PrTrans1000 Trigger Settings

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The PRTrans1000 is a data logger that measures and records transient pressure events. The device constantly samples at 100Hz, but only records to memory, when the user specified trigger settings have been reached.

A critical component of recording transient events pertains to how the start and stop trigger point(s) are set. There are two different modes of triggers: Window and 2-Point.

Window Mode

Window mode is very similar to using an oscilloscope – it starts on a trigger and takes a fixed number of samples. For example, you could set it to trigger when the pressure exceeds 20psi and take 2,048 samples. At the end of 2,048 samples, the trigger would re-set and be ready to take another 2,048 samples should the logger detect another trigger event.

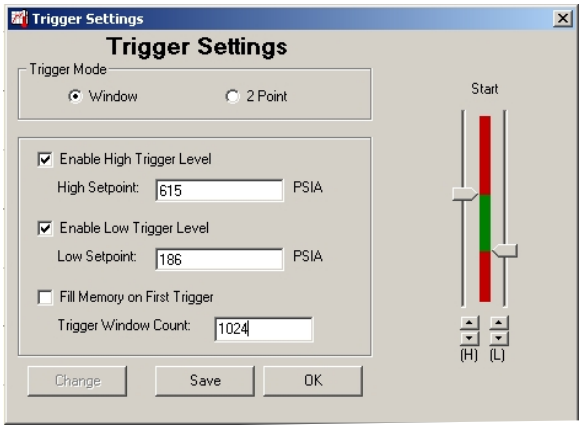

Fig. 1

Window Mode Trigger Levels

In Window Mode, you must enable the High Trigger and/or Low Trigger. A High Trigger level will start an event when the pressure exceeds the chosen level. A Low Trigger level will start an event when the pressure falls below the chosen level. After an event is triggered, the data logger will take a number of samples equal to the number set in the Window Count. If you disable either the High or Low Trigger levels (but not both) the device will not trigger at all in the disabled region.

Consult Fig. 2 for a visual aide in understanding the relationship between the trigger points. *(Note: two sensor signals are displayed to show the high and low triggers only for illustration.)*

If both trigger levels are set, the High cannot be below the Low level. There is also a software determined minimum difference between the levels. The software will warn you if the levels are too close.

Trigger Window count will take the value you enter and round it up to the nearest valid value the data logger can execute.

Fill Memory on First Trigger will fill the entire data logger memory when the first trigger event occurs.

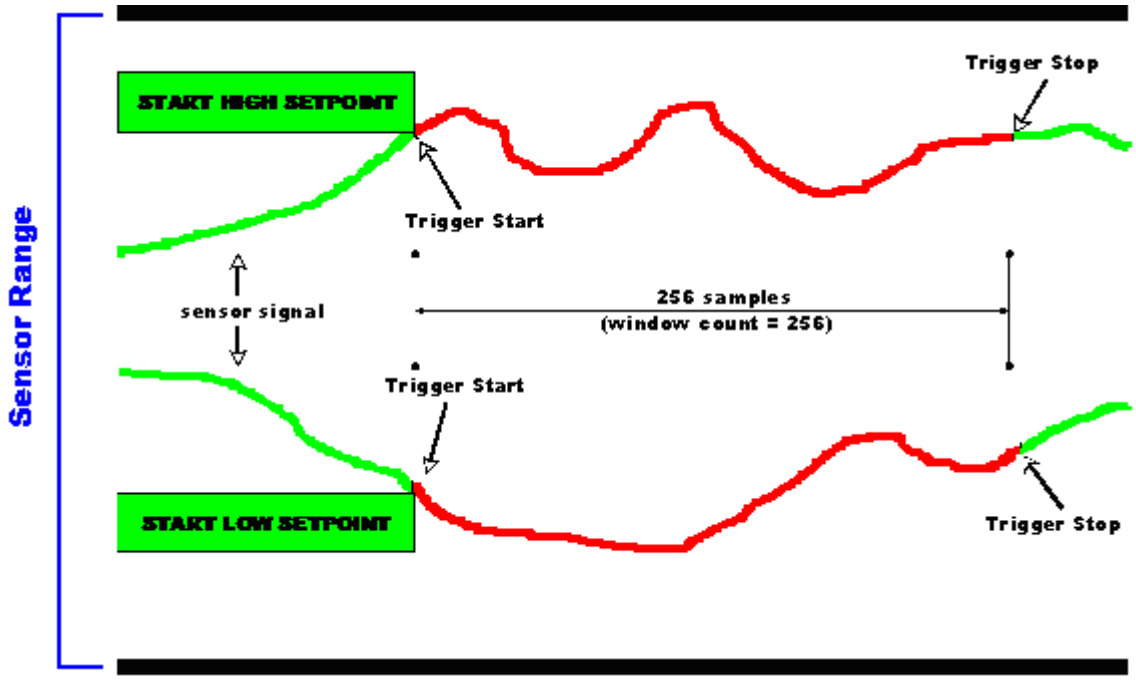

Fig. 2 Window Mode

2-Point Mode

2-Point mode allows for start and stop trigger levels to be set for a High level and Low level. In this mode, the number of samples taken is determined by the time the pressure spends above the high levels or below the low levels.

