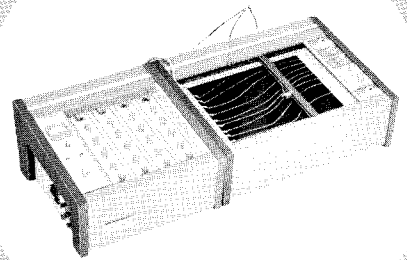
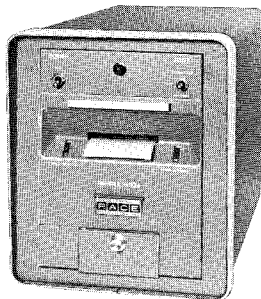
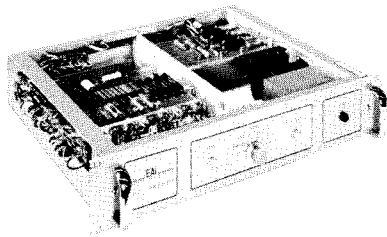
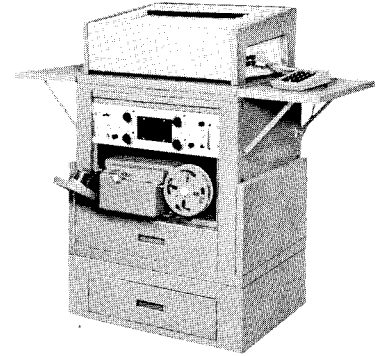
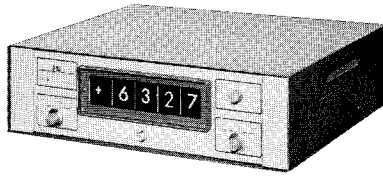
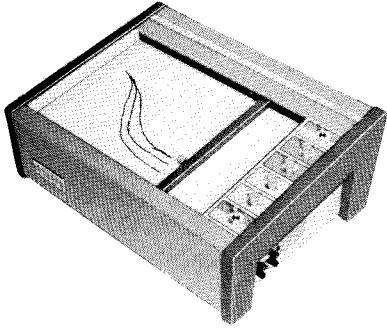


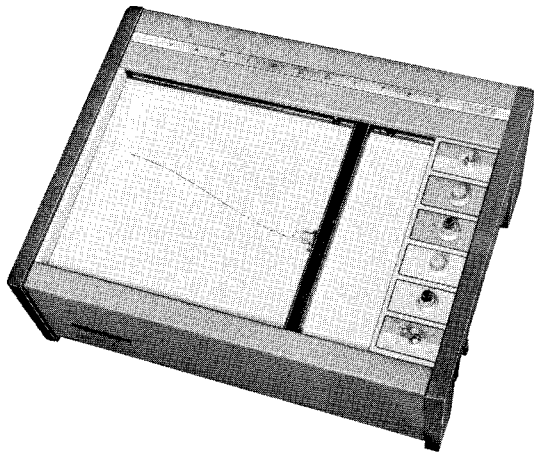
EAI-ELECTRONIC-ASSOCIATES
51 AACHEN · MARTINST
TEL.: 26041

standard data processing instruments



EAI ELECTRONIC ASSOCIATES, INC. *Long Branch, New Jersey*

11" x 17" X-Y Analog Plotter-- VARIPLOTTER[®] Series 1100E



... with EAI portable XY plotter, data can be converted to graphic form quickly... accurately...reliably.

VARIPLOTTER, Series 1100E is a self-balancing potentiometer type recorder that plots one DC voltage as a function of a second DC voltage. Flexibility of design permits the 1100E to be used as an X-Y recorder, or with the addition of accessory equipment, as a function generator or as a unit to plot digital information acquired from a keyboard, punched cards, or punched paper tape.

LARGE PLOTTING SURFACE —

Curves are plotted in a 10" x 15" area on 11" x 17" graph paper. Parallax controls allow the setting of the plot origin to any location on the plotting surface.

VACUUM HOLD DOWN —

Provides ease in aligning graph paper and holds it firmly to the vinyl plotting surface.

DIFFERENTIAL INPUT —

Accepts single-ended or differential inputs or records in normal or reversed plotting sense.

