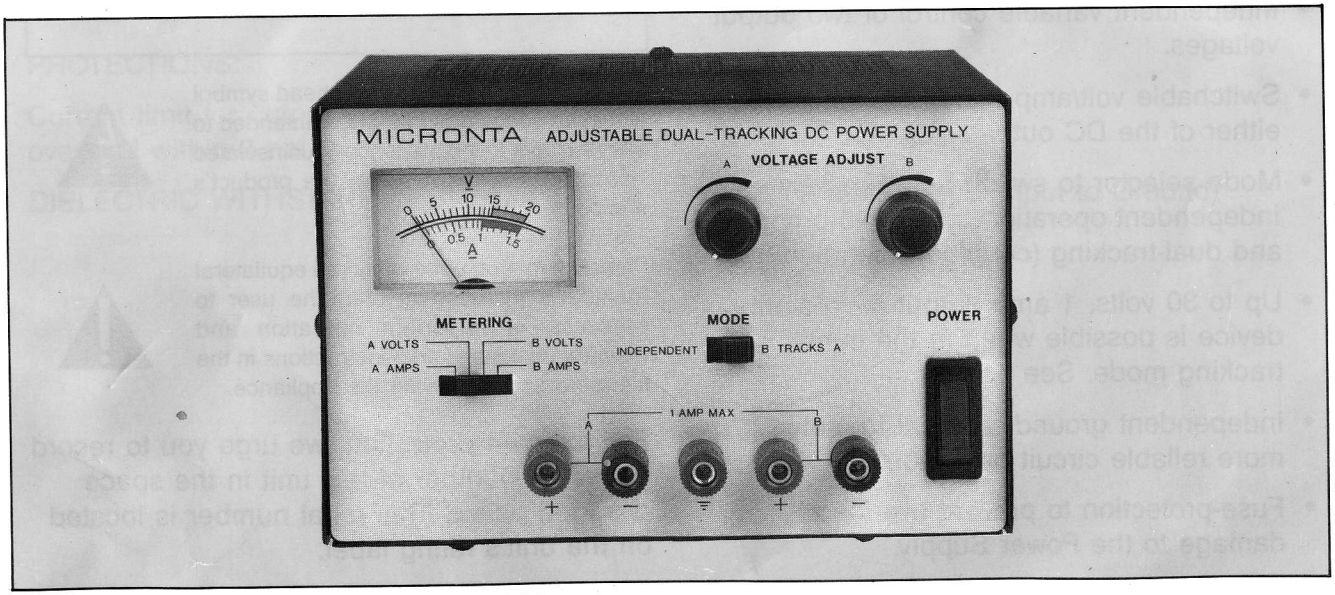
OWNER'S MANUAL

Cat. No. 22-121

ADJUSTABLE DUAL-TRACKING DC POWER SUPPLY

PLEASE READ BEFORE USING THIS EQUIPMENT



MICRONTA®

FEATURES

Your Micronta® Adjustable Dual-Tracking DC Power Supply is ideal for the hobbyist or professional electronics technician. Two 0 – 15 volt power supplies may be operated independently or in a master/slave fashion to power circuitry with simple or very demanding voltage requirements. Here are a few of the features that qualify your new Power Supply as a real "pro."

- Independent variable control of two output voltages.
- Switchable volt/amp meter for monitoring of either of the DC outputs.
- Mode selector to switch between fully independent operation of the two outputs and dual-tracking (coupled) operation.
- Up to 30 volts, 1 amp output for a single device is possible when in the dual-tracking mode. See page 8.
- Independent ground terminal for safer, more reliable circuit operation.
- Fuse-protection to prevent overload damage to the Power Supply.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure.

The exclamation point within an equilateral triangle is intended to alert the user to presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

For you own protection, we urge you to record the serial number of this unit in the space provided below. The serial number is located on the unit's rating label.

