

# HP 2392A

## Display Terminal

 HEWLETT  
PACKARD



### Features

- **Complete Alphanumerics**
  - Up to 4 Pages of Display Memory
  - Optionally Expandable to 8 Pages
  - Smooth Vertical Scrolling
  - Display Enhancements and Line Drawing Character Set
  - Line Modify Mode
  - Block Mode
  - Format Mode and Local Editing Capabilities
- **Ergonomics**
  - Compact Design
  - Integrated Tilt and Swivel
  - Anti-Glare Green Phosphor Screen
  - Front Panel Power and Brightness Controls
  - Detachable Low-Profile Keyboard
- **Ease of Use**
  - Screen-Labeled Function Keys for Terminal Control
  - Nonvolatile User-Definable Soft Keys with 16-Character Labels
  - Nonvolatile Configuration Menus
  - 17 National Keyboard Layouts
  - 27th Screen Line Indicates Status of Terminal
  - Self-Test Capability
- **High Performance Data Communications**
  - Character, Line or HP Block Mode Transmission
  - Port 1 offers both RS232C and HP422 with data rates up to 19.2 kbps with handshaking
  - Port 2 provides either an optional RS232C Serial Interface or Centronics® -type Parallel Interface
  - Supports X.25 PAD connection
- **Optional ANSI\* Compatibility**



### The HP 2392A

The HP 2392A is a compact, easy-to-use terminal designed for applications ranging from data entry to program development. Maintaining Hewlett-Packard's traditional standards for reliability and support, the HP 2392A provides additional features that increase productivity and ease of use.

The HP 2392A occupies a minimum of desk space, while the integral tilt and swivel mechanism enables it to be positioned at an optimum viewing angle. For user convenience, power and brightness controls are located on the front of the terminal.

The HP 2392A offers the powerful capabilities typical of Hewlett-Packard alphanumeric display terminals, with further enhancements like additional memory, smooth scrolling, faster data communication rates, a variety of printer interfaces and optional ANSI\* compatibility.

The HP 2392A is one of the most comprehensive terminals in its price range, providing the quality and features that people have come to expect from Hewlett-Packard products.

® Centronics is a registered trademark of Centronics Data Computer Corporation  
\* American National Standards Institute



## Complete Alphanumeric

The 2392A has a 12-inch diagonal CRT that displays 24 lines of 80 characters on a high-resolution green phosphor screen. The characters are formed in a 9 by 14 dot character cell with half-dot shifting to create smooth, well-defined characters—like those of a typewritten page.

Up to 4 pages of text can be stored in display memory and viewed easily with the smooth scrolling capabilities. Additional memory can be ordered to give a total of up to 8 pages.

Display enhancements—underline, inverse video, blinking and half-bright— can be used in conjunction with the 64-character line drawing set to emulate existing paper forms. Security video, an additional enhancement, allows passwords and other confidential data to be input to the system without being displayed on the screen.

To save time and effort, the user can enable line modify mode while in character mode to make changes to a previously entered line without having to retype the entire line.

