

Package ‘controlcharts’

October 9, 2026

Title Interactive Plotting for Funnel, Sigma, and Statistical Process
Control Charts

Version 0.0.23

Description Generate interactive funnel plots, multi-indicator sigma charts,
and statistical process control ('SPC') charts. Chart calculation and plotting
use JavaScript, allowing dynamic charts without a Shiny server. For more details
see Spiegelhalter (2004) <[doi:10.1002/sim.1970](https://doi.org/10.1002/sim.1970)> and Pfadt & Wheeler (1995)
<[doi:10.1901/jaba.1995.28-349](https://doi.org/10.1901/jaba.1995.28-349)>.

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Imports htmlwidgets, htmltools, crosstalk, QuickJSR, jsutils, rlang

Suggests rsvg, knitr, rmarkdown, testthat (>= 3.0.0), chromote, xml2

VignetteBuilder knitr

URL <https://aus-doh-safety-and-quality.github.io/controlcharts/>

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funnel	<i>Generate interactive Funnel chart</i>
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Description

Generate interactive Funnel chart

Usage

```
funnel(  
  data,  
  keys,  
  numerators,  
  denominators,  
  tooltips,  
  labels,  
  aggregations = list(numerators = "sum", denominators = "sum", tooltips = "first",  
    labels = "first"),  
  title = NULL,  
  canvas_settings = NULL,  
  funnel_settings = NULL,  
  outlier_settings = NULL,  
  scatter_settings = NULL,  
  line_settings = NULL,  
  x_axis_settings = NULL,  
  y_axis_settings = NULL,  
  label_settings = NULL,  
  tooltip_settings = NULL,  
  width = NULL,  
  height = NULL,  
  elementId = NULL,  
  return_objs = c("html_plot", "static_plot", "limits")  
)
```

Arguments

- data

A data frame containing the data for the chart.
- keys

A vector or column name representing the categories of the chart.
- numerators

A numeric vector or column name representing the numerators for each category.

denominators	A numeric vector or column name representing the denominators for each category.
tooltips	A vector or column name, or a list of them, representing additional tooltips for each category. Each is labelled by its name in the list, or else by the expression supplied.
labels	A vector or column name representing the labels for each category.
aggregations	A list of aggregation function names for each field if multiple values are provided for each key. Valid options are: • "first": returns the first value • "last": returns the last value • "sum": returns the sum of values • "mean": returns the mean of values • "min": returns the minimum value • "max": returns the maximum value • "median": returns the median value • "count": returns the count of values
title	Optional title to be added to the top of the chart. It can be a character string for the title text only, or a list with the following options: • text: Title text (default: NULL) • font_size: Font size of the title (default: "16px") • font_weight: Font weight of the title (default: "bold") • font_family: Font family of the title (default: "'Arial', sans-serif") • x: Horizontal (x) position of the title as a percentage (default: "50%") • y: Vertical (y) position of the title in pixels (default: 5) • text_anchor: Text anchor of the title (default: "middle") • dominant_baseline: Dominant baseline of the title (default: "hanging") • subtitle: Subtitle text, drawn below the title (default: NULL) • subtitle_font_size: Font size of the subtitle (default: "12px") • subtitle_font_weight: Font weight of the subtitle (default: "normal")
canvas_settings	Optional list of settings for the canvas, see <code>funnel_default_settings('canvas')</code> for valid options.
funnel_settings	Optional list of settings for the Funnel chart, see <code>funnel_default_settings("funnel")</code> for valid options.
outlier_settings	Optional list of settings for outliers, see <code>funnel_default_settings('outliers')</code> for valid options.
scatter_settings	Optional list of settings for scatter points, see <code>funnel_default_settings('scatter')</code> for valid options.
line_settings	Optional list of settings for lines, see <code>funnel_default_settings('lines')</code> for valid options.

<code>x_axis_settings</code>	Optional list of settings for the x-axis, see <code>funnel_default_settings('x_axis')</code> for valid options.
<code>y_axis_settings</code>	Optional list of settings for the y-axis, see <code>funnel_default_settings('y_axis')</code> for valid options.
<code>label_settings</code>	Optional list of settings for labels, see <code>funnel_default_settings('labels')</code> for valid options.
<code>tooltip_settings</code>	Optional list of settings for tooltips, see <code>funnel_default_settings('tooltips')</code> for valid options.
<code>width</code>	Optional width of the chart in pixels. If NULL (default), the chart will fill the width of its container.
<code>height</code>	Optional height of the chart in pixels. If NULL (default), the chart will fill the height of its container.
<code>elementId</code>	Optional HTML element ID for the chart.
<code>return_objs</code>	Character vector of object types to return. Valid values are: • <code>"html_plot"</code>: Interactive <code>htmlwidgets</code> plot • <code>"static_plot"</code>: Non-interactive SVG plot • <code>"limits"</code>: Calculated control limits • <code>"limit_lines"</code>: Control limits across the full range of denominators, for drawing the limit lines (not returned by default)

Value

An object of class `controlchart` containing the interactive plot, static plot, limits data frame, raw data, and a function to save the plot.

funnel-shiny	<i>Shiny bindings for wrapper</i>
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Description

Output and render functions for using wrapper within Shiny applications and interactive Rmd documents.

