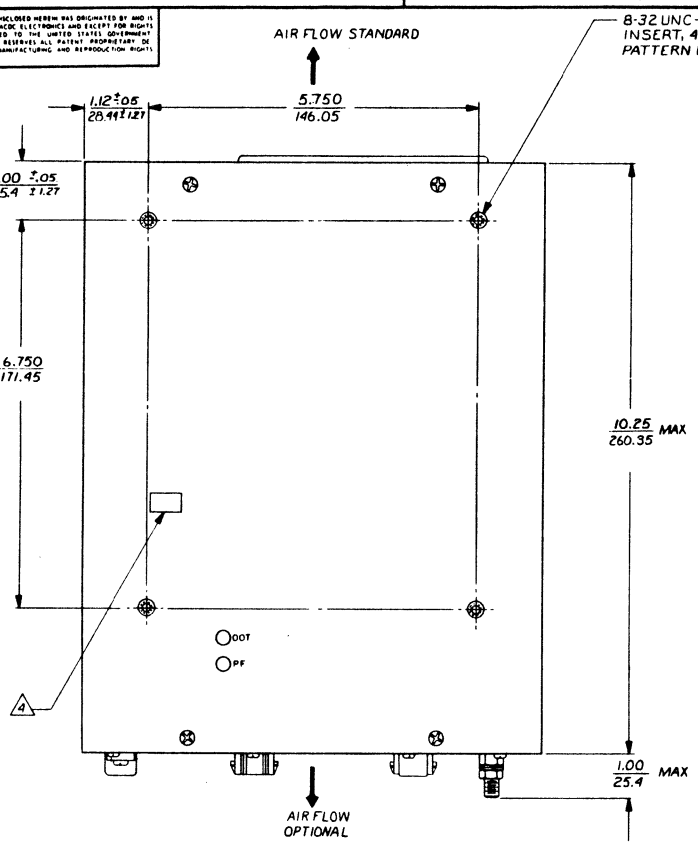
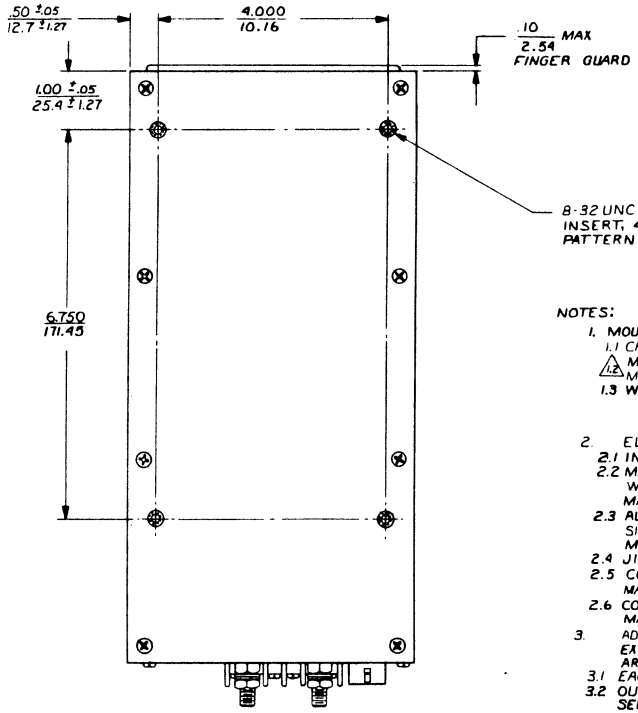
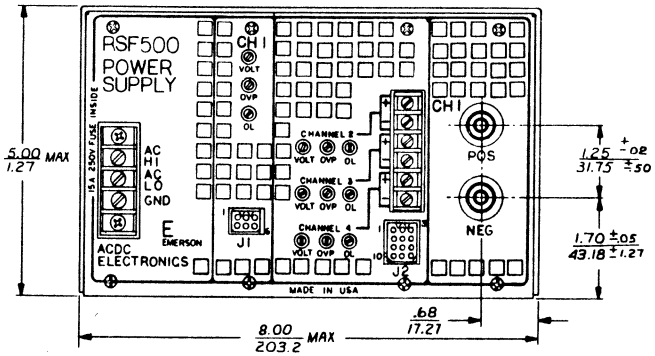
	A	PRODUCTION RELEASE		







OUTPUT CONTROLS					
CHANNEL 1		CHANNEL 2	CHANNEL 3	CHANNEL 4	FUNCTION
PIN NO	FUNCTION	PIN NO.	PIN NO.	PIN NO.	
J1-1	+SENSE	J2-3	J2-1	J2-2	+REMOTE SENSE
J1-2	MARGIN (+5%, -5%) OUTPUT	J2-6	J2-4	J2-5	-REMOTE SENSE
J1-3	OUT-OF-TOLERANCE	J2-7	J2-8	J2-9	CROWBAR DISABLE
J1-4	-SENSE	J2-10	J2-11	J2-12	INHIBIT
J1-5	POWERFAIL	——	——	——	——
J1-6	INHIBIT	——	——	——	——

NOTES:

1. MOUNTING DATA:
   - 1.1 CHASSIS MATL: ZINC PLATED CRS.
   - 1.2 MOUNTING PROVISIONS: (16) 8-32 THREADED INSERTS, MAX TORQUE: 15 IN-LB; SCREW PENETRATION: .22 MAX.
   - 1.3 WEIGHT: 16.5 LBS MAX, 16.0 LBS TYP.
2. ELECTRICAL TERMINATIONS:
   - 2.1 INPUT - BARRIER TYPE THREE NO. 6-32 X 1/4 BH SCREWS
   - 2.2 MAIN OUTPUT: (CH1) (2) 1/4-20 UNC-2A STUDS, HEX NUT, WASHER & LOCKWASHER PROVIDED. MAX TORQUE 60 IN-LB.
   - 2.3 AUXILIARY OUTPUT (CH 2,3,4) BARRIER TYPE. SIX NO. 6-32 X 1/4 BH SCREWS. MAX TORQUE 10 IN-LBS.
   - 2.4 J1 CONTROLS CH1; J2 CONTROLS CH2 THRU CH4.
   - 2.5 CONNECTOR J1: 6-POSITION MOLEX NO. 03-06-1061, MATES WITH MOLEX NO. 03-06-2061.
   - 2.6 CONNECTOR J2: 12-POSITION MOLEX NO. 03-06-1121 MATES WITH MOLEX NO. 03-06-2122.
3. ADJUSTMENT ACCESS: (FRONT PANEL) EXTERNAL ACCESS FOR VOLTAGE ADJUSTMENT; OVERLOAD & OVP, ARE FACTORY SET.
   - 3.1 EACH OUTPUT IS INDEPENDENTLY ADJUSTED.
   - 3.2 OUTPUTS ARE AUTOMATICALLY ON "LOCAL" SENSE UNLESS REMOTE SENSE LINES ARE HOOKED UP.
   - 3.3 CONNECT PIN 2 TO PIN 1 FOR +5% OR PIN 2 TO PIN 4 FOR -5% VOLTAGE CHANGE (CHANNEL 1 ONLY).
   - 3.4 TO INHIBIT CH1, APPLY 2-5VDC, (+) LEAD TO J1-6 AND (-) LEAD TO J1-4.
4. INPUT VOLTAGE SELECTOR SWITCH: 115/230 VAC
5. 5.1 RSF502, TYPE NO. 99108 PART NO. 70-792-XXX, UTILIZES CH1 INDEPENDENTLY. PARALLEL CH2 & CH3 TERMINALS FOR SECONDARY OUTPUT.
   - 5.2 RSF503, TYPE NO. 99110 PART NO. 70-805-XXX UTILIZES CH1 CH2 AND CH3 INDEPENDENTLY.
   - 5.3 RSF504 TYPE NO. 99111 PART NO. 70-806-XXX, UTILIZES CH1, CH2, CH3 AND CH4 INDEPENDENTLY.

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO
LIST OF MATERIAL OR PARTS LIST				

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON: FRACTIONS ±1/32 ANGLES ±1/2° DECIMALS .XX ±.02 .XXX ±.010
MATERIAL
FINISH
NEXT ASSY | USED ON APPLICATION
FIRST USED ON 99111

DRAWN	J. JOSLEN	7/14/11
CHECK		7/20/11
MECH		7/20/11
PROJ		7/20/11
PROJ		7/14/11
APPROVED		

APPROVED

acdc electronics
OCEANSIDE, CALIFORNIA

TITLE: OUTLINE, POWER SUPPLY - RSF502 /503/504 5

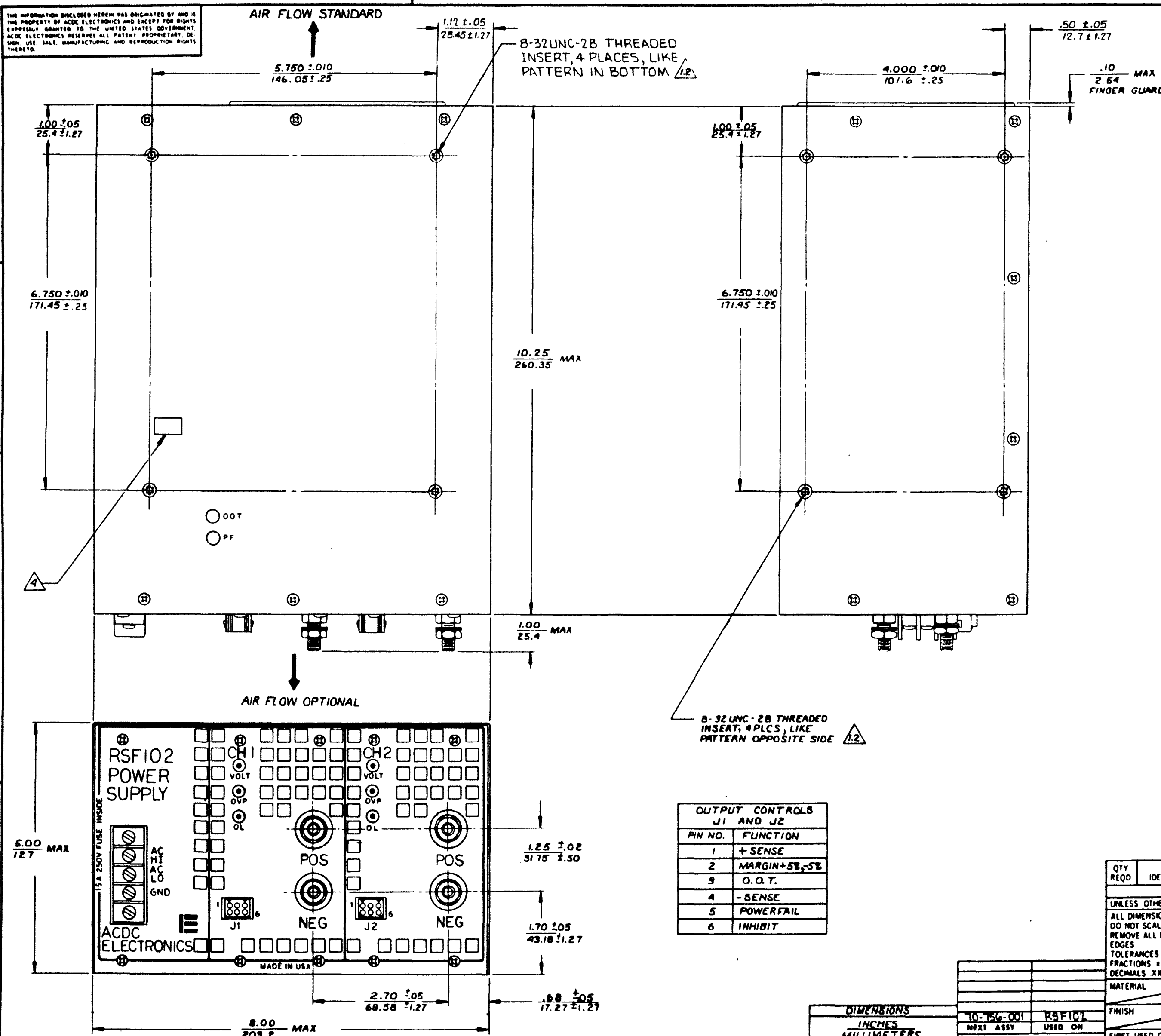
SIZE	CODE IDENT NO	DWG NO	REV
D	08742	70-806-720	A

SCALE 1/1 SHEET 1 OF 1

RSF504

70-806-720

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE J.J.		
	B	[illegible]		
	C	REV FRONT PNL MARKING PER ECO 8C-153		



NOTES:

1. MOUNTING DATA:
   1.1 CHASSIS MATL: ZINC PLATED C.R.S.
   1.2 MOUNTING PROVISIONS: (16) 8-32 THREADED INSERTS. MAX TORQUE: 15 IN-LB. SCREW PENETRATION: .22 MAX
   1.3 WEIGHT: 16 LBS MAX.(15.8 TYPICAL)
2. ELECTRICAL TERMINATIONS:
   2.1 INPUT-BARRIER TYPE: THREE NO. 6-32 X 1/4 BH SCREWS, MAX TORQUE: 10 IN-LB, ACCEPTS UP TO 5/16 INCH WIDE TERMINALS. COVER: PROTECTIVE COVER PROVIDED.
   2.2 MAIN OUTPUT: 4 1/4-20UNC-2A STUDS HEX NUT, WASHER & LOCKWASHER PROVIDED. MAX TORQUE: 60 IN-LB
   2.3 OUTPUT CONTROLS: J1 AND J2 CONTROL CH1 AND CH2 OUTPUTS RESPECTIVELY. CONNECTORS J1 AND J2: 6 POSITION MOLEX NO. 03-06-1061; MATES WITH MOLEX NO. 03-06-2061.
3. ADJUSTMENT ACCESS: (FRONT PANEL) EXTERNAL ACCESS FOR VOLTAGE ADJUSTMENT; OVERLOAD & OVP ARE FACTORY SET.
   3.1 EACH OUTPUT IS INDEPENDENTLY ADJUSTED.
   3.2 OUTPUTS ARE AUTOMATICALLY ON "LOCAL" SENSE UNLESS REMOTE SENSE LINES ARE CONNECTED
   3.3 CONNECT PIN 2 TO PIN 1 FOR +5% OR PIN 2 TO PIN 4 FOR -5% VOLTAGE CHANGE.
   3.4 2.0VOLTS OR GREATER ON PIN 6 WITH RESPECT TO PIN 4 WILL INHIBIT OUTPUT.
4. INPUT VOLTAGE SELECTOR SWITCH: 115/230 VAC.
5. OPTIONAL DUAL OUTPUT BUS BAR: P/N 70-845-000

OUTPUT CONTROLS J1 AND J2	
PIN NO.	FUNCTION
1	+SENSE
2	MARGIN+5%,-5%
3	O.O.T.
4	-SENSE
5	POWERFAIL
6	INHIBIT

70-756-001	RSF102
NEXT ASSY	USED ON
APPLICATION	

DIMENSIONS: INCHES / MILLIMETERS

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON: FRACTIONS ±1/32 ANGLES ±1/2° DECIMALS .XX±.02 .XXX±.010

MATERIAL
FINISH
FIRST USED ON 99102

DRAWN	D.F.R.	4-10-81
CHECK		
MECH		
PROJ		
PROJ		
APPROVED		
APPROVED		

acdc electronics
OCEANSIDE, CALIFORNIA

TITLE: OUTLINE, POWER SUPPLY-RSF102

SIZE	CODE IDENT NO	DWG NO	REV
D	08742	70-756-720	C

SCALE 1/1 SHEET 1 OF 1

RSF102

70-756-720

RSF MODULE ASSEMBLIES	MODEL RSF501	MODEL RSF502	MODEL RSF503	MODEL RSF504	MODEL RSF102
TYPE NUMBER	99109	99108	99110	99111	99102
FINAL ASSEMBLY	70-795-XXX	70-792-XXX	70-805-XXX	70-806-XXX	70-756-XXX
INPUT MODULE "STD"	70-713-001	70-713-001	70-713-001	70-713-001	70-713-001
INPUT MODULE "FCC"	70-713-002	70-713-002	70-713-002	70-713-002	70-713-002
INPUT MODULE "VDE"	70-713-003	70-713-003	70-713-003	70-713-003	70-713-003
INPUT STORAGE CAP	70-716-001	70-716-001	70-716-001	70-716-001	70-716-001
FAN ASSEMBLY	69-320-003	69-320-003	69-320-003	69-320-003	69-320-003
MOTHER STRIP ASSEMBLY	70-717-001	70-834-001	70-834-001	70-834-001	70-818-001
CONVERTER PARTIAL	70-714-001	70-714-001	70-714-001	70-714-001	70-714-001
CONVERTER (A3)	70-714-XXX	70-714-005	70-714-005	70-714-005	70-714-XXX
CONVERTER (A5)	---	---	---	---	70-714-XXX
OUTPUT PARTIAL 500W	70-715-001	---	---	---	---
OUTPUT 500W	70-715-XXX	---	---	---	---
OUTPUT PARTIAL 400W	---	70-757-001	70-757-001	70-757-001	70-757-001
OUTPUT 400W (A4)	---	70-757-005	70-757-005	70-757-005	70-757-XXX
OUTPUT 400W (A6)	---	---	---	---	70-757-XXX
AUX REG OTPT PARTIAL	---	70-827-001	70-827-001	70-827-001	---
AUX REG OUTPUT	---	70-827-XXX	70-827-XXX	70-827-XXX	---
CHASSIS	70-740-000	70-813-000	70-813-000	70-813-000	70-813-000
COVER	70-741-000	70-814-000	70-814-000	70-814-000	70-814-000
FRONT PANEL	70-743-000	70-839-000	70-839-000	70-839-000	70-815-000
PCB RETAINER	70-910-000	70-852-000	70-852-000	70-852-000	70-852-000
OPTION PCB	70-211-XXX	70-211-XXX	70-211-XXX	70-211-XXX	70-211-XXX

