

MEASURING TECHNOLOGY & TEST SERVICE

Industry | Laboratory | Quality Assurance

PROFESSIONAL MEASURING



2025

It's so easy to order from SAUTER:

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Your Advantages – our Philosophy. All SAUTER Advantages at a Glance

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Advice from the experts

Our SAUTER experts will offer you individual advice in a range of languages and will be pleased to assist you:
Mon - Fri from 8.00 am to 5.00 pm

100 % product availability and dispatch service

With SAUTER you can be sure that you will have immediate access to the products you need – provided that they are in stock. Our 24-hour dispatch service will send your products immediately. Ordered today, on their way tomorrow!

Warranty

We offer you as the customer up to 3 years warranty on all products in our entire range, as an option the warranty can be extended for a small fee. Because our products deliver on their promises!

Customer service

Our customer service is personally available by telephone, e-mail or video call. We speak more than 7 languages and we will be happy to help with your requests.

Trust through experience

Experience counts: We are professionals when it comes to precision: A heavyweight in terms of weighing and measuring technology and this has been the case for 180 years – for the benefit of our customers. Put us to the test!

Accreditations/certification

- DAkkS accreditation
DIN EN ISO/IEC 17025
- Certified QM system DIN EN ISO 9001
- Conformity assessment in accordance with NAWID 2014/31/EU
- Medical certifications DIN EN ISO 13485 and 93/42/EEC or VO (EU) 2017/745

DAkkS calibrations

In the modern, accredited KERN calibration laboratory, we perform DAkkS calibrations for balances, test weights as well as for numerous other measuring devices. In addition we can offer calibrations on your premises. Of course, all services are in accordance with international standards.

Verification service

Our professional verification service offers conformity assessments and verification of balances and weights – for a feeling of security in compliance with legal requirements.

Individual customer solutions

We are the right partner for special customer requirements. SAUTER offers numerous modular system solutions for your very individual requirements. Please contact us!

Service Portal

You can find aftersales support in our online service portal: Technical Support, help with questions or problems, etc.
www.kern-sohn.com/shop/en/Serviceportal/

Spare parts and repair service

In spite of reliable SAUTER quality: If you should ever need to make a complaint about our products, we will help you quickly, flexibly and in an unbureaucratic manner.

No storage costs

You have no storage costs – we maintain the storage. Direct dispatch of ordered goods to your customer is available, invoice will be issued to you (third party business).

Still got questions?

You can find all SAUTER Service Hotlines on the inside flap

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 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 cf. 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



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 an 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

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SAUTER Customer Consultants

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

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SAUTER Hotlines



Technical questions about our products?

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

Service Hotline

for general technical questions about your SAUTER product

→ 199

SAUTER Measuring Instruments

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

→ 555

Industrial Scales

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

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System Solutions Industry 4.0

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

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FORCE MEASUREMENT

Quick-Finder

| Readout | Measuring range | Model | Price excl. of VAT | Page |
|-------------|-----------------|--------------|--------------------|------|
| [d] | [Max] | SAUTER | ex works | |
| N | N | | € | |
| 0,001 | 2 | FH 2 | 590,- | 12 |
| 0,001 | 5 | FH 5 | 590,- | 12 |
| 0,002 | 5 | FL 5 | 570,- | 14 |
| 0,004 | 20 | FS 2-20 | 1070,- | 16 |
| 0,004 | 20 | FS 4-20 | 1180,- | 16 |
| 0,005 | 10 | FH 10 | 590,- | 12 |
| 0,005 | 10 | FK 10 | 275,- | 9 |
| 0,005 | 10 | FL 10 | 570,- | 14 |
| 0,01 | 1 | 283-152 | 115,- | 7 |
| 0,01 | 10 | FC 10 | 415,- | 10 |
| 0,01 | 20 | FH 20 | 590,- | 12 |
| 0,01 | 25 | FK 25 | 275,- | 9 |
| 0,01 | 25 | FL 20 | 570,- | 14 |
| 0,01 | 50 | FC 50 | 415,- | 10 |
| 0,01 | 50 | FH 50 | 590,- | 12 |
| 0,01 | 50 | FS 2-50 | 1070,- | 16 |
| 0,01 | 50 | FS 4-50 | 1180,- | 16 |
| 0,01 | 50 | SD 50N100 | 2520,- | 32 |
| 0,01 0,05 | 1 | 289-100 | 81,- | 5 |
| 0,02 | 3 | 283-252 | 128,- | 7 |
| 0,02 | 50 | FK 50 | 275,- | 9 |
| 0,02 | 50 | FL 50 | 570,- | 14 |
| 0,02 | 100 | FS 2-100 | 1070,- | 16 |
| 0,02 | 100 | FS 2-100OY2 | 1320,- | 18 |
| 0,02 | 100 | FS 4-100 | 1180,- | 16 |
| 0,02 | 100 | SD 100N100 | 2520,- | 32 |
| 0,04 | 200 | FS 2-200 | 1070,- | 16 |
| 0,04 | 200 | FS 4-200 | 1180,- | 16 |
| 0,05 | 6 | 283-302 | 128,- | 7 |
| 0,05 | 10 | FA 10 | 230,- | 8 |
| 0,05 | 100 | FH 100 | 590,- | 12 |
| 0,05 | 100 | FK 100 | 275,- | 9 |
| 0,05 | 100 | FL 100 | 570,- | 14 |
| 0,05 0,5 | 5 | 289-102 | 81,- | 5 |
| 0,1 | 10 | 283-402 | 125,- | 7 |
| 0,1 | 20 | FA 20 | 230,- | 8 |
| 0,1 | 100 | FC 100 | 415,- | 10 |
| 0,1 | 200 | FH 200 | 590,- | 12 |
| 0,1 | 250 | FK 250 | 275,- | 9 |
| 0,1 | 250 | FL 200 | 570,- | 14 |
| 0,1 | 500 | FC 500 | 415,- | 10 |
| 0,1 | 500 | FH 500 | 590,- | 12 |
| 0,1 | 500 | FH 500S71 | 710,- | 24 |
| 0,1 | 500 | FS 2-500 | 1070,- | 16 |
| 0,1 | 500 | FS 2-500OY1 | 1250,- | 18 |
| 0,1 | 500 | FS 2-500OY2 | 1320,- | 18 |
| 0,1 | 500 | FS 4-500 | 1180,- | 16 |
| 0,1 | 500 | FS 500G | 1160,- | 20 |
| 0,1 | 500 | FS 500G | 1160,- | 20 |
| 0,1 | 500 | FS 500G | 1160,- | 20 |
| 0,1 | 500 | TVL 500FHS71 | 1380,- | 24 |

| Readout | Measuring range | Model | Price excl. of VAT | Page |
|-----------|-----------------|--------------|--------------------|------|
| [d] | [Max] | SAUTER | ex works | |
| N | N | | € | |
| 0,1 0,5 | 10 | 289-104 | 92,- | 5 |
| 0,2 | 25 | 283-422 | 132,- | 7 |
| 0,2 | 500 | FK 500 | 275,- | 9 |
| 0,2 | 500 | FL 500 | 570,- | 14 |
| 0,2 | 500 | FL 500G | 690,- | 20 |
| 0,2 | 1000 | FS 2-1KOY2 | 1390,- | 18 |
| 0,2 | 1000 | FS 2-1KSP1 | 1300,- | 18 |
| 0,4 | 2000 | FS 2-2KOY1 | 1260,- | 18 |
| 0,5 | 50 | 283-483 | 255,- | 7 |
| 0,5 | 100 | FA 100 | 230,- | 8 |
| 0,5 | 1000 | FH 1K | 1000,- | 13 |
| 0,5 | 1000 | FK 1K | 275,- | 9 |
| 0,5 | 1000 | FL 1K | 650,- | 14 |
| 0,5 | 1000 | FL 1KG | 810,- | 20 |
| 0,5 | 2500 | FS 2-2KSP1 | 1300,- | 18 |
| 0,25 | 50 | FA 50 | 230,- | 8 |
| 1 | 100 | 283-502 | 260,- | 7 |
| 1 | 200 | FA 200 | 230,- | 8 |
| 1 | 1000 | FC 1K | 415,- | 10 |
| 1 | 1000 | FC 1K-BT | 1320,- | 21 |
| 1 | 2000 | FH 2K | 1000,- | 13 |
| 1 | 2500 | FL 2K | 690,- | 15 |
| 1 | 5000 | FH 5K | 1270,- | 13 |
| 1 | 5000 | FS 2-5KOY1 | 1320,- | 18 |
| 1 | 5000 | FS 2-5KRY1 | 1380,- | 18 |
| 1 | 5000 | FS 2-5KSP1 | 1320,- | 18 |
| 2 | 200 | 283-602 | 270,- | 7 |
| 2 | 300 | FA 300 | 230,- | 8 |
| 2 | 5000 | FL 5K | 1070,- | 15 |
| 2 | 10000 | FS 2-10KRY1 | 1380,- | 18 |
| 2 | 10000 | FS 2-10KSP1 | 1350,- | 18 |
| 2,5 | 500 | FA 500 | 230,- | 8 |
| 2,5 | 500 | FA 500G | 355,- | 20 |
| 4 | 20000 | FS 2-20KOY1 | 1350,- | 18 |
| 4 | 20000 | FS 2-20KSP1 | 1390,- | 18 |
| 5 | 500 | 283-902 | 320,- | 7 |
| 5 | 10000 | FH 10K | 1500,- | 13 |
| 5 | 10000 | FL 10K | 1250,- | 15 |
| 5 | 25000 | FS 2-25KRQ1 | 1410,- | 18 |
| 10 | 20000 | FH 20K | 1500,- | 13 |
| 10 | 20000 | FL 20K | 1290,- | 15 |
| 10 | 50000 | FH 50K | 1750,- | 13 |
| 10 | 50000 | FS 2-50KRQ1 | 1410,- | 18 |
| 10 | 50000 | FS 2-50KRY1 | 1390,- | 18 |
| 10 | 50000 | FS 2-50KSP1 | 1390,- | 18 |
| 20 | 100000 | FS 2-100KRQ1 | 1390,- | 18 |
| 20 | 100000 | FS 2-100KRY1 | 1550,- | 18 |
| 20 | 100000 | FS 2-100KSP1 | 1660,- | 18 |
| 40 | 200000 | FS 2-200KRY1 | 1560,- | 18 |
| 50 | 100000 | FH 100K | 1970,- | 13 |