Serial Number_____

SPECIFICATIONS

Input voltage : 120VAC (or 240 VAC available only in Australia/UK)
Input Frequency : 60Hz (or 50 Hz available only in Australia/UK)
Output Voltage : 0–15VDC
Ripple (RMS) (each) : 0mV
Maximum Output Current : 1A for each output
Line Regulation (each) : 0V
Load Regulation (each) : 0V
Dimensions : 6-3/4"×6-11/16"×4-1/2"
172(W)×170(D)×115(H)mm
Weight : 7.81LBS (3.55KGS)

PROTECTIONS:

Current limit for output short or
overload within 3 hours.

DIELECTRIC WITHSTAND TEST (HI–POT): AC 1.5KV 10mA 1 sec (Input to Ground)

CONTROLS AND FUNCTIONS

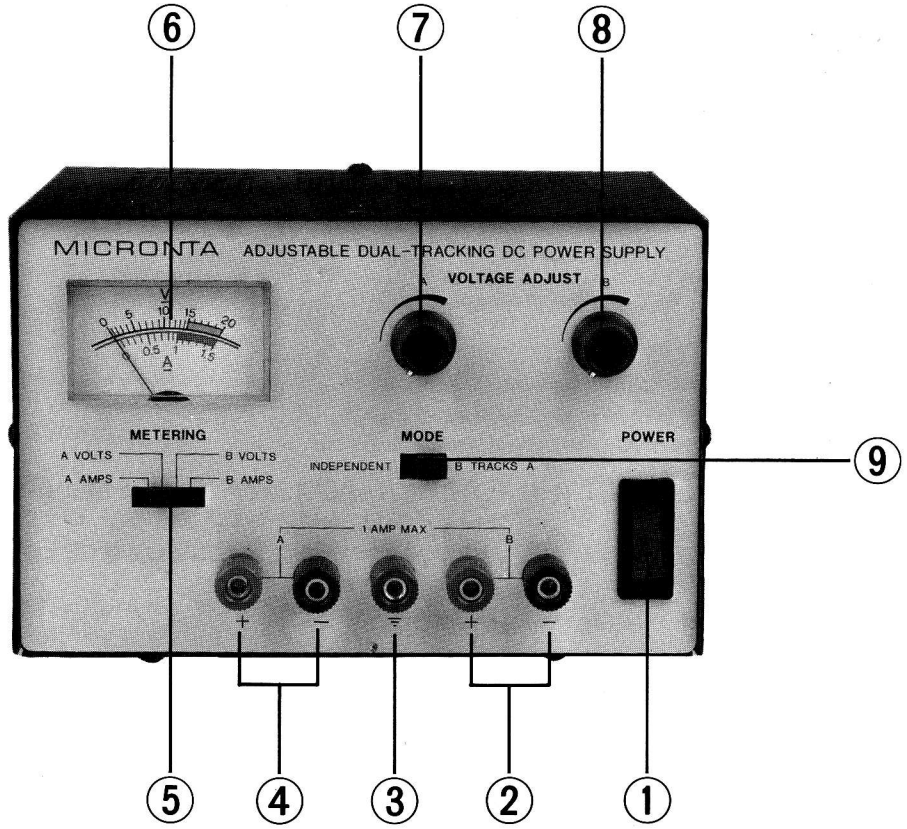


Fig. 1

1. POWER Switch
Push up to turn the Power Supply on -- the switch will light. Push down to turn the Power Supply off.

2. B-Output Terminals (+/–)
Connect to a circuit that requires 0 to 15 volts and less than 1 amp DC power.

Note: The maximum current drain of each output must not exceed 1 amp.

3. Front Panel Ground Terminal
Connect to ground of the circuit as shown on page 12.

4. A-Output Terminals (+/–)
Connect to a circuit that requires 0 to 15 volts and less than 1 amp DC power.

Note: The maximum current drain of each output must not exceed 1 amp.

5. METERING Switch
Use to select the function of the output meter. You may monitor voltage or amperage of the A or B output by choosing the appropriate switch setting.

6. Output Meter
Use to read the output voltage or amperage as selected by the METERING switch.

7. VOLTAGE ADJUST Control (A)
When the MODE switch is set to INDEPENDENT, use to adjust the voltage from the A outputs terminals. When the MODE switch is set to B-TRACKS-A, this control adjusts both outputs to the same voltage.

