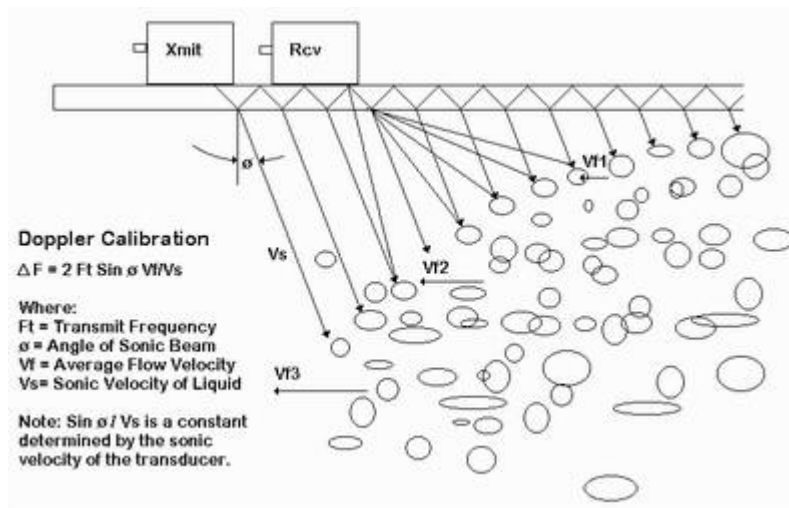


Reflexor™ Doppler Technology – Thanks to Controlotron

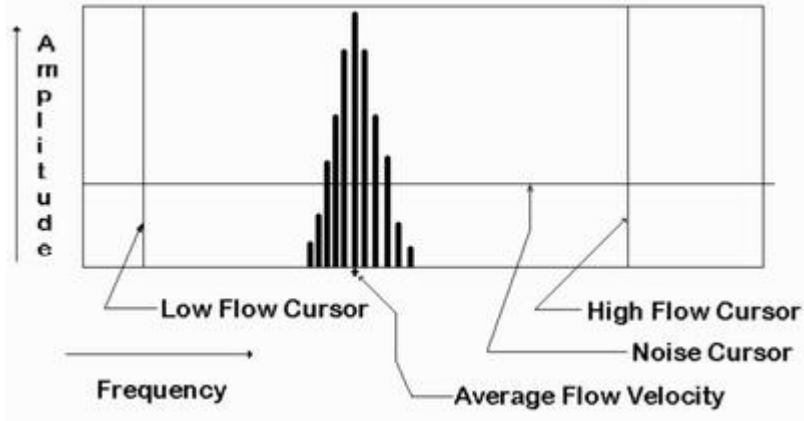
Doppler flowmeters inject sound into the liquid by a transmit transducer at a known angle and reflects off a moving particle or bubble. The frequency is shifted proportional to velocity of the particle or bubble. The reflected signal is captured by the receive transducer and demodulated by the electronics.



Doppler ultrasonic flowmeters work by detecting the change in frequency imposed on an injected Ultrasonic carrier wave as it is reflected from minute particles or air bubbles traveling with the flow stream. As can be imagined, these particles are not all traveling at the average flow velocity, nor even necessarily, in the pipe's axial direction due to local turbulence effects. Even worse, pipe vibration introduces significant additional Doppler signals as it transfers its velocity to the liquid itself.

Reflexor? avoids these problems by approaching flow detection in just the way required. Reflexor? uses Synchronous Demodulation and then qualifies all generated frequencies individually, separating them from each other using Fourier Transformation, a mathematical technique of converting a time varying signal into its component frequencies. Reflexor does all of this in milliseconds, thus the term Fast Fourier Transform: FFT.

Then, Reflexor's? internal microprocessor algorithm goes to work and eliminates those frequency components due to pipe vibration, spurious electromagnetic noise generated by other instruments and those generated by eddy currents and other non-axial liquid flow. Reflexor's? unique Signal Spectrum Display shows you the spectrum and lets you identify and exclude unusually high levels of non-flow noise signals.



Now, Reflexor? precisely computes flow by mathematical analysis of the remaining spectrum. This entire process takes only milliseconds, so that Reflexor? can report flow as fast as 10 times per second.