Suitable test stands for your SAUTER force measuring device can be found from page 22 onwards

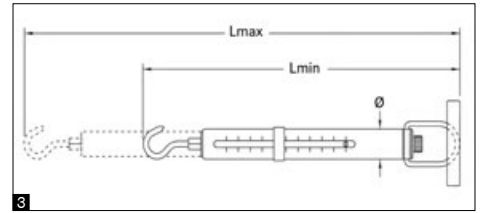
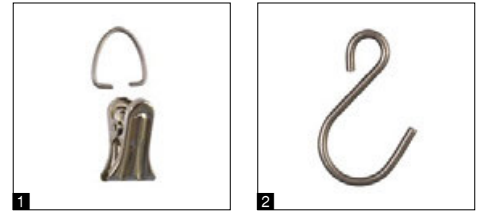
Note: You will find a wide range of further spring balances with gram division on the internet



SAUTER 289



SAUTER 287



Mechanical weight and force measurement with quality spring for long service life

Features

- The very best price/performance ratio thanks to the transparent plastic housing, ideal for schools and educational institutions
- Newton scale: The SAUTER 289 range can display the results in Newtons instead of in grammes, specifically for measuring tensile forces
- Double scale: For fast or precise recording of the measurement result
- Backlash-free spring bearing with integrated tare screw for highly-precise adjustment
- Non-fatigue stainless steel spring

- Abrasion-resistant, colour precision scale with high resolution
- Thanks to the rotating inner tube, the scale is always easy to read
- The bracket which is delivered as standard can easily be swapped for another suspension device, so that the system can be individually adapted to the items being weighed

Technical data

- Measuring precision: $\pm 0,3\%$ of [Max]
- Tare range: 20 % of [Max]

Accessories

- **1** Bracket for spring balances of 10 – 1000 g / 0,1 – 10 N, SAUTER 287-A01, **€ 28,-**
- **2** Hook for spring balances 10 – 1000 g/0,1 – 10 N, SAUTER 287-A02, **€ 28,-**



| Model | Measuring range [Max] | Division [d] | Load support | Dimensions | | | Price excl. of VAT ex works | Option | |
|----------------|-----------------------|--------------|--------------|------------|------|------|-----------------------------|---------------------------------|-------|
| | | | | Lmin | Lmax | Ø | | Factory calibration certificate | |
| SAUTER | N | N | | mm | mm | mm | € | KERN | € |
| 289-100 | 1 | 0,01 0,05 | Hook | 230 | 335 | 12,2 | 81,- | 961-1610 | 187,- |
| 289-102 | 5 | 0,05 0,5 | Hook | 230 | 335 | 12,2 | 81,- | 961-1610 | 187,- |
| 289-104 | 10 | 0,1 0,5 | Hook | 235 | 335 | 12,2 | 92,- | 961-1610 | 187,- |

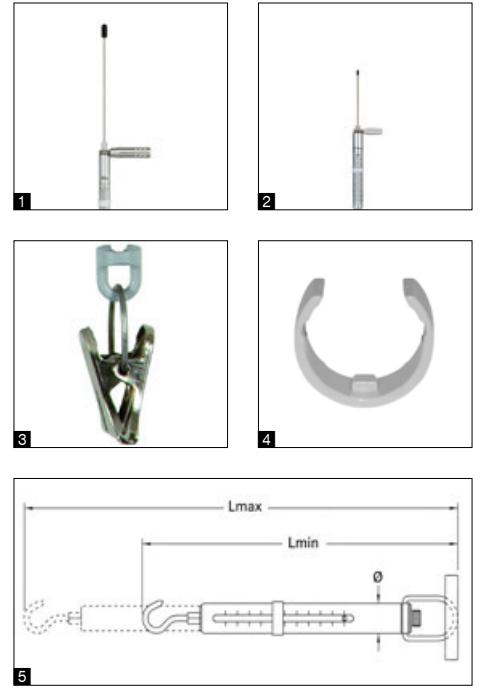
| Model | Weighing range [Max] | Division [d] | Load support | Dimensions | | | Price excl. of VAT ex works | Option | |
|----------------|----------------------|--------------|--------------|------------|------|------|-----------------------------|---------------------------------|------|
| | | | | Lmin | Lmax | Ø | | Factory calibration certificate | |
| SAUTER | g | g | | mm | mm | mm | € | KERN | € |
| 287-100 | 10 | 0,1 | Clip | 225 | 330 | 12,2 | 84,- | 961-100 | 99,- |
| 287-102 | 20 | 0,2 | Clip | 225 | 330 | 12,2 | 82,- | 961-100 | 99,- |
| 287-104 | 50 | 0,5 | Clip | 225 | 330 | 12,2 | 82,- | 961-100 | 99,- |
| 287-106 | 100 | 1 | Clip | 225 | 330 | 12,2 | 82,- | 961-100 | 99,- |
| 287-108 | 500 | 5 | Clip | 225 | 330 | 12,2 | 82,- | 961-100 | 99,- |
| 287-110 | 1000 | 10 | Clip | 225 | 330 | 12,2 | 92,- | 961-100 | 99,- |



SAUTER 281



SAUTER 285



Precise, mechanical spring balances in robust aluminium housing with g/kg readout

Features

- Aluminium scale tube: robust, long service life, handy
- Gram/Kilogram scale: Measuring result display in grams/kilograms instead of N
- Double scale: For fast or precise recording of the measurement result
- Compressive force measurement: possible using an optional pressure set, see *accessories*
- Drag pointer and carrying handle: as standard for all models of the SAUTER 285 range
- Thanks to the rotating suspension bow the scale can always be aligned to be at the very best line of sight

- Backlash-free spring bearing with integrated tare screw for highly-precise adjustment
- Non-fatigue stainless steel spring
- Clip loop which can be freely rotated of the lower suspension bracket by 360° for models with $[Max] \leq 1 \text{ kg}$
- High-quality workmanship: Wear-resistant, colour-anodised precision scale with high resolution for accurate readability of the measuring result

Technical data

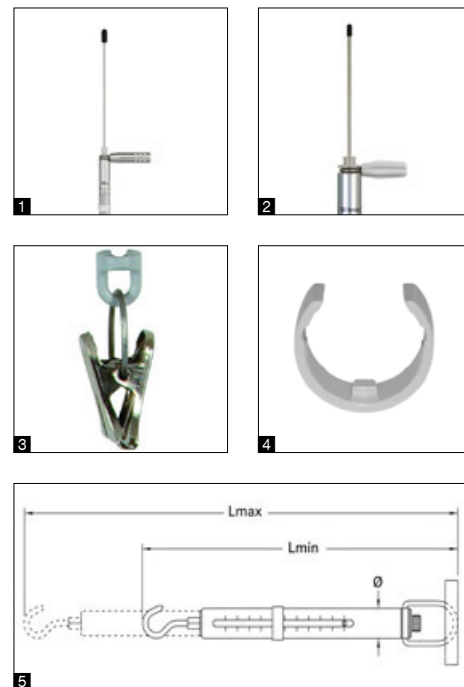
- Measuring precision: $\pm 0,3 \%$ of $[Max]$
- Tare range: 20 % of $[Max]$