8. VOLTAGE ADJUST Control (B)
When the MODE switch is set to INDEPENDENT, use to adjust the voltage from the B-outputs terminals. When the MODE switch is set to B-TRACKS-A, this control has no effect.

9. MODE Switch (INDEPENDENT/ B-TRACKS-A)
Set to INDEPENDENT to adjust the two outputs separately. Set to B-TRACKS-A to adjust the two outputs for the same voltage using the A VOLTAGE ADJUST control.

CAUTION: Your Micronta Adjustable Dual-Tracking DC Power Supply is designed to deliver up to 15 volts from each output and maximum 1 amp for each output. It will withstand short-term accidental overloads or shorting and is fuse protected. However, repeated, long-term misuse of the unit could result in permanent damage.

OPERATION

Using the Power Supply to Power One Device or Two Devices with Different Voltage Requirements (Fig. 2)

1. Plug the Power Supply AC cord into a standard AC outlet -- 120 volts, 60 Hz. (or 240 volts 50 Hz available in Australia/UK)

2. Push the POWER switch up so that the switch lights.

3. Set the MODE switch to INDEPENDENT.

4. Set the METERING switch to A VOLTS.

5. Adjust the A VOLTAGE ADJUST control so that the meter needle indicates the correct voltage for the device you wish to power.

6. Connect the device to the A output terminals (+/–), taking care to observe correct polarity. See "Proper System Grounding" on page 12.

7. Move the METERING switch to the A AMPS position and confirm that the current is at or below the 1-amp limit of the power supply. If the reading is greater than 1 amp, the device should not be operated using this Power Supply. Turn off the Power Supply and disconnect the device.

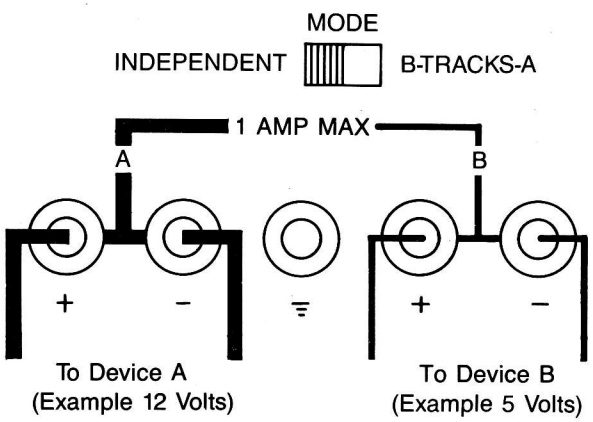


Fig. 2

8. In order to power a second device that requires a different voltage, repeat steps 4 – 6 using the B VOLTS and B AMPS settings of the METERING switch -- also use the B VOLTAGE ADJUST control and the B output terminals.

Caution: When powering two devices at the same time, the maximum of each output current readings must not exceed the 1-amp limit of this POWER supply.

Using the Power Supply to Power Two Devices with the Same Voltage Requirements (Fig. 3)

1. Plug the Power Supply AC cord into a standard AC outlet -- 120 volts, 60 Hz. (or 240 volts 50 Hz available in Australia/UK)

2. Push the POWER switch up so that the switch lights.

3. Set the MODE switch to B-TRACKS-A.

4. Set the METERING switch to A VOLTS.

5. Adjust the A VOLTAGE ADJUST control so that the meter needle indicates the correct voltage for the devices you wish to power.

6. When setting the MODE switch to B-TRACKS-A, the negative terminal of the A output and the positive terminal of the B output are connected internally. Devices A and B can not be connected to the Power Supply independently. You must connect the positive (+) terminal of A output to the positive (+) terminal of Device A and connect the negative (–) terminal of B output to the negative (–) terminal of Device B. Then, connect either the negative (–) terminal of A output or the positive (+) teminal of B output to the negative (–) terminal of Device A and to the positive (+) terminal of Device B. (Fig. 3)

7. Move the METERING switch to the A AMPS position and note the reading. Then move the METERING switch to the B AMPS position and confirm that the maximum of each output current reading is at or below the 1-amp limit of the power supply. If the maximum of each output current reading is greater than 1 amp, both devices should not be operated using this Power Supply. Turn off the Power Supply.

