

HIOKI

PLOTTER

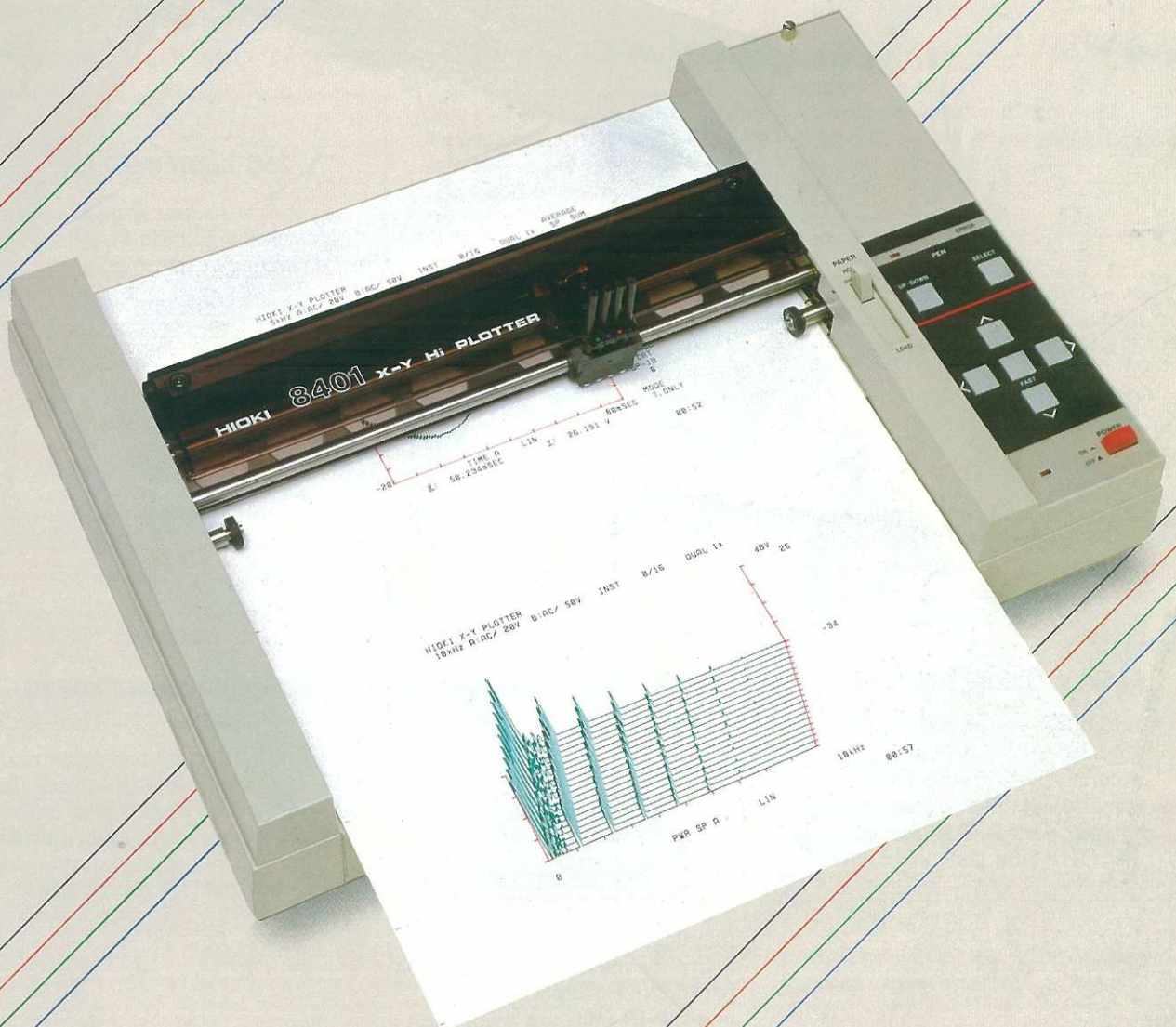
8401 X-Y Hi PLOTTER

8401

Resolution of $50\mu\text{m}$, Pen Speed of 450mm/s

Professional-Grade X-Y Plotter

- High Reliability
- High Copy Quality, High-Speed Operation
- Powerfull Command Set
- Continuous Plotting Possible
- Two Paper Size
- Four-Color Graphics
- Three Types Interface Available