Accessories

- **1** Pressure-Set, suitable for models with weighing range $< 2,5 \text{ kg}/25 \text{ N}$, SAUTER 281-890, **€ 85,-**
- **2** Pressure-Set, suitable for models with weighing range $\geq 5 \text{ kg}/50 \text{ N}$, SAUTER 285-890, **€ 98,-**
- **3** Clip, suitable for models with weighing range $\leq 2,5 \text{ kg}/25 \text{ N}$, SAUTER 281-151-002, **€ 11,-**
- **4** Drag pointer for spring balances, suitable for models with weighing range $< 2,5 \text{ kg}/25 \text{ N}$, SAUTER 281-051-001, **€ 8,-**
- Drag pointer for spring balances, suitable for models with weighing range $\geq 5 \text{ kg}/50 \text{ N}$, SAUTER 285-897, **€ 45,-**



| Model | Weighing range [Max] | Division [d] | Load support | 5 Dimensions | | | Price excl. of VAT ex works € | Option | |
|----------------|----------------------|--------------|--------------|--------------|------|----|-------------------------------|---------------------------------|-------|
| | | | | Lmin | Lmax | Ø | | Factory calibration certificate | KERN |
| SAUTER | g | g | | mm | mm | mm | | | |
| 281-101 | 10 | 0,1 | Clip | 220 | 300 | 12 | 120,- | 961-100 | 99,- |
| 281-151 | 30 | 0,25 | Clip | 220 | 300 | 12 | 105,- | 961-100 | 99,- |
| 281-201 | 60 | 0,5 | Clip | 220 | 300 | 12 | 105,- | 961-100 | 99,- |
| 281-301 | 100 | 1 | Clip | 220 | 300 | 12 | 106,- | 961-100 | 99,- |
| 281-401 | 300 | 2 | Clip | 225 | 325 | 12 | 120,- | 961-100 | 99,- |
| 281-451 | 600 | 5 | Clip | 225 | 325 | 12 | 128,- | 961-100 | 99,- |
| 281-601 | 1000 | 10 | Clip | 225 | 325 | 12 | 145,- | 961-100 | 99,- |
| 281-752 | 2500 | 20 | Hook | 225 | 325 | 12 | 135,- | 961-100 | 99,- |
| 285-052 | 5000 | 50 | Hook | 370 | 510 | 32 | 250,- | 961-100 | 99,- |
| 285-102 | 10000 | 100 | Hook | 370 | 510 | 32 | 265,- | 961-101 | 123,- |
| 285-202 | 20000 | 200 | Hook | 370 | 510 | 32 | 260,- | 961-101 | 123,- |
| 285-352 | 35000 | 500 | Hook | 370 | 460 | 32 | 270,- | 961-101 | 123,- |
| 285-502 | 50000 | 500 | Hook | 370 | 460 | 32 | 320,- | 961-101 | 123,- |



Precise, mechanical force gauge in robust aluminium housing with Newton readout

Features

- Aluminium scale tube: robust, long service life, handy
- Newton scale: Measuring result displayed in Newton
- Double scale: For fast or precise recording of the measurement result
- Compressive force measurement: possible using an optional pressure set, see *accessories*
- Carrying handle as standard
- Drag pointer as standard on all models of the SAUTER 283 range with [Max] \geq 50 N
- Thanks to the rotating suspension bow the scale can always be aligned to be at the very best line of sight on all models of the SAUTER 283 range with [Max] \geq 50 N

- Backlash-free spring bearing with integrated tare screw for highly-precise adjustment
- Non-fatigue stainless steel spring
- Clip loop which can be freely rotated of the lower suspension bracket by 360°
- High-quality workmanship: Wear-resistant, colour-anodised precision scale with high resolution for accurate readability of the measuring result

Technical data

- Measuring precision: $\pm 0,3\%$ of [Max]
- Tare range: 20 % of [Max]

Accessories

- **1** Pressure-Set, suitable for models with weighing range $< 2,5$ kg/25 N, SAUTER 281-890, **€ 85,-**
- **2** Pressure-Set, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-890, **€ 98,-**
- **3** Clip, suitable for models with weighing range $\leq 2,5$ kg/25 N, SAUTER 281-151-002, **€ 11,-**
- **4** Drag pointer for spring balances, suitable for models with weighing range $< 2,5$ kg/25 N, SAUTER 281-051-001, **€ 8,-**
- Drag pointer for spring balances, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-897, **€ 45,-**

STANDARD

OPTION



| Model | Measuring range [Max] N | Division [d] N | Load support | 5 Dimensions | | | Price excl. of VAT ex works € | Option | |
|-----------------------|-------------------------|----------------|--------------|--------------|---------|-----------|-------------------------------|---------------------------------|-------|
| | | | | Lmin mm | Lmax mm | ϕ mm | | Factory calibration certificate | KERN |
| SAUTER 283-152 | 1 | 0,01 | Hook | 225 | 305 | 12 | 115,- | 961-1610 | 187,- |
| 283-252 | 3 | 0,02 | Hook | 225 | 325 | 12 | 128,- | 961-1610 | 187,- |
| 283-302 | 6 | 0,05 | Hook | 225 | 325 | 12 | 128,- | 961-1610 | 187,- |
| 283-402 | 10 | 0,1 | Hook | 225 | 325 | 12 | 125,- | 961-1610 | 187,- |
| 283-422 | 25 | 0,2 | Hook | 225 | 325 | 12 | 132,- | 961-1610 | 187,- |
| 283-483 | 50 | 0,5 | Hook | 370 | 510 | 32 | 255,- | 961-1610 | 187,- |
| 283-502 | 100 | 1 | Hook | 370 | 510 | 32 | 260,- | 961-1610 | 187,- |
| 283-602 | 200 | 2 | Hook | 370 | 510 | 32 | 270,- | 961-1610 | 187,- |
| 283-902 | 500 | 5 | Hook | 370 | 510 | 32 | 320,- | 961-1610 | 187,- |



Mechanical force gauge for tensile and compressive force measurements with peak hold function

Features

- Dual scale: shows Newton and kg
- Turnable display unit for an easy zero setting of the instrument
- Peak hold function by drag pointer
- Can be mounted on all manual test stands
- Zeroing by a short push of the switch
- **1** Delivered in a robust carrying case
- **2** Standard attachments as shown, extension rod: 90 mm

Technical data

- Measuring precision: 1 % of [Max]
- Overall dimensions W×D×H 235×60×50 mm
- Thread: M6
- Net weight approx. 0,55 kg

Accessories

- **2** Standard attachments as standard, set can be reordered, SAUTER AC 43, € 61,-
- Further accessories see *internet*



| Model | Measuring range [Max] N | Division [d] N | Price excl. of VAT ex works € | Option Factory Calibration Certificate | | | | | |
|--------|-------------------------|----------------|-------------------------------|---|-------|-------------------|-------|---------------------------|-------|
| | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| SAUTER | | | | KERN | € | KERN | € | KERN | € |
| FA 10 | 10 | 0,05 | 230,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FA 20 | 20 | 0,1 | 230,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FA 50 | 50 | 0,25 | 230,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FA 100 | 100 | 0,5 | 230,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FA 200 | 200 | 1 | 230,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FA 300 | 300 | 2 | 230,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FA 500 | 500 | 2,5 | 230,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |

Further calibration options on request

BASIC
★

1



Robust, digital force gauge for tensile and compressive force measurements

Features

- Turnable display: automatic direction identification
- Secure operability due to the ergonomic design
- Peak-Hold function to capture peaks (value is "frozen" for approx. 10 seconds) or Track function mode for a continuous measurement indication
- Selectable measuring units: N, lbf, kg, ozf
- Auto-Power-Off
- **1** Standard attachments as shown, extension rod: 90 mm
- Can be mounted on all SAUTER test stands up to 5 kN

Technical data

- Measuring precision: 0,5 % of [Max]
- Overload protection: 200 % of [Max]
- Overall dimensions W×D×H 195×83×35 mm
- Thread: M8
- Ready for use: Batteries included, 6×1.5 V AA
- Net weight approx. 0,75 kg

Accessories

- **2** With one of the two optional attachments for tensile strength testing, the SAUTER FK can become a tensiometer for testing the material tension characteristics of cables, threads, wires, twine etc. (up to \varnothing 5 mm): Illustration shows accessories SAUTER FK-A02
- Tensiometer attachment with Safe-insert function: Pull and release to insert the running cable in between the rolls, for tensile strength testing up to 250 N, aluminium attachment, rolls can be adjusted inwards, SAUTER FK-A01, **€ 230,-**
- Tensiometer kit for high-capacity tensile strength testing up to 1000 N, steel attachment and steel rolls, rolls cannot be adjusted, SAUTER FK-A02, **€ 320,-**
- **1** Standard attachments as standard, set can be reordered, SAUTER AC 430, **€ 55,-**
- Further accessories see *internet*

STANDARD

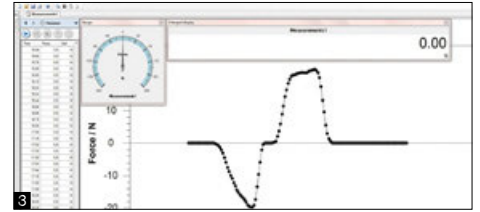
PEAK, PUSH/PULL, ZERO, BATT, 230 V, 1 DAY

OPTION

ISO +4 DAYS

| Model | Measuring range [Max] | Division [d] | Price excl. of VAT ex works € | Option Factory Calibration Certificate | | | | | |
|--------|-----------------------|--------------|-------------------------------|--|-------|-------------------|-------|---------------------------|-------|
| | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| SAUTER | N | N | € | KERN | € | KERN | € | KERN | € |
| FK 10 | 10 | 0,005 | 275,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FK 25 | 25 | 0,01 | 275,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FK 50 | 50 | 0,02 | 275,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FK 100 | 100 | 0,05 | 275,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FK 250 | 250 | 0,1 | 275,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FK 500 | 500 | 0,2 | 275,- | 961-1610 | 187,- | 961-2610 | 198,- | 961-3610 | 350,- |
| FK 1K | 1000 | 0,5 | 275,- | 961-1620 | 240,- | 961-2620 | 240,- | 961-3620 | 430,- |

