

Ultrasonic Contact Impedance (UCI) Hardness Tester SonoDur2



Standardized Robust Simple Fast Precise

SonoDur2 UCI (ultrasonic) portable hardness tester made by NewSonic represents the best quality of German engineering. This model has high accuracy on almost any type of applications, whether the parts are big or small, smooth or rough. It is very easy to use, even for beginner users. Material settings and hardness settings can be customized to your unique applications. It's an investment that will pay for itself through the quality of your products.

Overall features:

- Conform to ASTM, DIN standard
- Bright TFT color display, touch screen
- Windows embedded full alphabet keyboard
- Display dwell time with count down
- Menu provide step-by-step guideline
- Unlimited onboard storage (32GB)
- Motor & hand probe test force 1N-98N
- Covers most hardness scales and materials
- Interface: USB, bluetooth
- Made in Germany

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Standard accessories:

Main unit with probe connection cable (1.5m)
SONO-50H handheld probe 49N (5 kgf), standard
Data logger
SONO-NG charger/adaptor with USB cable
SONO-TK-1 carrying case
SONO-CD product USB drive including operation manual
SONO-Protect protection foil for touch screen
Manufacturing certificate

Advantages of SonoDur2:

Light-weight, robust case with IP54 protection
Hardness measurements on surfaces in virtually any direction
Stable measurement results even without attachment sleeves/tripod
Stable accuracy with minimum secure handling
Precise positioning for selective measurement – especially on small test spots
All information at a glance, bright TFT-colour-display (readable even in sunlight)
Intuitive Instrument navigation through the menu via touch screen and illuminated Keypad
“Unlimited“ data storage capacity (32 GByte max.), transfer via USB, Bluetooth, WLAN
Cost effective repair work due to modular probe design
100% availability due to fast exchangeable LiPo battery pack
Field-updatable operating system allows you to keep pace with current developments
Hardness to hardness and hardness to tensile strength for all material tables in EN ISO 18265:2014, ASTM E140-12bE1 (2013) and DIN50150 (2000, Table 1, Steel)
Immediately ready for testing on selecting a material table due to pre-adjustment corresponding to the specific Young’s modulus
Low load hardness testing with precision - the best that money can buy!
Precision probes with motor driven test load on scratch sensitive surfaces.
Highly accurate measurements: apply low test loads due to uniform and automatic indentation of the Vickers diamond even for untrained personnel.
Curved surfaces: SONO-PM-4 probe attachments guarantee an optimal test position by strict perpendicular and concentric material contact.
SONO-8M, HV0.9 (8.6N): General production control in metal fabrication industries, testing of gear teeth in heat treatment shops (induction hardening)
SONO-1M, HV 0.1 (1N) and SONO-3M, HV0.3 (3N): Test very hard surfaces (Plasma-nitride, Chrome plating >1000HV), very soft and floating materials like Copper Plating via penetration time related measurement according to specification between 1 and 99 seconds, an precious (small) parts with damageable surface for material sorting .
There are few alternatives compared to the UCI-Method to be used at the same time on soft aluminum (here EN573) as on hard metal with test loads between 1N and 8.6N (motor probes) and 10N to 100N (handheld probes).
SonoDur2 is the most versatile hardness tester compared to all others because of testing from soft Aluminum (20HB) to hardmetals (ca. 1600HV) with one probe.

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Features of the SonoDur2 display unit:

- Comprehensive intuitive operation scheme
- Color touch screen and large graphics display
- All important information at a glance
- Virtually unlimited storage space for settings, results, statistics (4GByte through 32GByte)
- Versatile set-up and documentation capabilities in clear text
- Automatic importing of set-up parameters from stored measurement series
- Data transfer to PC (USB, Bluetooth)

New: Conversions from Hardness to Hardness and Hardness to Tensile Strength can be done for all materials listed in EN ISO 18265:2014 und ASTM E140-12bE1 (2013) and DIN50150 (2000, Table 1, Steel).