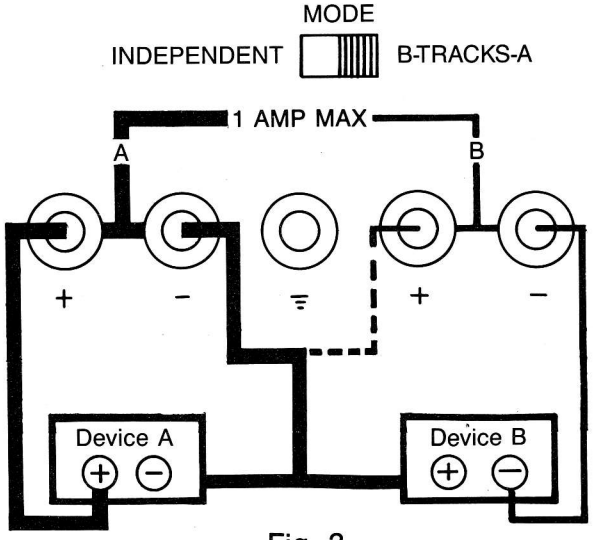


Fig. 3

Connecting the A and B Outputs in Series for Up To 30 Volts (Fig. 4)

A single device may be powered up to 30 volts, 1 amp by connecting the two outputs in series as described below. However, follow these instructions carefully to avoid over load damage to the Power Supply.

1. Plug the Power Supply AC cord into a standard AC outlet -- 120 volts, 60 Hz. (or 240 volts 50 Hz available in Australia/UK)

2. Push the POWER switch up so that the switch lights.

3. Set the MODE switch to B-TRACKS-A.

4. Set the METERING switch to A VOLTS.

5. Adjust the A VOLTAGE ADJUST control so that the meter needle indicates one half of the necessary voltage for the device you wish to power. For example if the device requires 30 volts, set the meter for 15 volts.

6. Connect the positive terminal of the A output to the positive terminal of the device you wish to power.

7. Connect the negative terminal of the B output to the negative terminal of the deivce you wish to power. See "Proper System Grounding" on page 12.

8. Move the METERING switch to the A AMPS position and confirm that the current is at or below 1 amp. If the reading is greater than 1 amp, the device should not be operated using this Power Supply. Turn off the Power Supply and disconnect the device.

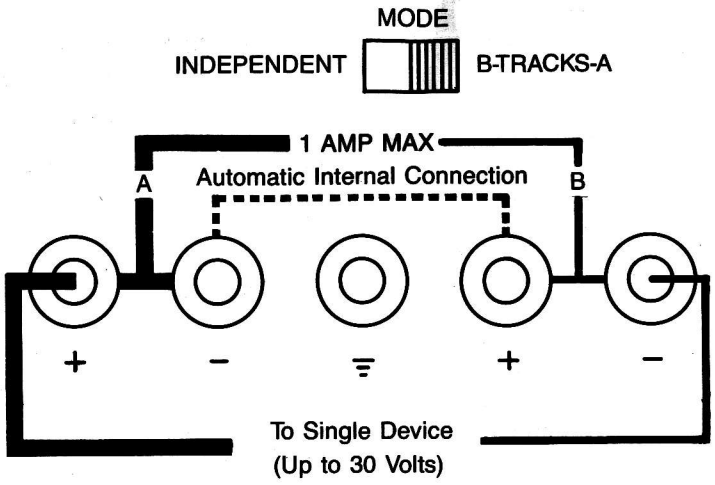

MODE
INDEPENDENT
B-TRACKS-A
1 AMP MAX
Automatic Internal Connection
A
B
+
−
+
−
To Single Device
(Up to 30 Volts)

Fig. 4

Using the Power Supply to Power One Device with Split Voltage Requirements (Fig. 5)

This connection and procedure is used to provide power to two parts of a single device that have opposite reference to ground (+ and –).