PLUG-IN INPUT NETWORKS —

Two plug-in input networks are available for both pen and arm circuits. One network gives sensitivities of from 0.1 to 20.0 volts per inch and the other from 0.001 to 0.2 volts per inch.

BUILT-IN REFERENCE VOLTAGE —

Consists of a mercury cell for each of the axes. External reference potentials, up to 100 volts, may be applied through the data connector receptacle.

SLEWING SPEED —

20" per second for either arm or pen.

ACCELERATION —

Pen — 750 inches/ sec²; Arm — 250 inches/ sec².

ACCURACY —

Static accuracy 0.075% of full scale. Dynamic accuracy 0.1% of full scale at plotting speeds of 10"/sec. (pen and arm) with low sensitivity network or, at 3"/sec. (pen) and 1"/sec. (arm) with high sensitivity network.

FULL SCALE SENSITIVITIES

(in volts per inch)*

Low

0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10.0, 20.0

High

0.001, 0.002, 0.005, 0.01, 0.02, 0.05, 0.1, 0.2

POWER REQUIREMENTS —

115 volt, 60 cycle, 150 watts.

CONTINUOUSLY ADJUSTABLE SCALE FACTOR —

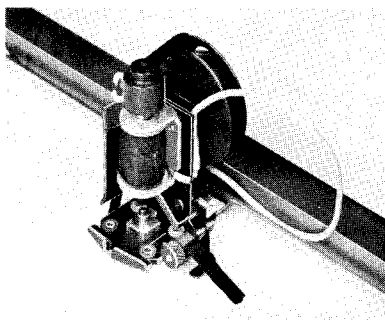
Available as an accessory to provide a continuously variable scale-factor adjustment in addition to the standard step-control of scale-factor.

OFF-BOARD PARALLAX —

An accessory which provides plus or minus one full board-width of zero off-set or zero suppression in each axis, allowing expanded presentation of any segment of a plot.

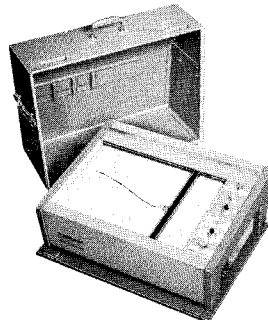
* Calibration in volts/cm is also available.

1100E VARIPLOTTER accessories



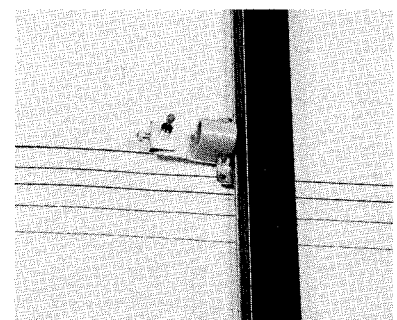
SYMBOL PRINTER

The Type 2.222 Symbol Printer features manual change of six different symbols. Special symbols are available. Basic snap-in symbols are used for fast easy change.



1100E SHIPPING CASE

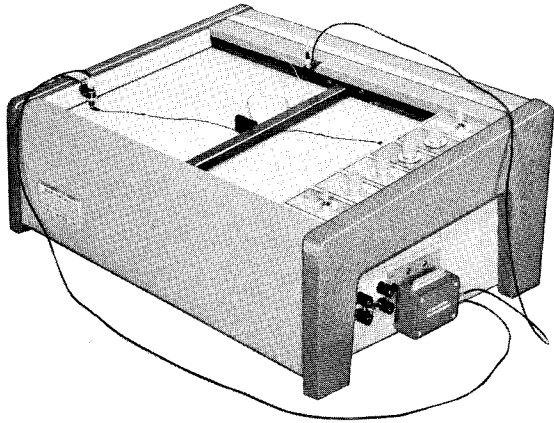
A portable aluminum case for the 1100E VARIPLOTTER that facilitates the use of the VARI-PLOTTER on sites away from the laboratory.



LEROY PEN ADAPTER

The Model 406.272 Pen Adapter provides an adapter pen carriage to replace the standard VARI-PLOTTER pen that accepts size 0000 to 8 Leroy Pens. Interchangeable with standard pen.

