CHAPTER 12 Graphics Attributes

All lines drawn by DATAPLOT can have the following attributes set:

• line type;

• line color;

• line thickness.

Available line types

DATAPLOT recognizes the following line types--

no line	BLANK or NONE or BL or NO
solid	SOLID or SO
dotted	DOT or DOTTED or DO
dashed	DASH or DASHED or DA
dashed type 1	DASH1 or DA1
dashed type 2	DASH2 or DA2
dashed type 3	DASH3 or DA3
dashed type 4	DASH4 or DA4

The short designations (e.g., BL for BLANK, SO for SOLID, DA3 for DASH3) allow for the specification of a large number of line types on a single command line. For example,

    LINES SO SO SO SO SO DO DO DO DO DO DA DA DA DA DA

DATAPLOT draws all dash patterns in hardware, so dashed lines can have a somewhat different appearance on different graphics devices. In addition, some graphics devices may not support 5 different dash patterns. In this case, the unsupported dash types are mapped to one of the supported dash types. DATAPLOT does not currently draw any dash patterns in software.

The line style for each element of the plot can be controlled individually. These commands are documented in the Plot Control chapter.

Line colors

The available colors are documented in the Color chapter. The line color for each element of the plot can be controlled individually. These commands are documented in the Plot Control chapter.

Line thickness

Line thickness is handled in hardware when available on the device. If not, thick lines are drawn as multiple lines in software. The documentation for the supported devices in the Output Devices chapter specifies whether the given device draws wide lines in hardware or software. This means that wide lines can have a slightly different appearance on different devices.

The THICKNESS command can be used to set the default thickness for all plot lines. The thickness for each element of the plot can also be controlled individually. These commands are documented in the Plot Control chapter.

Plot symbols

Plot symbols can be taken from the following categories:

- common plotting characters;
- any ascii keyboard character (up to 4 characters can be specified for the plot symbol);
- Greek symbols;
- mathematics symbols;
- miscellaneous symbols.

The case (upper versus lower) and font (simplex, duplex, triplex, etc.) of the plot character are specified by the current setting of the CASE and FONT commands. The Greek, math, and miscellaneous symbols are available only when one of the Hershey fonts have been specified via the FONT command (simplex, duplex, triplex, triplex italic, complex, simplex script, complex script).

The common plot characters include:

blank	BLANK or NONE or BL or NO
circle	CIRCLE or O or CI
square	SQUARE or BOX or SQ
diamond	DIAMOND or DI
triangle	TRIANGLE or TR
reverse triangle	REVTRI or TRIREV or RT
star	STAR or ST
arrow up	ARROWU or AU
arrow down	ARROWD or AD
vertical bar	VERTICAL BAR or VB
pyramid	PYRAMID
cube	CUBE
arrow	ARROW or ARRH
vector	VECTOR
point	POINT

Of the above characters, the circle, square, diamond, triangle, reverse triangle, pyramid, and cube can be filled to provide a solid plot symbol. Use the CHARACTER FILL command to specify filled characters. For example,

CHARACTER FILL ON OFF ON ON

Up to 4 ASCII characters can be specified for the plot symbol. More than 1 character is most often used for the case where the CHARACTER command is used to label points. Some examples of this are given in the Plot Control chapter under the various character attribute setting commands.

The ASCII keyboard characters include:

0 to 9	0 to 9
A to Z, ato z	A to Z, a to z
period	.
bar	-
plus	+
asterisk	*
left bracket	[
right bracket	]
left brace	{
right brace	}
exclamation point	!
double quote	"
number	#
dollar	$

percent	%
ampersand	&
single quote	'
left parenthesis	(
right parenthesis	)
colon	:
semi-colon	;
comma	,
question mark	?
apostrophe	'
underscore	_
at sign	@T
slash	/
reverse slash	\
equal sign	=
greater than sign	>
less than sign	<
vertical bar		
tilde	~
carat	^

The available Greek symbols, mathematics symbols, and miscellaneous symbols are listed in the Text Attributes chapter.

When specifying one of the special symbols as a plot character, leave off the open and closed parenthesis. For example, ALPH() is used to generate a Greek alpha. To use this as a plot symbol, enter:

        CHARACTER ALPH

DATAPLOT automatically switches to a software font if it recognizes one of the special symbols.

Although the Postscript device supports a special symbol font that generates Greek characters, DATAPLOT does not use this when it encounters a Greek character (it is drawn in software). If , for example, you want to use α as the plot symbol drawn using the Postscript font (not the DATAPLOT software font), you could do something like the following

        SET POSTSCRIPT FONT SYMBOL
        LINE BLANK
        CHARACTER a
        CHARACTER CASE ASIS
        TIC MARK LABEL OFF
        LABEL
        PLOT Y X
        X1TIC MARK LABEL ON
        Y1TIC MARK LABEL ON
        Y1LABEL Y
        X1LABEL X
        CHARACTER BLANK
        SET POSTSCRIPT FONT HELB
        PLOT Y X

Notice that the plot is generated twice. This is because only one Postscript font can be active. The plot is drawn once with the symbol font and all other text turned off to draw the character symbol with the Postscript greek character. It is then redrawn using the default Postscript font with no character symbol, but the other text turned on. Also, with the symbol font, Greek characters are specified by the corresponding alphabetic character, not the special () strings. The correspondence between the standard

keyboard characters and the Greek (and other miscellaneous symbols) in the Postscript symbol font is given in the Postscript Reference Language Manual.