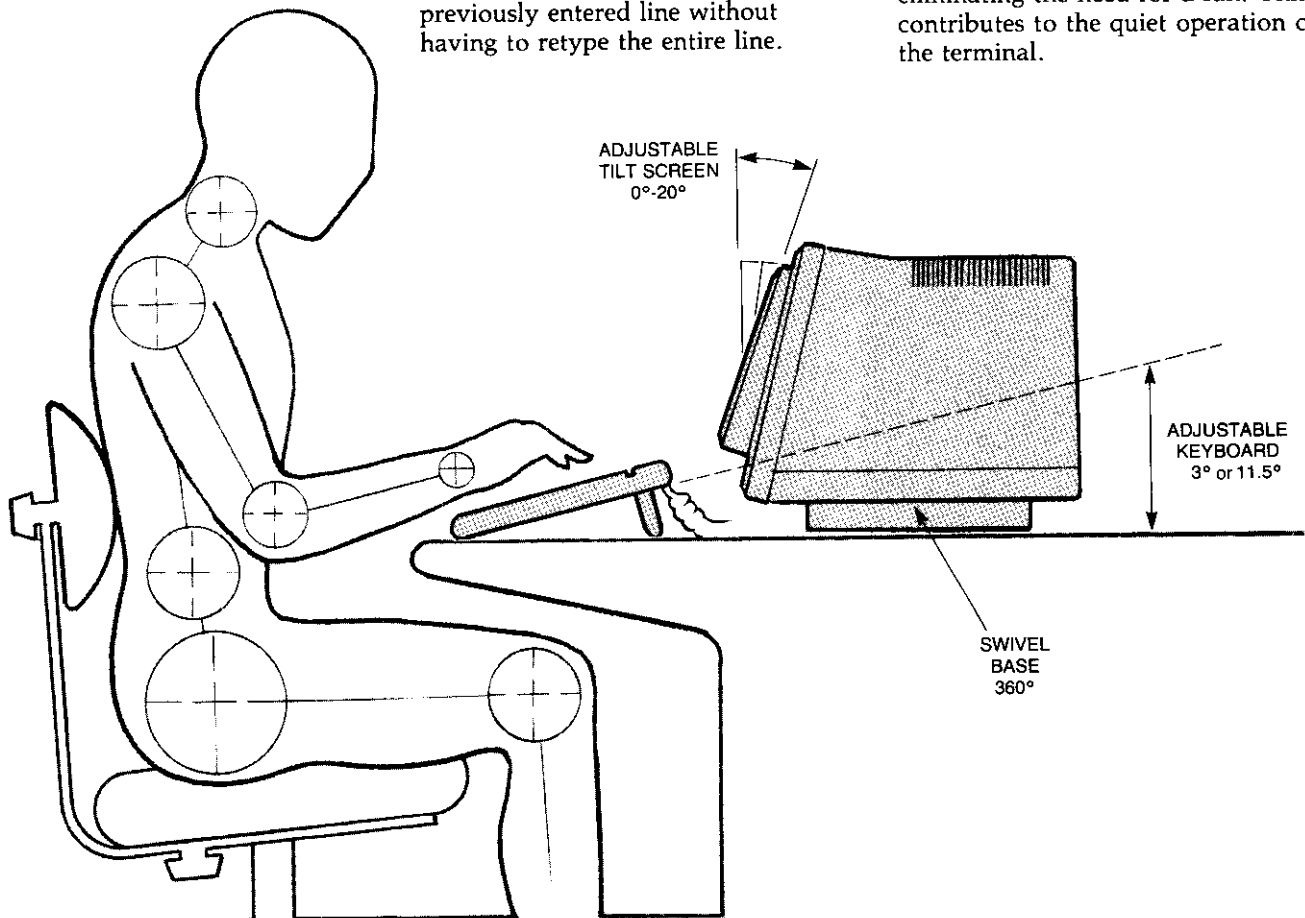
In block mode, forms, text and data can be edited with the local edit keys before the information is transmitted to the computer for processing. On HP 3000 systems the 2392A provides full compatibility with VPLUS applications.

With format mode enabled, protected and unprotected fields make filling out forms an easy task. Only the user-entered data in the unprotected fields is sent to the host.

## Ergonomics

The 2392A offers a contemporary design with standard ergonomic features. These features include an integral tilt and swivel mechanism, front panel power and brightness controls, and an anti-glare display screen. In addition, the new low profile detachable keyboard can be adjusted for use in either a flat or an angled position. The sculptured keys are color-coded and conveniently clustered by function.

The 2392A is convection-cooled, eliminating the need for a fan. This contributes to the quiet operation of the terminal.



## Ease of Use

The 2392A has eight function keys that can be used to simplify the operation of the terminal. Each function key has a corresponding screen label at the bottom of the display. These keys can be programmed to tailor the terminal for specific applications, eliminating the need for typing repetitive or complex commands. The content of these keys is not lost when the terminal is turned off, since the settings are stored in nonvolatile memory.

Screen menus containing user-selected or default settings are provided to simplify configuring the terminal. Configuration settings can be saved in nonvolatile memory.

The 2392A provides a choice of 17 national language keyboards. For a complete list of the keyboards available, refer to the Product Specifications section.

Terminal status information appears on the 27th line of the screen display. The status line indicates, for example, when the terminal is set for Insert Character, CAPS lock or ANSI operation.

The 2392A offers extensive self-test capabilities which allow the user to check if the terminal is functioning properly.