Features of the Probe:

- Available motor & handheld probes: 1N – 100N, long rod with 10N, 50N
- Best repeatability of measurement, longtime stabile
- Almost steady low scattering of results across the whole range even at high hardness
- Free adjustable to nearly all technical materials (fine grained, homogeneous texture)
- Transfer of measured value to the indicating device via USB-Interface
- Service friendly, modular construction

Most popular probes:

SONO-10H, HV1 (10N) for testing weld seams (HAZ), soft spots, nitrided & hard surface

SONO-50H, HV5 (49N) for metal working Industries, "Work Horse" in heat treatment shops

SONO-100H, HV10 (98N) for testing construction steel, cast iron, forgings, fasteners

Use of UCI-Hardness Testing methods:

Tools and mechanical engineering, plant engineering and construction, ship building, (wind) power plants, chemical, car, and aircraft industries, maintenance and surveillance of machines and facilities.

Materials: most of metal products, industrial ceramics

Inspection: Welded seams, heat treatment condition, material sorting

HV10: Assessment of tensile strength Rm (MPa) acc. to EN ISO 18265/ DIN 50150Rm (MPa) gemäß EN ISO 18265 / DIN 50150

Specification:

Measuring principle: UCI Method corresponds to DIN 50159, ASTM A1038

Test indenter: Vickers diamond 136°

Test loads- Newton: Motor probes: 1N (0.1 kgf), 3N (0.3kgf), and 8.6 N (0.8 kgf)

Handheld Probes: 10N (1 kgf), 49N (5kgf), and 98N (10kgf)

(Other test loads can be customized on request, 1kgf = 9.81 N)

Hardness scales: Vickers HV 10 – ca. 2000
 Brinell HB 76 – 618
 Knoop HK 87 – 920 (ASTM only)
 Rockwell HRB 41 – 105
 Rockwell HRF 82.6 – 115.1
 Rockwell HRC 20.3 – 68
 Rockwell HRA 60.7 – 85.6
 Rockwell HRD 40.3 – 76.9 (EN ISO 18265 only)
 HR45N 19.9 – 75.4
 Tensile Strength MPa (N/mm²) 255 – 2180 (EN ISO 18265 only)

*Note: Conversions are acc. to ASTM E140-12b E1 (2013), EN ISO 18265-2014, and DIN 50150-2000 (solely table 1, low-alloyed steel). Conversions into tensile strength for 98N (10kgf) test load only.

Measure uncertainty: < 3% of the average out of 5 measurements relative to the plate value

Repeatability: < 3% (5 measurements on 300HV block using motor probe 8.6N)

Operating time: >8h use, up to 6h continuous use after a full charge

Operating temp.: Probe: 0°C to 50 °C, Instrument: -10° to 50°C

Storage temp. : -20°C to 60°C

Humidity: Max. 90%, non-condensing

Dimensions:

Instrument 5.2"x3.1"x0.9" (132x78x22mm)

Motor probe: Ø38mm, L= 7.5" (190mm) (free length oscillation rod 32,5mm)

Handheld probe: Ø25mm, L=6.9" (176mm) (free length oscillation rod 12,5mm)

L-Handheld probe: Ø25mm, L=8.1" (207mm) (free length oscillation rod 34mm)

Weight: Instrument 10oz (280g), motor probe 13oz (370g), handheld probe 10oz (280g)

Processor & memory: TI Cortex A8 / 256 MB SDRAM / 512 MB Flash / micro SD Card up to 32GB

Operating system: Windows Embedded Handheld (WM 6.5)

Keypad: 21-key mobile alphanumeric software keypad with backlight and a full alphanumeric software keyboard

Power: 3.7V / 2600mAh LiPo battery pack, fast exchangeable on site

Charging time: <2h up to 80% capacity (instrument switched off)

AC mains/charger: 90VAC - 264VAC 50/60Hz to 5VDC

Display: 3.5" transfective TFT (320x240) with 4W-resistive touch-screen, easy to read even in direct sunlight. Adjustable brightness with LED-backlight (440 Cd/m² max.)

Interfaces: USB1.1, Micro-SD-Card, WLAN, Bluetooth Version 2.1 +EDR,CLASS2

Instrument case: Dust/Water-splash proof IP54 (accord. to IEC60529)

Drop test 1.2 Meter / 4 Feet Drop Threshold

Tumble test 150 (1.65 ft./0.5m), exceeds applicable IEC tumble spec



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