Further calibration options on request



Compact force gauge for tensile and compressive force measurements

Features

- Turnable display with backlight
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Metal housing for durable use in harsh environmental conditions
- Capacity display: A bar lights up to show how much of the measuring range is still available
- Measuring with tolerance range (limit-setting function): Upper and lower limit adjustable, between 10 and 100 % of [Max], in pull and push direction. The process is supported by an acoustic and visual signal
- Safety: If loads exceed 110 % of the measuring range, the device will give clear acoustic and visual signals

- Internal memory for up to 500 measurement values
- USB data interface and USB interface cable as standard
- Selectable: AUTO-OFF function or permanent operation
- Selectable measuring units: N, kgf, ozf, lbf
- **1** Delivered in a robust carrying case
- **2** Standard attachments as shown, extension rod: 90 mm
- Can be mounted on all SAUTER test stands up to 5 kN

Technical data

- Measuring precision: 0,3 % of [Max]
- Transmission rate to PC: up to 200 measured values/second
- Overload protection: 150 % of [Max]
- Overall dimensions W×D×H 145×73×34 mm
- Thread: M6
- Rechargeable battery pack integrated, as standard, operating time up to 20 h without backlight, charging time approx. 4 h
- Net weight approx. 0,50 kg

Accessories

- **3** Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
- **2** Standard attachments as standard, set can be reordered, SAUTER AC 43, **€ 61,-**
- Further accessories see *internet*

STANDARD



OPTION



| Model | Measuring range [Max] | Readability [d] | Price excl. of VAT ex works € | Option DAKKS Calibration Certificate | | | | | |
|--------|-----------------------|-----------------|-------------------------------|--------------------------------------|-------|-------------------|-------|---------------------------|-------|
| | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| SAUTER | N | N | € | DAKKS KERN | € | DAKKS KERN | € | DAKKS KERN | € |
| FC 10 | 10 | 0,01 | 415,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FC 50 | 50 | 0,01 | 415,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FC 100 | 100 | 0,1 | 415,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FC 500 | 500 | 0,1 | 415,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FC 1K | 1000 | 1 | 415,- | 963-162 | 225,- | 963-262 | 225,- | 963-362 | 420,- |

Further calibration options on request

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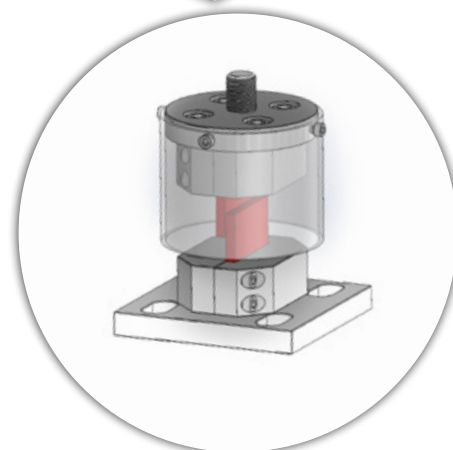
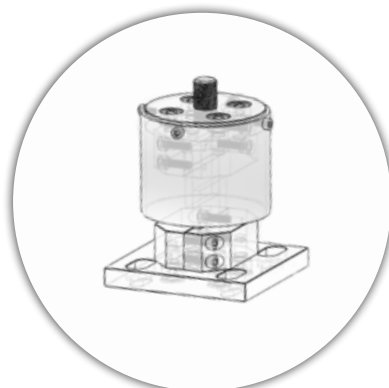
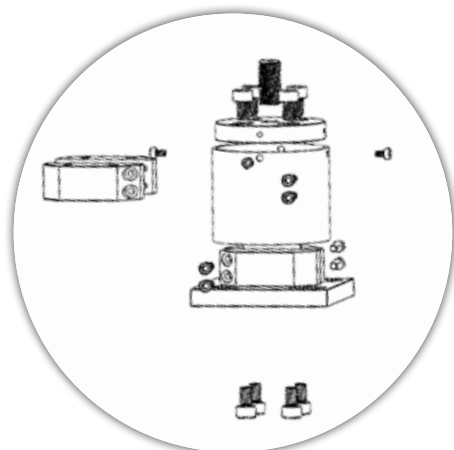
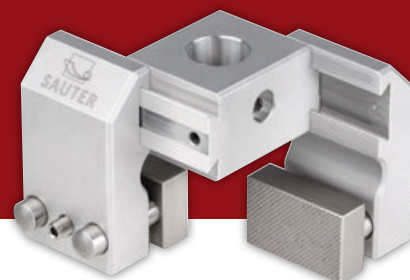
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Product Manager SAUTER
Force Measurement
Tel. +49 7433 9933-194
enrico.steier@kern-sohn.com



FACE
LIFT



Universal digital force gauge for tensile and compressive force measurements with integrated load cell

Features

- Turnable display with backlight
- **1** Can be mounted on all SAUTER test stands up to 5 kN
- **2** NEW: USB interface for data transfer and power supply as standard
- Data interface RS-232 as standard
- Selectable measuring units: N, kgf, lbf
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Measuring with tolerance range (limit-setting function): Upper and lower limit adjustable, in pull and push direction. The process is supported by an audible and visual signal
- Auto-Power-Off
- Internal memory for up to 10 measurement values

- Mini Statistics Kit: calculates the average result from up to 10 stored measured values, as well as min., max., n
- **3** Standard attachments as shown, extension rod: 90 mm, included with the delivery
- **4** Delivered in a robust carrying case

Technical data

- Transfer rate to PC: approx. 25 measured values per second
- Measuring precision: 0,5 % of [Max]
- Overload protection: 150 % of [Max]
- Thread: M6
- Overall dimensions W×D×H 240×70×40 mm
- Rechargeable battery pack integrated, as standard, operating time up to 40 h without backlight, charging time approx. 120 min
- External mains adapter, for connection to the USB-C connector, standard
- Net weight approx. 0,55 kg

Accessories

- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
- RS 232 connection cable to connect models from the SAUTER FH range to an electric SAUTER test bench, SAUTER FH-A04, **€ 45,-**
- **3** Standard attachments as standard, set can be reordered, SAUTER AC 43, **€ 61,-**

STANDARD



OPTION



| Model | Measuring range [Max] | Readability [d] | Price excl. of VAT ex works € | Option DAkkS Calibration Certificate | | | | | |
|---------------|-----------------------|-----------------|-------------------------------|---|-------|-------------------|-------|---------------------------|-------|
| | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| | | | | DAkkS KERN | € | DAkkS KERN | € | DAkkS KERN | € |
| SAUTER FH 2 | 2 | 0,001 | 590,- | - | - | - | - | - | - |
| SAUTER FH 5 | 5 | 0,001 | 590,- | - | - | - | - | - | - |
| SAUTER FH 10 | 10 | 0,005 | 590,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| SAUTER FH 20 | 20 | 0,01 | 590,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| SAUTER FH 50 | 50 | 0,01 | 590,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| SAUTER FH 100 | 100 | 0,05 | 590,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| SAUTER FH 200 | 200 | 0,1 | 590,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| SAUTER FH 500 | 500 | 0,1 | 590,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |

Further calibration options on request

FACE
LIFT



Universal digital force gauge for tensile and compressive force measurements with external load cell

Features

- Turnable display with backlight
- **1** NEW: USB interface for data transfer and power supply as standard
- Data interface RS-232 as standard
- Selectable measuring units: N, kN, kgf, tf
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Measuring with tolerance range (limit-setting function): Upper and lower limit adjustable, in pull and push direction. The process is supported by an audible and visual signal
- Auto-Power-Off
- Internal memory for up to 10 measurement values

- Mini Statistics Kit: calculates the average result from up to 10 stored measured values, as well as min., max., n
- Tension loops and compression plates are included in delivery
- **2** Delivered in a robust carrying case

Technical data

- Transfer rate to PC: approx. 25 measured values per second
- Measuring precision: 0,5 % of [Max]
- Overload protection: 150 % of [Max]
- Overall dimensions WxDxH 240x70x40 mm
- Rechargeable battery pack integrated, as standard, operating time up to 40 h without backlight, charging time approx. 120 min
- External mains adapter, for connection to the USB-C connector, standard
- Cable length approx. 3 m
- Net weight approx. 1,6 kg

Accessories

- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
- RS 232 connection cable to connect models from the SAUTER FH range to an electric SAUTER test bench, SAUTER FH-A04, **€ 45,-**

STANDARD



OPTION



| Model | Measuring range [Max] kN | Readability [d] N | Price excl. of VAT ex works € | Option DAkKs Calibration Certificate (≤ 5 kN) / Factory calibration certificate (> 5 kN) | | | | | |
|---------------------|--------------------------|-------------------|-------------------------------|---|-------|-------------------|-------|---------------------------|-------|
| | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| | | | | KERN | € | KERN | € | KERN | € |
| SAUTER FH 1K | 1 | 0,5 | 1000,- | 963-162 | 225,- | 963-262 | 225,- | 963-362 | 420,- |
| FH 2K | 2 | 1 | 1000,- | 963-162 | 225,- | 963-262 | 225,- | 963-362 | 420,- |
| FH 5K | 5 | 1 | 1270,- | 963-163 | 315,- | 963-263 | 315,- | 963-363 | 560,- |
| FH 10K | 10 | 5 | 1500,- | 961-164 | 410,- | 961-264 | 410,- | 961-364 | 610,- |
| FH 20K | 20 | 10 | 1500,- | 961-164 | 410,- | 961-264 | 410,- | 961-364 | 610,- |
| FH 50K | 50 | 10 | 1750,- | 961-165 | 410,- | 961-265 | 410,- | 961-365 | 610,- |
| FH 100K | 100 | 50 | 1970,- | 961-166 | 455,- | 961-266 | 455,- | 961-366 | 670,- |

