

Styling widgets

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A widget's look is a formula. Its `styles` returns a record of style keys, and the widget writes them onto what it draws: an SVG shape or text on the canvas, or an HTML control over it. Because the record is computed, the look can follow the plant: a pump turns green when it runs, a level turns red above its alarm. This page gives the rules of the record, colours and units, what each widget's element accepts, the theme, animation, and a set of recipes. Each widget's own page adds the element its styles land on, its default styles and the keys to avoid there.

The styles record

```
{fill: if(P101_RUN, "#16A34A", "#9CA3AF"), stroke: "#374151", stroke_width: 2}
```

- **Keys are names**, written without quotes. Every `_` in a key is written as `-`: `stroke_width` sets the property `stroke-width`, and `background_color` sets `background-color`. A key that starts with two underscores sets a CSS custom property: `__j2w_accent` sets `--j2w-accent`.
- **Values are written as text**, exactly as they are. The browser keeps what it understands and drops the rest silently: a misspelt key or an unusable value fails on its own, and nothing else does.

Value in the record	Written as	Result
Text: <code>fill: "#2563EB"</code>	<code>fill: #2563EB</code>	Used
Whole number: <code>stroke_width: 3</code>	<code>stroke-width: 3</code>	Used
Decimal: <code>opacity: 0.5</code>	<code>opacity: 0.5</code>	Used
A number for a length: <code>font_size: 18</code>	<code>font-size: 18px</code>	Used: see Units
Boolean: <code>fill: true</code>	<code>fill: true</code>	Dropped by the browser: a fill turns black
List: <code>stroke_dasharray: [8, 4]</code>	The list as text	Dropped: write the text <code>"8 4"</code>
Record: <code>fill: {r: 1}</code>	The record as text	Dropped
<code>null</code>	Nothing	The key is removed

- **Each redraw replaces the whole set**. A key that the new record leaves out is removed, and so is a key whose value is `null`: the property returns to what the widget or the browser gives it. So a key needed in one state only can be left out, or be `null`, in the others. `{fill: "#E5E7EB", stroke: if(ALARM, "#DC2626", null), stroke_width: 4}` draws a red outline during the alarm and none after it.
- **A styles formula that fails keeps the last styles that worked**. One that has never worked leaves the element with the browser's own look: an SVG shape is then filled black, with no outline. One that does not compile stops its widget from being updated at all: see [When a formula fails](#).
- **Styles are evaluated in the editor too**, so a dashboard shows its colours while it is built.

- The gauges take a second record, `valueStyles`, for their value: the arc of a RadialGauge, the bar of a HorizontalGauge or a VerticalGauge. A RadialGauge's `styles` draws its track, the whole arc behind the value, light grey by default. The linear gauges do not apply `styles`: draw their track with a Rect placed after the gauge in the component list.
- Two widgets take no styles at all: the SVG widget, whose drawing keeps its own look, and a group, whose members are styled one by one.

Keys the widgets read themselves

Most keys only reach the browser. A few are also read by the widget:

Key	Widgets	What the widget does with it	When it is left out
<code>font_size</code>	Label, Labels, RadialLabels	Sizes the text, and the editor's estimate of the area a click on the text selects	12 px
<code>text_anchor</code>	Label, Labels, RadialLabels	Which point of the text sits on its anchor: <code>start</code> , <code>middle</code> or <code>end</code>	<code>middle</code> , or a Label's stored alignment
<code>bar_width</code>	ChartBar	The width of a bar, as a fraction of the slot each value has, given as a number or numeric text	0.9
<code>bar_offset</code>	ChartBar	The gap before a bar, as a fraction of its slot, given as a number or numeric text	0.05
<code>r</code>	ChartDot	The radius of a dot in canvas pixels, given as a number or numeric text such as <code>"6px"</code>	6
<code>background_true</code>	FieldSwitch	The track's colour while the switch is on	The theme's accent colour
<code>background_false</code>	FieldSwitch	The track's colour while it is off	The theme's sunken surface
<code>cursor</code>	Region	The pointer's shape over the region	<code>pointer</code> , a hand