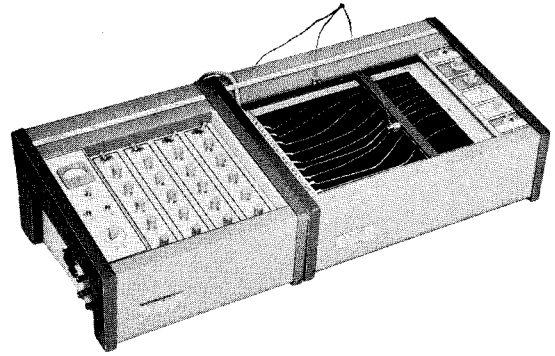
function generator accessories for 1100E VARIPLOTTER[®]



FUNCTION GENERATOR MODEL 2.040

... permits use of 1100E VARIPLOTTER as a curve follower to generate the function of a variable.

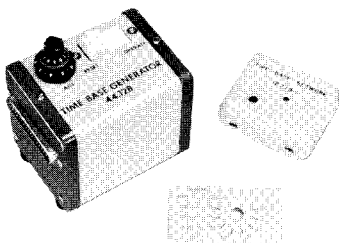
This accessory consists of a kit containing all necessary components and cables for generating the function of one variable with the 1100E VARIPLOTTER. The dependent variable, $f(x)$, is plotted manually as a function of the independent variable, x , on standard graph paper using a special conductive ink. The independent variable is plotted as the abscissa (arm) and the dependent variable as the ordinate (pen). The graph paper is placed on the plotter and the curve is excited with R-F signals generated in a transistorized Curve Follower Oscillator plugged into the VARIPLOTTER Data Connector. The pen is replaced with a special pick-up coil which follows the curve as the independent variable moves the arm across the plotting surface. A DC voltage is available from the VARIPLOTTER which is proportional to the value of the dependent variable.



BI-VARIANT FUNCTION GENERATOR

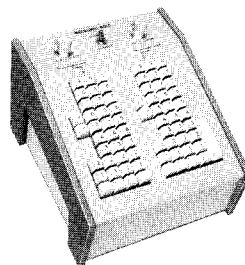
... converts 1100E VARIPLOTTER to a function generator of two variables.

The BIVAR function generator is designed to give instantaneous solutions of quantities which are a function of two variables. With the BIVAR the family of curves are manually plotted on a semi-conductive plate using conductive ink. The independent variables X and Y are plotted as the abscissa (arm) and ordinate (pen). Lines of equal values of the dependent variable, z , are energized with DC voltages scaled to represent the constant values of z . A conductive probe mounted on the VARIPLOTTER pen holder, which is positioned by the plotter pen and arm servo's according to the values of X and Y , measures the voltage corresponding to the value of z . The BIVAR accessory includes two conductive surface plates, one pick-up probe, a voltage loading unit and the necessary cables for connecting the system to the VARIPLOTTER. Also included are extra probe points, conducting ink, brushes, ruler, and a case for small accessories.



TIME BASE GENERATOR

The 2.227 Time Base Generator converts the 1100E VARIPLOTTER into a time base recorder. Provides a voltage signal that positions the arm (x axis) of the VARIPLOTTER at a fixed rate of arm displacement versus time.



KEYBOARD DATAPLOTTER

The 2.223 Keyboard when used with the 1100E VARIPLOTTER comprises the 3000 Series DATAPLOTTER system. It permits rapid graphical plotting of digital data, either as inked point plots or coded symbol point plots with the Symbol Printer accessory.

ALSO . . .

INPUT FILTERS . . . provide five selectable 20 db steps of low pass filtering. Available for either single ended or differential inputs.

