

DOCUMENTATION DU PROGRAMMATEUR DE COMPTAGE HP 5376A

FICHE N° 3961

PRÉSERVER
SAUVEGARDER
VALORISER

Période de fabrication : 1950-1974
Fabricant : Hewlett-Packard Company
Domaines : Physique
Sous-domaines : Electronique
Organisme : Université de Rennes
Ville : Rennes
Modèle : HP 5376A
Matériaux : Papier

Description

Cette documentation en anglais est extraite du catalogue général Hewlett-Packard de 1971. Elle décrit en une page les caractéristiques principales du programmeur de comptage HP 5376A. L'appareil est aussi présenté en détail dans le journal de Hewlett-Packard de décembre 1970.

Utilisation

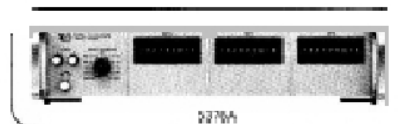
Ce programmeur était utilisé dans un laboratoire de recherche en traitement de signal de la faculté des sciences de Rennes dans les années 1970. Couplé à un compteur de fréquences (modèle HP 5360A), il permettait de piloter celui-ci. Il possède des registres de stockage, des sorties analogiques pour enregistreurs ou contrôles de processus, des entrées et sorties numériques pour communiquer avec d'autres appareils, des dispositifs de synchronisation. Il peut aussi programmer des calculs et accepter des données numériques d'autres sources comme un voltmètre numérique.

COUNTERS & FREQ/TIME STANDARDS



SYSTEMS PROGRAMMER

Automatic measurement/computation/control
Model 5376A



Converts 5380A Computing Counter into an Automatic Computing/Measuring System With:

- Simple programming
- Precision system measurement capability
- ROM program (easily reprogrammed)
- Digital I/O capability
- Programmable analog output
- Options maximize price/performance
- For systems, production, laboratory, maintenance, and test

With the 5376A Systems Programmer, the HP 5380A Computing Counter System (request 5380A data sheet) provides economical, ready-to-use solutions to problems that formerly required the use of a computerized instrumentation system. The associated 5380A Computing Counter not only measures time interval and frequency faster and more accurately than other counters but also solves equations whose variables are the counter's measurements. The 5376A programs the computation, accepts digital data from other sources (digital voltmeters, etc.) for arithmetic processing and provides analog voltage outputs for data plotters or as a feedback signal in closed loop control systems. Three equation constants can be entered in optional thumbwheel switches. The 5380A/5376A combination finds wide use in the general areas of data reduction, statistical analysis and process control.

Programming

For dedicated applications in production, systems, equipment maintenance and check out, programming can be achieved by inserting diodes in appropriate coordinates of a matrix. The instrument is provided with a 40 step program capacity which can be optionally expanded to 200 steps.

For the laboratory environment or where the 5380A/5376A is intended for a number of applications, an alternative programming method using a punched card reader is available. Each card provides a 160 step program capacity.

A versatile program statement set is provided with the 5376A, viz:

1. Data Entry: e.g. Computing Counter measurements, external instrument measurements, manual.
2. Arithmetic: e.g. $+$, $-$, $\times$, $\div$, $\sqrt{N}$, N^2 , N^{10} , $N^{1/10}$. Sufficient memory exists for algorithms of more complex arithmetic functions to be inserted, e.g. $\log$, e^x , $\sin x$, etc.
3. Register Transfer & Storage for data manipulation and storage.
4. Readout & General Control: e.g. display, system timing synchronization, etc.
5. Looping & Branching: e.g. conditional program branching, sub-routines, etc.

Analog Output

Up to two digital-analog converters can be installed in the 5376A. These can be used for plotting the results of a program, providing a programmable voltage stimulus to a device under test, or providing an analog feedback signal in a closed loop process control system.

Digital Input/Output

Parallel digital data can be outputted to the standard Hewlett-Packard 5050B or 5055A Digital Recorders to provide printed records of the results of programs.

Parallel digital data from external instruments can also be inputted to the 5376A. This enormously increases the power and versatility of the Computing Counter System since potentially every digital Hewlett-Packard instrument (with +8421 code) can be incorporated.

Operation

The 5376A is very simple to program and integrate into a practical working system. For full details refer to the 5376A Systems Programmer User's Manual. This is available on request. Once programmed and integrated into a working system, the 5376A is easily operated and can be used by unskilled operators.

Options

The 5376A features eight separate options, any or all of which can be installed in the instrument. This option mix maximizes price/performance ratio; just purchase those options required to meet your specific requirements. All options may be installed in the field. This allows easy updating of the 5376A to additional applications.

5380 Integrated Systems

Occasions will arise where it is more convenient for Hewlett-Packard to provide the software and integrate the complete system for a specific application.