Colours

A colour in a style is text, in any form a browser reads:

Form	Example	Notes
Hex, three or six digits	<code>"#6CF"</code> , <code>"#2563EB"</code>	An opaque colour
Hex, eight digits	<code>"#DC262680"</code>	The last pair is the opacity, from <code>00</code> , transparent, to <code>FF</code> : <code>80</code> is about half
Name	<code>"orange"</code> , <code>"transparent"</code>	Any CSS colour name
CSS functions, as text	<code>"rgb(37 99 235)"</code> , <code>"hsl(217 91% 60%)"</code>	Written in quotes, like any other text
<code>none</code>	<code>"none"</code>	No fill, or no outline, on an SVG widget

The colour functions

The colour functions of Amtiri Script return a **colour number**, not text: `rgb(1, 0, 0)` is 16711680. A style writes that number as it is, the browser drops it, and a fill turns black. Turn it into hex text with `format` and the pattern `%06X` (hexadecimal, upper case, six digits): `"#%06X".format(rgb(1, 0, 0))` gives `"#FF0000"`.

Function	Takes	Example	Style text
<code>rgb(r, g, b)</code>	Red, green and blue, each a fraction from 0 to 1. 1 and above count as 1, so <code>rgb(128, 64, 0)</code> is yellow	<code>"#%06X".format(rgb(1, 0.5, 0))</code>	<code>#FF8000</code>
<code>hsl(h, s, l)</code>	The hue in turns, from 0 to 1: 0 red, 1/3 green, 2/3 blue, and 1 red again. Saturation and lightness from 0 to 1	<code>"#%06X".format(hsl(0.3333, 1, 0.5))</code>	<code>#00FF00</code>
<code>lighter(colour, f)</code> , <code>darker(colour, f)</code>	A colour number, and a factor from 0 to 1	<code>"#%06X".format(darker(rgb(1, 0, 0), 0.5))</code>	<code>#602020</code>
<code>gradient(name, value)</code>	A gradient's name, written bare, and a value from 0 to 1	<code>"#%06X".format(gradient(red2green, 0.5))</code>	<code>#FFFF00</code>

- **Gradients.** The engine offers seven: `red2green`, `red2gray2green`, `red2white2green`, `black2green`, `black2red`, `white2black`, and `rainbow`, which runs from red through yellow, green and blue back to red. The name is bare and its case does not matter; a name the engine does not have makes the formula fail when it runs, and the widget keeps its last styles. A value below 0 gives the gradient's first colour, and one above 1 its last.
- **A colour that follows a reading** divides the reading by its range: `{fill: "#%06X".format(gradient(red2green, 1 - to_double(LIT_301) / 4.5))}` is green when the tank is empty and red when it is full.

Warning

`format` writes decimals the way the instance's locale does: on an instance whose locale uses a decimal comma, `"%.2f".format(0.5)` gives `0,50`, which no browser reads. Give numbers to a style as numbers, as in `opacity: LOAD_PCT / 100`, and keep `format` for colours (`%06X`) and whole numbers (`"%dms".format(to_int(X))`).

Units

Sizes are in canvas pixels, and scale with the rest of the drawing when the view is zoomed.

- **A number given for a length is written with `px`.** The keys are `font_size`, `letter_spacing`, `word_spacing`, `rx`, `ry`, `border_radius`, `border_width`, `outline_width`, `padding`, `min_height` and `min_width`: `font_size: 18` becomes `font-size: 18px`, and `padding: 6` pads all four sides by 6 px. A text with its unit, such as `"18px"`, works for them too.
- **A number for any other key is written as it is.** That is what `stroke_width`, `opacity`, `fill_opacity`, `stroke_opacity` and `font_weight` expect.
- **Everything else is text, with its unit:** `border: "2px solid #DC2626"`, `padding: "4px 12px"`, `box_shadow: "0 2px 6px #0000004D"`, `stroke-dasharray: "8 4"`, `transition: "fill 0.5s"`.