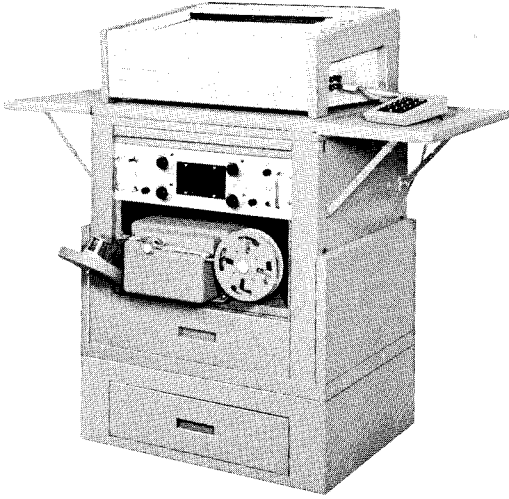
POWER MODIFICATION . . . adapting the 1100E VARIPLOTTER to operate from 220 volt, 50-60 cycle power.

PAPER LOCATING PINS . . . facilitate rapid alignment of plotting paper.

SPRING LOADED PEN . . . holds the plotting pen to plotting surface on inclined mounted VARIPLOTTERS or for writing at top speeds.

NULL-SENSING CIRCUIT . . . provides electrical indication when the 1100E VARIPLOTTER has reached null. Required when 1100E is used with digital input from keyboard, card and tape readers, or from plotting multiplexed analog sources.

11" x 17" Digital Plotter--Series 3100 DATAPLOTTER[®] System



. . . automatically converts data from punched cards or punched paper tape to graphic form.

The full potential usefulness of digital computer calculations is seldom fully realized due to the difficulty of interpreting extensive tabular data. Because of the excessive cost of hand plotting, the benefits of graphic displays of digital data are usually sacrificed. Now, with the DATAPLOTTER 3100, this lost dividend can be recovered.

The basic 3100 system plots data from punched cards; it includes the following components:

Model 1100E VARIPLOTTER

Type 99.144 Data Translator (with 13-key Keyboard)

Type 2.229 Null-Sensing Circuit

Model 1121 VARIPLOTTER Stand

Type 2.257 Cable Assembly

For plotting data from punched paper tape, the punched paper input accessory may be added. It includes:

Modified FRIDEN Model 2 Tape Reader and

Type 2.258 Cable Assembly

This accessory may be added in the field.

TRANSISTORIZED CONVERSION CIRCUITS

Transistorized conversion circuits and relay storage matrices are utilized to convert digitally coded point data into DC voltages representing the X and Y coordinates of the point to be plotted. Conversion circuits, control circuits, and storage matrices are mounted on plug-in printed circuit cards. Power is supplied by an integrally mounted transistorized power supply which is powered independently of the VARIPLOTTER.

ACCURACY AND SPEED OF PLOTTING —

The error in conversion can never be greater than ± 1 count. Static accuracy of the 1100E VARI-PLOTTER is 0.075% of full scale for the arm and pen. Plotting speed is up to 80 inked point plots per minute, depending upon type of input.

ORIGIN OFFSET —

The plotting surface of the 1100E VARI-PLOTTER is electronically divided into 1000 (0 to 999) parts. Origin offset allows the origin of a plot to be moved "off-the-board" by as much as 900 of the 1000 counts, thus providing for non-zero plot origin.

CONTINUOUSLY VARIABLE SCALE FACTOR —

Full scale deflection of the VARI-PLOTTER pen and arm can be made equivalent to a maximum of 2000 counts (± 1000). Coarse and fine scale factor controls for both X and Y coordinates are incorporated to permit the continuous adjustment of the plotter pen and arm scale factors. With these controls a minimum of 2000 and a maximum of 100 counts can be made equal to any plotting surface displacement.

DIRECT READOUT OF MATRIX —

An indicator is located on the control panel of the Data Translator which permits the direct readout, in binary coded decimal form, of the information stored in both the X and Y matrices.

INPUT CODES —

The Data Translator is designed to accept two standard codes; the binary coded decimal for punched paper tape, and the decimal code for IBM punched cards. On special order the system can be adapted to receive punched card or paper tape inputs from any computer or data source.

PAPER TAPE INPUT —

A modified Friden, Model 2, motorized tape reader may be supplied as the input device for the 3100 DATAPLOTTER. The tape reader accepts a seven-column width tape of which only four columns are used. Special reading units may be provided on special order.

IBM CARD INPUT —

The 3100 Dataplotter will accept inputs from modified IBM 513, 514, 517, 519, 523, 024, 026, and 526 card reading equipment. The standard IBM card of 80 columns and 12 rows is used.