COMPONENT PARTS LISTS

RSF500/RSF102
PCB ASSEMBLY
INPUT MODULE
70-713-001/-002/-003 (REV.D)

REF.DES.		DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
BR1		Bridge, Diode	West.Hse. MB12A25V60	66-718-006
C1,2	**	Capacitor	0.0047mf/3KV CRL DD30-472	52-231-004
C3		Capacitor	2200mf/25V ILL 228RM025M	62-708-029
C6		Capacitor	10mf/50V ILL 106RLR050M	70-333-009
CR1-6		Diode	MOT 1N4004	50-464-003
F1		Fuse	15A BUSS ABC15	51-533-016
FL1	**	Filter, Line	10A/5A SAEF14706	71-026-001
L1	**	Choke	ACDC	98714
L2,3	**	Choke	ACDC	52775
R1,2		Resistor	56K 5% 1W	50-460-563
R3,4	**	Resistor	1K 5% 1/4W	55-675-102
RT1,2		Thermistor	MIDWEST 3D9118	67-216-002
S1		Slide Switch	CW IND. GF1326-0002	64-065-001
T1		Transformer	ACDC	52648

** EMI COMPONENTS OPTIONAL (FCC/VDE) AND MAY OR MAY NOT BE INSTALLED.

RSF500/RSF102
PCB ASSEMBLY
STORAGE CAPACITORS
70-716-001 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4,5	Capacitor	2000mf/200V MAL CGS202U200V4C3PH	55-846-016
F2	Fuse	5A BUSS MTH-5	51-533-004

RSF501
PCB ASSEMBLY
500W OUTPUT MODULE (PARTIAL)
70-715-001 (REV.D)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C5,6,9	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C7,11	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C10	Capacitor	OMIT	
J1	PCB Connector	5 pin MOL 09-52-3031	64-563-905
J2	PCB Connector	6 pin MOL 09-52-3031	64-563-906
L2	Core Tor	ARNOLD FE-1060-7501	69-521-106
R4	Resistor	OMIT	
SCR1		OMIT	

RSF501
PCB ASSEMBLY
500W OUTPUT MODULE (2V)
70-715-002 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.1mf/100V MUR GP1-1042K	52-231-104
C3,4	Capacitor	18000mf/6V MALCG0183M006R2C3PH	61-867-004
CR1,2	Kit,Schottky	ACDC	68-876-002
CR3	Diode	OMIT	
CR4	Diode	OMIT	
L1	Choke	ACDC	52647
L3,4	Choke	OMIT	
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	1 Ohm 5% 5W	52-441-109
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
T1	Transformer	ACDC	52669

RSF501
PCB ASSEMBLY
500W OUTPUT MODULE (5V)
70-715-005 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.1mf/100V MUR GP1-1042K	52-231-104
C3,4	Capacitor	18000mf/6V MAL MAL CG0183M006R2C3PH	61-867-004
CR1,2	Kit, Schottky	ACDC	68-876-002
CR3	Suppressor	MOT P6KE15	67-449-002
CR4	Diode	MOT MR501	50-464-020
L1	Choke	ACDC	52647
L3,4	Ferrite Bead	OMIT	
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	6.2 Ohm 5% 5W	52-441-629
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
T1	Transformer	ACDC	52658

RSF501
PCB ASSEMBLY
500W OUTPUT MODULE (12V)
70-715-012 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.02mf/500V MUR GP5-203MF	52-231-203
C3,4	Capacitor	4600mf/25V MAL CGR462N025R2C3PH	61-867-005
CR1,2	Diode	MOT 1N3910	50-464-085
CR3	Diode	OMIT	
CR4	Diode	OMIT	
L1	Choke	ACDC	52653
L3,4	Core Fer Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	36 Ohm 5% 5W	52-441-360
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
T1	Transformer	ACDC	52662

RSF501
PCB ASSEMBLY
500W OUTPUT MODULE (15V)
70-715-015 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.02mf/500V MUR GP5-203MF	52-231-203
C3,4	Capacitor	4600mf/25V MAL CGR462N025R2C3PH	61-867-005
CR1,2	Diode	MOT 1N3910	50-464-085
CR3	Diode	OMIT	
CR4	Diode	OMIT	
L1	Choke	ACDC	52666
L3,4	Core Fer Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	56 Ohm 5% 5W	52-441-560
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
T1	Transformer	ACDC	52663

RSF501
PCB ASSEMBLY
500W OUTPUT MODULE (24V)
70-715-024 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.0047mf/1KV MUR DTK-482KG	52-231-482
C3,4	Capacitor	2400mf/40V MAL CGR242N040R2C3PH	61-867-006
CR1,2	Diode	MOT 1N3901	50-464-084
CR3	Diode	OMIT	
CR4	Diode	OMIT	
L1	Choke	ACDC	52667
L3,4	Core Fer Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	30 Ohm 5% 2W	50-459-300
R3	Resistor	150 Ohm 5% 5W	52-441-151
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
T1	Transformer	ACDC	52664

RSF501
PCB ASSEMBLY
500W OUTPUT MODULE (28V)
70-715-028 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.0047mf/1KV MUR DTK-482KG	52-231-482
C3,4	Capacitor	2400mf/40V MAL CGR242N040R2C3PH	61-867-006
CR1,2	Diode	MOT 1N3901	50-464-084
CR3	Diode	OMIT	
CR4	Diode	OMIT	
L1	Choke	ACDC	52668
L3,4	Core Fer Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	30 Ohm 5% 2W	50-459-300
R3	Resistor	220 Ohm 5% 5W	52-441-221
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
T1	Transformer	ACDC	52665

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (PARTIAL)
70-714-001 (REV.K)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,13,14	Capacitor	33mf/25V ILL336RAR025B	62-708-005
C2,3	Capacitor	10mf/50V ILL 106RLR035M	70-333-009
C6	Capacitor	0.47mf/35V MAL TDC474M035NSE	58-577-014
C7	Capacitor	0.047mf/100V MUR RC1-473	67-159-473
C11	Capacitor	0.0047mf/80V IMB ZA2B472K	54-435-472
C12	Capacitor	0.01mf/100V MUR RC1-103	67-159-103
C15,16	Capacitor	0.0015mf/500V MUR GPK-152KC	52-231-152
C17	Capacitor	0.0047mf/1KV MUR DTK-472KG	52-231-482
C18,19	Capacitor	1mf/400V IMB KA2E105K	63-847-105
C22	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C24,25	Capacitor	0.01mf/500V MUR GP5-203ME25	52-231-103
CR1,3,18-20,22-24	Diode	MOT 1N4004	50-464-003
CR2,4-9, 12-16, 29-31	Diode	GE 1N4454	50-464-045
CR10,11, 32	Diode	HP 1N6263	50-464-102
CR17,21 25-28	Diode	MOT 1N4937	50-464-074
CR33	Diode,Zener	MOT 1N756A	51-739-047
CR34	Diode	OMIT	
IC1	Int.Ckt.	MOT LM393N	62-331-021
IC2	Int.Ckt.	SIL.GEN. SG3525AN	70-719-001
Q2	Transistor	MOT ST421H	52-057-013
Q3,7,8	Transistor	MOT 2N2907A	52-725-004
Q4,5	Transistor	RCA 2N6677	68-709-000

Continued (RSF) 70-714-001

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
R1-4	Resistor	100 Ohm 5% 1/4W	55-675-101
R9,47	Resistor	1.0K 5% 1/4W	55-675-102
R11,19,20	Resistor	10K 5% 1/4W	55-675-103
R16	Resistor	2.7K 5% 1/4W	55-675-272
R17,25,35	Resistor	22K 5% 1/4W	55-675-223
R18	Resistor	2K 5% 1/4W	55-675-202
R22	Resistor	4.75K 1% 1/10W	57-757-366
R30,31	Resistor	150 Ohm 1% 1/10W	57-757-218
R33	Resistor	6.8K 5% 1/4W	55-675-682
R36	Resistor	100 Ohm 5% 1/2W	50-461-101
R37,38	Resistor	330 Ohm 5% 3W	52-633-331
R39	Resistor	25 Ohm 5% 9W	54-727-250
R40,41	Resistor	150K 5% 1/2W	50-461-154
R46	Resistor	150K 5% 1/4W	55-675-154
R6	Pot	10K 10% 1/2W SPECTROL 63X103T010	68-716-103
R15	Pot	2K 10% 1/2W SPECTROL 63X202T010	68-716-202
R21	Pot	1K 10% 1/2W SPECTROL 63X102T010	68-716-102
RT1	Thermistor	MIDWEST 185Q20111	68-029-002
RT2	Thermistor	MIDWEST 175Q20111	68-029-000
T1	Transformer	ACDC	52627
T2	Transformer	ACDC	98752

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (2V)
70-714-002 (REV.E)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4	Capacitor	0.047mf/100V MUR RC1-473	67-159-473
C5	Capacitor	1mf/50V MAL TDC105M050NSE	58-577-015
C8	Capacitor	0.022mf/100V MUR RC1-223	67-159-223
C9	Capacitor	OMIT	
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
C21	Capacitor	4.7mf/35V MAL TDC475M035NSF	58-577-002
C23	Capacitor	0.001mf/100V MUR RC1-102	67-159-102
Q1	Transistor	MOT ST421H	52-057-013
Q6	Transistor	OMIT	
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	1.40K 1% 1/10W	57-757-315
R10	Resistor	OMIT	
R12	Resistor	4.99K 1% 1/10W	57-757-368
R13	Resistor	13K 1% 1/10W	57-757-412
R14	Resistor	470 Ohm 5% 1/4W	55-675-471
R23	Resistor	6.49K 1% 1/10W	57-757-379
R24	Resistor	2K 1% 1/10W	57-757-330
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R27	Resistor	21K 1% 1/10W	57-757-432
R28	Resistor	OMIT	
R29	Resistor	15K 5% 1/4W	55-675-153
R32	Resistor	OMIT	
R42	Resistor	402 Ohm 1% 1/10W	57-757-259
R43	Resistor	OMIT	
R44	Resistor	OMIT	
R45	Resistor	10K 5% 1/4W	55-675-103

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (5V)
70-714-005 (REV.F)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4	Capacitor	0.1mf/100V MUR RC1-104	67-159-104
C5	Capacitor	1mf/50V MAL TDC105M050NSE	58-577-015
C8	Capacitor	0.022mf/100V MUR RC1-223	67-159-223
C9	Capacitor	OMIT	
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
C21	Capacitor	2.2mf/20V MAL TDC225M020NSE	58-577-006
C23	Capacitor	0.0047mf/100V MUR RC1-472	67-159-472
Q1	Transistor	MOT ST421H	52-057-013
Q6	Transistor	OMIT	

Continued (RSF) 70-714-005

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	5.36K 1% 1/10W	57-757-371
R10	Resistor	OMIT	
R12	Resistor	4.99K 1% 1/10W	57-757-368
R13	Resistor	20K 1% 1/10W	57-757-430
R14	Resistor	470 Ohm 5% 1/4W	55-675-471
R23	Resistor	9.53K 1% 1/10W	57-757-395
R24	Resistor	5.23K 1% 1/10W	57-757-370
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R27	Resistor	49.9K 1% 1/10W	57-757-468
R28	Resistor	OMIT	
R29	Resistor	15K 5% 1/4W	55-675-153
R32	Resistor	OMIT	
R42	Resistor	100 Ohm 1% 1/10W	57-757-201
R43	Resistor	OMIT	
R44	Resistor	OMIT	
R45	Resistor	10K 5% 1/4W	55-675-103

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (8V)
70-714-008 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4	Capacitor	0.1mf/100V MUR RC1-104	67-159-104
C5	Capacitor	0.22mf/50V MAL TDC224M050NSE	58-577-011
C8	Capacitor	0.047mf/100V MUR RC1-473	67-159-473
C9	Capacitor	OMIT	
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
C21	Capacitor	1mf/50V MAL TDC105M050NSE	58-577-015
C23	Capacitor	0.0047mf/100V MUR RC1-472	67-159-472
Q1	Transistor	MOT ST421H	52-057-013
Q6	Transistor	OMIT	
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	16.9K 1% 1/10W	57-757-423
R10	Resistor	OMIT	
R12	Resistor	4.99K 1% 1/10W	57-757-368
R13	Resistor	27.4K 1% 1/10W	57-757-443
R14	Resistor	2K 5% 1/4W	55-675-202
R23	Resistor	12.1K 1% 1/10W	57-757-409
R24	Resistor	8.87K 1% 1/10W	57-757-392
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R27	Resistor	86.6K 1% 1/10W	57-757-491
R28	Resistor	OMIT	
R29	Resistor	33K 5% 1/4W	55-675-333
R32	Resistor	OMIT	
R42	Resistor	75 Ohm 1% 1/10W	57-757-185
R43	Resistor	OMIT	
R44	Resistor	OMIT	
R45	Resistor	10.0K 5% 1/4W	55-675-103

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (12V)
70-714-012 (REV.E)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4	Capacitor	0.1mf/100V MUR RC1-104	67-159-104
C5	Capacitor	0.22mf/50V MAL TDC224M050NSE	58-577-011
C8	Capacitor	0.047mf/100V MUR RC1-473	67-159-473
C9	Capacitor	OMIT	
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
C21	Capacitor	1mf/50V MAL TDC105M050NSE	58-577-015
C23	Capacitor	0.001mf/100V MUR RC1-102	67-159-102
Q1	Transistor	MOT ST421H	52-057-013
Q6	Transistor	OMIT	

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	24.3K 1% 1/10W	57-757-438
R10,45	Resistor	10K 5% 1/4W	55-675-103
R12	Resistor	4.99K 1% 1/10W	57-757-368
R13	Resistor	42.2K 1% 1/10W	57-757-461
R14	Resistor	2K 5% 1/4W	55-675-202
R23	Resistor	16.5K 1% 1/10W	57-757-422
R24	Resistor	12.7K 1% 1/10W	57-757-411
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R27	Resistor	127K 1% 1/10W	57-757-511
R28	Resistor	OMIT	
R29	Resistor	15K 5% 1/4W	55-675-153
R32	Resistor	OMIT	
R42	Resistor	75 Ohm 1% 1/10W	57-757-185
R43	Resistor	OMIT	
R44	Resistor	OMIT	

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (15V)
70-714-015 (REV.E)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4	Capacitor	0.1mf/100V MUR RC1-104	67-159-104
C5	Capacitor	0.22mf/50V MAL TDC224M050NSE	58-577-011
C8	Capacitor	0.022mf/100V MUR RC1-223	67-159-223
C9	Capacitor	OMIT	
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
C21	Capacitor	1MF/50V MAL TDC105M050NSE	58-577-015
C23	Capacitor	0.001mf/100V MUR RC1-102	67-159-102
Q1	Transistor	MOT ST421H	52-057-013
Q6	Transistor	OMIT	
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	28K 1% 1/10W	57-757-444
R10,45	Resistor	10K 5% 1/4W	55-675-103
R12	Resistor	4.99K 1% 1/10W	57-757-368
R13	Resistor	53.6K 1% 1/10W	57-757-471
R14	Resistor	2K 5% 1/4W	55-675-202
R23	Resistor	20K 1% 1/10W	57-757-430
R24	Resistor	15.4K 1% 1/10W	57-757-419
R27	Resistor	150K 1% 1/10W	57-757-518
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R28	Resistor	OMIT	
R29	Resistor	33K 5% 1/4W	55-675-333
R32	Resistor	OMIT	
R42	Resistor	75 Ohm 1% 1/10W	57-757-185
R43	Resistor	OMIT	
R44	Resistor	OMIT	

