SECTION I

INTRODUCTION AND SPECIFICATIONS

1-1. INTRODUCTION

1-2. The Model 760A Meter Calibrator is designed for the calibration of voltage, resistance, or current measuring instruments or meters having an accuracy of (or in many instances better than) one percent. The Model 760A will provide a precision voltage (1 mv to 1000v) or current (1 ua to 10a) for calibration purposes. Resistance measuring devices can be checked or calibrated by comparison with the Model 760A's precision resistance decade (0 to 10 megohms in 1 ohms steps).

1-3. The voltage or current error, of an instrument under test, can be read directly from the front panel meter of the Model 760A in terms of percent. The error in terms of volts, amperes, or ohms can be determined from the meter of the instrument under test.

1-4 ELECTRICAL SPECIFICATIONS

1-5. DC VOLTAGE AND CURRENT

VOLTAGE ACCURACY
± (0.1% of setting +25 uv) from 0.001v to 1000v, except 0.33% at 1 mv, 4 mv and 10 mv, over a temperature range of 0° C to 50° C and 1 year calibration.

IMPROVED VOLTAGE ACCURACY
± (0.05% of setting +25 uv) from 0.001v to 1000v, except ±0.33% at 1 mv, 3 mv and 10 mv, over a temperature range of 20° C to 30° C and 30 day calibration.

VOLTAGE RESOLUTION
100 uv.

OUTPUT CURRENT (Voltage Mode)
0 to 20 ma except 0.5 ohm minimum load resistance. Currents to 800 ma at certain settings (see Figure 1-2).

CURRENT RANGE
1 ua to 10a.

CURRENT ACCURACY
± (0.25% of setting +0.025 ua) over a temperature range of 0° C to 50° C and 1 year calibration.

IMPROVED CURRENT ACCURACY
± (0.1% of setting +0.01 ua) over a temperature range of 20° C to 30° C and 30 day calibration.

CURRENT RESOLUTION
1 ua.

VOLTAGE COMPLIANCE
0 to 1v minimum (5v open circuit).

RIPPLE AND NOISE (RMS)
Less than 0.5% rms of output; or 150 uv, voltage; and 0.05 ua, current; whichever is greater.

1-6. AC VOLTAGE AND CURRENT

FREQUENCY
400 Hz and 50 Hz or 60 Hz.

FREQUENCY ACCURACY
±1% for 400 Hz; phase locked to power line for 50 Hz and 60 Hz (remains locked for ±1% frequency variations, manually adjustable to cover 48 to 52 and 55 to 65 Hz).

VOLTAGE RANGE
0.001v to 1000v.

VOLTAGE ACCURACY
± (0.25% of setting +25 uv) from 0.001v to 1000v, except 0.33% at 1 mv, 3 mv and 10 mv, over a temperature range of 0° C to 50° C and 1 year calibration.

IMPROVED VOLTAGE ACCURACY
± (0.2% of setting +25 uv) from 0.001v, except 0.33% at 1 mv, 3 mv and 10 mv, over a temperature range of 20° C to 30° C and 30 day calibration.

VOLTAGE RESOLUTION
100 uv.

OUTPUT CURRENT (Voltage Mode)
0 to 20 ma except 0.5 ohm minimum load resistance. Currents to 900 ma at certain settings (see Figure 1-2).

CURENT RANGE
1 ua to 10a.

CURRENT ACCURACY
±(0.25 of setting +0.025 ua).

CURRENT RESOLUTION
1 ua.

VOLTAGE CAPABILITY
0 to 1v minimum (5v open circuit).

HARMONIC DISTORTION
Less than 0.5% of output.

NOISE
Less than 0.1% of output; or 30 uv, voltage; and 0.02 ua, current; whichever is greater.

1-7. RESISTANCE

RANGE
0 to 10 megohms.

ACCURACY
±(0.1% of setting +0.5 ohm).

RESOLUTION
1 ohm.

POWER DISSIPATION
Up to 0.25 watt from 10° C to 35° C.

1-8. PANEL METER

SEARCH
0 to 100% of voltage or current as indicate f panel dials.

NULL
1%, 3% and 10% of front panel dial settings.

ACCURACY
±3% end-scale on SEARCH.

INPUT POWER
115/230 VAC ±10%, single-phase, 50 Hz ±2 Hz and 6 ±5 Hz, approximately 200 watts full load, 40 watt load.

FUSES
Both sides of the power line are fused.

METER RESOLUTION
0.02% per small scale division.

1-9. GENERAL

AC CONVERTER
Average responding circuit calibrated in rms.

REFERENCE
Aged, temperature compensated zener diode.

LINE REGULATION
0.05% of setting for a 10% line change fror n. less than 0.1% of setting for a 1% line frequency ch at 60 Hz.

CALIBRATION STABILITY
Within performance specifications for 12 months no internal adjustments. Improved specifications quire more frequent calibration intervals.

OUTPUT CONTROL
Coarse, medium, and fine controls.

OUTPUT RESOLUTION
Better than 0.05% of setting.

HIGH-VOLTAGE WARNING
A red front panel lamp indicates when output vol is greater than 100v.

