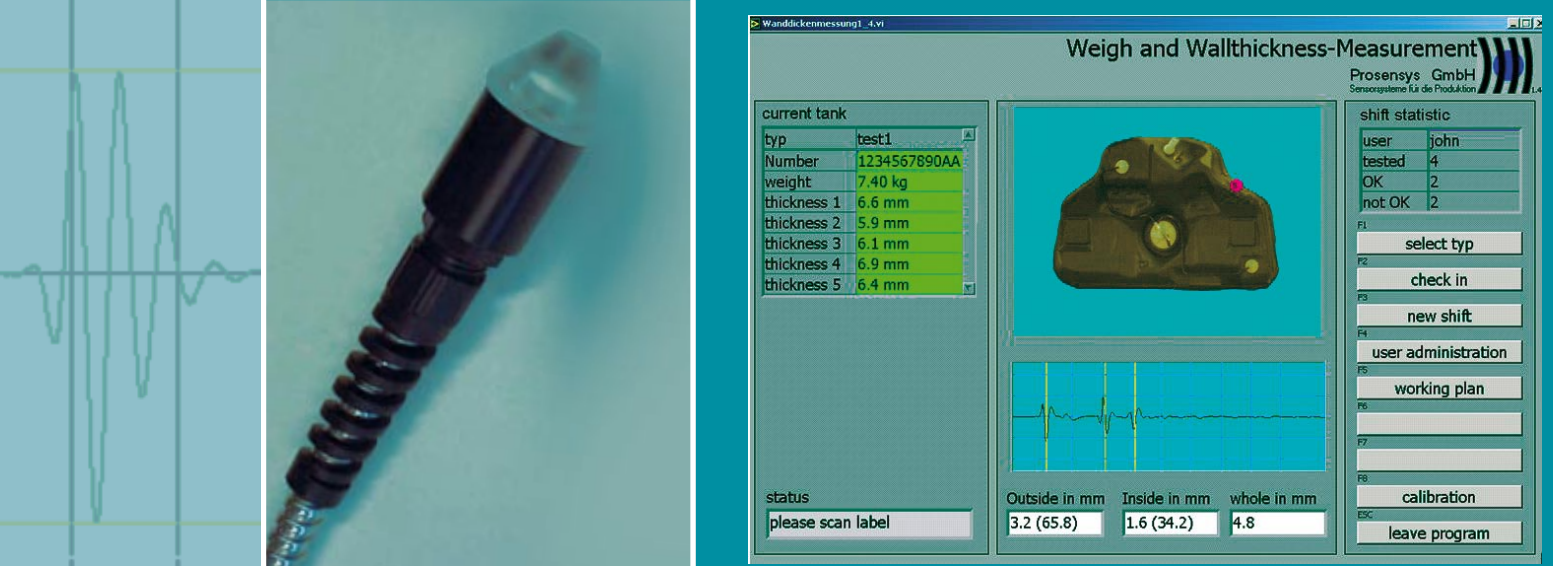


Ultrasonic Thickness Measurements with PCBased UltraSonic Instruments

Type: USWT



Background

(Wall-) thickness measurements are one of the most common applications of ultrasonic technology. Knowing the speed of sound of your material, the thickness is calculated by measuring the time of flight. One of the big advantages is that the object must be accessible only from one side. Simple devices are offered from many different suppliers. A lot of these devices only provide a digital display with the result in numbers. The received raw signal is not displayed. While this is satisfactory in many cases, more challenging measurements may cause problems. Wall thickness measurement for plastic fuel tanks is such an example. The wall of a coex fuel tank consist of a multi-layer structure and without showing the raw signal you are not sure to measure the total thickness or only a part of the multilayer structure. An automatic

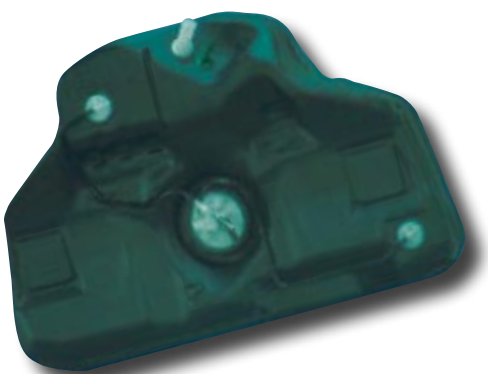
detection algorithm for the correct measurement is typically not included.

Today in many manufacturing lines documentation of quality/parameters is an important item. Measured data must be stored together with the identification code of the part measured. Therefore some of the above mentioned devices can be connected to a computer via serial interface. The result is to have the computer and the ultrasonic device and some confusing cables.

Solution

PCBased UltraSonic Instruments of MACEAS

With PC based Ultrasonic Instruments from **MACEAS** custom designed solutions can be realized fast and with high efficiency. Our ultrasonic kit for PC consists of the **MACEAS** ultrasound module, a standard PC card with integrated digital signal processor and a well chosen transducer depending on the application in a very robust housing. Last but not least intelligent software makes the measurement reliable in your manufacturing line.



Your advantages

- Clear and well arranged display
- Easy check of your measurement by displaying the raw signal
- Database functions included in measuring software
- Interfaces for peripheral devices (barcode scanner)
- Robust measuring head
- Robust cable for industrial use
- Automatic system check within each measurement
- Ultrasonic kit for existing PC (condition: free ISA-Bus slot long) or stand alone system in industrial PC

Ultrasonic Thickness Measurements with PCBased UltraSonic Instruments

Ultrasonic Wall Thickness Kit for PC

- **MACEAS** Ultrasound module with DSP
- Standard PC-Card
- customer-specific selected ultrasound transducer



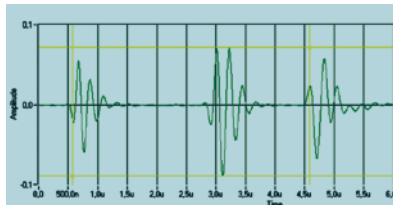
MACEAS ultrasound module with digital signal processor



Robust housing including transducer

Wall thickness measurements on plastic fuel tanks

One example is wall thickness measurements on a plastic fuel tank. Independent of the used material, single or multilayer structure, mono or coex tank, the **MACEAS** ultrasonic kit automatically measures the correct thickness. No additional wiring is required because the ultrasonic device is a part of the documentation PC. No additional Software required to connect two devices. Handheld or automatic barcode scanner can be connected easily to the PC for parts identification.



Raw signal from coex fuel tank

Appropriate to

- Plastic Fuel Tanks
- many further materials

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