

Advanced Gtk+ Sequencer UI Reference Manual

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Chapter 1

UI Widgets

1.1 AgsCartesian

AgsCartesian — A cartesian widget

Stability Level

Stable, unless otherwise indicated

Functions

#define	AGS_PLOT()
#define	AGS_CARTESIAN_STEP_CONVERSION_FUNC()
#define	AGS_CARTESIAN_TRANSLATE_FUNC()
#define	AGS_CARTESIAN_SCALE_FUNC()
#define	AGS_CARTESIAN_LABEL_FUNC()
gdouble	(*AgsCartesianStepConversionFunc) ()
void	(*AgsCartesianTranslateFunc) ()
gdouble	(*AgsCartesianScaleFunc) ()
gchar *	(*AgsCartesianLabelFunc) ()
AgsPlot *	ags_plot_alloc ()
void	ags_plot_free ()
guint	ags_plot_get_n_points ()
void	ags_plot_set_n_points ()
gboolean	ags_plot_get_join_points ()
void	ags_plot_set_join_points ()
gdouble **	ags_plot_get_point ()
void	ags_plot_set_point ()
gdouble **	ags_plot_get_point_color ()
void	ags_plot_set_point_color ()
gchar **	ags_plot_get_point_label ()
void	ags_plot_set_point_label ()
guint	ags_plot_get_n_bitmaps ()
void	ags_plot_set_n_bitmaps ()
guchar **	ags_plot_get_bitmap ()
void	ags_plot_set_bitmap ()
gdouble **	ags_plot_get_bitmap_color ()
void	ags_plot_set_bitmap_color ()

guint	ags_plot_get_n_pixmap ()
void	ags_plot_set_n_pixmap ()
guchar **	ags_plot_get_pixmap ()
void	ags_plot_set_pixmap ()
void	ags_cartesian_add_plot ()
void	ags_cartesian_remove_plot ()
gdouble	ags_cartesian_get_x_margin ()
void	ags_cartesian_set_x_margin ()
gdouble	ags_cartesian_get_y_margin ()
void	ags_cartesian_set_y_margin ()
gdouble	ags_cartesian_get_center ()
void	ags_cartesian_set_center ()
gdouble	ags_cartesian_get_line_width ()
void	ags_cartesian_set_line_width ()
gdouble	ags_cartesian_get_point_radius ()
void	ags_cartesian_set_point_radius ()
gdouble	ags_cartesian_get_font_size ()
void	ags_cartesian_set_font_size ()
gdouble	ags_cartesian_get_x_step_width ()
void	ags_cartesian_set_x_step_width ()
gdouble	ags_cartesian_get_y_step_height ()
void	ags_cartesian_set_y_step_height ()
gdouble	ags_cartesian_get_x_scale_step_width ()
void	ags_cartesian_set_x_scale_step_width ()
gdouble	ags_cartesian_get_y_scale_step_height ()
void	ags_cartesian_set_y_scale_step_height ()
gdouble	ags_cartesian_get_x_unit_x0 ()
void	ags_cartesian_set_x_unit_x0 ()
gdouble	ags_cartesian_get_x_unit_y0 ()
void	ags_cartesian_set_x_unit_y0 ()
gdouble	ags_cartesian_get_x_unit_size ()
void	ags_cartesian_set_x_unit_size ()
gdouble	ags_cartesian_get_y_unit_x0 ()
void	ags_cartesian_set_y_unit_x0 ()
gdouble	ags_cartesian_get_y_unit_y0 ()
void	ags_cartesian_set_y_unit_y0 ()
gdouble	ags_cartesian_get_y_unit_size ()
void	ags_cartesian_set_y_unit_size ()
gdouble	ags_cartesian_get_x_label_start ()
void	ags_cartesian_set_x_label_start ()
gdouble	ags_cartesian_get_x_label_step_width ()
void	ags_cartesian_set_x_label_step_width ()
gdouble	ags_cartesian_get_y_label_start ()
void	ags_cartesian_set_y_label_start ()
gdouble	ags_cartesian_get_y_label_step_height ()
void	ags_cartesian_set_y_label_step_height ()
gdouble	ags_cartesian_get_x_step ()
void	ags_cartesian_set_x_step ()
gdouble	ags_cartesian_get_y_step ()
void	ags_cartesian_set_y_step ()
gdouble	ags_cartesian_get_x_start ()
void	ags_cartesian_set_x_start ()
gdouble	ags_cartesian_get_x_end ()
void	ags_cartesian_set_x_end ()
gdouble	ags_cartesian_get_y_start ()
void	ags_cartesian_set_y_start ()

gdouble	ags_cartesian_get_y_end ()
void	ags_cartesian_set_y_end ()
gchar *	ags_cartesian_get_x_unit ()
void	ags_cartesian_set_x_unit ()
gchar *	ags_cartesian_get_y_unit ()
void	ags_cartesian_set_y_unit ()
gchar **	ags_cartesian_get_x_label ()
void	ags_cartesian_set_x_label ()
gchar **	ags_cartesian_get_y_label ()
void	ags_cartesian_set_y_label ()
gdouble	ags_cartesian_get_x_step_factor ()
void	ags_cartesian_set_x_step_factor ()
gdouble	ags_cartesian_get_y_step_factor ()
void	ags_cartesian_set_y_step_factor ()
gdouble	ags_cartesian_get_x_small_scale_factor ()
void	ags_cartesian_set_x_small_scale_factor ()
gdouble	ags_cartesian_get_x_big_scale_factor ()
void	ags_cartesian_set_x_big_scale_factor ()
gdouble	ags_cartesian_get_y_small_scale_factor ()
void	ags_cartesian_set_y_small_scale_factor ()
gdouble	ags_cartesian_get_y_big_scale_factor ()
void	ags_cartesian_set_y_big_scale_factor ()
gdouble	ags_cartesian_get_x_label_factor ()
void	ags_cartesian_set_x_label_factor ()
gdouble	ags_cartesian_get_x_label_precision ()
void	ags_cartesian_set_x_label_precision ()
gdouble	ags_cartesian_get_y_label_factor ()
void	ags_cartesian_set_y_label_factor ()
gdouble	ags_cartesian_get_y_label_precision ()
void	ags_cartesian_set_y_label_precision ()
cairo_surface_t *	ags_cartesian_get_surface ()
gdouble	ags_cartesian_linear_step_conversion_func ()
void	ags_cartesian_linear_translate_func ()
gdouble	ags_cartesian_linear_x_small_scale_func ()
gdouble	ags_cartesian_linear_x_big_scale_func ()
gdouble	ags_cartesian_linear_y_small_scale_func ()
gdouble	ags_cartesian_linear_y_big_scale_func ()
gchar *	ags_cartesian_linear_x_label_func ()
gchar *	ags_cartesian_linear_y_label_func ()
void	ags_cartesian_reallocate_label ()
void	ags_cartesian_fill_label ()
AgsCartesian *	ags_cartesian_new ()
#define	AGS_CARTESIAN()
#define	AGS_CARTESIAN_CLASS()
#define	AGS_CARTESIAN_GET_CLASS()
#define	AGS_IS_CARTESIAN()
#define	AGS_IS_CARTESIAN_CLASS()
GType	ags_cartesian_get_type ()

Properties

double	center	Read / Write
double	font-size	Read / Write
double	line-width	Read / Write
gpointer	plot	Read / Write

double	point-radius	Read / Write
gpointer	surface	Read / Write
gpointer	translate-data	Read / Write
double	x-big-scale-factor	Read / Write
double	x-end	Read / Write
gpointer	x-label	Read / Write
gpointer	x-label-data	Read / Write
double	x-label-factor	Read / Write
double	x-label-precision	Read / Write
double	x-label-start	Read / Write
double	x-label-step-width	Read / Write
double	x-margin	Read / Write
gpointer	x-scale-data	Read / Write
double	x-scale-step-width	Read / Write
double	x-small-scale-factor	Read / Write
double	x-start	Read / Write
double	x-step	Read / Write
gpointer	x-step-data	Read / Write
double	x-step-factor	Read / Write
double	x-step-width	Read / Write
double	x-translate-point	Read / Write
char *	x-unit	Read / Write
double	x-unit-size	Read / Write
double	x-unit-x0	Read / Write
double	x-unit-y0	Read / Write
double	y-big-scale-factor	Read / Write
double	y-end	Read / Write
gpointer	y-label	Read / Write
gpointer	y-label-data	Read / Write
double	y-label-factor	Read / Write
double	y-label-precision	Read / Write
double	y-label-start	Read / Write
double	y-label-step-height	Read / Write
double	y-margin	Read / Write
gpointer	y-scale-data	Read / Write
double	y-scale-step-height	Read / Write
double	y-small-scale-factor	Read / Write
double	y-start	Read / Write
double	y-step	Read / Write
gpointer	y-step-data	Read / Write
double	y-step-factor	Read / Write
double	y-step-height	Read / Write
double	y-translate-point	Read / Write
char *	y-unit	Read / Write
double	y-unit-size	Read / Write
double	y-unit-x0	Read / Write
double	y-unit-y0	Read / Write

Types and Values

#define	AGS_CARTESIAN_DEFAULT_X_MARGIN
#define	AGS_CARTESIAN_DEFAULT_Y_MARGIN
#define	AGS_CARTESIAN_DEFAULT_X_STEP_WIDTH
#define	AGS_CARTESIAN_DEFAULT_Y_STEP_HEIGHT
#define	AGS_CARTESIAN_DEFAULT_X_SCALE_STEP_WIDTH

#define	AGS_CARTESIAN_DEFAULT_Y_SCALE_STEP_HEIGHT
#define	AGS_CARTESIAN_DEFAULT_X_STEP
#define	AGS_CARTESIAN_DEFAULT_Y_STEP
#define	AGS_CARTESIAN_DEFAULT_X_START
#define	AGS_CARTESIAN_DEFAULT_X_END
#define	AGS_CARTESIAN_DEFAULT_Y_START
#define	AGS_CARTESIAN_DEFAULT_Y_END
#define	AGS_CARTESIAN_DEFAULT_X_LABEL_START
#define	AGS_CARTESIAN_DEFAULT_X_LABEL_STEP_WIDTH
#define	AGS_CARTESIAN_DEFAULT_Y_LABEL_START
#define	AGS_CARTESIAN_DEFAULT_Y_LABEL_STEP_HEIGHT
enum	AgsCartesianFlags
enum	AgsPlotFillFlags
struct	AgsPlot
#define	AGS_TYPE_CARTESIAN
struct	AgsCartesian
struct	AgsCartesianClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; AgsCartesian
```

Implemented Interfaces

AgsCartesian implements [GtkAccessible](#), [GtkBuildable](#) and [GtkConstraintTarget](#).

Includes

```
#include <ags/widget/ags_cartesian.h>
```

Description

[AgsCartesian](#) enables you to plot data and shows a grid pattern and some scales.

Functions

AGS_PLOT()

```
#define AGS_PLOT(ptr) ((AgsPlot *) (ptr))
```

AGS_CARTESIAN_STEP_CONVERSION_FUNC()

```
#define AGS_CARTESIAN_STEP_CONVERSION_FUNC(current, is_abscissae, data) ((↔
  AgsCartesianStepConversionFunc)(current, is_abscissae, data))
```

AGS_CARTESIAN_TRANSLATE_FUNC()

```
#define AGS_CARTESIAN_TRANSLATE_FUNC(x, y, ret_x, ret_y, data) ((AgsCartesianTranslateFunc ←  
)(x, y, ret_x, ret_y, data))
```

AGS_CARTESIAN_SCALE_FUNC()

```
#define AGS_CARTESIAN_SCALE_FUNC(value, data) ((AgsCartesianScaleFunc)(value, data))
```

AGS_CARTESIAN_LABEL_FUNC()

```
#define AGS_CARTESIAN_LABEL_FUNC(value, data) ((AgsCartesianLabelFunc)(value, data))
```

AgsCartesianStepConversionFunc ()

```
gdouble  
(*AgsCartesianStepConversionFunc) (gdouble current,  
                                     gboolean is_abscissae,  
                                     gpointer data);
```

AgsCartesianTranslateFunc ()

```
void  
(*AgsCartesianTranslateFunc) (gdouble x,  
                                gdouble y,  
                                gdouble *ret_x,  
                                gdouble *ret_y,  
                                gpointer data);
```

AgsCartesianScaleFunc ()

```
gdouble  
(*AgsCartesianScaleFunc) (gdouble value,  
                             gpointer data);
```

AgsCartesianLabelFunc ()

```
gchar~*  
(*AgsCartesianLabelFunc) (gdouble value,  
                             gpointer data);
```

ags_plot_alloc ()

```
AgsPlot~*  
ags_plot_alloc (guint n_points,  
                guint n_bitmaps,  
                guint n_pixmaps);
```

Allocate **AgsPlot**.

Parameters

n_points	number of points
n_bitmaps	number of bitmaps
n_pixmaps	number of pixmaps

Returns

the newly allocated [AgsPlot](#).

[type gpointer][transfer full]

Since: [3.0.0](#)

ags_plot_free ()

```
void
ags_plot_free (AgsPlot *plot);
```

Free *plot*.

Parameters

plot | the [AgsPlot](#). | *[type gpointer][transfer full]*

Since: [3.0.0](#)

ags_plot_get_n_points ()

```
guint
ags_plot_get_n_points (AgsPlot *plot);
```

Get number of points.

Parameters

plot | the [AgsPlot](#). | *[type gpointer]*

Returns

n_points field

Since: [3.2.0](#)

ags_plot_set_n_points ()

```
void
ags_plot_set_n_points (AgsPlot *plot,
                      guint n_points);
```

Set n_points field of *plot*.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
n_points	the number of points	

Since: 3.2.0

ags_plot_get_join_points ()

```
gboolean
ags_plot_get_join_points (AgsPlot *plot);
```

Get join points.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
------	----------------------	-------------------------

Returns

join_points field

Since: 3.2.0

ags_plot_set_join_points ()

```
void
ags_plot_set_join_points (AgsPlot *plot,
                          gboolean join_points);
```

Set join_points field of *plot*.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
join_points	if TRUE join points, otherwise not	

Since: 3.2.0

ags_plot_get_point ()

```
gdouble~**
ags_plot_get_point (AgsPlot *plot);
```

Get points.

Parameters

plot | the **AgsPlot**. | *[type gpointer]*

Returns

point field.

[transfer none]

Since: 3.2.0

ags_plot_set_point ()

```
void
ags_plot_set_point (AgsPlot *plot,
                   gdouble **point);
```

Set point field of *plot*.

Parameters

plot	the AgsPlot .	<i>[type gpointer]</i>
point	the points as array of coordinates.	<i>[transfer full]</i>

Since: 3.2.0

ags_plot_get_point_color ()

```
gdouble~**
ags_plot_get_point_color (AgsPlot *plot);
```

Get point colors.

Parameters

plot | the **AgsPlot**. | *[type gpointer]*

Returns

point color field.

[transfer none]

Since: 3.2.0

ags_plot_set_point_color ()

```
void
ags_plot_set_point_color (AgsPlot *plot,
                         gdouble **point_color);
```

Set point color field of *plot*.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
point_color	the points colors as array of RGB value.	[transfer <i>full</i>]

Since: 3.2.0

ags_plot_get_point_label ()

```
gchar~**
ags_plot_get_point_label (AgsPlot *plot);
```

Get point labels.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
------	----------------------	-------------------------

Returns

point label field.

[element-type *utf8*][transfer *none*]

Since: 3.2.0

ags_plot_set_point_label ()

```
void
ags_plot_set_point_label (AgsPlot *plot,
                          gchar **point_label);
```

Set point label field of *plot* .

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
point_label	the points labels as string vector.	[transfer <i>full</i>]

Since: 3.2.0

ags_plot_get_n_bitmaps ()

```
guint
ags_plot_get_n_bitmaps (AgsPlot *plot);
```

Get number of bitmaps.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
------	-------------------------------	-------------------------

Returns

n_bitmaps field

Since: 3.2.0

ags_plot_set_n_bitmaps ()

```
void
ags_plot_set_n_bitmaps (AgsPlot *plot,
                       guint n_bitmaps);
```

Set n_bitmaps field of *plot*.**Parameters**

plot	the AgsPlot .	[type <i>gpointer</i>]
n_bitmaps	the number of bitmaps	

Since: 3.2.0

ags_plot_get_bitmap ()

```
guchar~**
ags_plot_get_bitmap (AgsPlot *plot);
```

Get bitmaps.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
------	-------------------------------	-------------------------

Returns

bitmap field.

[transfer none]

Since: 3.2.0

ags_plot_set_bitmap ()

```
void
ags_plot_set_bitmap (AgsPlot *plot,
                    guchar **bitmap);
```

Set bitmap field of *plot*.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
bitmap	the bitmaps.	[transfer <i>full</i>]

Since: 3.2.0

ags_plot_get_bitmap_color ()

```
gdouble~**
ags_plot_get_bitmap_color (AgsPlot *plot);
```

Get bitmap colors.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
------	----------------------	-------------------------

Returns

bitmap color field.

[transfer *none*]

Since: 3.2.0

ags_plot_set_bitmap_color ()

```
void
ags_plot_set_bitmap_color (AgsPlot *plot,
                           gdouble **bitmap_color);
```

Set bitmap color field of *plot*.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
bitmap_color	the bitmaps colors as array of RGB value.	[transfer <i>full</i>]

Since: 3.2.0

ags_plot_get_n_pixmaps ()

```
guint
ags_plot_get_n_pixmaps (AgsPlot *plot);
```

Get number of pixmaps.

Parameters

plot	the AgsPlot .	<i>[type gpointer]</i>
------	-------------------------------	------------------------

Returns

n_pixmap field

Since: [3.2.0](#)

ags_plot_set_n_pixmap ()

```
void
ags_plot_set_n_pixmap (AgsPlot *plot,
                       guint n_pixmap);
```

Set n_pixmap field of *plot*.

Parameters

plot	the AgsPlot .	<i>[type gpointer]</i>
n_pixmap	the number of pixmaps	

Since: [3.2.0](#)

ags_plot_get_pixmap ()

```
guchar~**
ags_plot_get_pixmap (AgsPlot *plot);
```

Get pixmaps.

Parameters

plot	the AgsPlot .	<i>[type gpointer]</i>
------	-------------------------------	------------------------

Returns

pixmap field.

[transfer none]

Since: [3.2.0](#)

ags_plot_set_pixmap ()

```
void
ags_plot_set_pixmap (AgsPlot *plot,
                    guchar **pixmap);
```

Set pixmap field of *plot*.

Parameters

plot	the AgsPlot .	[type <i>gpointer</i>]
pixmap	the pixmaps.	[transfer <i>full</i>]

Since: 3.2.0

ags_cartesian_add_plot ()

```
void
ags_cartesian_add_plot (AgsCartesian *cartesian,
                       AgsPlot *plot);
```

Add *plot* to *cartesian*.

Parameters

cartesian	the AgsCartesian	
plot	the AgsPlot .	[type <i>gpointer</i>]

Since: 3.0.0

ags_cartesian_remove_plot ()

```
void
ags_cartesian_remove_plot (AgsCartesian *cartesian,
                           AgsPlot *plot);
```

Remove *plot* from *cartesian*.

Parameters

cartesian	the AgsCartesian	
plot	the AgsPlot .	[type <i>gpointer</i>]

Since: 3.0.0

ags_cartesian_get_x_margin ()

```
gdouble
ags_cartesian_get_x_margin (AgsCartesian *cartesian);
```

Get x margin of *cartesian*.

Parameters

cartesian	the AgsCartesian	
-----------	-------------------------	--

Returns

the x margin

Since: 3.2.0

ags_cartesian_set_x_margin ()

```
void
ags_cartesian_set_x_margin (AgsCartesian *cartesian,
                           gdouble x_margin);
```

Set x margin of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>x_margin</i>	the x margin

Since: 3.2.0

ags_cartesian_get_y_margin ()

```
gdouble
ags_cartesian_get_y_margin (AgsCartesian *cartesian);
```

Get y margin of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
------------------	-------------------------

Returns

the y margin

Since: 3.2.0

ags_cartesian_set_y_margin ()

```
void
ags_cartesian_set_y_margin (AgsCartesian *cartesian,
                           gdouble y_margin);
```

Set y margin of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>y_margin</i>	the y margin

Since: 3.2.0

ags_cartesian_get_center ()

```
gdouble  
ags_cartesian_get_center (AgsCartesian *cartesian);
```

Get center of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the center

Since: 3.2.0

ags_cartesian_set_center ()

```
void  
ags_cartesian_set_center (AgsCartesian *cartesian,  
                          gdouble center);
```

Set center of *cartesian*.

Parameters

cartesian		the AgsCartesian	
center		the center	

Since: 3.2.0

ags_cartesian_get_line_width ()

```
gdouble  
ags_cartesian_get_line_width (AgsCartesian *cartesian);
```

Get line width of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the line width

Since: 3.2.0

ags_cartesian_set_line_width ()

```
void
ags_cartesian_set_line_width (AgsCartesian *cartesian,
                              gdouble line_width);
```

Set line width of *cartesian*.

Parameters

cartesian	the AgsCartesian
line_width	the line width

Since: 3.2.0

ags_cartesian_get_point_radius ()

```
gdouble
ags_cartesian_get_point_radius (AgsCartesian *cartesian);
```

Get point radius.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the point radius

Since: 3.2.0

ags_cartesian_set_point_radius ()

