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## SECTION I - INTRODUCTION

The Keithley Model 240 Regulated High Voltage Supply is a line operated source of dc potential. It provides constant, accurate outjut for safe and convenient testing of insulation, diode and capacitor leakage resistance, and it thus complements the Keithley line of electrometer equipment. The output can be set from zero to 1000 volts in increments of one volt.

The Model 240 may also be used as a general purpose laboratory voltage supply, furnishing excitation potentials to ion chambers and photocells, and supplying a buck-out potential for precise voltage measurements by the null method. It may be used as a stable de potential in checking dc amplifien gains, calibrating meters, and in production testing. Used in conjunction with a Keithley electrometer, resistance over the range of 0.1 ohm to 1016 ohms can be measured.


FIGURE 1. Keithley Model 240 Regulated High Voltage Supply equipped with end frames for bench use.

## SECTION II - SPECIEICATIONS

OUTPUT:
Voltage: 0 to 1000 volts dc in 1 -volt steps. Current: 10 milliamperes dc maximum. Polarity: Positive or negative with respect to chassis.

ACCURACY: $\pm 1 \%$ of dial setting or $\pm 100$ millivolts, whichever is greater.
RESOLUTION: A "Trim" Potentiometer permits interpolation between steps with a resolution better than 15 millivolts.

RESETABILITY AND STABILITY: $\pm 0.05 \%$ or 0.05 volt the first hour or in subsequent 8-hour periods, after a 20 -minute warm-up.

LINE REGULATION: $\pm 0.05 \%$ or 0.05 volt for $10 \%$ change in line voltage.
LOAD REGULATION: $\pm 0.05 \%$ from no load to full load.

RIPPLE: Less than 3 millivolts rms above 5 cps.
OUTPUT IMPEDANCE: Less than 15 ohms.
RECOVERY TIME: 50 milliseconds from no load to full load.
OVERLOAD PROTECTION: Output is disconnected within 50 milliseconds if current exceeds about 12 milliamperes.

CONNECTORS: Output: Teflon-insulated UHF type.
POWER: 105-125 or 210-250 volts, $50-60$ cps, 70 watts.
DIMENSIONS, WEIGHT: 5-1/4 inches high x 19 inches wide x 10 inches deep; net weight, 22 pounds.

ACCESSORIES SUPPLIED: Mating connectors.

## SECTION III - OPERATION

General - The Model 240 Regulated High-Voltage Supply is shipped complete with tubes and fuse, and is accurately calibrated at the factory. Plug the power cord into a source of proper voltage and frequency, Unless otherwise specified, the unit is wired for 110 v , 50-60 cps. For $220-v o l t$ operation, change the jumpers on the transformer primary as indicated in the schematic diagram. Turn the POWER switch to ON. Allow two minutes for the circuit to stabilize after turning it on.

Connections - UHF type output connectors are on the front and rear of the instrument. Due to the high potential available from the output, use a mating connector and polyethelene or tefion insulated cable for maximum user protection. When making connections with the power on, it is recommended that the OUTPUT switch be set to OFF.

Polarity - The output polarity may be chosen by setting the OUTPUT switch to the appropriate position.

Output Voltage - The output voltage is set with the three main dials on the panel. For small adjustments in the output voltage to facilitate making a critical measurement, the INCREMENTAL VOLTS knob can be employed, For more accurate voltage setting than possible with the panel dials, connect an accurate voltmeter to the output connector and set the desired voltage with the main dials and the INCREMENTAL VOLTS potentiometer.

For the accuracy specification to hold, the INCREMENTAL VOLTS must be set to zero.

Overload Protection - Overload protection is provided at a current of about 12 milliamperes. If the current exceeds that amount, the output is disconnected within 50 milliseconds; the circuit can then by reset with the OUTPUT switch on the front panel. In this way, not only is the instrument protected, but in most cases the component being tested as well.

## SECTION IV - CIRCUIT DESCRIPTION

Figure 2 shows the simplified circuit diagram, while 12282D enclosed at the back, gives the circuit details.


FIGURE 2
Refer to Figure 2. Two cascaded electronic series-regulators furnish a high degree of load and line regulation. The first regulator reduces the effect of input voltage change, while the second regulator provides the means for varying the output voltage and provides a low output impedance and very close regulation. Resistors R1 and R2 determine the output voltage by referencing it to a selected, aged premium VR tube. The current supply to the reference tube is doubly regulated. Relays K1 and K2 are overload protectors, disconnecting the output within 50 milliseconds.