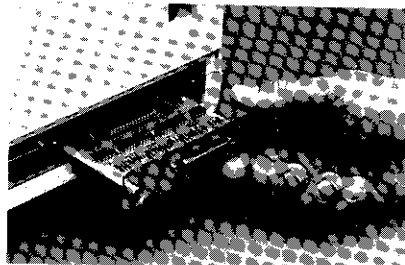
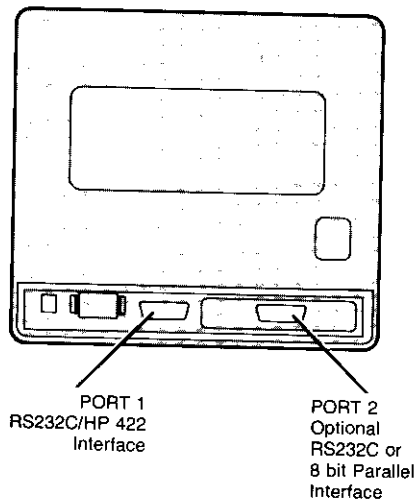
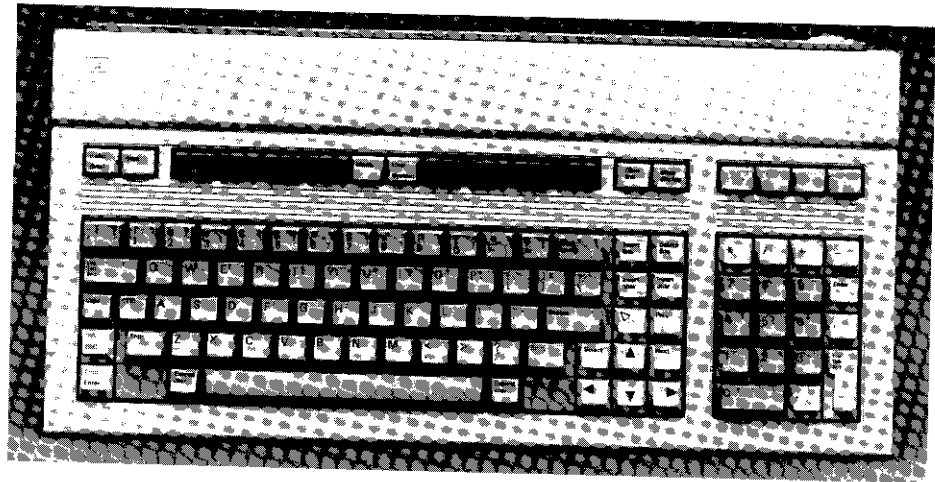
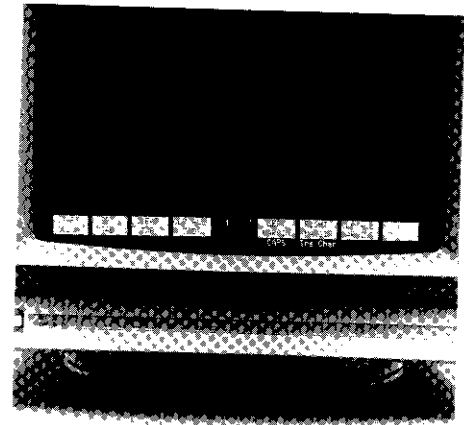
## Data Communications

The 2392A offers block, line or character mode communications. Full duplex point-to-point asynchronous transmission is supported with flexible hardware and software handshaking to interface with a variety of computer systems and printers.

Port 1 offers both RS232C and HP422 capabilities at data transmissions rates up to 19.2 kbps with handshaking.

For additional flexibility, an optional port 2 offers either an RS232C serial printer interface or a Centronics-type parallel printer interface. These modules are easily installed by the user.

The 2392A also connects to an X.25 PAD (Packet Assembler/Disassembler) network.



## ANSI Compatibility

The 2392A optionally provides a subset of the ANSI X3.64 standard for those users requiring a device-independent environment. In addition, the 2392A can execute many DEC® VT100® and VT52® control sequences. The user can select this mode via the terminal's configuration menu or programmatically from the host system. While in ANSI character mode operation, the user has access to additional features like double-high, double-wide characters and answerback.

## Reliability/Serviceability

The 2392A, using state-of-the-art VLSI technology to minimize component count, has been engineered to provide years of trouble-free service. For support services, Hewlett-Packard has a world-wide network of sales and service offices staffed by highly qualified customer engineers and system engineers.

---

## DATA COMMUNICATIONS (Continued)

---

Transmission Modes: Full duplex, asynchronous point-to-point. Compatible with Bell 103A, Bell 212A, Vadic VA3400 or equivalent full duplex modem.

Electrical Interface: Port 1: combined RS232C/HP422 data communications.  
Optional Port 2:  
RS232C serial interface or Centronics-type parallel 8-bit interface.