```
void
ags_cartesian_set_point_radius (AgsCartesian *cartesian,
                                gdouble point_radius);
```

Set point radius.

Parameters

cartesian	the AgsCartesian
point_radius	the point radius

Since: 3.2.0

ags_cartesian_get_font_size ()

```
gdouble
ags_cartesian_get_font_size (AgsCartesian *cartesian);
```

Get font size of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the font size

Since: [3.2.0](#)

ags_cartesian_set_font_size ()

```
void  
ags_cartesian_set_font_size (AgsCartesian *cartesian,  
                             gdouble font_size);
```

Set font size of *cartesian*.

Parameters

cartesian		the AgsCartesian	
font_size		the font size	

Since: [3.2.0](#)

ags_cartesian_get_x_step_width ()

```
gdouble  
ags_cartesian_get_x_step_width (AgsCartesian *cartesian);
```

Get x step width of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the x step width

Since: [3.2.0](#)

ags_cartesian_set_x_step_width ()

```
void  
ags_cartesian_set_x_step_width (AgsCartesian *cartesian,  
                                gdouble x_step_width);
```

Set x step width of *cartesian*.

Parameters

cartesian	the AgsCartesian
x_step_width	the x step width

Since: 3.2.0

ags_cartesian_get_y_step_height ()

```
gdouble
ags_cartesian_get_y_step_height (AgsCartesian *cartesian);
```

Get y step height.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the y step height

Since: 3.2.0

ags_cartesian_set_y_step_height ()

```
void
ags_cartesian_set_y_step_height (AgsCartesian *cartesian,
                                gdouble y_step_height);
```

Set y step height of *cartesian*.

Parameters

cartesian	the AgsCartesian
y_step_height	the y step height

Since: 3.2.0

ags_cartesian_get_x_scale_step_width ()

```
gdouble
ags_cartesian_get_x_scale_step_width (AgsCartesian *cartesian);
```

Get x scale step width of *cartesian*.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the x scale step width

Since: 3.2.0

ags_cartesian_set_x_scale_step_width ()

```
void
ags_cartesian_set_x_scale_step_width (AgsCartesian *cartesian,
                                       gdouble x_scale_step_width);
```

Set x scale step width of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>x_scale_step_width</i>	the x scale step width

Since: 3.2.0

ags_cartesian_get_y_scale_step_height ()

```
gdouble
ags_cartesian_get_y_scale_step_height (AgsCartesian *cartesian);
```

Get y scale step height of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
------------------	-------------------------

Returns

the y scale step height

Since: 3.2.0

ags_cartesian_set_y_scale_step_height ()

```
void
ags_cartesian_set_y_scale_step_height (AgsCartesian *cartesian,
                                       gdouble y_scale_step_height);
```

Set y scale step height of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>y_scale_step_height</i>	the y scale step height

Since: 3.2.0

ags_cartesian_get_x_unit_x0 ()

```
gdouble
ags_cartesian_get_x_unit_x0 (AgsCartesian *cartesian);
```

Get x unit x0 of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the x unit x0

Since: 3.2.0

ags_cartesian_set_x_unit_x0 ()

```
void
ags_cartesian_set_x_unit_x0 (AgsCartesian *cartesian,
                             gdouble x_unit_x0);
```

Set x unit x0 of *cartesian*.

Parameters

cartesian		the AgsCartesian	
x_unit_x0		the x unit x0	

Since: 3.2.0

ags_cartesian_get_x_unit_y0 ()

```
gdouble
ags_cartesian_get_x_unit_y0 (AgsCartesian *cartesian);
```

Get x unit y0 of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the x unit y0

Since: 3.2.0

ags_cartesian_set_x_unit_y0 ()

```
void
ags_cartesian_set_x_unit_y0 (AgsCartesian *cartesian,
                             gdouble x_unit_y0);
```

Set x unit y0 of *cartesian*.

Parameters

cartesian	the AgsCartesian
x_unit_y0	the x unit y0

Since: 3.2.0

ags_cartesian_get_x_unit_size ()

```
gdouble
ags_cartesian_get_x_unit_size (AgsCartesian *cartesian);
```

Get x unit size of *cartesian*.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the x unit size

Since: 3.2.0

ags_cartesian_set_x_unit_size ()

```
void
ags_cartesian_set_x_unit_size (AgsCartesian *cartesian,
                               gdouble x_unit_size);
```

Set x unit size of *cartesian*.

Parameters

cartesian	the AgsCartesian
x_unit_size	the x unit size

Since: 3.2.0

ags_cartesian_get_y_unit_x0 ()

```
gdouble
ags_cartesian_get_y_unit_x0 (AgsCartesian *cartesian);
```

Get y unit x0 of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the y unit x0

Since: [3.2.0](#)

ags_cartesian_set_y_unit_x0 ()

```
void
ags_cartesian_set_y_unit_x0 (AgsCartesian *cartesian,
                             gdouble y_unit_x0);
```

Set y unit x0 of *cartesian*.

Parameters

cartesian		the AgsCartesian	
y_unit_x0		the y unit x0	

Since: [3.2.0](#)

ags_cartesian_get_y_unit_y0 ()

```
gdouble
ags_cartesian_get_y_unit_y0 (AgsCartesian *cartesian);
```

Get y unit y0 of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Since: [3.2.0](#)

ags_cartesian_set_y_unit_y0 ()

```
void
ags_cartesian_set_y_unit_y0 (AgsCartesian *cartesian,
                             gdouble y_unit_y0);
```

Set y unit y0 of *cartesian*.

Parameters

cartesian		the AgsCartesian	
y_unit_y0		the y unit y0	

Since: [3.2.0](#)

ags_cartesian_get_y_unit_size ()

```
gdouble  
ags_cartesian_get_y_unit_size (AgsCartesian *cartesian);
```

Get y unit size of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the y unit size

Since: 3.2.0

ags_cartesian_set_y_unit_size ()

```
void  
ags_cartesian_set_y_unit_size (AgsCartesian *cartesian,  
                               gdouble y_unit_size);
```

Set y unit size of *cartesian*.

Parameters

cartesian		the AgsCartesian	
y_unit_size		the y unit size	

Since: 3.2.0

ags_cartesian_get_x_label_start ()

```
gdouble  
ags_cartesian_get_x_label_start (AgsCartesian *cartesian);
```

Get x label start of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the x label start

Since: 3.2.0

ags_cartesian_set_x_label_start ()

```
void
ags_cartesian_set_x_label_start (AgsCartesian *cartesian,
                                gdouble x_label_start);
```

Set x label start of *cartesian* .

Parameters

cartesian	the AgsCartesian
x_label_start	the x label start

Since: 3.2.0

ags_cartesian_get_x_label_step_width ()

```
gdouble
ags_cartesian_get_x_label_step_width (AgsCartesian *cartesian);
```

Get x label step width.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the x label step width

Since: 3.2.0

ags_cartesian_set_x_label_step_width ()

```
void
ags_cartesian_set_x_label_step_width (AgsCartesian *cartesian,
                                      gdouble x_label_step_width);
```

Set x label step width of *cartesian* .

Parameters

cartesian	the AgsCartesian
x_label_step_width	the x label step width

Since: 3.2.0

ags_cartesian_get_y_label_start ()

```
gdouble
ags_cartesian_get_y_label_start (AgsCartesian *cartesian);
```

Get y label start of *cartesian* .

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the y label start

Since: [3.2.0](#)

ags_cartesian_set_y_label_start ()

```
void
ags_cartesian_set_y_label_start (AgsCartesian *cartesian,
                                gdouble y_label_start);
```

Set y label start of *cartesian*.

Parameters

cartesian		the AgsCartesian	
y_label_start		the y label start	

Since: [3.2.0](#)

ags_cartesian_get_y_label_step_height ()

```
gdouble
ags_cartesian_get_y_label_step_height (AgsCartesian *cartesian);
```

Get y label step height of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the y label step height

Since: [3.2.0](#)

ags_cartesian_set_y_label_step_height ()

```
void
ags_cartesian_set_y_label_step_height (AgsCartesian *cartesian,
                                       gdouble y_label_step_height);
```

Set y label step height of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
<code>y_label_step_height</code>	the y label step height

Since: 3.2.0

ags_cartesian_get_x_step ()

```
gdouble
ags_cartesian_get_x_step (AgsCartesian *cartesian);
```

Get x step of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
------------------------	-------------------------

Returns

the x step

Since: 3.2.0

ags_cartesian_set_x_step ()

```
void
ags_cartesian_set_x_step (AgsCartesian *cartesian,
                          gdouble x_step);
```

Set x step of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
<code>x_step</code>	the x step

Since: 3.2.0

ags_cartesian_get_y_step ()

```
gdouble
ags_cartesian_get_y_step (AgsCartesian *cartesian);
```

Get y step of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
------------------------	-------------------------

Returns

the y step

Since: 3.2.0

ags_cartesian_set_y_step ()

```
void
ags_cartesian_set_y_step (AgsCartesian *cartesian,
                          gdouble y_step);
```

Set y step of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>y_step</i>	the y step

Since: 3.2.0

ags_cartesian_get_x_start ()

```
gdouble
ags_cartesian_get_x_start (AgsCartesian *cartesian);
```

Get x start of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
------------------	-------------------------

Returns

the x start

Since: 3.2.0

ags_cartesian_set_x_start ()

```
void
ags_cartesian_set_x_start (AgsCartesian *cartesian,
                           gdouble x_start);
```

Set x start of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>x_start</i>	the x start

Since: 3.2.0

ags_cartesian_get_x_end ()

```
gdouble
ags_cartesian_get_x_end (AgsCartesian *cartesian);
```

Get x end of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the x end

Since: **3.2.0**

ags_cartesian_set_x_end ()

```
void
ags_cartesian_set_x_end (AgsCartesian *cartesian,
                        gdouble x_end);
```

Set x end of *cartesian*.

Parameters

cartesian		the AgsCartesian	
x_end		the x end	

Since: **3.2.0**

ags_cartesian_get_y_start ()

```
gdouble
ags_cartesian_get_y_start (AgsCartesian *cartesian);
```

Get y start of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the y start

Since: **3.2.0**

ags_cartesian_set_y_start ()

```
void
ags_cartesian_set_y_start (AgsCartesian *cartesian,
                           gdouble y_start);
```

Set y start of *cartesian*.

Parameters

cartesian	the AgsCartesian
y_start	the y start

Since: 3.2.0

ags_cartesian_get_y_end ()

```
gdouble
ags_cartesian_get_y_end (AgsCartesian *cartesian);
```

Get y end of *cartesian*.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the y end

Since: 3.2.0

ags_cartesian_set_y_end ()

```
void
ags_cartesian_set_y_end (AgsCartesian *cartesian,
                          gdouble y_end);
```

Set y end of *cartesian*.

Parameters

cartesian	the AgsCartesian
y_end	the y end

Since: 3.2.0

ags_cartesian_get_x_unit ()

```
gchar~*
ags_cartesian_get_x_unit (AgsCartesian *cartesian);
```

Get x unit of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the x unit

Since: [3.2.0](#)

ags_cartesian_set_x_unit ()

```
void
ags_cartesian_set_x_unit (AgsCartesian *cartesian,
                          gchar *x_unit);
```

Set x unit of *cartesian*.

Parameters

cartesian		the AgsCartesian	
x_unit		the x unit	

Since: [3.2.0](#)

ags_cartesian_get_y_unit ()

```
gchar~*
ags_cartesian_get_y_unit (AgsCartesian *cartesian);
```

Get y unit of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the y unit

Since: [3.2.0](#)

ags_cartesian_set_y_unit ()

```
void
ags_cartesian_set_y_unit (AgsCartesian *cartesian,
                          gchar *y_unit);
```

Set y unit of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
<code>y_unit</code>	the y unit

Since: 3.2.0

ags_cartesian_get_x_label ()

```
gchar~**
ags_cartesian_get_x_label (AgsCartesian *cartesian);
```

Get x label of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
------------------------	-------------------------

Returns

the x label.

[transfer none]

Since: 3.2.0

ags_cartesian_set_x_label ()

```
void
ags_cartesian_set_x_label (AgsCartesian *cartesian,
                           gchar **x_label);
```

Set x label of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian	
<code>x_label</code>	the x label.	[transfer none]

Since: 3.2.0

ags_cartesian_get_y_label ()

```
gchar~**
ags_cartesian_get_y_label (AgsCartesian *cartesian);
```

Get y label of *cartesian*.

Parameters

cartesian | the [AgsCartesian](#) |

Returns

the y label.

[*transfer none*]

Since: [3.2.0](#)

ags_cartesian_set_y_label ()

```
void
ags_cartesian_set_y_label (AgsCartesian *cartesian,
                           gchar **y_label);
```

Set y label of *cartesian*.

Parameters

cartesian		the AgsCartesian		
y_label		the y label.		[<i>transfer none</i>]

Since: [3.2.0](#)

ags_cartesian_get_x_step_factor ()

```
gdouble
ags_cartesian_get_x_step_factor (AgsCartesian *cartesian);
```

Get x step factor of *cartesian*.

Parameters

cartesian | the [AgsCartesian](#) |

Returns

the x step factor

Since: [3.2.0](#)

ags_cartesian_set_x_step_factor ()

```
void
ags_cartesian_set_x_step_factor (AgsCartesian *cartesian,
                                 gdouble x_step_factor);
```

Set x step factor of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>x_step_factor</i>	the x step factor

Since: 3.2.0

ags_cartesian_get_y_step_factor ()

```
gdouble  
ags_cartesian_get_y_step_factor (AgsCartesian *cartesian);
```

Get y step factor of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
------------------	-------------------------

Returns

the y step factor

Since: 3.2.0

ags_cartesian_set_y_step_factor ()

```
void  
ags_cartesian_set_y_step_factor (AgsCartesian *cartesian,  
                                gdouble y_step_factor);
```

Set y step factor of *cartesian*.

Parameters

<i>cartesian</i>	the AgsCartesian
<i>y_step_factor</i>	the y step factor

Since: 3.2.0

ags_cartesian_get_x_small_scale_factor ()

```
gdouble  
ags_cartesian_get_x_small_scale_factor  
    (AgsCartesian *cartesian);
```

Get x small scale factor of *cartesian*.

Parameters

cartesian | the [AgsCartesian](#) |

Returns

the x small factor

Since: [3.2.0](#)

ags_cartesian_set_x_small_scale_factor ()

```
void
ags_cartesian_set_x_small_scale_factor
    (AgsCartesian *cartesian,
     gdouble x_small_scale_factor);
```

Set x small scale factor of *cartesian*.

Parameters

cartesian		the AgsCartesian	
x_small_scale_factor		the x small scale factor	

Since: [3.2.0](#)

ags_cartesian_get_x_big_scale_factor ()

```
gdouble
ags_cartesian_get_x_big_scale_factor (AgsCartesian *cartesian);
```

Get x big scale factor of *cartesian*.

Parameters

cartesian | the [AgsCartesian](#) |

Returns

the x big factor

Since: [3.2.0](#)

ags_cartesian_set_x_big_scale_factor ()

```
void
ags_cartesian_set_x_big_scale_factor (AgsCartesian *cartesian,
     gdouble x_big_scale_factor);
```

Set x big scale factor of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
<code>x_big_scale_factor</code>	the x big scale factor

Since: 3.2.0

ags_cartesian_get_y_small_scale_factor ()

```
gdouble
ags_cartesian_get_y_small_scale_factor
    (AgsCartesian *cartesian);
```

Get y small scale factor of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
------------------------	-------------------------

Returns

the y small factor

Since: 3.2.0

ags_cartesian_set_y_small_scale_factor ()

```
void
ags_cartesian_set_y_small_scale_factor
    (AgsCartesian *cartesian,
     gdouble y_small_scale_factor);
```

Set y small scale factor of *cartesian*.

Parameters

<code>cartesian</code>	the AgsCartesian
<code>y_small_scale_factor</code>	the y small scale factor

Since: 3.2.0

ags_cartesian_get_y_big_scale_factor ()

```
gdouble
ags_cartesian_get_y_big_scale_factor (AgsCartesian *cartesian);
```

Get y big scale factor of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the y big factor

Since: [3.2.0](#)

ags_cartesian_set_y_big_scale_factor ()

```
void
ags_cartesian_set_y_big_scale_factor (AgsCartesian *cartesian,
                                     gdouble y_big_scale_factor);
```

Set y big scale factor of *cartesian*.

Parameters

cartesian		the AgsCartesian	
y_big_scale_factor		the y big scale factor	

Since: [3.2.0](#)

ags_cartesian_get_x_label_factor ()

```
gdouble
ags_cartesian_get_x_label_factor (AgsCartesian *cartesian);
```

Get x label factor of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	----------------------------------	--

Returns

the x label factor

Since: [3.2.0](#)

ags_cartesian_set_x_label_factor ()

```
void
ags_cartesian_set_x_label_factor (AgsCartesian *cartesian,
                                  gdouble x_label_factor);
```

Set x label factor of *cartesian*.

Parameters

cartesian	the AgsCartesian
x_label_factor	the x label factor

Since: 3.2.0

ags_cartesian_get_x_label_precision ()

```
gdouble
ags_cartesian_get_x_label_precision (AgsCartesian *cartesian);
```

Get x label precision of *cartesian*.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the x label precision

Since: 3.2.0

ags_cartesian_set_x_label_precision ()

```
void
ags_cartesian_set_x_label_precision (AgsCartesian *cartesian,
                                     gdouble x_label_precision);
```

Set x label precision of *cartesian*.

Parameters

cartesian	the AgsCartesian
x_label_precision	the x label precision

Since: 3.2.0

ags_cartesian_get_y_label_factor ()

```
gdouble
ags_cartesian_get_y_label_factor (AgsCartesian *cartesian);
```

Get y label factor of *cartesian*.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the y label factor

Since: 3.2.0

ags_cartesian_set_y_label_factor ()

```
void
ags_cartesian_set_y_label_factor (AgsCartesian *cartesian,
                                  gdouble y_label_factor);
```

Set y label factor of *cartesian*.

Parameters

cartesian	the AgsCartesian
y_label_factor	the y label factor

Since: 3.2.0

ags_cartesian_get_y_label_precision ()

```
gdouble
ags_cartesian_get_y_label_precision (AgsCartesian *cartesian);
```

Get y label precision of *cartesian*.

Parameters

cartesian	the AgsCartesian
-----------	-------------------------

Returns

the y label precision

Since: 3.2.0

ags_cartesian_set_y_label_precision ()

```
void
ags_cartesian_set_y_label_precision (AgsCartesian *cartesian,
                                     gdouble y_label_precision);
```

Set y label precision of *cartesian*.

Parameters

cartesian	the AgsCartesian
y_label_precision	the y label precision

Since: 3.2.0

ags_cartesian_get_surface ()

```
cairo_surface_t~*
ags_cartesian_get_surface (AgsCartesian *cartesian);
```

Get cairo surface of *cartesian*.

Parameters

cartesian		the AgsCartesian	
-----------	--	-------------------------	--

Returns

the cairo surface.

[transfer full]

Since: **3.2.0**

ags_cartesian_linear_step_conversion_func ()

```
gdouble
ags_cartesian_linear_step_conversion_func
    (gdouble current,
     gboolean is_abscissae,
     gpointer data);
```

Perform linear step conversion.

Parameters

current		current step value	
is_abscissae		is abscissae	
data		the data	

Returns

the converted step value

Since: **3.0.0**

ags_cartesian_linear_translate_func ()

```
void
ags_cartesian_linear_translate_func (gdouble x,
                                     gdouble y,
                                     gdouble *ret_x,
                                     gdouble *ret_y,
                                     gpointer data);
```

Perform linear translation.

Parameters

x	the x position	
y	the y position	
ret_x	the return location of translated x.	<i>[out]</i>
ret_y	the return location of translated y.	<i>[out]</i>
data	the AgsCartesian	

Since: 3.0.0

ags_cartesian_linear_x_small_scale_func ()

```
gdouble
ags_cartesian_linear_x_small_scale_func
    (gdouble value,
     gpointer data);
```

Labeling function of x small scale

Parameters

value	the value	
data	the AgsCartesian	

Returns

the matching scale value

Since: 3.0.0

ags_cartesian_linear_x_big_scale_func ()

```
gdouble
ags_cartesian_linear_x_big_scale_func (gdouble value,
                                       gpointer data);
```

Labeling function of x big scale

Parameters

value	the value	
data	the AgsCartesian	

Returns

the matching scale value

Since: 3.0.0

ags_cartesian_linear_y_small_scale_func ()

```
gdouble
ags_cartesian_linear_y_small_scale_func
    (gdouble value,
     gpointer data);
```

Labeling function of y small scale

Parameters

value	the value
data	the AgsCartesian

Returns

the matching scale value

Since: [3.0.0](#)

ags_cartesian_linear_y_big_scale_func ()

```
gdouble
ags_cartesian_linear_y_big_scale_func (gdouble value,
                                       gpointer data);
```

Labeling function of y big scale

Parameters

value	the value
data	the AgsCartesian

Returns

the matching scale value

Since: [3.0.0](#)

ags_cartesian_linear_x_label_func ()