Refer to 12282 D . The high-voltage output of transformer Tl is rectified and supplied to the plate of $V 2$, the series tube in the pre-regulator. V4 compares a fraction of the premregulated voltage from divider network R110 to R113 to the 150 volts of V6. This standard reg. ulator supplies approximately 1300 volts to the final regulator.

The final regulator consists of series tube $V 3$ and difference amplifier V5 and V11.

V11 compares the potential between the minus side of the supply and the mid-point of the divider formed by resistors R129 to R158, chosen by the voltage controls on the panel, and resistors R145 and R127, going to the minus $85 v$ reference potential supplied by V10. Since the action of the negative-feedback circuit is to maintain pin 7 of V1l at ground, the output voltage must assume whatever value necessary to satisfy this condition. For example, since the resistance from the grid to the minus 85 volt reference (R148, R127) is set so that 100 microamperes must flow to have pin 7, V11 at ground potential, the side of the divider going from pin 7 , V1l to the plus output, must also be of a value which will allow 100 microamperes to flow from $B-p l u s$ to the negative reference since the tube grid draws negligible current, Therefore, if the current is fixed, the output voltage is a linear function of the resistance from B-plus to pin 7, V1l. With the values used here, the output voltage changes by exactly 100 volts per megohm of resistance added by switches S3, S4, S5, and the INCREMENTAL VOLTS control. When the main dials are set at zero, there is no resistance between the cathode of V3 and the divider return to the input grid of V11. Thus, the output and feedback points are tied together and this is the condition for zero volts output. ZERO control R116 adjusts the common cathode current in V11 so that both grids may be set at zero volts. The CALIBRATE control, R127, is adjusted so that exactly . 1 milliampere flowing through R148 and R127 produces a voltage drop equal to the negative return voltage from V10.

Overload protection is provided by relays $K 1$ and $K 2$, The current sensing relay, K2, energizes relay $K 1$ when the output current rises to about 12 milliamperes. Kl disconnects the output terminal from the voltage supply, holds itself closed through the first section of S 2 , and lights the red overload light. Switching the OUTPUT switch, S2, to OFF opens the self-locking loop of Kl.

## SECTION V - MAINTENANCE

BE EXTREMELY CAREFUL that the Regulated Voltage Supply is disconnected from the power line when unscrewing the top or bottom covers. Many circuit components are 1000 volts above ground, and if the output polarity is negative, the negative side of the circuit is 1000 volts below ground. Therefore, do not assume that it is safe to touch any part of the circuit when the power is on.

## Tube Replacement

With the exception of V10 (0G3) and V11 (12AX7), all tubes can be replaced with jobber stock tubes. A replacement for V10 (0G3) should be aged for 300 hours. A replacement for V11 should be selected for low drift, hum and noise. Amperex ECC 83-12AX7 is recommended. Both tubes, aged and selected, are available from Keithley Instruments with stock numbers EV 0G3-240 (V10) and EV 12AX7-240 (V11).

## Recalibration

The zero setting can be readjusted with potentiometer R116, mounted on the channel just behind the front panel. Set the OUTPUT VOLTS switches and the INCREMENTAL VOLTS potentiometer to zero. Connect a voltmeter to the output terminals and adjust R116 until the output reads zero.

The voltage calibration can be set with potentiometer R127. Connect an accurate voltmeter to the output terminal. Set the OUTPUT VOLTS switches to the highest voltage which may be read by the voltmeter and adjust R127 until the voltmeter reads the dial setting.

The settings will be no more accurate than the standardizing meter; and it is well to let the instrument warm up for about an hour before recalibrating. Recalibration will be necessary only after replacement of V10 or V1l.

## SECTION 6. REPLACEABLE PARTS

6-1. REPLACEABLE PARTS LIST. The Replaceable Parts List describes the components of the Model 240. The List gives the circuit designation, the part description, a suggested manufacturer, the manufacturer's part number and the Keithley Part Number. The last column, "Loc.", lists the part's location. The name and address of the manufacturers listed in the "Mfg. Code" column are contained in Table 2.

6-2. HOW TO ORDER PARTS.
a. For parts orders, include the instrument's model and serial number, the Keithley Part Number, the circuit designation and a description of the part. All structural parts and those parts coded for Keithley manufacture (80164) must be ordered from Keithley Instruments, Inc. In ordering a part not listed in the Replaceable Parts List, completely describe the part, its function and its location.
b. Order parts through your nearest Keithley distributor or the Sales Service Department, Keithley Instruments, Inc.

