FOERSTER

SONODUR PRODUCT FAMILY

High quality UCI - and Leeb-measuring technology for fast and reliable hardness testing on metallic components and materials (formerly NewSonic)

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Mobile hardness testing with UCI and Leeb measuring technology. The non-destructive UCI test method (Ultrasonic Contact Impedance) as well as the Leeb test method enable fast and mobile measurement as a supplement to the classical hardness test. Due to the compact measuring probes and sensors of the SONO series, the devices can also be used in difficult test positions and with complex component geometries.

Fields of application are e.g. incoming goods inspection, mix-up testing, production control, quality assurance, weld seam testing, cut edge testing, maintenance on installed components as well as the replacement of dynamic hardness testers for small material thicknesses (below 50 mm, e.g. boilers, tubes).

In the UCI method, the entire contact area of the Vickers diamond is used in the calculation of the hardness - (not only the diagonal or the diameter as in the classical hardness measurement). Consequently, this method is also characterized by a lower susceptibility to unsymmetrical asymmetrical test indentations.

The small indentation size and depth of the test indentation also allow the test part to be reused. This method can therefore be regarded as non-destructive. Further advantages are the easy automation and the high reproducibility. Our product portfolio includes the SONODUR 3 for mobile on-site hardness testing and the SONODUR R for automated mass production. In addition, we offer hand and motor probes of the SONO series with different test forces from 1 N to 98 N according to the UCI method, as well as hand sensors for different applications with the Leeb rebound method.

YOUR ADVANTAGES AT A GLANCE

Fast hardness testing: Mobile and non-destructive measurements within seconds

Maximum flexibility: Reliable testing on complex geometries and hard-to-reach areas

Minimal indentation: Preserves component surfaces and enables component reuse

High reproducibility: Stable and precise measurement results

Wide application range: Ideal for incoming inspection, production, QA and maintenance

Flexible probe portfolio: Different probes and test forces for diverse applications

Rugged industrial design: Reliable and easy to use in daily operation

Automation-ready: Supports operator-independent high-throughput testing

NORMS

- **ASTM A1038**
- **DIN 50159**

SONODUR 3

Portable, high-quality and suitable for industrial use - the user-friendly SONODUR 3 sets standards in the field of mobile materials testing

Standards in the field of mobile material testing. The mobile SONODUR 3 is robust, suitable for industrial use and specially designed and built for rough everyday use. It has a high functionality level similar to that of modern smartphones. The powerful energy concept has up to eight hours of battery life in continuous operation.

The software of the SONODUR 3 is based on the future-proof Android platform with almost any expansion possibilities. The device is thus ideally equipped for daily use as a "workhorse" in hardening and industrial plants with outdoor operations as well as for tasks that are increasingly being discussed today in connection with comprehensive communication in production lines, keyword IOT.

The SONODUR 3 masters the evaluations of the hardness testing methods UCI (Ultrasonic Contact Impedance) and the rebound hardness testing according to Leeb.

In the area of UCI hardness testing, the instrument works with cable-connected probes of the SONO-H/M/S series. These are available in different versions and test loads. Hand-held probes are available in the standard test loads 10 N, 30 N, 49 N and 98 N. Motor probes are available in 1 N, 3 N and 8.6 N versions. For tripod probes, there are test forces of 10 N, 49 N, 98 N.

The sensors for rebound hardness testing according to Leeb are connected wirelessly, via Bluetooth with the SONODUR 3. The SONO L rebound sensors are available in the D-C/D/G version. Wired Leeb probes are also available and eliminate the need for separate charging.

The mobile high-tech all-rounder is used for quality control in incoming goods and during production, as well as for rapid hardness testing of metallic materials after heat treatment or surface processing. The system is also excellently suited for hardness testing at positions that are difficult to access and for mobile weld seam testing in confined spaces. The layer hardness measurement with several measuring points and its easy adjustment functions on almost all fine-grained, homogeneous materials round off the SONODUR 3's range of applications.

YOUR ADVANTAGES AT A GLANCE

Industrial-grade, rugged design: Permanently available

Multitouch software design based on Android: Easy and intuitive handling of the software. All information at a glance by means of graphical display of measured values and tolerance thresholds

Data transmission via WLAN, Bluetooth, USB: Well prepared for future tasks

Large, flat and armored color display incl. protective foils: Long service life, easy to clean

Maximum flexibility: SONODUR 3 has the largest range of UCI test probes on the market

Unique combination option with Leeb sensors via Bluetooth: 2 in 1 concept

Standardized test method: UCI method - Our expertise for your safety

NORMS

ASTM A1038: Defines the UCI hardness testing method, in which material hardness is determined by measuring the frequency shift of a vibrating probe with a Vickers indenter.

