RadialGauge Control Reference

A unified radial gauge that replaces CircularGauge, CenterValueGauge, and RangeCircularGauge for new projects.

Reference **Controls** **Gauge** RadialGauge

The RadialGauge visualizes data from field devices and processes using a circular display. It unifies the behaviors previously split across CircularGauge, CenterValueGauge, and RangeCircularGauge into a single configurable control with presets (Full, SemiCircle, CenterValue, BandedRange). It supports multiple pointer types (Needle, Range, Symbol), a configurable number of colored range bands with individual tag-bindable boundaries, an optional center value annotation, and an optional legend panel.

RadialGauge is 100% Tatsoft source code — no third-party UI library dependency — and runs natively on both Windows (WPF) and the web (HTML5 / WebAssembly).

> **Replaces three legacy gauges for new projects.**
> RadialGauge supersedes CircularGauge, CenterValueGauge, and RangeCircularGauge. Existing displays continue to work unchanged — there is no automatic migration. Use RadialGauge for new work.

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Requirements

This component is Portable. It runs both on Windows and on Web Pages hosted in any platform.

Presets

The Preset property seeds a self-consistent default configuration in a single click. After a preset is applied, every property it touched remains user-overridable.

Preset	Typical use
Full	Classic 270° circular gauge with a needle pointer. The default preset.
SemiCircle	Half-circle gauge (180° sweep) with a needle pointer. Fits in shallow layouts.
CenterValue	Circular gauge with a range-style progress arc and the numeric value displayed in the center.
BandedRange	Circular gauge with three colored range bands (green / orange / red) seeded by default, a visible legend, and a needle pointer. Use for threshold-based visualizations.

Configuration

1. Go to **Displays / Draw**.
2. On the Components Panel, select **Gauges**, then **RadialGauge**.
3. Click or drag-and-drop it on the Drawing area to use it.
4. Double-click the object to open the configuration window.

Fields marked **Static number or tag** *accept either a literal value or a tag/expression reference that is resolved at runtime. All other fields (notably color, font, and enum fields) are design-time settings and do not accept tag/expression bindings.*

General

Field	Description
Preset	One-click configuration template. Selecting a preset updates StartAngle, SweepAngle, PointerType, ShowCenterValue, and LegendVisible to a self-consistent default. Properties remain user-overridable afterward.

Header

Field	Description
Header	Defines the title of the gauge. Accepts a static string or a tag/expression (e.g., `{Tag.Zone1/Name}`) that is resolved at runtime.
Font Size	Sets the font size for the header text.
Font Family	Sets the font family for the header text.
Alignment	Position of the header within the gauge: Top, Bottom, TopLeft, TopRight, BottomLeft, BottomRight. Uses a Grid-based layout so the header and gauge never overlap.
Color	Foreground color of the header text.
Localize	When the header is static text, marks it as localizable so it participates in translation.

Value

Field	Description
Linked Value	Tag or expression whose value the gauge indicates (e.g., `@Tag.Motor1/Speed`).
Min Value	Scale minimum. Static number or tag.
Max Value	Scale maximum. Static number or tag.

Geometry and Rim

Field	Description
Start Angle	Starting angle of the rim arc, in degrees. 0° points up (12 o'clock); angles increase clockwise.
Sweep Angle	Arc length in degrees. 360° draws a full circle.
Show Rim	Toggle the visibility of the rim arc. When off, only ticks, labels, ranges, and pointer are drawn.
Rim Thickness	Thickness of the rim arc stroke. Static number or tag.
Rim Color	Color of the rim arc stroke.

Scale

Field	Description
Show Ticks	Toggles the visibility of tick marks.
Show Labels	Toggles the visibility of numeric labels on major ticks.
Major Ticks	Number of major tick marks (clamped 2..15). Static number or tag.
Minor / Interval	Number of minor ticks between two major ticks (clamped 0..10). Static number or tag.
Tick Color	Color of the tick marks.
Label Position	Inside: labels render inside the rim. Outside: labels render outside the rim.
Label Font Size	Font size for the numeric tick labels.
Label Font Family	Font family for the numeric tick labels.
Label Format	Standard .NET numeric format string (e.g., `G`, `F2`, `N0`, `0.00`).

Pointer

Field	Description

Pointer Type	Primary pointer style: • **Needle**: classic rotating needle from the gauge center to the current value. • **Range**: filled progress arc from the minimum up to the current value. • **Symbol**: small marker sliding along the rim at the current value.
Show Second Needle	When Pointer Type is Range or Symbol, also shows a needle overlay at the current value. Ignored when Pointer Type is Needle.
Pointer Thickness	Thickness of the pointer stroke. Static number or tag.
Pointer Color	Color of the pointer.
Needle Shape	Needle visual: Line (thin stroke), Triangle (wide base), Tapered (narrow base).
Knob Color	Fill color of the center knob at the needle pivot.
Needle Length	Fraction of the arc radius covered by the needle (0.1 to 1.0). Slider in the config dialog commits on release.

Center Value

Field	Description
Show Center Value	Displays the current numeric value in the center of the gauge. Automatically enabled by the CenterValue preset.
Format	Standard .NET numeric format string applied to the displayed value.
Font Size	Font size of the center value text.
Font Family	Font family of the center value text.
Color	Foreground color of the center value text.

Ranges

Each range is a colored band on the scale. Ranges are added via the **Add Range** button; each row's chevron expands to reveal the Offset and Rounded Corner advanced fields. Each range boundary (Start, End) accepts a static number or a tag, so ranges can move at runtime based on live setpoints.

Field	Description
Show	Toggle visibility of this range.
Start	Lower boundary. Static number or tag.
End	Upper boundary. Static number or tag.
Color	Fill color of the range band.
Thickness	Width of the band stroke.
Legend	Display name shown in the Legend panel (when the legend is visible). Leave empty to omit from the legend.
Offset	Radial offset from the rim centerline. Positive pushes the band outward; negative pulls it inward. Useful for stacking multiple bands at different radii.
Rounded Corner	0 for square end caps; greater than 0 for rounded end caps on the range band.

Legend

Field	Description
Show Legend	Show a legend panel listing the named ranges. Automatically enabled by the BandedRange preset.
Shape	Swatch shape: Circle, Diamond, Rectangle, Triangle.
Position	Legend panel placement relative to the gauge: Top, Bottom, Left, Right, Auto.

Runtime Execution

During runtime the RadialGauge reads its bound value and updates the pointer without redrawing the whole gauge on every tick, keeping the visual smooth on busy displays. Dynamic headers (`{Tag.X}`) resolve live from their bound tags. Per-range tag bindings allow range boundaries to move at runtime based on live setpoints or alarm limits. The RadialGauge runs in the same rendering model on both Windows and Web, so visuals match end-to-end.

See Also

- Gauge Controls Reference — all gauge controls in the platform.
- CircularGauge, CenterValueGauge, RangeCircularGauge — legacy controls superseded by RadialGauge.