```
gchar~*
ags_cartesian_linear_x_label_func (gdouble value,
                                    gpointer data);
```

Format x label *value* appropriately.

Parameters

value	the value
data	the AgsCartesian

Returns

the formatted string

Since: 3.0.0

ags_cartesian_linear_y_label_func ()

```
gchar~*
ags_cartesian_linear_y_label_func (gdouble value,
                                   gpointer data);
```

Format y label *value* appropriately.

Parameters

value data	the value the AgsCartesian
---------------	--------------------------------------

Returns

the formatted string

Since: 3.0.0

ags_cartesian_reallocate_label ()

```
void
ags_cartesian_reallocate_label (AgsCartesian *cartesian,
                                gboolean do_x_label);
```

Reallocate x label if *do_x_label*, otherwise y label.

Parameters

cartesian do_x_label	the AgsCartesian do x label
-------------------------	---------------------------------------

Since: 3.0.0

ags_cartesian_fill_label ()

```
void
ags_cartesian_fill_label (AgsCartesian *cartesian,
                           gboolean do_x_label);
```

Fill x label if *do_x_label*, otherwise y label.

Parameters

cartesian	the AgsCartesian
do_x_label	do x label

Since: 3.0.0

ags_cartesian_new ()

```
AgsCartesian~*
ags_cartesian_new ();
```

Create a new instance of **AgsCartesian**

Returns

the new **AgsCartesian**

Since: 3.0.0

AGS_CARTESIAN()

```
#define AGS_CARTESIAN(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), ↵
    AGS_TYPE_CARTESIAN, AgsCartesian))
```

AGS_CARTESIAN_CLASS()

```
#define AGS_CARTESIAN_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ↵
    AGS_TYPE_CARTESIAN, AgsCartesianClass))
```

AGS_CARTESIAN_GET_CLASS()

```
#define AGS_CARTESIAN_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), ↵
    AGS_TYPE_CARTESIAN, AgsCartesianClass))
```

AGS_IS_CARTESIAN()

```
#define AGS_IS_CARTESIAN(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), ↵
    AGS_TYPE_CARTESIAN))
```

AGS_IS_CARTESIAN_CLASS()

```
#define AGS_IS_CARTESIAN_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), ↵
    AGS_TYPE_CARTESIAN))
```

ags_cartesian_get_type ()

```
GType
ags_cartesian_get_type (void);
```


Types and Values

AGS_CARTESIAN_DEFAULT_X_MARGIN

```
#define AGS_CARTESIAN_DEFAULT_X_MARGIN (24.0)
```

AGS_CARTESIAN_DEFAULT_Y_MARGIN

```
#define AGS_CARTESIAN_DEFAULT_Y_MARGIN (24.0)
```

AGS_CARTESIAN_DEFAULT_X_STEP_WIDTH

```
#define AGS_CARTESIAN_DEFAULT_X_STEP_WIDTH (10.0)
```

AGS_CARTESIAN_DEFAULT_Y_STEP_HEIGHT

```
#define AGS_CARTESIAN_DEFAULT_Y_STEP_HEIGHT (10.0)
```

AGS_CARTESIAN_DEFAULT_X_SCALE_STEP_WIDTH

```
#define AGS_CARTESIAN_DEFAULT_X_SCALE_STEP_WIDTH (10.0)
```

AGS_CARTESIAN_DEFAULT_Y_SCALE_STEP_HEIGHT

```
#define AGS_CARTESIAN_DEFAULT_Y_SCALE_STEP_HEIGHT (10.0)
```

AGS_CARTESIAN_DEFAULT_X_STEP

```
#define AGS_CARTESIAN_DEFAULT_X_STEP (1.0)
```

AGS_CARTESIAN_DEFAULT_Y_STEP

```
#define AGS_CARTESIAN_DEFAULT_Y_STEP (1.0)
```

AGS_CARTESIAN_DEFAULT_X_START

```
#define AGS_CARTESIAN_DEFAULT_X_START (-60.0)
```

AGS_CARTESIAN_DEFAULT_X_END

```
#define AGS_CARTESIAN_DEFAULT_X_END (199.0)
```

AGS_CARTESIAN_DEFAULT_Y_START

```
#define AGS_CARTESIAN_DEFAULT_Y_START (-70.0)
```

AGS_CARTESIAN_DEFAULT_Y_END

```
#define AGS_CARTESIAN_DEFAULT_Y_END (99.0)
```

AGS_CARTESIAN_DEFAULT_X_LABEL_START

```
#define AGS_CARTESIAN_DEFAULT_X_LABEL_START (10.0)
```

AGS_CARTESIAN_DEFAULT_X_LABEL_STEP_WIDTH

```
#define AGS_CARTESIAN_DEFAULT_X_LABEL_STEP_WIDTH (50.0)
```

AGS_CARTESIAN_DEFAULT_Y_LABEL_START

```
#define AGS_CARTESIAN_DEFAULT_Y_LABEL_START (20.0)
```

AGS_CARTESIAN_DEFAULT_Y_LABEL_STEP_HEIGHT

```
#define AGS_CARTESIAN_DEFAULT_Y_LABEL_STEP_HEIGHT (50.0)
```

enum AgsCartesianFlags**Members**

AGS_CARTESIAN_ABSCISSAE		
AGS_CARTESIAN_ORDINATE		
AGS_CARTESIAN_X_SCALE		
AGS_CARTESIAN_Y_SCALE		
AGS_CARTESIAN_X_UNIT		
AGS_CARTESIAN_Y_UNIT		
AGS_CARTESIAN_X_LABEL		
AGS_CARTESIAN_Y_LABEL		

enum AgsPlotFillFlags**Members**

AGS_PLOT_FILL_REPLACE		
-----------------------	--	--

struct AgsPlot

```
struct AgsPlot {
    guint fill_flags;

    guint n_points;
    gboolean join_points;
    gdouble **point;
    gdouble **point_color;
    gchar **point_label;

    guint n_bitmaps;
    gchar **bitmap;
    gdouble **bitmap_color;

    guint n_pixmap;
    gdouble ***pixmap;
};
```

AGS_TYPE_CARTESIAN

```
#define AGS_TYPE_CARTESIAN (ags_cartesian_get_type())
```

struct AgsCartesian

```
struct AgsCartesian;
```

struct AgsCartesianClass

```
struct AgsCartesianClass {
    GtkWidgetClass widget;
};
```

Property Details

The “center” property

“center”	double
----------	--------

The center of lines

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0.5

Since: 3.0.0

The "font-size" property

"font-size"	double
-------------	--------

The font's size to draw labels and units.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 12

Since: 3.0.0

The "line-width" property

"line-width"	double
--------------	--------

The line width.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 3.0.0

The "plot" property

"plot"	gpointer
--------	----------

The **GList** containig **AgsPlot**.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "point-radius" property

"point-radius"	double
----------------	--------

The points radius.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0

Since: 3.0.0

The "surface" property

"surface"	gpointer
-----------	----------

The cairo surface.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "translate-data" property

"translate-data"	gpointer
------------------	----------

The data to pass to translate function.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "x-big-scale-factor" property

"x-big-scale-factor"	double
----------------------	--------

The scale factor to use with x big scale function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 5

Since: 4.0.0

The "x-end" property

"x-end"	double
---------	--------

The x end.

Owner: AgsCartesian

Flags: Read / Write

Default value: 199

Since: 3.0.0

The "x-label" property

"x-label"	gpointer
-----------	----------

The x labels as a string array.

Owner: AgsCartesian

Flags: Read / Write

Since: 3.0.0

The "x-label-data" property

"x-label-data"	gpointer
----------------	----------

The data to pass to x label conversion function.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "x-label-factor" property

"x-label-factor"	double
------------------	--------

The factor to use with x label function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 5

Since: 4.0.0

The "x-label-precision" property

"x-label-precision"	double
---------------------	--------

The precision to use with x label function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 3

Since: 4.0.0

The "x-label-start" property

"x-label-start"	double
-----------------	--------

The x label start position.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 10

Since: 3.0.0

The "x-label-step-width" property

"x-label-step-width"	double
----------------------	--------

The x label step width.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 50

Since: 3.0.0

The "x-margin" property

"x-margin"	double
------------	--------

The horizontal x margin.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 24

Since: 3.0.0

The "x-scale-data" property

"x-scale-data"	gpointer
----------------	----------

The data to pass to x scale conversion function.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "x-scale-step-width" property

"x-scale-step-width"	double
----------------------	--------

The width of a x scale step.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 10

Since: 3.0.0

The "x-small-scale-factor" property

"x-small-scale-factor"	double
------------------------	--------

The scale factor to use with x small scale function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 4.0.0

The "x-start" property

"x-start"	double
-----------	--------

The x start.

Owner: AgsCartesian

Flags: Read / Write

Default value: -60

Since: 3.0.0

The "x-step" property

"x-step"	double
----------	--------

The x step.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 3.0.0

The "x-step-data" property

"x-step-data"	gpointer
---------------	----------

The data to pass to x step conversion function.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "x-step-factor" property

"x-step-factor"	double
-----------------	--------

The step factor to use with x step conversion function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 4.0.0

The "x-step-width" property

"x-step-width"	double
----------------	--------

The width of a x step.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 10

Since: 3.0.0

The "x-translate-point" property

"x-translate-point"	double
---------------------	--------

The x translate point.

Owner: AgsCartesian

Flags: Read / Write

Default value: 0

Since: 4.0.0

The "x-unit" property

"x-unit"	char~*
----------	--------

The x unit label.

Owner: AgsCartesian

Flags: Read / Write

Default value: NULL

Since: 3.0.0

The "x-unit-size" property

"x-unit-size"	double
---------------	--------

The x unit's size.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0

Since: 4.0.0

The "x-unit-x0" property

"x-unit-x0"	double
-------------	--------

The x unit's x0 position.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0

Since: 3.0.0

The "x-unit-y0" property

"x-unit-y0"	double
-------------	--------

The x unit's y0 position.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0

Since: 3.0.0

The "y-big-scale-factor" property

"y-big-scale-factor"	double
----------------------	--------

The scale factor to use with y big scale function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 5

Since: 4.0.0

The "y-end" property

"y-end"	double
---------	--------

The y end.

Owner: AgsCartesian

Flags: Read / Write

Default value: 99

Since: 3.0.0

The "y-label" property

"y-label"	gpointer
-----------	----------

The y labels as a string array.

Owner: AgsCartesian

Flags: Read / Write

Since: 3.0.0

The "y-label-data" property

"y-label-data"	gpointer
----------------	----------

The data to pass to y label conversion function.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "y-label-factor" property

"y-label-factor"	double
------------------	--------

The factor to use with y label function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 5

Since: 4.0.0

The "y-label-precision" property

"y-label-precision"	double
---------------------	--------

The precision to use with y label function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 3

Since: 4.0.0

The "y-label-start" property

"y-label-start"	double
-----------------	--------

The y label start position.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 20

Since: 3.0.0

The "y-label-step-height" property

"y-label-step-height"	double
-----------------------	--------

The y label step height.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 50

Since: 3.0.0

The "y-margin" property

"y-margin"	double
------------	--------

The horizontal y margin.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 24

Since: 3.0.0

The "y-scale-data" property

"y-scale-data"	gpointer
----------------	----------

The data to pass to y scale conversion function.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "y-scale-step-height" property

"y-scale-step-height"	double
-----------------------	--------

The height of a y scale step.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 10

Since: 3.0.0

The "y-small-scale-factor" property

"y-small-scale-factor"	double
------------------------	--------

The scale factor to use with y small scale function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 4.0.0

The "y-start" property

"y-start"	double
-----------	--------

The y start.

Owner: AgsCartesian

Flags: Read / Write

Default value: -70

Since: 3.0.0

The "y-step" property

"y-step"	double
----------	--------

The y step.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 3.0.0

The "y-step-data" property

"y-step-data"	gpointer
---------------	----------

The data to pass to y step conversion function.

Owner: AgsCartesian

Flags: Read / Write

Since: 4.0.0

The "y-step-factor" property

"y-step-factor"	double
-----------------	--------

The step factor to use with y step conversion function.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 4.0.0

The "y-step-height" property

"y-step-height"	double
-----------------	--------

The height of a y step.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 10

Since: 3.0.0

The "y-translate-point" property

"y-translate-point"	double
---------------------	--------

The y translate point.

Owner: AgsCartesian

Flags: Read / Write

Default value: 0

Since: 4.0.0

The “y-unit” property

“y-unit”	char~*
----------	--------

The y unit label.

Owner: AgsCartesian

Flags: Read / Write

Default value: NULL

Since: 3.0.0

The “y-unit-size” property

“y-unit-size”	double
---------------	--------

The y unit’s size.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0

Since: 4.0.0

The “y-unit-x0” property

“y-unit-x0”	double
-------------	--------

The y unit’s x0 position.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0

Since: 3.0.0

The “y-unit-y0” property

“y-unit-y0”	double
-------------	--------

The y unit’s y0 position.

Owner: AgsCartesian

Flags: Read / Write

Allowed values: ≥ 0

Default value: 0

Since: 3.0.0

1.2 AgsDial

AgsDial — A dial widget

Stability Level

Stable, unless otherwise indicated

Functions

void	ags_dial_set_radius ()
guint	ags_dial_get_radius ()
void	ags_dial_set_outline_strength ()
guint	ags_dial_get_outline_strength ()
void	ags_dial_set_scale_precision ()
guint	ags_dial_get_scale_precision ()
void	ags_dial_set_font_size ()
guint	ags_dial_get_font_size ()
void	ags_dial_set_button_width ()
gint	ags_dial_get_button_width ()
void	ags_dial_set_button_height ()
gint	ags_dial_get_button_height ()
void	ags_dial_set_margin_left ()
gint	ags_dial_get_margin_left ()
void	ags_dial_set_margin_right ()
gint	ags_dial_get_margin_right ()
void	ags_dial_set_adjustment ()
GtkAdjustment *	ags_dial_get_adjustment ()
void	ags_dial_value_changed ()
void	ags_dial_set_value ()
gdouble	ags_dial_get_value ()
AgsDial *	ags_dial_new ()
#define	AGS_DIAL()
#define	AGS_DIAL_CLASS()
#define	AGS_DIAL_GET_CLASS()
#define	AGS_IS_DIAL()
#define	AGS_IS_DIAL_CLASS()
GType	ags_dial_get_type ()

Properties

GObject *	adjustment	Read / Write
int	button-height	Read / Write
int	button-width	Read / Write
guint	font-size	Read / Write
int	margin-left	Read / Write
int	margin-right	Read / Write
guint	outline-strength	Read / Write
guint	radius	Read / Write
guint	scale-precision	Read / Write

Signals

`void` | `value-changed` | `Run Last`

Types and Values

<code>#define</code>	<code>AGS_DIAL_DEFAULT_PRECISION</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_RADIUS</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_OUTLINE_STRENGTH</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_FONT_SIZE</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_BUTTON_WIDTH</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_BUTTON_HEIGHT</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_MARGIN</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_MARGIN_LEFT</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_MARGIN_RIGHT</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_HEIGHT</code>
<code>#define</code>	<code>AGS_DIAL_DEFAULT_WIDTH</code>
<code>enum</code>	<code>AgsDialFlags</code>
<code>enum</code>	<code>AgsDialAction</code>
<code>#define</code>	<code>AGS_TYPE_DIAL</code>
<code>struct</code>	<code>AgsDial</code>
<code>struct</code>	<code>AgsDialClass</code>

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500;&#x2500; AgsDial
```

Implemented Interfaces

`AgsDial` implements `GtkAccessible`, `GtkBuildable` and `GtkConstraintTarget`.

Includes

```
#include <ags/widget/ags_dial.h>
```

Description

`AgsDial` is a widget representing a `GtkAdjustment`.

Functions

`ags_dial_set_radius ()`

```
void
ags_dial_set_radius (AgsDial *dial,
                    guint radius);
```

Set radius of `dial`.

Parameters

dial	the AgsDial	
radius	the radius	

Since: 3.2.0

ags_dial_get_radius ()

```
guint
ags_dial_get_radius (AgsDial *dial);
```

Get radius of *dial*.

Parameters

dial	the AgsDial	
------	--------------------	--

Returns

the radius

Since: 3.2.0

ags_dial_set_outline_strength ()

```
void
ags_dial_set_outline_strength (AgsDial *dial,
                              guint outline_strength);
```

Set outline strength of *dial*.

Parameters

dial	the AgsDial	
outline_strength	the outline strength	

Since: 3.2.0

ags_dial_get_outline_strength ()

```
guint
ags_dial_get_outline_strength (AgsDial *dial);
```

Get outline strength of *dial*.

Parameters

dial	the AgsDial	
------	--------------------	--

Returns

the outline `_strength`

Since: 3.2.0

ags_dial_set_scale_precision ()

```
void
ags_dial_set_scale_precision (AgsDial *dial,
                             quint scale_precision);
```

Set scale precision of *dial*.

Parameters

dial	the AgsDial
scale_precision	the scale precision

Since: 3.2.0

ags_dial_get_scale_precision ()

```
quint
ags_dial_get_scale_precision (AgsDial *dial);
```

Get scale precision of *dial*.

Parameters

dial	the AgsDial
------	--------------------

Returns

the scale precision

Since: 3.2.0

ags_dial_set_font_size ()

```
void
ags_dial_set_font_size (AgsDial *dial,
                       quint font_size);
```

Set font size of *dial*.

Parameters

dial	the AgsDial
font_size	the font size

Since: 3.2.0

ags_dial_get_font_size ()

```
guint
ags_dial_get_font_size (AgsDial *dial);
```

Get font size of *dial*.

Parameters

dial		the AgsDial	
------	--	--------------------	--

Returns

the font size

Since: 3.2.0

ags_dial_set_button_width ()

```
void
ags_dial_set_button_width (AgsDial *dial,
                           gint button_width);
```

Set button width of *dial*.

Parameters

dial		the AgsDial		
button_width		the button width		

Since: 3.2.0

ags_dial_get_button_width ()

```
gint
ags_dial_get_button_width (AgsDial *dial);
```

Get button width of *dial*.

Parameters

dial		the AgsDial	
------	--	--------------------	--

Returns

the button width

Since: 3.2.0

ags_dial_set_button_height ()

```
void
ags_dial_set_button_height (AgsDial *dial,
                           gint button_height);
```

Set button height of *dial*.

Parameters

dial		the AgsDial	
button_height		the button height	

Since: 3.2.0

ags_dial_get_button_height ()

```
gint
ags_dial_get_button_height (AgsDial *dial);
```

Get button height of *dial*.

Parameters

dial		the AgsDial	
------	--	--------------------	--

Returns

the button height

Since: 3.2.0

ags_dial_set_margin_left ()

```
void
ags_dial_set_margin_left (AgsDial *dial,
                          gint margin_left);
```

Set margin left of *dial*.

Parameters

dial		the AgsDial	
margin_left		the margin left	

Since: 3.2.0

ags_dial_get_margin_left ()

```
gint
ags_dial_get_margin_left (AgsDial *dial);
```

Get *margin_left* of *dial*.

Parameters

dial		the AgsDial	
------	--	-----------------------------	--

Returns

the margin left

Since: [3.2.0](#)

ags_dial_set_margin_right ()

```
void
ags_dial_set_margin_right (AgsDial *dial,
                           gint margin_right);
```

Set margin right of *dial* .

Parameters

dial		the AgsDial	
margin_right		the margin right	

Since: [3.2.0](#)

ags_dial_get_margin_right ()

```
gint
ags_dial_get_margin_right (AgsDial *dial);
```

Get margin right of *dial* .

Parameters

dial		the AgsDial	
------	--	-----------------------------	--

Returns

the margin right

Since: [3.2.0](#)

ags_dial_set_adjustment ()

```
void
ags_dial_set_adjustment (AgsDial *dial,
                          GtkAdjustment *adjustment);
```

Set adjustment of *dial* .

Parameters

dial	the AgsDial	
adjustment	the GtkAdjustment .	<i>[transfer none]</i>

Since: 3.2.0

ags_dial_get_adjustment ()

```
GtkAdjustment~*
ags_dial_get_adjustment (AgsDial *dial);
```

Get adjustment of *dial*.

Parameters

dial	the AgsDial	
------	--------------------	--

Returns

the **GtkAdjustment**.

