

HARDNESS TESTING OF METALS (UCI)

PROFESSIONAL MEASURING



SAUTER Pictograms



Adjusting program (CAL)

For quick setting of the instrument's accuracy. External adjusting weight required



Calibration block

Standard for adjusting or correcting the measuring device



Peak hold function

Capturing a peak value within a measuring process



Scan mode

Continuous capture and display of measurements



Push and Pull

The measuring device can capture tension and compression forces



Length measurement

Captures the geometric dimensions of a test object or the movement during a test process



Focus function

Increases the measuring accuracy of a device within a defined measuring range



Internal memory

To save measurements in the device memory



Data interface RS-232

Bidirectional, for connection of printer and PC



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



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



Data interface USB

To connect the measuring instrument to a printer, PC or other peripheral devices



Bluetooth® data interface

To transfer data from the balance/measuring instrument to a printer, PC or other peripherals



WIFI data interface

To transfer data from the balance/measuring instrument to a printer, PC or other peripherals



Data interface infrared

To transfer data from the measuring instrument to a printer, PC or other peripheral devices



Control outputs (optocoupler, digital I/O)

To connect relays, signal lamps, valves, etc.



Analogue interface

To connect a suitable peripheral device for analogue processing of the measurements



Analogue output

For output of an electrical signal depending on the load (e.g. voltage 0 V – 10 V or current 4 mA – 20 mA)



Statistics

Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.



PC Software

To transfer the measurement data from the device to a PC



Printer

A printer can be connected to the device to print out the measurement data



Network interface

For connecting the scale/measuring instrument to an Ethernet network



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



GLP/ISO record keeping

of measurement data with date, time and serial number. Only with SAUTER printers



Measuring units

Weighing units can be switched to e.g. non-metric. Please refer to website for more details



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



Protection against dust and water splashes IPxx

The type of protection is shown in the pictogram of. DIN EN 60529:2000-09, IEC 60529:1989 +A1:1999+A2:2013



ZERO

Resets the display to "0"



Battery operation

Ready for battery operation. The battery type is specified for each device



Rechargeable battery pack

Rechargeable set



Plug-in power supply

230V/50Hz in standard version for EU. On request GB, AUS or US version available



Integrated power supply unit

Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or US on request



Motorised drive

The mechanical movement is carried out by a electric motor



Motorised drive

The mechanical movement is carried out by a synchronous motor (stepper)



Fast-Move

The total length of travel can be covered by a single lever movement



Conformity assessment

Models with type approval for construction of verifiable systems



DAkkS calibration possible

The time required for DAKkS calibration is shown in days in the pictogram



Factory calibration (ISO)

The time required for factory calibration is specified in the pictogram



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

SAUTER Models A-Z

281/285	9
283	10
287/289	8
AE 500	43
AFH FAST	45
AFH FD/AFH LD	46
AFI 2.0	47
CB	104
CD	102
CE HSx	96
CE WT	97
CJ	108
CK	102
CO	107
CP	100-101
CR	103
CT	105
CS	106-107
CW	112-114
DA	51
DB	52
DC Y1 · DC Y2	99
FA	11
FC	13
FC 1K-BT	23
FG	22
FH-M	15
FH-S	14
FK	12
FL-M	17
FL-S	16
FS	18-19
FS Set <small>NEW</small>	20-21
HB	72
HD	73
HE (neu)	70
HK-D/-DB	76
HMM/-NP	77
HMO	79
HN-D	78
HO	82-83
JCS <small>NEW</small>	92-93
JCT <small>NEW</small>	58
JIT <small>NEW</small>	90
LB	49
S71	28-29
SD-M	38
SO	85
SP	86
SU	87
SW	88-89
TB	54
TB-US	62
TC	55
TD-US	63
TE	56
TF/TG	57
THM-N	30
TI	74
TI-HE <small>NEW</small>	71
TN-EE	66
TN-GOLD	64
TN-US	67
TO-EE	68
TU-US	67
TVL/-E/-O/XLS	26
TVL-XS	25
TVM-N/-NL/-LB	34-35
TVO	31
TVO-S/-LD	32-33
TVP/-L	27
TVS/-LD	36-37
YKV	95