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (24V)
70-714-024 (REV.E)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4,5	Capacitor	0.1mf/100V MUR RC1-104	67-159-104
C8	Capacitor	0.047mf/100V MUR RC1-473	67-159-473
C9	Capacitor	OMIT	
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
C21	Capacitor	0.47mf/35V MAL TDC474M035NSE	58-577-014
C23	Capacitor	0.001mf/100V MUR RC1-102	67-159-102
Q1	Transistor	MOT ST421H	52-057-013
Q6	Transistor	OMIT	
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	93.1K 1% 1/10W	57-757-494
R10,45	Resistor	10K 5% 1/4W	55-675-103
R12	Resistor	7.68K 1% 1/10W	57-757-386
R13	Resistor	102K 1% 1/10W	57-757-502
R14	Resistor	470 Ohm 5% 1/4W	55-675-471
R23	Resistor	28K 1% 1/10W	57-757-444
R24	Resistor	24.3K 1% 1/10W	57-757-438
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R27	Resistor	232K 1% 1/10W	57-757-536
R28	Resistor	OMIT	
R29	Resistor	47K 5% 1/4W	55-675-473
R32	Resistor	OMIT	
R42	Resistor	75 Ohm 1% 1/10W	57-757-185
R43	Resistor	OMIT	
R44	Resistor	OMIT	

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (28V)
70-714-028 (REV.E)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4,5	Capacitor	0.1mf/100V MUR RC1-104	67-159-104
C8	Capacitor	0.047mf/100V MUR RC1-473	67-159-473
C9	Capacitor	470pf/100V MUR RC1-471	67-159-471
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
C21	Capacitor	0.47mf/35V MAL TDC474M035NSE	58-577-014
C23	Capacitor	0.001mf/100V MUR RC1-102	67-159-102
Q1	Transistor	MOT ST421H	52-057-013
Q6	Transistor	OMIT	
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	59K 1% 1/10W	57-757-475
R10,45	Resistor	10K 5% 1/4W	55-675-103
R12	Resistor	8.45K 1% 1/10W	57-757-390
R13	Resistor	130K 1% 1/10W	57-757-512
R14	Resistor	470 Ohm 5% 1/4W	55-675-471
R23	Resistor	32.4K 1% 1/10W	57-757-450
R24	Resistor	28K 1% 1/10W	57-757-444
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R27	Resistor	243K 1% 1/10W	57-757-538
R28	Resistor	10 Ohm 5% 1/4W	55-675-100
R29	Resistor	47K 5% 1/4W	55-675-473
R32	Resistor	OMIT	
R42	Resistor	75 Ohm 1% 1/10W	57-757-185
R43	Resistor	OMIT	
R44	Resistor	OMIT	

RSF500/RSF102
PCB ASSEMBLY
CONVERTER MODULE (48V)
70-714-048 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C4,5,21	Capacitor	0.1mf/100V MUR RC1-104	67-159-104
C8	Capacitor	0.047mf/100V MUR RC1-473	67-159-473
C9,23	Capacitor	0.001mf/100V MUR RC1-102	67-159-102
C10	Capacitor	OMIT	
C20	Capacitor	OMIT	
Q1	Transistor	MOT 2N3700	52-057-029
Q6	Transistor	OMIT	
R5	Resistor	OMIT	
R7,34	Resistor	7.50K 1% 1/10W	57-757-385
R8	Resistor	86.6K 1% 1/10W	57-757-491
R10	Resistor	OMIT	
R12	Resistor	8.45K 1% 1/10W	57-757-390
R13	Resistor	210K 1% 1/10W	57-757-532
R14	Resistor	470 Ohm 5% 1/4W	55-675-471
R23	Resistor	53.6K 1% 1/10W	57-757-471
R24	Resistor	48.7K 1% 1/10W	57-757-467
R26	Resistor	100 Ohm 5% 1/4W	55-675-101
R27	Resistor	442K 1% 1/10W	57-757-563
R28	Resistor	15K 5% 1/4W	55-675-153
R29	Resistor	47K 5% 1/4W	55-675-473
R32	Resistor	OMIT	
R42	Resistor	75 Ohm 1% 1/10W	57-757-185
R43	Resistor	OMIT	
R44	Resistor	OMIT	
R45	Resistor	10K 5% 1/4W	55-675-103

RSF500/RSF102
PCB ASSEMBLY
400W OUTPUT (PARTIAL)
70-757-001 (REV.D)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C6,7,11	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C9	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
J1	PCB Connector	5 pin MOL 09-52-3031	64-563-905
J2	PCB Connector	6 pin MOL 09-52-3031	64-563-906

RSF500/RSF102
PCB ASSEMBLY
400W OUTPUT (2V)
70-757-002 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.1mf/100V MUR GP1-1042K	52-231-104
C3	Capacitor	3300mf/6.3V MAL VPR332N6R3N1C6A	63-284-007
C4,5	Capacitor	18000mf/6V MAL CG0183M006R2C3PH	61-867-004
C8	Capacitor	OMIT	
C10	Capacitor	OMIT	
CR1,2	Kit,Schottky	ACDC	68-876-002
CR3	Suppressor	OMIT	
CR4	Diode	OMIT	
CR5-8	Diode	OMIT	
L1	Choke	ACDC	52675
L2,3	Ferrite Bead	OMIT	
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	1 Ohm 5% 5W	52-441-109
R4	Resistor	OMIT	
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
SCR1	Rectifier	OMIT	
T1	Transformer	ACDC	52677

RSF500/RSF102
PCB ASSEMBLY
400W OUTPUT (5V)
70-757-005 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.1mf/100V MUR GP1-1042K	52-231-104
C3	Capacitor	3300mf/3V MAL VPR332N6R3N1C6A	63-284-007
C4,5	Capacitor	18000mf/6V MAL CG0183M006R2C3PH	61-867-004
C8	Capacitor	OMIT	
C10	Capacitor	OMIT	
CR1,2	Kit,Schottky	ACDC	68-876-002
CR3	Suppressor trns	MOT P6KE15	67-449-002
CR4	Diode	MOT MR501	50-464-020
CR5-8	Diode	OMIT	
L1	Choke	ACDC	52675
L2,3	Ferrite Bead	OMIT	
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	6.2 Ohm 5% 5W	52-441-629
R4	Resistor	OMIT	
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
SCR1	Rectifier	OMIT	
T1	Transformer	ACDC	52716

RSF500/RSF102
PCB ASSEMBLY
400W OUTPUT (12V)
70-757-012 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.02mf/500V MUR GP5-203MF	52-231-203
C3	Capacitor	1000mf/25V MAL VPR102N025N1C6A	63-284-006
C4,5	Capacitor	4600mf/25V MAL CGR462N025R2C3PH	61-867-005
C8	Capacitor	OMIT	
C10	Capacitor	OMIT	

Continued (RSF) 70-757-012

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
CR1,2	Diode	MOT 1N3910	50-464-085
CR3	Suppressor	OMIT	
CR4	Diode	OMIT	
CR5-8	Diode	OMIT	
L1	Choke	ACDC	52722
L2,3	Ferrite Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	36 Ohm 5% 5W	52-441-360
R4	Resistor	OMIT	
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
SCR1	Rectifier	OMIT	
T1	Transformer	ACDC	52718

RSF500/RSF102
PCB ASSEMBLY
400W OUTPUT (15V)
70-757-015 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.02mf/500V MUR GP5-203MF	52-231-203
C3	Capacitor	1000mf/25V MAL VPR102N025N1C6A	63-284-006
C4,5	Capacitor	4600mf/25V MAL CGR462N025R2C3PH	61-867-005
C8	Capacitor	OMIT	
C10	Capacitor	OMIT	
CR1,2	Diode	MOT 1N3910	50-464-085
CR3	Suppressor	OMIT	
CR4	Diode	OMIT	
CR5-8	Diode	OMIT	
L1	Choke	ACDC	52722
L2,3	Ferrite Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	3.3 Ohm 5% 1W	50-460-339
R3	Resistor	56 Ohm 5% 5W	52-441-560
R4	Resistor	OMIT	
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
SCR1	Rectifier	OMIT	
T1	Transformer	ACDC	52719

RSF500/RSF102
PCB ASSEMBLY
400W OUTPUT (24V)
70-757-024 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.0047mf/1KV MUR DTK-482KG	52-231-482
C3	Capacitor	680mf/40V MAL VPR681N040N1C6A	63-284-009
C4,5	Capacitor	2400mf/40V MAL CGR242N040R2C3PH	61-867-006
C8	Capacitor	OMIT	
C10	Capacitor	OMIT	
CR1,2	Diode	MOT 1N3901	50-464-084
CR3	Suppressor	OMIT	
CR4	Diode	OMIT	
CR5-8	Diode	OMIT	
L1	Choke	ACDC	52723
L2,3	Ferrite Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	30 Ohm 5% 2W	50-459-300
R3	Resistor	150 Ohm 5% 5W	52-441-151
R4	Resistor	OMIT	
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
SCR1	Rectifier	OMIT	
T1	Transformer	ACDC	52720

RSF500/RSF102
PCB ASSEMBLY
400W OUTPUT (28V)
70-757-028 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C1,2	Capacitor	0.0047mf/1KV MUR DTK-482KG	52-231-482
C3	Capacitor	680mf/40V MAL VPR681N040N1C6A	63-284-009
C4,5	Capacitor	2400mf/40V MAL CGR242N040R2C3PH	61-867-006
C8	Capacitor	OMIT	
C10	Capacitor	OMIT	
CR1,2	Diode	MOT 1N3901	50-464-084
CR3	Suppressor	OMIT	
CR4	Diode	OMIT	
CR5-8	Diode	OMIT	
L1	Choke	ACDC	52723
L2,3	Ferrite Bead	STACKPOLE 57-0010	68-095-001
R1,2	Resistor	30 Ohm 5% 2W	50-459-300
R3	Resistor	220 Ohm 5% 5W	52-441-221
R4	Resistor	OMIT	
R5	Resistor	OMIT	
R6	Resistor	OMIT	
R7	Resistor	OMIT	
R8	Resistor	OMIT	
SCR1	Rectifier	OMIT	
T1	Transformer	ACDC	52721

PCB ASSEMBLY
AUXILIARY OUTPUT (PARTIAL)
70-827-001 (REV.B)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C3,12	Capacitor	100mf/10V ILL 107RLR010M	70-333-013
C7,16	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C8,9,17,18	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
CR1,6	Diode	NAE SE5404C	70-857-004
CR2,3,5,7, 8,10	Diode	MOT 1N4004	50-464-003
L4-7	Ferrite Bead	STACKPOLE 57-1559	68-095-003
P1,2	Wafer Conn	MOL 22-10-2121	65-432-012
Q1,3	Transistor	RCA 2N5323	52-725-035
Q2,4	Transistor	RCA 2N3772	54-031-017
R1,2,8,9	Resistor	33 Ohm 5% 3W	52-633-330
R4,11	Resistor	220 Ohm 5% 1/4W	55-675-221
R7,14	Resistance Wire	0.22 Ohm 5W	71-037-001

PCB ASSEMBLY
AUXILIARY OUTPUT (12V/12V)
70-827-002/-007 (REV.B/B)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2 (1)	Control Module	12V ACDC	70-826-012
A3	Control Module	OMIT	
C1,2,10,11	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C4,13	Capacitor	900mf/50V MAL VPR901N050L2CA	63-284-027
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C19,20	Capacitor	OMIT	
C21	Capacitor	OMIT	
C22	Capacitor	OMIT	
C24	Capacitor	OMIT	
C25	Capacitor	OMIT	
C26,27	Capacitor	OMIT	
C28,29	Capacitor	100pf/1KV ARCO CCD101	52-231-101
C30	Capacitor	OMIT	
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	OMIT	
CR12,13,15	Diode	OMIT	
CR14	Diode	OMIT	

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
F1,2	Fuse	LITTLEFUSE 276010	57-869-110
F3	Fuse	OMIT	
L1,2	Choke	ACDC	52703
L3	Choke	OMIT	
L8,9	Choke	OMIT	
Q5	Transistor	OMIT	
Q6	Transistor	OMIT	
R3,10	Resistor	330 Ohm 5% 3W	52-633-331
R5	Resistor	OMIT	
R6,13	Resistor	100 Ohm 5% 3W	52-633-101
R12	Resistor	OMIT	
R15,16	Resistor	OMIT	
R17	Resistor	OMIT	
R18	Resistor	OMIT	
R19	Resistor	OMIT	
R21	Resistor	OMIT	
R22,23	Resistor	10 Ohm 5% 1/4W	55-675-100
R24	Resistor	OMIT	
T1	Transformer	ACDC	52672

(1) One required for paralleled channel 2 and 3 (RSF502).

PCB ASSEMBLY
AUXILIARY OUTPUT (12V/12V/5V)
70-827-003 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(12V)	ACDC	70-826-012
A3	Control Mod(5V)	ACDC	70-826-005
C1,2,10,11, 19,20	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C4,13,22	Capacitor	900mf/50V MAL VPR901N050L2CA	63-284-027
C5,14,23	Capacitor	OMIT	
C6,15,24	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C21	Capacitor	100mf/10V ILL 107RLR010M	70-333-013
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28,29	Capacitor	100pf/1KV ARCO CCD101	52-231-101
C30	Capacitor	120pf/1KV ARCO CCD121	52-231-121
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	MOT 1N4004	50-464-003
CR14	Diode	OMIT	
F1,2	Fuse	LITTLEFUSE 276010	57-869-110
F3	Fuse	LITTLEFUSE 276007	57-869-107
L1,2,3	Choke	ACDC	52703
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	RCA 2N5323	52-725-035
Q6	Transistor	MOT TIP41B	54-031-084
R3,10	Resistor	330 Ohm 5% 3W	52-633-331
R5	Resistor	OMIT	
R6,13	Resistor	100 Ohm 5% 3W	52-633-101
R12	Resistor	OMIT	
R15,16,20	Resistor	33 Ohm 5% 3W	52-633-330
R17	Jumper	#22 ACDC	68-999-010
R18	Resistor	220 Ohm 5% 1/4W	55-675-221
R19	Resistor	OMIT	
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52672

PCB ASSEMBLY
AUXILIARY OUTPUT (12V/12V/24V)
70-827-004 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(12V)	ACDC	70-826-012
A3	Control Mod(24V)	ACDC	70-826-024
C1,2,10,11	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C4,13	Capacitor	900mf/50V MAL VPR901N050L2CA	63-284-027
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C19,20	Capacitor	0.0047mf/1KV SPR 5GA-D47	52-231-472
C21	Capacitor	100mf/10V ILL 107RLR010M	70-333-013
C22	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C24	Capacitor	360mf/40V MAL VPR361N040E1L6A	63-284-025
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28,29	Capacitor	100pf/1KV ARCO CCD101	52-231-101
C30	Capacitor	56pf/1KV ARCO CCD560	52-231-560
CR4,9,14	Diode,Zener	IR1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	MOT 1N4004	50-464-003
F1,2	Fuse	LITTLEFUSE 276010	57-869-110
F3	Fuse	LITTLEFUSE 276004	57-869-104
L1,2	Choke	ACDC	52703
L3	Choke	ACDC	52704
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	RCA 2N5323	52-725-035
Q6	Transistor	MOT TIP41B	54-031-084
R3,10	Resistor	330 Ohm 5% 3W	52-633-331
R5	Resistor	OMIT	
R6,13	Resistor	100 Ohm 5% 3W	52-633-101
R12	Resistor	OMIT	
R18	Resistor	220 Ohm 5% 1/4W	55-675-221
R19	Resistor	OMIT	
R20	Resistor	270 Ohm 5% 3W	52-633-271
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52673

PCB ASSEMBLY
AUXILIARY OUTPUT (12V/12V/24 SEMI-REG)
70-827-005 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(12V)	ACDC	70-826-012
A3	Control Mod	OMIT	
C1,2,10,11	Capacitor	0.022mf/250V SPR 2SS-S20	52-231-213
C4,13	Capacitor	900mf/50V MAL VPR901N050L2CA	63-284-027
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C19,20	Capacitor	0.0047mf/1KV SPR 5GA-D47	52-231-472
C21	Capacitor	OMIT	
C22	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C24	Capacitor	360mf/40V MAL VPR361N040E1L6A	63-284-025
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28,29	Capacitor	100pf/1KV ARCO CCD101	52-231-101
C30	Capacitor	56pf/1KV ARCO CCD560	52-231-560
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	OMIT	
CR14	Diode	OMIT	
F1,2,3	Fuse	LITTLEFUSE 276010	57-869-110
L1,2	Choke	ACDC	52703
L3	Choke	ACDC	52704
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	OMIT	
Q6	Jumper	ACDC	68-999-201
R3,10	Resistor	330 Ohm 5% 3W	52-633-331
R5,12,19	Resistor	OMIT	
R6,13	Resistor	100 Ohm 5% 3W	52-633-101
R15,16	Resistor	33 Ohm 5% 3W	52-633-330
R17	Resistor	OMIT	
R18	Resistor	OMIT	
R20	Resistor	270 Ohm 5% 3W	52-633-271
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52761