Further calibration options on request



Universal digital force gauge with graphic-assisted display and integrated load cell

Features

- Turnable display with backlight
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Metal housing for durable use in harsh environmental conditions
- Can be mounted on all SAUTER test stands up to 5 kN
- Capacity display: A bar lights up to show how much of the measuring range is still available
- Measuring with tolerance range (limit-setting function): Upper and lower limit adjustable, in pull and push direction. The process is supported by a visual signal
- Internal memory for up to 500 measurement values

- Continuous analogue output: Linear voltage signal in dependence to the load (-2 to +2V)
- USB data interface, as standard
- Selectable measuring units: N, kN, kgf, lbf
- **1** Standard attachments: as shown
- **2** Delivered in a robust carrying case

Technical data

- Transfer rate to PC: approx. 25 measured values per second
- Measuring precision: 0,2 % of [Max]
- Overload protection: 120 % of [Max]
- Overall dimensions WxDxH 215x75x30 mm
- Thread: M6
- Rechargeable battery pack integrated, as standard, operating time up to 10 h without backlight, charging time approx. 8 h
- Net weight approx. 0,55 kg

Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see *internet*
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
- USB/PC connection cable (USB-A/USB mini), included with the delivery, can be ordered separately, SAUTER FL-A01, **€ 50,-**
- RS-232 adapter cable, SAUTER FL-A04, **€ 50,-**
- Holders for object fixation and other accessories, please see *internet*

STANDARD



OPTION



| Model | Measuring range [Max] | Readability [d] | Price excl. of VAT ex works € | Option DAkkS Calibration Certificate | | | | | |
|--------------------|-----------------------|-----------------|-------------------------------|---|-------|-------------------|-------|---------------------------|-------|
| | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| | | | | DAkkS KERN | € | DAkkS KERN | € | DAkkS KERN | € |
| SAUTER FL 5 | 5 | 0,002 | 570,- | - | - | - | - | - | - |
| FL 10 | 10 | 0,005 | 570,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FL 20 | 25 | 0,01 | 570,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FL 50 | 50 | 0,02 | 570,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FL 100 | 100 | 0,05 | 570,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FL 200 | 250 | 0,1 | 570,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FL 500 | 500 | 0,2 | 570,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FL 1K | 1000 | 0,5 | 650,- | 963-162 | 225,- | 963-262 | 225,- | 963-362 | 420,- |

Further calibration options on request



Powerful digital force gauge with graphic assisted display for tensile and compressive force measurements with external load cell

Features

- Premium force gauge with external measuring cell, tension loops included with delivery
- Turnable display with backlight
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Metal housing for durable use in harsh environmental conditions
- Can be mounted on all SAUTER test stands starting 1 kN
- Capacity display: A bar lights up to show how much of the measuring range is still available
- Measuring with tolerance range (limit-setting function): Upper and lower limit adjustable, in pull and push direction. The process is supported by a visual signal
- Internal memory for up to 500 measurement values

- Continuous analogue output: Linear voltage signal in dependence to the load (-2 to +2V)
- USB data interface, as standard
- Selectable measuring units: N, kN, kgf, ozf, lbf
- Delivered in a robust carrying case

Technical data

- Transfer rate to PC: approx. 25 measured values per second
- Measuring precision: 0,2 % of [Max]
- Overload protection: 120 % of [Max]
- Overall dimensions W×D×H 175×75×30 mm
- Dimensions load cell W×D×H 76,2×51×19 mm (FL 2K), 76,2×51×28 mm (FL 5K, 10K, 20K)
- Thread: M12
- Rechargeable battery pack integrated, as standard, operating time up to 10 h without backlight, charging time approx. 8 h
- Net weight approx. 1,4 kg

Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see *internet*
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
- USB/PC connection cable (USB-A/USB mini), included with the delivery, can be ordered separately, SAUTER FL-A01, **€ 50,-**
- RS-232 adapter cable, SAUTER FL-A04, **€ 50,-**
- Holders for object fixation and other accessories, please see *internet*

STANDARD



OPTION



| Model | Measuring range [Max] N | Readability [d] N | Price excl. of VAT ex works € | Option DAkkS Calibration Certificate (≤ 5 kN)/Factory calibration certificate (> 5 kN) | | | | | |
|--------|----------------------------|-------------------------|--|--|-------|-------------------|-------|---------------------------|-------|
| | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| SAUTER | | | | KERN | € | KERN | € | KERN | € |
| FL 2K | 2500 | 1 | 690,- | 963-162 | 225,- | 963-262 | 225,- | 963-362 | 420,- |
| FL 5K | 5000 | 2 | 1070,- | 963-163 | 315,- | 963-263 | 315,- | 963-363 | 560,- |
| FL 10K | 10000 | 5 | 1250,- | 961-164 | 410,- | 961-264 | 410,- | 961-364 | 610,- |
| FL 20K | 20000 | 10 | 1290,- | 961-164 | 410,- | 961-264 | 410,- | 961-364 | 610,- |

Further calibration options on request

PREMIUM



Measurement of forces in different tensile or compression directions possible with only one measuring device



Premium force gauge with integrated load cell (optional) and connection possibility for up to 4 external load cells

Use with integrated load cell

The SAUTER FS premium force gauge has an load measuring cell for tensile and compressive force applications. Either mobile for rapid testing or stationary integrated into a test stand or production line, the multifunction display allows all the values recorded to be read off at a glance in real time. Via the integrated interface, the data can be sent to a PC or laptop for further processing.

Use with external load cells

The SAUTER FS premium force gauge is compatible with all SAUTER strain gauge measuring cells, see *Measuring Cells*. Up to 4 external measuring cells can be connected simultaneously.



Supplied in a high-quality and robust system case (systemainer® T-LOC) including plug-in power supply and USB cable type C



Tip: Order the practical system case (systemainer® T-LOC) for storing and transporting of accessories, clamps, sensors, etc. at the same time, SAUTER FS TKZ, see *Accessories*



User-friendly touch pen for display included with the delivery



Simultaneous measurement on up to four channels. External sensors with sensor data memory, optionally available, see *Measuring Cells*



Compact force gauge with internal measuring cell (up to max. 500 N) for fast and mobile force measurements. Illustration shows optional accessories, SAUTER AE 500 screw tension clamp

Features

- 3,5" touchscreen with touch pen
- Standard version with 2 or 4 measuring channels for external force sensors (subsequently expandable from 2 to 4)
- An internal load cell is possible (is deactivated if an external load cell is connected)
- Suitable for 4-wire and 6-wire sensors with strain gauges
- Two-point adjustment with weights or numerical adjustment possible
- The specific data of an external sensor are stored directly in the connector
- USB interface for data transfer and power supply as standard
- Internal device memory (16 GB)
- Adjustable SI units: kg, N, kN, mN, MN, Nm, kNm, mNm
- Tolerance function
- Track function for continuous measurement display
- Peak value measurement

Technical data

- Resolution: up to 10000 points per measurement channel
- Storage of measured values as well as their transmission to the interface with up to 1000 Hz per measuring channel
- Measurement accuracy:
 - with internal load cell: 0.1 % of [Max]
 - with external load cell: among other things from the load cells used
- Overload protection: 150 % of [Max] with internal measuring cell
- Thread on load receptor: M6 (outer)
- Rechargeable battery pack integrated, as standard, operating time up to 8 h without backlight, charging time approx. 8 h
- External mains adapter, for connection to the USB-C connector, standard
- Overall dimensions W×D×H 71×31×180 mm
- Net weight approx. 0,40 kg

Accessories

- For subsequent expansion to 4 measuring channels, A/D converter module, only for FS 2 and FS 2-xxx models, SAUTER FS 34, € 205,-
- Stainless steel handle bar with rubber grip, SAUTER AFK 02, € 105,-
- Transport case, e.g. for accessories, SAUTER FS TKZ, € 125,-
- Standard attachments, SAUTER AC 43, € 61,-
- Hook for tensile and fracture testing up to 500 N, thread: M6, 1 item, SAUTER AC 49, € 21,-
- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see *internet*
- Suitable load cells see page 86 et seq.
- Holders for object fixation and other accessories, please see *internet*

Optional calibration, see page 101
 Calibration is recommended for each measuring cell!
 Assembly and adjustment of measuring cell, connector and sensors must be ordered separately, see table below,
 SAUTER FS 401 - FS 408

Order example SAUTER FS force gauge with 2 load cells:

| | | |
|----|------------|--|
| 1× | FS 2-500 | 2-channel force gauge with integrated load cell for tension/compression force measurements |
| 1× | 963-361 | DAkKS calibration certificate tension/compression force up to 500 N |
| 1× | CO 100-Y1 | Miniature compression load cell up to 1 kN |
| 1× | FS 403 | Two-point adjustment up to 2 kN, incl. plug and memory for SAUTER FS |
| 1× | 963-262 | DAkKS calibration certificate compression force up to 2 kN |
| 1× | CS 500-3P2 | Stainless steel "S" load cell for tension/compression force up to 5 kN |
| 1× | 963-363 | DAkKS calibration certificate tension/compression force up to 5 kN |
| 1× | FS 404 | Two-point adjustment up to 5 kN, incl. connector and memory for SAUTER FS |

