StdDevOverTimeWithReset

This function returns the standard deviation of all values since the function was reset.

Syntax

StdDevOverTimeWithReset (number, valueTimestamp, resetOption, doReset [optional])

Remarks

The number parameter specifies the data value for which the standard deviation is to be calculated. The valueTimestamp is the timestamp for this data value. (The Timestamp function can be used to obtain this timestamp.) The resetOption specifies when the standard deviation will be reset. This parameter must contain one of the following predefined constants: RESET_HOURLY, RESET_DAILY, RESET_WEEKLY, RESET_MONTHLY, RESET_YEARLY, or RESET_CUSTOM. For example, RESET_MONTHLY will cause the standard deviation to be reset whenever there is a change in the month in the value's timestamp. RESET_CUSTOM will cause the standard deviation to be reset whenever the doReset parameter is set to a non-zero value.

Any value that evaluates to –INF, INF, or NAN will be ignored. If there are no valid values stored, this function will return NAN.

The following equation is used to calculate the StdDev:

$$\sigma(x) = \left(\left(\sum_{i=1}^{i=N} x_i^2 - \left(\sum_{i=1}^{i=N} x_i \right)^2 / N \right) / N \right)^{\frac{1}{2}}$$

where σ(x) is the standard deviation of x, and N is the number of samples.

Examples

Example #1

The following example will return the standard deviation of the variable Temp_F. The value will be reset at the beginning of each day:

StdDevOverTimeWithReset("Server:CR1000.Hourly.Temp_F",TimeStamp("Server:CR1000.Hourly.Temp_F"), Reset_Daily)

Example #2

The following example will return the standard deviation of the variable Rain. The value will be reset on October 01.

StdDevOverTimeWithReset("Server:CR1000.Minute.Rain",Timestamp ("Server:CR1000.Minute.Rain"),RESET_CUSTOM,

ToInt(FormatTime(Timestamp("Server:CR1000.Minute.Rain"), $"%m%d%H%M")) = 10010000)