SAUTER Customer Consultants

With questions about our products and services, we will be happy to advise you:

Product Specialist Measuring Technology



Irmgard Russo
Tel. +49 7433 9933-208
info.sauter@kern-sohn.com

Product Specialist Measuring Technology



Helga Biselli
Tel. +49 7433 9933-188
info.sauter@kern-sohn.com

Product Specialist Measuring Technology



Ralf Gutbrod
Tel. +49 7433 9933-306
info.sauter@kern-sohn.com

Product Specialist Measuring Technology



Andreas Vossler
Tel. +49 7433 9933-243
info.sauter@kern-sohn.com

FR, Maghreb, GB, IE, IS, BE, LU



Maren Möwert
Tel. +49 7433 9933-132
Mobil +49 151 46143240
maren.moewert@kern-sohn.com

DK, SE, FI, NO, PL, LV, LT, EE



Mark Hauder
Tel. +49 7433 9933-310
Mobil +49 160 3378426
mark.hauder@kern-sohn.com

GR, CY, BG, HU, RO, SK, CZ, AL,
Ex-Yugoslavia, CIS



Ariana Sevcenco
Tel. +49 7433 9933-203
Mobil +49 151 72434692
ariana.sevcenco@kern-sohn.com

North America, Africa, Asia, Middle East,
Oceania, TR



Corinna Matthes
Tel. +49 7433 9933-215
Mobil +49 151 44568364
corinna.matthes@kern-sohn.com

Germany (PC 4, 7), NL



Taras Mikitisin
Tel. +49 7433 9933-143
Mobil +49 171 5590115
mikitisin@kern-sohn.com

SAUTER Hotlines

Technical questions about our products?

You will find assistance here quickly: **+49 7433 9933 - ...**



Service Hotline

→ 199

for general technical questions about your SAUTER product

SAUTER Measuring Instruments

→ 555

for all technical questions concerning our SAUTER measuring instruments,
test benches, force measuring accessories (clamps etc.), SAUTER software

Industrial Scales

→ 333

for all technical questions concerning our basic scales (laboratory & industry),
pocket balances, school balances, bench scales, price-computing scales,
platform scales, counting scales, counting systems, floor scales, pallet truck
scales, crane scales, veterinary scales

System Solutions Industry 4.0

→ 200

for all technical questions concerning the interlocking of the latest information
and communication technology with our scales, load cells and measuring devices
as well as questions about KERN software



Premium UCI hardness testing device for Rockwell, Brinell and Vickers

8



Mini statistics function: Display of the measuring result, the number of measurements, the maximum and minimum value as well as the average value and the standard deviation



Scope of delivery: Standard block for calibration (approx. 61 HRC), USB cable, display unit, UCI sensor unit, transport case, software to transfer the saved data to the PC, other accessories



Test stand for repeatable movements during testing. In this way you can avoid errors which could occur in manual handling of the sensor. This ensures even more stable measurements and more precise measuring results, see *Accessories*



Features

- Application: This ultrasound hardness testing device is ideally suited for mobile hardness testing, where the main emphasis is on obtaining rapid and precise results
- Principle: The SAUTER HO measures by using a vibrating rod which vibrates at ultrasonic frequency and is pressed onto the sample at a defined test force. At the lower end there is a Vickers indenter. Its resonant frequency increases, as soon as an indentation is created when it comes into contact with the sample. Through appropriate adjustment of the device, the resulting change in resonant frequency is matched with the corresponding Vickers hardness
- Examples: The SAUTER HO ultrasound hardness testing system is primarily used for measuring small forgings, castings, welding points, punched parts, casting tools, ball bearings and the flanks of gear wheels as well as for measuring the influence of warmth or heat
- Advantages compared with Rockwell and Brinell: Almost non-destructive testing by smaller test force and thus only microscopic indentation craters
- Advantages compared with Vickers: Demanding optical measuring is not required. You can therefore carry out measurements directly on-site, for example, on a permanently installed workpiece
- Advantages compared with Leeb: The high requirements concerning the proper weight of the test object can be widely omitted
- Standards: The device meets following technical standards: DIN 50159-1; ASTM-A1038-2005; JB/T9377-2013
- Measurement data memory saves up to 1000 measurement groups each with 20 individual values

