

AC 3-Phase Calculator

Version 1.0 18 November 2007

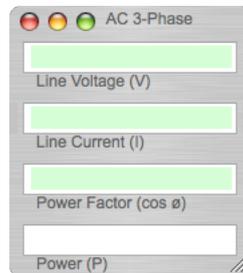
Summary

This is a special purpose calculator which performs simple 3-phase alternating current calculations. Given three of the four quantities voltage, current, power factor and power, the Widget calculates the value of the fourth.

Two formulae are used, one for line voltages and currents, the other for phase voltages and currents.

Instructions

When the Widget is started, it displays a window with four fields.



Enter data into the three green fields, then press the RETURN or ENTER key. The Widget computes the other value and displays it in the fourth field.

Which of the four values is to be computed can be set in the Widget's preferences or by alt-clicking the amber button, which reveals a menu from which the output mode (output field) can be chosen.

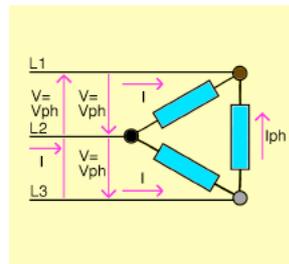
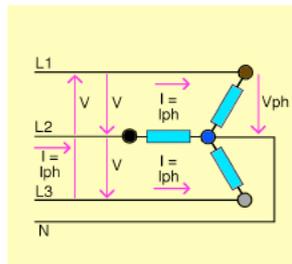
Line and Phase Modes

The Widget uses two formulae, one for **line voltages and currents (V, I)**, the other for **phase voltages and currents (V_{ph}, I_{ph})**. The formula to be used can be chosen in the Widget's preferences or by alt-clicking the green button, which reveals a menu from which the input mode (**line mode** or **phase mode**) can be chosen.

In line mode, the formula used is: $P = (\sqrt{3}) * V * I * \cos \phi$.

In phase mode, the formula used is: $P = 3 * V_{ph} * I_{ph} * \cos \phi$.

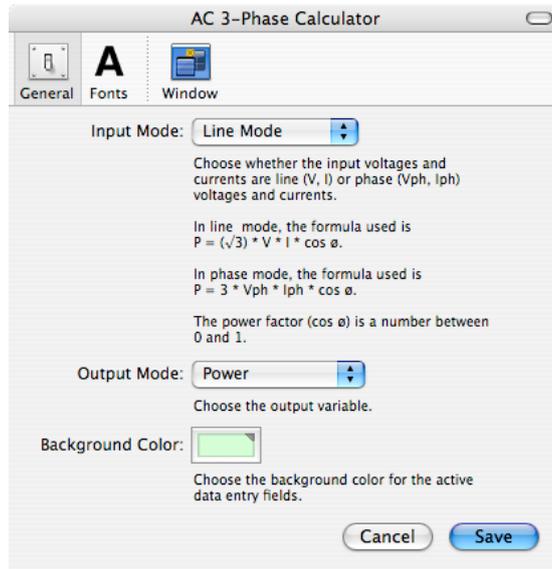
These formulae apply to **both star** and **delta** configurations.



Note that in star configuration: $V = V_{ph} * (\sqrt{3})$ and $I = I_{ph}$,

and that in delta configuration: $V = V_{ph}$ and $I = I_{ph} * (\sqrt{3})$.

Preferences



Dock

The dock shows the **line** or **phase mode** currently in force.

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Widget Concept, Coding and Documentation

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