OVERLOAD PROTECTION
Output terminals are de-energized and indicator l illuminates if unit is overloaded or if COARSE OUT ADJUST control is not at RESET when FUNCTIO FREQUENCY setting is changed. Setting the COA OUTPUT ADJUST control to RESET restores instru operation.

OUTPUT TERMINALS
Multipurpose binding posts on 3/4 inch centers for (-), and chassis ground. The (-) terminal i connected to chassis ground. However, a m ±50 volts dc is allowable between chassis ground (-) terminals.

1-10. ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE
Operating, 0° C to +50° C. Improved specifications apply from 20° C to 30° C.
Non-operating, -62° C to +75° C.

HUMIDITY
Up to 85% and 35° C. Improved specifications apply up to 50% RH.

SHOCK
Meets MIL-T-945A and MIL-S-901C (grade B).

VIBRATION
Meets MIL-STD-167.

1-11. MECHANICAL SPECIFICATIONS

MOUNTING
Standard EIA rack mounting with chassis slides (not supplied) or bench mounted on nylon feet. See Section II of this manual for information on obtaining and mounting chassis slides.

SIZE
19" wide by 10-1/2" high by 18" deep behind panel. See Figure 1-1 for outline drawing.

WEIGHT
Approximately 77 pounds.

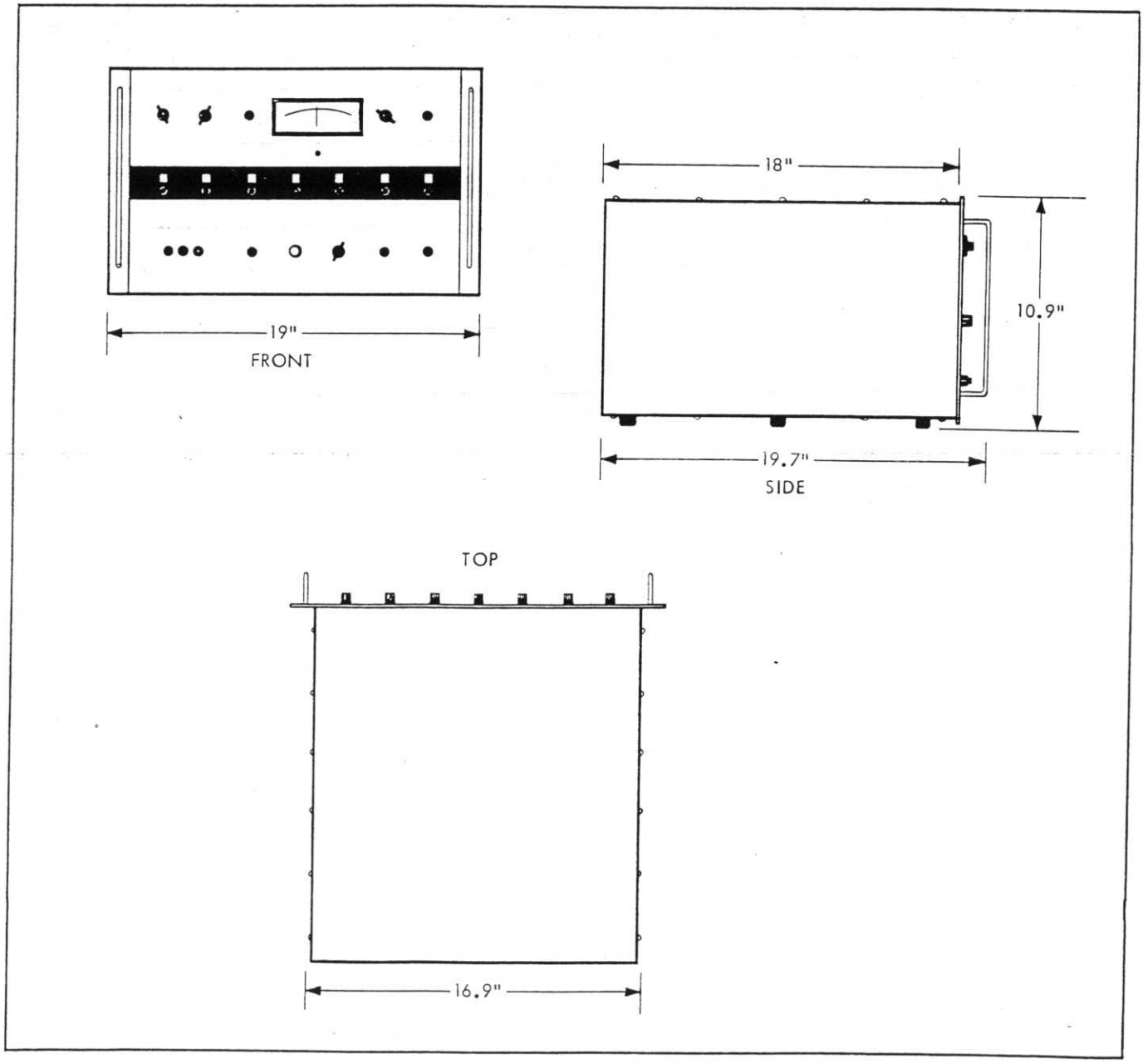

Figure 1-1. MODEL 760A OUTLINE DRAWING