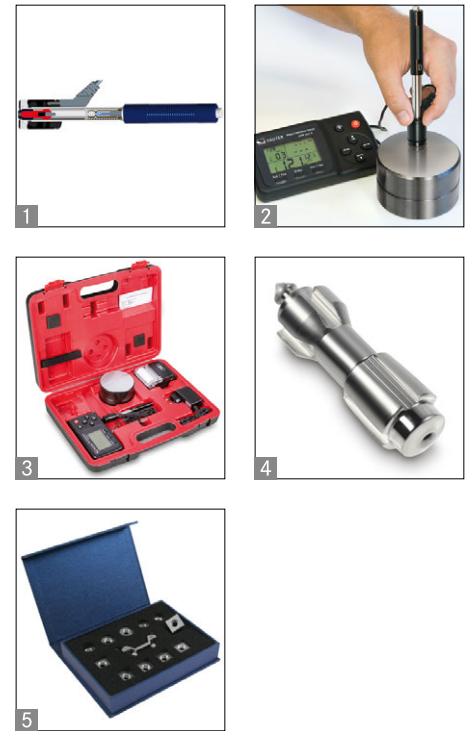


Mobile Leeb hardness tester SAUTER HMM · HMM-NP



Advanced features for demanding applications

Features

- **1** Impact (rebound) sensor: The bounce module is accelerated by a spring against the item being tested. Depending on how hard the object is, the kinetic energy of the module will be absorbed. The speed reduction will be measured and converted to Leeb hardness values.
- External impact sensor (Type D) included
- Mobility: In comparison with stationary table-top devices and testing devices with an internal sensor, using the SAUTER HMM. offers the highest level of mobility and flexibility
- All measurement directions possible (360°) thanks to an automatic compensation function
- **2** Standard block for calibration included (790 ± 40 HL)
- **3** Delivered in a robust carrying case
- Internal memory for up to 9 measured values
- Mini statistics function: displays the measured result, the average value, the impact direction, date and time
- SAUTER HMM-NP: identical product features as the SAUTER HMM. model, but comes without the printer

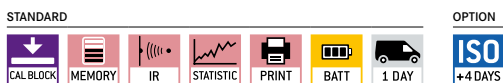
- Measurement value display: Rockwell (B & C), Vickers (HV), Brinell (HB), Shore (HSD), Leeb (HL), tensile strength (MPa)
- Automatic unit conversion: The measuring result is automatically converted into all specified hardness units

Technical data

- Measuring precision: 1 % at 800 HLD (± 6 HLD)
- Measuring range tensile strength: 375–2639 MPa (steel)
- Minimum sample weight on a solid and stable support: 2 kg with fixed coupling
- Minimum sample material thickness: 3 mm with coupling on fixed base
- Minimum sample radius (concave/convex): 50 mm (with support ring: 10 mm)
- Dimensions W×D×H 80×30×150 mm
- SAUTER HMM.: External mains adaptor for printer, as standard
- Ready for use: Batteries included, 3× 1.5 V AAA, block, operating time up to 30 h, AUTO-OFF function to preserve battery life
- Net weight approx. 0,2 kg









































Accessories

- Connection cable, without impact sensor, SAUTER HMM-A02
- **5** Attachment rings for secure positioning, SAUTER AHMR 01
- **4** Impact body, SAUTER AHMO D01
- Test block Type D/DC, Ø 90 mm (± 1 mm), net weight < 3 kg, hardness range 790 ± 40 HL, SAUTER AHMO D02 630 ± 40 HL, SAUTER AHMO D03 530 ± 40 HL, SAUTER AHMO D04
- Paper roll, 1 piece, SAUTER ATU-US11
- Factory calibration certificates for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132



Model	Sensor	Measuring range	Readout	Option	
				Factory calibration certificates	
SAUTER		[Max] HL	[d] HL	KERN	
HMM	Typ D	170-960	1	961-131	
HMM-NP	Typ D	170-960	1	961-131	

Pictograms

 Adjusting program (CAL): For quick setting of the instrument's accuracy. External adjusting weight required	 WLAN data interface: To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 Protection against dust and water splashes IPxx: The type of protection is shown in the pictogram.
 Calibration block: Standard for adjusting or correcting the measuring device	 Data interface Infrared: To transfer data from the measuring instrument to a printer, PC or other peripheral devices	 ZERO: Resets the display to "0"
 Peak hold function: Capturing a peak value within a measuring process	 Control outputs (optocoupler, digital I/O): To connect relays, signal lamps, valves, etc.	 Battery operation: Ready for battery operation. The battery type is specified for each device
 Scan mode: Continuous capture and display of measurements	 Analogue interface: To connect a suitable peripheral device for analogue processing of the measurements	 Rechargeable battery pack: Rechargeable set
 Push and Pull: The measuring device can capture tension and compression forces	 Analog output: For output of an electrical signal depending on the load (e.g. voltage 0 V – 10 V or current 4 mA – 20 mA)	 Mains adapter: 230V/50Hz in standard version for EU. On request GB, AUS or USA version available
 Length measurement: Captures the geometric dimensions of a test object or the movement during a test process	 Statistics: Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.	 Power supply: Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or USA on request
 Focus function: Increases the measuring accuracy of a device within a defined measuring range	 PC Software: To transfer the measurement data from the device to a PC	 Motorised drive: The mechanical movement is carried out by a electric motor
 Internal memory: To save measurements in the device memory	 Printer: A printer can be connected to the device to print out the measurement data	 Motorised drive: The mechanical movement is carried out by a synchronous motor (stepper)
 Data interface RS-232: Bidirectional, for connection of printer and PC	 Network interface: For connecting the scale/measuring instrument to an Ethernet network	 Fast-Move: The total length of travel can be covered by a single lever movement
 Profibus: For transmitting data, e.g. between scales, measuring cells, controllers and peripheral devices over long distances. Suitable for safe, fast, fault-tolerant data transmission. Less susceptible to magnetic interference.	 KERN Communication Protocol (KCP): It is a standardized interface command set for KERN balances and other instruments, which allows retrieving and controlling all relevant parameters and functions of the device. KERN devices featuring KCP are thus easily integrated with computers, industrial controllers and other digital systems	 Verification possible: The time required for verification is specified in the pictogram
 Profinet: Enables efficient data exchange between decentralised peripheral devices (balances, measuring cells, measuring instruments etc.) and a control unit (controller). Especially advantageous when exchanging complex measured values, device, diagnostic and process information. Savings potential through shorter commissioning times and device integration possible	 GLP/ISO record keeping: Of measurement data with date, time and serial number. Only with SAUTER printers	 DAKkS calibration possible: The time required for DAKkS calibration is shown in days in the pictogram
 Data interface USB: To connect the measuring instrument to a printer, PC or other peripheral devices	 Measuring units: Weighing units can be switched to e.g. non-metric at the touch of a key. Please refer to website for more details	 Factory calibration: The time required for factory calibration is specified in the pictogram
 Bluetooth* data interface: To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 Measuring with tolerance range (limit-setting function): Upper and lower limiting can be programmed individually. The process is supported by an audible or visual signal, see the relevant model	 Package shipment: The time required for internal shipping preparations is shown in days in the pictogram
		 Pallet shipment: The time required for internal shipping preparations is shown in days in the pictogram

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