

S CHART

PURPOSE

Generates a standard deviation control chart.

DESCRIPTION

A standard deviation control chart is a data analysis technique for determining if a measurement process has gone out of statistical control. The S chart is sensitive to changes in variation in the measurement process. It consists of:

Vertical axis = the standard deviation for each sub-group.

Horizontal axis = sub-group designation.

In addition, horizontal lines are drawn at the mean standard deviation value and at the upper and lower control limits.

SYNTAX

S CHART <y> <x> <SUBSET/EXCEPT/FOR/qualification>

where <y> is the response (= dependent) variable (containing the raw data values);

<x> is an independent variable (containing the sub-group identifications);

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

EXAMPLES

S CHART Y X

NOTE 1

The distribution of the response variable is assumed to be normal. This assumption is the basis for calculating the upper and lower control limits.

NOTE 2

The attributes of the 4 traces can be controlled by the standard LINES, CHARACTERS, BARS, and SPIKES commands. Trace 1 is the response variable, trace 2 is the mean line, and traces 3 and 4 are the control limits. Some analysts prefer to draw the response variable as a spike or character rather than a connected line.

NOTE 3

Versions prior to December 1993 have a bug in that the S CHART command conflicts with the SAVE command. Use the SD CHART or the SD CONTROL CHART syntax (see SYNONYMS section below) for these versions.

DEFAULT

None

SYNONYMS

SD CHART for S CHART.

S CONTROL CHART for S CHART.

SD CONTROL CHART for S CHART.

RELATED COMMANDS

R CHART	=	Generates a range control chart.
X CHART	=	Generates a mean control chart.
P CHART	=	Generates a p control chart.
NP CHART	=	Generates a Np control chart.
U CHART	=	Generates a U control chart.
C CHART	=	Generates a C control chart.
CHARACTERS	=	Sets the types for plot characters.
LINES	=	Sets the types for plot lines.
SPIKES	=	Sets the on/off switches for plot spikes.
BARS	=	Sets the on/off switches for plot bars.
PLOT	=	Generates a data or function plot.
LAG PLOT	=	Generates a lag plot.
4-PLOT	=	Generates 4-plot univariate analysis.
STANDARD DEVIATION PLOT	=	Generates a standard deviation (vs subset) plot.

APPLICATIONS

Quality Control

IMPLEMENTATION DATE

88/2

PROGRAM

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SKIP 25
READ GEAR.DAT DIAMETER BATCH
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LINE SOLID SOLID DOT DOT
TITLE AUTOMATIC
XILABEL GROUP-ID
YILABEL STANDARD DEVIATION
SD CHART DIAMETER BATCH
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