

DOCUMENTATION DU CONVERTISSEUR ANALOGIQUE-DIGITAL HP 59313A

FICHE N° 3955

PRÉSERVER
SAUVEGARDER
VALORISER

Période de fabrication : 1975-1999
Fabricant : Hewlett-Packard Company
Domaines : Physique
Sous-domaines : Electronique
Organisme : Université de Rennes
Ville : Rennes
Modèle : HP 59313A
Matériaux : Papier

Description

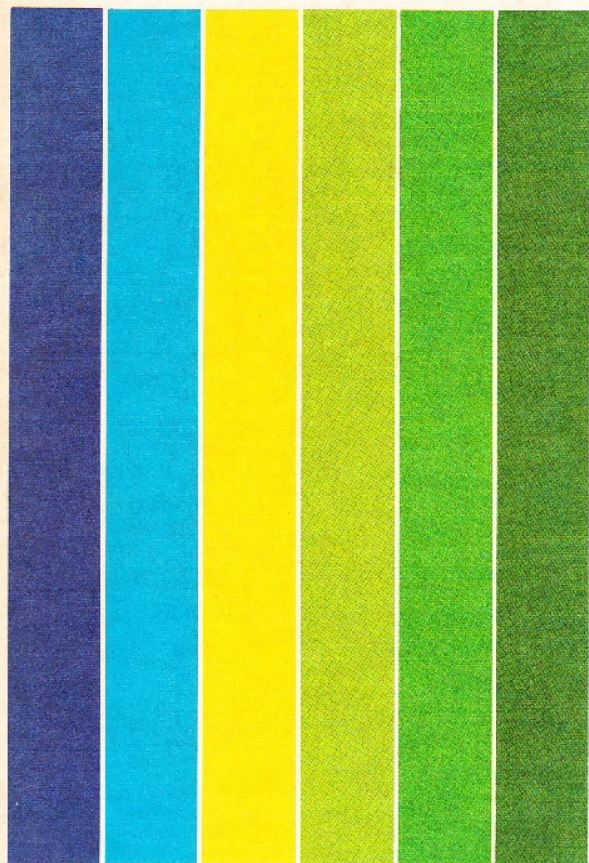
Cette documentation en anglais est extraite du catalogue Hewlett-Packard de 1978. Elle décrit, en deux pages, les principales caractéristiques du convertisseur analogique-numérique HP 59313A. Elle détaille les spécifications en tension, les entrées de signaux sur les quatre canaux et les propriétés de l'appareil.

Utilisation

Ce convertisseur Analogique-Digital, encore appelé Analogique-Numérique ou CAN, était utilisé en travaux pratiques d'électronique de maîtrise par les étudiants. Il permettait la conversion d'une grandeur analogique telle qu'une tension ou un courant en une grandeur numérique que l'on pouvait afficher ou mémoriser.



MEASUREMENT/COMPUTATION



1978

ELECTRONIC
INSTRUMENTS
AND SYSTEMS





59403A



The distance between HP-IB devices may be extended by up to 1000 metres, using two 59403A's; even further with modems.

59306A relay actuator

Has six Form-C relays that provide for control of external devices either manually from front panel pushbuttons or remotely from the HP-IB. Relay contacts are specified to switch 24 V dc or 115 V ac @ 0.5 A. Use the 59306A with HP 8761A/B SPDT switches for HP-IB programmable microwave switching de-IB GHz; use it with HP 8496 thru 8496G/H attenuators for HP-IB programmable attenuation de-IB GHz (external power supply required).

59307A dual VHF switch

This module offers a pair of single throw 4-pole switches (dc to 500 MHz, 50 ohm) optimized for fast risetime (1 ns) pulse waveforms. Switches are independent and bidirectional, and can be operated either from front panel pushbuttons or remotely from the HP-IB.