[transfer full]

Since: 3.2.0

ags_dial_value_changed ()

```
void
ags_dial_value_changed (AgsDial *dial);
```

draws the widget

Parameters

dial	the AgsDial	
------	--------------------	--

Since: 3.0.0

ags_dial_set_value ()

```
void
ags_dial_set_value (AgsDial *dial,
                   gdouble value);
```

Set value

Parameters

dial value	the AgsDial the value to set
---------------	--

Since: **3.0.0**

ags_dial_get_value ()

```
gdouble
ags_dial_get_value (AgsDial *dial);
```

Get value

Parameters

dial	the AgsDial
------	--------------------

Returns

the value

Since: **3.14.0**

ags_dial_new ()

```
AgsDial~*
ags_dial_new ();
```

Creates an **AgsDial**

Returns

a new **AgsDial**

Since: **3.0.0**

AGS_DIAL()

```
#define AGS_DIAL(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), AGS_TYPE_DIAL, ↵
AgsDial))
```

AGS_DIAL_CLASS()

```
#define AGS_DIAL_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), AGS_TYPE_DIAL, ↵
AgsDialClass))
```

AGS_DIAL_GET_CLASS()

```
#define AGS_DIAL_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), AGS_TYPE_DIAL, ↵
AgsDialClass))
```


AGS_IS_DIAL()

```
#define AGS_IS_DIAL(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), AGS_TYPE_DIAL))
```

AGS_IS_DIAL_CLASS()

```
#define AGS_IS_DIAL_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), AGS_TYPE_DIAL))
```

ags_dial_get_type ()

```
GType  
ags_dial_get_type (void);
```

Types and Values**AGS_DIAL_DEFAULT_PRECISION**

```
#define AGS_DIAL_DEFAULT_PRECISION (8.0)
```

AGS_DIAL_DEFAULT_RADIUS

```
#define AGS_DIAL_DEFAULT_RADIUS (10)
```

AGS_DIAL_DEFAULT_OUTLINE_STRENGTH

```
#define AGS_DIAL_DEFAULT_OUTLINE_STRENGTH (4)
```

AGS_DIAL_DEFAULT_FONT_SIZE

```
#define AGS_DIAL_DEFAULT_FONT_SIZE (12)
```

AGS_DIAL_DEFAULT_BUTTON_WIDTH

```
#define AGS_DIAL_DEFAULT_BUTTON_WIDTH (12)
```

AGS_DIAL_DEFAULT_BUTTON_HEIGHT

```
#define AGS_DIAL_DEFAULT_BUTTON_HEIGHT (8)
```

AGS_DIAL_DEFAULT_MARGIN

```
#define AGS_DIAL_DEFAULT_MARGIN (4.0)
```

AGS_DIAL_DEFAULT_MARGIN_LEFT

```
#define AGS_DIAL_DEFAULT_MARGIN_LEFT (AGS_DIAL_DEFAULT_MARGIN)
```

AGS_DIAL_DEFAULT_MARGIN_RIGHT

```
#define AGS_DIAL_DEFAULT_MARGIN_RIGHT (AGS_DIAL_DEFAULT_MARGIN)
```

AGS_DIAL_DEFAULT_HEIGHT

```
#define AGS_DIAL_DEFAULT_HEIGHT (2 * (AGS_DIAL_DEFAULT_RADIUS + ↔
    AGS_DIAL_DEFAULT_OUTLINE_STRENGTH + 1))
```

AGS_DIAL_DEFAULT_WIDTH

```
#define AGS_DIAL_DEFAULT_WIDTH (2 * (AGS_DIAL_DEFAULT_BUTTON_WIDTH + ↔
    AGS_DIAL_DEFAULT_MARGIN + AGS_DIAL_DEFAULT_RADIUS + AGS_DIAL_DEFAULT_OUTLINE_STRENGTH + ↔
    2))
```

enum AgsDialFlags**Members**

AGS_DIAL_WITH_BUTTONS		
AGS_DIAL_MOUSE_BUTTON_PRESSED		
AGS_DIAL_BUTTON_DOWN_PRESSED		
AGS_DIAL_BUTTON_UP_PRESSED		
AGS_DIAL_MOTION_CAPTURING_INIT		
AGS_DIAL_MOTION_CAPTURING		
AGS_DIAL_SEEMLESS_MODE		
AGS_DIAL_INVERSE_LIGHT		

enum AgsDialAction**Members**

AGS_DIAL_INCREMENT		
AGS_DIAL_DECREMENT		

AGS_TYPE_DIAL

```
#define AGS_TYPE_DIAL (ags_dial_get_type())
```

struct AgsDial

```
struct AgsDial;
```

struct AgsDialClass

```
struct AgsDialClass {
    GtkWidgetClass widget;

    void (*value_changed) (AgsDial *dial);
};
```

Property Details

The "adjustment" property

"adjustment"	GObject~*
--------------	-----------

The adjustment storing current value and boundaries.

Owner: AgsDial

Flags: Read / Write

Since: 3.0.0

The "button-height" property

"button-height"	int
-----------------	-----

The buttons height.

Owner: AgsDial

Flags: Read / Write

Allowed values: ≥ -1

Default value: 8

Since: 3.0.0

The "button-width" property

"button-width"	int
----------------	-----

The buttons width.

Owner: AgsDial

Flags: Read / Write

Allowed values: ≥ -1

Default value: 12

Since: 3.0.0

The "font-size" property

"font-size"	guint
-------------	-------

The font size of the buttons.

Owner: AgsDial

Flags: Read / Write

Default value: 12

Since: 3.0.0

The "margin-left" property

"margin-left"	int
---------------	-----

The button's margin left.

Owner: AgsDial

Flags: Read / Write

Allowed values: ≥ -1

Default value: 4

Since: 3.0.0

The "margin-right" property

"margin-right"	int
----------------	-----

The button's margin right.

Owner: AgsDial

Flags: Read / Write

Allowed values: ≥ -1

Default value: 4

Since: 3.0.0

The "outline-strength" property

"outline-strength"	guint
--------------------	-------

The outline strength of the knob.

Owner: AgsDial

Flags: Read / Write

Default value: 4

Since: 3.0.0

The "radius" property

"radius"	guint
----------	-------

The radius of the knob.

Owner: AgsDial

Flags: Read / Write

Default value: 10

Since: 3.0.0

The “scale-precision” property

“scale-precision”	guint
-------------------	-------

The precision of the scale.

Owner: AgsDial

Flags: Read / Write

Default value: 8

Since: 3.0.0

Signal Details

The “value-changed” signal

```
void
user_function (AgsDial *dial,
              gpointer user_data)
```

The ::value-changed signal notifies adjustment value changed.

Parameters

dial	the AgsDial
user_data	user data set when the signal handler was connected.

Flags: [Run Last](#)

Since: 3.0.0

1.3 AgsExpander

AgsExpander — A expander widget

Stability Level

Stable, unless otherwise indicated

Functions

#define	AGS_EXPANDER_CHILD()
AgsExpanderChild *	ags_expander_child_alloc ()
void	ags_expander_child_free ()
AgsExpanderChild *	ags_expander_child_find ()
void	ags_expander_add ()
void	ags_expander_remove ()
AgsExpander *	ags_expander_new ()

#define	AGS_EXPANDER()
#define	AGS_EXPANDER_CLASS()
#define	AGS_EXPANDER_GET_CLASS()
#define	AGS_IS_EXPANDER()
#define	AGS_IS_EXPANDER_CLASS()
GType	ags_expander_get_type ()

Types and Values

enum	AgsExpanderFlags
struct	AgsExpanderChild
#define	AGS_TYPE_EXPANDER
struct	AgsExpander
struct	AgsExpanderClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; GtkBox
        &#x2570;&#x2500;&#x2500; AgsExpander
```

Implemented Interfaces

AgsExpander implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_expander.h>
```

Description

[AgsExpander](#) is a composite widget containing a [GtkGrid](#). It is mainly used to layout childs in rows and columns that can be expanded.

Functions

AGS_EXPANDER_CHILD()

```
#define AGS_EXPANDER_CHILD(ptr) ((AgsExpanderChild *) (ptr))
```

ags_expander_child_alloc ()

```
AgsExpanderChild~*
ags_expander_child_alloc (guint x,
                          guint y,
                          guint width,
                          guint height);
```

Allocate [AgsExpanderChild](#).

Parameters

x	the x position	
y	the y position	
width	the width	
height	the height	

Returns

the new [AgsExpanderChild](#).

[type gpointer][transfer full]

Since: [3.0.0](#)

ags_expander_child_free ()

```
void
ags_expander_child_free (AgsExpanderChild *expander_child);
```

Free *expander_child*.

Parameters

expander_child | the [AgsExpanderChild](#). | *[type gpointer][transfer full]*

Since: [3.2.2](#)

ags_expander_child_find ()

```
AgsExpanderChild~*
ags_expander_child_find (AgsExpander *expander,
                        GtkWidget *child);
```

Find *child* of *expander*.

Parameters

<i>expander</i>	the AgsExpander	
<i>child</i>	the GtkWidget	

Returns

the matching [AgsExpanderChild](#).

[type gpointer][transfer none]

Since: [3.0.0](#)

ags_expander_add ()

```
void
ags_expander_add (AgsExpander *expander,
                 GtkWidget *widget,
                 guint x,
                 guint y,
                 guint width,
                 guint height);
```

Adds a **GtkWidget** to **AgsExpander**

Parameters

expander	the AgsExpander	
widget	the child GtkWidget	
x	x-position	
y	y-position	
width	allocation width	
height	allocation height	

Since: **3.0.0**

ags_expander_remove ()

```
void
ags_expander_remove (AgsExpander *expander,
                    GtkWidget *widget);
```

Removes a **GtkWidget** of **AgsExpander**

Parameters

expander	the AgsExpander	
widget	the child GtkWidget	

Since: **3.0.0**

ags_expander_new ()

```
AgsExpander~*
ags_expander_new ();
```

Creates an **AgsExpander**

Returns

a new **AgsExpander**

Since: **3.0.0**

AGS_EXPANDER()

```
#define AGS_EXPANDER(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), ↵
    AGS_TYPE_EXPANDER, AgsExpander))
```

AGS_EXPANDER_CLASS()

```
#define AGS_EXPANDER_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ↵
    AGS_TYPE_EXPANDER, AgsExpanderClass))
```

AGS_EXPANDER_GET_CLASS()

```
#define AGS_EXPANDER_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), ↵
    AGS_TYPE_EXPANDER, AgsExpanderClass))
```

AGS_IS_EXPANDER()

```
#define AGS_IS_EXPANDER(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), ↵
    AGS_TYPE_EXPANDER))
```

AGS_IS_EXPANDER_CLASS()

```
#define AGS_IS_EXPANDER_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), ↵
    AGS_TYPE_EXPANDER))
```

ags_expander_get_type ()

```
GType
ags_expander_get_type (void);
```

Types and Values**enum AgsExpanderFlags****Members**

AGS_EXPANDER_DRAW_BORDER

| |

struct AgsExpanderChild

```
struct AgsExpanderChild {
    GtkWidget *child;

    guint x;
    guint y;

    guint width;
    guint height;
};
```

AGS_TYPE_EXPANDER

```
#define AGS_TYPE_EXPANDER (ags_expander_get_type())
```

struct AgsExpander

```
struct AgsExpander;
```

struct AgsExpanderClass

```
struct AgsExpanderClass {
    GtkWidgetClass box;
};
```

1.4 AgsExpanderSet

AgsExpanderSet — A container

Stability Level

Stable, unless otherwise indicated

Functions

#define	AGS_EXPANDER_SET_CHILD()
AgsExpanderSetChild *	ags_expander_set_child_alloc ()
void	ags_expander_set_child_free ()
AgsExpanderSetChild *	ags_expander_set_child_find ()
void	ags_expander_set_add ()
void	ags_expander_set_remove ()
AgsExpanderSet *	ags_expander_set_new ()
#define	AGS_EXPANDER_SET()
#define	AGS_EXPANDER_SET_CLASS()
#define	AGS_EXPANDER_SET_GET_CLASS()
#define	AGS_IS_EXPANDER_SET()
#define	AGS_IS_EXPANDER_SET_CLASS()
GType	ags_expander_set_get_type ()

Types and Values

enum	AgsExpanderSetFlags
struct	AgsExpanderSetChild
#define	AGS_TYPE_EXPANDER_SET
struct	AgsExpanderSet
struct	AgsExpanderSetClass

Object Hierarchy

```
GObject
↳ GInitiallyUnowned
↳ GtkWidget
↳ GtkGrid
↳ AgsExpanderSet
```

Implemented Interfaces

AgsExpanderSet implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_expander_set.h>
```

Description

[AgsExpanderSet](#) is a composite widget containing a [GtkGrid](#).

Functions

AGS_EXPANDER_SET_CHILD()

```
#define AGS_EXPANDER_SET_CHILD(ptr) ((AgsExpanderSetChild *) (ptr))
```

ags_expander_set_child_alloc ()

```
AgsExpanderSetChild~*
ags_expander_set_child_alloc (guint x,
                              guint y,
                              guint width,
                              guint height);
```

Allocate [AgsExpanderSetChild](#).

Parameters

x	the x position	
y	the y position	
width	the width	
height	the height	

Returns

the new [AgsExpanderSetChild](#).

[type gpointer][transfer full]

Since: 3.0.0

ags_expander_set_child_free ()

```
void
ags_expander_set_child_free (AgsExpanderSetChild *expander_set_child);
```

Free *expander_set_child*.

Parameters

expander_set_child	the AgsExpanderSetChild .	<i>[type gpointer][transfer full]</i>
--------------------	---	---------------------------------------

Since: [3.2.2](#)

ags_expander_set_child_find ()

```
AgsExpanderSetChild~*
ags_expander_set_child_find (AgsExpanderSet *expander_set,
                             GtkWidget *child);
```

Find *child* of *expander_set*.

Parameters

expander_set	the AgsExpanderSet	
child	the GtkWidget	

Returns

the matching [AgsExpanderSetChild](#).

[type gpointer][transfer none]

Since: [3.0.0](#)

ags_expander_set_add ()

```
void
ags_expander_set_add (AgsExpanderSet *expander_set,
                     GtkWidget *widget,
                     guint x,
                     guint y,
                     guint width,
                     guint height);
```

Adds a [GtkWidget](#) to [AgsExpanderSet](#)

Parameters

expander_set	the AgsExpanderSet	
widget	the child GtkWidget	
x	x-position	
y	y-position	
width	allocation width	
height	allocation height	

Since: 3.0.0

ags_expander_set_remove ()

```
void
ags_expander_set_remove (AgsExpanderSet *expander_set,
                        GtkWidget *widget);
```

Removes a **GtkWidget** of **AgsExpanderSet**

Parameters

expander_set	the AgsExpanderSet	
widget	the child GtkWidget	

Since: 3.0.0

ags_expander_set_new ()

```
AgsExpanderSet~*
ags_expander_set_new ();
```

Creates an **AgsExpanderSet**

Returns

a new **AgsExpanderSet**

Since: 3.0.0

AGS_EXPANDER_SET()

```
#define AGS_EXPANDER_SET(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), ↵
AGS_TYPE_EXPANDER_SET, AgsExpanderSet))
```

AGS_EXPANDER_SET_CLASS()

```
#define AGS_EXPANDER_SET_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ↵
AGS_TYPE_EXPANDER_SET, AgsExpanderSetClass))
```

AGS_EXPANDER_SET_GET_CLASS()

```
#define AGS_EXPANDER_SET_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), ↵
    AGS_TYPE_EXPANDER_SET, AgsExpanderSetClass))
```

AGS_IS_EXPANDER_SET()

```
#define AGS_IS_EXPANDER_SET(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), ↵
    AGS_TYPE_EXPANDER_SET))
```

AGS_IS_EXPANDER_SET_CLASS()

```
#define AGS_IS_EXPANDER_SET_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), ↵
    AGS_TYPE_EXPANDER_SET))
```

ags_expander_set_get_type()

```
GType
ags_expander_set_get_type (void);
```

Types and Values**enum AgsExpanderSetFlags****Members**

AGS_EXPANDER_SET_DRAW_GHOST		
AGS_EXPANDER_SET_DRAW_LEFT_ENDING		
AGS_EXPANDER_SET_DRAW_RIGHT_ENDING		
AGS_EXPANDER_SET_DRAW_LEFT_CONNECTOR		
AGS_EXPANDER_SET_DRAW_RIGHT_CONNECTOR		

struct AgsExpanderSetChild

```
struct AgsExpanderSetChild {
    GtkWidget *child;

    guint x;
    guint y;

    guint width;
    guint height;
};
```

AGS_TYPE_EXPANDER_SET

```
#define AGS_TYPE_EXPANDER_SET (ags_expander_set_get_type())
```

struct AgsExpanderSet

```
struct AgsExpanderSet;
```

struct AgsExpanderSetClass

```
struct AgsExpanderSetClass {
    GtkWidgetClass grid;
};
```

1.5 AgsIndicator

AgsIndicator — A indicator widget

Stability Level

Stable, unless otherwise indicated

Functions

guint	ags_indicator_get_segment_width ()
void	ags_indicator_set_segment_width ()
guint	ags_indicator_get_segment_height ()
void	ags_indicator_set_segment_height ()
guint	ags_indicator_get_segment_padding ()
void	ags_indicator_set_segment_padding ()
guint	ags_indicator_get_segment_count ()
void	ags_indicator_set_segment_count ()
GtkAdjustment *	ags_indicator_get_adjustment ()
void	ags_indicator_set_adjustment ()
AgsIndicator *	ags_indicator_new ()
#define	AGS_INDICATOR()
#define	AGS_INDICATOR_CLASS()
#define	AGS_INDICATOR_GET_CLASS()
#define	AGS_IS_INDICATOR()
#define	AGS_IS_INDICATOR_CLASS()
GType	ags_indicator_get_type ()

Properties

GObject *	adjustment	Read / Write
guint	segment-count	Read / Write
guint	segment-height	Read / Write
guint	segment-padding	Read / Write
guint	segment-width	Read / Write

Types and Values

#define	AGS_INDICATOR_DEFAULT_SEGMENT_WIDTH
#define	AGS_INDICATOR_DEFAULT_SEGMENT_HEIGHT
#define	AGS_INDICATOR_DEFAULT_SEGMENT_PADDING
#define	AGS_INDICATOR_DEFAULT_SEGMENT_COUNT
#define	AGS_TYPE_INDICATOR
struct	AgsIndicator
struct	AgsIndicatorClass

Object Hierarchy

```
GObject
↳ GInitiallyUnowned
↳ GtkWidget
↳ AgsIndicator
```

Implemented Interfaces

AgsIndicator implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_indicator.h>
```

Description

[AgsIndicator](#) is a widget representing a [GtkAdjustment](#).

Functions

ags_indicator_get_segment_width ()

```
guint
ags_indicator_get_segment_width (AgsIndicator *indicator);
```

Get segment width.

Parameters

indicator | the [AgsIndicator](#) |

Returns

the segment width

Since: [3.2.0](#)

ags_indicator_set_segment_width ()

```
void
ags_indicator_set_segment_width (AgsIndicator *indicator,
                                guint segment_width);
```

Set segment width.

Parameters

indicator	the AgsIndicator	
segment_width	the segment width	

Since: 3.2.0

ags_indicator_get_segment_height ()

```
guint
ags_indicator_get_segment_height (AgsIndicator *indicator);
```

Get segment height.

Parameters

indicator	the AgsIndicator	
-----------	-------------------------	--

Returns

the segment height

Since: 3.2.0

ags_indicator_set_segment_height ()

```
void
ags_indicator_set_segment_height (AgsIndicator *indicator,
                                  guint segment_height);
```

Set segment height.

Parameters

indicator	the AgsIndicator	
segment_height	the segment height	

Since: 3.2.0

ags_indicator_get_segment_padding ()

```
guint
ags_indicator_get_segment_padding (AgsIndicator *indicator);
```

Get segment padding.

Parameters

indicator		the AgsIndicator	
-----------	--	----------------------------------	--

Returns

the segment padding

Since: [3.2.0](#)

ags_indicator_set_segment_padding ()

```
void
ags_indicator_set_segment_padding (AgsIndicator *indicator,
                                   guint segment_padding);
```

Set segment padding.

Parameters

indicator		the AgsIndicator	
segment_padding		the segment padding	

Since: [3.2.0](#)

ags_indicator_get_segment_count ()

```
guint
ags_indicator_get_segment_count (AgsIndicator *indicator);
```

Get segment count.

Parameters

indicator		the AgsIndicator	
-----------	--	----------------------------------	--

Returns

the segment count

Since: [3.2.0](#)

ags_indicator_set_segment_count ()

```
void
ags_indicator_set_segment_count (AgsIndicator *indicator,
                                  guint segment_count);
```

Set segment count.

Parameters

indicator	the AgsIndicator
segment_count	the segment count

Since: [3.2.0](#)

ags_indicator_get_adjustment ()

```
GtkAdjustment~*
ags_indicator_get_adjustment (AgsIndicator *indicator);
```

Get adjustment.

Parameters

indicator	the AgsIndicator
-----------	----------------------------------

Returns

the [GtkAdjustment](#).

[transfer full]

Since: [3.2.0](#)

ags_indicator_set_adjustment ()

```
void
ags_indicator_set_adjustment (AgsIndicator *indicator,
                             GtkAdjustment *adjustment);
```

Set adjustment.

Parameters

indicator	the AgsIndicator	
adjustment	the GtkAdjustment .	<i>[transfer none]</i>

Since: [3.2.0](#)

ags_indicator_new ()

```
AgsIndicator~*
ags_indicator_new (GtkOrientation orientation,
                  quint segment_width,
                  quint segment_height);
```

Creates a new instance of [AgsIndicator](#).