The 5380A systems include the 5380A Computing Counter, the 5376A Systems Programmer and other peripheral instruments necessary to meet the written specifications provided. Prices vary depending on the system complexity and the amount of hardware involved.

Options

- Option 001** Initial Thumbwheel Switch Assembly, \$275
For manual entry of numerical data.
- Option 002** Additional Thumbwheel Switch Assemblies, \$150 ea.
Up to two additional assemblies can be installed.
- Option 003** Program Board, \$350 ea.
40 program steps per board. One board is provided with the instrument and up to four additional boards can be installed.
- Option 004** Program Diodes, \$65
Provides 22 additional program diodes.
- Option 005** Register Card, \$200 ea.
Each board contains two storage registers. Up to three register cards can be installed.
- Option 006** Digital-Analog Converter, \$300 ea.
Up to two digital-analog converters can be installed.
- Option 007** Parallel Digital Input/Output, \$600
- Option 008** Card Reader, \$2090

5376A Systems Programmer

Operating Temperature: 0°C to +50°C

Power: 115V or 230V $\pm 10\%$, 50 to 400 Hz, 70W with all options included

Dimensions: 16 3/4" wide, 3 15/32" high, 16 3/8" deep

Weight: Net 21 lbs, shipping 25 lbs 10 oz

Price: \$6350 includes one 40 step program board

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Electro-Optical Instruments
Frequency and Time Standards
Graphic Recorders
Magnetic Recorders
Meters, Multifunction
Microwave Test Equipment
Network Analyzers
Oscilloscope Systems
Signal Analyzers
Signal Generators
Signal Sources
Spectrum Analyzers



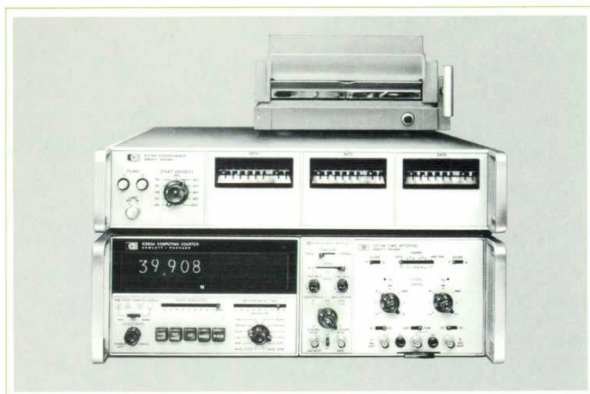


Fig. 1. New HP 5376A Programmer (center) is a programming and interface device for the HP 5360A Computing Counter. Together the two instruments are the nucleus of a class of low-cost programmable systems with built-in computer capability. Punched-card reader (top) provides optional programming method.

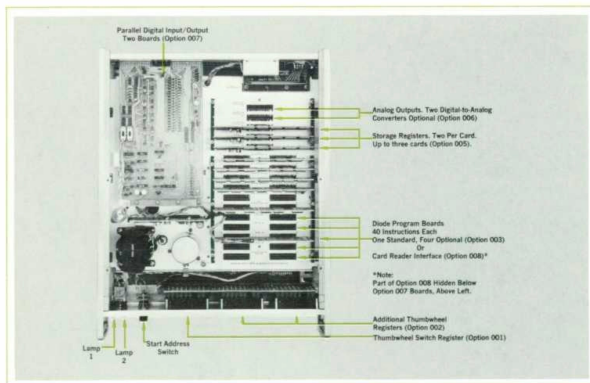


Fig. 2. Most programmer capabilities come as plug-in options, requiring only a screwdriver to install. Systems can be tailored to fit the requirements of a given application, and still be readily modified later.

data input occurs. Alternatively, the command from the instrument can be dispensed with.

To reduce loading and to improve noise immunity all data input lines have a high impedance and a long time constant. Logical '1' and '0' levels are defined by reference voltages and can be anywhere within a relatively wide range. If a data line is left open the programmer interprets it as a logical zero; this saves having to ground unused inputs.

Analog Output

For driving X-Y recorders and plotters, or for pro-

viding stimulus voltages in a measurement system or feedback signals in process control, the programmer can have as many as two separate analog outputs. These outputs are derived from optional plug-in digital-to-analog converters. Each output has its own program code and can be addressed individually by the program.

Data enters the D-to-A converter in serial, floating-point, binary-coded-decimal format. The converter looks at the exponent and converts the number to fixed-point form. If the number exceeds the dynamic range of the converter the output is either full-scale voltage or zero volts, as appropriate.

Pour nous citer :

Base de la Mission nationale de sauvegarde et de valorisation du patrimoine scientifique et technique contemporain, PATSTEC, Documentation du programmeur de comptage HP 5376A (Hewlett-Packard Company),

<https://www.patstec.fr/ressources/objets/detail?id=15979>, consulté le 2026-07-28