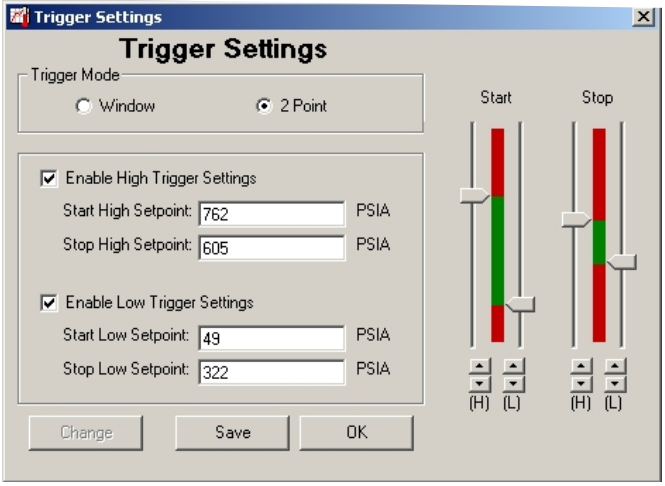

Fig. 3

In 2-Point Mode, you must enable the High Trigger and/or Low Trigger. A High Trigger level will start an event when the pressure is greater or equal to the Start High setpoint and stop when it is equal to or less then the Stop High setpoint. A Low Trigger level will start an event when the pressure is less or equal to the Start Low setpoint and stop when it is equal to or greater than the Stop Low setpoint. If you disable either the High or Low Trigger levels (but not both) the device will not trigger at all in the disabled region.

Consult Fig. 4 for a visual aide in understanding the relationship between the trigger points. *(Note: two sensor signals are displayed to show the high and low triggers only for illustration.)*

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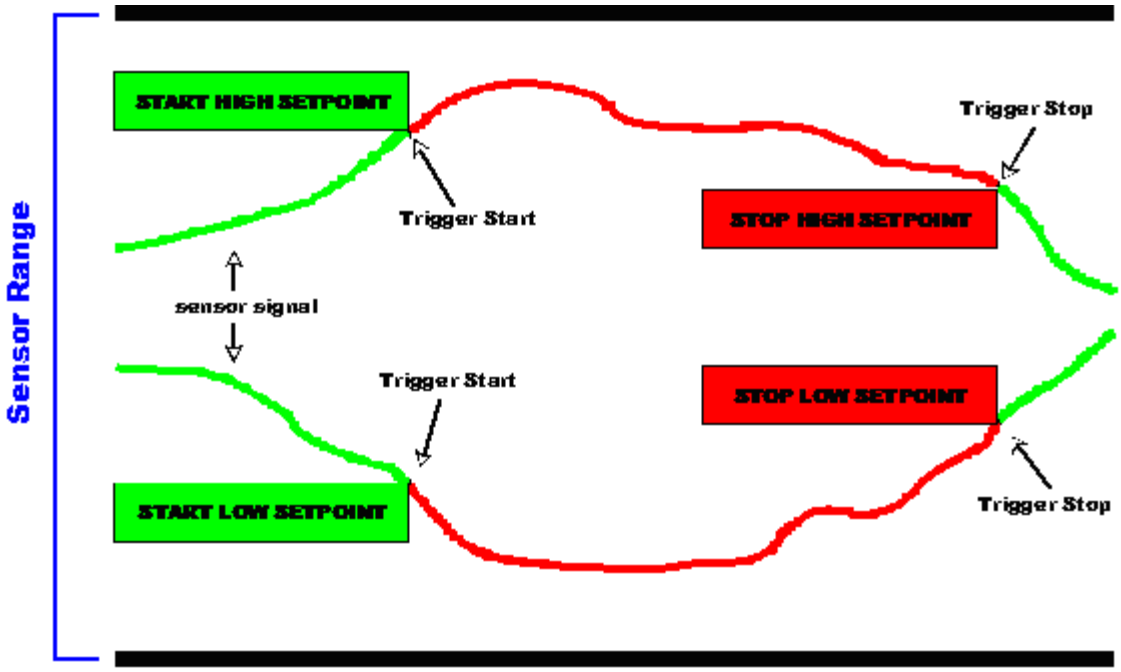
If both trigger levels are set, the High cannot be below the Low setpoints. There is also a software determined minimum difference between the levels. The software will warn you if the levels are too close. Similarly, the Start and Stop setpoints cannot be too close and the software will issue a warning as well if they are.



Pre-Trigger

The PRTRans1000 will record up to 32 samples of pre-trigger for any event, irrespective of trigger mode. The actual trigger event is annotated in the data and graph displays. The pre-trigger data is sampled at the same rate as the post-trigger data. The only time there is less that 32 points of pre-trigger is if the trigger happens too soon after a prior trigger is recorded or if the timer between the start of logging is less that the time equivalent of 32 data points.

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