KEYBOARD INPUT —

The Data Translator is supplied with a 13-key keyboard for manually entering point data and the setting of scale factors and origins (parallaxes).

DATA OUTPUT —

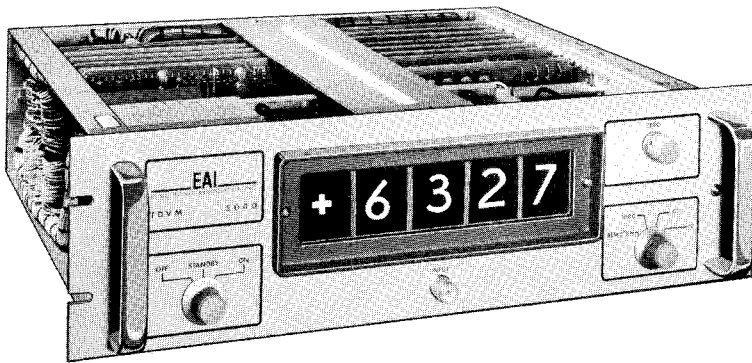
The Model 1100E VARI-PLOTTER accepts 11" x 17" plotting paper with a maximum useable plotting surface of 10" x 15". Scale factor and parallax controls allow the plotting of a graph on any portion of the plotting surface, or more than one graph can be plotted on a single sheet of paper.

SYMBOL PRINTING —

Symbol Printer, Type 2.222, is available as an accessory for the 1100E VARI-PLOTTER to permit the plotting of point data as coded symbol point plots.

transistorized digital voltmeter

with "full time" high input impedance



Series 5000 for rack mounting

features

- Full-time input impedance to 1000 megohms
- 0.01% F.S. plus 1 digit maximum error
- 200 readings per second average
- Input noise filter
- Fully transistorized
- Outstanding long term stability
- Quiet, reliable, trouble free operation

... for digital readout of analog voltages with 0.01% accuracy.

A transistorized Electronic Digital Voltmeter for use in the laboratory and in data handling systems . . . provides rapid digital readout of analog voltages with extreme accuracy and high reliability. Decimal and binary coded decimal electrical outputs available for driving a full range of accessory equipment.

PROVEN SOLID-STATE RELIABILITY —

These Digital Voltmeters feature an improved version of a basic transistorized design which has been successfully employed in Electronic Associates' PACE Precision Analog Computers for more than 4 years. Users will benefit from EAI's extensive production and application experience by obtaining proven circuits with proven reliability.

READOUT —

A high-brilliance, in-line, in-plane, projection readout is used to display the four-digit reading, decimal point, and sign.

Range (volts full scale)	Input Impedance (megohms)	Relative Accuracy (millivolts)
9.999	1000*	1
99.99	1.0	10
999.9	10.0	100

* May be set to higher values by user.

AUTOMATIC POLARITY —

Reads positive and negative inputs, and displays input sign.

READING TIME (not including sign change)

	Millisec./reading	Readings/sec.
Min. Speed	10.0	100
Avg. Speed	5.0	200

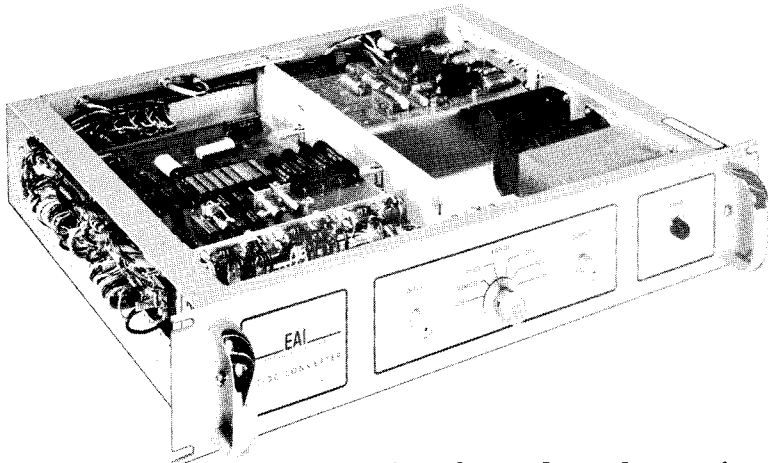
OUTPUTS —

Electrical outputs are available on a 78-pin Cannon connector at the rear of the unit for operation and control of auxiliary equipment, such as digital printers, punches, or displays.