1. Plug the Power Supply AC cord into a standard AC outlet -- 120 volts, 60 Hz. (or 240 volts 50 Hz available in Australia/UK)

2. Push the POWER switch up so that the switch lights.

3. Set the MODE switch to B-TRACKS-A.

4. Set the METERING switch to A VOLTS.

5. Adjust the A VOLTAGE ADJUST control so that the meter needle indicates the correct voltage for the device you wish to power. Push the POWER switch down to turn the power off.

6. Install a jumper wire from the negative (–) terminal of the A output to the ground terminal.

7. Connect a jumper wire from the positive terminal of the B output to the GND.

8. Connect the negative (–) terminal of the B output to the negative connection of the circuit.

9. Connect the positive (+) terminal of the A output to the positive connection of the circuit.

10. Connect the circuit's common ground to the ground terminal. Push the POWER switch up to turn the power on.

11. Move the METERING switch to the A AMPS position and observe the current reading. Then move the METERING switch to the B AMPS position and observe the current reading. The maximum of each output current reading must be equal to or less than 1 amp. If the maximum current is greater than 1 amp, turn off the Power Supply and disconnect the device.

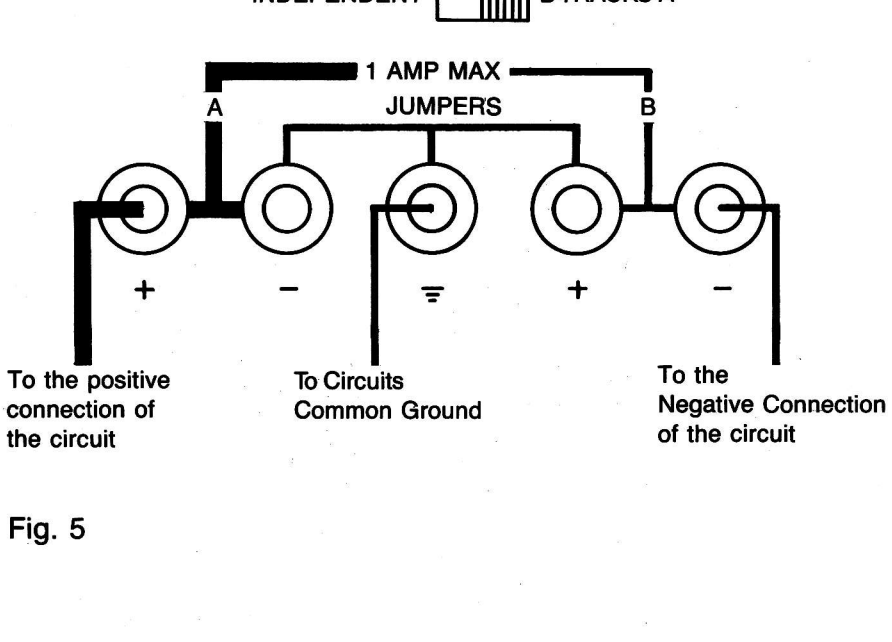

MODE
INDEPENDENT
B-TRACKS-A
1 AMP MAX
JUMPERS
A
B
+
−
+
−
To the positive connection of the circuit
To Circuits Common Ground
To the Negative Connection of the circuit

Fig. 5

Proper System Grounding (Fig. 6, 7, 8)

You may ground the circuit(s) powered by the Power Supply by connecting jumper wires between the output terminals and the front-panel ground terminal, as shown in Fig. 6,7,8.

There is a ground terminal under the AC cord on the back of cabinet. This terminal is used to transmit the overload to the ground. Unscrewing this terminal will defeat its function. Do not move it.