STANDARD



OPTION



Service required for use with external sensors

| Model | Measuring range internal load cell [Max] N | Readability internal load cell [d] N | Internal load cell | Number of measuring channels | Price excl. of VAT ex works € |
|---------------|--|--------------------------------------|--------------------|------------------------------|-------------------------------|
| SAUTER | | | | | |
| FS 2 | - | - | - | 2 | 950,- |
| FS 2-20 | 20 | 0,004 | • | 2 | 1070,- |
| FS 2-50 | 50 | 0,01 | • | 2 | 1070,- |
| FS 2-100 | 100 | 0,02 | • | 2 | 1070,- |
| FS 2-200 | 200 | 0,04 | • | 2 | 1070,- |
| FS 2-500 | 500 | 0,1 | • | 2 | 1070,- |
| FS 4 | - | - | - | 4 | 1070,- |
| FS 4-20 | 20 | 0,004 | • | 4 | 1180,- |
| FS 4-50 | 50 | 0,01 | • | 4 | 1180,- |
| FS 4-100 | 100 | 0,02 | • | 4 | 1180,- |
| FS 4-200 | 200 | 0,04 | • | 4 | 1180,- |
| FS 4-500 | 500 | 0,1 | • | 4 | 1180,- |

| Model | Adjustment of optional, external sensors | Measuring range [Max] kN | Price excl. of VAT ex works € |
|---------------|--|--------------------------|-------------------------------|
| SAUTER | | | |
| FS 401 | Numeric* | - | 135,- |
| FS 402 | | 0,05 | 160,- |
| FS 403 | | 2 | 170,- |
| FS 404 | | 5 | 195,- |
| FS 405 | Two-point | 20 | 205,- |
| FS 406 | | 50 | 205,- |
| FS 407 | | 120 | 225,- |
| FS 408 | | 250 | 240,- |

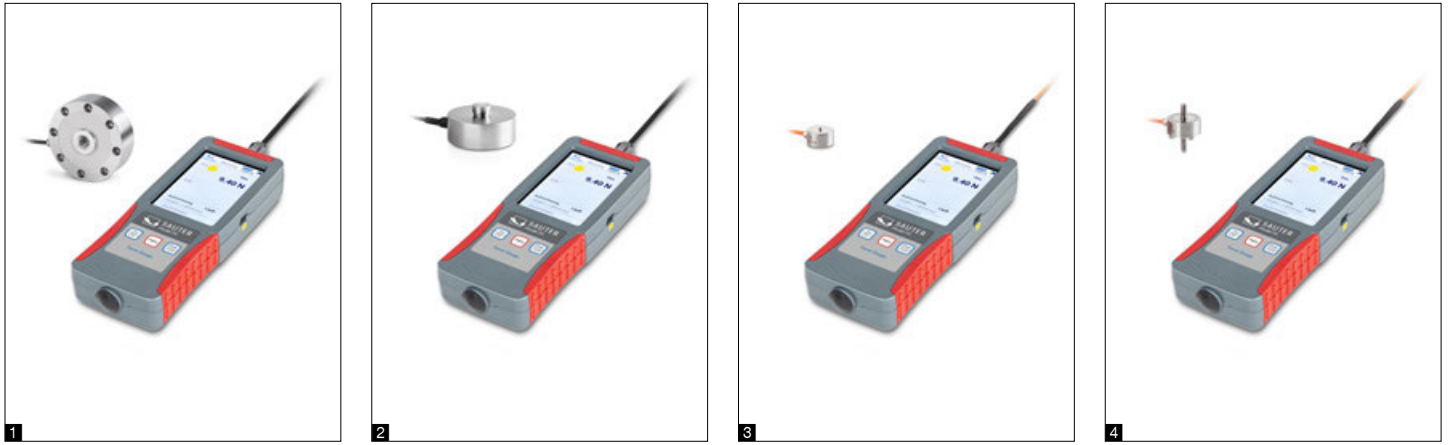
*only for sensors > 250 kN



Practical set of premium force gauge and measuring cell

Features

- Thanks to several versions, the pre-configured sets are suitable for tensile and compressive force measurements in a wide range of applications. The set includes the premium force gauge FS 2 and the necessary service FS 401 – FS 408
- It is supplemented optionally by:
 - FS SP1: 4-wire “S” measuring cell made of nickel-plated steel for force and mass measurement (CS P1). For tensile force and compressive force measurements, see larger picture
 - **1** FS RY1: Loadcell made of steel alloy (CR Y1). For tensile force and compressive force measurements
 - **2** FS RQ1: Load cell made of stainless steel (CR Q1). For compressive force measurements
 - **3** FS OY1: Miniature cylindrical load cell made from stainless steel (CO Y1). For compressive force measurements
 - **4** FS OY2: Miniature cylindrical load cell made from stainless steel (CO Y2). For tensile force and compressive force measurements



Accessories

- For subsequent expansion to 4 measuring channels, A/D converter module, only for FS 2 and FS 2-xxx models, SAUTER FS 34, € 205,-
- Max ≤ 10.000 N: Transport case, e.g. for accessories, SAUTER FS TKZ, € 125,-
- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see *internet*
- Holders for object fixation and other accessories, please see *internet*

STANDARD

OPTION

FS SP1, FS RY1, FS OY2

≤ 5 kN

| Model | Measuring range [Max] N | Readability [d] N | Load cell in the set | Price excl. of VAT ex works € | Option DAKkS Calibration Certificate (≤ 5 kN)/Factory calibration certificate (> 5 kN) | | | | | |
|---|-------------------------|-------------------|----------------------|-------------------------------|--|-------|-------------------|-------|---------------------------|-------|
| | | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| SAUTER | | | | € | KERN | € | KERN | € | KERN | € |
| FS SP1: For tensile force and compressive force measurements | | | | | | | | | | |
| FS 2-1KSP1 | 1000 | 0,2 | CS 100-3P1 | 1300,- | 963-162 | 225,- | 963-262 | 225,- | 963-362 | 420,- |
| FS 2-2KSP1 | 2500 | 0,5 | CS 250-3P1 | 1300,- | 963-163 | 315,- | 963-263 | 315,- | 963-363 | 560,- |
| FS 2-5KSP1 | 5000 | 1 | CS 500-3P1 | 1320,- | 963-163 | 315,- | 963-263 | 315,- | 963-363 | 560,- |
| FS 2-10KSP1 | 10000 | 2 | CS 1000-3P1 | 1350,- | 961-164 | 410,- | 961-264 | 410,- | 961-364 | 610,- |
| FS 2-20KSP1 | 20000 | 4 | CS 2000-3P1 | 1390,- | 961-164 | 410,- | 961-264 | 410,- | 961-364 | 610,- |
| FS 2-50KSP1 | 50000 | 10 | CS 5000-3P1 | 1390,- | 961-165 | 410,- | 961-265 | 410,- | 961-365 | 610,- |
| FS 2-100KSP1 | 100000 | 20 | CS 10000-3P1 | 1660,- | 961-166 | 455,- | 961-266 | 455,- | 961-366 | 670,- |
| 1 FS RY1: For tensile force and compressive force measurements | | | | | | | | | | |
| FS 2-5KRY1 | 5000 | 1 | CR 500-1Y1 | 1380,- | 963-161 | 187,- | 963-263 | 315,- | 963-363 | 560,- |
| FS 2-10KRY1 | 10000 | 2 | CR 1000-1Y1 | 1380,- | 961-164 | 410,- | 961-264 | 410,- | 961-364 | 610,- |
| FS 2-50KRY1 | 50000 | 10 | CR 5000-1Y1 | 1390,- | 961-165 | 410,- | 961-265 | 410,- | 961-365 | 610,- |
| FS 2-100KRY1 | 100000 | 20 | CR 10000-1Y1 | 1550,- | 961-166 | 455,- | 961-266 | 455,- | 961-366 | 670,- |
| FS 2-200KRY1 | 200000 | 40 | CR 20000-1Y1 | 1560,- | 961-167 | 455,- | 961-267 | 455,- | 961-367 | 670,- |
| 2 FS RQ1: For compressive force measurements | | | | | | | | | | |
| FS 2-25KRQ1 | 25000 | 5 | CR 2500-1Q1 | 1410,- | - | - | 961-265 | 410,- | - | - |
| FS 2-50KRQ1 | 50000 | 10 | CR 5000-1Q1 | 1410,- | - | - | 961-265 | 410,- | - | - |
| FS 2-100KRQ1 | 100000 | 20 | CR 10000-1Q1 | 1390,- | - | - | 961-266 | 455,- | - | - |
| 3 FS OY1: For compressive force measurements | | | | | | | | | | |
| FS 2-500OY1 | 500 | 0,1 | CO 50-Y1 | 1250,- | - | - | 963-261 | 187,- | - | - |
| FS 2-2KOY1 | 2000 | 0,4 | CO 200-Y1 | 1260,- | - | - | 963-262 | 225,- | - | - |
| FS 2-5KOY1 | 5000 | 1 | CO 500-Y1 | 1320,- | - | - | 963-263 | 315,- | - | - |
| FS 2-20KOY1 | 20000 | 4 | CO 2000-Y1 | 1350,- | - | - | 961-264 | 410,- | - | - |
| 4 FS OY2: For tensile force and compressive force measurements | | | | | | | | | | |
| FS 2-100OY2 | 100 | 0,02 | CO 10-Y2 | 1320,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FS 2-500OY2 | 500 | 0,1 | CO 50-Y2 | 1320,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| FS 2-1KOY2 | 1000 | 0,2 | CO 100-Y2 | 1390,- | 963-162 | 225,- | 963-262 | 225,- | 963-362 | 420,- |



