

### General Syntax

```
proc sgplot data=sashelp.class;
    scatter x=height
    y=weight;
    ellipse x=height
    y=weight / type=p red icted
run;

proc sgpanel data=sashelp.heart noauto legend;
    title "Cholesterol Distribution";
    panelby sex;
    histogram cholesterol;
    density cholesterol;
run;
```

### Basic Types

|                    |                                                            |
|--------------------|------------------------------------------------------------|
| Basic              | scatter, series, step, band, needle, vector                |
| Fit and confidence | loess, regression, penalized B-Spline curves, ellipses     |
| Distribution       | box plots, histograms, normal and kernel density estimates |
| Categorization     | dot plots, bar charts, line plots                          |

Basic and Fit and confidence plots may be used together, otherwise different categories must not be mixed. Box plots cannot be combined.

### Plot Axes

|                 |                                     |
|-----------------|-------------------------------------|
| Axis Statements | XAXIS, X2AXIS, YAXIS, Y2AXIS        |
| Axis Types      | Discrete, Linear, Logarithmic, Time |

### General Options

```
LEGENDLABEL=, NAME=,
TRANSPARENCY=
```

### Marker Symbols

|               |            |            |                  |
|---------------|------------|------------|------------------|
| ↓ ArrowDown   | ▽ HomeDown | ∩ Tide     | ● CircleFilled   |
| * Asterisk    | I lbeam    | △ Triangle | ◆ DiamondFilled  |
| ○ Circle      | + Plus     | ∪ Union    | ▼ HomeDownFilled |
| ◇ Diamond     | □ Square   | × X        | ■ SquareFilled   |
| > GreaterThan | ☆ Star     | Y Y        | ★ StarFilled     |
| # Hash        | T Tack     | Z Z        | ▲ TriangleFilled |

Set via MARKERATTRS= option

### Line Patterns

|                     |    |
|---------------------|----|
| Solid               | 1  |
| ShortDash           | 2  |
| MediumDash          | 4  |
| LongDash            | 5  |
| MediumDashShortDash | 8  |
| DashDot             | 14 |
| DashDotDot          | 15 |
| Dash                | 20 |
| LongDashShortDash   | 26 |
| Dot                 | 34 |
| ThinDot             | 35 |
| ShortDashDot        | 41 |
| MediumDashDotDot    | 42 |

Set via LINEATTRS= option

### PROC sgplot DATA=

```
[NO]CYCLEATTRS, DESCRIPTION=,
NOAUTOLEGEND, TMPLOUT=, UNIFORM=
[GROUP | SCALE | ALL]
```

### SCATTER X= Y=

```
DATALABEL=, ERRORBARATTRS=,
FREQ=, MARKERATTRS=,
MARKERCHAR=, MARKERCHARATTRS=,
NOMISSINGGROUP, XERRORLOWER=,
XERRORUPPER=, YERRORLOWER=,
YERRORUPPER=, GROUP=
```

Creates a scatter plot.

### SERIES X= Y=

```
BREAK, CURVELABEL=[],
CURVELABELPOS=[MIN | MAX | START
| END], DATALABEL=[],
LINEATTRS=, MARKERATTRS=,
MARKERS, NOMISSINGGROUP, GROUP=
```

Creates a series plot.

### STEP X= Y=

```
BREAK, CURVELABEL=[],
CURVELABELPOS=[MIN | MAX |
START | END], DATALABEL=[],
ERRORBARATTRS=, JUSTIFY=[LEFT |
CENTER | RIGHT], LINEATTRS=,
MARKERATTRS=, MARKERS,
NOMISSINGGROUP, YERRORLOWER=,
YERRORUPPER=, GROUP=
```

Creates a step plot.

### BAND [X|Y]= UPPER= LOWER=

```
FILL | NOFILL, FILLATTRS=,
LINEATTRS=, MODELNAME=,
NOEXTEND, NOMISSINGGROUP,
OUTLINE | NOOUTLINE, GROUP=
```

Creates a band that highlights part of the plot.

### NEEDLE Statement

```
BASELINE=, DATALABEL=[],
LINEATTRS=, MARKERATTRS=,
MARKERS, NOMISSINGGROUP, URL=,
GROUP=
```

Creates a plot with needles connecting each point to the baseline.

### VECTOR X= Y=

```
ARROWDIRECTION=[OUT | IN |
BOTH], ARROWHEADSHAPE=,
DATALABEL=[], LINEATTRS=,
NOARROWHEADS, NOMISSINGGROUP,
XORIGIN=, YORIGIN=, GROUP=
```

Creates a vector plot that draws arrows from a point of origin to each data point.

### LOESS X= Y=

```
ALPHA=, CLM=[], CLMATTRS=,
CLMTRANSPARENCY=, CURVELABEL=[],
CURVELABELLOC= [OUTSIDE |
INSIDE], CURVELABELPOS= [MIN |
MAX | START | END],
DATALABEL=[], DEGREE= [1 | 2],
INTERPOLATION= [CUBIC | LINEAR],
LINEATTRS=, MARKERATTRS=,
MAXPOINTS=, NOLEGCLM, NOLEGFIT,
NOMARKERS, REWEIGHT=, SMOOTH=,
WEIGHT=, GROUP=
```

Creates a fitted loess curve.

