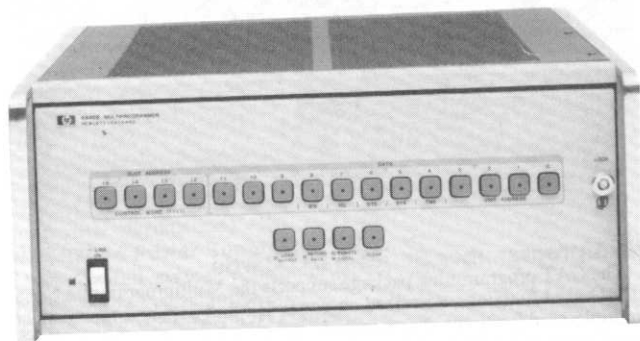# DATA ACQUISITION, CONTROL & TEST
Multiprogrammer: Versatile Building Block Approach to Systems
Model 6940B

- Front panel control
- GPIO or HP-IB
- Data transfer rate 20,000 readings/second

- Temperature measurement capability
- Multiprogrammer Series I I/O cards

HP 6940B

Description

The HP 6940B Multiprogrammer is a low-cost, medium-speed data acquisition and control system designed to be used with controllers or computers via the GP-IB, a 16-bit parallel interface bus. The HP 6940B is supported by a full complement of I/O cards. These I/O cards provide a broad range of instrumentation functions for acquisition, stimulus, measurement and control.

The HP 6940B is programmed by a set of word formats and octal coding. There are three word formats: a control word that selects the operating mode, a data word used to select and control output cards, and an address word to select and control an input card.

The HP 6940B may also be used as an HP-IB product. This requires an HP 59500A Multiprogrammer Interface Kit. This kit provides conversion of the HP-IB format to 16-bit parallel format.

Features

A full-feature, front-panel switch register permits manual programming of all Multiprogrammer output, input and control functions. Fault isolation or manual system checkout of the computer, multiprogrammer or external devices is accomplished from the front panel.

Another feature of the HP 6940B is isolation of analog cards. Isolation from system ground is provided on analog cards. The HP 6940B has four isolated bias power supplies available to independently power the output circuitry of up to four groups of cards.

The HP 6940B Multiprogrammer has the capability of growing to meet the user's needs. Up to 15 HP 6941B extenders can be added to the system, allowing up to 240 I/O slots to be programmed from a single computer interface. The HP 6941B Multiprogrammer Extender has a blank front panel and all interfacing is provided in the HP 6940B Multiprogrammer.

Specifications

Plug-in I/O card position: Maximum of 15 plug-in input or output cards per mainframe.
Computer Interface: Can be interfaced using the GP-IO, which requires an I/O slot of the computer and a GP-IO interface card. An HP 59500A Multiprogrammer Interface Kit is required for use on the HP-IB.
Extender Units: Up to 15 HP 6941B extenders can be chained together to create 240 programmable I/O slots. Extenders may be separated from one another by up to 30 metres.
Data transfer rate: 20,000 readings/second using the GP-IO interface.
Cooling: Natural convection
Operating temperature range: 0 to +55 degrees Celsius.
Power: 100/120/220/240 Vac (selectable), +5%, −10%, 48 to 440 Hz, 230 watts.
Dimensions: 172.2 mm high x 425.4 mm wide x 539.8 mm deep (6.78 in high x 16.75 in wide x 21.25 in deep).
Weight (without I/O cards): 15.9 kg (35.0 lb) net, 19.5 kg (43.0 lb) shipping.

Ordering Information
Step 1 - Select controller

Controller	ROM HP P/N	Description
HP-85B		HP-IB: Option 085
		GP-IO: Option 185
HP-86B	00087-15003*	HP-IB: Option 085
		GP-IO: Option 185
HP-87XM	00087-15003*	HP-IB: Option 085
		GP-IO: Option 185
HP 9826A	N/A	BASIC: Option 026
		HPL: Option 126
HP 9836A	N/A	Option 036
HP 1000	N/A	Option 010

*Requires HP 8936A ROM drawer.

Step 2 - Select interface

Interface	GP-IO	HP-IB
HP-85B	HP 6940B Opt 185	HP 59500A and HP-85B Opt 007
HP-86B*	HP 6940B Opt 185	HP 59500A
HP-87XM*	HP 6940B Opt 185	HP 59500A
HP 9826A	HP 98622A Opt 003	HP 59500A, includes 2-metre HP-IB cable
HP 9836A	HP 98622A Opt 003	HP 59500A
HP 1000A	HP 14550B	HP 59500A and HP 59310B

*When ordering an HP-86B or HP-87XM and using HP-IB interface, an HP-IB cable must be ordered.

Step 3 - Determine I/O card set
Select I/O functions from Series I I/O cards (See page 321).

Step 4 - Select number of mainframes

	Price
HP 6940B - holds up to 15 I/O cards plus one	$2500
HP 69351C voltage regulator card.	N/C
Option 10: HP-1000	N/C
Option 85: HP-85B HP-IB	$ 605
Option 185: HP-85B GP-IO	N/C
Option 026: HP 9826A BASIC	N/C
Option 126: HP 9826A HPL	N/C
Option 036: HP 9836A BASIC	N/C
Option 136: HP 9836A HPL	$ 40
Option 908: Rack Mount Hardware for	$2100
HP 6941B Extender, additional 15 I/O slots	$ 40
Option 908: Rack Mounting Hardware	$ 125
HP 14541A Extender Cable; one for each HP 6941B	

Step 5 - Determine accessories

HP 59500A Multiprogrammer Interface; required for each HP 6940B on the HP-IB	$1300

Accessories

HP 14540A Main Input Cable Assembly, 3.6 m (12 ft)	$ 255
HP 14541A Chaining Cable, HP 6940B to HP 6941B	$ 125
HP 14550B Multiprogrammer Interface Kit for the HP 1000	$1820
HP 14551A Service Kit for the HP 6940B	$1715
HP 14555A Connector Kit for Series I Multiprogrammer I/O cards	$ 20
HP 14556A Software Library for the HP 9825A	$ 200
HP 14557A Power Supply Interconnect Cable for the HP 69520A Programming Card	$ 135
HP 14558A Termination Panel; with 40 dual-screw terminals	$ 125
HP 14560A Cable Assembly for Series I I/O cards; 15 conductors	$ 81
HP 14561A Cable Assembly for Series I I/O cards; 30 conductors	$ 125
HP 14562A Cable Assembly for Series I analog I/O cards; two shielded conductors	$ 35