Fast testing of the stability of tombstones in accordance with VSG 4.7

SAUTER FA-G

- Pressure disc with foam rubber attachment
- Stainless steel handle with rubber covering for secure handling
- No electrical power supply required due to mechanical measuring system
- Real time or peak hold switch to observe transients or capture peaks by a drag indicator
- For tensile force and compressive force measurements
- Scope of delivery:
 - 1× FA 500
 - 1× AE 08
 - 1× AFH 04

SAUTER FL-G

- Ideal for the documented certification of specialist stone-cutter companies
- Rechargeable battery with long operating time (significantly more than 8 hours), so it is possible to use the device for a whole working day, in mobile mode
- Function to set limits: This is where you can program a stability limit value. If this limit value is exceeded, the device emits a visual signal. In this way, the measuring result does not need to be read off each time
- Wide pressure plate with foam rubber surface, so that the tombstone does not get scratched when force is applied
- Robust metal housing for permanent use under harsh environmental conditions
- Scope of delivery:
 - 1× FL 500/FL 1K
 - 1× AE 08
 - 1× AFH 04

SAUTER FS-G

- Through the internal and also external measuring cell it can also be used for more than just tombstone testing
- 3,5" touchscreen
- USB interface for data transfer and power supply as standard
- Internal device memory (16 GB)
- Tolerance function
- Track function for continuous measurement display
- Peak value measurement
- Scope of delivery:
 - 1× FS 2-500
 - 1× AE 08
 - 1× AFK 02

Further details and plenty of further accessories see *internet*



STANDARD

PEAK PUSH/PULL ZERO 1 DAY

OPTION

ISO +4 DAYS

STANDARD

PEAK PUSH/PULL MEMORY USB ANALOG UNIT TOL

STANDARD

PEAK SCAN PUSH/PULL MEMORY USB KCP PROTOCOL TOL

OPTION

ZERO ACCU 230 V 1 DAY SOFTWARE DAKKS ISO +4 DAYS +4 DAYS

OPTION

ZERO ACCU 230 V 1 DAY DAKKS ISO +4 DAYS +4 DAYS

| SAUTER | FA 500G | FL 500G | FL 1KG | FS 500G |
|---------------------------------|---------------------------|-------------------|------------------|------------------|
| Measuring range [Max] N | 500 | 500 | 1000 | 500 |
| Readout [d] N | 2,5 | 0,2 | 0,5 | 0,1 |
| Measuring precision of [Max] | 1 % | 0,2 % | 0,2 % | 0,1 % |
| Overload protection of [Max] | 150 % | 120 % | 120 % | 150 % |
| Price excl. of VAT ex works, € | 355,- | 690,- | 810,- | 1160,- |
| Option | Tensile force | 961-1610, € 187,- | 961-161, € 187,- | 961-162, € 225,- |
| Factory calibration certificate | Compressive force | 961-2610, € 198,- | 961-261, € 187,- | 961-262, € 225,- |
| | Tensile/Compressive force | 961-3610, € 350,- | 961-361, € 340,- | 961-362, € 420,- |
| Option | Tensile force | - | 963-161, € 187,- | 963-162, € 225,- |
| DAkKS Calibration certificate | Compressive force | - | 963-261, € 187,- | 963-262, € 225,- |
| | Tensile/Compressive force | - | 963-361, € 340,- | 963-362, € 420,- |



Compact force measuring instrument

Features

- Checking the consistency of sprayed concrete is essential to ensure the maximum strength of the concrete during the curing process
- The FC 1K-BT determines exactly the forces required for the needle to penetrate the concrete. This allows reliable conclusions to be made regarding the compressive strength of the concrete during the dry phase
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Metal housing for durable use in harsh environmental conditions
- Capacity display: A bar lights up to show how much of the measuring range is still available
- Limit value function, programming of Max./Min., with output of acoustic and optical signal per ok indication
- Safety: If loads exceed 110 % of the measuring range, the device will give clear acoustic and visual signals

- Internal memory for up to 500 measurement values
- Turnable display with backlight
- Selectable: AUTO-OFF function or continuous operation, charge indicator
- Delivered in a robust carrying case

Technical data

- Transmission rate to PC: up to 200 measured values/second
- Measuring precision: 0,3 % of [Max]
- Overload protection: 150 % of [Max]
- Housing dimensions W×D×H 145×73×34 mm
- Net weight approx. 1,8 kg
- Selectable measuring units: N, kgf, ozf, lbf
- Robust, cleanable and portable construction
 - Built-in 1000 N force measuring cell
 - Rapid and simple changing of the penetration needle
 - Inverted display for better readability
 - Live peak force value for immediate monitoring
 - Measurement precision ± 0,1 %
 - USB interface

- Penetration needle and adapter
 - Removable if necessary
 - Needle diameter: 3 mm
 - Upper angle: 60 degrees
 - Length: 15 mm
 - Included: 15 needles

Accessories

- Spare needles (1 piece) for concrete tester SAUTER BT-A01, € 50,-
- Further accessories see *internet*

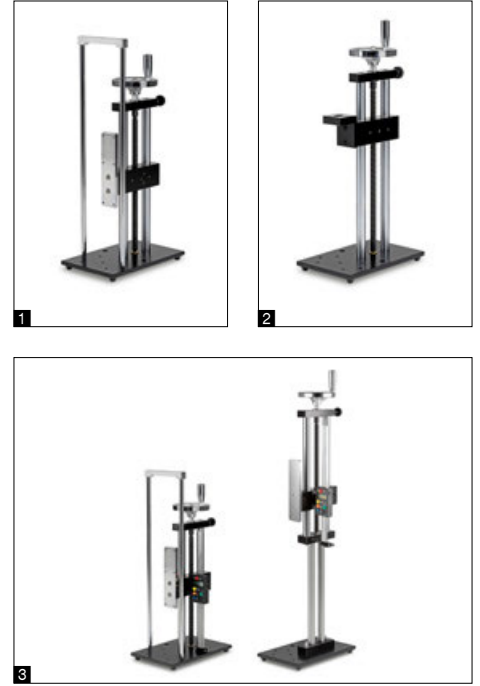
STANDARD



OPTION



| Model | Measuring range [Max] N | Readability [d] N | Price excl. of VAT ex works € | Option DAkKS Calibration Certificate | | | |
|----------|----------------------------|----------------------|----------------------------------|--------------------------------------|-------|-------------------|-------|
| | | | | Tensile Force | | Compressive Force | |
| SAUTER | | | | DAkKS KERN | € | DAkKS KERN | € |
| FC 1K-BT | 1000 | 1 | 1320,- | 963-162 | 225,- | 963-262 | 225,- |



Manual test stand for highly accurate tensile and compressive force measurements

Features

- For vertical and horizontal use
- Precise measurement results
- High level of security at repeated measurements
- Large base plate with high versatility of fastening objects
- SAUTER TVL, TVL-XLS: Digital length meter SAUTER LA (without interface) as standard
 - Measuring range: max. 200 mm
 - Readability: 0,01 mm
 - Zero setting possible
 - Pre-length can be set manually
- **1** SAUTER TVL-O: Manual test bench without SAUTER LA length measuring device
- **2** SAUTER TVL-E: Test bench for force-measuring devices with an external measuring cell
- SAUTER TVL-O, TVL-E: As an option, the SAUTER LB length measuring device (with interface) can be fitted, see *accessories*

- SAUTER TVL, TVL-XLS, TVL-O: Suitable for all SAUTER force measuring devices with internal measuring cell up to 1000 N (not included in delivery)
- SAUTER TVL-E: Suitable for all SAUTER force measuring devices with external measuring cell up to 2000 N (not included in delivery)
- SAUTER TVL: Hook with M6 thread as standard
- SAUTER TVL-XLS: consisting of: SAUTER TVL + SAUTER TVL-XL, see *accessories*
- **3** Model TVL and TVL-XLS in size comparison

Technical data

- Base plate with threaded hole M6
- Travel distance per knob rotation (stroke per one turn):
SAUTER TVL-XLS, TVL, TVL-O: 3 mm
SAUTER TVL-E: 2 mm

Accessories

- Extension kit for SAUTER TVL, extends the working area by 340 mm, enabling larger test pieces to be measured. The traverse distance (spindle height from base plate) remains the same: 230 mm. Overall dimensions W×D×H 35×110×344 mm, Net weight approx. 2,8 kg, can be retrofitted, SAUTER TVL-XL, **€ 330,-**
- Digital length measuring device, measuring range 200 mm, readability 0,01 mm, details see page 39, SAUTER LB 200-2, **€ 1140,-**
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02, **€ 210,-**
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
Force-displacement only in combination with SAUTER LB, SAUTER AFH FD, **€ 710,-**