### REG X= Y=

```
ALPHA=, CLI=[], CLIATTRS=,
CLM=[], CLMATTRS=,
CLMTRANSPARENCY=, CURVELABEL=[],
CURVELABELLOC=[OUTSIDE |
INSIDE], CURVELABELPOS=[MIN |
MAX | START | END],
DATALABEL=[], DEGREE=, FREQ=,
LINEATTRS=, MARKERATTRS=,
MAXPOINTS=, NOLEGCLI, NOLEGCLM,
NOLEGFIT, NOMARKERS, WEIGHT=,
GROUP=
```

Creates a fitted regression line or curve.

### PBSPLINE X= Y=

```
ALPHA=, CLI=[], CLIATTRS=,
CLM=[], CLMATTRS=,
CLMTRANSPARENCY=, CURVELABEL=[],
CURVELABELLOC=[OUTSIDE |
INSIDE], CURVELABELPOS=[MIN |
MAX | START | END],
DATALABEL=[], DEGREE=, FREQ=,
LINEATTRS=, MARKERATTRS=,
MAXPOINTS=, NKNOTS=, NOLEGCLI,
NOLEGCLM, NOLEGFIT, NOMARKERS,
SMOOTH=, WEIGHT=, GROUP=
```

Creates a fitted penalized B-spline curve.

### ELLIPSE X= Y=

```
ALPHA=, CLIP, FILL | NOFILL,
FILLATTRS=, FREQ=, LINEATTRS=,
OUTLINE | NOOUTLINE, TYPE = MEAN
| PREDICTED
```

Adds a confidence or prediction ellipse to another plot.

### [H|V]BOX response variable

```
BOXWIDTH=, CATEGORY=,
DATALABEL=[], EXTREME, FREQ=,
LABELFAR, MISSING, PERCENTILE=,
SPREAD
```

Creates a horizontal / vertical box plot that shows the distribution of your data.

### DENSITY response variable

```
FREQ=, LINEATTRS=, SCALE=, TYPE=
[NORMAL | KERNEL]
```

Creates a density curve that shows the distribution of values in your data.

### HISTOGRAM response variable

```
BOUNDARY= LOWER | UPPER, FILL |
NOFILL, FILLATTRS=, FREQ=,
OUTLINE | NOOUTLINE, SCALE=
[COUNT | PERCENT | PROPORTION],
SHOWBINS
```

Creates a histogram that displays the frequency distribution of a numeric value.

### DOT category variable

```
ALPHA=, DATALABEL=[], FREQ=,
LIMITATTRS=, LIMITS= [BOTH |
LOWER | UPPER], LIMITSTAT= [CLM
| STDDEV | STDERR],
MARKERATTRS=, MISSING,
NOSTATLABEL, NUMSTD=, RESPONSE=,
STAT= [FREQ | MEAN | SUM],
WEIGHT=
```

Creates a dot plot that summarizes the values of a category variable.

### [H|V]BAR category variable

```
ALPHA=, BARWIDTH=, DATALABEL,
FILL | NOFILL, FILLATTRS=,
FREQ=, LIMITATTRS=, LIMITS=
[BOTH | LOWER | UPPER],
LIMITSTAT= CLM | STDDEV |
STDERR, MISSING, NOSTATLABEL,
NUMSTD=, OUTLINE | NOOUTLINE,
RESPONSE=, STAT= [FREQ | MEAN |
SUM], WEIGHT, GROUP=
```

Creates a bar chart that summarizes the values of a category variable.

### [H|V]LINE category variable

```
ALPHA=, BREAK, CURVELABEL,
CURVELABELPOS= [MIN | MAX |START
| END], DATALABEL=[], FREQ=,
LIMITATTRS=, LIMITS= [BOTH |
LOWER | UPPER], LIMITSTAT= [CLM
| STDDEV | STDERR], LINEATTRS=,
MARKERATTRS=, MARKERS, MISSING,
NOSTATLABEL, NUMSTD=, RESPONSE=,
STAT= [FREQ | MEAN | SUM], URL=,
WEIGHT=, GROUP=
```

Creates a horizontal / vertical line plot (the line is vertical / horizontal). You can use the [H|V]LINE statement with the [H|V]BAR statement to create a bar-line chart.

### PANELBY variable(s)

```
BORDER | NOBORDER, COLHEADERPOS=
[TOP | BOTTOM | BOTH], COLUMNS=,
LAYOUT= [LATTICE | PANEL |
ROWLATTICE | COLUMNLATTICE],
MISSING, NOVARNAME, ONEPANEL,
ROWHEADERPOS=[RIGHT | LEFT |
BOTH], ROWS=, SPACING=, SPARSE,
START= TOPLEFT | BOTTOMLEFT,
UNISCALE= ROW | ALL
```

May only be used with proc sgpanel.

