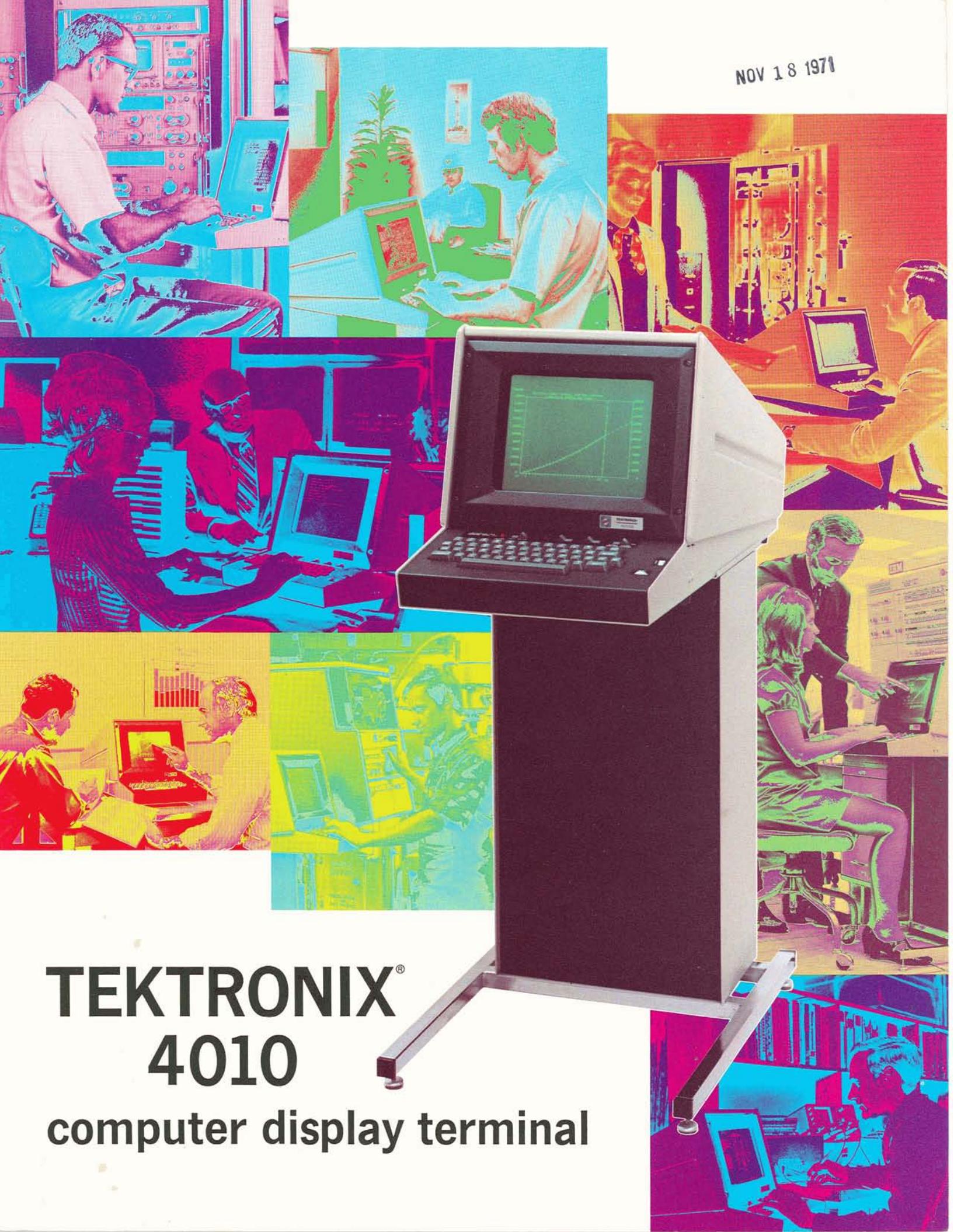


NOV 18 1971



TEKTRONIX[®]
4010
computer display terminal

when your computer
has something
to say...



the new TEKTRONIX® 4010

The 4010 is the first, LOW-COST GRAPHING terminal for BUSINESS and SCIENTIFIC USERS. A computer picture can be worth a thousand words. The 4010 produces both the right picture and the right words, putting computerized data in action by graphing it in the right format. Data now becomes useful information. Evaluation begins the moment it's displayed. Time is spent analyzing information and making decisions rather than viewing reams of alphanumeric data and hand plotting it.

low cost...