Independent Mode
One Device-Negative Ground

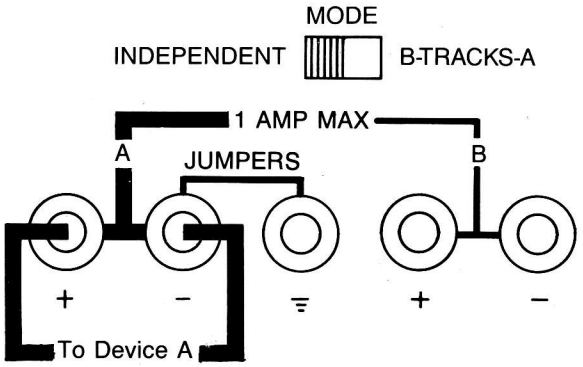


Fig. 6

Independent Mode
Two Devices-Negative Ground

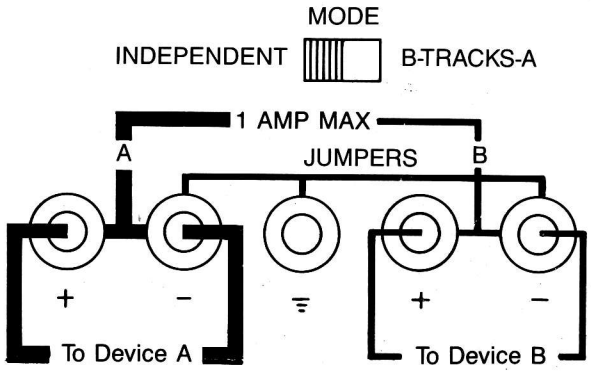


Fig. 7

B-TRACKS-A Mode
One Device-Split Ground Reference

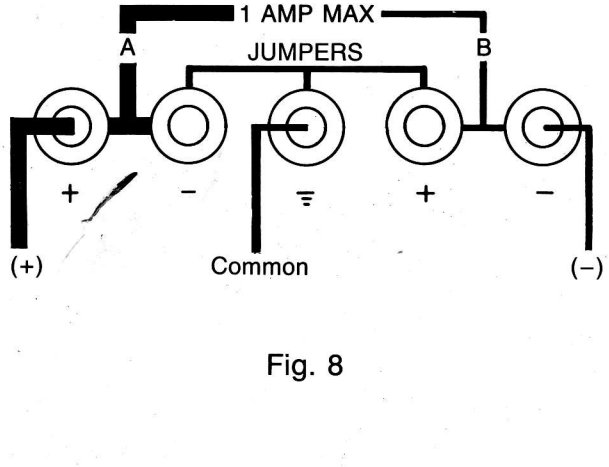


Fig. 8

Fuse Replacement

Your Micronta® Power Supply is fuse-protected against overload. If the unit stops working suddenly, an overload probably caused the fuse to "blow." Replace the blown fuse with a new 1 amp, 250 volt fuse (Radio Shack Cat. No. 270-1273), as described below.
(For Australian/UK model use 0.5 amp, 250 volt fuse)

1. Unplug the Power Supply AC cord from the wall socket.

2. While pushing in firmly on the fuse cap, turn it counter-clockwise -- remove the cap.

3. Remove the old fuse from the cap and insert a new fuse.

Caution: Use only a 1 amp, 250 volts fuse as a replacement.
(for Australian/UK model use 0.5 amp, 250 volt fuse)

4. Insert the fuse-cap assembly into the fuse holder so that the two pins on the sides of the fuse cap fit into the corresponding notches in the fuse holder.

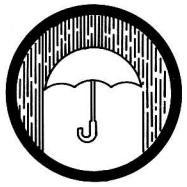
5. While pushing in firmly on the cap, turn it clockwise until it locks into place.

MAINTENANCE

Your Power Supply represents a fine example of electronic engineering and construction. As such it should be treated accordingly. We offer the following suggestions so you will enjoy this product for many years to come.

If at any time you suspect that your unit is not performing as it should, stop by your local Radio Shack store. Our personnel are there to assist you and arrange for service, if needed.

Keep it dry. If water should get on it, wipe it off immediately. Water contains minerals that can corrode electronic circuits.