ASTM A956: Defines the Leeb hardness testing method, in which material hardness is determined from the rebound behavior of an impact body.

ASTM E140: Defines conversion relationships between different hardness scales, including Brinell, Vickers, Rockwell and Leeb hardness.

DIN 50159: Specifies a hardness testing method for metallic materials using the UCI (Ultrasonic Contact Impedance) technique.

DIN EN ISO 16859: Defines the Leeb hardness testing method for metallic materials, in which dynamic hardness is determined from the impact and rebound behavior of an impact body.

DIN EN ISO 18265: Defines the principles for converting hardness values between different hardness scales and estimating tensile strength.

TECHNICAL INFORMATION

OPERATING SYSTEM:	Android 7.0
OPERATING TIME:	>10 h in measurement mode (depending on system settings and operating conditions)
PROTECTION GRADE:	IP65
QUALIFICATION:	suitable for industrial use according to MIL-STD-810G method
TEST METHOD:	UCI method, according to DIN 50159 1,2-2021, ASTM A1038 2019
REVALUTATIONS:	according to the latest ASTM E140-12b (2019) and EN ISO 18265:2019
DIMENSIONS DISPLAY UNIT:	approx. 164 × 86 × 23 mm
WEIGHT INDICATING INSTRUMENT:	approx. 320 g (incl. battery pack)
SCOPE OF DELIVERY:	— SONODUR 3 Display Unit — Carrying case — Power supply — USB cable — Connection cable — Operating instructions — Screen protector

ACCESSORIES

SONODUR 3 - DUPLEX CHARGING STATION
Charging station with two charging slots for single or dual charging of SONODUR 3 devices

SONO STUDIO
Statistics and logging software for SONODUR products

HARDNESS REFERENCE BLOCKS
Hardness reference blocks for UCI- and Leeb meassuring technology

ADAPTER PLATE FOR TRIPODS
Smart, safe and fast - the adapter plate for the SONODUR 3 in combination with a tripod

SONO H
Handheld UCI Measuring Probes for Flexible Hardness Testing

SONO L
Bluetooth Leeb rebound sensors for fast and reliable hardness testing

SONO M
Motorized UCI Measuring Probes for Maximum Repeatability

SONO S
Guided UCI Measuring Probes for Reliable Everyday Hardness Testing

WIRED LEEB PROBES
Always ready, no charging required

SONO MS 1 (M)
Operator-independent, highly accurate and flexible precision tripod

SONO MS 2 (M)
The all-rounder among tripods - adjustable, highly accurate and highly flexible

SONO PS 1
Measurement tasks with small installation space and when precisely checking the probe calibration

SONO PS 2
Operator-independent precision stand for semi-automatic hardness testing

RECALIBRATION OF MOBILE PRODUCTS
Recalibration guarantees the accuracy and quality of your test and measurement values

SONODUR R

The world's only UCI hardness tester suitable for fully automated production lines with the possibility of 100% process monitoring in mass or series production

100% process monitoring in mass or series production. With its 19" housing dimensions, the SONODUR R is ideally suited to be used in fully automated production lines and as a tabletop device. The familiar android-based software of the SONODUR 3 is optimally adapted to the clear 7" LED touch screen of the SONODUR R.

Thanks to USB and a fully isolated, digital I/O interface, the device is currently the only fully automatable UCI hardness measuring system in the world. Setpoints can be used to directly control actuators such as good/bad sorting switches.

The SONODUR R combines all the advantages of the SONODUR 3 mobile hardness tester with the requirements of a device for integration into a fully automated process line. All UCI SONODUR handheld and motor probes can be used without restrictions due to high-resolution, digital signal processing technology.

The instrument works with wired probes of the SONO H/M/S series. These are available in different versions and test forces. Hand-held probes are available with standard test loads of 10 N, 30 N, 49 N and 98 N. Motor probes are available in 1 N, 3 N and 8.6 N versions.

The main areas of application are the measurement of series parts after heat treatment and/or surface processing as well as coating hardness measurement on gravure cylinders.