| amp | ampere | $\Omega$ | ohm |
| :---: | :---: | :---: | :---: |
| C | Chassis | OS | OUTPUT Switch |
| CbVar | Carbon Variable |  |  |
| CerD | Ceramic, Disc | p | pico ( $10^{-12}$ ) |
| Comp | Composition | PC | Printed Circuit PC24A |
| DCb | Deposited Carbon | Ref. | Reference |
|  |  | RP | Rear Panel |
| ETB | Electrolytic, tubular |  |  |
|  |  |  | micro ( $10^{-6}$ ) |
| f | farad |  |  |
| FP | Front Panel | v | volt |
| Fig. | Figure | Var | Variable |
| k | kilo ( $10^{3}$ ) | w | watt |
|  |  | WW | Wirewound |
| $\begin{aligned} & \mathrm{M} \text { or } \mathrm{meg} \\ & \mathrm{~m} \end{aligned}$ | mega ( $10^{6}$ ) or megohms milli ( $10^{-3}$ ) | WWVar | Wirewound Variable |
| Mfg. | Manufacturer | X1S | X1 Output Volts Switch |
| Mil. No. | Military Type Number | X10S | X10 Output Volts Switch |
| My | Mylar | X100S | X100 Output Volts Switch |

TABLE 1. Abbreviations and Symbols.

MODEL 240 REPLACEABLE PARTS LIST
(Refer to Schematic Diagram 12282D for circuit designations.)
CAPACITORS

| Circuit | Value | Rating | Type | Mfg. <br> Code | Mfg. <br> Part | Keithley <br> Part | No. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


| Circuit |  | Myp, | Keithley |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Desig. | Type | Number | Code | Part No. |

## MISCELLANEOUS PARTS

| Circuit Desig. | Description | Mfg. Code | Keithley <br> Part No. | Loc. |
| :---: | :---: | :---: | :---: | :---: |
| DS1 | Bulb, Lamp, POWER ON (Mfg. No. 47) | 08804 | PL-4 | FP |
| --- | Pilot Light Assembly (Mfg. No. 81410-233) | 72619 | PL-5 |  |
| --- | Pilot Light Lens (Mfg. No. 233) | 72619 | PL-5G |  |
| DS2 | Bulb, Lamp, OVERLOAD (Mfg. No. 47) | 08804 | PL-4 | FP |
| --- | Pilot Light Assembly (Mfg. No. 81410-231) | 72619 | PL-5 |  |
| --- | Pilot Light Lens (Mfg. No. 231) | 72619 | PL-5R |  |
| F1 (110v) | Fuse, slow blow, 1 amp (Mfg. Type MDL) | 71400 | FU-10 |  |
| F1 (220v) | Fuse, slow blow, 0.5 amp (Mfg. Type MDL) | 71400 | FU-4 |  |
| --- | Fuse Holder (Mfg. No. 342012) | 75915 | FH-3 | RP |
| J1 | Receptacle, uhf, OUTPUT, Mil. No. SO-239A (Mfg. No. 6804) | 91737 | CS-64 | FP |
| --- | Dust Cap for J1, Mil. No. MX-913/U (Mfg. No, 7901) | 91737 | CAP-4 | FP |
| -- | (F) Plug, uhf, Mate of J1, Mil. No. 49190 (Mfg. No. 83-822) | 02660 | CS-49 |  |
| --- | (F) Reducing Adapter, uhf, Mil. No. UG-175/U (Mfg. No. 83-185) | 02660 | CS-36 |  |
| K1 | Relay | 80164 | RL-6 | PC |
| K2 | Relay | 80164 | RL-5 | PC |
| P1 | Cord Set, 6 feet (Mfg. No. 4638-13) | 93656 | CO-5 | RP |
|  | Cable Clamp (Mfg. No. SR-5P-1) | 28520 | CC-4 |  |
| S1 | Toggle Switch, SPST, POWER ON (Mfg. No. 20994LH) | 04009 | SW-4 | FP |
| S2 | Rotary Switch less components, OU'IPUT | 80164 | SW-27 | FP |
| --- | Knob, Output Switch | 80164 | 14838A | FP |
| S3 | Rotary Switch less components, OUTPUT VOLTS X100 | 80164 | SW-28 | FP |
| - | Rotary Switch with components, OUTPUT VOLTS X100 | 80164 | 12565A |  |
| --- | Knob, X100 Volts | 80164 | 16338A | FP |
| S4 | Rotary Switch less components, OUTPUT VOLTS X10 | 80164 | SW-28 | FP |
| - | Rotary Switch with components, OUTPUT VOLTS X10 | 80164 | 12564A |  |
| - | Knob, X10 Volts | 80164 | 16338A | FP |
| S5 | Rotary Switch less components, OUTPUT VOLTS X1 | 80164 | SW-28 | FP |
| - | Rotary Switch with components, OUTPUT VOLTS X1 | 80164 | 12563A |  |
| --- | Knob, X1 Volts | 80164 | 16338A | FP |
| --- | Knob, INCREMENIAL VOLTS Control | 80164 | 14838A | FP |
| T1 | Trans former | 80164 | TR-29 | C |
| (F) Furnished Accessory 1165 R |  |  |  | $6-3$ |

