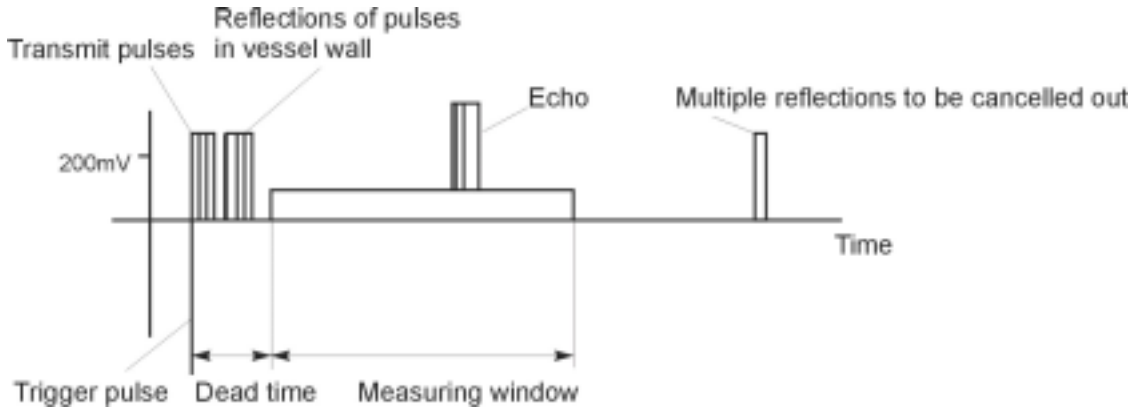
Measuring principle – SONOMETER/SONOCONTROL

SONOMETER and SONOCONTROL are novel ultrasonic measuring devices using sensors installed to the outside of tanks or pipes. Ultrasonic signals are continuously transmitted through the wall and into the liquid. The received echo signals are evaluated in the electronics. The measured value is available as switch output and/or as analogue and/or digital signal.

The liquid medium should only contain a small amount of gaseous or solid content. The tank bottom should be free of or be covered by only a little amount of deposit material.

The material of the tank can be any homogenous material such as plastic, glass, stainless steel or similar.



The SONOMETER/SONOCONTROL units transmit ultrasonic pulses through the vessel wall. Signal reflections within the vessel wall must be filtered out. The ultrasonic signals travel through the liquid medium at the speed of sound, which is specific to the medium. The signals are reflected by the surface of the liquid. The ultrasonic sensor receives the signal reflections again. The time-of-flight of the signals is proportional to the liquid surface level. Any false multiple reflections are cancelled out.

SONOMETER

The SONOMETER units are continuous level measuring instruments for liquid media. The ultrasonic sensor is mounted to the bottom of the tank or vessel. The time-of-flight of the ultrasonic signals through the liquid is an indication of the surface level of the medium. The level information is available as an analogue output. Additionally, switch outputs are provided for high/low level alarms.

SONOCONTROL

The SONOCONTROL units are suitable for point level control or pipe empty detection applications. The ultrasonic sensors are mounted to the side of the vessel or pipe. A reflection signal within the measuring window indicates the presence of the liquid. No reflection signal means that there is no liquid present at the measuring point. The SONOCONTROL units provide this information as a switch output.