



Totalizing Calculations Using a Compound Line Equation

We can collect and display accumulation or totalizing information from the data collected, by applying a Totalizing or Accumulating Compound Line equation to the collected data set.

There are two basic scenarios. The first would be simply adding up the events as they are being logged, yielding a total as time goes on. An example would be keeping a running total of the number of pulses or items that are occurring over time. The formula for accomplishing this is as follows:

$$\text{Answer1} = \text{Answer1} + \text{Source0}$$

$$\text{Answer0} = \text{Answer1}$$

Answer1 is the result obtained from performing the calculation.
Source0 is the input variable (from the data graph - each item or pulse) that we wish to accumulate.
Answer0 is the final result that gets plotted to the graph.

This scenario is not time dependent as we are just adding up the number of items as time goes by. (How many cars came off the assembly line for example.)

The second scenario is to log Rate information, such as gallons per minute or items per unit of time and then to apply the totalizing formula to show the accumulated number of gallons or items over the time the data was collected. This is accomplished using the following formula:

$$\text{Answer1} = \text{Answer1} + \text{Source0} * \text{logger.Sample Rate}$$

$$\text{Answer0} = \text{Answer1}$$

Answer1 is the result obtained from performing the calculation.
Source0 is the input variable (from the data graph - the rate that the item is occurring at each recorded sample interval) that we wish to accumulate.
logger.SampleRate is the interval or rate at which the readings were taken.
Answer0 is the final result that gets plotted to the graph.

As this is a rate-based data set, to yield the total or accumulation, the time must be factored out of the data. The data displayed will be influenced by the sample rate of the logger (how often the data was collected) and so this time element must be taken into account.