- Calibration: The device can be set to both standard hardness test blocks as well as to up to 20 reference calibration values. When doing this it is possible to measure different materials quickly, without having to re-adjust the device to the individual materials

Technical data

- Measuring ranges: HRC: 20,3–68; HRB: 41–100; HRA: 61–85,6; HV: 80–1599; HB: 76–618; Tensile strength: 255–2180 N/mm²
- Measurement precision: ± 3 % HV; ± 1,5 HR; ± 3 % HB
- Display units: HRC, HV, HBS, HBW, HK, HRA, HRD, HR15N, HR30N, HR45N, HS, HRF, HR15T, HR30T, HR45T, HRB.
- Rechargeable battery pack integrated, as standard, operating time up to 12 h without backlight, charging time approx. 8 h
- Minimum weight of the test object: 300 g for direct measurement with the sensor (included); 100 g with supporting ring (optional)
- Minimum dimensions the test surface size around: approx. 5×5 mm (recommended)
- Overall dimensions W×D×H 28×83×160 mm
- Net weight approx. 0,95 kg

Accessories

- External impact sensor Type D, as standard, can be reordered, SAUTER AHMO D, € 355,-
- **5** Calibration and adjustment plate (hardness test blocks) with defined and tested steel hardness for regular testing and adjustment of hardness testing devices. The hardness values are indicated. A key feature of the plates is the low-granular, homogeneous finish of the steel, Ø 90 mm

- 28 to 35 HRC, SAUTER HO-A09, € 440,-
- 38 to 43 HRC, SAUTER HO-A10, € 440,-
- 48 to 53 HRC, SAUTER HO-A11, € 440,-
- 58 to 63 HRC, SAUTER HO-A12, € 440,-
- **6** Test stand for repeatable movements during testing. Smooth-running mechanical system, stroke length 34 mm, maximum height of the test object within the test stand 240 mm, swivel probe device for measurements outside the base plate, very robust construction, net weight approx. 9 kg, SAUTER HO-A08, € 1610,-
- Motorised probe. Enables testing at the touch of a button while maintaining the same procedure (while stocks last)
 - HV 0,3, SAUTER HO-A15, € 3900,-
 - HV 0,5, SAUTER HO-A16, € 3900,-
 - HV 0,8, SAUTER HO-A17, € 3900,-
 - HV 1, SAUTER HO-A18, € 3900,-

SAUTER HO 1K, HO 2K

- **1** Support ring, flat, SAUTER HO-A04N, € 510,-
- **2** Support ring, small cylinder, Ø 8-20 mm, SAUTER HO-A05N, € 510,-
- **3** Support ring, large cylinder, Ø 20-80 mm, SAUTER HO-A06N, € 510,-

SAUTER HO 5K, HO 10K

- **1** Support ring, flat, SAUTER HO-A04, € 510,-
- **2** Support ring, small cylinder, Ø 8-20 mm, SAUTER HO-A05, € 510,-
- **3** Support ring, large cylinder, Ø 20-80 mm, SAUTER HO-A06, € 510,-
- **4** Deep-hole protective cover, SAUTER HO-A07, € 280,-

STANDARD

OPTION

Model	Hardness scale	Min. weight of test item	Min. thickness of test item	Price		Option
				excl. of VAT	ex works	Factory calibration certificate
		g	mm	€	KERN	€
SAUTER HO 1K	HV 1	300	2	5520,-	961-270	345,-
SAUTER HO 2K	HV 2	300	2	5520,-	961-270	345,-
SAUTER HO 5K	HV 5	300	2	5520,-	961-270	345,-
SAUTER HO 10K	HV 10	300	2	5520,-	961-270	345,-

Sauter GmbH
 c/o KERN & SOHN GmbH
 Ziegelei 1
 72336 Balingen
 Germany
 Tel. +49 7433 9933-0
 info@sauter.eu
 www.sauter.eu