SVG widgets and HTML widgets

A widget draws either on the canvas, as SVG, or over it, as an HTML control, and the two take different properties:

- **SVG widgets**, the shapes, texts, images, gauges, charts and regions, take SVG properties: `fill` for the inside, `stroke` for the outline, `font_family` and its kin for text. They do not change with the viewer's theme.
- **HTML widgets**, the seven inputs and the two buttons, take CSS box properties: `background_color`, `color` for the text, `border`, `border_radius`, `padding`. They follow the viewer's theme until their styles say otherwise.

A property of the other kind does nothing: `fill` on a button, `background_color` on a Rect.

Widget	The styles land on	Properties that work there	Keys to avoid
Label	An SVG text, standing on its baseline	<code>fill</code> , <code>stroke</code> with <code>stroke_width</code> for an outline, <code>font_family</code> , <code>font_size</code> , <code>font_weight</code> , <code>font_style</code> , <code>letter_spacing</code> , <code>text_anchor</code> , <code>opacity</code>	<code>transform</code>
Labels	An SVG text per item, all styled alike	As Label	<code>transform</code>
RadialLabels	An SVG text per item, each turned by the widget	As Label	<code>transform</code> , which replaces the turn of every label
Rect	An SVG rectangle	<code>fill</code> , <code>fill_opacity</code> , <code>stroke</code> , <code>stroke_width</code> , <code>stroke_opacity</code> , <code>stroke_dasharray</code> , <code>stroke_linejoin</code> , <code>rx</code> and <code>ry</code> for round corners, <code>opacity</code>	<code>x</code> , <code>y</code> , <code>width</code> , <code>height</code> , which some browsers let replace the drawn box
Circle	An SVG circle, as wide as the box's shorter side	As Rect, without <code>rx</code> and <code>ry</code>	<code>r</code> , <code>cx</code> , <code>cy</code>
Ellipse	An SVG ellipse filling the box	As Circle	<code>rx</code> , <code>ry</code> , <code>cx</code> , <code>cy</code>
Line	An SVG line, with round ends unless <code>stroke_linecap</code> says otherwise	<code>stroke</code> , <code>stroke_width</code> , <code>stroke_opacity</code> , <code>stroke_dasharray</code> , <code>stroke_linecap</code> , <code>opacity</code>	<code>fill</code> , which has nothing to fill
Image	An SVG image	<code>opacity</code> , <code>cursor</code>	—
SVG	Nothing: its styles are not applied	—	Every key. Hide or move it with <code>visible</code> and the offsets
RadialGauge	<code>styles</code> : the track, an SVG polyline along the whole arc. <code>valueStyles</code> : the value arc, a second polyline	<code>stroke</code> , <code>stroke_width</code> , <code>stroke_linecap</code> , <code>stroke_dasharray</code> , <code>stroke_opacity</code> , <code>opacity</code>	A <code>fill</code> other than <code>"none"</code> , which fills the arc's chord
HorizontalGauge, VerticalGauge	<code>valueStyles</code> : the bar, an SVG rectangle. <code>styles</code> is not applied	As Rect	—
ChartLine	One SVG polyline through the values	<code>stroke</code> , <code>stroke_width</code> , <code>stroke_dasharray</code> , <code>stroke_linejoin</code> , <code>stroke_linecap</code> , <code>opacity</code> , and <code>fill: "none"</code>	—
ChartArea	One SVG polyline, closed down to the bottom of the box	<code>fill</code> , <code>fill_opacity</code> , <code>stroke</code> , <code>stroke_width</code> , <code>opacity</code>	—
ChartBar	An SVG rectangle per value	As Rect, and <code>bar_width</code> , <code>bar_offset</code>	—
ChartDot	An SVG circle per value	<code>fill</code> , <code>stroke</code> , <code>stroke_width</code> , <code>opacity</code> , and <code>r</code>	—

