

Movira 2.8

Control Chart for Individual Measurements

Instructions for Use

This application draws a control chart from a series of individual measurements and helps you to know if these results come from a process which is in a state of stability, ie under control. The control chart shows that the process is not under control when one of these criteria is met, according to the *Western Electric Statistical Control Handbook* :

- One dot beyond a control limit
- Two dots in three successive dots beyond the 2/3 of a control limit
- Eight successive dots on the same side of the average

Movira calculates the average, the virtual sigma and the control limits of a series of individual measurements. The virtual sigma is different from the standard sigma, which is given by Excel or a hand calculator, because it takes into account the order of the numbers in the series. The control limits calculated with the standard sigma lead to wrong conclusions. By definition, the virtual sigma is the average moving range multiplied by 0.886 (statistical constant).

Movira doesn't work with less than 10 data. It can process up to 45 data.

Type the data on the window, one entry at a time, with return after each entry, including the last one. Then click *Go*. The graph and the results appear immediately. The window can't display more than 32 dots, but you can graph up to 45 dots and view them by moving the slider at the bottom of the screen. You can also enter data by writing the series on a word processor, placing the numbers in a column at the left side of the page, each number followed by return. Then copy the column of numbers to the clipboard and paste them on the window.

Movira does not work with negative numbers. If some data are negative numbers, add a plain constant so that the smallest one be positive. Next subtract the same constant from the output.

You can easily save the input and the calculated parameters for using them in another application. Go to the Menu : Special > Data Card. Assign a title to the untitled file (measurement, date) and save it. You can also save the control chart and print it by going to the Menu : Special > Control Chart.

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Versailles, 4 September 2001

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