INNOVATEST®

Advanced Materials Testing Solutions

MET-U1A

Portable Ultrasonic Hardness Tester

PORTABLE ULTRASONIC HARDNESS TESTER MET-U1A

MET-U1A
ULTRASONIC HARDNESS TESTER, 15N TESTFORCE

FEATURES

The INNOVATEST MET-U1A differs completely from traditional hardness testers. Instead of measuring the size of the indentation of the test sample using a microscope, it uses a diamond indentor mounted on a vibrating rod that presses on the test surface at a fixed load and then measures its hardness by applying ultrasonic vibrations and analyzing its damping effect.

The technique is very reproducible which makes the MET-U1A a perfect tool for on-site measurements such as maintenance of large scale structures, vehicles, ships, steel towers, bridges, air planes. It is ideal for inspection of thin materials or difficult to get area such as crank shaft, gears and grooved areas.

- Hardness measurements of metals and alloys on standardized hardness scales: Rockwell (HRC), Brinell (HB), Vickers (HV) and Shore (HSD)
- Three additional scales H1, H2, H3 for calibration of selfdefined hardness scales/materials
- Rm scale for determination of tensile strength
- Typically suitable for components that are inaccessible for dynamic hardness testers (small articles, structures with thin walls, pipes, reservoirs, steel sheets etc.)
- Leaves no visible indent on the tested article surface (crankshafts necks, mirrored surface, knives)

TECHNICAL SPECIFICATIONS

Measuring principle	According to the UCI method (ultrasonic contact impedance principle)		
Measuring range	Rockwell C scale	HRC	20-70
	Brinell scale	HB	75-650
	Vickers scale	HV	75-1000
	Shore scale	HSD	23-102
	Tensile strength	MPa	378-1736
Reproducibility	Rockwell C scale	HRC	1.5
	Brinell scale	HB	10
	Vickers scale	HV	12
	Shore scale	HSD	2
	Tensile strength	MPa	5%
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)		
Display lighting	Available		
Display features	Hardness scale, measured value, number of measurement, operation mode, archival number, battery charge indication, Auto-off after 150 sec.		
Memory	100 readings, also stored when test is switched off		
Surface roughness	<Ra 2.5		
Convex/concave	>5mm		
Minimum specimen weight	>0.01kg		
Material thickness	Probe without position accessories >2mm Probe with position accessories >1mm		
Penetration depth	0.03mm average		
Probe operating life	±200000 measurement		
Measuring force	14.7 N		
Power supply	AC mains, V / Hz100-240 / 50-60 Batteries AA, 1.2V (4pcs) Consumed power <3.0VA		
Battery life	Without backlight 16 hours With backlight 8 hours		
Battery charging time	8 hours		
Transportation & storage temperature	-35°C ... +60°C		
Operating environment	Relative humidity 30% ... 80%		
Overall dimensions	Gauge 180mm x 80mm x 42.4mm Probe 160mm x 25mm x ø7mm		

ORDER DETAILS

MET-U1A Ultrasonic portable hardness tester

STANDARD DELIVERY

- Instrument
- U1 ultrasonic probe
- Power unit
- Batteries AA (4pcs) NiMh
- Carrying case
- INNOVATEST® certificate
- User and installation manual

OPTIONAL ACCESSORIES

- Reference hardness blocks
- Support V-anvil
- Probe stand

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