ryCalculatorApplicationSummaryCalculatorAppl

CALCULATOR FEATURES	HP 9825	HP 9815
Programming	HPL - a high level programming language	Sequence of keystroke operations (RPN operational stack)
User read/write memory	Expandable from 6844 bytes to 31,420 bytes	Expandable from 472 bytes to 2008 bytes② +10 data registers
System ROM memory	24k bytes standard + 16k bytes of optional plug-in ROM	14k bytes standard +2k bytes per I/O card
Data cartridge	250,000 bytes, 6 s avg. access time	96,384 bytes, 9 s avg. access time
Display	32 characters LED, upper and lower case	16 numeric characters
Printer	16 characters/line, upper and lower case	16 alphanumeric characters/line
Keyboard	Typewriter-like, upper and lower case with numeric pad	63 total keys, key-per-function
Special Function keys	12 (shiftable to 24)	15
Live keyboard	Examine variables or execute subroutine while program is running	No
Auto start	Loads and runs program at power on①	Loads and runs program at power on
Math functions and operations	20	22
Multidimensional arrays	Limited only by available memory	No
Trig functions	6	6
Bit manipulation and testing	10 functions①	Dependent upon I/O card
Logic operators	AND, NOT, OR, XOR	Dependent upon I/O card
Relational operators	$=, >, <, \geq, \leq, \neq$	$=, <, \geq, \emptyset$, positive, negative, flag set, flag clear
Addressing modes Internal significant digits	Absolute, relative, symbolic, and computed 12	Absolute, relative, symbolic, and computed 12
Dynamic range	$0, \pm 10^{99}$ to 10^{99}	$0, \pm 10^{99}$ to 10^{99}
Error recovery	Programmable error trapping①	Programmable error override
Memory load and record	Records complete contents of memory on tape	No
Interrupt	2 level vectored (8 priorities per level)①	No
Time out	Programmable alternatives when device does not respond	No
I/O slots	3 standard, 15 with expanders	2
Language extension ROMs	String④ Advanced Programming④ Matrix, Plotter, General I/O, Extended I/O④	I/O ROMs built into I/O interfaces katakana and Cyrillic characters
Unbuffered input/output	Yes③	Yes
Buffered input/output	Yes①	No
Burst read/write	Yes①	Yes
DMA	1 channel①	No
Size	5.1 in. x 15.1 in. x 19.5 in. (130 mm x 384 mm x 495 mm)	4 in. x 13.6 in. x 13.5 in. (102 mm x 345 mm x 343 mm)
Weight	26 lb	13 lb

① Requires General I/O and Extended I/O ROMs.
② Memory may be allocated by user in any combination of program steps (1 byte, 1 program step) and data registers (8 bytes/register).
③ Requires General I/O ROM
④ The maximum user read/write memory is 23,228 bytes if the String, Advanced Programming, or Extended I/O ROMs are used. These capabilities are available with the 31,420-byte memory by loading binary programs.

HP 9815A & HP 9825A Computing Controller Capability Table

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INTERFACES FOR THE HP 9825A CALCULATOR

I/O Features	HP 98032A Bit Parallel Interface	HP 98033A BCD Interface	HP 98034A HPIB Interface⑤
Data input lines	16 latched⑥	43 not latched⑥	8 bidirectional
Data output lines	16 latched⑦	None	
Control lines to device	5⑦	2⑧	8 bidirectional
Control lines from device	5⑥	2⑥	
Interrupt capability	Yes ⑩	Yes ⑩	Yes ⑩
Type of data transfers	16-bit words or 8-bit bytes	16-bit character sequence⑨	8-bit bytes
Transfer rates extend to:			
with Gen. I/O ROM ⑪	1 ms/transfer	4 ms/transfer	1 ms/byte
with Ext. I/O ROM	90,000 transfers/s	4000 readings/s	45,000 bytes/s
DMA	Input 400k transfers/s ⑩ Output 225k transfers/s ⑩	No	No

⑤ Implements IEEE Standard 488-1975.
⑥ Input levels TTL compatible.
⑦ Open collector outputs, sink 40mA, 30V maximum voltage.
⑧ Open collector outputs with 2.2k Ω pullup resistors, sink 14 mA, 15V maximum voltage.
⑨ Capability to input up to 10 BCD digits with overload and sign information. Alternatively, two devices can be connected to the same interface.
⑩ Requires Extended I/O ROM.
⑪ The transfer rate can be increased, up to 15,000 bytes per second, by the use of strings.

INTERFACES FOR THE HP 9815A CALCULATOR

I/O Features	HP 98133A BCD Interface	HP 98134A Bit Parallel Interface	HP 98136A Serial Interface ⑫	HP 98135A HP-IB Interface ⑬
Data input lines	40 latched ⑭	8 latched ⑭	1	8 bidirectional
Data output lines	8 latched ⑮	8 latched ⑮	1	
Control lines to device	3 ⑯	4 ⑮	2	8 bidirectional
Control lines	2 ⑭	1 ⑭	1	
Interrupt capability	No	No	No	No
Type of data transfers	Flexible ⑰	8-bit bytes	Bit-serial	8-bit bytes
Transfer rates extend to	2000 readings/s 5000 bytes/s	Output 2000 bytes/s Input 1200 bytes/s	Selectable 110-3600 band	2500 bytes/s

⑫ RS-232-C compatible. Receive only current loop capability optional.
⑬ Implements IEEE Standard 488-1975.
⑭ Input levels TTL compatible.
⑮ Open collector outputs, sink 40 mA, 30V maximum voltage.
⑯ Open collector outputs, sink 16 mA, 15V maximum voltage.
⑰ Up to 9 BCD digits with overload and sign information can be input. Alternatively, two devices can be connected to the same interface. 8-bit bytes may be output.

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