Parameters

orientation	the GtkOrientation	
segment_width	the width of one segment	
segment_height	the height of one segment	

Returns

the new **AgsIndicator**

Since: **3.0.0**

AGS_INDICATOR()

```
#define AGS_INDICATOR(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), ↵
    AGS_TYPE_INDICATOR, AgsIndicator))
```

AGS_INDICATOR_CLASS()

```
#define AGS_INDICATOR_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ↵
    AGS_TYPE_INDICATOR, AgsIndicatorClass))
```

AGS_INDICATOR_GET_CLASS()

```
#define AGS_INDICATOR_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), ↵
    AGS_TYPE_INDICATOR, AgsIndicatorClass))
```

AGS_IS_INDICATOR()

```
#define AGS_IS_INDICATOR(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), ↵
    AGS_TYPE_INDICATOR))
```

AGS_IS_INDICATOR_CLASS()

```
#define AGS_IS_INDICATOR_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), ↵
    AGS_TYPE_INDICATOR))
```

ags_indicator_get_type ()

```
GType
ags_indicator_get_type (void);
```

Types and Values**AGS_INDICATOR_DEFAULT_SEGMENT_WIDTH**

```
#define AGS_INDICATOR_DEFAULT_SEGMENT_WIDTH (7)
```

AGS_INDICATOR_DEFAULT_SEGMENT_HEIGHT

```
#define AGS_INDICATOR_DEFAULT_SEGMENT_HEIGHT (7)
```

AGS_INDICATOR_DEFAULT_SEGMENT_PADDING

```
#define AGS_INDICATOR_DEFAULT_SEGMENT_PADDING (3)
```

AGS_INDICATOR_DEFAULT_SEGMENT_COUNT

```
#define AGS_INDICATOR_DEFAULT_SEGMENT_COUNT (10)
```

AGS_TYPE_INDICATOR

```
#define AGS_TYPE_INDICATOR (ags_indicator_get_type())
```

struct AgsIndicator

```
struct AgsIndicator;
```

struct AgsIndicatorClass

```
struct AgsIndicatorClass {  
    GtkWidgetClass widget;  
};
```

Property Details

The “adjustment” property

“adjustment”	GObject~*
--------------	-----------

The adjustment giving indicator value.

Owner: AgsIndicator

Flags: Read / Write

Since: 3.0.0

The “segment-count” property

“segment-count”	guint
-----------------	-------

The indicator’s segment count.

Owner: AgsIndicator

Flags: Read / Write

Allowed values: ≥ 1

Default value: 10

Since: 3.0.0

The “segment-height” property

“segment-height”	guint
------------------	-------

The indicator’s segment height.

Owner: AgsIndicator

Flags: Read / Write

Allowed values: ≥ 1

Default value: 7

Since: 3.0.0

The “segment-padding” property

“segment-padding”	guint
-------------------	-------

The indicator’s segment padding.

Owner: AgsIndicator

Flags: Read / Write

Default value: 3

Since: 3.0.0

The “segment-width” property

“segment-width”	guint
-----------------	-------

The indicator’s segment width.

Owner: AgsIndicator

Flags: Read / Write

Allowed values: ≥ 1

Default value: 7

Since: 3.0.0

1.6 AgsLed

AgsLed — A led widget

Stability Level

Stable, unless otherwise indicated

Functions

guint	ags_led_get_segment_width ()
void	ags_led_set_segment_width ()
guint	ags_led_get_segment_height ()
void	ags_led_set_segment_height ()
gboolean	ags_led_is_active ()
void	ags_led_set_active ()
AgsLed *	ags_led_new ()
#define	AGS_IS_LED()
#define	AGS_IS_LED_CLASS()
#define	AGS_LED()
#define	AGS_LED_CLASS()
#define	AGS_LED_GET_CLASS()
GType	ags_led_get_type ()

Properties

guint	segment-height	Read / Write
guint	segment-width	Read / Write

Types and Values

#define	AGS_LED_DEFAULT_SEGMENT_WIDTH
#define	AGS_LED_DEFAULT_SEGMENT_HEIGHT
#define	AGS_TYPE_LED
struct	AgsLed
struct	AgsLedClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; AgsLed
```

Implemented Interfaces

[AgsLed](#) implements [GtkAccessible](#), [GtkBuildable](#) and [GtkConstraintTarget](#).

Includes

```
#include <ags/widget/ags_led.h>
```

Description

[AgsLed](#) is a widget visualizing a [gboolean](#) value.

Functions

ags_led_get_segment_width ()

```
guint
ags_led_get_segment_width (AgsLed *led);
```

Get segment width.

Parameters

led		the AgsLed	
-----	--	-------------------	--

Returns

the segment width

Since: 4.0.0

ags_led_set_segment_width ()

```
void
ags_led_set_segment_width (AgsLed *led,
                           guint segment_width);
```

Set segment width.

Parameters

led		the AgsLed	
segment_width		the segment width	

Since: 4.0.0

ags_led_get_segment_height ()

```
guint
ags_led_get_segment_height (AgsLed *led);
```

Get segment height.

Parameters

led		the AgsLed	
-----	--	-------------------	--

Returns

the segment height

Since: 4.0.0

ags_led_set_segment_height ()

```
void
ags_led_set_segment_height (AgsLed *led,
                           guint segment_height);
```

Set segment height.

Parameters

led		the AgsLed	
segment_height		the segment height	

Since: 4.0.0

ags_led_is_active ()

```
gboolean
ags_led_is_active (AgsLed *led);
```

Set *led* to active state.

Parameters

led		the AgsLed	
-----	--	-------------------	--

Returns

TRUE if led active, otherwise **FALSE**

Since: 3.2.0

ags_led_set_active ()

```
void
ags_led_set_active (AgsLed *led,
                   gboolean active);
```

Set *led* active by *active*.

Parameters

led		the AgsLed	
active		TRUE if active, otherwise FALSE	

Since: 3.0.0

ags_led_new ()

```
AgsLed~*
ags_led_new (guint segment_width,
             guint segment_height);
```

Create a new instance of **AgsLed**.

Parameters

segment_width	the width of the segment
segment_height	the height of the segment

Returns

the new **AgsLed**

Since: 3.0.0

AGS_IS_LED()

```
#define AGS_IS_LED(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), AGS_TYPE_LED))
```

AGS_IS_LED_CLASS()

```
#define AGS_IS_LED_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), AGS_TYPE_LED))
```

AGS_LED()

```
#define AGS_LED(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), AGS_TYPE_LED, AgsLed ←
))
```

AGS_LED_CLASS()

```
#define AGS_LED_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), AGS_TYPE_LED, ←
AgsLedClass))
```

AGS_LED_GET_CLASS()

```
#define AGS_LED_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), AGS_TYPE_LED, ←
AgsLedClass))
```

ags_led_get_type ()

```
GType
ags_led_get_type (void);
```

Types and Values

AGS_LED_DEFAULT_SEGMENT_WIDTH

```
#define AGS_LED_DEFAULT_SEGMENT_WIDTH (12)
```

AGS_LED_DEFAULT_SEGMENT_HEIGHT

```
#define AGS_LED_DEFAULT_SEGMENT_HEIGHT (8)
```

AGS_TYPE_LED

```
#define AGS_TYPE_LED (ags_led_get_type())
```

struct AgsLed

```
struct AgsLed;
```

struct AgsLedClass

```
struct AgsLedClass {  
    GtkWidgetClass widget;  
};
```

Property Details

The “segment-height” property

“segment-height”	guint
------------------	-------

The led’s segment height.

Owner: AgsLed

Flags: Read / Write

Allowed values: ≥ 1

Default value: 8

Since: 4.0.0

The “segment-width” property

“segment-width”	guint
-----------------	-------

The led’s segment width.

Owner: AgsLed

Flags: Read / Write

Allowed values: ≥ 1

Default value: 12

Since: 4.0.0

1.7 AgsLedArray

AgsLedArray — A led array widget

Stability Level

Stable, unless otherwise indicated

Functions

guint	ags_led_array_get_segment_width ()
void	ags_led_array_set_segment_width ()
guint	ags_led_array_get_segment_height ()
void	ags_led_array_set_segment_height ()
guint	ags_led_array_get_led_count ()
void	ags_led_array_set_led_count ()
void	ags_led_array_unset_all ()
void	ags_led_array_set_nth ()
AgsLedArray *	ags_led_array_new ()
#define	AGS_IS_LED_ARRAY()
#define	AGS_IS_LED_ARRAY_CLASS()
#define	AGS_LED_ARRAY()
#define	AGS_LED_ARRAY_CLASS()
#define	AGS_LED_ARRAY_GET_CLASS()
GType	ags_led_array_get_type ()

Properties

guint	led-count	Read / Write
guint	segment-height	Read / Write
guint	segment-width	Read / Write

Types and Values

#define	AGS_LED_ARRAY_DEFAULT_SEGMENT_WIDTH
#define	AGS_LED_ARRAY_DEFAULT_SEGMENT_HEIGHT
#define	AGS_TYPE_LED_ARRAY
struct	AgsLedArray
struct	AgsLedArrayClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500;&#x2500; GtkBox
        &#x2570;&#x2500;&#x2500;&#x2500; AgsLedArray
```

Implemented Interfaces

AgsLedArray implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_led_array.h>
```

Description

AgsLedArray is a widget representing an array of leds.

Functions

ags_led_array_get_segment_width ()

```
guint  
ags_led_array_get_segment_width (AgsLedArray *led_array);
```

Get led width of *led_array*.

Parameters

led_array		the AgsLedArray	
-----------	--	------------------------	--

Returns

the led width

Since: 3.2.0

ags_led_array_set_segment_width ()

```
void  
ags_led_array_set_segment_width (AgsLedArray *led_array,  
guint segment_width);
```

Set led width of *led_array*.

Parameters

led_array		the AgsLedArray	
segment_width		the led width	

Since: 3.2.0

ags_led_array_get_segment_height ()

```
guint  
ags_led_array_get_segment_height (AgsLedArray *led_array);
```

Set led height of *led_array*.

Parameters

led_array		the AgsLedArray	
-----------	--	---------------------------------	--

Returns

the led height

Since: [3.2.0](#)

ags_led_array_set_segment_height ()

```
void
ags_led_array_set_segment_height (AgsLedArray *led_array,
                                  guint segment_height);
```

Set led height of *led_array*.

Parameters

led_array		the AgsLedArray	
segment_height		the led height	

Since: [3.2.0](#)

ags_led_array_get_led_count ()

```
guint
ags_led_array_get_led_count (AgsLedArray *led_array);
```

Get led count of *led_array*.

Parameters

led_array		the AgsLedArray	
-----------	--	---------------------------------	--

Returns

the led count

Since: [3.2.0](#)

ags_led_array_set_led_count ()

```
void
ags_led_array_set_led_count (AgsLedArray *led_array,
                              guint led_count);
```

Set led count of *led_array*.

Parameters

led_array	the AgsLedArray
led_count	the led count

Since: [3.0.0](#)

ags_led_array_unset_all ()

```
void
ags_led_array_unset_all (AgsLedArray *led_array);
```

Unset all led active.

Parameters

led_array	the AgsLedArray
-----------	---------------------------------

Since: [3.0.0](#)

ags_led_array_set_nth ()

```
void
ags_led_array_set_nth (AgsLedArray *led_array,
                      guint nth);
```

Set *nth* led active.

Parameters

led_array	the AgsLedArray
nth	the nth led

Since: [3.0.0](#)

ags_led_array_new ()

```
AgsLedArray~*
ags_led_array_new (GtkOrientation orientation,
                  guint segment_width,
                  guint segment_height,
                  guint led_count);
```

Create a new instance of [AgsLedArray](#).

Parameters

segment_width	the width of the segment
segment_height	the height of the segment

Returns

the new [AgsLedArray](#)

Since: 3.0.0

AGS_IS_LED_ARRAY()

```
#define AGS_IS_LED_ARRAY(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), ←  
    AGS_TYPE_LED_ARRAY))
```

AGS_IS_LED_ARRAY_CLASS()

```
#define AGS_IS_LED_ARRAY_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), ←  
    AGS_TYPE_LED_ARRAY))
```

AGS_LED_ARRAY()

```
#define AGS_LED_ARRAY(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), ←  
    AGS_TYPE_LED_ARRAY, AgsLedArray))
```

AGS_LED_ARRAY_CLASS()

```
#define AGS_LED_ARRAY_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ←  
    AGS_TYPE_LED_ARRAY, AgsLedArrayClass))
```

AGS_LED_ARRAY_GET_CLASS()

```
#define AGS_LED_ARRAY_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), ←  
    AGS_TYPE_LED_ARRAY, AgsLedArrayClass))
```

ags_led_array_get_type ()

```
GType  
ags_led_array_get_type (void);
```

Types and Values

AGS_LED_ARRAY_DEFAULT_SEGMENT_WIDTH

```
#define AGS_LED_ARRAY_DEFAULT_SEGMENT_WIDTH (10)
```

AGS_LED_ARRAY_DEFAULT_SEGMENT_HEIGHT

```
#define AGS_LED_ARRAY_DEFAULT_SEGMENT_HEIGHT (10)
```


AGS_TYPE_LED_ARRAY

```
#define AGS_TYPE_LED_ARRAY (ags_led_array_get_type())
```

struct AgsLedArray

```
struct AgsLedArray;
```

struct AgsLedArrayClass

```
struct AgsLedArrayClass {  
    GtkWidgetClass box;  
};
```

Property Details

The “led-count” property

“led-count”	guint
-------------	-------

The count of leds available.

Owner: AgsLedArray

Flags: Read / Write

Default value: 0

Since: 3.0.0

The “segment-height” property

“segment-height”	guint
------------------	-------

The segment height of one led.

Owner: AgsLedArray

Flags: Read / Write

Default value: 10

Since: 4.0.0

The “segment-width” property

“segment-width”	guint
-----------------	-------

The segment width of one led.

Owner: AgsLedArray

Flags: Read / Write

Default value: 10

Since: 4.0.0

1.8 AgsLevel

AgsLevel — A level widget

Stability Level

Stable, unless otherwise indicated

Functions

void	ags_level_set_upper ()
gdouble	ags_level_get_upper ()
void	ags_level_set_lower ()
gdouble	ags_level_get_lower ()
void	ags_level_set_normalized_volume ()
gdouble	ags_level_get_normalized_volume ()
void	ags_level_value_changed ()
AgsLevel *	ags_level_new ()
#define	AGS_IS_LEVEL()
#define	AGS_IS_LEVEL_CLASS()
#define	AGS_LEVEL()
#define	AGS_LEVEL_CLASS()
#define	AGS_LEVEL_GET_CLASS()
GType	ags_level_get_type ()

Properties

guint	data-format	Read / Write
double	lower	Read / Write
double	normalized-volume	Read / Write
double	upper	Read / Write

Signals

void	value-changed	Run Last
------	---------------	----------

Types and Values

#define	AGS_LEVEL_DEFAULT_WIDTH_REQUEST
#define	AGS_LEVEL_DEFAULT_HEIGHT_REQUEST
#define	AGS_LEVEL_DEFAULT_LOWER
#define	AGS_LEVEL_DEFAULT_UPPER
#define	AGS_LEVEL_DEFAULT_NORMALIZED_VOLUME
#define	AGS_LEVEL_DEFAULT_STEP_COUNT
#define	AGS_LEVEL_DEFAULT_PAGE_SIZE
#define	AGS_LEVEL_DEFAULT_DATA_FORMAT
#define	AGS_LEVEL_DEFAULT_SAMPLERATE
enum	AgsLevelDataFormat
enum	AgsLevelButtonState
enum	AgsLevelKeyMask

enum	AgsLevelAction
#define	AGS_TYPE_LEVEL
struct	AgsLevel
struct	AgsLevelClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; AgsLevel
```

Implemented Interfaces

[AgsLevel](#) implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_level.h>
```

Description

[AgsLevel](#) is a widget that shows you a meter.

Functions

[ags_level_set_upper \(\)](#)

```
void
ags_level_set_upper (AgsLevel *level,
                    gdouble upper);
```

Set *upper* of *level*.

Parameters

level	the AgsLevel	
upper	the upper	

Since: [3.2.2](#)

[ags_level_get_upper \(\)](#)

```
gdouble
ags_level_get_upper (AgsLevel *level);
```

Get upper of *level*.

Parameters

level		the AgsLevel	
-------	--	---------------------	--

Returns

the upper

Since: 3.2.2

ags_level_set_lower ()

```
void
ags_level_set_lower (AgsLevel *level,
                    gdouble lower);
```

Set *lower* of *level*.

Parameters

level		the AgsLevel	
lower		the lower	

Since: 3.2.2

ags_level_get_lower ()

```
gdouble
ags_level_get_lower (AgsLevel *level);
```

Get lower of *level*.

Parameters

level		the AgsLevel	
-------	--	---------------------	--

Returns

the lower

Since: 3.2.2

ags_level_set_normalized_volume ()

```
void
ags_level_set_normalized_volume (AgsLevel *level,
                                gdouble normalized_volume);
```

Set *normalized_volume* of *level*.

Parameters

level	the AgsLevel
normalized_volume	the normalized volume

Since: 3.2.2

ags_level_get_normalized_volume ()

```
gdouble  
ags_level_get_normalized_volume (AgsLevel *level);
```

Get normalized volume of *level*.

Parameters

level	the AgsLevel
-------	---------------------

Returns

the normalized volume

Since: 3.2.2

ags_level_value_changed ()

```
void  
ags_level_value_changed (AgsLevel *level,  
                        gdouble normalized_volume);
```

Emits ::value-changed event.

Parameters

level	the AgsLevel
normalized_volume	the normalized volume

Since: 3.0.0

ags_level_new ()

```
AgsLevel~*  
ags_level_new (GtkOrientation orientation,  
              guint width_request,  
              guint height_request);
```

Create a new instance of **AgsLevel**.

Parameters

orientation	the GtkOrientation	
width_request	the level's width	
height_request	the level's height	

Returns

the new **AgsLevel** instance

Since: **3.0.0**

AGS_IS_LEVEL()

```
#define AGS_IS_LEVEL(obj) (G_TYPE_CHECK_INSTANCE_TYPE ((obj), AGS_TYPE_LEVEL))
```

AGS_IS_LEVEL_CLASS()

```
#define AGS_IS_LEVEL_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE ((class), AGS_TYPE_LEVEL))
```

AGS_LEVEL()

```
#define AGS_LEVEL(obj) (G_TYPE_CHECK_INSTANCE_CAST ((obj), AGS_TYPE_LEVEL, ↵  
AgsLevel))
```

AGS_LEVEL_CLASS()

```
#define AGS_LEVEL_CLASS(class) (G_TYPE_CHECK_CLASS_CAST ((class), AGS_TYPE_LEVEL, ↵  
AgsLevelClass))
```

AGS_LEVEL_GET_CLASS()

```
#define AGS_LEVEL_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, AGS_TYPE_LEVEL, ↵  
AgsLevelClass))
```

ags_level_get_type ()

```
GType  
ags_level_get_type (void);
```

Types and Values**AGS_LEVEL_DEFAULT_WIDTH_REQUEST**

```
#define AGS_LEVEL_DEFAULT_WIDTH_REQUEST (60)
```

AGS_LEVEL_DEFAULT_HEIGHT_REQUEST

```
#define AGS_LEVEL_DEFAULT_HEIGHT_REQUEST (256)
```

AGS_LEVEL_DEFAULT_LOWER

```
#define AGS_LEVEL_DEFAULT_LOWER (0.0)
```

AGS_LEVEL_DEFAULT_UPPER

```
#define AGS_LEVEL_DEFAULT_UPPER (1.0)
```

AGS_LEVEL_DEFAULT_NORMALIZED_VOLUME

```
#define AGS_LEVEL_DEFAULT_NORMALIZED_VOLUME (0.0)
```

AGS_LEVEL_DEFAULT_STEP_COUNT

```
#define AGS_LEVEL_DEFAULT_STEP_COUNT (0.1)
```

AGS_LEVEL_DEFAULT_PAGE_SIZE

```
#define AGS_LEVEL_DEFAULT_PAGE_SIZE (0.25)
```

AGS_LEVEL_DEFAULT_DATA_FORMAT

```
#define AGS_LEVEL_DEFAULT_DATA_FORMAT (AGS_LEVEL_PCM_S16)
```

AGS_LEVEL_DEFAULT_SAMPLERATE

```
#define AGS_LEVEL_DEFAULT_SAMPLERATE (44100)
```

enum AgsLevelDataFormat**Members**

AGS_LEVEL_PCM_S8		
AGS_LEVEL_PCM_S16		
AGS_LEVEL_PCM_S24		
AGS_LEVEL_PCM_S32		
AGS_LEVEL_PCM_S64		
AGS_LEVEL_PCM_FLOAT		
AGS_LEVEL_PCM_DOUBLE		
AGS_LEVEL_PCM_COMPLEX		

enum AgsLevelButtonState**Members**

AGS_LEVEL_BUTTON_1_PRESSED		
----------------------------	--	--

enum AgsLevelKeyMask**Members**

AGS_LEVEL_KEY_L_CONTROL		
AGS_LEVEL_KEY_R_CONTROL		
AGS_LEVEL_KEY_L_SHIFT		
AGS_LEVEL_KEY_R_SHIFT		

enum AgsLevelAction**Members**

AGS_LEVEL_STEP_UP		
AGS_LEVEL_STEP_DOWN		
AGS_LEVEL_PAGE_UP		
AGS_LEVEL_PAGE_DOWN		

AGS_TYPE_LEVEL

```
#define AGS_TYPE_LEVEL (ags_level_get_type())
```

struct AgsLevel

```
struct AgsLevel;
```

struct AgsLevelClass

```
struct AgsLevelClass {
    GtkWidgetClass widget;

    void (*value_changed)(AgsLevel *level,
        gdouble normalized_volume);
};
```

Property Details**The "data-format" property**

"data-format"	guint
---------------	-------

The data format.

Owner: AgsLevel

Flags: Read / Write

Default value: 1

Since: 4.0.0

The “lower” property

“lower”	double
---------	--------

The level’s lower range.

Owner: AgsLevel

Flags: Read / Write

Default value: 0

Since: 3.0.0

The “normalized-volume” property

“normalized-volume”	double
---------------------	--------

The level’s default value.

Owner: AgsLevel

Flags: Read / Write

Default value: 0

Since: 3.0.0

The “upper” property

“upper”	double
---------	--------

The level’s upper range.

Owner: AgsLevel

Flags: Read / Write

Default value: 1

Since: 3.0.0

Signal Details

The “value-changed” signal

```
void
user_function (AgsLevel *level,
              double    normalized_volume,
              gpointer   user_data)
```

The ::value-changed signal notifies about modified default value.

Parameters

level	the AgsLevel	
normalized_volume	the changed default value	
user_data	user data set when the signal handler was connected.	

Flags: [Run Last](#)Since: [3.0.0](#)**1.9 AgsLevelBox**

AgsLevelBox — box widget

Stability Level

Stable, unless otherwise indicated

Functions

GList *	ags_level_box_get_level ()
void	ags_level_box_add_level ()
void	ags_level_box_remove_level ()
void	ags_level_box_child_width_request ()
void	ags_level_box_child_height_request ()
AgsLevelBox *	ags_level_box_new ()
#define	AGS_IS_LEVEL_BOX()
#define	AGS_IS_LEVEL_BOX_CLASS()
#define	AGS_LEVEL_BOX()
#define	AGS_LEVEL_BOX_CLASS()
#define	AGS_LEVEL_BOX_GET_CLASS()
GType	ags_level_box_get_type ()

Signals

void	child-height-request	Run Last
void	child-width-request	Run Last

Types and Values

#define	AGS_LEVEL_BOX_DEFAULT_SPACING
#define	AGS_TYPE_LEVEL_BOX
struct	AgsLevelBox
struct	AgsLevelBoxClass

Object Hierarchy

```
GObject
↳ GInitiallyUnowned
↳ GtkWidget
↳ GtkBox
↳ AgsLevelBox
```

Implemented Interfaces

AgsLevelBox implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_level_box.h>
```

Description

The [AgsLevelBox](#) is a box widget containing [AgsLevel](#).

