

DOCUMENTATION DE L'IMPRIMANTE HEWLETT-PACKARD HP 9120A

FICHE N° 3902

PRÉSERVER
SAUVEGARDER
VALORISER

Période de fabrication : 1950-1974
Fabricant : Hewlett-Packard Company
Domaines : Informatique et Communication
Sous-domaines : Calculateurs
Organisme : Université de Rennes
Ville : Rennes
Modèle : HP 9120A
Matériaux : Papier

Description

Cette documentation sur l'imprimante HP 9102A du calculateur HP 9100A de Hewlett-Packard est extraite à la fois des catalogues 1969, 1970 de la firme et de documents publics. Elle décrit l'appareil, les opérations que l'on peut effectuer et ses caractéristiques techniques. On peut aussi trouver les références des rouleaux de papier spéciaux utilisés (code 9270-0802).

Utilisation

L'apparition de cet ordinateur constitue un événement historique en 1968 même si il y a eu des "emprunts" à la programma 101 d' Olivetti notamment la carte magnétique et l'architecture. Il a été utilisé dans les laboratoires de recherche en informatique et électronique car il était doté de nombreuses fonctions accessibles au clavier : arithmétique, log, trigonométrie, hyperboliqueIl possédait une mémoire magnétique à 19 registres et était programmable.

Une librairie de programmes de toutes disciplines scientifiques ou économiques était disponible en supplément. On l'associait très souvent à un traceur de courbe de type XY (modèle HP 9125A).



9100A/9120A

Print Characteristics

Printing rate: 180 lines/min. at 60 Hz, 150 lines/min. at 50 Hz.
Print format: any combination of X, Y, Z registers can be printed by depressing the appropriate key on the 9120A panel.
 Lists contents of program on command.
 Line capacity is up to 15 characters per line.
 Vertical printing at 5 lines per inch.
 Vertical formatting available on command.
Paper required: HP electrosensitive printer paper. (Roll 250' long by 2 1/2" wide.)

General

Temperature: operating range 0-45°C.
Weight: net 13 lbs (5.9 kg); shipping 24 lbs (10.9 kg).
Power: 115 or 230 V $\pm 10\%$ (slide switch), 50 to 60 Hz, 45 W.
Dimensions: 4" high by 14 3/8" wide by 13 1/2" deep (102 mm x 371 mm x 343 mm).

Accessories

Furnished: package of 3 rolls HP 9270-0802 paper. (Approx. 3 month supply).
Available: 9270-0802 pkg. of 3 rolls, \$9.75. 9270-0815 pkg. of 24 rolls, \$72.

Purchase Plans

Purchase: HP 9120A, \$975.
Rent: \$75 per month.
Lease: \$25.35 per month.
 Service contracts available.

CALCULATOR PLOTTER

Description: The 9125A provides permanent graphic solutions to problems solved by the Calculator. The Plotter plots the point, specified by the numbers in the Calculator's X and Y registers, when the format (FMT) instruction is activated. The relationship between the variables is ordinarily programmed in the Calculator which then drives the Plotter. The Calculator can also be used in the manual mode to transfer data coordinates to the Plotter directly.

Specifications

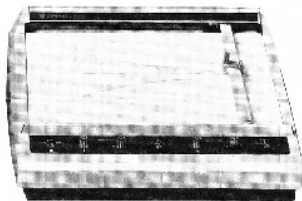
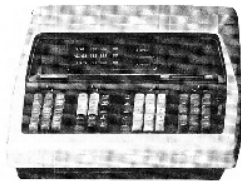
Plotting area: 10 inches on the Y-axis by 15 inches on the X-axis. (25 cm by 38 cm on metric paper.)
Origin: origin can be set anywhere on the plotting surface, allowing four-quadrant plotting.
Scale factor: 500 counts per inch (200 counts per cm) adjustable by at least ± 10 counts per inch (4 counts per cm) by front panel scale vernier control.
Plotting accuracy: ± 0.03 inches (0.08 mm).
Dynamic accuracy: deviation from straight line between two data points is less than ± 0.04 inches (1.0 mm) for data points up to 5 inches (12.5 cm) apart, at constant ambient temperature.
Resetability: ± 0.007 inches (0.18 mm).
Plotting time: minimum of 0.9 seconds from one plot point to the next. Total plotting time depends upon calculation time.

General

Temperature: operating range 5-45°C.
Weight: net 36 lbs (16.3 kg); shipping 48 lbs (21.8 kg).
Power: 115 or 230 V $\pm 10\%$ (slide switch), 50-400 Hz, 100 W.
Dimensions: 8 1/4" high by 20" wide by 19 3/8" deep. (213 mm x 500 mm x 484 mm).

