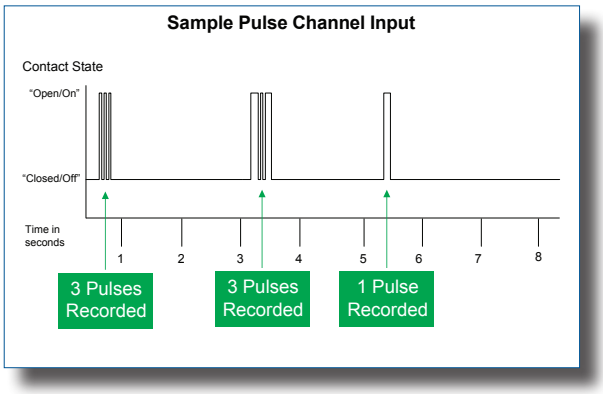
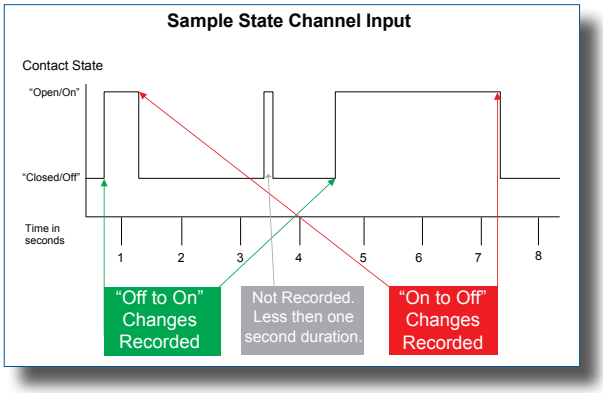
Understanding The difference between a Pulse, State and Event Logger

While they perform similar functions, there are significant differences in the way a Pulse, State and Event logger operates. Most Data Loggers record measurements from their sensors at regular preset intervals. The Pulse, State and Event loggers will always be monitoring but will only record when a State change, Pulse or Event occurs. As the logic behind these three types of measurement is similar, most manufacturers combine these 3 recording types into one logger. Here's a little information on each to help you decide which one is right for your application.

Pulse Logger - For a logger to record a pulse signal, it must be paired up with a sensor that has a pulse output. These types of sensors are cumulative sensors that monitor usage and output a pulse when a predetermined value has been met. Monitoring water flow is a common type of application where a sensor with a pulse signal output and a datalogger would be used. In a typical scenario a flow meter is installed in a pipe and set to output a pulse signal for every gallon of water that flows over its sensor. As the sample data shows, many samples per second are counted, then written to the logger at the interval you set up (1 per second, minute etc.)



State Logger - State loggers are used when you want to record the duration of an event. The logger records a ***time and date-stamped*** record of each change of state (Open to Closed or On to Off). This type of logger is perfect for monitoring door open and closed cycles. The data file created by the data logger can be used to determine how long (seconds, minutes, hours etc.) a device is on or off to calculate run-time. Devices or sensors that output a contact closure, or simple magnetic switch devices, can be used to trigger a change of state.



Event Logger - Event loggers are used when you want to record the number of events that occur, but not the duration. This type of logger records the occurance of an event (a switch going from closed to open) but does not record the time duration of the open or closed state. This type of logging is commonly used to monitor rainfall. To monitor rainfall a "tipping bucket" that holds 10-20 drops of rain is placed at the bottom of the rain collector. As it rains, the weight of the water tips the bucket down, closing the contact momentarily and emptying the bucket. The empty bucket returns to position and the cycle repeats. Since the events are only recorded when it's raining, periods of no rain are not recorded.