Usage

```
funnelOutput(outputId, width = "100%", height = "400px")
```

```
renderfunnel(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

outputId	output variable to read from
width, height	Must be a valid CSS unit (like '100%', '400px', 'auto') or a number, which will be coerced to a string and have 'px' appended.
expr	An expression that generates a wrapper
env	The environment in which to evaluate expr.
quoted	Is expr a quoted expression (with quote())? This is useful if you want to save an expression in a variable.

Value

Interactive Shiny widget for funnel plot
 Interactive Shiny widget for funnel plot

funnel_default_settings

Get default settings for Funnel charts Retrieve the default settings for Funnel charts or a specific settings group.

Description

Get default settings for Funnel charts Retrieve the default settings for Funnel charts or a specific settings group.

Usage

```
funnel_default_settings(group = NULL)
```

Arguments

group	Optional. A specific settings group to retrieve. If NULL, all settings groups are returned.
-------	---

Value

A list of default settings for Funnel charts or the specified settings group.

Examples

```
#' # Get all default settings for Funnel charts
funnel_default_settings()
# # Get default settings for a specific group
funnel_default_settings("x_axis")
```

misc

*Generate a multi-indicator sigma chart***Description**

Calculates a funnel plot independently for each indicator, then displays the selected target's funnel z-score for every indicator. Positive values are in the favourable direction.

Usage

```
misc(
  data,
  keys,
  numerators,
  denominators,
  indicators,
  target,
  groupings = NULL,
  tooltips,
  aggregations = list(numerators = "sum", denominators = "sum", tooltips = "first",
    labels = "first"),
  title = NULL,
  funnel_settings = NULL,
  outlier_settings = NULL,
  canvas_settings = NULL,
  misc_settings = NULL,
  bar_settings = NULL,
  line_settings = NULL,
  x_axis_settings = NULL,
  y_axis_settings = NULL,
  tooltip_settings = NULL,
  width = NULL,
  height = NULL,
  elementId = NULL,
  return_objs = c("html_plot", "static_plot", "limits")
)
```

Arguments

data	A data frame containing the comparison population.
keys	A vector or column name identifying the funnel groups.
numerators	A numeric vector or column name containing numerators.
denominators	A numeric vector or column name containing denominators.
indicators	A vector or column name identifying indicators. A separate funnel calculation is performed for each value.

target	A single value from keys to display.
groupings	Optional vector or column name used to group indicator labels.
tooltips	An optional vector or column name, or a list of them, providing additional tooltips. Each is labelled by its name in the list, or otherwise by the supplied expression.
aggregations	A list of aggregation function names passed to <code>funnel()</code> .
title	Optional chart title. See <code>funnel()</code> for the supported format.
funnel_settings, outlier_settings	Settings used for each indicator's funnel calculation. <code>outlier_settings\$improvement_direction</code> may be conditionally formatted by indicator. Three-sigma detection is always enabled.
canvas_settings, misc_settings, bar_settings, line_settings, x_axis_settings, y_axis_settings	Optional chart settings. See <code>misc_default_settings()</code> for valid options.
tooltip_settings	Optional tooltip settings.
width, height	Optional chart dimensions in pixels.
elementId	Optional HTML element ID for the chart.
return_objs	Character vector containing any of "html_plot", "static_plot", and "limits".

Value

An object of class `controlchart`.

Examples

```
comparison <- data.frame(
  organisation = rep(LETTERS[1:4], 2),
  indicator = rep(c("Measure A", "Measure B"), each = 4),
  numerator = c(8, 5, 4, 6, 2, 4, 5, 3),
  denominator = 10
)
misc(
  comparison,
  keys = organisation,
  numerators = numerator,
  denominators = denominator,
  indicators = indicator,
  target = "A",
  return_objs = "limits"
)
```

misc-shiny	<i>Shiny bindings for multi-indicator sigma charts</i>
------------	--

Description

Shiny bindings for multi-indicator sigma charts

Usage

```
miscOutput(outputId, width = "100%", height = "400px")  
  
renderMisc(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

outputId	Output variable to read from.
width, height	Valid CSS dimensions.
expr	An expression that generates a MISC chart.
env	Environment in which to evaluate expr.
quoted	Whether expr is quoted.

Value

An interactive Shiny widget.

misc_default_settings	<i>Get default settings for multi-indicator sigma charts</i>
-----------------------	--

Description

Get default settings for multi-indicator sigma charts

Usage

```
misc_default_settings(group = NULL)
```

Arguments

group	Optional settings group. If NULL, all groups are returned.
-------	--

Value

A list of MISC settings.