PCB ASSEMBLY
AUXILIARY OUTPUT (15V/15V)
70-827-010/-015 (REV.B/B)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2 (1)	Control Mod(15V)	ACDC	70-826-015
A3	Control Mod	OMIT	
C1,2,10,11	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C4,13	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	330mf/25V ILL337RAR025B	62-708-006
C19,20	Capacitor	OMIT	
C21	Capacitor	OMIT	
C22	Capacitor	OMIT	
C24	Capacitor	OMIT	
C25	Capacitor	OMIT	
C26,27	Capacitor	OMIT	
C28,29	Capacitor	56pf/1KV ARCO CCD560	52-231-560
C30	Capacitor	OMIT	
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	OMIT	
CR12,13,15	Diode	OMIT	
CR14	Diode	OMIT	
F1,2	Fuse	LITTLEFUSE 276010	57-869-110
F3	Fuse	OMIT	
L1,2	Choke	ACDC	52703
L3	Choke	OMIT	
L8,9	Ferrite Bead	OMIT	
Q5	Transistor	OMIT	
Q6	Transistor	OMIT	
R3,10	Resistor	470 Ohm 5% 3W	52-633-471
R5,12,18,19	Resistor	OMIT	
R6,13	Resistor	150 Ohm 5% 3W	52-633-151
R15,16	Resistor	OMIT	
R17	Resistor	OMIT	
R20	Resistor	OMIT	
R21	Resistor	OMIT	
R22,23	Resistor	10 Ohm 5% 1/4W	55-675-100
R24	Resistor	OMIT	
T1	Transformer	ACDC	52690

(1) One required for paralleled channel 2 and 3 (RSF502)

PCB ASSEMBLY
AUXILIARY OUTPUT (15V/15V/5V)
70-827-011 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(15V)	ACDC	70-826-015
A3	Control Mod(5V)	ACDC	70-826-005
C1,2,10,11, 19,20	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C4,13	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15,24	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C21	Capacitor	100mf/10V ILL 107RLR010M	70-333-013
C22	Capacitor	900mf/50V MAL VPR901N050L2CA	63-284-027
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28,29	Capacitor	56pf/1KV ARCO CCD560	52-231-560
C30	Capacitor	120pf/1KV ARCO CCD121	52-231-121
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	MOT 1N4004	50-464-003
CR14	Diode	OMIT	
F1,2	Fuse	LITTLEFUSE 276010	57-869-110
F3	Fuse	LITTLEFUSE 276007	57-869-107
L1,2,3	Choke	ACDC	52703
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	RCA 2N5323	52-725-035
Q6	Transistor	MOT TIP41B	54-031-084
R3,10	Resistor	470 Ohm 5% 3W	52-633-471
R5,12,19	Resistor	OMIT	
R6,13	Resistor	150 Ohm 5% 3W	52-633-151
R15,16,20	Resistor	33 Ohm 5% 3W	52-633-330
R18	Resistor	220 Ohm 5% 1/4W	55-675-221
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52690

PCB ASSEMBLY
AUXILIARY OUTPUT (15V/15V/24V)
70-827-012 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(15V)	ACDC	70-826-015
A3	Control Mod(24V)	ACDC	70-826-024
C1,2,10,11	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C4,13,22	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C19,20	Capacitor	0.0047mf/1KV SPR 5GA-D47	52-231-472
C21	Capacitor	100MF/10V ILL 107RLR010M	70-333-013
C24	Capacitor	360MF/40V MAL VPR361N040E1L6A	63-284-025
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28,29,30	Capacitor	56pf/1KV ARCO CCD560	52-231-560
CR4,9,14	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	MOT 1N4004	50-464-003
F1,2	Fuse	LITTLEFUSE 276010	57-869-110
F3	Fuse	LITTLEFUSE 276004	57-869-104
L1,2	Choke	ACDC	52703
L3	Choke	ACDC	52704
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	RCA 2N5323	52-725-035
Q6	Transistor	MOT TIP41B	54-031-084
R3,10	Resistor	470 Ohm 5% 3W	52-633-471
R5,12,19	Resistor	OMIT	
R6,13	Resistor	150 Ohm 5% 3W	52-633-151
R15,16	Resistor	33 Ohm 5% 3W	52-633-330
R17	Resistor	820 Ohm 5% 3W	52-633-821
R18	Resistor	220 Ohm 5% 1/4W	55-675-221
R20	Resistor	270 Ohm 5% 3W	52-633-271
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52752

PCB ASSEMBLY
AUXILIARY OUTPUT (15V/15V/24 SEMI REG.)
70-827-013 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(15V)	ACDC	70-826-015
A3	Control Mod	OMIT	
C1,2,10,11	Capacitor	0.022mf/250V SPR 2SS-S20	52-231-213
C4,13,22	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C19,20	Capacitor	0.0047mf/250V SPR 2SS-S20	52-231-213
C21	Capacitor	OMIT	
C24	Capacitor	360mf/40V MAL VPR361N040E1L6A	63-284-025
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28-30	Capacitor	56pf/1KV ARCO CCD560	52-231-560
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	OMIT	
CR14	Diode	OMIT	
F1,2,3	Fuse	LITTLEFUSE 276010	57-869-110
L1,2	Choke	ACDC	52703
L3	Choke	ACDC	52704
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	OMIT	
Q6	Jumper	#22 ACDC	68-999-201
R3,10	Resistor	470 Ohm 5% 3W	52-633-471
R5,12,19	Resistor	OMIT	
R6,13	Resistor	150 Ohm 5% 3W	52-633-151
R15,16	Resistor	33 Ohm 5% 3W	52-633-330
R17	Resistor	OMIT	
R18	Resistor	OMIT	
R20	Resistor	270 Ohm 5% 3W	52-633-271
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52717

PCB ASSEMBLY
AUXILIARY OUTPUT (24V/24V)
70-827-018/-020 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2 (1)	Control Mod(24V)	ACDC	70-826-024
A3	Control Mod	OMIT	
C1,2,10,11	Capacitor	0.0047mf/1KV SPR 5GA-D47	52-231-472
C4,13	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	360mf/40V MAL VPR361N040E1L6A	63-284-025
C19,20	Capacitor	OMIT	
C21	Capacitor	OMIT	
C22	Capacitor	OMIT	
C24	Capacitor	OMIT	
C25	Capacitor	OMIT	
C26,27	Capacitor	OMIT	
C28,29	Capacitor	56pf/1KV ARCO CCD560	52-231-560
C30	Capacitor	OMIT	
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	OMIT	
CR12,13,15	Diode	OMIT	
CR14	Diode	OMIT	
F1,2	Fuse	LITTLEFUSE 276007	57-869-107
F3	Fuse	OMIT	
L1,2	Choke	ACDC	52704
L3	Choke	OMIT	
L8,9	Choke	OMIT	
R3,10	Resistor	820 Ohm 5% 3W	52-633-821
R5,12,18,19	Resistor	OMIT	
R6,13	Resistor	270 Ohm 5% 3W	52-633-271
R15,16	Resistor	OMIT	
R17	Resistor	OMIT	
R20	Resistor	OMIT	
R21	Resistor	OMIT	
R22,23	Resistor	10 Ohm 5% 1/4W	55-675-100
R24	Resistor	OMIT	
T1	Transformer	ACDC	52751

(1) One required for paralleled channel 2 and 3 (RSF502).

PCB ASSEMBLY
AUXILIARY OUTPUT (24V/24V/5V)
70-827-019 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(24V)	ACDC	70-826-024
A3	Control Mod(5V)	ACDC	70-826-005
C1,2,10,11	Capacitor	0.0047mf/1KV SPR 5GA-D47	52-231-472
C4,13	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	360mf/40V MAL VPR361N040E1L6A	63-284-025
C19,20	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C21	Capacitor	100mf/10V ILL 107RLR010M	70-333-013
C22	Capacitor	900mf/50V MAL VPR901N050L2CA	63-284-027
C24	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28,29	Capacitor	56pf/1KV ARCO CCD560	52-231-560
C30	Capacitor	120pf/1KV ARCO CCD121	52-231-121
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	MOT 1N4004	50-464-003
CR14	Diode	OMIT	
F1-3	Fuse	LITTLEFUSE 276007	57-869-107
L1,2	Choke	ACDC	52704
L3	Choke	ACDC	52703
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	RCA 2N5323	52-725-035
Q6	Transistor	MOT TIP418	54-031-084
R3,10	Resistor	820 Ohm 5% 3W	52-633-821
R5,12,19	Resistor	OMIT	
R6,13	Resistor	270 Ohm 5% 3W	52-633-271
R15,16,20	Resistor	33 Ohm 5% 3W	52-633-330
R17	Jumper	#22 ACDC	68-999-010
R18	Resistor	220 Ohm 5% 1/4W	55-675-221
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52751

RSF500/RSF102
KIT ASSEMBLY OUTPUT (2V/5V)
70-861-001 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C10	Capacitor	1mf/50V MAL TDC105M050NSE	58-577-015
R4	Resistor	200 Ohm 5% 1/4W	55-675-201
R5	Resistor	.10 Ohm 10% 3W	52-63-108
R6	Resistor	1.0K 5% 2W	52-064-102
SCR1	Thyristor	MOT 2N6400	52-714-057

RSF500/RSF102
KIT ASSEMBLY OUTPUT (12V/15V)
70-861-002 (REV. C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C10	Capacitor	1mf/50V MAL TDC105M050NSE	58-577-015
R4	Resistor	200 Ohm 5% 1/4W	55-675-201
R5	Resistor	.25 Ohm 10% 3W	52-633-258
R6	Resistor	2.0K 5% 2W	52-064-202
SCR1	Thyristor	Mot 2N6400	52-714-057

RSF500/RSF102
KIT ASSEMBLY OUTPUT (24V/28V)
70-861-003 (REV. C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
C10	Capacitor	1mf/50V MAL TDC105M050NSE	58-577-015
R4	Resistor	200 Ohm 5% 1/4W	55-675-201
R5	Resistor	0.25 Ohm 10% 3W	52-633-258
R6	Resistor	3.0K 5% 2W	52-064-302
SCR1	Thyristor	MOT 2N6400	52-714-057

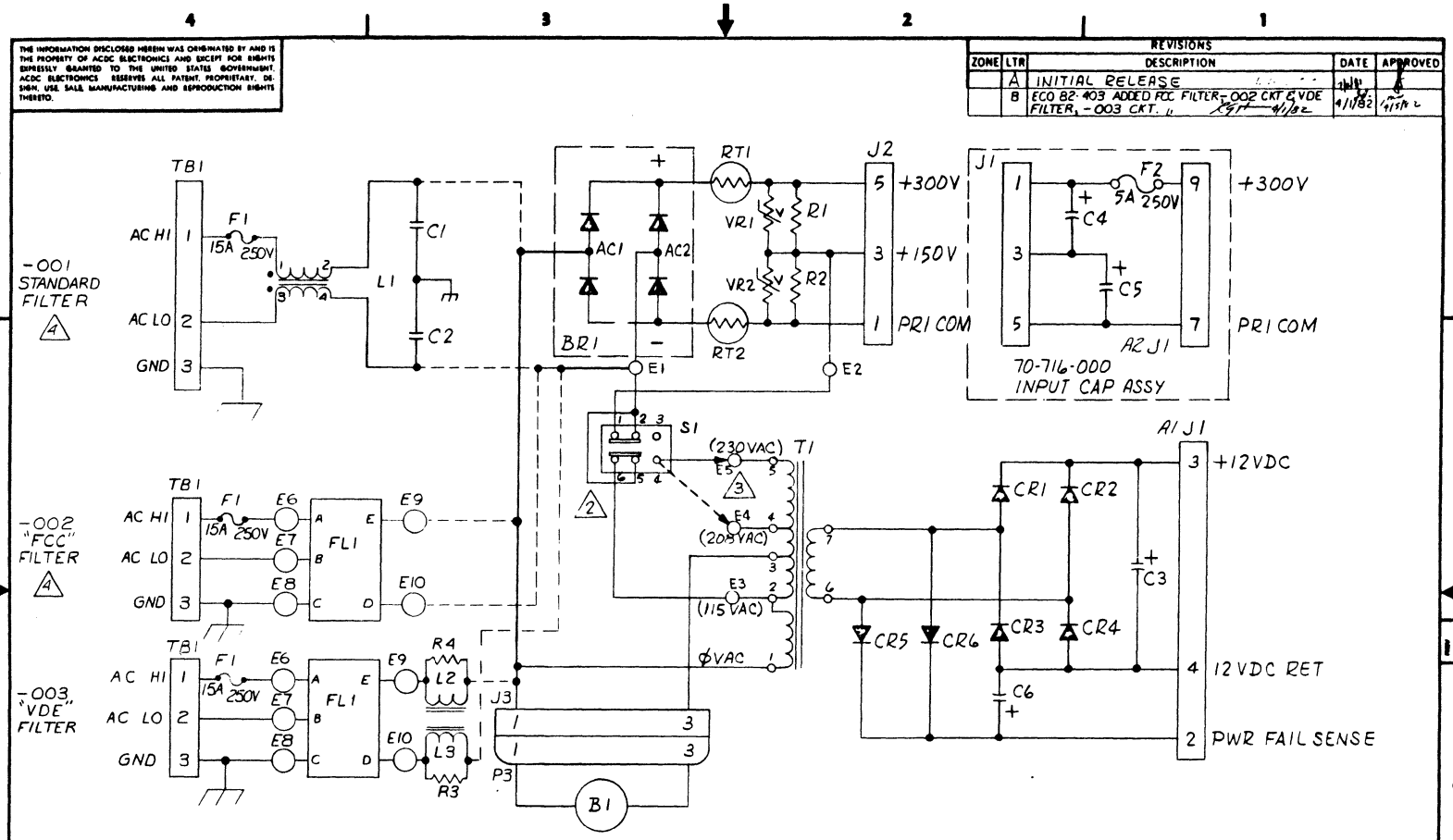
PCB ASSEMBLY
AUXILIARY OUTPUT (28V/28V)
70-827-023/-025 (REV.A)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2 (1)	Control Mod(28V)	ACDC	70-826-028
A3	Control Mod	OMIT	
C1,2,10,11	Capacitor	0.0047mf/1KV SPR 5GA-D47	52-231-472
C4,13	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	360mf/40V MAL VPR361N040E1L6A	63-284-025
C19,20	Capacitor	OMIT	
C21	Capacitor	OMIT	
C22	Capacitor	OMIT	
C24	Capacitor	OMIT	
C25	Capacitor	OMIT	
C26,27	Capacitor	OMIT	
C28,29	Capacitor	56pf/1KV ARCO CCD560	52-231-560
C30	Capacitor	OMIT	
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	OMIT	
CR12,13,15	Diode	OMIT	
CR14	Diode	OMIT	
F1,2	Fuse	LITTLEFUSE 276007	57-869-107
F3	Fuse	OMIT	
L1,2	Choke	ACDC	52704
L3	Choke	OMIT	
L8,9	Choke	OMIT	
R3,10	Resistor	1.0k 5% 3w	52-633-102
R5,12,18,19	Resistor	OMIT	
R6,13	Resistor	390 Ohm 5% 3W	52-633-391
R15,16	Resistor	OMIT	
R17	Resistor	OMIT	
R20	Resistor	OMIT	
R21	Resistor	OMIT	
R22,23	Resistor	10 Ohm 5% 1/4W	55-675-100
R24	Resistor	OMIT	
T1	Transformer	ACDC	52728

(1) One required for paralleled channel 2 and 3 (RSF502).