## RESTSTORS

| Circuit Desig. | Value | Rating | Type | Mfg. <br> Code | Mfg. <br> Part No. | Keithley <br> Part No. | Loc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| R101 | $1 \mathrm{k}_{\Omega}$ | 10\%, 1 w | Comp | 01121 | GB | R2-1K | PC |
| R102 | $5 \mathrm{k} \Omega$ | 3\%, 25 w | WW | 91637 | RH-25 | R45-5K | PC |
| R103 | $470 \mathrm{k} \Omega$ | 10\%, 1 w | Comp | 01121 | GB | R2-470K | PC |
| R104 | $8.2 \mathrm{k} \Omega$ | 10\%, 2 w | Comp | 01121 | HB | R3-8.2K | PC |
| R105 | $5 \mathrm{k} \Omega$ | 1\%, 5 w | WW | 91637 | RS-5 | R4A-5K | PC |
| R106 | $80 \mathrm{k} \Omega$ | 1\%, 10 W | WW | 91637 | RS-10 | R30A-80K | PC |
| R107 | $80 \mathrm{k} \Omega$ | 1\%, 10 w | WW | 91637 | RS-10 | R30A-80K | PC |
| R108 | $8.2 \mathrm{k} \Omega$ | 10\%, 2 w | Comp | 01121 | HB | R3-8.2K | PC |
| R109 | $10 \mathrm{k} \Omega$ | 1\%, 5 W | WW | 44655 | 4654 | R4A-10K | PC |
| R110 | $333 \mathrm{k} \Omega$ | 1\%, I w | DCb | 91637 | DC-1 | R13-333K | PC |
| R.111 | $333 \mathrm{k} \Omega$ | 1\%, 1 w | DCb | 91637 | DC-1 | R13-333K | PC |
| R112 | $333 \mathrm{k} \Omega$ | 1\%, l w | DCb | 91637 | DC-1 | R13-333K | PC |
| R113 | $120 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-120K | PC |
| R114 | $312 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-312K | PC |
| R115 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | PC |
| R116 | $100 \mathrm{k} \Omega$ | 10\%, 3 w | CbVar | 97979 | RA10411S | RP15-100K | RP |
| R117 | $180 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-180K | PC |
| R118 | $5 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-5K | PC |
| R119 | Not Used |  |  |  |  |  |  |
| R120 | Not Used |  |  |  |  |  |  |
| R121 | 5 M 2 | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-5M | PC |
| R122 | 1.667 M 2 | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1.667M | PC |
| R123 | $700 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-700K | PC |
| R124 | Not Used |  |  |  |  |  |  |
| R125 | $33.3 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-120K | PC |
| R126 | Not Used |  |  |  |  |  |  |
| R127 | $70 \mathrm{k} \Omega$ | 10\%, 4 w | WWVar | 37942 | M70MPK | RP1-70K | PC |
| R128 | $220 \mathrm{k} \Omega$ | 10\%, 1 w | Comp | 01121 | GB | R2-220K | OS |
| R129 | 1. M $\Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1M | X100S |
| R130 | $1 \mathrm{M} / 2$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1M | X100S |
| R131 | 1 M | 1\%, 1/2 w | DCb | 79727 | GFE-15 | R12-1M | X100S |
| R132 | 1 M | $1 \%, 1 / 2 \mathrm{w}$ | DCb | 79727 | CFE-15 | R12-1M | X100S |
| R133 | $1 \mathrm{M} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1M | X100S |
| R134 | $1 \mathrm{M} / \mathrm{l}$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1M | X100S |
| R135 | 1 M 析 | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1M | X100S |
| R136 | 1 M | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1M | X100s |
| R137 | 1 M | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-1M | X100S |
| R138 | $600 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-600K | PC |
| R139 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |
| R140 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |

