

Ultrasonic Coating Thickness Measurement



QuintSonic 7

Coating Thickness Gauge

- for paint, lacquer and plastic coatings on plastic, metal, wood, ceramic or glass substrates
- from 10 µm coating thickness
- extended measuring range up to 7mm
- up to 5 layers in one operation
- also suitable for GRP and CRP

A-Scan on Graphic Display

QuintSonic 7 Precision through Innovative Technology

Ultrasonic thickness gauge for measuring paint, lacquer and plastic layers applied on plastic, metal, wood, glass and ceramic. Up to five layers can be measured non-destructively in one operation.

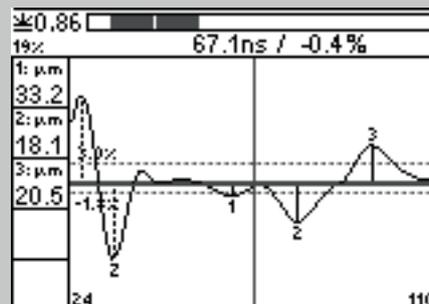
Thanks to the innovative technology, QuintSonic 7 is the first gauge of its kind to determine exactly the layer thickness of GRP and CRP components.

Particularly innovative is the A-scan image function that is available on the graphic display without the need to connect the gauge to a PC. This enables utmost reliability of measurement in any situation and makes QuintSonic 7 the ideal gauge for on-site use, use in the laboratory or use on the shop floor. QuintSonic 7 offers a wide range of applications in the automotive industry, aircraft manufacturing or any other industrial branch where accuracy is of high importance.

Additional feature: QuintSonic 7 can also be used for measuring thin substrates through the coating.

Based on the reflection of ultrasonic waves, the intelligent sensor of QuintSonic 7 emits an ultrasonic pulse through the layer system. When the ultrasound beam crosses a boundary between two layers or to the substrate, some of the ultrasound energy is reflected. Such reflections are picked up by the sensor and evaluated according to the sound velocity in the given medium to give you the layer thickness. Special feature of QuintSonic 7: the gauge combines state-of-the-art sensor technology and innovative software to provide a high-precision measuring system for applications that couldn't be solved so far.

The QSoft7 Basic Edition PC software supplied with the gauge provides A-scan images allowing most convenient parameter setting adapted to your measuring task. This allows to optimise measuring results considerably. Parameter sets are used to define measuring ranges, interference suppression, evaluation of sound echoes as well as expectancy or blocked domains. Unwanted echoes caused by fibers of GRP or CRP substrates, for instance, will be attenuated by blocked domains accordingly.



Screen shot of a 3-layer system

Another challenge in ultrasonic coating thickness measurement are layers exhibiting very similar material properties. Their impedance values do not vary significantly enough in order to provide clear echo signals. The innovative clipping function of QuintSonic 7 offers a solution to this problem so that also very weak echoes can be clearly distinguished. Thus even very difficult settings of task of this kind can be solved with utmost reliability and precision.

Additional comfort is added by the possibility to determine the sound velocity by means of reference samples. Once the sound velocity of a given material has been determined, it can be stored in the data base to be available for further measurements. This helps to cut the time expense for the set-up of your measuring tasks to a minimum.

Supply Schedule

- QuintSonic 7 with sensor in carrying case
- QSoft7 Basic Edition software
- Operating instructions on CD ROM
- coupling agent (gel/glycerine)
- One-layer reference sample
- USB adapter cable
- 4 x AA batteries

Optional Accessories

- Data printer MiniPrint 7000
- Quick charger for NiMH batteries
- Mains unit
- Shoulder bag
- Protective rubber cover with positioning device and shoulder strap
- Multi-purpose connection box with USB cable for connecting mains unit, footswitch, alarm device, headphones, RS232 adapter cable
- QSoft7 Professional Edition data management software
- IrDA/USB converter

Technical Specifications	
Measuring ranges:	356 μm, 890 μm, 1900 μm, 3900 μm, 7500 μm (at 2375 m/s ultrasonic velocity in all layers)
Min. layer thickness:	approx. 10 μm (depending on the ultrasonic velocity in the layer)
Measuring area:	5 mm Ø / 0.2" Ø
Contact area:	10 mm Ø / 0.4" Ø
Resolution:	0.1 μm
Accuracy:	± (1 μm + 1% of reading)
Number of batches:	300 (max.)
Number of storable readings:	approx. 250,000 readings in total
Statistical functions (per batch):	n, min, max, mean value, standard deviation, coefficient of variation, block statistics (norm-conforming / user adjustable), histogram, trend diagram
Calibration:	Sound velocity calibration for up to 5 layers
Measuring units:	μm, mm, mils
Operating temperature:	+5...+50°C
Storage temperature:	-10...+50°C
Data ports:	IrDA® 1.0, USB and RS232 via adapter cable (available as an option)
Power supply:	4 x AA (LR06) batteries, mains unit as an option (90 - 240 V~ / 48 - 62 Hz)
Norms and standards:	DIN EN ISO 2808
Display:	160 x 160 pixel LCD, backlight
Dimensions:	153 mm x 89 mm x 32 mm (basic unit); dia. 25 mm x length 60 mm (sensor)
Weight:	310 g (basic unit incl. batteries), 80 g (sensor)

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