PCB ASSEMBLY
AUXILIARY OUTPUT (28V/28V/5V)
70-827-024 (REV.C)

REF.DES.	DESCRIPTION	SUGGESTED MANUF/TYPE	ACDC P/N
A1,2	Control Mod(28V)	ACDC	70-826-028
A3	Control Mod(5V)	ACDC	70-826-005
C1,2,10,11	Capacitor	0.0047mf/1KV SPR5GA-D47	52-231-472
C4,13	Capacitor	500mf/75V MAL VPR501N075L2CA	63-284-028
C5,14,23	Capacitor	OMIT	
C6,15	Capacitor	360mf/40V MAL VPR361N040E1L6A	63-284-025
C19,20	Capacitor	0.02mf/500V SPR 2SS-S20	52-231-203
C21	Capacitor	100mf/10V ILL 107RLR010M	70-333-013
C22	Capacitor	900mf/50V MAL VPR901N050L2CA	63-284-027
C24	Capacitor	330mf/25V ILL 337RAR025B	62-708-006
C25	Capacitor	2.2mf/50V CRL CY30C225M	56-137-007
C26,27	Capacitor	0.1mf/500V CAPAR CCD104	52-231-001
C28,29	Capacitor	56pf/1KV ARCO CCD560	52-231-560
C30	Capacitor	120pf/1KV ARCO CCD121	52-231-121
CR4,9	Diode,Zener	IR 1N4750A	51-739-045
CR11	Diode	NAE SE5404C	70-857-004
CR12,13,15	Diode	MOT 1N4004	50-464-003
CR14	Diode	OMIT	
F1-3	Fuse	LITTLEFUSE 276007	57-869-107
L1,2	Choke	ACDC	52704
L3	Choke	ACDC	52703
L8,9	Ferrite Bead	STACKPOLE 57-1559	68-095-003
Q5	Transistor	RCA 2N5323	52-725-035
Q6	Transistor	MOT TIP41B	54-031-084
R3,10	Resistor	1.0K 5% 3W	52-633-102
R5,12,19	Resistor	OMIT	
R6,13	Resistor	390 Ohm 5% 3W	52-633-391
R15,16,20	Resistor	33 Ohm 5% 3W	52-633-330
R17	Jumper	#22 ACDC	68-999-010
R18	Resistor	220 Ohm 5% 1/4W	55-675-221
R21	Resistance Wire	0.22 Ohm 5W	71-037-002
R22-24	Resistor	10 Ohm 5% 1/4W	55-675-100
T1	Transformer	ACDC	52728



4. -001, & -002 L2 AND L3 ARE JUMPERED.

3. FOR 208 VAC OPERATION SLIDE S1 TO THE 230 VAC POSITION AND MOVE S1-4 WIRE FROM 230 VAC TO 208 VAC PAD (E4).

2. 115/230 VAC SWITCH (S1) SHOWN IN THE 115 VAC POSITION.

1. REF DOCUMENTS:
70-713-000 ASSY
70-713-702 FAB
70-713-XXX L/M

NOTES:

REF. DESIGNATIONS	
LAST USED	NOT USED
C6 F2 L3 CR6 VR2 B1 BR1 J4 T1 R4 RT2 TB1 P3 FL1	P1,2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE	3/4/82	
	B	ECO 82-403 ADDED FCC FILTER -002 CKT & VDE FILTER, -003 CKT.	4/1/82	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE, DESCRIPTION & SPECIFICATION	ITEM NO

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS: ±1/32 ANGLES: ±1/2°
DECIMALS: XX ± 02 .XXX ± 010
MATERIAL
FINISH
FIRST USED ON 99109

DRAWN 3/4/82
CHECK
ENGR
PROJ 4/5/82
APPR 4/5/82
APPROVED
APPROVED

acdc electronics
OCEANSIDE, CALIFORNIA
EMERSON

TITLE
SCHEMATIC,
INPUT MODULE,
RSF 500 SERIES P S

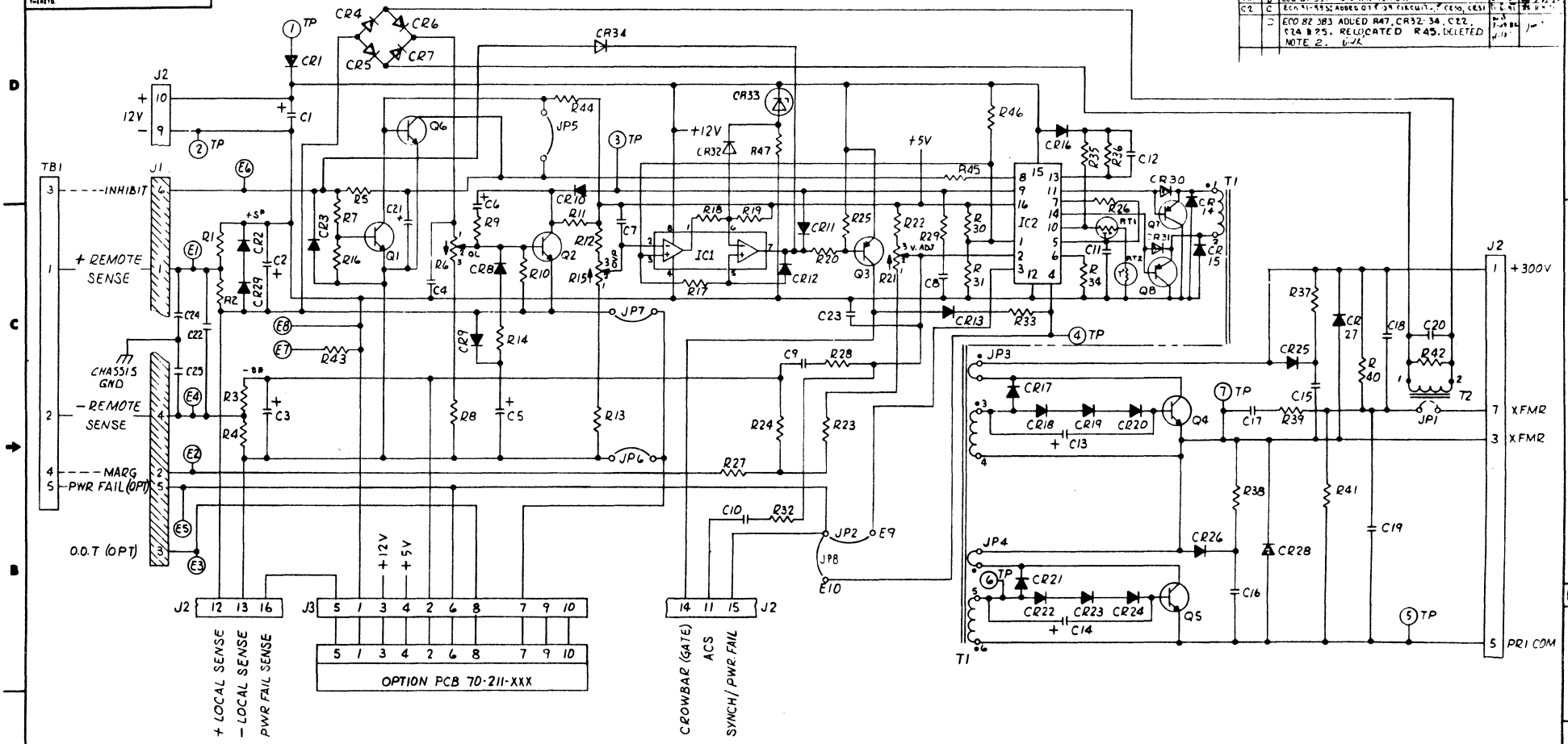
SIZE	CODE IDENT NO	DWG. NO.	REV
C	08742	70-713-709	B

SCALE
SHEET 1 OF 1

RSF 501

70-713-709

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE		
B2	B	ECO B1-534 JP8 WAS (OPTION)		
C2	C	ECO 81-995 ADDED QTY 3 OF CIRCUIT "C" CR30, CR31		
	D	ECO 82-383 ADDED R47, CR32-34, C22, C24 & 25. RELOCATED R45. DELETED NOTE 2.		



1. REF. DOCUMENTS:
   70-714-710 ATP
   70-714-000 ASSY DWG
   70-714-XXX L/M
   70-714-702 FAB DWG

NOTES:

3. OPTIONS:
3a. STANDARD INHIBIT LOGIC "1"
INSTALL R7, 16, JP5, Q1, C21; OMIT R5, 44, Q6.
3b. OPTIONAL INHIBIT LOGIC "0"
INSTALL R5, C21; OMIT R7, 44, , 16, JP5, Q1, 6.
3c. OPTIONAL INHIBIT LOGIC "0" (STC)
INSTALL R7, 16, 44, , Q1, 6, C21; OMIT R5, JP5
3d. OPTIONAL MARGIN (STC)
WIRE J1 AS FOLLOWS:
J1-1 TO E1, J1-2 TO E8, J1-3 TO E7, J1-4 TO E4, J1-5 TO E2, J1-6 TO E6
CHANGE R27 TO 22.6K; INSTALL R43 TO 22.6K

REF. DESIGNATIONS	
LAST USED	NOT USED
C25 J3 IC2 CR34 TB1 RT1 JP7 T2 R47 TP7 Q6 E10	

70-714-001 RSF500
NEXT ASSY | USED ON
APPLICATION

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE, DESCRIPTION & SPECIFICATION	ITEM NO

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS ±1/32 ANGLES ±1/2°
DECIMALS XX±.02 XXX±.010
MATERIAL
FINISH
FIRST USED ON

DRAWN 3/4/81
CHECK
MECH
PROJ 6/4/81
PROJ 6/4/81
APPROVED
APPROVED

acdc electronics
OCEANSIDE, CALIFORNIA

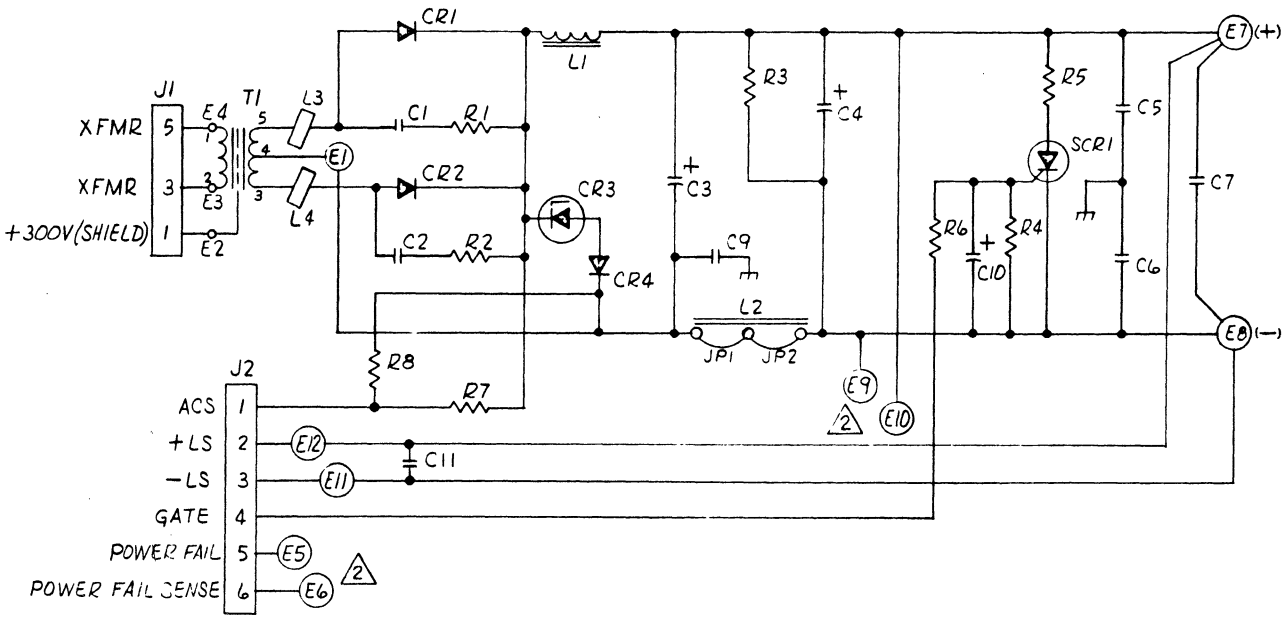
TITLE SCHEMATIC, CONVERTER, 500 W

SIZE	CODE IDENT NO	DWG NO	REV
D	08742	70-714-709	D

SCALE NONE SHEET 1 OF 1

70-714-709

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE		
B5	B	ECO 91-916 ADDED C11		



2. TERMINALS E5, E6, E9, E10 FOR POWER FAIL INTERCONNECTIONS, (RS/RT ONLY).

1. REF. DOCUMENTS:
   70-715-000 ASSY
   70-715-XXX L/M
   70-715-702 PCB

NOTES:

REF. DESIGNATIONS	
LAST USED	NOT USED
C11 R8	C8
CR4 SCR1	
JP2 T1	
J2 E12	
L4	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE, DESCRIPTION & SPECIFICATION	ITEM NO
LIST OF MATERIAL OR PARTS LIST				

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS: ±1/32 ANGLES: ±1/2°
DECIMALS: .XX ± .02 .XXX ± .010
MATERIAL
FINISH
FIRST USED ON 99109
RSF501

DRAWN		3/1/91
CHECK		6/4/91
ENGR		6/4/91
PROJ		
APPR		6/5/91
	APPROVED	
	APPROVED	

acdc electronics
OCEANSIDE, CALIFORNIA
EMERSON

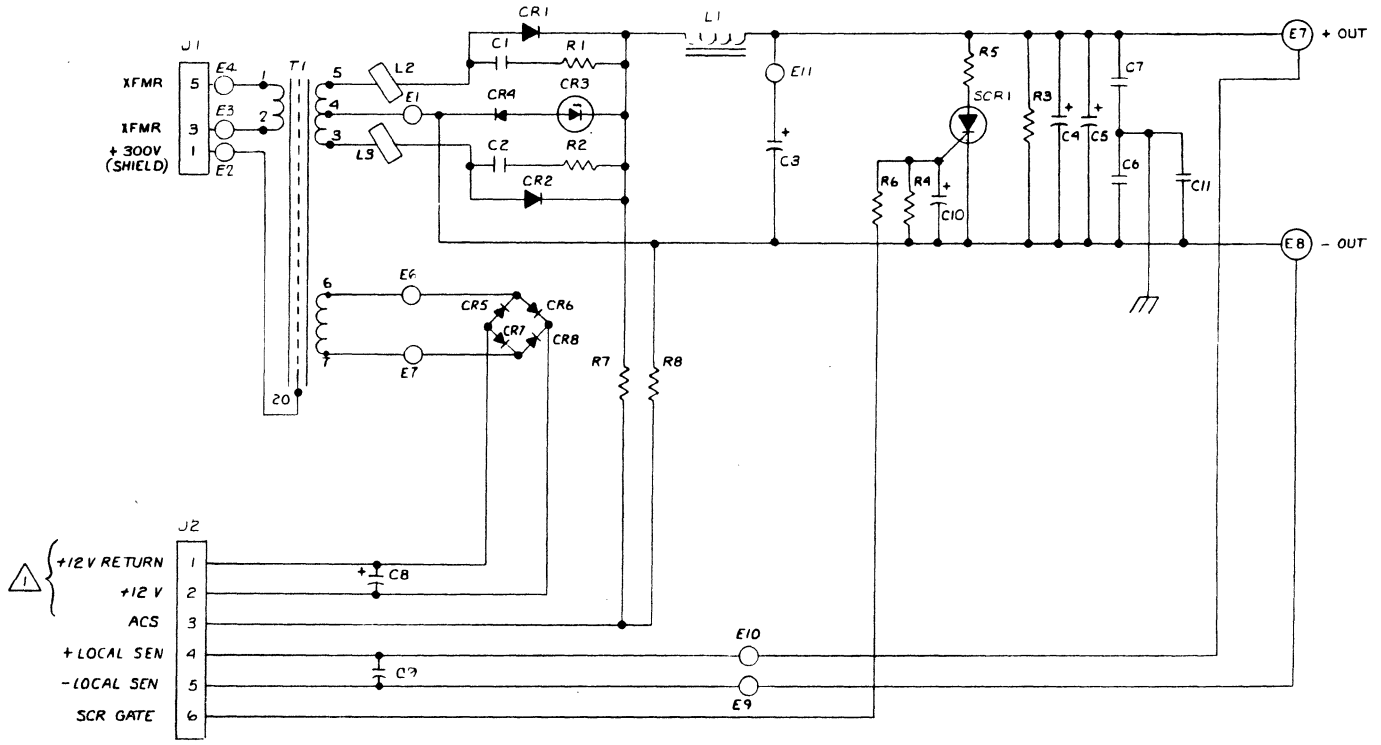
TITLE: SCHEMATIC
OUTPUT, 500 WATT
RSF501

SIZE	CODE IDENT NO.	DWG. NO.	REV
C	08742	70-715-709	B

SCALE — SHEET OF

70-715-709 B

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE J.J.	8/19/81	
	A1	C10 WAS C9	9/17/81	
	B	ECO 81-981 ADD C9	11-1-81	
	C	ECO 82-268 ADDED C11	3-5-82	



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE, DESCRIPTION & SPECIFICATION	ITEM NO

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS: ±1/32 ANGLES: ±1/2°
DECIMALS: XX±.02 .XXX±.010
MATERIAL
FINISH
FIRST USED ON 99103