The LOW COST of the 4010 opens the door for the potential user who has avoided graphic terminals because of expensive hardware, software development and computer overhead.

compatibility...

The 4010 is now hardware and software operational with over 20 timesharing systems, with IBM 360/370 and with a host of popular mini-computers. A data communications interface is included with the 4010.

The easy-to-operate 4010 terminal and comprehensive PLOT-10 software package assure maximum flexibility in computer interfacing. The simplicity of this interfacing to your computer system gives you the 4010's problem-solving ability the day you receive it.

Optional Data Communications Interface—This unit is designed for operator convenience with rear panel, switch-selectable functions. It is fully compatible with EIA Spec. RS-232-C and CCITT (V24).

Optional Teletype Port Interface—The Teletype port interface allows high-speed data transmission between the 4010 and numerous mini-computers through the computer's TTY I/O port. (Refer to *Options* on back cover.)

easy operation...

Alphanumeric input to the computer is with a Teletype style keyboard. The 4010 is compatible with TTY ASCII. There is a left margin, a center screen margin and automatic carriage return/line feed at the right margin. Graphic input is by dual thumbwheels on the keyboard giving independent vertical and horizontal control of the full-screen crosshair cursor.

The direct-view storage CRT eliminates the need for an expensive refreshed memory and minimizes the information requirements of the data source.

You may address any point in a 1024 x 1024 point matrix and view any point in a 780 x 1024 point matrix.

The standard 4010 Computer Display Terminal uses a versatile pedestal. It is styled for business office, engineering lab or control system console. The display and keyboard section may be located up to five feet from the pedestal. It then becomes a convenient desktop terminal or a compact terminal section built into a system console.

hard copy capability...

The 4010-1 Computer Display Terminal retains all the unique features of the 4010, plus circuitry enabling compatibility with the 4610.

The 4610 Hard Copy Unit inexpensively produces permanent high-resolution, dry copies from the 4010-1 display. Copy is 8½ x 11-inches. Copy command may be initiated from the front panel, or under computer control or from the 4010-1 keyboard.

Since the 4610 is self-contained, installation consists merely of connection to the power line and to the 4010-1.

The 4610 with Option 1 retains all the unique features of the 4610, plus multiplexing capability. This enables it to produce hard copies of the information displayed on from one to four 4010-1's.

it can
be said
more ways,
more
effectively,
with the
TEKTRONIX®
4010



**more software
for
more users
than ever
before!**

new PLOT-10/ software...

The PLOT-10 software system offers more graphing software for more users than ever before. It is compatible with most timesharing systems, with IBM 360/370 and with numerous mini-computers. PLOT-10 offers a series of modules from which can be selected those elements that best suit the operating environment and application. Now users have available a new tool to get computer data into a graphing form directly helpful to decision-making.

PLOT-10/ mini-computer...

The PLOT-10/mini-computer package lets the operator easily use the TEKTRONIX 4010 on his mini-system. PLOT-10 consists of assembly-language subroutines supporting graphics input/output and alphanumeric characteristics of the 4010 terminal.

Two basic software routines perform I/O functions of the 63 ASCII characters and symbols (upper-case letters). Other subroutines permit information in mini-computers to be plotted within the flexibility of a program, and let an operator communicate graphics information to the mini-computer using the 4010.

PLOT-10/360-370...

