

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 7 mm
- 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.

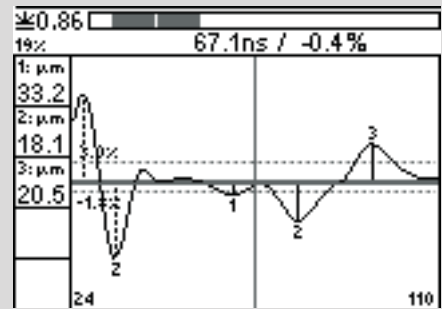
Thanks to the innovative technology, QuintSonic 7 is the first gauge of its kind to determine exactly the layer thickness of GRP and CRP components.

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 QSoft basic PC software supplied with the gauge provides A-scan images of your measuring application allowing you to set up parameter sets most conveniently in order to optimise the measuring results. Parameter sets are used to define the measuring range, interference rejection, evaluation of sound echoes as well as expected ranges or stop-bands. False echoes as they may be caused by fibres of GRP or CRP substrates, for instance, will be attenuated by setting stop-bands accordingly.



Screen shot of a 3-layer system

Another challenge in ultrasonic coating thickness measurement are layers having very similar properties. The difference of impedance values associated with such layers are not sufficiently significant to provide clear echo signals. The innovative clipping functions of QuintSonic 7 offer 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 give medium is determined, it can be stored in the data base to be available for further applications. This helps to cut the time expense for the set-up of your measuring applications to a minimum.

Technical Specification	
Measuring ranges:	300 μm, 700 μm, 1,5 mm, 3,1 mm, 5,9 mm (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 Ø:	11 mm
Resolution:	0,1 μm
Accuracy:	± (1 μm + 1%) of reading
Number of measuring series:	500 (max.)
Number of storable readings:	approx. 250,000 readings in total
Statistical functions (per measuring series):	n, min, max, mean value, standard deviation, coefficient of variation, block statistics (norm-conforming / user adjustable), process capability Cp and Cpk, histogram, trend diagram
Monitoring of limits:	Visual and audible alarm when exceeding limits
Measuring units:	μm, mm, mils, inch
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, via mains unit as an option (90 - 240 V~ / 48 - 62 Hz)
Norms and standards:	DIN EN ISO 2808:2007, ASTM D6132 - 08, SSPC-PA 9
Display:	160 x 160 pixel LCD, back-lit
Dimensions:	153 mm x 89 mm x 32 mm (basic unit); Ø 24 mm x 100 mm (sensor)
Weight:	310 g (basic unit incl. batteries), 80 g (sensor)

Supply Schedule

- QuintSonic 7 with sensor in carrying case
- Operating instructions on CD ROM
- 2 x 100 ml 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
- QSoft professional data management software
- IrDA/USB converter

ElektroPhysik

ElektroPhysik
 Pasteurstr. 15
 D-50735 Köln
 Tel.: +49 (0) 221 75204 0
 Fax: +49 (0) 221 75204 67
 www.elektrophysik.com
 info@elektrophysik.com

ElektroPhysik USA
 778 West Algonquin Rd.
 Arlington Heights IL 60005
 Phone: +1 847 437 6616
 Fax: +1 847 437 0053
 www.elektrophysikusa.com