59308A timing generator

Has two modes of operation—a pacing function which provides output at a specified rate, and a timing function which provides a delay with respect to a trigger for a specified period of time. Timed intervals can be selected by thumbwheel switches on the front panel, or can be programmed remotely from the HP-IB. Times from 1 μ s to more than a day are available. Trigger inputs are available via front panel pushbutton and rear panel connector. Timing outputs are available for both TTL and ECL levels, with switch selection of a squarewave or pulse output positive or negative going edge. Output pulses are 500 ns $\pm$ 100 ns wide, and rise time is <50 ns.

59309A digital clock

Displays month, day, hour, minute and seconds, and upon command will output time via the interface bus. Time can be set into the clock by local control, or by remote commands received from the HP-IB. The clock accepts a small internal battery which can provide more than a day's standby during short power interruptions. Alternately, an external source such as D-sized batteries can sustain the clock for up to one year.

59313A analog-to-digital converter

This medium-speed 4-channel unit can accept a full scale input of +10 V dc on each channel, individually selectable in four ranges. It also has a program-controlled reverse channel for driving small signal lamps, relays, or TTL circuits. An HP-IB controller can com-

mand this unit to perform a single conversion, or initiate a series of internally-paced conversions at one of six selectable rates (up to 200/s if one channel; up to 50/s on each of four channels). Sampling can also be initiated externally by TTL transition or contact closure to ground.

59403A HP-IB/common carrier interface

Provides a way to extend the separation of component parts in an HP-IB system by more than the 20 metre maximum transmission path length specified in various interface Standards, and it is especially useful for production or remote site applications. Distances up to 1000 metres are possible by using two 59403A modules (one at each location) interconnected by a dedicated and shielded twisted-pair cable. And even longer distances can be achieved by using a telephone line (with appropriate modems) instead of the dedicated cable.

Each 59403A module converts HP-IB data and control lines to a serial bit stream of digital information for transmission over the dedicated or telephone lines, and vice versa in the reverse direction. In both cases, operation is full duplex, so that (for example) one HP-IB device at a remote location can request service from the controller at the same time the controller is sending data to another HP-IB device at the remote location.

The recommended dedicated cable is available from HP as Part Number 8100 1197 (Belden type 3723). The 59403A is designed to operate with 110, 300 and 1200 baud asynchronous or synchronous full duplex modems which are EIA RS232C or CCITT V24 compatible. In the U.S., Bell 103A modems with "soft carrier turn-off" are recommended for the direct dial (DDD) network. (Check your local telephone authorities regarding data communication regulations.)

59501A power supply programmer (isolated DAC)

This single-channel digital-to-analog converter can control a wide range of power supplies (output voltage, or current), as well as other analog programmable devices. It may also be used as a low level signal source, depending on the speed of the controller. It has two output ranges (0-1 and 0-10 Vdc in unipolar mode; -1 to +1 and -10 to +10 V dc in bipolar mode), as well as photo-isolators which electrically separate HP-IB control and data lines from power supply circuitry by up to 600 V dc. (Additional details on page 212.)

Model	Description	Dimensions—max. height $\times$ width $\times$ depth mm (inches)	Net Weight kg (lb)	Shipping Weight kg (lb)
59306A	Relay Actuator	101.5 $\times$ 425.5 $\times$ 407.8 (4 $\times$ 15.8 $\times$ 19.0)	8.22 (18.1)	11.8 (26.0)
59307A	AS201-to-parallel Converter	101.5 $\times$ 212.5 $\times$ 254.6 (4 $\times$ 8.38 $\times$ 10.0)	2.76 (6.08)	3.32 (7.31)
59308A	4-bit-to-parallel Converter	101.5 $\times$ 105.3 $\times$ 254.6 (4 $\times$ 4.17 $\times$ 10.0)	2.31 (5.09)	3.17 (7.04)
59309A	Numeric Display	101.5 $\times$ 105.3 $\times$ 254.6 (4 $\times$ 4.17 $\times$ 10.0)	1.75 (3.85)	2.59 (5.75)
59313A	Relay Actuator	101.5 $\times$ 212.5 $\times$ 254.6 (4 $\times$ 8.38 $\times$ 10.0)	2.64 (5.81)	3.23 (7.12)
59307A	Timing Generator	101.5 $\times$ 212.5 $\times$ 254.6 (4 $\times$ 8.38 $\times$ 10.0)	2.64 (5.81)	3.23 (7.12)
59308A	Timing Generator	101.5 $\times$ 212.5 $\times$ 254.6 (4 $\times$ 8.38 $\times$ 10.0)	2.64 (5.81)	3.23 (7.12)
59309A	Timing Generator	101.5 $\times$ 212.5 $\times$ 254.6 (4 $\times$ 8.38 $\times$ 10.0)	2.64 (5.81)	3.23 (7.12)
59313A	Timing Generator	101.5 $\times$ 212.5 $\times$ 254.6 (4 $\times$ 8.38 $\times$ 10.0)	2.64 (5.81)	3.23 (7.12)
59501A	Power Supply Programmer	101.5 $\times$ 212.5 $\times$ 254.6 (4 $\times$ 8.38 $\times$ 10.0)	2.64 (5.81)	3.23 (7.12)