The PLOT-10/360-370 software module provides the capability to access TEKTRONIX 4010 terminals from within application programs. Written in assembler language using the Execute Channel Program I/O facility, the module can be accessed from any of the IBM programming languages by subroutine calls. Special facilities are provided for PL/I compatibility. The module will handle multiple terminals, and operates under OS MFT or MVT.



PLOT-10/FORTRAN II timesharing...

The PLOT-10/FORTRAN II timesharing package is a set of subroutines written in FORTRAN II that facilitates the use of the 4010 terminal. These subroutines have been written for easy installation on timesharing computers. The package consists of utility, plotting, graphic-input, axis-generation routines, and a software-character-generation routine.

PLOT-10/terminal- control system...

The PLOT-10/terminal-control system sets a new standard for interactive graphics terminal software. It provides a comprehensive base of graphic software to support user application programs.

The module is written in FORTRAN IV. These routines and localization allow magnification of information for a detailed view of any portion of a display. All clipping and scaling is automatic.

They also provide for erasing the screen; making a hard copy; determining character size and font, etc.; plotting absolutely or relatively; handling and formatting alphanumeric output; performing graphic input of screen points or point relative to the total user picture; and drawing software-generated characters of any desired size or orientation. Care has been taken to maximize transferability to any operating system that supports a FORTRAN IV compiler.

The routines communicate with one another through a central-terminal status area and are designed for inclusion in the existing FORTRAN library.

PLOT-10/graphing...

The PLOT-10 graphing module lets the operator display data graphically without concerning himself with programming details. Alphanumeric data tables can be converted to graphs with a single subroutine call. Routines are included for data plotting in Cartesian, semi-log, log-log and polar-coordinate systems, with automatic or specified scaling. One curve or several curves can be drawn on the same set of coordinates.

Business graphing is provided to easily duplicate existing graph formats so managers using the computer output need not learn new formats. Pie charts and histograms are also provided.

A wide variety of subroutine calls is available to provide flexibility and ease of use.

PLOT-10/application interface...

A series of graphing modules using PLOT-10/graphing subroutines permit the user to obtain graphs directly from existing applications packages.

A modular approach has been adopted for the application-interfacing packages. Computations required are isolated from the graphics that display their results, which allows flexibility in future development. This software allows digital manipulation of graphic information, the results of specific computations can be presented in a variety of ways. The viewer needs look at only the interesting part of the computer output.

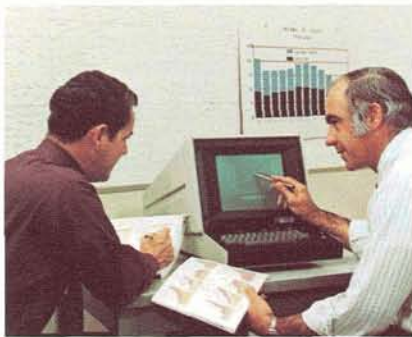


*it can be said
more ways,
more effectively,
with the
TEKTRONIX®
4010 in
these areas:*

business...

Trends, comparisons and patterns of cost of sales, sales forecasts, simulations of decision alternatives, purchasing and inventory control, manufacturing scheduling, and personnel systems are economically presented in any format.

By entering simple instructions at the 4010 keyboard you can conveniently have line drawings, bar graphs or pie charts with appropriate alphanumeric annotations and summaries, immediately displayed at your desk or conference room.



machine control...

The 4010 with appropriate software will dramatically reduce new part development time from part design to error free numerical control tape.

Computer output can be graphically displayed and viewed on the 4010 for part design verification and program editing, eliminating costly errors.