ChartGridH, ChartGridV	An SVG line per value	As Line	—
Region	An SVG rectangle, almost transparent	<code>cursor</code> , and a visible <code>fill</code> while placing it	<code>fill: "none"</code> , <code>visibility: "hidden"</code> and <code>display: "none"</code> : a region that is not painted cannot be clicked
FieldButton, ActionButton	An HTML button	<code>background_color</code> , <code>color</code> , <code>border</code> , <code>border_color</code> , <code>border_width</code> , <code>border_radius</code> , <code>padding</code> , <code>font_family</code> , <code>font_size</code> , <code>font_weight</code> , <code>box_shadow</code> , <code>opacity</code> , <code>min_height</code> , <code>cursor</code>	<code>fill</code> and <code>stroke</code> , which do nothing there. <code>position</code> , <code>left</code> , <code>top</code> , <code>width</code> and <code>height</code> , which replace the place and size the widget was drawn at
FieldText	An HTML text box, or a text area when Multiline is ticked	As a button, and <code>text_align</code>	As a button
FieldNumber	An HTML number box, aligned right	As FieldText	As a button
FieldDate	An HTML date box	As FieldText	As a button
FieldCombobox	An HTML drop-down list. The list that opens is drawn by the browser	As FieldText	As a button
FieldSliderHorizontal, FieldSliderVertical	An HTML range slider. The vertical one is the same slider, turned	<code>__j2w_accent</code> for the filled part and the thumb, <code>opacity</code>	<code>transform</code> , which replaces the vertical slider's turn. The slider's own <code>__j2w_slider...</code> properties, which it sets itself
FieldSwitch	An HTML switch	<code>background_true</code> , <code>background_false</code> , <code>opacity</code>	<code>background_color</code> , which competes with the two state colours
ComponentGroup	Nothing: its styles are not applied	—	Every key. Style the members

Every widget that takes styles also takes the keys of the sections below: `cursor`, `transition`, `animation` and `display`.

Fonts

- **Open Sans is the only font the product serves**, in every weight from 300 to 800, upright and italic. Texts and controls use it unless their styles name another family.
- **Any other family comes from the viewer's device**. A device that lacks it shows the browser's default font instead, often a serif. End every `font_family` with a generic family, which every device has: `sans-serif`, `serif`, `monospace` or `system-ui`. A family name with spaces goes in single quotes inside the text: `font_family: "'Courier New', monospace"`.
- `font_weight` takes a number, any from 300 to 800 with Open Sans (`600` is semibold), or `"normal"` and `"bold"`. `font_style: "italic"` slants the text.

The theme

- **Light and dark.** Each user chooses a light or a dark theme, or follows the device. The theme changes the HTML widgets only: in dark mode the inputs turn dark and the buttons change tint, while SVG shapes, texts and the canvas background keep their colours. A dashboard drawn on a white canvas therefore shows dark inputs in dark mode. Where that matters, give inputs and buttons their own `background_color`, `color` and `border_color`: they then look the same in both themes.
- **A widget's styles win over the theme**, in both themes.
- **Hover, focus and pressed looks cannot be styled.** A style applies to the widget in every state. The theme tints a button while the pointer is over it and while it is pressed; setting `background_color` removes both tints, and only a slight shrink on press remains, so give such a button `cursor: "pointer"`. An input keeps the theme's hover and focus border colours unless `border_color` is set. SVG shapes have no hover look beyond `cursor`.
- **One custom property is meant for widgets:** `__j2w_accent`, the accent colour. On a slider it paints the filled part of the track and the thumb, which no other key reaches: `__j2w_accent: "#DC2626"`. A switch has its own two keys, `background_true` and `background_false`, which default to the theme's colours when they are left out.
- **A brand sheet restyles every dashboard at once.** The instance setting `application.theme` names an extra stylesheet, loaded after the built-in ones: see the [Configuration reference](#). Its rules reach the inputs and buttons of every dashboard; a sheet that changes the theme's accent colour, for example, changes every slider and switch. A widget's own styles still win over it, unless the sheet marks its rules `!important`.