Functions

ags_level_box_get_level ()

```
GList~*
ags_level_box_get_level (AgsLevelBox *level_box);
```

Get level.

Parameters

level_box | the [AgsLevelBox](#) |

Returns

the [GList](#) containing [AgsLevel](#).

[element-type AgsGui.Level][transfer container]

Since: [4.0.0](#)

ags_level_box_add_level ()

```
void
ags_level_box_add_level (AgsLevelBox *level_box,
                        AgsLevel *level);
```

Add *level* to *level_box*.

Parameters

level_box	the AgsLevelBox	
level	the AgsLevel	

Since: [4.0.0](#)

ags_level_box_remove_level ()

```
void
ags_level_box_remove_level (AgsLevelBox *level_box,
                           AgsLevel *level);
```

Remove level at *position* of *level_box*.

Parameters

level_box	the AgsLevelBox	
level	the AgsLevel	

Since: [4.0.0](#)

ags_level_box_child_width_request ()

```
void
ags_level_box_child_width_request (AgsLevelBox *level_box,
                                   GtkWidget *level,
                                   gint width_request);
```

Notify about child level width request.

Parameters

level_box	the AgsLevelBox	
level	the AgsLevel	
width_request	the level's width-request	

Since: [4.0.0](#)

ags_level_box_child_height_request ()

```
void
ags_level_box_child_height_request (AgsLevelBox *level_box,
                                    GtkWidget *level,
                                    gint height_request);
```

Notify about child level height request.

Parameters

level_box	the AgsLevelBox	
level	the AgsLevel	
height_request	the level's height-request	

Since: **4.0.0**

ags_level_box_new ()

```
AgsLevelBox~*
ags_level_box_new (GtkOrientation orientation);
```

Create a new instance of **AgsLevelBox**.

Parameters

orientation	the GtkOrientation	
-------------	---------------------------	--

Returns

the new **AgsLevelBox** instance

Since: **3.0.0**

AGS_IS_LEVEL_BOX()

```
#define AGS_IS_LEVEL_BOX(obj) (G_TYPE_CHECK_INSTANCE_TYPE ((obj), ↵
    AGS_TYPE_LEVEL_BOX))
```

AGS_IS_LEVEL_BOX_CLASS()

```
#define AGS_IS_LEVEL_BOX_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE ((class), ↵
    AGS_TYPE_LEVEL_BOX))
```

AGS_LEVEL_BOX()

```
#define AGS_LEVEL_BOX(obj) (G_TYPE_CHECK_INSTANCE_CAST ((obj), ↵
    AGS_TYPE_LEVEL_BOX, AgsLevelBox))
```

AGS_LEVEL_BOX_CLASS()

```
#define AGS_LEVEL_BOX_CLASS(class) (G_TYPE_CHECK_CLASS_CAST ((class), ↵
    AGS_TYPE_LEVEL_BOX, AgsLevelBoxClass))
```

AGS_LEVEL_BOX_GET_CLASS()

```
#define AGS_LEVEL_BOX_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, ↵
    AGS_TYPE_LEVEL_BOX, AgsLevelBoxClass))
```

ags_level_box_get_type ()

```
GType  
ags_level_box_get_type (void);
```

Types and Values

AGS_LEVEL_BOX_DEFAULT_SPACING

```
#define AGS_LEVEL_BOX_DEFAULT_SPACING (8)
```

AGS_TYPE_LEVEL_BOX

```
#define AGS_TYPE_LEVEL_BOX (ags_level_box_get_type())
```

struct AgsLevelBox

```
struct AgsLevelBox;
```

struct AgsLevelBoxClass

```
struct AgsLevelBoxClass {  
    GtkWidgetClass box;  
  
    void (*child_width_request) (AgsLevelBox *level_box,  
        GtkWidget *level,  
        gint width_request);  
    void (*child_height_request) (AgsLevelBox *level_box,  
        GtkWidget *level,  
        gint height_request);  
};
```

Signal Details

The "child-height-request" signal

```
void  
user_function (AgsLevelBox *level_box,  
              GObject *level,  
              int height_request,  
              gpointer user_data)
```

The ::child-height-request

Parameters

level_box	the AgsLevelBox .	
level	the AgsLevel	
height_request	the level's height-request	
user_data	user data set when the signal handler was connected.	

Flags: [Run Last](#)Since: [4.0.0](#)**The "child-width-request" signal**

```
void
user_function (AgsLevelBox *level_box,
              GObject      *level,
              int           width_request,
              gpointer      user_data)
```

The ::child-width-request

Parameters

level_box	the AgsLevelBox .	
level	the AgsLevel	
width_request	the level's width-request	
user_data	user data set when the signal handler was connected.	

Flags: [Run Last](#)Since: [4.0.0](#)

1.10 AgsScrolledLevelBox

AgsScrolledLevelBox — scrolled level box widget

Stability Level

Stable, unless otherwise indicated

Functions

GtkScrolledWindow *	ags_scrolled_level_box_get_scrolled_window ()
AgsLevelBox *	ags_scrolled_level_box_get_level_box ()
AgsScrolledLevelBox *	ags_scrolled_level_box_new ()
#define	AGS_IS_SCROLLED_LEVEL_BOX()
#define	AGS_IS_SCROLLED_LEVEL_BOX_CLASS()

#define	AGS_SCROLLED_LEVEL_BOX()
#define	AGS_SCROLLED_LEVEL_BOX_CLASS()
#define	AGS_SCROLLED_LEVEL_BOX_GET_CLASS()
GType	ags_scrolled_level_box_get_type ()

Types and Values

#define	AGS_TYPE_SCROLLED_LEVEL_BOX
struct	AgsScrolledLevelBox
struct	AgsScrolledLevelBoxClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; GtkGrid
        &#x2570;&#x2500;&#x2500; AgsScrolledLevelBox
```

Implemented Interfaces

AgsScrolledLevelBox implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_scrolled_level_box.h>
```

Description

The [AgsScrolledLevelBox](#) lets you to have a scrolled level box widget.

Functions

ags_scrolled_level_box_get_scrolled_window ()

```
GtkScrolledWindow~*
ags_scrolled_level_box_get_scrolled_window
    (AgsScrolledLevelBox *scrolled_level_box);
```

Get scrolled window of *scrolled_level_box*.

Parameters

scrolled_level_box | the [AgsScrolledLevel_Box](#) |

Returns

the [GtkScrolledWindow](#).

[transfer none]

Since: 4.0.0

ags_scrolled_level_box_get_level_box ()

```
AgsLevelBox~*
ags_scrolled_level_box_get_level_box (AgsScrolledLevelBox *scrolled_level_box);
```

Get level box of *scrolled_level_box*.

Parameters

scrolled_level_box | the [AgsScrolledLevel_Box](#) |

Returns

the [AgsLevelBox](#).

[transfer none]

Since: 4.0.0

ags_scrolled_level_box_new ()

```
AgsScrolledLevelBox~*
ags_scrolled_level_box_new ();
```

Create a new [AgsScrolledLevelBox](#).

Returns

a new [AgsScrolledLevelBox](#)

Since: 3.0.0

AGS_IS_SCROLLED_LEVEL_BOX()

```
#define AGS_IS_SCROLLED_LEVEL_BOX(obj) (G_TYPE_CHECK_INSTANCE_TYPE ((obj), ↵
    AGS_TYPE_SCROLLED_LEVEL_BOX))
```

AGS_IS_SCROLLED_LEVEL_BOX_CLASS()

```
#define AGS_IS_SCROLLED_LEVEL_BOX_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE ((class), ↵
    AGS_TYPE_SCROLLED_LEVEL_BOX))
```

AGS_SCROLLED_LEVEL_BOX()

```
#define AGS_SCROLLED_LEVEL_BOX(obj) (G_TYPE_CHECK_INSTANCE_CAST ((obj), ↵
    AGS_TYPE_SCROLLED_LEVEL_BOX, AgsScrolledLevelBox))
```

AGS_SCROLLED_LEVEL_BOX_CLASS()

```
#define AGS_SCROLLED_LEVEL_BOX_CLASS(class) (G_TYPE_CHECK_CLASS_CAST ((class), ↵
    AGS_TYPE_SCROLLED_LEVEL_BOX, AgsScrolledLevelBoxClass))
```

AGS_SCROLLED_LEVEL_BOX_GET_CLASS()

```
#define AGS_SCROLLED_LEVEL_BOX_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, ↵
    AGS_TYPE_SCROLLED_LEVEL_BOX, AgsScrolledLevelBoxClass))
```

ags_scrolled_level_box_get_type ()

```
GType
ags_scrolled_level_box_get_type (void);
```

Types and Values**AGS_TYPE_SCROLLED_LEVEL_BOX**

```
#define AGS_TYPE_SCROLLED_LEVEL_BOX (ags_scrolled_level_box_get_type ())
```

struct AgsScrolledLevelBox

```
struct AgsScrolledLevelBox;
```

struct AgsScrolledLevelBoxClass

```
struct AgsScrolledLevelBoxClass {
    GtkGridClass grid;
};
```

1.11 AgsNotebook

AgsNotebook — selection widget

Stability Level

Stable, unless otherwise indicated

Functions

gint	ags_notebook_next_active_tab ()
GList *	ags_notebook_get_tab ()
void	ags_notebook_add_tab ()
void	ags_notebook_insert_tab ()
void	ags_notebook_remove_tab ()
AgsNotebook *	ags_notebook_new ()
#define	AGS_IS_NOTEBOOK()
#define	AGS_IS_NOTEBOOK_CLASS()
#define	AGS_NOTEBOOK()
#define	AGS_NOTEBOOK_CLASS()

#define	AGS_NOTEBOOK_GET_CLASS()
GType	ags_notebook_get_type ()

Properties

guint	tab-height	Read / Write
guint	tab-width	Read / Write

Types and Values

#define	AGS_NOTEBOOK_TAB_DEFAULT_WIDTH
#define	AGS_NOTEBOOK_TAB_DEFAULT_HEIGHT
#define	AGS_TYPE_NOTEBOOK
struct	AgsNotebook
struct	AgsNotebookClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; GtkBox
        &#x2570;&#x2500;&#x2500; AgsNotebook
```

Implemented Interfaces

AgsNotebook implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_notebook.h>
```

Description

The [AgsNotebook](#) lets you select/deselect tabs and assign data to them.

Functions

ags_notebook_next_active_tab ()

```
gint
ags_notebook_next_active_tab (AgsNotebook *notebook,
                              gint position);
```

Get next active tab following *position*.

Parameters

notebook	the AgsNotebook
position	the position as integer

Returns

the position of next active tab as integer

Since: [3.0.0](#)

ags_notebook_get_tab ()

```
GList~*
ags_notebook_get_tab (AgsNotebook *notebook);
```

Get tab.

Parameters

notebook	the AgsNotebook
----------	---------------------------------

Returns

the [GList](#) containing [GtkToggleButton](#).

[element-type Gtk.ToggleButton][transfer container]

Since: [4.0.0](#)

ags_notebook_add_tab ()

```
void
ags_notebook_add_tab (AgsNotebook *notebook,
                     GtkToggleButton *tab);
```

Add *tab* to *notebook* .

Parameters

notebook	the AgsNotebook
tab	the GtkToggleButton

Since: [3.0.0](#)

ags_notebook_insert_tab ()

```
void
ags_notebook_insert_tab (AgsNotebook *notebook,
                        GtkToggleButton *tab,
                        gint position);
```

Insert a new [AgsNotebookTab](#) to *notebook* .

Parameters

notebook	the AgsNotebook	
tab	the GtkToggleButton	
position	the position as integer	

Since: [3.0.0](#)

ags_notebook_remove_tab ()

```
void
ags_notebook_remove_tab (AgsNotebook *notebook,
                        GtkToggleButton *tab);
```

Remove *tab* from *notebook*.

Parameters

notebook	the AgsNotebook	
tab	the GtkToggleButton	

Since: [3.0.0](#)

ags_notebook_new ()

```
AgsNotebook~*
ags_notebook_new ();
```

Create a new [AgsNotebook](#).

Returns

a new [AgsNotebook](#)

Since: [3.0.0](#)

AGS_IS_NOTEBOOK()

```
#define AGS_IS_NOTEBOOK(obj) (G_TYPE_CHECK_INSTANCE_TYPE ((obj), ↵
    AGS_TYPE_NOTEBOOK))
```

AGS_IS_NOTEBOOK_CLASS()

```
#define AGS_IS_NOTEBOOK_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE ((class), ↵
    AGS_TYPE_NOTEBOOK))
```

AGS_NOTEBOOK()

```
#define AGS_NOTEBOOK(obj) (G_TYPE_CHECK_INSTANCE_CAST ((obj), ↵
    AGS_TYPE_NOTEBOOK, AgsNotebook))
```

AGS_NOTEBOOK_CLASS()

```
#define AGS_NOTEBOOK_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ↵  
    AGS_TYPE_NOTEBOOK, AgsNotebookClass))
```

AGS_NOTEBOOK_GET_CLASS()

```
#define AGS_NOTEBOOK_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, AGS_TYPE_NOTEBOOK ↵  
    , AgsNotebookClass))
```

ags_notebook_get_type ()

```
GType  
ags_notebook_get_type (void);
```

Types and Values**AGS_NOTEBOOK_TAB_DEFAULT_WIDTH**

```
#define AGS_NOTEBOOK_TAB_DEFAULT_WIDTH (100)
```

AGS_NOTEBOOK_TAB_DEFAULT_HEIGHT

```
#define AGS_NOTEBOOK_TAB_DEFAULT_HEIGHT (32)
```

AGS_TYPE_NOTEBOOK

```
#define AGS_TYPE_NOTEBOOK (ags_notebook_get_type ())
```

struct AgsNotebook

```
struct AgsNotebook;
```

struct AgsNotebookClass

```
struct AgsNotebookClass {  
    GtkWidgetClass box;  
};
```

Property Details

The “tab-height” property

“tab-height”	guint
--------------	-------

The tab’s height.

Owner: AgsNotebook

Flags: Read / Write

Default value: 32

Since: 4.0.0

The “tab-width” property

“tab-width”	guint
-------------	-------

The tab’s width.

Owner: AgsNotebook

Flags: Read / Write

Default value: 100

Since: 4.0.0

1.12 AgsPiano

AgsPiano — A piano widget

Stability Level

Stable, unless otherwise indicated

Functions

void	ags_piano_set_button_state ()
guint	ags_piano_get_button_state ()
void	ags_piano_set_base_note ()
gchar *	ags_piano_get_base_note ()
void	ags_piano_set_base_key_code ()
gint	ags_piano_get_base_key_code ()
void	ags_piano_set_key_width ()
guint	ags_piano_get_key_width ()
void	ags_piano_set_key_height ()
guint	ags_piano_get_key_height ()
void	ags_piano_set_key_count ()
guint	ags_piano_get_key_count ()
gchar *	ags_piano_key_code_to_note ()
void	ags_piano_key_pressed ()
void	ags_piano_key_released ()

<code>void</code>	<code>ags_piano_key_clicked ()</code>
<code>gint *</code>	<code>ags_piano_get_active_key ()</code>
<code>AgsPiano *</code>	<code>ags_piano_new ()</code>
<code>#define</code>	<code>AGS_IS_PIANO()</code>
<code>#define</code>	<code>AGS_IS_PIANO_CLASS()</code>
<code>#define</code>	<code>AGS_PIANO()</code>
<code>#define</code>	<code>AGS_PIANO_CLASS()</code>
<code>#define</code>	<code>AGS_PIANO_GET_CLASS()</code>
<code>GType</code>	<code>ags_piano_get_type ()</code>

Properties

<code>guint</code>	<code>base-key-code</code>	Read / Write
<code>char *</code>	<code>base-note</code>	Read / Write
<code>guint</code>	<code>key-count</code>	Read / Write
<code>guint</code>	<code>key-height</code>	Read / Write
<code>guint</code>	<code>key-width</code>	Read / Write

Signals

<code>void</code>	<code>key-clicked</code>	Run Last
<code>void</code>	<code>key-pressed</code>	Run Last
<code>void</code>	<code>key-released</code>	Run Last

Types and Values

<code>#define</code>	<code>AGS_PIANO_DEFAULT_FONT_SIZE</code>
<code>#define</code>	<code>AGS_PIANO_DEFAULT_BASE_NOTE</code>
<code>#define</code>	<code>AGS_PIANO_DEFAULT_BASE_KEY_CODE</code>
<code>#define</code>	<code>AGS_PIANO_DEFAULT_KEY_WIDTH</code>
<code>#define</code>	<code>AGS_PIANO_DEFAULT_KEY_HEIGHT</code>
<code>#define</code>	<code>AGS_PIANO_DEFAULT_KEY_COUNT</code>
<code>enum</code>	<code>AgsPianoFlags</code>
<code>enum</code>	<code>AgsPianoButtonState</code>
<code>enum</code>	<code>AgsPianoAction</code>
<code>enum</code>	<code>AgsPianoOctave</code>
<code>#define</code>	<code>AGS_TYPE_PIANO</code>
<code>struct</code>	<code>AgsPiano</code>
<code>struct</code>	<code>AgsPianoClass</code>

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500;&#x2500; AgsPiano
```

Implemented Interfaces

AgsPiano implements `GtkAccessible`, `GtkBuildable`, `GtkConstraintTarget` and `GtkOrientable`.

Includes

```
#include <ags/widget/ags_piano.h>
```

Description

AgsPiano is a widget representing a clavier.

Functions

ags_piano_set_button_state ()

```
void  
ags_piano_set_button_state (AgsPiano *piano,  
                             quint button_state);
```

Set *button_state* of *piano*.

Parameters

piano		the AgsPiano	
button_state		the AgsPianoButtonState	

Since: 3.6.6

ags_piano_get_button_state ()

```
quint  
ags_piano_get_button_state (AgsPiano *piano);
```

Get mouse button state of *piano*.

Parameters

piano		the AgsPiano	
-------	--	---------------------	--

Returns

the button state

Since: 3.6.6

ags_piano_set_base_note ()

```
void  
ags_piano_set_base_note (AgsPiano *piano,  
                          gchar *base_note);
```

Set base note of *piano*.

Parameters

piano	the AgsPiano
base_note	the base note

Since: [3.2.0](#)

ags_piano_get_base_note ()

```
gchar~*
ags_piano_get_base_note (AgsPiano *piano);
```

Get base note of *piano*.

Parameters

piano	the AgsPiano
-------	------------------------------

Returns

the base note

Since: [3.2.0](#)

ags_piano_set_base_key_code ()

```
void
ags_piano_set_base_key_code (AgsPiano *piano,
                             gint base_key_code);
```

Set base key code of *piano*.

Parameters

piano	the AgsPiano
base_key_code	the base key code

Since: [3.2.0](#)

ags_piano_get_base_key_code ()

```
gint
ags_piano_get_base_key_code (AgsPiano *piano);
```

Get base key code of *piano*.

Parameters

piano	the AgsPiano
-------	------------------------------

Returns

the base key code

Since: 3.2.0

ags_piano_set_key_width ()

```
void
ags_piano_set_key_width (AgsPiano *piano,
                        guint key_width);
```

Set key width of *piano*.

Parameters

piano	the AgsPiano
key_width	the base note

Since: 3.2.0

ags_piano_get_key_width ()