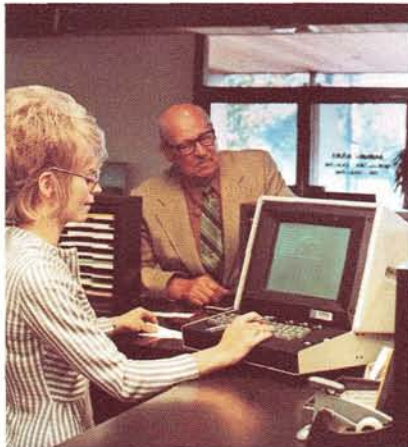
Machine tool characteristics may also be simulated on the display.



finance...

The most up-to-the-minute STOCK MARKET information can be displayed on the 4010 for your analysis in your own format. The 4010 produces a graph for you in a matter of seconds, making manual techniques obsolete.

In BANKING current account balances, withdrawals, deposits, number of overdrafts, and returns are continuously available. Signature verification by actual comparison is a practical reality with graphing capability.



production testing...



The high quantities of constantly changing test data from product and component testing activity can be converted into easy-to-see and simple-to-analyze graphic displays without compromising alphanumeric requirements.

Dynamically interacting variables can be tabulated, smoothed and graphed to be made comprehensive. In this way turn around time from test to analysis is significantly reduced.

process control...

Chemical, metal and electrical producing and distribution processes can be analyzed, controlled and simulated from simple instructions entered at the 4010 keyboard.

Entire processes can be displayed for overview and sequence or specific areas may be analyzed in detail. Designation of alternate courses, process parameters or real time monitoring of selected executions is feasible. Parameter recording and process status reports from the 4010-1 are directly produced by the 4610.



engineering and science...

Electrical, mechanical and chemical engineering as well as scientific problems frequently are characterized by tedious iterations and page after page of alphanumeric data output.

Graphic displays enable more comprehensive and quicker understanding of problems. The displayed information waits for you to digest it, you don't wait for it.

Most engineering simulation packages have been or can be easily interfaced. Faster problem solving turn around is achieved and needless repetitions are by-passed with visual verifications.





Price Information

- 4610 Hard Copy Unit
- 4610-1 Hard Copy Unit (220-VOLT MOD)
- 4610, Option 1 (MULTIPLEX UNIT)
- 4911 Reader/Perforator
- 4912 Digital Cassette Tape Unit

CATALOG PRICES

Product	Price
4610	\$3550
4610, Option 1	3950
4610-1	3550
4610-1, Option 1	3950
4911 Reader/Perforator	2950
4912 Digital Cassette Tape Unit	1950

QUANTITY DISCOUNT

The 4610 and 4610-1 are covered by the standard Tektronix Quantity Discount.

Number Purchased	Discount Percent
1-9	NET
10-19	2%
20-29	4%
30-49	6%
50 and up	As Quoted

LEASE PROGRAM

This Lease Agreement is a noncancellable, one-year lease requiring no advance payment. The equipment may be purchased any time during the term of the lease with thirty days written notice. A portion of the paid-in amounts will be credited towards a purchase price. The following monthly fees include full product maintenance and service. An additional cost may be charged when the product must be serviced more than 100 miles from the nearest Tektronix service center.

LEASE SCHEDULE

	1st Year	2nd Year	3rd Year
4610	\$185	\$175	\$170
4610-1	185	175	170
4610, Option 1	200	190	180
4610-1, Option 1	200	190	180
4911	190	180	175
4912	130	125	125
4912 w/Option	150	145	145

Local Tektronix Application Engineers and Field Engineers should be contacted for additional ordering information.

U.S. Sales Prices FOB Beaverton, Oregon

INFORMATION DISPLAY PRODUCTS



TEKTRONIX®
excellence in
information display

Price Information

- 4010 Computer Display Terminal
- 4010-1 Computer Display Terminal (HARD COPY COMPATIBLE)
- 4010 w/Options
- 4010 and 4010-1 Accessories
- PLOT-10 Software Package

CATALOG PRICES

Product	Price
4010	\$3950
4010 w/Option 1, 2, 3, 4, 5, 6 or 7	4250
4010-1	4250
4010-1 w/Option 1, 2, 3, 4, 5, 6 or 7	4550