Sizes of inputs and buttons

- **At least 30 pixels tall.** The theme gives buttons, one-line text boxes, number and date boxes and drop-down lists a minimum height of 30 px. Drawn smaller, the control still renders 30 px high and hangs below its box. `min_height: "0px"` lifts the minimum, and the control then takes exactly the height it was drawn at.
- **The drawn box is the control.** Borders and padding are inside the box, not added to it.
- **Text** is 14 px Open Sans unless `font_size` and `font_family` say otherwise.
- **A slider sizes itself from its box:** the thumb is as thick as the box, at least 10 px, and the track is 8/18 of the thumb, at least 3 px.
- A newly dropped FieldDate is 160 px wide, enough to show a whole date and its picker button.

Dynamic styling

Every key of the record can be a formula of its own, and the record is evaluated again each time the view redraws, so the look follows the plant.

- **A value per state.** `if` chooses: `{fill: if(P101_RUN, "#16A34A", "#9CA3AF")}`. The condition must be a Boolean. A signal held as a number, such as a coil read as 0 or 1, is compared: `if(P101_RUN != 0, ...)`.
- **Thresholds** nest `if` s, the most severe first:

```
{fill: if(to_double(LIT_301) > 4.2, "#DC2626",
  if(to_double(LIT_301) > 3.8, "#F59E0B", "#2563EB")),
stroke: "#1E3A8A", stroke_width: 1}
```

A comparison also works with an infinite value or NaN, which a division by zero can give: NaN is neither above nor below any threshold, so it takes the last branch.

- **Grey when there is no data.** A variable that was never written, or holds `null`, makes `if` fail; `evl` catches that and gives its second argument. The three-state LED of a pump, with a fourth look for no data:

```
{fill: evl(if(P101_TRIP, "#DC2626", if(P101_RUN, "#16A34A", "#FFFFFF")), "#9CA3AF"),
stroke: evl(if(P101_TRIP, "#7F1D1D", if(P101_RUN, "#14532D", "#4B5563")), "#6B7280"),
stroke_width: 3}
```



Running

P101_RUN true



Stopped

both false



Tripped

P101_TRIP true



No data

a signal without a value

- **Smooth changes.** `transition: "fill 0.5s"` makes a fill change colour over half a second instead of at once. Name several properties with commas: `transition: "fill 0.5s, stroke 0.5s"`.
- **Showing and hiding.** Three ways, which differ:
 - `visible`, the widget's **Visible** formula, removes the widget from the view while it is `false`. The editor keeps showing it, so it can still be selected there. This is the way to hide.
 - `display: "none"` in `styles` hides the widget in the editor too, where it becomes hard to find and select.
 - `opacity: 0` makes the widget invisible but leaves it in place: it still takes clicks.

Blinking and rotation

A dashboard has no timer, so no style can switch itself on and off. A blink or a rotation is a CSS animation, named in the `animation` key. The Site provides two animations for dashboards, and keeps their names stable:

Animation	What it does	Style
<code>do-blink</code>	Fades the widget from full opacity down to 0.2	<code>animation: "do-blink 1s infinite alternate"</code>
<code>do-spin</code>	Turns the widget one full turn	<code>animation: "do-spin 2s linear infinite", transform_box: "fill-box", transform_origin: "center"</code>

- **The timing is part of the text.** `do-blink 0.5s` blinks twice as fast; `alternate` fades back up instead of jumping; `do-spin 4s` turns half as fast.
- **Switch an animation with the state:** `animation: if(LSHH_301, "do-blink 0.5s infinite alternate", "none")`.
- **An SVG shape turns about its own centre** only with `transform_box: "fill-box"` and `transform_origin: "center"`. Without them it turns about the corner of the canvas.
- **What can move.** The SVG widget and groups take no styles, so they cannot be animated. An Image widget can, for example the picture of a fan or an agitator. RadialLabels and FieldSliderVertical must not spin: the animation replaces their own turn.
- **Only these two names.** The pages of the product hold other animations for their own use; their names may change in any release, so a dashboard must not rely on them.