DRAWN	J. JOSLEN	7/7/81
CHECK		
ENGR		7/15/81
PROJ		8/5/81
APPR		8/19/81
	APPROVED	
	APPROVED	

acdc electronics
OCEANSIDE, CALIFORNIA

TITLE
SCHEMATIC,
OUTPUT MODULE -
400 WATT RSF SERIES

SIZE	CODE IDENT NO	DWG. NO.	REV
C	08742	70-757-709	C

SCALE ~ SHEET 1 OF 1

REF DES	
LAST USED	NOT USED
C11	55,8
CR8	
J2	
L3	
R8	
SCR1	
T1	
E10	

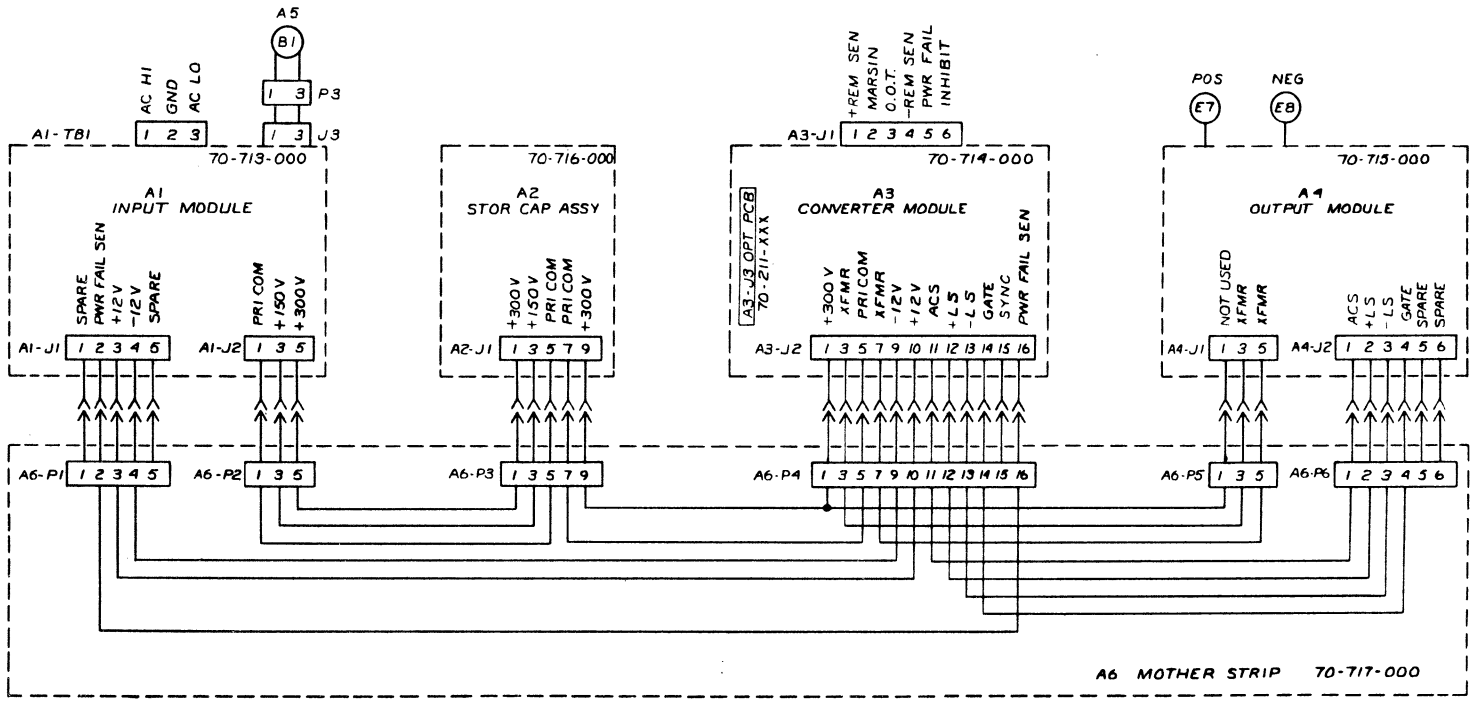
⚠1 12V BIAS CKT USED ON RSF102 CH 1 ONLY.

NOTES:

RSF102

70-757-704

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE	7-28-81	
	B	MOTHER STRIP DELETED CONNECTION BETWEEN A3-P2 5 & 7	7-9-81	
	C	REVISED A6 CONNECTOR DES	10-30-81	



QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO
LIST OF MATERIAL OR PARTS LIST				

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON
FRACTIONS ±1/32 ANGLES ±1/2°
DECIMALS .XX±.02 .XXX±.010
MATERIAL
FINISH
NEXT ASSY | USED ON
APPLICATION
FIRST USED ON 99109
RSF 501

DRAWN	E BRINER	9/14/81
CHECK	D RAMEY	9/17/81
MECH		
PROJ	R HANNON	9/17/81
PROJ	JMS	9/25/81
APPROVED		
APPROVED		

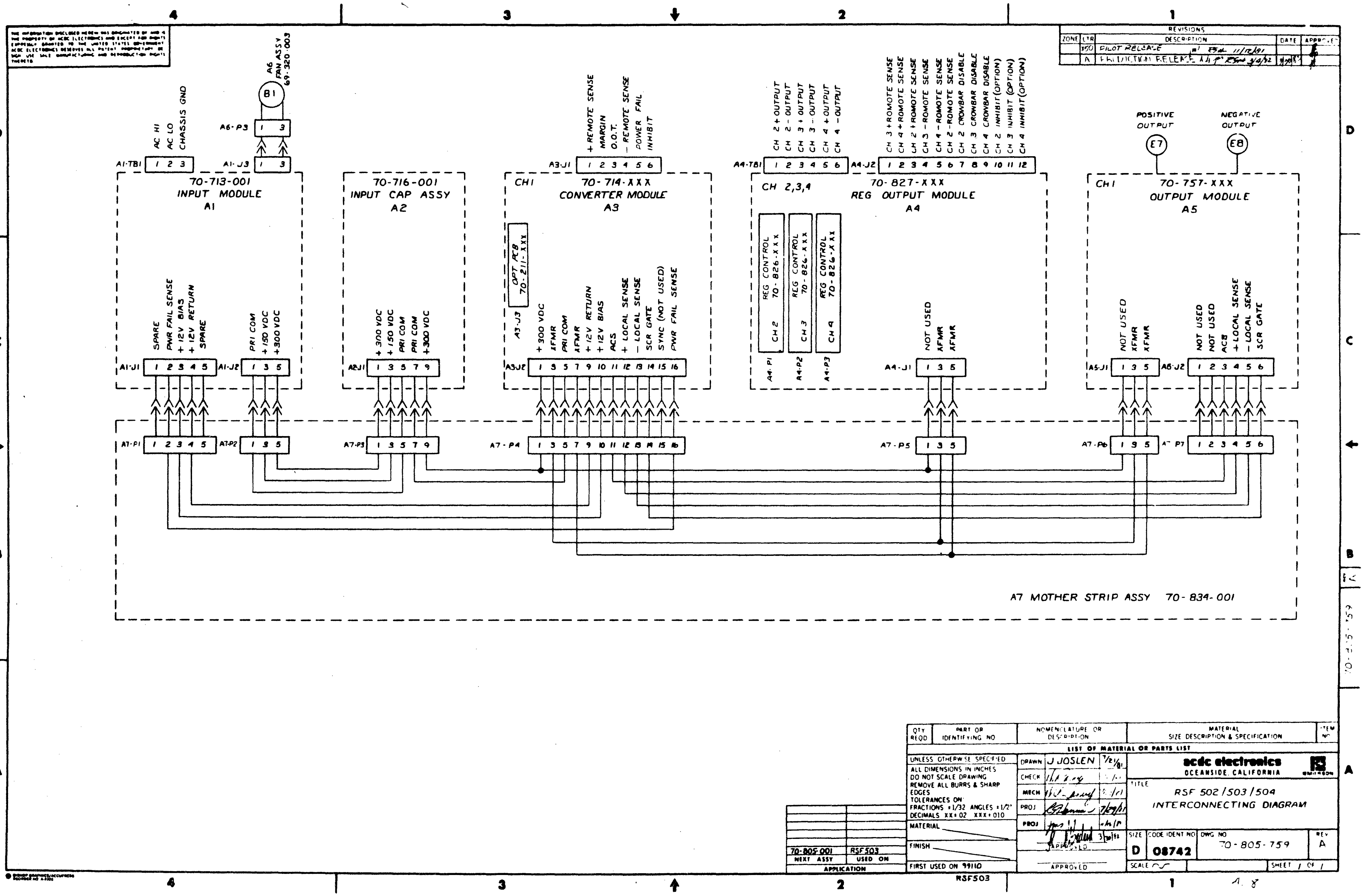
acdc electronics
OCEANSIDE, CALIFORNIA

TITLE
INTERCONNECT DIAGRAM - RSF 501 T/N 99109

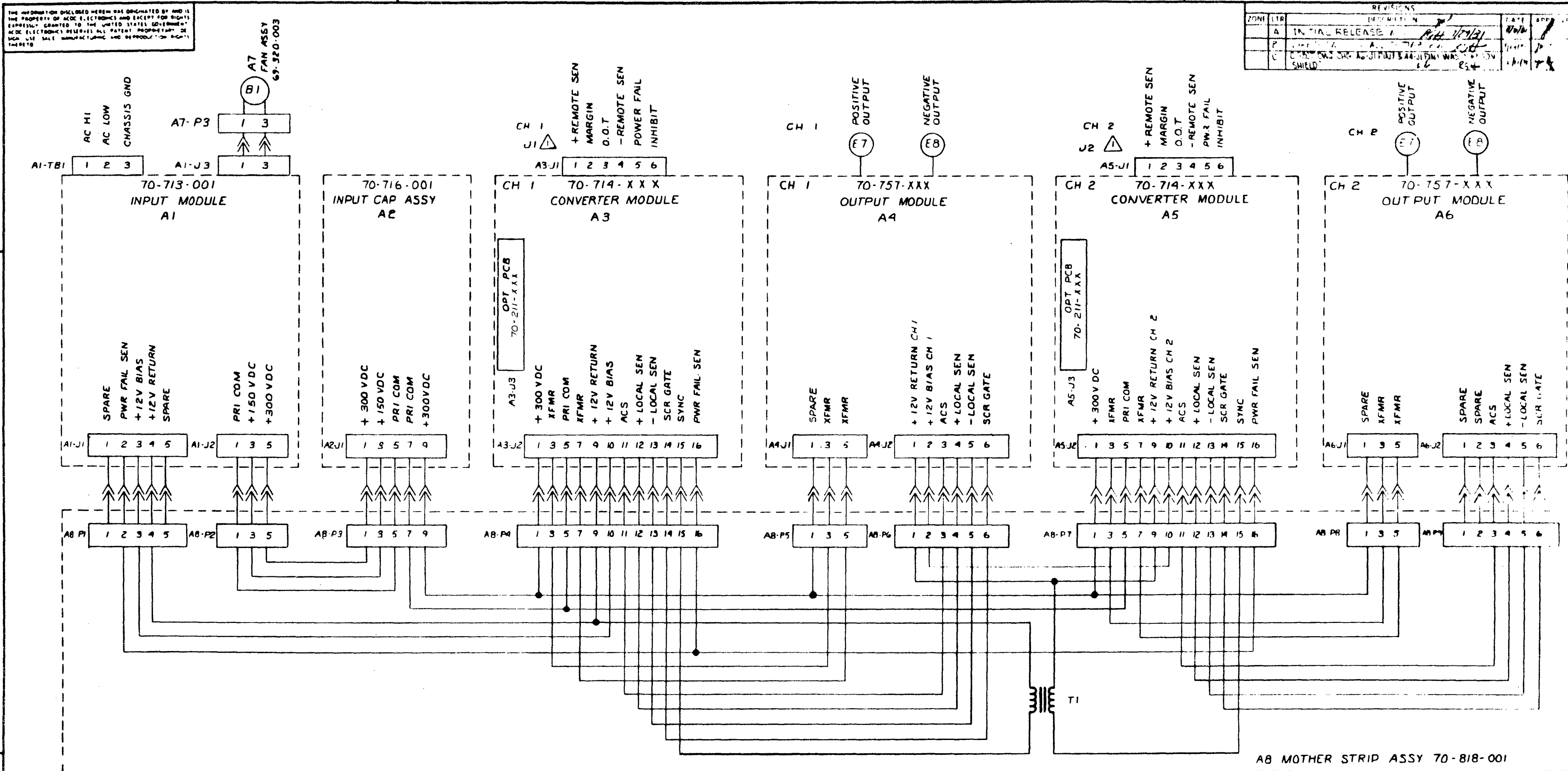
SIZE	CODE IDENT NO	DWG NO	REV
D	08742	70-795-759	C

SCALE ~ SHEET 1 OF 1

70-795-759



REVISIONS
ZONE LTR DESCRIPTION DATE APPROVED
X50 PILOT RELEASE 11/12/91
A PRODUCTION RELEASE 3/4/92
A6 FAN ASSY 69-320-003
B1
A6-P3 1 3
A1-J3 1 3
AC HI
AC LO
CHASSIS GND
A1-TB1 1 2 3
70-713-001
INPUT MODULE
A1
SPARE
PWR FAIL SENSE
+12V BIAS
+12V RETURN
SPARE
A1-J1 1 2 3 4 5
PRI COM
+150 VDC
+300 VDC
A1-J2 1 3 5
70-716-001
INPUT CAP ASSY
A2
+300 VDC
+150 VDC
PRI COM
PRI COM
+300 VDC
A2-J1 1 3 5 7 9
CH1
70-714-XXX
CONVERTER MODULE
A3
+REMOTE SENSE
MARGIN
O.O.T.
-REMOTE SENSE
POWER FAIL
INHIBIT
A3-J1 1 2 3 4 5 6
OPT PCB 70-211-XXX
A3-J3
+300 VDC
XFMR
PRI COM
XFMR
+12V RETURN
+12V BIAS
ACS
+LOCAL SENSE
-LOCAL SENSE
SCR GATE
SYNC (NOT USED)
PWR FAIL SENSE
A3-J2 1 3 5 7 9 10 11 12 13 14 15 16
CH 2,3,4
70-827-XXX
REG OUTPUT MODULE
A4
CH 2 +OUTPUT
CH 2 -OUTPUT
CH 3 +OUTPUT
CH 3 -OUTPUT
CH 4 +OUTPUT
CH 4 -OUTPUT
A4-TB1 1 2 3 4 5 6
CH 3 +ROMOTE SENSE
CH 4 +ROMOTE SENSE
CH 2 +ROMOTE SENSE
CH 3 -ROMOTE SENSE
CH 4 -ROMOTE SENSE
CH 2 -ROMOTE SENSE
CH 2 CROWBAR DISABLE
CH 3 CROWBAR DISABLE
CH 4 CROWBAR DISABLE
CH 2 INHIBIT (OPTION)
CH 3 INHIBIT (OPTION)
CH 4 INHIBIT (OPTION)
A4-J2 1 2 3 4 5 6 7 8 9 10 11 12
REG CONTROL 70-826-XXX CH 2
REG CONTROL 70-826-XXX CH 3
REG CONTROL 70-826-XXX CH 4
A4-P1
A4-P2
A4-P3
NOT USED
XFMR
XFMR
A4-J1 1 3 5
POSITIVE OUTPUT
E7
NEGATIVE OUTPUT
E8
CH1
70-757-XXX
OUTPUT MODULE
A5
NOT USED
XFMR
XFMR
A5-J1 1 3 5
NOT USED
NOT USED
ACB
+LOCAL SENSE
-LOCAL SENSE
SCR GATE
A5-J2 1 2 3 4 5 6
A7-P1 1 2 3 4 5
A7-P2 1 3 5
A7-P3 1 3 5 7 9
A7-P4 1 3 5 7 9 10 11 12 13 14 15 16
A7-P5 1 3 5
A7-P6 1 3 5
A7-P7 1 2 3 4 5 6
A7 MOTHER STRIP ASSY 70-834-001
QTY REQD
PART OR IDENTIFYING NO
NOMENCLATURE OR DESCRIPTION
MATERIAL SIZE DESCRIPTION & SPECIFICATION
ITEM NO
LIST OF MATERIAL OR PARTS LIST
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS ±1/32 ANGLES ±1/2°
DECIMALS XX±.02 XXX±.010
MATERIAL
FINISH
FIRST USED ON 99110
DRAWN J JOSLEN 7/21/91
CHECK
MECH
PROJ
PROJ
APPROVED
APPROVED
acdc electronics
OCEANSIDE, CALIFORNIA
EMERSON
TITLE
RSF 502/503/504
INTERCONNECTING DIAGRAM
SIZE D
CODE IDENT NO 08742
DWG NO 70-805-759
REV A
SCALE
SHEET 1 OF 1
70-805-001 RSF503
NEXT ASSY USED ON
APPLICATION
RSF503



NOTES:

⚠ POWER SUPPLY FRONT PANEL IS LABLED J1 & J2 TO DIFFERENTIATE CHANNELS FOR CUSTOMER INTERFACE.

