

VECTOR PLOT**PURPOSE**

Generates a vector plot.

DESCRIPTION

A vector plot is a plot in which pairs of points are drawn as vectors. That is, an arrow is drawn from the first point to the second point. Several formats for storing the vectors are supported.

SYNTAX 1

VECTOR PLOT <y1> <x1> <y2> <x2> <SUBSET/EXCEPT/FOR qualification>

where <y1> is a variable containing the y coordinates for the first point;

<x1> is a variable containing the x coordinates for the first point;

<y2> is a variable containing the y coordinates for the second point;

<x2> is a variable containing the x coordinates for the second point;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

SYNTAX 2

VECTOR PLOT <y1> <x1> <ydelta> <xdelta> <SUBSET/EXCEPT/FOR qualification>

where <y1> is a variable containing the y coordinates for the first point;

<x1> is a variable containing the x coordinates for the first point;

<ydelta> is a variable containing the change in the vertical direction from the first point to the second point;

<xdelta> is a variable containing the change in the horizontal direction from the first point to the second point;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

SYNTAX 3

VECTOR PLOT <y1> <x1> <angle> <length> <SUBSET/EXCEPT/FOR qualification>

where <y1> is a variable containing the y coordinates for the first point;

<x1> is a variable containing the x coordinates for the first point;

<angle> is a variable containing the angle between the two points;

<length> is a variable containing the length of the vector between the two points;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

VECTOR PLOT Y1 X1 Y2 X2

VECTOR FORMAT DELTA
VECTOR PLOT Y1 X1 YDEL XDEL

VECTOR FORMAT ANGLE
VECTOR PLOT Y1 X1 ANGLE LENGTH

NOTE 1

The VECTOR FORMAT command specifies which syntax to use. The default is syntax 3 (i.e., specify the coordinates of the first point, the angle, and a length). VECTOR FORMAT DELTA specifies syntax 2 and VECTOR FORMAT POINTS specifies syntax 1.

NOTE 2

The line style, thickness, and color of the line segment portion of the arrow are set by the LINE, LINE THICKNESS, and LINE COLOR commands respectively. The size of the arrowhead is set by the CHARACTER HW or CHARACTER SIZE command. The CHARACTER FILL command specifies whether the arrow head is filled or hollow.

NOTE 3

The following two commands affect the appearance of the arrow head.

VECTOR ARROW <FIXED or VARIABLE>
VECTOR ARROW <OPEN or CLOSED>

Entering **FIXED** means all the arrow heads are drawn the same size. Entering **VARIABLE** means that the size of the arrow head is scaled to the length of the longest vector. The arrow head is drawn as a triangle. Entering **OPEN** specifies that the base of the triangle is not drawn while entering **CLOSED** specifies that it is. The defaults are **FIXED** and **CLOSED**.

NOTE 4

The **VECTOR PLOT** command currently supports only 2D plots. A 3D vector plot can be generated with a little more effort. You can do something like the following:

```

READ X Y Z TAG
x1 y1 z1 1
x2 y2 z2 1
x3 y3 z3 2
x4 y4 z4 2
...
END OF DATA
CHARACTER VECTOR ALL
3D-PLOT Z Y X TAG

```

The key is that the **TAG** variable identifies pairs of points (i.e., the starting point and the ending point). Setting the character type to **VECTOR** specifies that an arrow is drawn between pairs of points with the same value for **TAG**.

NOTE 5

Two bugs were fixed 94/2.

1. The arrow heads were not drawn correctly if a software font was used. Earlier versions can work around this problem by entering the command **CHARACTER FONT TEKTRONIX ALL**.
2. For vector plots, the pre-sort switch should be set to **OFF**. This is now done automatically. Earlier versions can work around this by entering the command **PRE-SORT OFF** (and then **PRE-SORT ON** after the **VECTOR PLOT** command).

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

VECTOR FORMAT	=	Specify the data format for vector plots.
VECTOR ARROW	=	Specify the attributes of the arrow for vector plots.
LINES	=	Sets the type for plot lines.
LINE COLOR	=	Sets the color for plot lines.
LINE THICKNESS	=	Sets the thickness for plot lines.
CHARACTER	=	Sets the type for plot characters.
CHARACTER HW	=	Sets the height and width for plot characters.
CHARACTER SIZE	=	Sets the size for plot characters.
CHARACTER FILL	=	Sets the fill switch for plot characters.
CHARACTER COLOR	=	Sets the color for plot characters.
PLOT	=	Generates a data or function plot.

APPLICATIONS

Data Analysis

IMPLEMENTATION DATE

92/10

PROGRAM

```

READ Y1 X1 Y2 X2
0.100000E+02 -0.152400E+02 0.1051449E+02 -0.1734317E+02
0.100000E+02 -0.139700E+02 0.1094621E+02 -0.1644858E+02
0.100000E+02 -0.114300E+02 0.1378484E+02 -0.1588376E+02
0.100000E+02 -0.101600E+02 0.1672586E+02 -0.1649936E+02
0.100000E+02 -0.889000E+01 0.1808503E+02 -0.1553822E+02
0.100000E+02 -0.762000E+01 0.1995356E+02 -0.1463254E+02
0.100000E+02 -0.635000E+01 0.2206867E+02 -0.1353830E+02
0.100000E+02 -0.508000E+01 0.2215228E+02 -0.1128796E+02
0.100000E+02 -0.381000E+01 0.1978718E+02 -0.8024862E+01
0.100000E+02 -0.254000E+01 0.1635728E+02 -0.4799302E+01
0.100000E+02 -0.127000E+01 0.1361335E+02 -0.2298972E+01
0.100000E+02 0.000000E+00 0.1239326E+02 -0.5136330E+00
0.100000E+02 0.127000E+01 0.1173628E+02 0.1501220E+01
0.100000E+02 0.254000E+01 0.1153493E+02 0.2589486E+01
0.100000E+02 0.381000E+01 0.1203320E+02 0.3974670E+01
0.100000E+02 0.508000E+01 0.1404934E+02 0.5650798E+01
0.100000E+02 0.635000E+01 0.1606889E+02 0.7883220E+01
0.100000E+02 0.762000E+01 0.1955596E+02 0.1140826E+02
0.100000E+02 0.889000E+01 0.2272479E+02 0.1506554E+02
0.100000E+02 0.101600E+02 0.2338944E+02 0.1776808E+02
0.100000E+02 0.114300E+02 0.2053801E+02 0.1859783E+02
0.100000E+02 0.127000E+02 0.1738284E+02 0.1887298E+02
0.100000E+02 0.139700E+02 0.1535987E+02 0.1946041E+02
0.100000E+02 0.152400E+02 0.1346489E+02 0.1979359E+02

```

END OF DATA

CHARACTER VECTOR ALL; CHARACTER HW 0.3 0.6 ALL

VECTOR ARROW OPEN; VECTOR FORMAT POINT; TITLE AUTOMATIC

VECTOR PLOT Y1 X1 Y2 X2