Important

Both animations stop when the viewer's operating system asks for reduced motion, an accessibility setting; the widget then shows its normal look, and transitions happen at once. A blink must never be the only sign of an alarm: change the colour as well, as the [alarm LED](#) does.

The canvas background

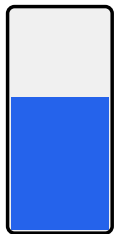
The colour behind the drawing is a setting of the dashboard, not a style: **Background** and **Opacity** in the editor, stored as `#RRGGBB` or `#RRGGBBAA`, white by default.

- **Below 100 % opacity**, a screen shows its own surface through the canvas, which follows the viewer's light or dark theme; a panel shows the dashboard it was opened over.
- **A background that follows the plant** is a widget: a Rect covering the whole canvas, last in the component list, with a `styles` formula. A picture or a gradient behind the drawing is an SVG widget, last in the list.

See [The canvas](#).

Recipes

Each recipe is written for the widget it names, with the variables of a small plant: a tank level `LIT_301`, its high-high switch `LSHH_301`, a pump `P101` and a temperature `TIT_201`.



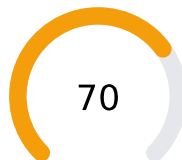
Level bar

60 %, growing upwards

3.42 m
4.31 m

Value label

red above 4.2 m



Gauge by threshold

amber from 60, red from 80



Rounded button

Action button



Dimmed look

opacity 0.4 when not ready

Alarm LED

A Circle of 24 × 24 pixels for the high-high level switch. Red and blinking in alarm, green otherwise, and grey while the switch has no value:

```
Styles {fill: evl(if(LSHH_301, "#DC2626", "#16A34A"), "#9CA3AF"),
stroke: "#1F2937", stroke_width: 2,
animation: evl(if(LSHH_301, "do-blink 0.5s infinite alternate", "none"), "none")}
```

The colour carries the alarm on its own for a viewer whose system reduces motion.

Level bar that grows upwards

Two Rects over the same box, the inside of a 4.5 m tank. The bar is higher in the component list than the tank, so it is drawn over it, and its offsets take away the empty part at the top, as [Offsets](#) explains:

```
Bar, a Rect at x 400, y 100, 60 × 200, above the tank in the list
Y offset      200 * (1 - clamp(to_double(LIT_301) / 4.5, 0.0, 1.0))
Height offset -200 * (1 - clamp(to_double(LIT_301) / 4.5, 0.0, 1.0))
Styles        {fill: if(to_double(LIT_301) > 4.2, "#DC2626", "#2563EB"), stroke: "none"}

Tank, a Rect at x 400, y 100, 60 × 200, below the bar in the list
Styles        {fill: "#F3F4F6", stroke: "#374151", stroke_width: 2, rx: 4, ry: 4}
```

A VerticalGauge draws the same bar without offsets: **Value 2** `LIT_301`, **Max value** `4.5`, and the colour in its `valueStyles`. It draws no track of its own, so the tank Rect stays, after the gauge in the list.

