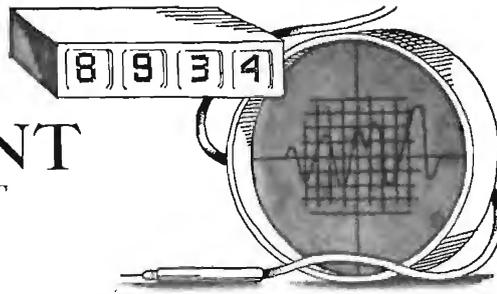


TEST EQUIPMENT

PRODUCT REPORT



"Knight-Kit" Model KG-640 V.O.M.

For copy of manufacturer's brochure, circle No. 27 on Reader Service Card.

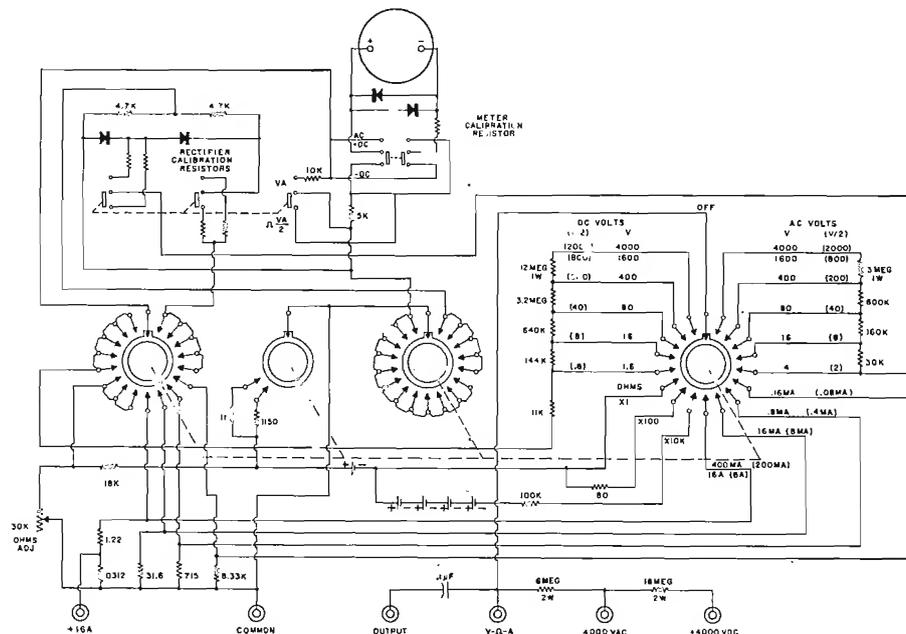


THE new "Knight-Kit" Model KG-640 is this kit manufacturer's finest volt-ohm-milliammeter. This is the first v.o.m. in kit form that we have seen that uses an excellent mirrored-scale taut-band meter movement instead of the more common pivot, bearing, and hairspring suspension system for the moving coil and pointer assembly. The taut-band movement will withstand severe shocks and has excellent repeatability of meter readings over very long

periods of time. What is more, the movement is protected against overloads of more than 1000 times by the pair of diodes shunted across it (see diagram).

Another unique feature of the instrument is the very large number of ranges available for use. There are no less than 57 ranges in all. These are made possible by the use of a "VA/2" switch that cuts in half the full-scale readings on the various d.c. voltage and current ranges and a.c. voltage ranges. This effectively doubles the number of these ranges. The lowest d.c. voltage range is only 0.8 volt full scale, which permits the user to measure the low emitter-to-base voltages in transistor circuits. The highest voltage range is 4000 volts, a.c. or d.c., while the highest current range is 16 amperes d.c.

The sensitivity of the v.o.m. is 20,000 ohms/volt on d.c. and 10,000 ohms/volt on a.c. All the multiplier resistors used are 1% carbon-film types and the over-all meter accuracy is rated as within 3% of full-scale on d.c. and within 5% of full-scale on a.c. A standard "C" cell and four standard penlight cells are used for the ohm-meter circuits.



As an indication of the simplicity of construction and the accuracy of the assembly instructions, the writer's 13-year-old son was able to put the kit together in just under 8 hours and end up with a perfectly functioning instrument. The accuracy of the completed v.o.m., incidentally, was found to be far better than the manufacturer's specs given above.

The price of the "Knight-Kit" KG-640 is \$39.95 in kit form or \$59.95 fully assembled. The instrument is available from *Allied Radio*. ▲

Dynamics Model 501 D.C.-A.C. Millivoltmeter

For copy of manufacturer's brochure, circle No. 161 on Reader Service Card.

A NEW solid-state instrument for laboratory and field use is the Model 501 portable d.c.-a.c. millivoltmeter just introduced by *Dynamics Instrumentation Co.* Full-scale ranges from as low as 1 mV to 1000 volts are



provided at an accuracy of 1% on all d.c. ranges and 2% on a.c. The meter movement used is a 7.2-inch mirror-backed, taut-band *Weston*. Frequency response on a.c. is from 1 Hz to 100 kHz and there is a panel-mounted meter-damping switch to facilitate readings below 10 Hz. Without the use of this switch, the meter pointer would try to follow the incoming low-frequency a.c. wave and reading would be difficult.

Since the instrument operates on six ordinary "D" cells, preferably of the heavy-duty type, it is completely portable and ideal for field use. At least 500 hours of operation are obtained from the batteries which operate at an 8-mA discharge rate.

The d.c. scales are all zero-center types while the a.c. scales are the usual left-zero types. The input impedance is 1 megohm and the input terminals are fully isolated for two-terminal or fully guarded differential voltage readings. Output terminals are provided at