Accessories furnished at no charge:

09125-90001 Operating Manual
 09125-90002 Magnetic card with Diagnostic Program
 4010-0477 Dust Cover
 09125-90000 Pull-out instruction card contained in the bottom of the 9125A
 5080-3605 Slidewire cleaner
 5080-3635 Slidewire lubricant
 5080-7979 Pkg. of 3 red pens
 5080-7980 Pkg. of 3 blue pens
 9270-1004 Graph Paper, 20 sheets
 9270-1024 Graph Paper, 10 sheets



9100B/9125A

of the 9100B is 392 steps. No language or code conversions are required.

The self-contained magnetic cardreader/recorder can record programs from program memory onto wallet-size magnetic cards. The reader/recorder can also read the magnetic cards back into program memory for repetitive use. Two programs of 196 steps each may be recorded on each reusable card. Cards may be cascaded for longer programs.

Program Instructions

Conditional branching: "IF" statements make the comparisons —less-than, equal-to, greater-than—and can be programmed to branch to any of the program addresses.

Unconditional branching: GO-TO statement can be programmed to branch to any of the program addresses. (Also used for manual addressing and correction of individual program steps.)

Subroutine: a true subroutine capability permitting instant access to subroutines from any point in a program. By using GO-TO-SUB/RET instruction, subroutines may be nested up to 3 deep. (9100B only)

Flag: provides conditional branching dependent on manual or programmed setting of flag.

Stop: halts program for data entry or display.

Pause: brief display of interim results in computation.

Step program: operator may step through program for visual verification of instructions. A "dual display" feature on the 9100B greatly simplifies program editing and modification. It allows the program step and the succeeding one to be displayed simultaneously.

Memory

Magnetic core memory includes

3 display registers (keyboard, accumulator, temporary.)

9100A has 16 storage registers with capacity for 196 program steps plus 2 constants. Total of 2208 bits of core memory.

9100B has 32 storage registers with capacity for 392 program steps plus 4 constants. Total of 3840 bits of core memory.

Capacity: register accommodates floating point number with 12 significant digits (including 2 undisplayed guard digits) and 2 digit exponent. Alternately, register accommodates 14 program steps.

Read-only-memory: contains over 32,000 bits of fixed information for keyboard routines.

9100A and 9100B COMPARISON

Items	9100A	9100B ¹
Storage Registers	16	32
Program Steps	196	392
Price	\$4400	\$4900

¹The 9100B also includes:

An additional positioning instruction X←() for more convenient data recall.

A dual program display for more convenient program editing.

A greater subroutine capability.

General

Temperature: operating range, 0-45°C.

Weight: net 40 lbs (18.1 kg); shipping 65 lbs (29.5 kg).

Power: 115 or 230 V ±10% (slide switch), 50-60 Hz, 70 W.

For 9100A: 09100-90001	Operating and programming manual. Additional copies—\$2.50
For 9100B: 09100-90021	
For 9100A: 09100-90002	Program Library binder containing sample programs. Additional copies—\$30.
For 9100B: 09100-90022	
5060-5919	Box of 10 magnetic program cards. Additional box—\$10.
For 9100A: 09100-90003	Pad of 100 program sheets. Additional pads—\$2.50.
For 9100B: 09100-90023	
For 9100A: 09100-90004	Magnetic card with pre-recorded diagnostic program. Additional card—\$2.50.
For 9100B: 09100-90024	
For 9100A: 9320-1157	Pull out instruction card mounted in calculator. Additional card—\$5.
For 9100B: 9320-1183	
4040-0350	Plastic dust cover. Additional cover—\$2.50.

Additional Accessories Available

All of above

5000-5884 Single magnetic card, \$2.

09100-90000 Box of 5 program pads, \$10.

09100-90007 200 magnetic cards without envelopes, \$80.

Purchase Plan

Purchase: HP 9100A, \$4400.

HP 9100B, \$4900.

Rent: HP 9100A, \$260 per month.

HP 9100B, \$285 per month.

Lease: HP 9100A, \$115 per month.

HP 9100B, \$128 per month.

Service contracts available.

Option 001 Pull-out instruction card in French

Option 002 Pull-out instruction card in German

Option 003 Pull-out instruction card in Italian

Option 004 Pull-out instruction card in Spanish

No additional charge for options.

Program Library

The Program Library furnished with the 9100's include programmed solutions to practical problems in a wide range of scientific and engineering fields. It serves both as an illustration of programming techniques and as a source of ready-to-use programs. Program Library holders also receive the Hewlett-Packard KEYBOARD, a periodic publication which provides updating information and a forum for the exchange of programs by 9100 users. Program categories include:

Business	Mechanics
Chemistry	Physics
Electronics	Statistics
Fluid Mechanics	Structures
Life Sciences	Surveying
Mathematics	Thermodynamics

CALCULATOR PRINTER

The HP 9120A provides fast, quiet printer capability for use with the 9100 Calculators. The Printer prints the contents of any combination of X, Y and Z Calculator display registers upon manual or programmed command. It also lists contents of the Calculator's program memory upon command. Quiet operation is obtained using a unique electrosensitive printing principle. The 9120A Printer mounts on top of the 9100 Calculators to ensure easy access and minimum space requirement. Operation of the Printer is initiated either manually by a single keystroke or in a program by one program step.