spc

Generate interactive SPC chart

Description

Generate interactive SPC chart

Usage

```
spc(
  data,
  keys,
  numerators,
  denominators,
  groupings,
  indicators = NULL,
  xbar_sds,
  tooltips,
  labels,
  aggregations = list(numerators = "sum", denominators = "sum", groupings = "first",
    xbar_sds = "first", tooltips = "first", labels = "first"),
  title = NULL,
  canvas_settings = NULL,
  spc_settings = NULL,
  outlier_settings = NULL,
  nhs_icon_settings = NULL,
  scatter_settings = NULL,
  line_settings = NULL,
  x_axis_settings = NULL,
  y_axis_settings = NULL,
  date_settings = NULL,
  label_settings = NULL,
  tooltip_settings = NULL,
  width = NULL,
  height = NULL,
  elementId = NULL,
  return_objs = c("html_plot", "static_plot", "limits")
)
```

Arguments

data	A data frame containing the data for the chart.
keys	A vector or column name representing the categories (x-axis) of the chart.
numerators	A numeric vector or column name representing the numerators for each category.

denominators	A numeric vector or column name representing the denominators for each category.
groupings	A vector or column name representing the grouping for each category.
indicators	A vector or list of vectors representing indicator categories for the summary table.
xbar_sds	A numeric vector or column name representing the x-bar and standard deviation values for each category.
tooltips	A vector or column name, or a list of them, representing additional tooltips for each category. Each is labelled by its name in the list, or else by the expression supplied.
labels	A vector or column name representing the labels for each category.
aggregations	A list of aggregation function names for each field if multiple values are provided for each key. Valid options are: • "first": returns the first value • "last": returns the last value • "sum": returns the sum of values • "mean": returns the mean of values • "min": returns the minimum value • "max": returns the maximum value • "median": returns the median value • "count": returns the count of values
title	Optional title to be added to the top of the chart. It can be a character string for the title text only, or a list with the following options: • text: Title text (default: NULL) • font_size: Font size of the title (default: "16px") • font_weight: Font weight of the title (default: "bold") • font_family: Font family of the title (default: "'Arial', sans-serif") • x: Horizontal (x) position of the title as a percentage (default: "50%") • y: Vertical (y) position of the title in pixels (default: 5) • text_anchor: Text anchor of the title (default: "middle") • dominant_baseline: Dominant baseline of the title (default: "hanging") • subtitle: Subtitle text, drawn below the title (default: NULL) • subtitle_font_size: Font size of the subtitle (default: "12px") • subtitle_font_weight: Font weight of the subtitle (default: "normal")
canvas_settings	Optional list of settings for the canvas, see <code>spc_default_settings('canvas')</code> for valid options.
spc_settings	Optional list of settings for the SPC chart, see <code>spc_default_settings('spc')</code> for valid options.
outlier_settings	Optional list of settings for outliers, see <code>spc_default_settings('outliers')</code> for valid options.

nhs_icon_settings	Optional list of settings for NHS icons, see <code>spc_default_settings('nhs_icons')</code> for valid options.
scatter_settings	Optional list of settings for scatter points, see <code>spc_default_settings('scatter')</code> for valid options.
line_settings	Optional list of settings for lines, see <code>spc_default_settings('lines')</code> for valid options.
x_axis_settings	Optional list of settings for the x-axis, see <code>spc_default_settings('x_axis')</code> for valid options.
y_axis_settings	Optional list of settings for the y-axis, see <code>spc_default_settings('y_axis')</code> for valid options.
date_settings	Optional list of settings for dates, see <code>spc_default_settings('dates')</code> for valid options.
label_settings	Optional list of settings for labels, see <code>spc_default_settings('labels')</code> for valid options.
tooltip_settings	Optional list of settings for tooltips, see <code>spc_default_settings('tooltips')</code> for valid options.
width	Optional width of the chart in pixels. If NULL (default), the chart will fill the width of its container.
height	Optional height of the chart in pixels. If NULL (default), the chart will fill the height of its container.
elementId	Optional HTML element ID for the chart.
return_objs	Character vector of object types to return. Valid values are: "html_plot": Interactive <code>htmlwidgets</code> plot "static_plot": Non-interactive SVG plot "limits": Calculated control limits

Value

An object of class `controlchart` containing the interactive plot, static plot, limits, and a function to save the plot. When indicators are supplied, limits are a named nested list of data frames.

spc-shiny

Shiny bindings for wrapper

Description

Output and render functions for using wrapper within Shiny applications and interactive Rmd documents.

Usage

```
spcOutput(outputId, width = "100%", height = "400px")

renderSpc(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

outputId	output variable to read from
width, height	Must be a valid CSS unit (like '100%', '400px', 'auto') or a number, which will be coerced to a string and have 'px' appended.
expr	An expression that generates a wrapper
env	The environment in which to evaluate expr.
quoted	Is expr a quoted expression (with quote())? This is useful if you want to save an expression in a variable.

Value

Interactive Shiny widget for SPC chart
 Interactive Shiny widget for funnel plot

spc_default_settings *Get default settings for SPC charts*

Description

Retrieve the default settings for SPC charts or a specific settings group.

Usage

```
spc_default_settings(group = NULL)
```

Arguments

group	Optional. A specific settings group to retrieve. If NULL, all settings groups are returned.
-------	---

Value

A list of default settings for SPC charts or the specified settings group.

Examples

```
#' # Get all default settings for SPC charts
spc_default_settings()
# # Get default settings for a specific group
spc_default_settings("x_axis")
```

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