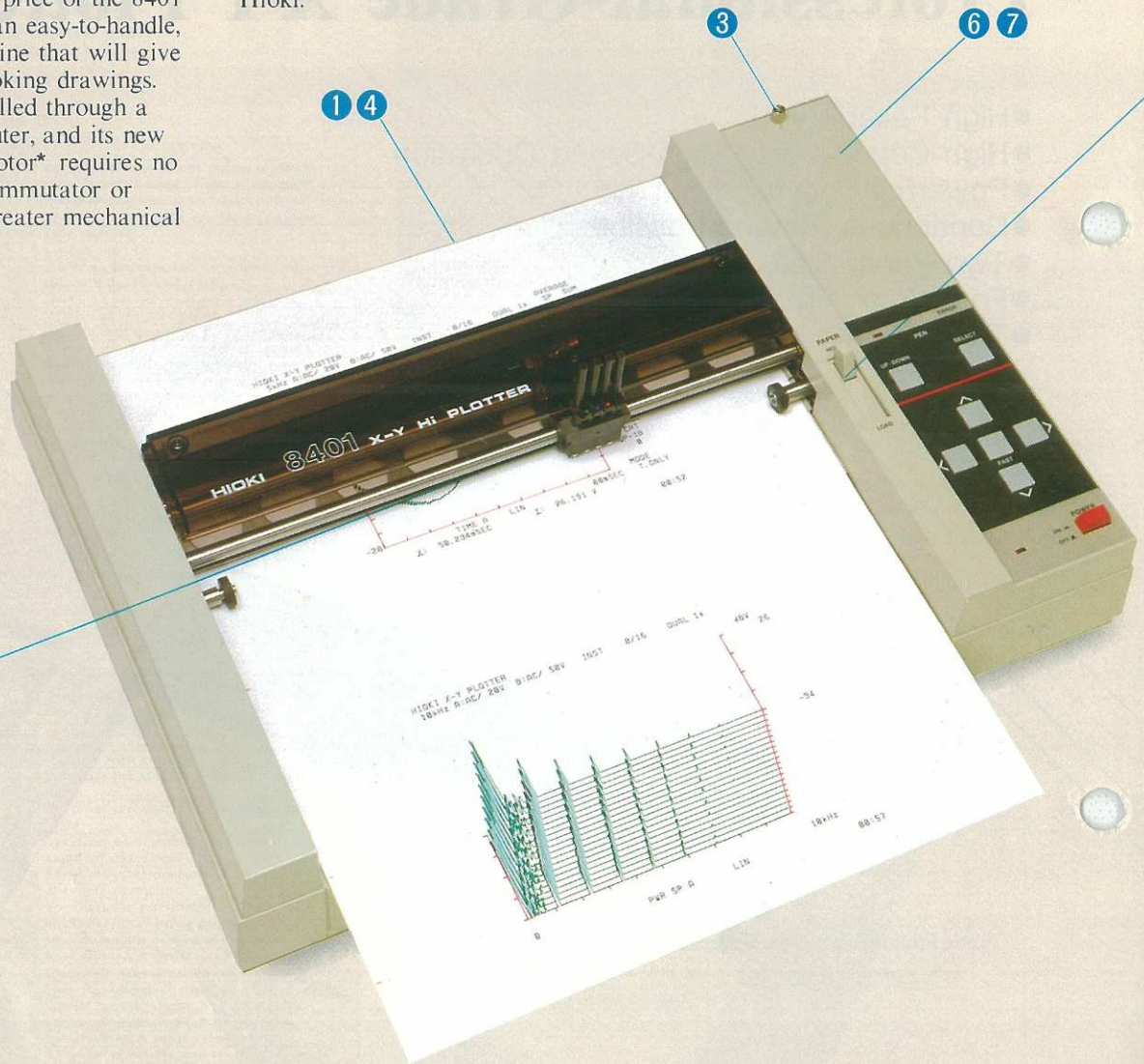


Excellent copy quality.....

1 Professional Results

Extensive use of microcircuits reduce the size and price of the 8401 X-Y Hi Plotter to an easy-to-handle, easy-to-afford machine that will give you professional-looking drawings. Pen speed is controlled through a special microcomputer, and its new AC synchronous motor* requires no maintenance (no commutator or brushes) for even greater mechanical reliability.

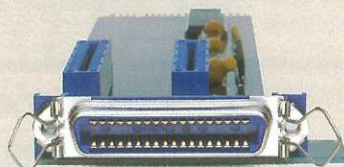
* Motor designed and developed by Hioki.



2 Four-Color Graphics

Selectable writing pens are fixed-mounted on the bar for highly accurate performance and excellent copy quality. Up to four colors can be used, with ball-point, plastic-tip, and OHP film pens available.

3 One-Touch Changeable Interface



Interfaces are mounted on a unit board for interchangeability. 8-bit parallel (Centronics), RS-232-C, and GP-IB units are available.

4 Continuous Plotting Possible

The 8401 can be programmed for continuous plotting without the addition of a chart feed mechanism.* However, a chart guide or roll chart holder (optional, available soon) is required for this function.