Value label with units

A Label, anchored at its right end so that the digits stay in place while the value changes:

```
Label    evl("%.2f m".format(to_double(LIT_301)), "-- m")
Styles   {fill: evl(if(to_double(LIT_301) > 4.2, "#DC2626", "#111827"), "#9CA3AF"),
          font_size: 20, font_weight: 600, text_anchor: "end"}
```

- `%.2f` writes two decimals with the instance's decimal separator: `3.42 m`, or `3,42 m` where the locale uses a decimal comma. That is right for a label to read; only inside a style does a decimal comma break.
- With `text_anchor: "end"`, the Label's anchor point is where the text ends: place it where the units should end.

Gauge colour by threshold

A RadialGauge for `TIT_201`, on its fixed range of 0 to 100 °C. `styles` draws the grey track, and `valueStyles` colours the value arc by threshold:

```
Value 2      TIT_201
Styles       {fill: "none", stroke: "#E5E7EB", stroke_width: 10}
Value styles {fill: "none",
                stroke: evl(if(TIT_201 > 80, "#DC2626", if(TIT_201 > 60, "#F59E0B", "#16A34A")), "#9CA3AF"),
                stroke_width: 10, stroke_linecap: "round"}
```

Keep `fill: "none"` in both records: a filled arc fills its chord. A Label placed at the gauge's centre shows the number.

Rounded button

For an ActionButton or a FieldButton. It sets its own colours, so it looks the same in the light and the dark theme:

```
Styles {background_color: "#2563EB", color: "FFFFFF", border: "none", border_radius: 8,
        font_size: 16, font_weight: 600, padding: "0px 16px", cursor: "pointer",
        box_shadow: "0 1px 3px #0000004D"}
```

- Setting `background_color` removes the theme's hover and pressed tints; the cursor keeps it reading as a button.
- For a button drawn less than 30 pixels high, add `min_height: "0px"`.

Dimmed look when not ready

The same button, dimmed while the pump is not ready to start:

```
Styles {background_color: "#2563EB", color: "FFFFFF", border: "none", border_radius: 8,
  opacity: evl(if(P101_READY, 1, 0.4), 0.4),
  cursor: evl(if(P101_READY, "pointer", "not-allowed"), "not-allowed"),
  pointer_events: evl(if(P101_READY, "auto", "none"), "none")}
```

`opacity` and `cursor` change only the look. `pointer_events: "none"` also keeps mouse and touch clicks from reaching the button. A keyboard can still press a button that has the focus, so an Action button's script checks the same condition before it acts.

When a style does not show

What you see	Why	What to do
A fill turns black	The colour is a number from a colour function, a Boolean, or a value the browser does not read	Write colours as text: <code>"#16A34A"</code> , or <code>"#%06X".format(rgb(...))</code>
Nothing changes at all	The widget takes no styles: the SVG widget, a group, a linear gauge's <code>styles</code> . Or the key does not apply to its element, such as <code>fill</code> on a button	See SVG widgets and HTML widgets
The look stopped following the plant	The styles formula fails, and the last styles that worked stay	Correct the formula; guard variables that may be missing with <code>evl</code>
A decimal has no effect	<code>format</code> wrote a decimal comma	Pass the number itself
A size has no effect	A text size without a unit	A number for the length keys, or text with its unit
A font differs on some devices	The family is not installed there	End <code>font_family</code> with a generic family
Inputs look different in dark mode	HTML widgets follow the theme	Set <code>background_color</code> , <code>color</code> and <code>border_color</code>
A button no longer changes under the pointer	<code>background_color</code> replaces the theme's tints	Expected: add <code>cursor: "pointer"</code>
A blink does not blink	The viewer's system reduces motion, or the animation is not <code>do-blink</code>	Pair the blink with a colour
A control is taller than drawn	The 30-pixel minimum of the theme	<code>min_height: "0px"</code>
A shape turns about the canvas's corner	The turn has no origin of its own	Add <code>transform_box: "fill-box"</code> and <code>transform_origin: "center"</code>

Next steps

- [Properties every widget shares](#)

- [How dashboards draw and refresh](#)
- [Colour functions](#)
- [Gauges](#)

This page describes Data Orchestrator Dashboards 1.9.4.