

# Line Charts

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Line charts are used to visualise and compare trends over time. They are highly customisable and a popular option for dashboards.

## Component

*[Design System Image]*

*[BLCIconButton Component - Interactive React component]*

## When to use

Line charts work well for satisfying the following user needs, among others:

- Observe trends over time, such as a growth in EV charging stations usage;
- Identify changes or events, such as power outages or peak demand;
- Show data distribution in order to identify possible outliers;
- Compare related data over time, such as EV charging station consumption over July.

They're usually shown as data points connected by straight lines, commonly used to express variations on data over equal intervals of time. While the base axis displays categorical/time-based variables, the vertical axis should display numeric values, which determines the line variation in height.

## Layout options

Line charts are commonly presented in the following layouts:

*[VariantIllustration Component - Interactive React component]*

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*[VariantIllustration Component - Interactive React component]*

## Best practices

Avoid comparing too many datasets in a single chart

The goal of a chart is to communicate trends and changes over time clearly. If the plot area is cluttered with too many datasets, the chart will be less effective at reaching this goal and harder to understand for users.

For most cases, we recommend displaying 1 to 5 plots in a single Line chart. There is no ideal number of lines to include, as this depends on the chart size or the presence of other elements (such as reference lines and underlays) that can increase cognitive load.

*[Design System Image]*

Avoid over-styling bars

Do not choose aesthetic over readability. Anything that could mislead the user and their interpretation of the data should not be altered or added.

*[Design System Image]*

Choosing a baseline

You don't always need to use a zero-value baseline. As the main goal for the line chart is to display changes over time, you don't always have to show data from the zero-value, if it's not meaningful - you can zoom the vertical axis range.

*[Design System Image]*

Using additional features to show variability

Add dashed lines, line with varying opacity, filled space or bar charts to deliver additional information such as deviations, uncertain measures or bounds (e.g. max. & min.)

*[Design System Image]*

Making sure the line chart is the right type for your data

There are several chart types that are visually similar to line charts, that you may want to consider. Make sure you choose the chart type that displays the data in the most meaningful way for your end user.

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## Additional resources

For more in-depth information on how to design bar charts for Eaton, please refer to:

*[BLCIconButton Component - Interactive React component]*

*[BLCIconButton Component - Interactive React component]*

## Related Components

*[VariantIllustration Component - Interactive React component]*

*[VariantIllustration Component - Interactive React component]*