

DOCUMENTATION SUR LA TABLE TRAÇANTE HEWLETT-PACKARD HP 9862A

FICHE N° 3922

PRÉSERVER
SAUVEGARDER
VALORISER

Période de fabrication : 1950-1974
Fabricant : Hewlett-Packard Company
Domaines : Informatique et Communication, Physique
Sous-domaines : Calculateurs, Electronique
Organisme : Université de Rennes
Ville : Rennes
Modèle : HP 9862A
Matériaux : Papier

Description

Cette documentation sur la table traçante Hewlett-Packard HP 9862A est tirée des catalogues généraux de la firme de 1978 (pages 76 et 585) et de 1982. Un document technique de deux pages rassemble aussi les caractéristiques principales de l'appareil.

Utilisation

Cette table traçante a été très utilisée en recherche dans de nombreux laboratoires d'informatique ou d'électronique car elle pouvait être couplée à de nombreux instruments de mesures : calculateur, oscilloscope, appareils de mesures électriques....

Plotting Time

0.5-inch vector 90 msec.

Numerical Resolution

1/10,000.

Resetability

0.007 inch (0.18 mm).

Temperature Range

5° to 45°C ambient.

Power

Choice of four positions:

100V ± 10%

115V ± 10%

200V ± 10%

230V ± 10%

48 to 66 Hz.

Weight

Net: 40 lbs (18.1 kg).

Shipping: 52 lbs (23.6 kg).

Dimensions

Height: 8.5 inches (213 mm).

Width: 20 inches (500 mm).

Depth: 19.37 inches (484 mm).

PLOTTER ACCESSORIES AND OPTIONS**Plotter Paper**9270-1004 10 in. x 15 in. plot area
(one box of 100 sheets)9270-1006 7 in. x 10 in. plot area
(one box)9270-1024 250 mm x 380 mm metric plot area
(one box)9270-1023 180 mm x 250 mm metric plot area
(one box)**SEMI-LOG**9280-0159 10 in. x 2 cycle plot area
(one box)9280-0160 10 in. x 3 cycle plot area
(one box)9280-0169 2 cycles x 15 in. plot area
(one box)9280-0168 3 cycles x 15 in. plot area
(one box)**LOG-LOG**9280-0167 2 cycle x 3 cycle plot area
(one box)9280-0165 3 cycle x 2 cycle plot area
(one box)9280-0171 3 cycle x 4 cycle plot area
(one box)**SMITH CHART**

9280-0137 7-inch diameter (one box)

9280-0180 Blank (one box)

Plotter Pens5081-1190 Package of 3 red pens¹5081-1191 Package of 3 blue pens¹

5081-1192 Package of 3 green pens

5081-1193 Package of 3 black pens¹**Miscellaneous**5080-3605 Slidewire cleaner¹5080-3635 Slidewire lubricant¹4040-0477 Dust cover — plotter¹

Standard Pull-out

Instruction card — English²

Option 001 Pull-out

Instruction card — French²

Option 002 Pull-out

Instruction card — German²

Option 003 Pull-out

Instruction card — Italian²

Option 004 Pull-out

Instruction card — Spanish²¹One furnished at no charge with instrument delivery.²Choice of one furnished at no charge with instrument delivery.**PURCHASE PLANS**Check with one of the Hewlett-Packard worldwide sales
and service offices for specific prices and plans in your area.**Service Contracts Available.**

*Data Subject to Change

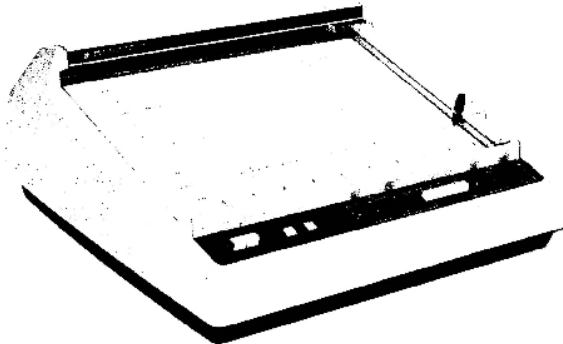


HEWLETT  PACKARD

Sales and service from 112 offices in 60 countries.
London, England EC2A 4PU.



TECHNICAL DATA* JANUARY 1975



DESCRIPTION

The HP 9862A Plotter provides permanent graphic solutions to problems solved by 9800 Programmable Calculators. The plotter graphs the point specified by the X and Y coordinates stored in two of the calculator data registers when the plot command is given. The relationship between the variables is usually programmed in the calculator which then controls the plotter. The calculator can also be used in the manual mode to transfer data coordinates directly to the plotter.

Maximum plotting capability is obtained with the plotter which provides complete alphanumeric plotter output, axis generation, automatic function scaling, and special symbol point plotting. This allows the user to produce finished plots that are titled, scaled, and labeled as he desires.

SPECIFICATIONS

Plotting Area

Y Axis: 10 inches (250 mm).
X Axis: 15 inches (380 mm).