---

## POWER REQUIREMENTS

---

Input Voltage: 115 V (+10%, -25%) at 47-66 Hz.  
230 V (+10%, -15%) at 47-66 Hz.

Power Consumption: 50 watts

---

## PHYSICAL CHARACTERISTICS

---

Display Monitor Weight: 10.8 kg (23.8 pounds).

Display Monitor Dimensions: 325 mm wide × 362 mm deep × 317 mm high (12.8 inches × 14.2 inches × 12.5 inches).

Keyboard Weight: 2.2 kg (4.9 pounds).

Keyboard Height: 34 mm (1.3 inches) flat; 43 mm (1.7 inches) on stand.

(at center row):

Keyboard Dimensions: 455 mm wide × 220 mm deep × 35 mm high (17.9 inches × 8.7 inches × 1.4 inches).

---

## ENVIRONMENTAL CONDITIONS

---

Parameter	Condition	Specification
Altitude	Operating	0 to 4,600 meters (15,000 ft)
	Nonoperating	0 to 15,300 meters (50,000 ft)
Humidity	Operating	5 to 95% Relative Humidity at 40°C
	Nonoperating	90% Relative Humidity at 65°C
Radiation susceptibility	Both operating and nonoperating	Maximum 10V/m (tested from 30 MHz to 520 MHz)
Shock	Operating	30g, 11ms, 1/2 sine
Temperature (free ambient)	Operating	0°C to +55°C (+32°F to +131°F)
	Nonoperating	-40°C to +75°C (-40°F to +167°F)
Vibration	Both operating and nonoperating	Maximum peak-to-peak 0.38 mm (0.015 in.) at 5-55 Hz 3 axis for 15 minutes, with resonance dwell for 10 minutes at greatest resonance

---

## PRODUCT REGULATIONS

---

Safety: United States - UL listing under standards 478 and 114  
Canada - CSA certification under standard C.22.2 154  
Germany - VDE certification under standard VDE 0806 pending  
Finland - FEI approval pending  
International - IEC 380/435 Safety of Electrically Energized Office Machine Compliance

RFI: United States - FCC Docket 20780 Part 15 for class A equipment  
Germany - VDE 0871 level B Radio Protection Mark pending

Datacomm: CCITT V.24 interchange, V.28 Electrical Recommendations  
Australia - Authorized  
Belgium - Approval pending  
Germany - Approved: license number: FTZ 03013D  
Nordic network - Approval pending  
Sweden - Approval pending  
UK - Approved

---

# HP 2392A Product Specifications

---

## DISPLAY

---

CRT Type:	Etched anti-glare, with implosion protection
Phosphor:	Green P31
CRT Size:	30 cm (12 inches) diagonal
Display Area:	150 mm × 215 mm (6 inches × 8.5 inches)
Refresh Rate:	60Hz
Character Generation:	7 × 11 dot matrix in 9 × 14 dot cell with half-dot shift
Character Size:	2.4 mm × 3.5 mm (0.094 inch × 0.138 inch)
Screen Capacity:	24 lines × 80 columns (1920 characters). 25th and 26th lines for function key labels. 27th line for terminal status information.
Character Set:	ROMAN 8 comprising 128 ASCII character set and 61 national characters from the extended Roman set. National characters include United Kingdom, Danish, Dutch, Finnish, French, German, Italian, Norwegian, Spanish and Swedish. Plus the 64-character Line Drawing Set.
Cursor:	Blinking-underline.
Display Enhancements:	Inverse, underline, blinking, halfbright and security video in any combination.
Video Attributes:	Memory lock, display lock, protected fields, user selectable margins and tabs, plus jump or smooth scrolling (8 lines per second.)
Editing:	Insert character/line, delete character/line, clear line/all
Page Control:	Next/previous page
Display Memory:	Memory is allocated dynamically. Up to 4 pages standard (1.5 to 4 pages). Up to 8 pages optional (3.5 to 8 pages). Depending on the number of display enhancements and security video fields used, memory allocation can vary.