RESISTORS (Cont'd)

| Circuit Desig. | Value | Rating | Type | Mfg. Code | Mfg. <br> Part No. | Keithley Part No. | Loc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| R. 141 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |
| R142 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |
| R143 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |
| R144 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |
| R145 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |
| R146 | $100 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-100K | X10S |
| R147 | $100 \mathrm{k} \Omega$ | 1\%, $1 / 2 \mathrm{w}$ | BCb | 79727 | CFE-15 | R12-100K | X10S |
| R148 | $* 800 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-800K | PC |
| R149 | $10 \mathrm{k} \Omega$ | $1 \%, 1 / 2 \mathrm{~W}$ | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R150 | $10 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R151 | $10 \mathrm{k} \Omega$ | 1\%, $1 / 2 \mathrm{w}$ | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R152 | $10 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R153 | $10 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R154 | $10 \mathrm{k} \Omega$ | $1 \%, 1 / 2 \mathrm{w}$ | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R155 | $10 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R156 | $10 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE- 15 | R12-800K | X1S |
| R157 | $10 \mathrm{k} \Omega$ | 1\%, 1/2 w | DCb | 79727 | CFE-15 | R12-800K | X1S |
| R158 | $15 \mathrm{k} \Omega$ | 5\%, 2 w | WWVar | 12697 | 43C2-15K | RP19-15K | FP |
| R159 | 1. $\mathrm{k} \Omega$ | 10\%, 1/2 w | Comp | 01121 | EB | R1-1K | PC |
| R160 | $* 3 \Omega$ | 1\%, 5 w | WW | 91637 | RS-5 | R4A-3 | C |
| R161 | $100 \mathrm{k} \Omega$ | 1\%, 5 w | WW | 91637 | RS-5 | R4A-100 | PC |
| R162 | . $500 \mathrm{k} \Omega$ | 1\%, 5 w | WW | 91637 | RS-5 | R4A-500 | PC |

## VACUUM TUBES

| Circuit <br> Desig. | Number | Mfg. <br> Code | Keith1ey <br> Part No. | Loc. |
| :--- | :--- | :--- | :--- | :--- |

[^0]00011 Sylvania E1ectric Products, Inc. Buffalo Operations of Sylvania Electronic Systems
Buffalo, N. Y.
00656 Aerovox Corp.
New Bedford, Mass.
01121 Allen-Bradley Corp.
Milwaukee, Wis.
02660 Amphenol-Borg Electronics Corp. Broadview, Chicago, Illinois

02735 Radio Corp. of America Commercial Receiving Tube and Semiconductor Division Somerville, N. J.

04009 Arrow-Hart and Hegeman Electric Co. Hartford, Conn.

08804 Lamp Metals and Components
Department G. E. Co.
Cleveland, Ohio
12697 Clarostat Mfg. Co., Inc. Dover, N. H.

14655 Cornell-Dubilier Electric Corp. Newark, N. J.

28520 Heyman Mfg. Co. Kenilworth, N. J.

37942 Mallory, P. R., and Co., Inc. Indianapolis, Ind.

Ohmite Mfg. Co. Skokie, I11.

71400 Bussmann Mfg. Div. of
McGraw-Edison Co.
St. Louis, Mo.
72619 Dialight Corp.
Brooklyn, N. Y.
72982 Erie Technological Products, Inc. Erie, Pa.

75915 Littelfuse, Inc. Des Plaines, I 11.

79727 Continental-Wirt Electronics Corp. Philadelphia, Pa.

80164 Keithley Instruments, Inc. Cleveland, Ohio

81483 International Rectifier Corp. E1 Segundo, Calif.

85599 Tube Department G. E. Co. Schenectady, N. Y.

91637 Dale Electronics, Inc. Columbus, Nebr.

91737 Gremar Mfg. Co., Inc. Wakefield, Mass.

93656 Electric Cord Co. Ca1dwe11, N. J.

97979 Reon Resistor Corp. Yonkers, N. Y.

99120 Plastic Capacitors, Inc. Chicago, I11.

56289 Sprague Electric Co. North Adams, Mass.

TABLE 2. Code List of Suggested Manufacturers. (Based on Federal Supply Code for Manufacturers, Cataloging Handbook H4-1.)






园

PC-24-A





Wenceis 28, 1966


|  Dewids. | Value | Bnting | Type | ME Code | 経为 <br> Rart NO. | Keathlay <br> Razt RYO. | Hose |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| wnow | 80 kR | 1\%, $10 \%$ | WW | 91637 | RS-10 | 834-80K | PC |
| R H | $30 \mathrm{k} \Omega$ | 1\%, 10 \% | WW | 91637 | 2S-10 | $834-80 \%$ | PC |



| CtFeatit |  | Mfigo | Kalthley |  |
| :---: | :---: | :---: | :---: | :---: |
| Dansgo | Whamber | Code | Pate No. | $100_{0}$ |
| URS | 7025 | 30164 | ESm 7025 240 | P6 |

Sxipexatic plagxam 122820:
Clunge the number of V11 so 7025.

## MODEE 240 VOLSACHE SULTSE


[^0]:    * Nominal value, façtory set.