Graph Limit Controls

The origin or the lower left corner of the plotting area must be set first.

Y Axis: 0 to 5 inches (0 to 125 mm).
X Axis: 0 to 10 inches (0 to 250 mm).

Full scale or the upper right corner of the plotting area may be set anywhere.

Vector Length Limits

18.03 inches (458 mm), corner to corner.

Writing Method

Disposable ink pens.

Pen Control

Local control by a front panel of switches. Remote control by calculator program commands. Maximum number of operations per second is 12. Time per command is 40 msec.

Accuracy

99.7% of full scale at 25°C $\pm$ 0.005% per degree centigrade.



Impedance/Z, θ , C, R, L, D & Q

Hewlett-Packard's family of impedance measurement instruments combine the familiar null measurement techniques with digital logic and feedback circuits to achieve simple and rapid operation without a sacrifice in precision. The basic specifications for Hewlett-Packard's impedance family is summarized on the opposite page. Frequency, Q, capacitance, inductance, resistance and basic accuracy can be traded off to select the most suitable instrument. For some instruments, capacitance and inductance are not the principal parameters but are secondary to the primary readout.

Impedance considerations

There are two basic types of impedance measuring instruments: bridges and meters. In general, bridge type instruments have the best accuracy specifications. This type of instrument has found wide application and is the basis for the HP 4260A/4265B Universal Bridge, 4270A Automatic Capacitance Bridge, and 250B RX Meter.

In the past, bridge instruments have required considerable operator skill to obtain consistent results. However, the Universal Bridge was specifically designed to achieve rapid and consistent audio frequency measurements.

The evolution of bridge measurements has created the need for completely automatic instruments to rapidly characterize multi-conductor cables, variable capacitor diodes, and discrete capacitors. To satisfy these customer requirements, the 4270A Automatic Capacitance Bridge was developed. This instrument is completely programmable and displays capacitance and dissipation factor/conductance in digital form. BCD outputs are available for remote processing.

Impedance meters, in general, utilize constant current/voltage sources to excite the unknown impedance. Amplitude and phase sensitive voltmeters detect the real and reactive voltage/current components of the unknown. The display for most impedance meters is an analog meter. Although impedance meters do not have the accuracy of bridge instruments, they are less expensive and easy to use. The 4800A Vector Impedance Meter, and the 4332A LCR Meter utilize this principal. Impedance meters have analog outputs proportional to the displayed function.

The wide measurement ranges of the 4261A allow easy measurements of various kinds of components. This applications area is extended even more by the new HP 4262A with its additional frequency and

measurement ranges. The 4271B is particularly useful for measuring microcircuit parameters. The new 4272A and 4273A, with their built-in limit comparators, are especially convenient when measuring small and medium range capacitors respectively.

Integration into HP-IB system

Adding the HP-IB option (Opt 101) for LCR measuring instruments is available for HP models 4271B, 4270A, 4262A, 4272A and 4282A. Two functions are provided: talker (measured data transfer) and listener (measurement remote control). System controller may be an HP model 9830A with bus interface kit (HP 59405A OPT. 021, 030), or an HP model 9825A with HP-IB card (HP 98034A). If other system components such as a plotter, printer, scanner or measurement instrument are added to the system, the integrated system reaches a high level of usefulness. For example, it would provide a component manufacturer with inspection/reliability test capabilities in the quality control or in-process test/inspection departments. In semiconductor device measurements, the combination can process the especially needed complex arithmetic manipulation of the measured data for the various device characteristics.

Figure 1 is the block diagram of a semiconductor device characteristic measurement system using the 4271B Opt 101. This calculator controlled system graphically shows the relationships between either bias voltage (measured with digital multimeter) and capacitance (measured with the 4271B), or between impurity concentration and depletion layer width, on a graphic plotter. Bias is automatically applied to the device

capacitance measured as directed by the calculator.

Summary

To help you select an impedance meter suitable to your needs the following guidelines may be used:

- (1) For a desired accuracy and cost range, select the instrument with the broadest capability in C, L, R & D or Q.
- (2) Bridge instruments will provide the best accuracies (0.1% to 1%). However, only the higher priced bridges offer the speed and convenience in measurement available in meter type instruments.
- (3) To obtain meaningful results, a parts user should make measurements at the same frequency and voltage level specified by the manufacturer.

For additional information on component measurements, Hewlett-Packard offers for sale a tutorial RCL video tape. The tape has three parts:

Part 1—Resistance (7 min.)—explains basic resistance measurements.

Part 2—Capacitance (11 min.)—format similar to Part 1—explains capacitance measurements.

Part 3—Inductance (11 min.)—develops the theory of inductors and their functions in circuits.

You may preview this video tape at your nearest HP Sales Office. Please call for an appointment. The tape (ID #90249C/D) is available in $\frac{1}{2}$ " EIAJ format (C) or $\frac{3}{4}$ " video cassette (D).