YOUR ADVANTAGES AT A GLANCE

Safety and cost savings: fully automatable UCI hardness testing for 100% process monitoring

Operator-independent measurements: Reproducible measurement for the highest quality requirements

Maximum flexibility for a wide range of applications: Ideally suited for use in fully automated production lines, but also for use as a benchtop device

Android-based software design: Easy and intuitive handling of the software

Large number of commercially available interfaces: Max. Flexibility for connection to third-party systems

The largest range of UCI test probes on the market: Maximum flexibility

Test method UCI method: Our expertise for your safety - Complies with DIN 50159-1,2-2021, ASTM A1038-2019

NORMS

DIN 50159: Specifies a hardness testing method for metallic materials using the UCI (Ultrasonic Contact Impedance) technique.

ASTM A1038: Defines the UCI hardness testing method, in which material hardness is determined by measuring the frequency shift of a vibrating probe with a Vickers indenter.

TECHNICAL INFORMATION

OPERATING SYSTEM:	Android 7
INTERFACES:	— On / Off — Digital I/O, Digitale Input/Out signals, galvanically isolated — USB (device) for software updates — COM1- serial interface RS232 data output and remote control galvanically isolated — Probe cable, connection socket for probe cable coded and locked (push-pull)
POWER SUPPLY:	24 V DC in / 1A min.
DIMENSIONS - DEVICE:	approx. 133 × 236 × 314 mm (H × W × D) (360 mm with handle, suitable for 19" housing dimensions)
WEIGHT - DEVICE:	approx. 3400 g
SCREEN:	7" PCT touch screen, TFT display with LED lightning

ACCESSORIES

HARDNESS REFERENCE BLOCKS
Hardness reference blocks for UCI- and Leeb meassuring technology

SONO H
Handheld UCI Measuring Probes for Flexible Hardness Testing

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Motorized UCI Measuring Probes for Maximum Repeatability

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Guided UCI Measuring Probes for Reliable Everyday Hardness Testing

SONODUR 3 LITE LEEB

Essential Leeb hardness testing performance – proven quality for mobile applications

Essential Leeb performance. Proven quality. The SONODUR 3 LITE LEEB is dedicated to pure Leeb hardness testing: focused, reliable, and uncompromising in accuracy. It uses the same high-quality probes and delivers the same precision as the SONODUR 3, while leaving out additional functions. Designed for straightforward operation, the LITE LEEB version omits camera features such as image storage, barcode naming, and DataMatrix adjustments.

UCI probe compatibility and Wi-Fi connectivity are not included; data transfer takes place via USB connection to your computer.

Alongside the Bluetooth-enabled probes, new wired Leeb probes now offer even greater flexibility. Choose from wired Leeb D and G or Bluetooth Leeb D, G, and DC probes.

YOUR ADVANTAGES AT A GLANCE

User-friendly: The probes are easy to handle and can be mastered within minutes.

Fast measurement: Perfect for serial testing of larger components.

Comprehensive data storage: All relevant results can be saved, e.g. as Excel or TXT files.

Replaceable impact body: The Impact body can be replaced by the user at any time – no need to send the unit in.

Automatic Conversion to All Common Hardness Scales: Instantly displays results in any customer-specified scale (HV, HB, HRC, HRB, etc.) according to EN ISO 18265-2019, ASTM E140-2019 and EPRI correlation P-91 2020 standards.

NORMS

ASTM A1038: Defines the UCI hardness testing method, in which material hardness is determined by measuring the frequency shift of a vibrating probe with a Vickers indenter.

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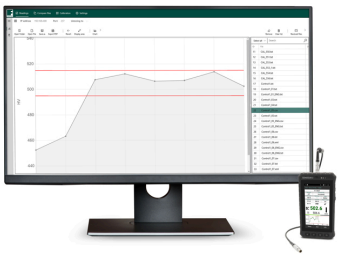

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Always ready, no charging required

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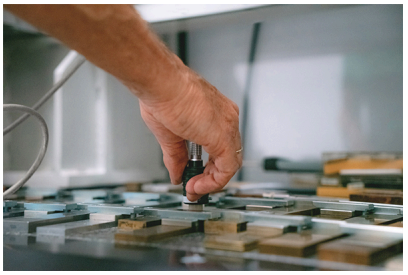

RECALIBRATION OF MOBILE PRODUCTS
Recalibration guarantees the accuracy and quality of your test and measurement values

FOERSTER

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