---

## KEYBOARD

---

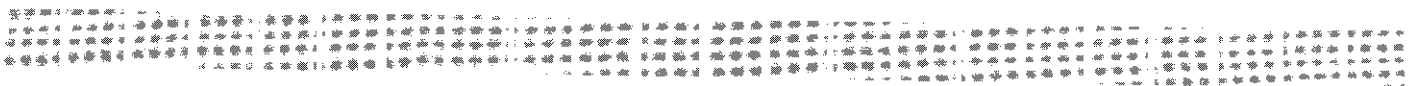
Style:	Detachable typewriter keyboard with 2 meter (6.6 ft.) fully extended coiled cable.
Layout:	107 sculptured keys. Separate numeric keypad, and independent user, editing and cursor keys. 17 national layouts are available: USASCII, Swedish, Norwegian, French, German, UK, Spanish, French-Canadian, English-Canadian, Italian, Dutch, Finnish, Danish, Swiss-German, Swiss-French, Spanish-Latin American and Flemish.
Operation:	Auto-repeat; N-key rollover
Function Keys:	8 screen-labeled user-definable function keys; screen labels up to 16 characters and function key definitions up to 80 characters in length. Can include control codes and escape sequences. Definitions are saved in nonvolatile memory.

---

## DATA COMMUNICATIONS

---

Data Rates:	Port 1: 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 4800, 9600, 19200 baud. Operation with control codes, escape sequences, or baud rates above 9600 may require handshaking or CPU-supplied delays. Optional Port 2 with the RS232C interface: 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 4800, 9600 baud. Operation with control codes or escape sequences may require handshaking or CPU-supplied delays.
Handshake:	Port 1: selectable software ENQ/ACK and XON/XOFF (transmit and receive), and hardware CS (Clear to Send). Optional Port 2: selectable software XON/XOFF (transmit only), hardware CS (Clear to Send) and SRR (secondary Receiver Ready).
Parity:	Selectable in 7-bit operation: even, odd, zero, one. Always none in 8-bit operation.
Operating Modes:	Local, remote, character, line, block, page, format, and optional ANSI operation. X.25 compatible using XON/XOFF when block mode is enabled and when the terminal is connected to an external PAD.



# HP 2392A ORDERING INFORMATION

Product Number	Description
2392A	DISPLAY TERMINAL
Opt. -015	230 V 50 Hz operation
-049	ANSI operation
-092	Port 2: 25-pin RS232C interface
-093	Port 2: 8-bit parallel Centronics-type interface
-160	Extended memory - adds up to 4 pages of display memory

## National Keyboards

-101	Swedish
-102	Norwegian
-103	French
-104	German
-105	UK
-106	Spanish
-107	Canadian-French
-108	Canadian-English
-109	Italian
-110	Dutch
-111	Finnish
-112	Danish
-113	Swiss-German
-114	Swiss-French
-115	Spanish-Latin American
-116	Flemish

## Cables

-301	U.S. modem cable, same as cable accessory 40242M
-302	European modem cable, same as cable accessory 40242M
-303	RS232C cable, same as cable accessory 40242C
-304	HP direct connect type 232 cable, same as cable accessory 40242X
-305	EMP (Electro-Magnetic Pulse) protect cable, same as cable accessory 40242Y
-306	HP direct connect type 422 cable, same as cable accessory 40242P

## Accessories

40210R	Port 2 25-pin RS232C interface
40210P	Port 2 8-bit parallel Centronics-type interface
40242A	RS232C/HP422 cable. Male (25-pin)/female (50-pin), 1 m (3 ft)
40242C	RS232C cable. Female (25-pin)/male (25-pin), 5 m (16 ft)
40242M	U.S./European modem cable. Male (25-pin)/male (25 pin) 5 m (16 ft)
40242P	HP direct connect type 422 cable. Male (25-pin)/male (5-pin), 5 m (16 ft)
40242X	HP direct connect type 232 cable. Male (25-pin)/male (3-pin), 5 m (16 ft)
40242Y	EMP protect cable. Male (25-pin)/male (25-pin) 5 m (16 ft)
40242Z	RS232C modem bypass cable. Male (25-pin)/female (25-pin), 5 m (16 ft)
40242D	Parallel printer cable. Amphenol male (36-pin)/male (36-pin), 2 m (6.6 ft)
40242G	Serial (RS232C) printer cable. Male (25-pin)/male (25-pin), 5 m (16 ft)

Note: All cables provide RFI filtering. The 2392A complies with RFI regulations only when used with these cables.

Corporate Headquarters:  
Hewlett-Packard  
3000 Hanover Street  
Palo Alto, CA 94304 USA

European Headquarters:  
Hewlett-Packard S.A.  
7 rue du Bois-du-Lan  
P.O. Box  
CH-1217 MEYRIN 2  
Geneva, Switzerland

Intercontinental Headquarters:  
Hewlett-Packard  
3495 Deer Creek Rd.  
Palo Alto, CA 94304 USA