Hewlett-Packard's impedance instruments have been used in numerous diverse applications, from the measurement of the dielectric constant of liquids, to the wing to fuselage continuity of aircraft. If you have an unusual application or need assistance, contact your nearest Hewlett-Packard sales office for application information.

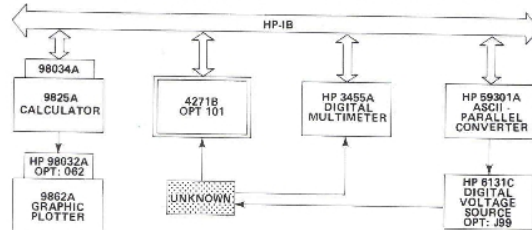
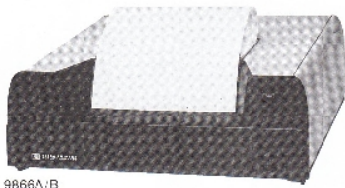


Figure 1. Measuring Semiconductor Characteristics (Typical System)



9866A/B



11285A



9832A

Line printer

The 9881A Line Printer Subsystem consists of the 2607A Line Printer, which is a reliable, low-cost, 5×7 dot matrix printer, and the 11287A Line Printer Interface Card. Its unique print mechanism makes it quiet enough for any business environment and provides up to six consistent, clean copies. It prints at 200 lines/min regardless of the line length and has full 132-column line width.

Thermal printers

For high-quality, hard-copy output, the 9866A/B Thermal Printers are hard to beat. The 9866A/B printers produce page-width, fully formatted, alphanumeric text, tables, or simple plots at 240 lines/min. The 9866B has upper- and lower-case characters and vertical line printer capabilities.

X-Y plotter

The 9862A X-Y Plotter with a peripheral control function block automatically scales your data, generates words as well as numbers and sets up both axes, complete with labels and tick marks — all in your designated units.

Interfacing

HP offers many interface cards designed for those customers who desire to build custom, desktop computer-controlled instrumentation systems. These cards are:

9815A interface cards

- 98133A BCD Interface — 8-digit BCD input with high-speed mode, 8-bit parallel output.
- 98134A General Interface — bidirectional 8-bit parallel interface.
- 98135A HP-IB Interface — general connection for HP-IB compatible instruments (in conformance with IEEE Std. 488-1975).
- 98136A RS-232-C Serial Interface — conforms to EIA RS-232-C recommended specifications.

9825A, 9831A and 9845A interface cards

- 98032A 16-bit Duplex Interface — latched 16-bit input/output for bidirectional transfer of information.
- 98033A BCD Input Interface — connects the 9825A with bit-parallel, digit-parallel BCD devices.
- 98034A HP-IB Interface — allows communication with as many as 14 HP-IB compatible instruments per interface.
- 98035A Clock/Timer/Pacer Interface — adds real time reference and time-related control capabilities to the 9825A, 9831A and 9845A desktop computers.
- 98036A Serial Interface — provides bit serial communication between the desktop computers and asynchronous EIA RS-232-C devices such as data terminals and modems.

9830A/B interface cards

- 11202A I/O Interface — 8-bit parallel input/output card with TTL compatible drivers and receivers.
- 11203A BCD Input Card — 9 digits of 8421-coded BCD data, plus other functions (input from instrument to 9830A/B only).
- 11205A Serial I/O Interface — bit serial input/output card conforming to EIA RS-232-C recommended specifications.
- 59405A Hewlett-Packard Interface Bus — byte serial interface offers plug-to-plug compatibility between instruments.
- 11285A Data Communications Interface — allows communication with other 9830A/B's and computers via telephone lines and modems that meet EIA Specification RS-232-C.
- 11297B Binary Synchronous ROM — when used with 11285A allows 9830A/B to act as a remote batch terminal emulating IBM 2780.
- 11298B Interactive ROM — when used with 11285A allows 9830A/B to act as time-sharing terminal emulating ASCII Teleprinter.

Ordering information

- 9862A X-Y Plotter
- 9866A Thermal Printer
- 9866B Thermal Printer
- 9881A Line Printer Subsystem
- 98133A BCD Interface
- 98134A General 8-bit Parallel Interface
- 98135A HP-IB (IEEE Std. 488-1975) Interface
- 98136A RS-232-C Serial Interface
- 98032A 16-bit Duplex Interface
- 98033A BCD Input Interface
- 98034A HP-IB (IEEE Std. 488-1975) Interface
- 98035A Clock/Timer/Pacer
- 98036A Serial Interface
- 11202A 8-bit Parallel I/O Interface Card
- 11203A BCD Input Interface Card
- 11205A Serial Interface Card
- 11285A Data Communications Interface and ROM
- 11297B Binary Synchronous ROM
- 11298B Interactive ROM



Pour nous citer :

Base de la Mission nationale de sauvegarde et de valorisation du patrimoine scientifique et technique contemporain, PATSTEC, Documentation sur la table traçante Hewlett-Packard HP 9862A (Hewlett-Packard Company),

<https://www.patstec.fr/ressources/objets/detail?id=15940>, consulté le 2026-07-28