Uses Range from Scientific Measurements to Business Applications.

5 High Copy Quality-High Pen Speed-A3/B Chart Size

Plotting is accomplished using the paper grip method where both pen and chart are simultaneously moved. While physical size of the plotter is very compact, chart sizes of either A4/A or A3/B can both be accommodated. Compared with conventional plotters, this operating system permits smaller moving parts to be used, greatly reducing inertial forces within the system. The result is higher plotting speeds, and improved copy quality. Virtually any type or quality of paper can be used, and repeatability is excellent.

6 Powerful Command Set

The plotter is programmed with a set of 74 different plotting commands. Software developmental requirements are minimum.

7 Expansion RAM Cartridges (Option)

Expansion RAMs come in one-touch mountable cartridges. Capacity is increased to 7 kilobytes through expansion.

Putting the features of the 8401 X-Y Hi Plotter to work for you will result in the following advantages.

Features	Advantages
<p>1 High reliability designed into machine Drive motor has no brushes and commutator to wear out. No slide-wire potentiometer. Superb reliability, minimum maintenance, long service life.</p>	Extensive use of maintenance-free, non-wearing parts increases reliability and service life far beyond that of conventional plotters.
<p>2 High copy quality Step size of 100μm. Lines, curves, and characters blend smoothly. Four-color automatic selection for multi-color graphics.</p>	High accuracy and multi-color graphics capability makes data easy to distinguish and identify. Increases effectiveness of presentations.
<p>3 One-touch interchangeable interfaces Cassette type interfaces are used. 8-bit parallel (Centronics), RC-232-C, and GP-IB are available.</p>	Provides maximum flexibility and compatibility with other equipment. Changing procedure quick and simple.
<p>4 Programmable for Continuous plotting operations.</p>	High-priced chart-feed mechanism not required. Plotter can be programmed for continuous operation. Ideal for plotting large volumes of data.
<p>5 Compact, lightweight, accommodates paper sizes up to A3/B. High-speed operation Pen speed in the X, Y axial direction is 450 mm/s.</p>	Physical size only 1/2 that of conventional platform plotters. Easy to move where needed. Drawings completed quickly. Saves time, keeps you on schedule.
<p>6 Powerful plotting commands Built-in plotting command set has 74 commands.</p>	Makes development of software easier, saves time.

Specifications

Chart Size: ISO A4 or ISO A3 (ANSI A, DIN A4 or ANSI B, DIN A3 also possible)

Allowable Grip Size: 278mm to 300mm

Max. Plotting Area: 250 × 180mm (ISO A4, ANSI A, DIN A4), 250 × 380mm (ISO A3, ANSI B, DIN A3)

Max. Plotting Speed: 450mm/s (axial direction)

Repeatability: 0.2mm

Resettability: 100 μ m

Mechanical resolution: 50 μ m

No. of Pens: Four (black, red, green, blue)

Types of Pens: Ball-point (oil-based), Plastic-tip (water-based) (Pens for plain paper and OHP film available.)

Interface: 8-bit parallel, RS-232-C, GP-IB (select one)

Environmental Conditions: 5~45°C, 35~75% RH

Power Source: AC 100, 120, 200, 220, 240V \pm 10% (specify at order) 50/60Hz

Dimensions: 440W × 105H × 300D (mm)

Weight: Approx. 7.7kg

Accessories: Ball-point pens, 5 ea. (2 each black, 1 each red, green, blue) Pen cap, 4 ea.

Plotter paper ISO A4 size (50 sheet), 1 set.

" ISO A3 size (50 sheet), 1 set.

Power cord, 1 ea.