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON
FRACTIONS ±1/32 ANGLES ±1/2°
DECIMALS .XX ±.02 .XXX ±.010
MATERIAL
FINISH
FIRST USED ON 99102

DRAWN J JOSLEN 9/20/81
CHECK
MECH
PROJ
APPROVED

acdc electronics
OCEANSIDE, CALIFORNIA

TITLE
INTERCONNECTING DIAGRAM
RSF102

SIZE	CODE IDENT NO	DWG NO
D	08742	70-756-759

SCALE — SHEET 1 OF 1

NEXT ASSY	USED ON
70-756-001	RSF102

APPLICATION

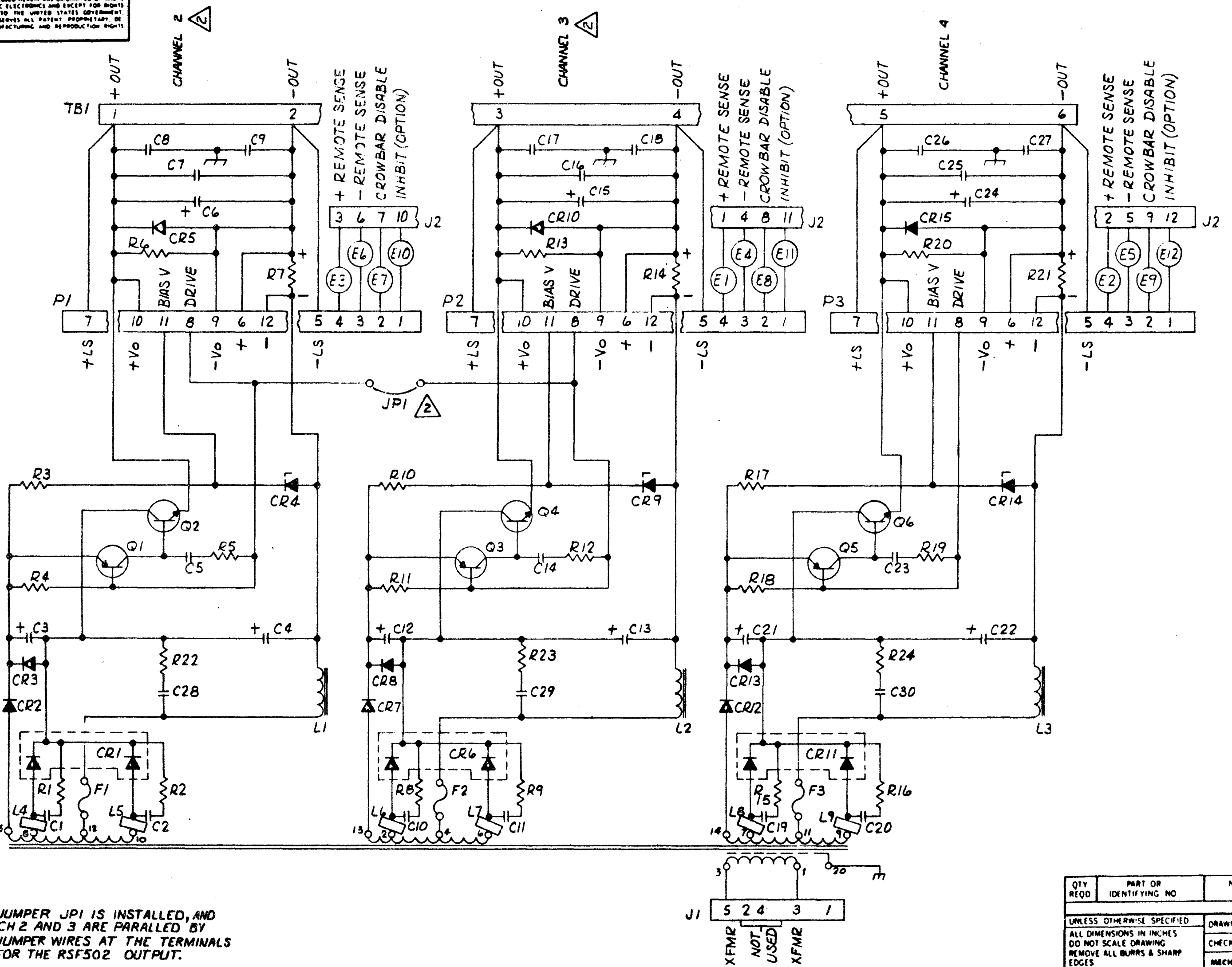
RSF102

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPD
	A	INITIAL RELEASE		
	B	[illegible]		
	C	[illegible] SHIELD		

70-756-759

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PRODUCTION RELEASE (SAME AS 35C...)		



2 JUMPER JP1 IS INSTALLED, AND CH 2 AND 3 ARE PARALLED BY JUMPER WIRES AT THE TERMINALS FOR THE RSF502 OUTPUT.

1. REF. DOCUMENTS:
   - 70-827-000 ASSY DWG
   - 70-827-XXX L/M
   - 70-827-702 FAB DWG

NOTES:

REF. DESIGNATIONS	
LAST USED	NOT USED
C30, CR15, J2, L9, JP1, Q6, Q6, P3, R24, T1, E12, F3	

NEXT ASSY	USED ON
70-827-001	9908,110,111

APPLICATION

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO.

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS ±1/32 ANGLES ±1/2°
DECIMALS XX±.02 XXX±.010
MATERIAL —
FINISH —
FIRST USED ON 99108

DRAWN 7/13/81
CHECK 3/22/82
MECH 3/22/82
PROJ
PROJ
APPROVED

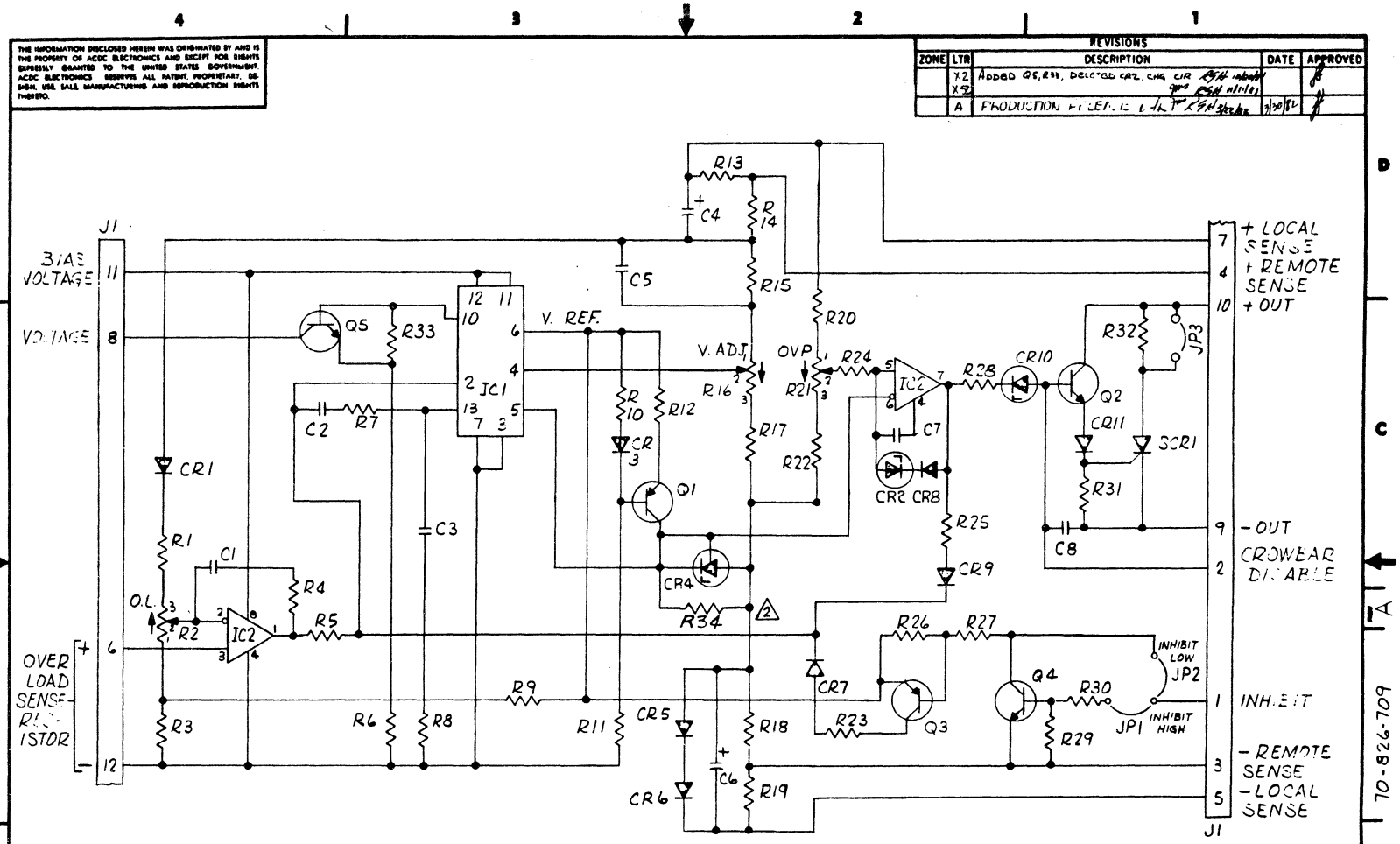
acdc electronics
OCEANSIDE, CALIFORNIA

TITLE SCHEMATIC, REGULATED OUTPUT, RSF502, 503, 504

SIZE	CODE IDENT NO	DWG NO.	REV
D	08742	70-827-709	A

SCALE NONE SHEET 1 OF 1

RSF 502-504



ZONE	LTR	REVISIONS DESCRIPTION	DATE	APPROVED
	X2 X52	ADDED Q5, R33, DELETED CR2, CHG CIR		
	A	PRODUCTION RELEASE	3/30/81	

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QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE, DESCRIPTION & SPECIFICATION	ITEM NO.

LIST OF MATERIAL OR PARTS LIST

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DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS: ±1/32 ANGLES: ±1/2°
DECIMALS: .XX±.02 .XXX±.010
MATERIAL
FINISH
FIRST USED ON 99108

DRAWN		7/27/81
CHECK		3/4/82
ENGR		7/28/81
PROJ		11/28/81
APPR		4/6/82
	APPROVED	3/30/82
	APPROVED	

acdc electronics
OCEANSIDE, CALIFORNIA
EMERSON

TITLE: SCHEMATIC, REGULATOR CONTROL RSF 502/503/504

SIZE	CODE IDENT NO.	DWG. NO.	REV
C	08742	70-826-709	A

SCALE | SHEET 1 OF 1

REF DESIGNATIONS LAST USED	NOT USED
C8, CR11, IC2, JP3, J1 Q5, R34 SCR1	

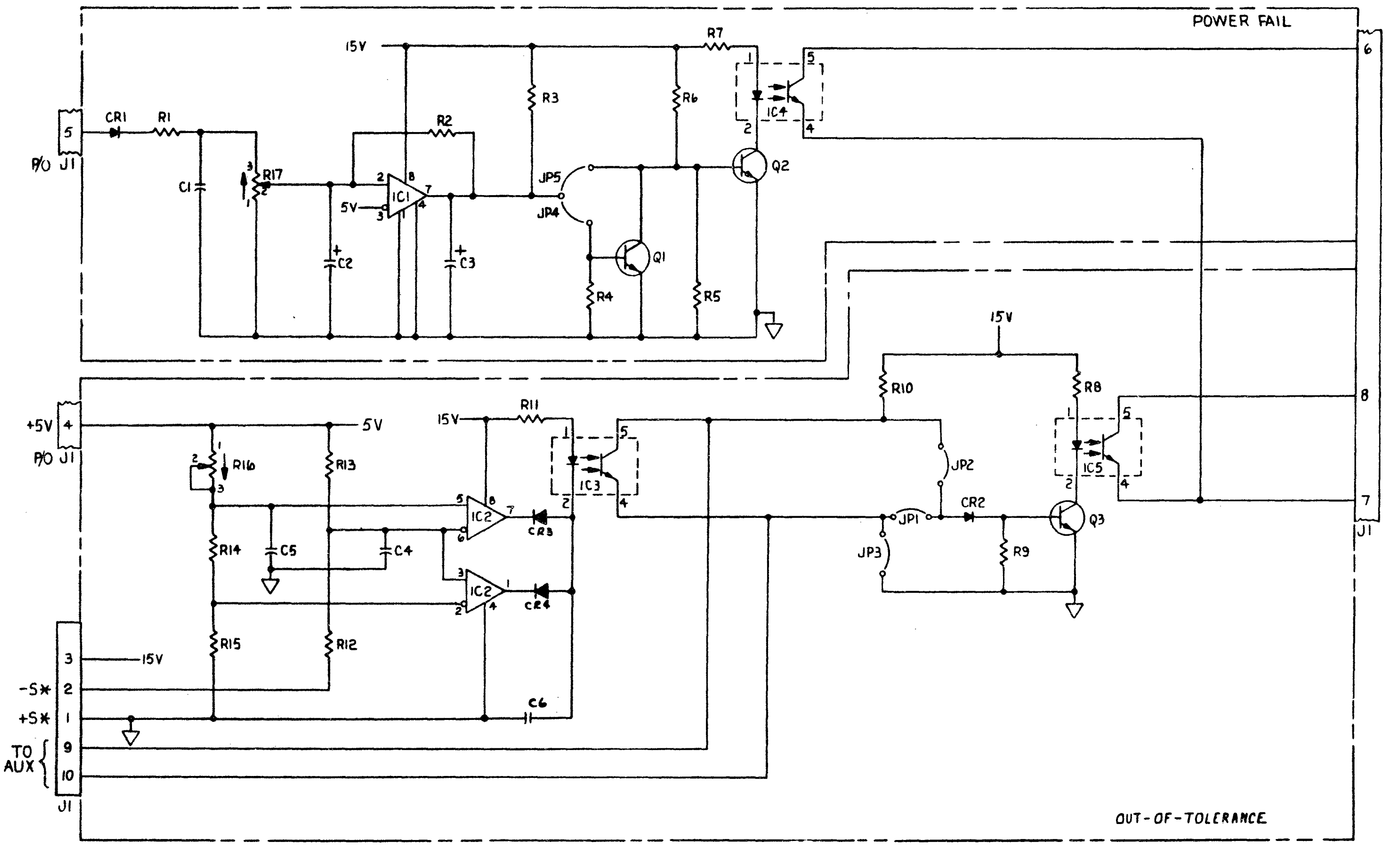
⚠2 R34 INSTALLED ON 4V ASSY ONLY AND CR4 IS OMITTED.