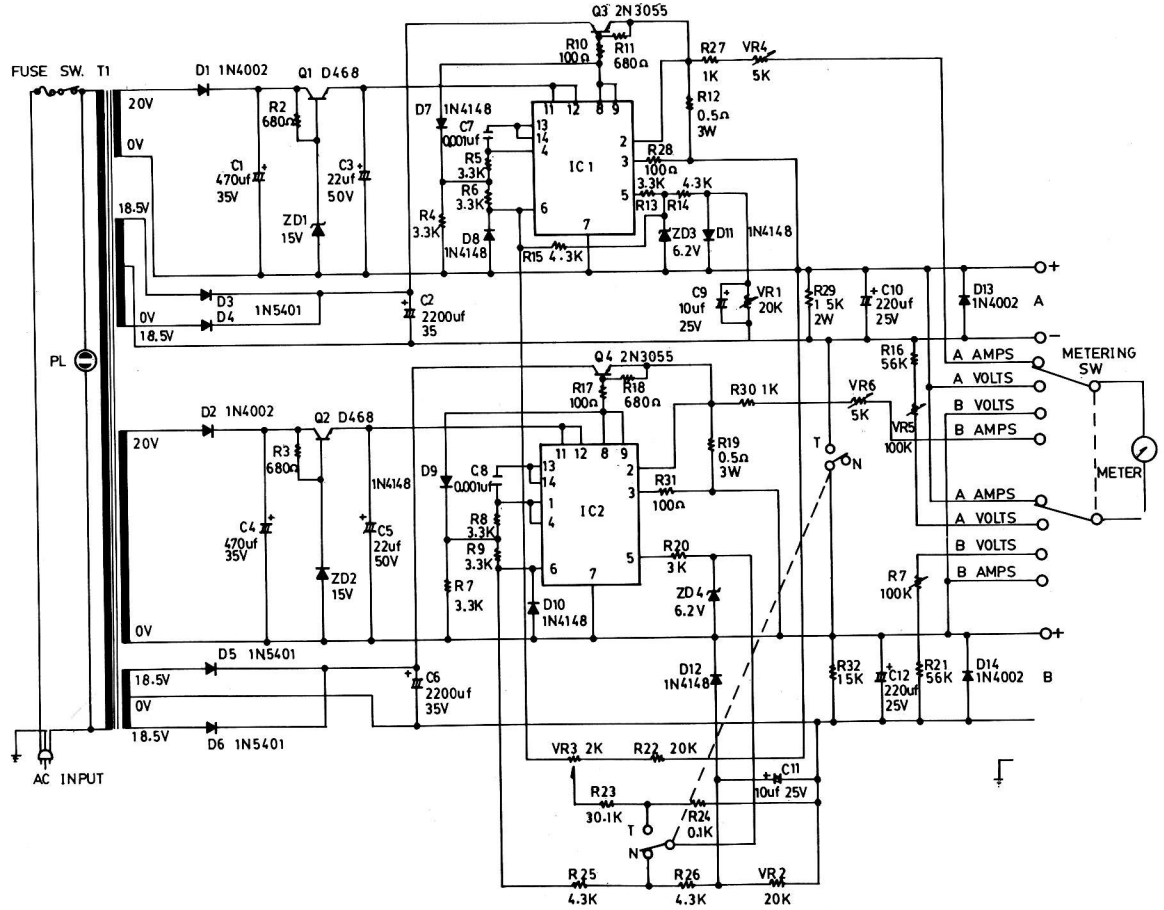
Do not store in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and can even distort or melt certain plastics.

Do not drop your product. This will likely result in failure to operate. Cases may not survive the impact. Handling your product roughly will shorten its useful life.

Do not use or store in areas of high levels of dirt or dust. The electronics may be contaminated. Any moving parts will wear prematurely.

Do not use harsh chemicals, cleaning solvents or strong detergents to keep your unit looking new. You need only wipe it with a dampened cloth from time to time.

SCHEMATIC DIAGRAM



NOTES: (1) ALL RESISTANCE VALUES ARE INDICATED IN 'OHM' ($K=10^3$ OHM, $M=10^6$ OHM)
ALL CAPACITANCE VALUES ARE INDICATED IN 'uF' ($P=10^{-6}$ uF)

Schematic subject to change without notice.
For most accurate Schematic (and parts)
contant Radio Shack, National Parts Dept.,
Fort Worth, TX 76101

RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 1 year from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

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