Speed

Maximum times for total performance of typical operations, including decimal-point placement:

Add, subtract: 2 milliseconds.

Multiply: 22 milliseconds.

Divide: 27 milliseconds.

Square-root: 30 milliseconds.

Sin, cos, tan: 330 milliseconds.

In x: 70 milliseconds.

e: 130 milliseconds.

Coordinate transformation: 280 milliseconds.

These times include core access of 1.6 microseconds.

Programming

The program mode allows entry of program instructions, via the keyboard, into program memory. Programming consists of pressing keys in the proper sequence, and any key on the keyboard, except step program, is available as a program step. Program capacity is 196 steps. No language or code-conversions are required.

A self-contained magnetic card reader/recorder records programs for program memory onto wallet-size magnetic cards for storage. It also reads programs from cards into program memory for repetitive use. Two programs of 196 steps each may be recorded on every reusable card. Cards may be cascaded for longer programs.

Program Instructions

Conditional branching: "If" statements make the comparisons—less-than, equal-to, greater-than—and can be programmed to branch to any of the 196 program addresses.

Unconditional branching: GO-TO statement can be programmed to branch to any of the 196 program addresses. (Also used for manual addressing and correction of individual program steps.)

Flag: provides conditional branching dependent on manual or programmed setting of flag.

Stop: halts program for data entry or display.

Pause: brief display of interim results in computation.

Step program: operator may step through program for visual verification of instructions.

Program library

The program library furnished with the 9100A includes programmed solutions to practical problems in a wide range of scientific and engineering fields. It serves both as an illustration of programming techniques and as a source of ready-to-use programs. Program library holders also receive the *Hewlett-Packard Keyboard*, a periodic publication which provides updating information and a forum for the exchange of programs by 9100A users. Program categories include:

Business	Life Sciences	Statistics
Chemistry	Mathematics	Structures
Electronics	Mechanics	Surveying
Fluid Mechanics	Physics	Thermodynamics

General

Weight: net, 40 lbs (18.1 kg); shipping, 63 lbs (29.5 kg).

Power: 115 or 230 V $\pm 10\%$ (slide-switch), 50 to 60 Hz, 400 Hz, 70 watts.

Dimensions: 8 $\frac{1}{4}$ " high, 16" wide, 19" deep (210 x 406 x 483 mm).

Accessories furnished at no charge:

09100-90001 Operating and Programming manual, \$2.50.*

09100-90002 Program library binder containing sample programs, \$30.*

5060-5919 Box of 10 magnetic program cards, \$10.*

09100-90003 Pad of 100 program sheets, \$2.50.*

09100-90004 Magnetic card with pre-recorded diagnostic program, \$2.50.*

9320-1157 Pull-out instruction card mounted in calculator, \$5.*

4040-0350 Plastic dust cover, \$2.50.*

Additional accessories available:

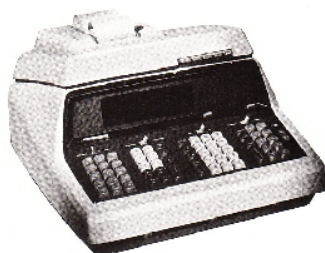
5000-5884 Single magnetic card, \$2.

09100-90000 Box of 5 program pads, \$10.

Price: HP 9100A, \$4900. Option 001: Pull-out instruction card in French. Option 002: Pull-out instruction card in German. Option 003: Pull-out instruction card in Italian.

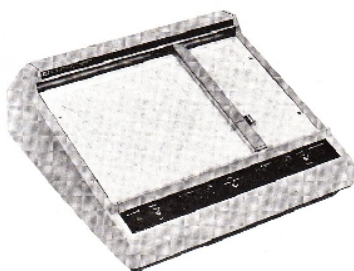
*If ordered separately.

Peripherals



9100A with 9120A

Model 9120A Printer: attaches to the top of the calculator and can be added at any time. Prints contents of display registers X, Y, Z, singly or in any combination, upon manual or programmed command. Also lists program upon command. Uses electrostatic principle for silent operation. Available, fall of 1969.



9125A

Model 9125A Plotter: plugs into rear connector on calculator and can be added at any time. Plots upon manual or programmed command, employing calculator's FMT (format) key, 11" x 17" page size. Available mid-1969.



Pour nous citer :

Base de la Mission nationale de sauvegarde et de valorisation du patrimoine scientifique et technique contemporain, PATSTEC, Documentation de l'imprimante Hewlett-Packard HP 9120A (Hewlett-Packard Company),
<https://www.patstec.fr/ressources/objets/detail?id=15920>, consulté le 2026-07-28