```
guint
ags_piano_get_key_width (AgsPiano *piano);
```

Get key width of *piano*.

Parameters

piano	the AgsPiano
-------	---------------------

Returns

the key width

Since: 3.2.0

ags_piano_set_key_height ()

```
void
ags_piano_set_key_height (AgsPiano *piano,
                        guint key_height);
```

Set key width of *piano*.

Parameters

piano	the AgsPiano
key_height	the key width

Since: 3.2.0

ags_piano_get_key_height ()

```
guint
ags_piano_get_key_height (AgsPiano *piano);
```

Get key height of *piano*.

Parameters

piano		the AgsPiano	
-------	--	---------------------	--

Returns

the key height

Since: 3.2.0

ags_piano_set_key_count ()

```
void
ags_piano_set_key_count (AgsPiano *piano,
                        guint key_count);
```

Set key count of *piano*.

Parameters

piano		the AgsPiano	
key_count		the key count	

Since: 3.2.0

ags_piano_get_key_count ()

```
guint
ags_piano_get_key_count (AgsPiano *piano);
```

Get key count of *piano*.

Parameters

piano		the AgsPiano	
-------	--	---------------------	--

Returns

the key count

Since: 3.2.0

ags_piano_key_code_to_note ()

```
gchar~*
ags_piano_key_code_to_note (gint key_code);
```

Get note from key code.

Parameters

key_code		the key code	
----------	--	--------------	--

Returns

the note as string

Since: 3.0.0

ags_piano_key_pressed ()

```
void
ags_piano_key_pressed (AgsPiano *piano,
                      gchar *note,
                      gint key_code);
```

Emits ::key-pressed event.

Parameters

piano		the AgsPiano	
note		the string representation of key	
key_code		the key code	

Since: 3.0.0

ags_piano_key_released ()

```
void
ags_piano_key_released (AgsPiano *piano,
                       gchar *note,
                       gint key_code);
```

Emits ::key-released event.

Parameters

piano		the AgsPiano	
note		the string representation of key	
key_code		the key code	

Since: 3.0.0

ags_piano_key_clicked ()

```
void
ags_piano_key_clicked (AgsPiano *piano,
                      gchar *note,
                      gint key_code);
```

Emits ::key-clicked event.

Parameters

piano	the AgsPiano	
note	the string representation of key	
key_code	the key code	

Since: [3.0.0](#)

ags_piano_get_active_key ()

```
gint~*
ags_piano_get_active_key (AgsPiano *piano,
                        guint *active_key_count);
```

Get active keys.

Parameters

piano	the AgsPiano	
active_key_count	return location of count of active keys	

Returns

the active keys as gint array

Since: [3.0.0](#)

ags_piano_new ()

```
AgsPiano~*
ags_piano_new (GtkOrientation orientation,
              guint key_width,
              guint key_height);
```

Create a new instance of [AgsPiano](#).

Parameters

orientation	the GtkOrientation	
key_width	the width of one key	
key_height	the height of one key	

Returns

the new [AgsPiano](#) instance

Since: [3.0.0](#)

AGS_IS_PIANO()

```
#define AGS_IS_PIANO(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), AGS_TYPE_PIANO))
```

AGS_IS_PIANO_CLASS()

```
#define AGS_IS_PIANO_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), AGS_TYPE_PIANO))
```

AGS_PIANO()

```
#define AGS_PIANO(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), AGS_TYPE_PIANO, ↵  
AgsPiano))
```

AGS_PIANO_CLASS()

```
#define AGS_PIANO_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), AGS_TYPE_PIANO, ↵  
AgsPianoClass))
```

AGS_PIANO_GET_CLASS()

```
#define AGS_PIANO_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS((obj), AGS_TYPE_PIANO, ↵  
AgsPianoClass))
```

ags_piano_get_type ()

```
GType  
ags_piano_get_type (void);
```

Types and Values**AGS_PIANO_DEFAULT_FONT_SIZE**

```
#define AGS_PIANO_DEFAULT_FONT_SIZE (12)
```

AGS_PIANO_DEFAULT_BASE_NOTE

```
#define AGS_PIANO_DEFAULT_BASE_NOTE AGS_PIANO_KEYS_OCTAVE_0_C
```

AGS_PIANO_DEFAULT_BASE_KEY_CODE

```
#define AGS_PIANO_DEFAULT_BASE_KEY_CODE (0)
```

AGS_PIANO_DEFAULT_KEY_WIDTH

```
#define AGS_PIANO_DEFAULT_KEY_WIDTH (60)
```

AGS_PIANO_DEFAULT_KEY_HEIGHT

```
#define AGS_PIANO_DEFAULT_KEY_HEIGHT (14)
```

AGS_PIANO_DEFAULT_KEY_COUNT

```
#define AGS_PIANO_DEFAULT_KEY_COUNT (128)
```

enum AgsPianoFlags**Members**

AGS_PIANO_DRAW_FULL_SCALE		
AGS_PIANO_DRAW_OCTAVE_SCALE		

enum AgsPianoButtonState**Members**

AGS_PIANO_BUTTON_1_PRESSED		
----------------------------	--	--

enum AgsPianoAction**Members**

AGS_PIANO_MOVE_CURSOR_UP		
AGS_PIANO_MOVE_CURSOR_DOWN		
AGS_PIANO_HIT_KEY		

enum AgsPianoOctave**Members**

AGS_PIANO_NOTE_C		
AGS_PIANO_NOTE_CIS		
AGS_PIANO_NOTE_D		
AGS_PIANO_NOTE_DIS		
AGS_PIANO_NOTE_E		
AGS_PIANO_NOTE_F		
AGS_PIANO_NOTE_FIS		
AGS_PIANO_NOTE_G		
AGS_PIANO_NOTE_GIS		
AGS_PIANO_NOTE_A		
AGS_PIANO_NOTE_AIS		
AGS_PIANO_NOTE_H		

AGS_TYPE_PIANO

```
#define AGS_TYPE_PIANO (ags_piano_get_type())
```

struct AgsPiano

```
struct AgsPiano;
```

struct AgsPianoClass

```
struct AgsPianoClass {
    GtkWidgetClass widget;

    void (*key_pressed)(AgsPiano *piano,
                       gchar *note, gint key_code);
    void (*key_released)(AgsPiano *piano,
                        gchar *note, gint key_code);

    void (*key_clicked)(AgsPiano *piano,
                       gchar *note, gint key_code);
};
```

Property Details

The “base-key-code” property

“base-key-code”	guint
-----------------	-------

The base key code.

Owner: AgsPiano

Flags: Read / Write

Default value: 0

Since: 3.0.0

The “base-note” property

“base-note”	char~*
-------------	--------

The base note to use as lower.

Owner: AgsPiano

Flags: Read / Write

Default value: "C,,"

Since: 3.0.0

The “key-count” property

“key-count”	guint
-------------	-------

The count of keys to be drawn.

Owner: AgsPiano

Flags: Read / Write

Default value: 128

Since: 3.0.0

The “key-height” property

“key-height”	guint
--------------	-------

The key height to use for drawing a key.

Owner: AgsPiano

Flags: Read / Write

Default value: 14

Since: 3.0.0

The “key-width” property

“key-width”	guint
-------------	-------

The key width to use for drawing a key.

Owner: AgsPiano

Flags: Read / Write

Default value: 60

Since: 3.0.0

Signal Details

The “key-clicked” signal

```
void
user_function (AgsPiano *piano,
               char      *note,
               int       key_code,
               gpointer   user_data)
```

The ::key-clicked signal notifies about key clicked.

Parameters

piano	the AgsPiano	
note	the note as string	
key_code	the numeric representation of the note	
user_data	user data set when the signal handler was connected.	

Flags: [Run Last](#)Since: [3.0.0](#)**The “key-pressed” signal**

```
void
user_function (AgsPiano *piano,
              char      *note,
              int       key_code,
              gpointer  user_data)
```

The ::key-pressed signal notifies about key pressed.

Parameters

piano	the AgsPiano	
note	the note as string	
key_code	the numeric representation of the note	
user_data	user data set when the signal handler was connected.	

Flags: [Run Last](#)Since: [3.0.0](#)**The “key-released” signal**

```
void
user_function (AgsPiano *piano,
              char      *note,
              int       key_code,
              gpointer  user_data)
```

The ::key-released signal notifies about key released.

Parameters

piano	the AgsPiano	
note	the note as string	

key_code	the numeric representation of the note
user_data	user data set when the signal handler was connected.

Flags: **Run Last**

Since: **3.0.0**

1.13 AgsScrolledPiano

AgsScrolledPiano — scrolled piano widget

Stability Level

Stable, unless otherwise indicated

Functions

GtkScrolledWindow *	ags_scrolled_piano_get_scrolled_window ()
AgsPiano *	ags_scrolled_piano_get_piano ()
AgsScrolledPiano *	ags_scrolled_piano_new ()
#define	AGS_IS_SCROLLED_PIANO()
#define	AGS_IS_SCROLLED_PIANO_CLASS()
#define	AGS_SCROLLED_PIANO()
#define	AGS_SCROLLED_PIANO_CLASS()
#define	AGS_SCROLLED_PIANO_GET_CLASS()
GType	ags_scrolled_piano_get_type ()

Types and Values

#define	AGS_TYPE_SCROLLED_PIANO
struct	AgsScrolledPiano
struct	AgsScrolledPianoClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; GtkGrid
        &#x2570;&#x2500;&#x2500; AgsScrolledPiano
```

Implemented Interfaces

AgsScrolledPiano implements **GtkAccessible**, **GtkBuildable**, **GtkConstraintTarget** and **GtkOrientable**.

Includes

```
#include <ags/widget/ags_scrolled_piano.h>
```

Description

The [AgsScrolledPiano](#) lets you to have a scrolled piano widget.

Functions

ags_scrolled_piano_get_scrolled_window ()

```
GtkScrolledWindow~*
ags_scrolled_piano_get_scrolled_window
    (AgsScrolledPiano *scrolled_piano);
```

Get scrolled window of *scrolled_piano*.

Parameters

scrolled_piano | the [AgsScrolledPiano](#) |

Returns

the [GtkScrolled_Window](#).

[transfer none]

Since: 3.6.8

ags_scrolled_piano_get_piano ()

```
AgsPiano~*
ags_scrolled_piano_get_piano (AgsScrolledPiano *scrolled_piano);
```

Get piano of *scrolled_piano*.

Parameters

scrolled_piano | the [AgsScrolledPiano](#) |

Returns

the [AgsPiano](#).

[transfer none]

Since: 3.6.8

ags_scrolled_piano_new ()

```
AgsScrolledPiano~*
ags_scrolled_piano_new ();
```

Create a new [AgsScrolledPiano](#).

Returns

a new [AgsScrolledPiano](#)

Since: 3.0.0

AGS_IS_SCROLLED_PIANO()

```
#define AGS_IS_SCROLLED_PIANO(obj) (G_TYPE_CHECK_INSTANCE_TYPE ((obj), ↵
    AGS_TYPE_SCROLLED_PIANO))
```

AGS_IS_SCROLLED_PIANO_CLASS()

```
#define AGS_IS_SCROLLED_PIANO_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE ((class), ↵
    AGS_TYPE_SCROLLED_PIANO))
```

AGS_SCROLLED_PIANO()

```
#define AGS_SCROLLED_PIANO(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), ↵
    AGS_TYPE_SCROLLED_PIANO, AgsScrolledPiano))
```

AGS_SCROLLED_PIANO_CLASS()

```
#define AGS_SCROLLED_PIANO_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ↵
    AGS_TYPE_SCROLLED_PIANO, AgsScrolledPianoClass))
```

AGS_SCROLLED_PIANO_GET_CLASS()

```
#define AGS_SCROLLED_PIANO_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, ↵
    AGS_TYPE_SCROLLED_PIANO, AgsScrolledPianoClass))
```

ags_scrolled_piano_get_type ()

```
GType
ags_scrolled_piano_get_type (void);
```

Types and Values**AGS_TYPE_SCROLLED_PIANO**

```
#define AGS_TYPE_SCROLLED_PIANO (ags_scrolled_piano_get_type())
```

struct AgsScrolledPiano

```
struct AgsScrolledPiano;
```

struct AgsScrolledPianoClass

```
struct AgsScrolledPianoClass {
    GtkGridClass grid;
};
```

1.14 AgsScale

AgsScale — A scale widget

Stability Level

Stable, unless otherwise indicated

Functions

void	ags_scale_set_control_name ()
gchar *	ags_scale_get_control_name ()
void	ags_scale_set_upper ()
gdouble	ags_scale_get_upper ()
void	ags_scale_set_lower ()
gdouble	ags_scale_get_lower ()
void	ags_scale_set_default_value ()
gdouble	ags_scale_get_default_value ()
void	ags_scale_value_changed ()
AgsScale *	ags_scale_new ()
#define	AGS_IS_SCALE()
#define	AGS_IS_SCALE_CLASS()
#define	AGS_SCALE()
#define	AGS_SCALE_CLASS()
#define	AGS_SCALE_GET_CLASS()
GType	ags_scale_get_type ()

Properties

char *	control-name	Read / Write
double	default-value	Read / Write
double	lower	Read / Write
double	upper	Read / Write

Signals

void	value-changed	Run Last
------	---------------	----------

Types and Values

#define	AGS_SCALE_DEFAULT_WIDTH_REQUEST
#define	AGS_SCALE_DEFAULT_HEIGHT_REQUEST
#define	AGS_SCALE_DEFAULT_CONTROL_NAME
#define	AGS_SCALE_DEFAULT_LOWER
#define	AGS_SCALE_DEFAULT_UPPER
#define	AGS_SCALE_DEFAULT_VALUE
#define	AGS_SCALE_DEFAULT_STEP_COUNT
#define	AGS_SCALE_DEFAULT_PAGE_SIZE
enum	AgsScaleFlags
enum	AgsScaleButtonState
enum	AgsScaleKeyMask
enum	AgsScaleLayout
enum	AgsScaleAction
#define	AGS_TYPE_SCALE
struct	AgsScale
struct	AgsScaleClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500;&#x2500; AgsScale
```

Implemented Interfaces

AgsScale implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_scale.h>
```

Description

[AgsScale](#) is a widget that shows you a meter.

Functions

ags_scale_set_control_name ()

```
void
ags_scale_set_control_name (AgsScale *scale,
                           gchar *control_name);
```

Set *control_name* of *scale*.

Parameters

scale	the AgsScale
control_name	the scale height

Since: 3.2.2

ags_scale_get_control_name ()

```
gchar~*
ags_scale_get_control_name (AgsScale *scale);
```

Get scale height of *scale*.

Parameters

scale	the AgsScale
-------	---------------------

Returns

the scale height

Since: 3.2.2

ags_scale_set_upper ()

```
void
ags_scale_set_upper (AgsScale *scale,
                    gdouble upper);
```

Set *upper* of *scale*.

Parameters

scale	the AgsScale
upper	the upper

Since: 3.2.2

ags_scale_get_upper ()

```
gdouble
ags_scale_get_upper (AgsScale *scale);
```

Get upper of *scale*.

Parameters

scale	the AgsScale
-------	---------------------

Returns

the upper

Since: 3.2.2

ags_scale_set_lower ()

```
void
ags_scale_set_lower (AgsScale *scale,
                    gdouble lower);
```

Set *lower* of *scale*.

Parameters

scale	the AgsScale
lower	the lower

Since: 3.2.2

ags_scale_get_lower ()

```
gdouble
ags_scale_get_lower (AgsScale *scale);
```

Get lower of *scale*.

Parameters

scale	the AgsScale
-------	---------------------

Returns

the lower

Since: 3.2.2

ags_scale_set_default_value ()

```
void
ags_scale_set_default_value (AgsScale *scale,
                             gdouble default_value);
```

Set *default_value* of *scale*.

Parameters

scale	the AgsScale
default_value	the normalized volume

Since: 3.2.2

ags_scale_get_default_value ()

```
gdouble
ags_scale_get_default_value (AgsScale *scale);
```

Get normalized volume of *scale*.

Parameters

scale	the AgsScale
-------	------------------------------

Returns

the normalized volume

Since: [3.2.2](#)

ags_scale_value_changed ()

```
void
ags_scale_value_changed (AgsScale *scale,
                        gdouble default_value);
```

Emits ::value-changed event.

Parameters

scale	the AgsScale
default_value	the default value

Since: [3.0.0](#)

ags_scale_new ()

```
AgsScale~*
ags_scale_new (GtkOrientation orientation,
              guint width_request,
              guint height_request);
```

Create a new instance of [AgsScale](#).

Parameters

orientation	the GtkOrientation
width_request	the scale's width
height_request	the scale's height

Returns

the new [AgsScale](#) instance

Since: [3.0.0](#)

AGS_IS_SCALE()

```
#define AGS_IS_SCALE(obj) (G_TYPE_CHECK_INSTANCE_TYPE ((obj), AGS_TYPE_SCALE))
```

AGS_IS_SCALE_CLASS()

```
#define AGS_IS_SCALE_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE ((class), AGS_TYPE_SCALE))
```

AGS_SCALE()

```
#define AGS_SCALE(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), AGS_TYPE_SCALE, ↔  
AgsScale))
```

AGS_SCALE_CLASS()

```
#define AGS_SCALE_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), AGS_TYPE_SCALE, ↔  
AgsScaleClass))
```

AGS_SCALE_GET_CLASS()

```
#define AGS_SCALE_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, AGS_TYPE_SCALE, ↔  
AgsScaleClass))
```

ags_scale_get_type ()

```
GType  
ags_scale_get_type (void);
```

Types and Values**AGS_SCALE_DEFAULT_WIDTH_REQUEST**

```
#define AGS_SCALE_DEFAULT_WIDTH_REQUEST (60)
```

AGS_SCALE_DEFAULT_HEIGHT_REQUEST

```
#define AGS_SCALE_DEFAULT_HEIGHT_REQUEST (128)
```

AGS_SCALE_DEFAULT_CONTROL_NAME

```
#define AGS_SCALE_DEFAULT_CONTROL_NAME "no name"
```

AGS_SCALE_DEFAULT_LOWER

```
#define AGS_SCALE_DEFAULT_LOWER (0.0)
```

AGS_SCALE_DEFAULT_UPPER

```
#define AGS_SCALE_DEFAULT_UPPER (1.0)
```

AGS_SCALE_DEFAULT_VALUE

```
#define AGS_SCALE_DEFAULT_VALUE (0.0)
```

AGS_SCALE_DEFAULT_STEP_COUNT

```
#define AGS_SCALE_DEFAULT_STEP_COUNT (16.0)
```

AGS_SCALE_DEFAULT_PAGE_SIZE

```
#define AGS_SCALE_DEFAULT_PAGE_SIZE (8.0)
```

enum AgsScaleFlags**Members**

AGS_SCALE_LOGARITHMIC		
-----------------------	--	--

enum AgsScaleButtonState**Members**

AGS_SCALE_BUTTON_1_PRESSED		
----------------------------	--	--

enum AgsScaleKeyMask**Members**

AGS_SCALE_KEY_L_CONTROL		
AGS_SCALE_KEY_R_CONTROL		
AGS_SCALE_KEY_L_SHIFT		
AGS_SCALE_KEY_R_SHIFT		

enum AgsScaleLayout**Members**

AGS_SCALE_LAYOUT_VERTICAL		
AGS_SCALE_LAYOUT_HORIZONTAL		

enum AgsScaleAction**Members**

AGS_SCALE_STEP_UP		
AGS_SCALE_STEP_DOWN		
AGS_SCALE_PAGE_UP		
AGS_SCALE_PAGE_DOWN		

AGS_TYPE_SCALE

```
#define AGS_TYPE_SCALE (ags_scale_get_type())
```

struct AgsScale

```
struct AgsScale;
```

struct AgsScaleClass

```
struct AgsScaleClass {  
    GtkWidgetClass widget;  
  
    void (*value_changed)(AgsScale *scale,  
        gdouble default_value);  
};
```

Property Details

The “control-name” property

“control-name”	char~*
----------------	--------

The scale’s control name.

Owner: AgsScale

Flags: Read / Write

Default value: NULL

Since: 3.0.0

The “default-value” property

“default-value”	double
-----------------	--------

The scale’s default value.

Owner: AgsScale

Flags: Read / Write

Default value: 0

Since: 3.0.0

The “lower” property

“lower”	double
---------	--------

The scale’s lower range.

Owner: AgsScale

Flags: Read / Write

Default value: 0

Since: 3.0.0

The “upper” property

“upper”	double
---------	--------

The scale’s upper range.

Owner: AgsScale

Flags: Read / Write

Default value: 1

Since: 3.0.0

Signal Details

The “value-changed” signal

```
void
user_function (AgsScale *scale,
              double   default_value,
              gpointer  user_data)
```

The ::value-changed signal notifies about modified default value.

Parameters

scale	the AgsScale	
default_value	the changed default value	
user_data	user data set when the signal handler was connected.	