1. REF DOCUMENTS:
   70-826-000 ASSY DWG
   70-826-XXX L/M
   70-826-702 FAB DWG

NOTES:

RSF5xx

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPR
	A	INITIAL RELEASE E.B.	[illegible]	[illegible]
	A1	ADDED POLARITY TO C2,C3 5-14-81	[illegible]	[illegible]



JP	FUNCTION
JP1	OUT-OF-TOLERANCE (LOGIC "0")
JP2,3	OUT-OF-TOLERANCE (LOGIC "1")
JP4	PWR FAIL STD
JP5	PWR FAIL SPCL

REF DES LAST USED	REF DES NOT USED
CR4	
C6	
IC5	
JP5	
P1	
Q3	
R17	

NEXT ASSY	USED ON
69-006-XXX	99037
69-000-XXX	99041
69-006-XXX	99042

APPLICATION

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE, DESCRIPTION & SPECIFICATION	ITEM NO

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON:
FRACTIONS ±1/32 ANGLES ±1/2°
DECIMALS: .XX±.02 .XXX±.010

MATERIAL —

FINISH —

FIRST USED ON 99037

DRAWN	[illegible]	1/3/80
CHECK		
MECH		
PROJ	[illegible]	[illegible]
PROJ	[illegible]	[illegible]

APPROVED

APPROVED

acdc electronics
OCEANSIDE, CALIFORNIA

TITLE SCHEMATIC, OPTION PCB - POWER FAIL / OUT-OF-TOLERANCE

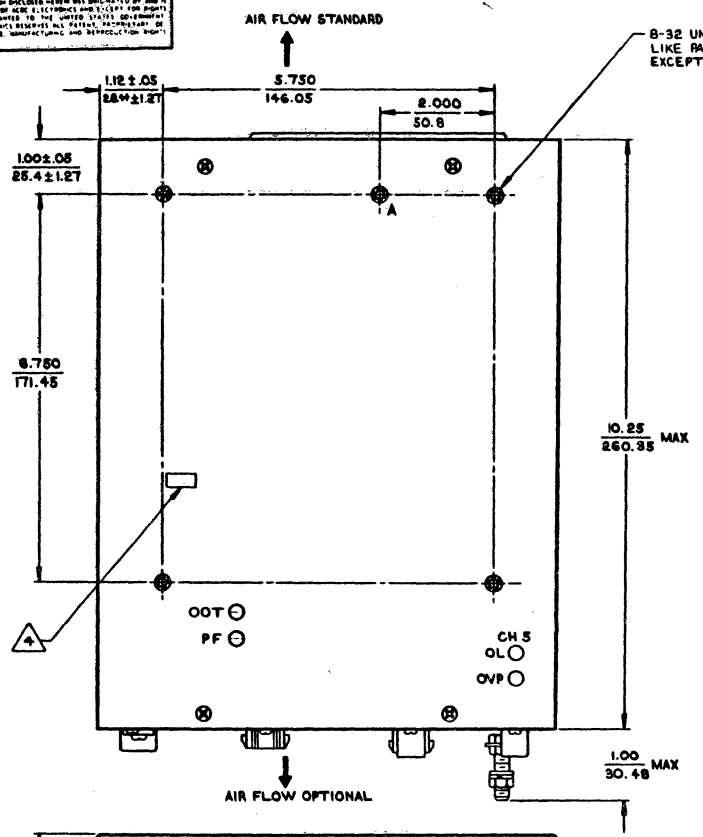
SIZE	CODE IDENT NO	DWG NO.	REV
D	08742	70-211-709	A1

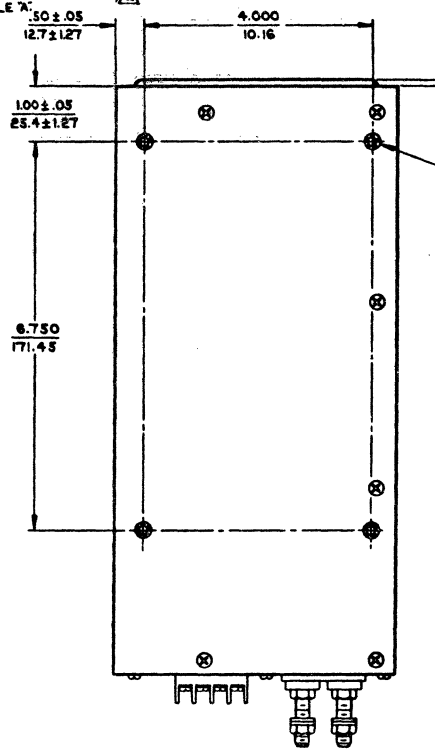
SCALE ~ SHEET 1 OF 1

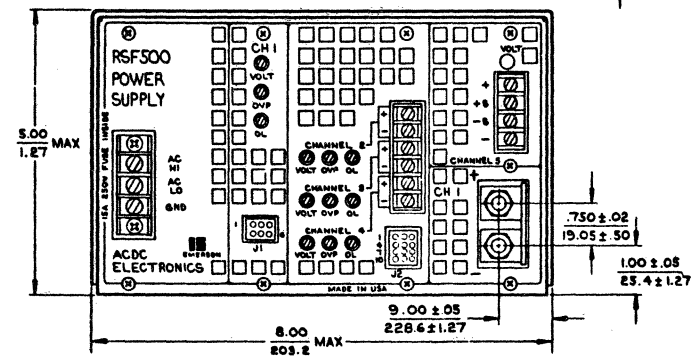
RE 754

70-211-709

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE BH 7/7/82 D.C. B.H.		







OUTPUT CONTROLS						
CH 1		CH 2	CH 3	CH 4	CH 5	FUNCTION
PIN	FUNCTION	PIN	PIN	PIN	PIN	
J1-1	+ REM SEN	J2-3	J2-1	J2-2	J2-7 *	+ REM SEN
J1-2	MARGIN ± 5%	J2-6	J2-4	J2-5	J2-10 *	- REM SEN
J1-3	OUTPUT OUT-OF-TOLERANCE					
J1-4	- REM SEN					
J1-5	POWERFAIL					
J1-6	INHIBIT					

* OPTION ONLY (SEE NOTE 2.4)

NOTES:

1. MOUNTING DATA:
   - 1.1 CHASSIS MATERIAL: ZINC PLATED C.R.S.
   - 1.2 MOUNTING PROVISIONS: (17) 8-32 THREADED INSERTS. MAX TORQUE: 15 IN-LB; SCREW PENETRATION: 0.22 MAXIMUM.
   - 1.3 WEIGHT: 15.5 LBS MAX., 15 LBS TYPICAL.
2. ELECTRICAL TERMINATIONS:
   - 2.1 INPUT: BARRIER STRIP WITH (3) 6-32 × 1/4 BH SCREWS.
   - 2.2 MAIN OUTPUT (CH 1): (2) 1/4-20 UNC-2A STUDS, HEX NUT WASHER AND LOCK WASHER PROVIDED. MAX TORQUE: 60 IN-LB.
   - 2.3 AUXILIARY OUTPUTS (CH 2,3,4,5): BARRIER STRIP WITH (8) 6-32 × 1/4 BH SCREWS.
   - 2.4 J1 CONTROLS CH 1; J2 CONTROLS CH 2 THROUGH CH 4. ± REMOTE SENSE, CH 5, IS ON A BARRIER STRIP WITH (2) 6-32 × 1/4 BH SCREWS, OR AS AN OPTION ON J2, PINS 7,10.
   - 2.5 CONNECTOR J1: 6 POSITION MOLEX NO. 03-06-1061; MATES WITH MOLEX NO. 09-06-2061.
   - 2.6 CONNECTOR J2: 12 POSITION MOLEX NO. 03-06-1121; MATES WITH MOLEX NO. 03-06-2122.
3. ADJUSTMENT ACCESS (FRONT PANEL AND TOP COVER): EXTERNAL ACCESS FOR VOLTAGE ADJUSTMENT IS FROM FRONT PANEL; OVERLOAD AND O.V.P ARE FACTORY SET.
   - 3.1 EACH OUTPUT IS INDEPENDENTLY ADJUSTED.
   - 3.2 ALL OUTPUTS ARE AUTOMATICALLY ON "LOCAL" SENSE UNLESS THE REMOTE SENSE LINES ARE CONNECTED.
   - 3.3 CHANNEL 1 ONLY ± 5% MARGIN: CONNECT J1-2 TO J1-1 FOR +5% MARGIN AND CONNECT J1-2 TO J1-4 FOR -5% MARGIN.
   - 3.4 FOR INHIBIT: APPLY +2V TO +5VDC TO J1-6 WITH RESPECT TO THE NEGATIVE OUTPUT STUD (CH 1).
4. INPUT VOLTAGE SELECTOR SWITCH: 115/230 VAC 47-63 HZ. CAUTION; NEVER MOVE SELECTOR SWITCH WITH AC POWER APPLIED TO THE UNIT.

NEXT ASSY	USED ON
APPLICATION	

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO
LIST OF MATERIAL OR PARTS LIST				

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON FRACTIONS ± 1/32 ANGLES ± 1/2° DECIMALS .XX ± .02 .XXX ± .010
MATERIAL
FINISH
FIRST USED ON 99149

DRAWN	E. CREENCIA	8-13-82
CHECK		
MECH		
PROJ		9/22/82
PROJ		10/1/82
APPROVED		
APPROVED		

acdc electronics
OCEANSIDE CALIFORNIA

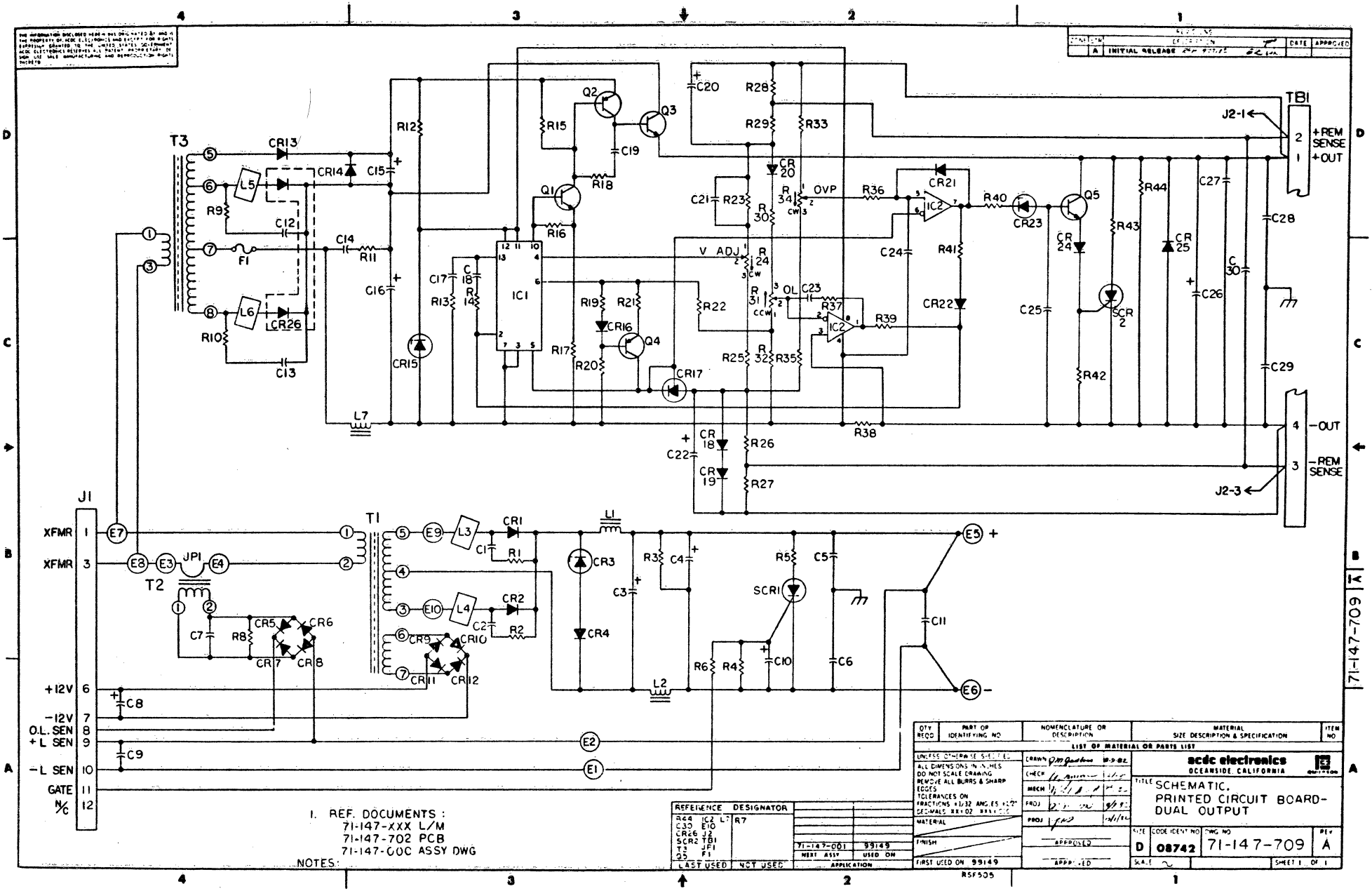
TITLE: OUTLINE, POWER SUPPLY - RSF505

SIZE	CODE IDENT NO	DWG NO	REV
D	08742	71-142-720	A

SCALE NONE | SHEET 1 OF 1

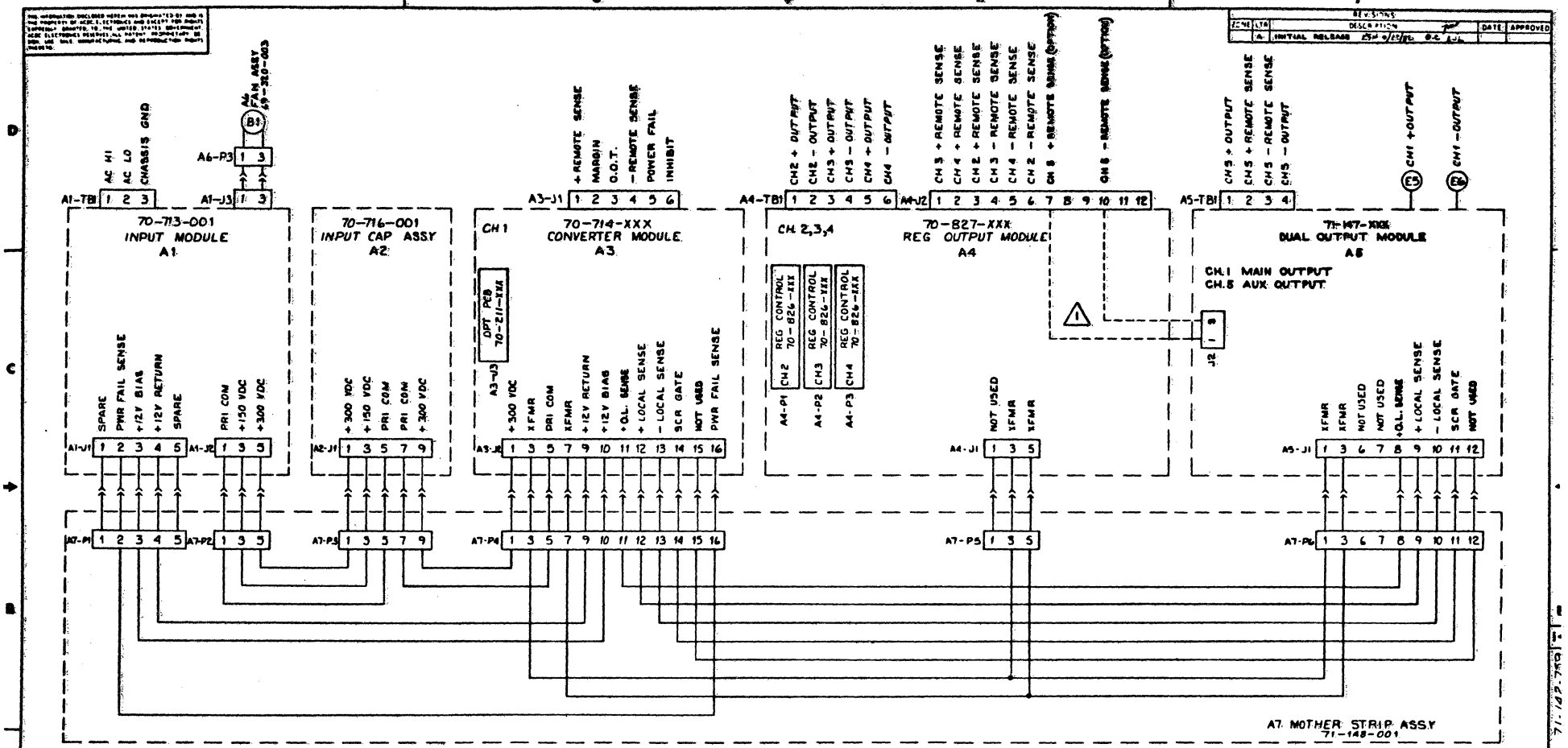
RSF505

71-142-720



1. REF. DOCUMENTS :
   71-147-XXX L/M
   71-147-702 PCB
   71-147-00C ASSY DWG

NOTES:



⚠1 KIT ASSY, REMOTE SENSE, 71-161-000 (OPTION).

NOTES:

ZONE	LTR	REVISIONS DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE		

QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SIZE DESCRIPTION & SPECIFICATION	ITEM NO

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN INCHES
DO NOT SCALE DRAWING
REMOVE ALL BURRS & SHARP EDGES
TOLERANCES ON FRACTIONS ±1/32 ANGLES ±1/2° DECIMALS .XX ±.02 .XXX ±.010
MATERIAL
FINISH
NEXT ASSY | USED ON
APPLICATION
DO NOT SCALE DRAWING

Drawn W DEWEY 8 2-82
CHECK
ENGR
PROJ
PROJ

APPROVED
APPROVED

acdc electronics
OCEANSIDE, CALIFORNIA

TITLE
INTERCONNECT DIAGRAM, POWER SUPPLY — RSF505

SIZE	CODE IDENT NO	DWG NO	REV
D	08742	71-142-759	A

SCALE — SHEET 1 OF 1

RSF505

71-142-759