

Sapling's Converter Box Calculator Instructions

Sapling has created a Converter Box Calculator for our 2-Wire Synchronized Clock System. The purpose of this calculator is to help system installers assess how many converter boxes may be required for a particular project. Each Sapling Converter Box has three outputs (power and data are merged and sent through two wires). An installer may elect to utilize only one output, running all the clocks on one run or choose to utilize all three outputs. This is typically determined by the installation layout. Regardless of how many outputs the installer utilizes, the converter box total power output is limited to 5.5 amps.

The number of Converter Boxes needed depends on:

1. The type and size of clocks (digital or analog); which determines the current consumption.
2. The number of clocks per run and the total number of clocks in the system.
3. The length of each clock run.
4. The wire gauge used.

Instructions for using the Calculator:

Each category is listed within a dropdown box. There are certain limits and ranges we have put into the calculator which are listed below:

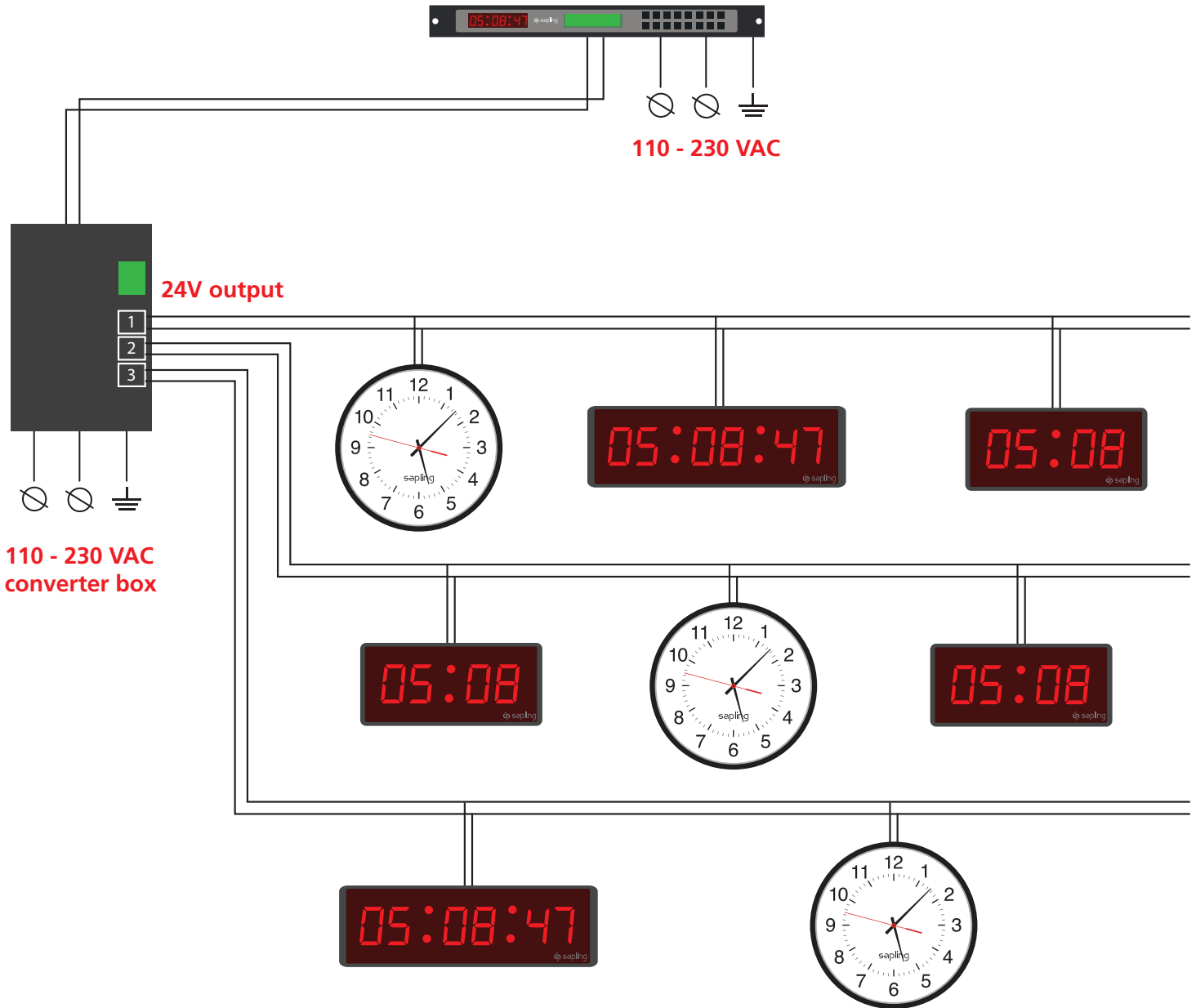
- Wire Gauge: 12AWG (1.31mm²), 14AWG (2.08mm²), 16AWG (3.31mm²)
- Length of Run: 100-1000 ft. (in 100 ft increments), 30-305 meters (in 30 meter increments)
- # of analog clocks: 1-180
- # of 2.5" x 4 digit digital clocks: 0-60
- # of 2.5" x 6 digit digital clocks: 0-45
- # of 4" x 4 digit digital clocks: 0-39
- # of 4" x 6 digit digital clocks: 0-29

To use the Converter Box Calculator, change the variables (number of clocks, wire gauge, and length of run) with the dropdown boxes to the specific installation needs. Please note, you may need to "Enable Editing" if your spreadsheet software asks you to before you are able to change the variables. If the desired clock system installation exceeds the converter box capacity, in either amperage or voltage, the calculator will automatically alert the user if the system will fit onto 1 converter box or if more are needed. In this scenario, you can either use a thicker gauge for the installation, reduce the number of clocks per run, or add more converter boxes. In the event that the calculator is being used for large installations, the total number of clocks is listed at the bottom of the calculator, to ensure all clocks are being included in the project.

*This calculator is only valid for the digital clocks with red LED displays. If using other than red display, please contact a Sapling representative for additional information.

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Converter Box Output Illustration



**Please note that federal, state and local codes supersede Sapling's recommendations and must be followed.*