Flags: [Run Last](#)

Since: 3.0.0

1.15 AgsScaleBox

AgsScaleBox — box widget

Stability Level

Stable, unless otherwise indicated

Functions

GList *	ags_scale_box_get_scale ()
void	ags_scale_box_add_scale ()
void	ags_scale_box_remove_scale ()
void	ags_scale_box_child_width_request ()
void	ags_scale_box_child_height_request ()

AgsScaleBox *	<code>ags_scale_box_new ()</code>
<code>#define</code>	<code>AGS_IS_SCALE_BOX()</code>
<code>#define</code>	<code>AGS_IS_SCALE_BOX_CLASS()</code>
<code>#define</code>	<code>AGS_SCALE_BOX()</code>
<code>#define</code>	<code>AGS_SCALE_BOX_CLASS()</code>
<code>#define</code>	<code>AGS_SCALE_BOX_GET_CLASS()</code>
GType	<code>ags_scale_box_get_type ()</code>

Signals

<code>void</code>	<code>child-height-request</code>	<code>Run Last</code>
<code>void</code>	<code>child-width-request</code>	<code>Run Last</code>

Types and Values

<code>#define</code>	<code>AGS_SCALE_BOX_DEFAULT_SPACING</code>
<code>#define</code>	<code>AGS_TYPE_SCALE_BOX</code>
<code>struct</code>	<code>AgsScaleBox</code>
<code>struct</code>	<code>AgsScaleBoxClass</code>

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; GtkBox
        &#x2570;&#x2500;&#x2500; AgsScaleBox
```

Implemented Interfaces

`AgsScaleBox` implements `GtkAccessible`, `GtkBuildable`, `GtkConstraintTarget` and `GtkOrientable`.

Includes

```
#include <ags/widget/ags_scale_box.h>
```

Description

The `AgsScaleBox` is a box widget containing `AgsScale`.

Functions

`ags_scale_box_get_scale ()`

```
GList~*
ags_scale_box_get_scale (AgsScaleBox *scale_box);
```

Get scale.

Parameters

scale_box	the AgsScaleBox
-----------	---------------------------------

Returns

the [GList](#) containing [AgsScale](#).

[element-type AgsGui.Scale][transfer container]

Since: [4.0.0](#)

ags_scale_box_add_scale ()

```
void
ags_scale_box_add_scale (AgsScaleBox *scale_box,
                        AgsScale *scale);
```

Add *scale* to *scale_box*.

Parameters

scale_box	the AgsScaleBox
scale	the AgsScale

Since: [4.0.0](#)

ags_scale_box_remove_scale ()

```
void
ags_scale_box_remove_scale (AgsScaleBox *scale_box,
                            AgsScale *scale);
```

Remove *scale* from *scale_box*.

Parameters

scale_box	the AgsScaleBox
scale	the AgsScale

Since: [4.0.0](#)

ags_scale_box_child_width_request ()

```
void
ags_scale_box_child_width_request (AgsScaleBox *scale_box,
                                   GtkWidget *scale,
                                   gint width_request);
```

Notify about child scale width request.

AGS_SCALE_BOX()

```
#define AGS_SCALE_BOX(obj) (G_TYPE_CHECK_INSTANCE_CAST((obj), ↵  
    AGS_TYPE_SCALE_BOX, AgsScaleBox))
```

AGS_SCALE_BOX_CLASS()

```
#define AGS_SCALE_BOX_CLASS(class) (G_TYPE_CHECK_CLASS_CAST((class), ↵  
    AGS_TYPE_SCALE_BOX, AgsScaleBoxClass))
```

AGS_SCALE_BOX_GET_CLASS()

```
#define AGS_SCALE_BOX_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, ↵  
    AGS_TYPE_SCALE_BOX, AgsScaleBoxClass))
```

ags_scale_box_get_type ()

```
GType  
ags_scale_box_get_type (void);
```

Types and Values**AGS_SCALE_BOX_DEFAULT_SPACING**

```
#define AGS_SCALE_BOX_DEFAULT_SPACING (8)
```

AGS_TYPE_SCALE_BOX

```
#define AGS_TYPE_SCALE_BOX (ags_scale_box_get_type())
```

struct AgsScaleBox

```
struct AgsScaleBox;
```

struct AgsScaleBoxClass

```
struct AgsScaleBoxClass {  
    GtkWidgetClass box;  
  
    void (*child_width_request)(AgsScaleBox *scale_box,  
        GtkWidget *scale,  
        gint width_request);  
    void (*child_height_request)(AgsScaleBox *scale_box,  
        GtkWidget *scale,  
        gint height_request);  
};
```

Signal Details

The “child-height-request” signal

```
void
user_function (AgsScaleBox *scale_box,
              GObject      *scale,
              int           height_request,
              gpointer      user_data)
```

The ::child-height-request

Parameters

scale_box	the AgsScaleBox .	
scale	the AgsScale	
height_request	the scale’s height-request	
user_data	user data set when the signal handler was connected.	

Flags: **Run Last**

Since: **4.0.0**

The “child-width-request” signal

```
void
user_function (AgsScaleBox *scale_box,
              GObject      *scale,
              int           width_request,
              gpointer      user_data)
```

The ::child-width-request

Parameters

scale_box	the AgsScaleBox .	
scale	the AgsScale	
width_request	the scale’s width-request	
user_data	user data set when the signal handler was connected.	

Flags: **Run Last**

Since: **4.0.0**

1.16 AgsScrolledScaleBox

AgsScrolledScaleBox — scrolled scale box widget

Stability Level

Stable, unless otherwise indicated

Functions

GtkScrolledWindow *	ags_scrolled_scale_box_get_scrolled_window ()
AgsScrolledScaleBox *	ags_scrolled_scale_box_new ()
#define	AGS_IS_SCROLLED_SCALE_BOX()
#define	AGS_IS_SCROLLED_SCALE_BOX_CLASS()
#define	AGS_SCROLLED_SCALE_BOX()
#define	AGS_SCROLLED_SCALE_BOX_CLASS()
#define	AGS_SCROLLED_SCALE_BOX_GET_CLASS()
GType	ags_scrolled_scale_box_get_type ()

Types and Values

#define	AGS_TYPE_SCROLLED_SCALE_BOX
struct	AgsScrolledScaleBox
struct	AgsScrolledScaleBoxClass

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500;&#x2500; GtkGrid
        &#x2570;&#x2500;&#x2500;&#x2500; AgsScrolledScaleBox
```

Implemented Interfaces

[AgsScrolledScaleBox](#) implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_scrolled_scale_box.h>
```

Description

The [AgsScrolledScaleBox](#) lets you to have a scrolled scale box widget.

Functions

[ags_scrolled_scale_box_get_scrolled_window \(\)](#)

```
GtkScrolledWindow~*
ags_scrolled_scale_box_get_scrolled_window
    (AgsScrolledScaleBox *scrolled_scale_box);
```

Get `scrolled_window` of `scrolled_scale_box`.

Parameters

scrolled_scale_box | the [AgsScrolledScale_Box](#) |

Returns

the [GtkScrolled_Window](#).

[transfer none]

Since: 4.0.0

ags_scrolled_scale_box_new ()

```
AgsScrolledScaleBox~*
ags_scrolled_scale_box_new ();
```

Create a new [AgsScrolledScaleBox](#).

Returns

a new [AgsScrolledScaleBox](#)

Since: 3.0.0

AGS_IS_SCROLLED_SCALE_BOX()

```
#define AGS_IS_SCROLLED_SCALE_BOX(obj) (G_TYPE_CHECK_INSTANCE_TYPE ((obj), ↵
    AGS_TYPE_SCROLLED_SCALE_BOX))
```

AGS_IS_SCROLLED_SCALE_BOX_CLASS()

```
#define AGS_IS_SCROLLED_SCALE_BOX_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE ((class), ↵
    AGS_TYPE_SCROLLED_SCALE_BOX))
```

AGS_SCROLLED_SCALE_BOX()

```
#define AGS_SCROLLED_SCALE_BOX(obj) (G_TYPE_CHECK_INSTANCE_CAST ((obj), ↵
    AGS_TYPE_SCROLLED_SCALE_BOX, AgsScrolledScaleBox))
```

AGS_SCROLLED_SCALE_BOX_CLASS()

```
#define AGS_SCROLLED_SCALE_BOX_CLASS(class) (G_TYPE_CHECK_CLASS_CAST ((class), ↵
    AGS_TYPE_SCROLLED_SCALE_BOX, AgsScrolledScaleBoxClass))
```

AGS_SCROLLED_SCALE_BOX_GET_CLASS()

```
#define AGS_SCROLLED_SCALE_BOX_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS (obj, ↵
    AGS_TYPE_SCROLLED_SCALE_BOX, AgsScrolledScaleBoxClass))
```

ags_scrolled_scale_box_get_type ()

```
GType
ags_scrolled_scale_box_get_type (void);
```

Types and Values**AGS_TYPE_SCROLLED_SCALE_BOX**

```
#define AGS_TYPE_SCROLLED_SCALE_BOX (ags_scrolled_scale_box_get_type ())
```

struct AgsScrolledScaleBox

```
struct AgsScrolledScaleBox;
```

struct AgsScrolledScaleBoxClass

```
struct AgsScrolledScaleBoxClass {
    GtkWidgetClass grid;
};
```

1.17 AgsRuler

AgsRuler — A ruler widget

Stability Level

Stable, unless otherwise indicated

Functions

guint	ags_ruler_get_font_size ()
void	ags_ruler_set_font_size ()
guint	ags_ruler_get_step ()
void	ags_ruler_set_step ()
guint	ags_ruler_get_large_step ()
void	ags_ruler_set_large_step ()
guint	ags_ruler_get_small_step ()
void	ags_ruler_set_small_step ()
gdouble	ags_ruler_get_factor ()
void	ags_ruler_set_factor ()
gdouble	ags_ruler_get_precision ()
void	ags_ruler_set_precision ()
gdouble	ags_ruler_get_scale_precision ()
void	ags_ruler_set_scale_precision ()
GtkAdjustment *	ags_ruler_get_adjustment ()
void	ags_ruler_set_adjustment ()

AgsRuler *	<code>ags_ruler_new ()</code>
<code>#define</code>	<code>AGS_IS_RULER()</code>
<code>#define</code>	<code>AGS_IS_RULER_CLASS()</code>
<code>#define</code>	<code>AGS_RULER()</code>
<code>#define</code>	<code>AGS_RULER_CLASS()</code>
<code>#define</code>	<code>AGS_RULER_GET_CLASS()</code>
GType	<code>ags_ruler_get_type ()</code>

Properties

GObject *	<code>adjustment</code>	Read / Write
double	<code>factor</code>	Read / Write
guint	<code>font-size</code>	Read / Write
guint	<code>large-step</code>	Read / Write
double	<code>precision</code>	Read / Write
double	<code>scale-precision</code>	Read / Write
guint	<code>small-step</code>	Read / Write
guint	<code>step</code>	Read / Write

Types and Values

<code>#define</code>	<code>AGS_RULER_FONT_SIZE</code>
<code>#define</code>	<code>AGS_RULER_FREE_SPACE</code>
<code>#define</code>	<code>AGS_RULER_DEFAULT_FACTOR</code>
<code>#define</code>	<code>AGS_RULER_DEFAULT_PRECISION</code>
<code>#define</code>	<code>AGS_RULER_DEFAULT_SCALE_PRECISION</code>
<code>#define</code>	<code>AGS_RULER_DEFAULT_HEIGHT</code>
<code>#define</code>	<code>AGS_RULER_DEFAULT_STEP</code>
<code>#define</code>	<code>AGS_RULER_DEFAULT_LARGE_STEP</code>
<code>#define</code>	<code>AGS_RULER_DEFAULT_SMALL_STEP</code>
<code>#define</code>	<code>AGS_TYPE_RULER</code>
<code>struct</code>	<code>AgsRuler</code>
<code>struct</code>	<code>AgsRulerClass</code>

Object Hierarchy

```
GObject
  &#x2570;&#x2500;&#x2500; GInitiallyUnowned
    &#x2570;&#x2500;&#x2500; GtkWidget
      &#x2570;&#x2500;&#x2500; AgsRuler
```

Implemented Interfaces

AgsRuler implements [GtkAccessible](#), [GtkBuildable](#), [GtkConstraintTarget](#) and [GtkOrientable](#).

Includes

```
#include <ags/widget/ags_ruler.h>
```

Description

AgsRuler is a widget representing a [GtkAdjustment](#).

Functions

ags_ruler_get_font_size ()

```
guint
ags_ruler_get_font_size (AgsRuler *ruler);
```

Get font size of *ruler*.

Parameters

ruler		the AgsRuler	
-------	--	---------------------	--

Returns

the font size

Since: 3.6.15

ags_ruler_set_font_size ()

```
void
ags_ruler_set_font_size (AgsRuler *ruler,
                        guint font_size);
```

Set font size of *ruler*.

Parameters

ruler		the AgsRuler	
font_size		the font size	

Since: 3.6.15

ags_ruler_get_step ()

```
guint
ags_ruler_get_step (AgsRuler *ruler);
```

Get step of *ruler*.

Parameters

ruler		the AgsRuler	
-------	--	---------------------	--

Returns

the step

Since: 3.2.0

ags_ruler_set_step ()

```
void
ags_ruler_set_step (AgsRuler *ruler,
                   quint step);
```

Set step of *ruler*.

Parameters

ruler		the AgsRuler	
step		the step	

Since: 3.2.0

ags_ruler_get_large_step ()

```
quint
ags_ruler_get_large_step (AgsRuler *ruler);
```

Get large step of *ruler*.

Parameters

ruler		the AgsRuler	
-------	--	---------------------	--

Returns

the large step

Since: 3.2.0

ags_ruler_set_large_step ()

```
void
ags_ruler_set_large_step (AgsRuler *ruler,
                          quint large_step);
```

Set large step of *ruler*.

Parameters

ruler		the AgsRuler	
large_step		the large step	

Since: 3.2.0

ags_ruler_get_small_step ()

```
quint
ags_ruler_get_small_step (AgsRuler *ruler);
```

Get small step of *ruler*.

Parameters

ruler	the AgsRuler	
-------	---------------------	--

Returns

the small step

Since: 3.2.0

ags_ruler_set_small_step ()

```
void
ags_ruler_set_small_step (AgsRuler *ruler,
                          guint small_step);
```

Set small step of *ruler*.

Parameters

ruler	the AgsRuler	
small_step	the small step	

Since: 3.2.0

ags_ruler_get_factor ()

```
gdouble
ags_ruler_get_factor (AgsRuler *ruler);
```

Get factor of *ruler*.

Parameters

ruler	the AgsRuler	
-------	---------------------	--

Returns

the factor

Since: 4.0.0

ags_ruler_set_factor ()

```
void
ags_ruler_set_factor (AgsRuler *ruler,
                      gdouble factor);
```

Set factor of *ruler*.

Parameters

ruler	the AgsRuler
factor	the factor

Since: 4.0.0

ags_ruler_get_precision ()

```
gdouble
ags_ruler_get_precision (AgsRuler *ruler);
```

Get precision of *ruler*.

Parameters

ruler	the AgsRuler
-------	---------------------

Returns

the precision

Since: 4.0.0

ags_ruler_set_precision ()

```
void
ags_ruler_set_precision (AgsRuler *ruler,
                        gdouble precision);
```

Set precision of *ruler*.

Parameters

ruler	the AgsRuler
precision	the precision

Since: 4.0.0

ags_ruler_get_scale_precision ()

```
gdouble
ags_ruler_get_scale_precision (AgsRuler *ruler);
```

Get scale precision of *ruler*.

Parameters

ruler	the AgsRuler
-------	---------------------

Returns

the scale precision

Since: 4.0.0

ags_ruler_set_scale_precision ()

```
void
ags_ruler_set_scale_precision (AgsRuler *ruler,
                              gdouble scale_precision);
```

Set scale precision of *ruler*.

Parameters

ruler	the AgsRuler	
scale_precision	the scale precision	

Since: 4.0.0

ags_ruler_get_adjustment ()

```
GtkAdjustment~*
ags_ruler_get_adjustment (AgsRuler *ruler);
```

Get adjustment of *ruler*.

Parameters

ruler	the AgsRuler	
-------	---------------------	--

Returns

the **GtkAdjustment**.

[*transfer full*]

Since: 3.2.0

ags_ruler_set_adjustment ()

```
void
ags_ruler_set_adjustment (AgsRuler *ruler,
                          GtkAdjustment *adjustment);
```

Set adjustment of *ruler*.

Parameters

ruler	the AgsRuler	
adjustment	the GtkAdjustment .	[<i>transfer none</i>]

Since: 3.2.0

ags_ruler_new ()

```
AgsRuler~*
ags_ruler_new (GtkOrientation orientation,
              guint step,
              gdouble factor,
              gdouble precision,
              gdouble scale_precision);
```

Create a new instance of **AgsRuler**

Parameters

orientation	the GtkOrientation
step	the step size

Returns

the new **AgsRuler**

Since: **3.0.0**

AGS_IS_RULER()

```
#define AGS_IS_RULER(obj) (G_TYPE_CHECK_INSTANCE_TYPE((obj), AGS_TYPE_RULER))
```

AGS_IS_RULER_CLASS()

```
#define AGS_IS_RULER_CLASS(class) (G_TYPE_CHECK_CLASS_TYPE((class), AGS_TYPE_RULER))
```

AGS_RULER()

```
#define AGS_RULER(obj) (G_TYPE_CHECK_INSTANCE_CAST(obj, AGS_TYPE_RULER, ↔  
AgsRuler))
```

AGS_RULER_CLASS()

```
#define AGS_RULER_CLASS(class) (G_TYPE_CHECK_CLASS_CAST(class, AGS_TYPE_RULER, ↔  
AgsRulerClass))
```

AGS_RULER_GET_CLASS()

```
#define AGS_RULER_GET_CLASS(obj) (G_TYPE_INSTANCE_GET_CLASS(obj, AGS_TYPE_RULER, ↔  
AgsRulerClass))
```

ags_ruler_get_type ()

```
GType
ags_ruler_get_type ();
```

Types and Values

AGS_RULER_FONT_SIZE

```
#define AGS_RULER_FONT_SIZE (12)
```

AGS_RULER_FREE_SPACE

```
#define AGS_RULER_FREE_SPACE (4.0)
```

AGS_RULER_DEFAULT_FACTOR

```
#define AGS_RULER_DEFAULT_FACTOR (16.0)
```

AGS_RULER_DEFAULT_PRECISION

```
#define AGS_RULER_DEFAULT_PRECISION (1.0)
```

AGS_RULER_DEFAULT_SCALE_PRECISION

```
#define AGS_RULER_DEFAULT_SCALE_PRECISION (1.0)
```

AGS_RULER_DEFAULT_HEIGHT

```
#define AGS_RULER_DEFAULT_HEIGHT (24)
```

AGS_RULER_DEFAULT_STEP

```
#define AGS_RULER_DEFAULT_STEP (16)
```

AGS_RULER_DEFAULT_LARGE_STEP

```
#define AGS_RULER_DEFAULT_LARGE_STEP (8.0)
```

AGS_RULER_DEFAULT_SMALL_STEP

```
#define AGS_RULER_DEFAULT_SMALL_STEP (6.0)
```

AGS_TYPE_RULER

```
#define AGS_TYPE_RULER (ags_ruler_get_type())
```

struct AgsRuler

```
struct AgsRuler;
```

struct AgsRulerClass

```
struct AgsRulerClass {  
    GtkWidgetClass widget;  
};
```

Property Details

The “adjustment” property

“adjustment”	GObject~*
--------------	-----------

The adjustment.

Owner: AgsRuler

Flags: Read / Write

Since: 3.0.0

The “factor” property

“factor”	double
----------	--------

The factor.

Owner: AgsRuler

Flags: Read / Write

Allowed values: ≥ 0

Default value: 16

Since: 4.0.0

The “font-size” property

“font-size”	guint
-------------	-------

The font size.

Owner: AgsRuler

Flags: Read / Write

Default value: 12

Since: 3.6.15

The “large-step” property

“large-step”	guint
--------------	-------

The large step’s width.

Owner: AgsRuler

Flags: Read / Write

Default value: 8

Since: 3.0.0

The “precision” property

“precision”	double
-------------	--------

The precision.

Owner: AgsRuler

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 4.0.0

The “scale-precision” property

“scale-precision”	double
-------------------	--------

The scale precision.

Owner: AgsRuler

Flags: Read / Write

Allowed values: ≥ 0

Default value: 1

Since: 4.0.0

The “small-step” property

“small-step”	guint
--------------	-------

The small step’s width.

Owner: AgsRuler

Flags: Read / Write

Default value: 6

Since: 3.0.0

The “step” property

“step”	guint
--------	-------

The step’s width.

Owner: AgsRuler

Flags: Read / Write

Default value: 16

Since: 3.0.0

Part I

Annotation Glossary

E

element-type

Generics and defining elements of containers and arrays.

O

out

Parameter for returning results. Default is transfer full.

S

Stable

The intention of a Stable interface is to enable arbitrary third parties to develop applications to these interfaces, release them, and have confidence that they will run on all minor releases of the product (after the one in which the interface was introduced, and within the same major release). Even at a major release, incompatible changes are expected to be rare, and to have strong justifications.

T

transfer container

The caller owns the data container, but not the data inside it.

transfer full

The caller owns the data, and is responsible for free it.

transfer none

The data is owned by the callee, which is responsible of freeing it.

type

Override the parsed C type with given type.

Part II

Tree Index

GObject

```
&#x2570;&#x2500;&#x2500; GInitiallyUnowned
&#x2570;&#x2500;&#x2500; GtkWidget
&#x251c;&#x2500;&#x2500; AgsCartesian
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```

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