ACCESSORIES

Instruction Book	062-1445-00	\$ 1.00
User's Manual	070-1225-00	5.00
Maintenance Manual	070-1183-00	20.00
Accessory Motherboard	670-1743-00	95.00
Audio Recorder Card	670-1980-00	295.00
Display Multiplexer Card	670-2046-00	195.00
Copy Holder	016-0291-00	15.00
Electromagnetic CRT Shield	337-1519-00	50.00
Logic Extender Card	067-0653-00	250.00
72 Pin Extender Card	670-1739-00	30.00



QUANTITY DISCOUNT

This discount schedule applies only to the 4010 and 4010-1, and their options.

Number Purchased	Discount Percent
1-3	NET
4-9	5%
10-19	10%
20-49	15%
50 and up	As Quoted

LEASE PROGRAM

This Lease Agreement is a noncancellable, one-year lease requiring no advance payment. The equipment may be purchased any time during the term of the lease with thirty days written notice. A portion of the paid-in amounts will be credited towards a purchase price. The following monthly fees include full product maintenance and service. An additional cost may be charged when the product must be serviced more than 100 miles from the nearest Tektronix service center.

LEASE SCHEDULE

	1st Year	2nd Year	3rd Year
4010	\$190	\$180	\$170
4010 w/Option	200	190	180
4010-1	200	190	180
4010-1 w/Option	210	200	190

PLOT-10 SOFTWARE PACKAGE

PLOT-10/Mini-computer	\$ 50
PLOT-10/Terminal Control	325
PLOT-10/FORTRAN II Timesharing	175
PLOT-10/360-370	500
PLOT-10/Advanced Graphing	250

U.S. Sales Prices FOB Beaverton, Oregon

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INFORMATION DISPLAY PRODUCTS



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excellence in
information display

Specifications...

Model Number	4010 Computer Display Terminal
Model Number	4010-1 Computer Display Terminal (Hard Copy Compatible)
Display Medium	11-inch direct view bistable storage CRT
Display Area	7.5-inches wide by 5.6-inches high
Alphanumeric Mode	
Format	72 characters per line, 35 lines 2520 characters per screen
Character Set	63 printing characters (TTY ASCII Code)
Character Size	0.2-inch high x 0.1-inch wide (approx.)
Character Generation	5 x 7 dot matrix MOS Read-Only Memory 1200 characters per second
Cursor	Pulsating 5 x 8 dot matrix
Graphic Mode	Vectors only Vector drawing time is 2.6 ms 1024 x 1024 addressable points 1024 x 780 viewable points
Graphic Input Mode	1024 (x), 780 (y) points. Thumbwheel- controlled crosshair cursor.
Interfaces	Standard Data Communication Interface included with the 4010 and 4010-1 is RS-232-C compatible. Strap selectable input/output data rates of 150, 300, 600, 1200, 2400, 4800 and 9600 bits/sec. Option 1 —Optional Data Communication Interfaces with convenient switch selectable functions including: local-echo, full-duplex, half-duplex and independent transmit and receive rates of 110, 150, 300, 600, 1200, 2400, 4800 and 9600 bits/sec. Option 2 —Teletype Port Interface PDP-11 Option 3 —Teletype Port Interface PDP-8i, 8l, 12 Option 4 —Teletype Port Interface Nova, Supernova, Nova 1200, Nova 800 Option 5 —Teletype Port Interface PDP-8e Option 6 —Teletype Port Interface Hewlett Packard-2114, 2116, 2100A Option 7 —Teletype Port Interface Varian 620i, 620L, 620R
Hard Copy Units	4610 (Compatible with 4010-1) 4610 Option 1 (multiplexes up to four 4010-1)
Input Power	110/220 (HI, MED, LOW) strappable VAC 50/60 Hertz
Operating Temperature	+ 10°C to + 40°C

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Cable: TEKTRONIX

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