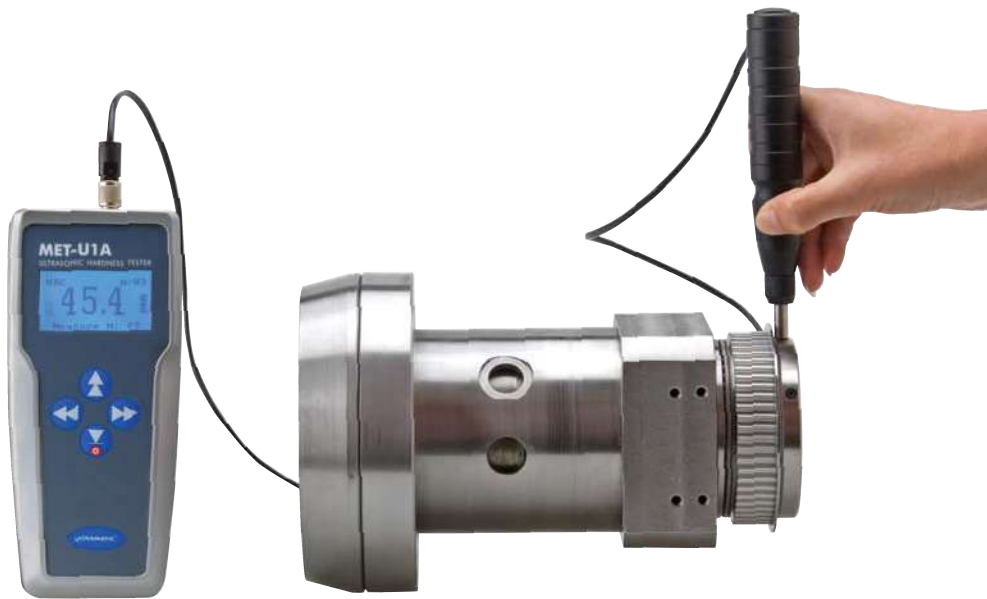


Ultrasonic Portable Hardness Tester MET-U1A

Portable hardness tester for accurate testing on metals, plastics and ceramics.

Features

- Uses UCI principle of hardness testing
- Suitable for hardness testing of metals, plastics and ceramics
- Rockwell (HRC), Brinell (HB), Vickers (HV) and Shore (HSD)
- Leaves almost no visible indent on the tested article surface



TECHNICAL SPECIFICATION

Measuring principle	According to the UCI method (ultrasonic contact impedance principle)
Indenter	Vickers diamond (angle 136°)
Test load	14.7N
Measuring range	Vickers 75-1000 Rockwell C 20-70 Brinell 75-650 UTS Mpa 378-1736
Reproducibility	Vickers 12HV Rockwell C 1.5HRC Brinell 10HB Shore 2HS UTS Mpa 5%
Applicable test materials	Primarily metals; plastics or ceramics may be tested using a standard calibration block
Display	Large graphical, backlit display, display of hardness scales HV, HRC, HB
Calibration	Storage of up to 3 calibrations for different materials
Display languages	English
Memory	100 readings also stored when switched off
Measurement results processing	Computation of average value from the data stored in the memory; selective data deleting (for example, in case of doubt in the conducted measurements)
Power	Power supply 100-240V / 50-60Hz
Batteries	16 hrs without backlit, 8hrs with backlit
Operating temperature	-5°C - 45°C
Dimensions	Display unit: 180mm x 80mm x 42mm Probe: 25mm diameter x 160mm length
Weight	1kg

Standard Delivery

- Main unit
- U1 ultrasonic probe
- Power unit
- Battery: NiMh
- Carrying case
- Instruments certificate
- User and installation manual

Optional Accessories

- Hardness reference test blocks
- Precision holding fixture for probe
- Battery operated grinder
- Changeable headpiece to probe
- Probe stand

Ultrasonic Portable Hardness Tester 'Ultramatic 2'

The ULTRAMATIC 2 is the next generation portable and laboratory use ultrasonic hardness tester. The instrument covers several new advanced features that can be selected from a menu-operated full colour display.

Features

- Ultrasonic Contact Impedance test principle, fast, accurate, easy to use in confined spaces
- Full colour display with easy to operate user interface
- Suitable for hardness tests on metals and ceramics
- Direct reading in Vickers HV, and direct conversion to HRC, HRB, HB & UTS
- High reproducibility, tolerance within $\pm 1\%$
- Extensive range of application at locations difficult to access
- Large memory, statistics and multiple data outputs
- Windows software for data transmission



TECHNICAL SPECIFICATION

Measuring principle	According to the UCI method (Ultrasonic Contact Impedance Principle)		
Standards	Conforms to DIN 50159, ASTM A 1038-05 and VDI/VDE directive 2616		
Indenter	Vickers diamond (angle 136°)		
Measuring range	Vickers	HV	10-3000 (direct)
	Rockwell	HRC	20-68 (conversion)
	Rockwell	HRB	41-99.5 (conversion)
	Brinell	HB	(76)-447 (conversion)
	UTS	N/mm ²	255-2180 (conversion)
Reproducibility	Vickers	HV	$\pm 1\%$
	Rockwell	HRC	± 0.5
	Rockwell	HRB	± 1.2
	Brinell	HB	$\pm 1\%$
Applicable testing materials	Preferably metals, for which HV400 can be calibrated. Examinations of ceramic(s) and glass are possible, if comparative measurements are accomplished for calibration		
Display	Large full color graphical display 3.5" colour-LCD, 320 x 240 Pixel		
Calibration	Storage of min. 100 calibrations for different materials		
Display languages	English or German (selectable)		
Memory	500,000 readings, storage in batches with date, hour, and Go/No Go judgement		
Statistics	Mean value, minimum, maximum, standard deviation absolute and relative Delete single readings		
Interface	Serial RS-232C, USB, Host, device, USB-Slave for PC connection (1 pc), USB-Master for printers (2 pcs) or USB flash drives, 100Base-TX (Ethernet), RS-232		
Printer output	Prints hardness values, hour and date. Prints statistics of stored data		
Power supply	100-240V / 50-60Hz		
Batteries	NiMH battery: 4.8V/2700 mAh		
Battery life	Approx. 7 hours		
Battery charging time	Approx. 3 hours		
Operating temperature	0°C to 50°C		
Dimensions	Device: 78mm x 198mm x 160mm (HxWxD)		
	Probe: $\varnothing 19.5\text{mm}$ x 175mm length		
Weight	1400gr (including probe 190gr)		

Standard Delivery

- Instrument
- Cable
- Power supply 100-240V / 50-60Hz
- Carrying case
- Manual
- CV Instruments certificate

Optional Probes

- 10N, 20N, 30N, 49N, 98N force

Optional Accessories

- High precision stand for probe
- Probe shoes for flat surfaces
- Probe shoes for convex surfaces 10mm - 50mm
- Probe shoes for convex surfaces 50mm - 250mm
- Probe SL type (slim nose)
- Windows software program for data transmission to PC (incl. USB cable)
- Plastic handle for probe
- Carrying bag for main unit & accessories
- Mobile printer
- Test block