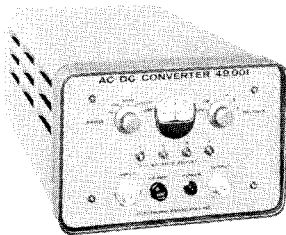
Portable Model 26.070-1

ac-dc converter



... converts a-c signals to d-c voltages for measurement or digitizing.

A precision instrument, easily calibrated, with fast settling time and high reliability to provide a-c to d-c conversion capability for use in meter calibration, engineering laboratories, production testing, automatic logging systems, and similar applications.



Type 49.001 Portable

FAST SETTLING TIME —

All electronic circuitry combined with sharp cut-off filters provides settling time of less than 0.5 seconds, even for low frequency signals.

INSENSITIVE TO DIODE CHARACTERISTICS —

Rectification is performed by high-quality silicon diodes. These diodes are used in such a manner that the converter output is independent of diode characteristics.

COMPLETELY TRANSISTORIZED —

Vacuum tubes, relays and stepping switches have been eliminated for increased reliability.

OUTPUT LEVEL —

0 to +10V DC for all input ranges.

ACCURACY —

0.05% of full scale below 1KC.

0.10% of full scale below 5KC.

MAXIMUM SETTLING TIME —

0.25 seconds.

INPUT FREQUENCY —

30 cps to 8 KC.

INPUT CONNECTION —

Single ended.

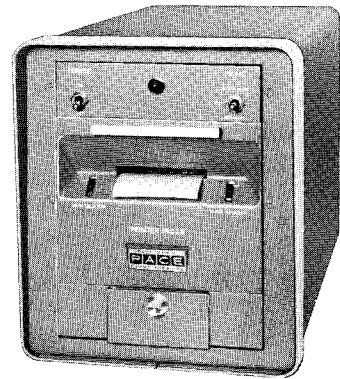
FULL SCALE INPUT LEVELS —

1000V RMS; 100V RMS; 10V RMS; 1V RMS.

RESOLUTION —

Essentially infinite; limited only by presence of random noise.

high speed printer



... for printing outputs of electronic digital voltmeter.

When used in combination with EAI's Electronic Digital Voltmeter the Type 39.034-2 Printer provides for the high-speed automatic print-out of digital readings and address of signal source. A front panel control allows the selection of one of three modes of operation to permit efficient integration with a variety of systems.

MANUAL:

A single reading and address are immediately printed when the control switch is thrown to MANUAL.

SEMI-AUTOMATIC:

A single reading and address are printed after a time delay to allow for settling time in remote selection equipment.

AUTOMATIC:

In which external equipment is used to automatically sequence inputs to the Digital Voltmeter and address information to the High Speed Printer.

PRINTOUT FORMAT —

Parallel decimal entry with 11 columns print-out consisting of 2 columns numeric address, 1 column space, 1 column sign, 4 columns digital read-out, and 3 columns for floating decimal point. Lines are printed with a spacing permitting 6½ lines per inch.

PRINTING SPEED —

200 lines per minute.

ADDRESS INPUTS —

Address information is printed in columns 10 and 11 when provided by external selection equipment.

INPUT LEVELS —

Address, polarity, range and decimal digits input levels are -9V ($\pm 1V$) to inhibit, 0 to -3V to print; the same as those provided by the Digital Voltmeter. Input impedance is 1600 ohms. Remote contacts are used to initiate print cycle.

PAPER CAPACITY —

Built-in paper feed drawer accommodates 200 feet of "fan-fold" paper, 3 inches wide.

SPECIAL MODELS —

Available with special code wheels or input and output specifications.

SIZE —

9¾" wide x 11½" high x 19½" deep; Weight - 41 lbs.

(EAI reserves the right to revise its product specifications in accordance with its continuing program of product development.)