Powerfull Command Set

	Type	Command	Action
Linear movement	Absolute movement	PA	Pen movement as specified by absolute coordinate value. PU and PD can be included as a parameter.
	Relative movement	PR	Pen movement as specified by relative coordinate value. P U and PD can be included as a parameter.
	Pen up	PU	Lifts the pen.
	Pen down	PD	Lowers the pen.
Arcs, Curves	Absolute arc	AA	Draws an arc centered on a specified absolute coordinate point.
	Relative arc	AR	Draws an arc centered on a specified relative coordinate point.
	Circle	CI	Draws a circle centered on the present point.
	Spiral	PI	Draws a spiral (radius specified by operator).
	Oval	OV	Draws an oval (axial radius specified by operator).
Axes	Graduations	TL	Specifies the distance between graduations when executing XT and YT commands.
		XT	Draws the X axis graduations.
		YT	Draws the Y axis graduations.
	X axis	X	Draws the X axis.
	Y axis	Y	Draws the Y axis.
	Grid	G	Draws line segments parallel to the X or Y axis.
Graphs	Marking	SM	Prints the characters specified when executing PA, PR, or GR commands.
	Relative graph	GR	Draws an X-Y figure on the X increment specified.
	Hatching command	FT	Used to specify shape, spacing, and slope for RA, RR, and WG commands.
		PT	Used to specify spacing for hatching lines.
	Absolute square	EA	Draws a square specified by absolute coordinates.
	Relative square	ER	Draws a square specified by relative coordinates.
	Absolute hatching	RA	Hatches the square specified by absolute coordinates.
	Relative hatching	RR	Hatches the square specified by relative coordinates.
	Fan	EW	Draws fan shapes.
Round hatching	WG	Hatches with circles.	
Character set	Standard character code	CS	Specifies the standard character code table.
	Alternate character code	CA	Specifies the alternate character code table.
	Standard character print	SS	Specifies print operations using standard characters.
	Alternate character print	SA	Specifies print operations using alternate characters.
	Label terminator	DT	Specifies the terminator for the character array being plotted.
		DI	Specifies character direction as an absolute value.
		DR	Specifies character direction as a relative value.
	Direction	R	Specifies character direction as an angular value.
		SL	Specifies character slope as a tan θ value.
	Italics	I	Specifies character slope as an angular value.
		SI	Specifies character size as an absolute value.
	Size	SR	Specifies character size as a relative value.
		S	Specifies character size by magnification
Spacing	ES	Adjusts character and line spacing.	
Print	Space feed	CP	Moves the pen using a specified number of characters as a unit.
	Print	LB	Drws (prints) characters.
Coordinate system	Scaling pointer	IP	Specifies the scaling points for SC, LT, DR, SR, TL, and other commands.
	Writing area	IW	Restricts writing area to the operator-set parameters.

	Type	Command	Action
Coordinate system	Scaling	SC	Designates a user-unit value as the scaling point.
	Reference point movement	FO	Makes a movement parallel to the drawing.
	Enlargement/Reduction	FC	Enlarges or reduces drawing size.
	Rotation	RG	Rotates the drawing around a specified point.
	Coordinate system rotation	RO	Rotates the coordinate system of the plotter.
Control	Error processing	SE	Specifies processing operations in the event of an error.
	Error mask	IM	Sets all masks.
	Chart change	PS	Moves to the chart change position.
	Chart feed	PF	Feeds the chart.
	Pen specify	SP	Specifies the writing pen.
	Pen speed	VS	Specifies pen speed at pen-down.
	Home position	H	Moves to the four corners of the window.
	Line type	LT	Specifies a solid line, or nine types of broken lines.
		GP	Selects printer mode.
Digitize	Present coordinate	OA	Enables output of the present pen position.
	Command coordinate	OC	Enables output of the last coordinate value sent to the plotter, along with pen status.
	Error	OE	Enables output of the error number, then clears the error status.
	Plotter unit number	OF	Enables output of the plotter unit, specified as n/mm.
	Effective movement coordinates	OH	Enables output of the coordinate values specifying the mechanical limits of pen movement.
	Scaling point	OP	Enables output of scaling points.
	Writing area	OW	Enables output of the coordinate values making up the window area.
	Model number	OI	Enables output of the plotter model number.
	Status	OS	Enables output of the plotter status byte.
	Initialization	Character initialize	SZ
		DF	Sets the standard status.
		IN	Initializes the plotter.
Printer mode	Direct commands	* DC 1	Clears the interface.
		* DC 2	Initializes the plotter.
		* LF	Initiates the CR and LF process.
		* FF	Initiates the FF process.
		* NUL	Sets the plotter mode.

* Asterisk items are ASCII code inputs.

Optional Accessories

9525 Expansion RAM cartridges (1 kilobyte expansion)

9520 8-bit parallel interface (Centronics compatible)

9521 RS-232-C interface

9522 GP-IB interface

Consumable parts

Ball-point pens (oil-based)

Code	Description	Color
9250-00	Four-color set (4 pens/set)	1 each black, red, green, blue
-01	Single-color set (4 pens/set)	black
-02	" " "	red
-03	" " "	green
-04	" " "	blue

Plastic-tip pens (water-based)

Code	Description	Color
9251-00	Four-color set (4 pens/set)	1 each black, red, green, blue
-01	Single-color set (4 pens/set)	black
-02	" " "	red
-03	" " "	green
-04	" " "	blue

Plastic-tip pens (water-based) for overhead transparency

Code	Description	Color
9252-00	Four-color set (4 pens/set)	1 each black, red, green, blue
-01	Single-color set (4 pens/set)	black
-02	" " "	red
-03	" " "	green
-04	" " "	blue

Ordering Information

8401-01 With 8-bit parallel interface

8401-02 With RS-232-C interface

8401-03 With GP-IB interface

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