*Height above 100 mm (4 in.) with 100 mm (4 in.) height.

HEWLETT-PACKARD INTERFACE BUS

Versatile interconnect system for instruments and controllers

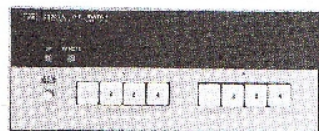
Accessory modules



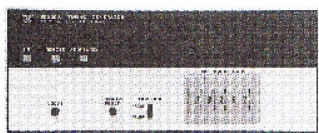
59301A



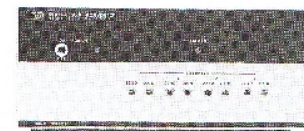
59306A



59307A



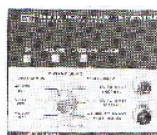
59308A



59313A



59304A



59303A



59304A



59309A

1350A graphics translator

Accepts digital information from the HP-IB (or optionally RS-232C) and converts it to X, Y, and Z analog voltages for driving high resolution, directed-beam, non-storage CRT displays. An internal 2k word digital memory (RAM) stores the data and is continually accessed in order to generate vectors or characters for refreshing one or more CRT displays. Each digital word can be a vector coordinate, or a ROM-generated upper or lower case ASCII character. An optional ROM provides an additional 512 user definable vectors for generating graphics and special characters. (Additional details on page 154.)

59301A ASCII-to-parallel converter

Accepts byte-serial ASCII characters from the HP-IB and converts them to parallel output. A string of up to 16 characters terminated by linefeed is converted to 1-2-4-8 BCD and placed on the output lines; the linefeed character signals execution of a print command (strobe).

With the 59301A, instruments with the HP-IB interface can be operated with HP 5050B/5055A Printers (requires two output cables, HP 507-16C, not furnished). Or, the 59301A can be used with HP 5128C thru 5145A (Option J99) digitally controlled power supplies for HP-IB programmable voltage and current. The 59301A can additionally be used to control other functions using its hexadecimal format.

59303A digital-to-analog converter

Accepts an ASCII string and converts any three consecutive digits to analog voltage accurate to 0.1% in 50 μ s. Fully programmable via the HP-IB or operates stand-alone from the front panel. Offers three output modes for conversion: normal, offset, or plus-minus (9.99 volts to -9.99 volts) to make it convenient for operating strip chart recorders.

A primary application for the HP 59303A is to present on a logging device the data points being taken during a measurement, such as with the HP 5345A Counter. No controller is required for operation. Compatible logging devices include strip chart recorders, X-Y plotters, and displays.

59304A numeric display

Provides a highly visible readout of up to 12 ASCII characters (0 thru 9F, -). It can be addressed to display the output of measurement devices or the results from a calculator/desktop computer. It can also be used as a remote display in the "listen only" mode.

Pour nous citer :

Base de la Mission nationale de sauvegarde et de valorisation du patrimoine scientifique et technique contemporain, PATSTEC, Documentation du convertisseur analogique-digital

HP 59313A (Hewlett-Packard Company),

<https://www.patstec.fr/ressources/objets/detail?id=15973>, consulté le 2026-07-28