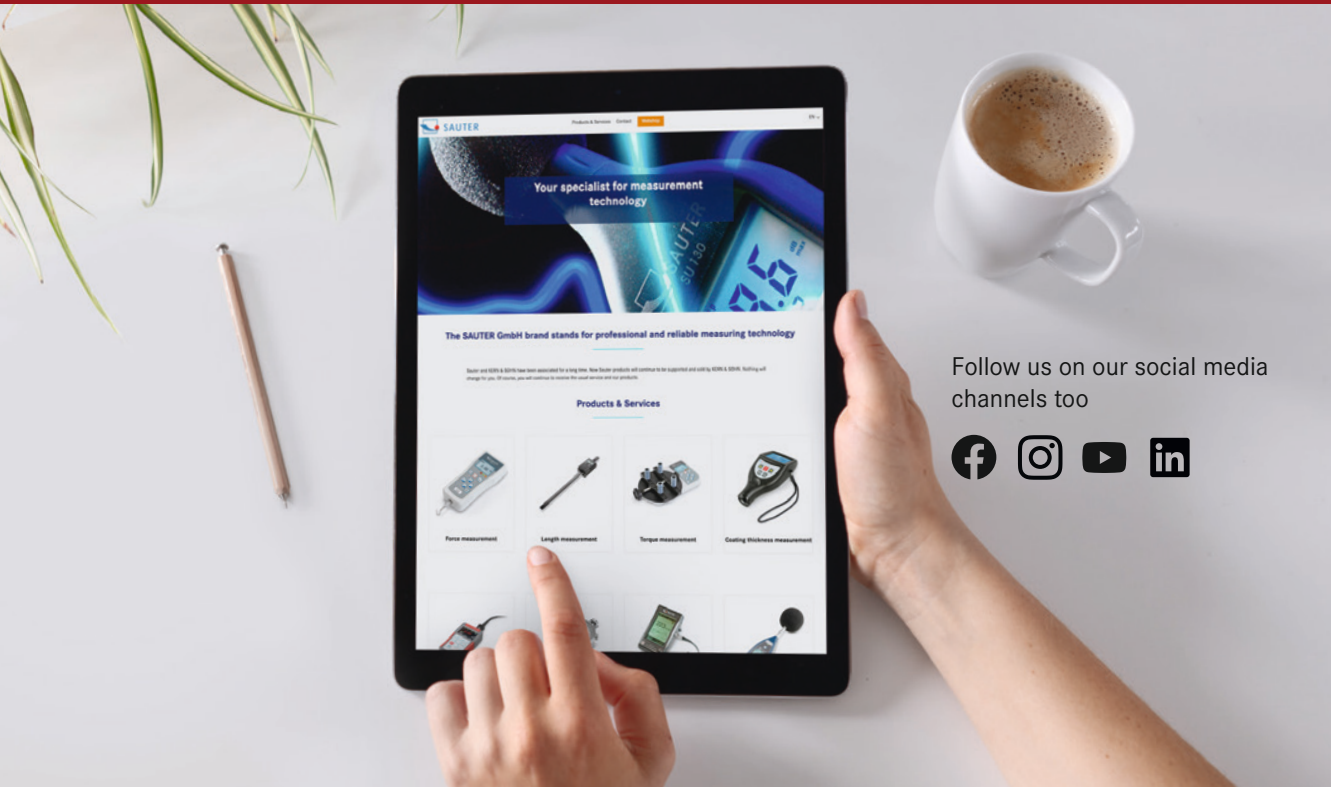
**The oldest Precision Balance
 Factory in Germany**

180 YEARS
 since 1844
KERN & SOHN

**Discover the multifaceted World of Balances and Measuring Technology from SAUTER
 online: www.sauter.eu**



- Full KERN & SAUTER Product Range
- Convenient 24/7 Ordering
- Selection of more than 5,000 Items across Weighing and Measuring Technology, Optical Instruments as well as Accessories and Services
- Extensive Information and useful Download Options
- Technical Product Data Sheets
- Operating Instructions
- Descriptive Image and Video Material
- Useful KERN Services
- Technical Glossary
- KERN Dealer Portal
- Practical Filter and Search Functions



Follow us on our social media channels too



Printed in Germany by SAUTER GmbH
 z-cs-en-kp-20241