Save with our practical bundles of test stand, force gauge and matching clamps, e.g. SAUTER TVL 500FHS71, consisting of:

- 1× TVL
- 1× FH 500 (Details see page 12)
- 2× AE 500 (Details see page 34)

You can find our bundles on page 24

STANDARD



TVL, TVL-XLS

| Model | Measuring range [Max] N | Maximum travel distance mm | Length measuring device at delivery | Dimensions W×D×H mm | Net weight approx. kg | Price excl. of VAT ex works € |
|----------------|-------------------------------|-------------------------------|--|---------------------------|--------------------------|----------------------------------|
| SAUTER TVL-XLS | 500 | 230 | Length measuring device with display | 200×300×800 | 12 | 760,- |
| TVL | 1000 | 230 | | 151×234×465 | 9 | 450,- |
| TVL-O | 1000 | 230 | Length measuring device with display and data interface (optional) | 151×234×465 | 9 | 290,- |
| TVL-E | 2000 | 290 | | 154×240×550 | 8 | 610,- |



SAUTER TVP



SAUTER TVP-L



Manual test stands for compressive force measurements, also with digital length measurement

Features

- Provides quick and consistent testing
- High level of security at repeated measurements
- Provides maximum versatility and precise measuring results
- Slide construction for distance measurement
- Large base plate with high versatility of fastening objects
- Suitable for all SAUTER force gauges up to 500 N (not included in delivery)
- SAUTER TVP-L: Digital length meter
 - Measuring range: 100 mm
 - Readability: 0,01 mm
 - Zero setting possible
 - Pre-length can be set manually

Technical data

- Maximum work zone: 315 mm
- Maximum stroke length: 78 mm
- Base plate with threaded hole M6
- Overall dimensions WxDxH 150x233x420 mm
- Net weight approx. 11 kg

Accessories

- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**

Only TVP-L:

- Digital length measuring device, measuring range 200 mm, readability 0,01 mm, details see page 39, SAUTER LB 200-2, **€ 1140,-**
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02, **€ 210,-**
- Data transfer software with graphical representation of the measuring process Force-displacement only in combination with SAUTER LB, SAUTER AFH FD, **€ 710,-**

STANDARD



TVP-L

| Model | Measuring range | Price excl. of VAT ex works € |
|--------|-----------------|--|
| SAUTER | [Max] N | |
| TVP | 500 | 305,- |
| TVP-L | 500 | 445,- |



The practical all-in-one package for rapid, simple testing

FH 500S71

- All-in-One: Digital force-measuring device incl. clamp
- For rapid, simple testing of forces up to 500 N
- Assembly and configuration of the parts is not required and therefore saves time and effort
- For tensile force and compressive force measurements

Accessories

- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, € 115,-

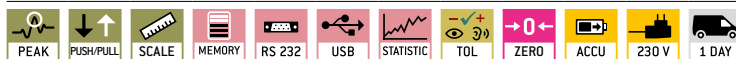
TVL 500FHS71

- All-in-One: test stand with digital force-measuring device and 2 clamps
- For manual testing with a pitch of 3 mm/rotation and for forces up to 500 N
- Assembly and configuration of the parts is not required and therefore saves time and effort
- For tensile force and compressive force measurements

Accessories

- Digital length measuring device, measuring range 200 mm, readability 0,01 mm, details see page 39, SAUTER LB 200-2, € 1140,-
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02, € 210,-
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, € 115,-
Force-displacement only in combination with SAUTER LB, SAUTER AFH FD, € 710,-

STANDARD



OPTION



| Model | Measuring range [Max] N | Division [d] N | Scope of delivery | Price excl. of VAT ex works € | Option DAKkS Calibration Certificate | | | | | |
|--------------|-------------------------|----------------|----------------------------------|-------------------------------|--------------------------------------|-------|-------------------|-------|---------------------------|-------|
| | | | | | Tensile Force | | Compressive Force | | Tensile/Compressive Force | |
| SAUTER | | | | | DAKkS KERN | € | DAKkS KERN | € | DAKkS KERN | € |
| FH 500S71 | 500 | 0,1 | 1× FH 500 1× AE 500 1× TVL | 710,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |
| TVL 500FHS71 | 500 | 0,1 | 1× FH 500 2× AE 500 | 1380,- | 963-161 | 187,- | 963-261 | 187,- | 963-361 | 340,- |



Robust premium test stand for laboratory applications

Features

- Motorised test stand for tension/compression force measurements
- Table-top design for comfortable operation
- Robust design for durable use
- Easy-to-access safety switch-off
- Upper and lower end point of the traverse distance can be set individually
- Automatic or manual operation mode
- **1** Suitable for all SAUTER force gauges up to 500 N, e.g. SAUTER FH-S, for details see page 12 (not included in delivery)

Technical data

- Maximum tensile and compressive force: 500 N
- Speed accuracy: 2 % of [Max]
- Overall dimensions W×D×H 570×428×236 mm
- Net weight approx. 28 kg

Accessories

- Digital length measuring device, measuring range 300 mm, readability 0,01 mm, details see page 39, SAUTER LB 300-2, **€ 1250,-**
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02, **€ 210,-**
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
Force-displacement only in combination with SAUTER LB, SAUTER AFH FD, **€ 710,-**

| | | | |
|----------|--------|--------|----------|
| STANDARD | | OPTION | |
| | | | |
| ELECTRO | 2 DAYS | SCALE | SOFTWARE |

| Model | Measuring range [Max] N | Speed range mm/min | Maximum travel distance mm | Price excl. of VAT ex works € |
|-----------------------|-------------------------------|-----------------------|-------------------------------|--|
| SAUTER TVO 500N300 | 500 | 15 - 300 | 270 | 2500,- |



**Premium test stand in table-top version – with precise step motor
– also available as a set**



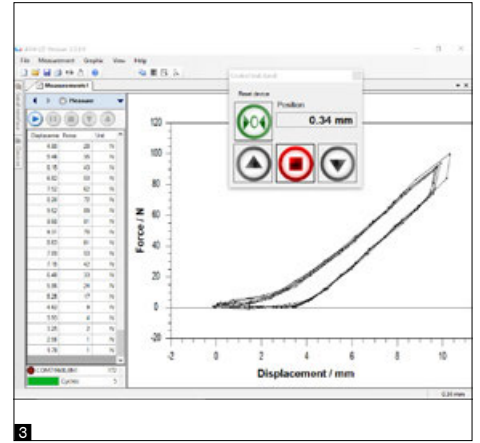
Solid and flexible fixing options for many clamps and accessories from the SAUTER product range, see *accessories*



A wide range of application possibilities because of its large travelling distance



Interface for data transmission from the SAUTER FH measuring device and for controlling the test stand with SAUTER AFH software



Features

- Motorised test stand for tension/compression force measurements. **1** Also available as a practical set TVO-LD for force-displacement-measurements in laboratory and industry
- Stepper motor for greatest ease of use
 - for constant speed from the smallest to the maximum load
 - allows testing at minimum speed and full load
 - for higher positioning accuracy. Precise starting and stopping, without overrun, even at high speeds
 - precise adjustment of the displacement speed using the information shown on the display
- Automatic or manual operation mode
- **2** Premium operating panel:
 - Digital speed display
 - Digital repeat function display
 - Control of the test stand using PC software SAUTER AFH **3**
- Table-top design for comfortable operation
- Robust construction
- Fixation of SAUTER force measuring devices up to 2 kN possible

1 SAUTER TVO-LD

- Five in one – motorised test stand, length measuring system LD, interface cable, data transfer software AFH LD, interface converter AFH 12 and mounting
- With linear potentiometer for length measurement to create force-displacement diagrams on PC, maximum measuring range 300 mm/ 500 mm/700 mm, readability 0,01 mm, measuring accuracy 0.5 % of [Max], USB-A cable 1,5 m, high data acquisition speed

Technical data

- Speed accuracy: 0,5 % of [Max]
- Positioning accuracy when shutting down: ± 0,05 mm

Accessories

- Only TVO-S: Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**

| | | | | | |
|-----------------|--------|--|--|---------------|--|
| STANDARD | | | | OPTION | |
| | | | | | |
| TVO-LD | TVO-LD | | | TVO | |

| Model | Measuring range | Speed range | Maximum travel distance | Price excl. of VAT ex works € |
|---|-----------------|-----------------|-------------------------|-------------------------------|
| | [Max] N | [Max] mm/min | mm | |
| SAUTER | | | | |
| TVO 500N500S | 500 | 1 - 500 | 270 | 3950,- |
| TVO 1000N500S | 1000 | 1 - 500 | 500 | 4090,- |
| TVO 2000N500S | 2000 | 1 - 500 | 700 | 5800,- |
| Sets incl. test stand, length measuring system, interface cable, software AFH LD, assembly: | | | | |
| TVO 500N500S-LD | 500 | 1 - 500 | 270 | 5050,- |
| TVO 1000N500S-LD | 1000 | 1 - 500 | 500 | 5250,- |
| TVO 2000N500S-LD | 2000 | 1 - 500 | 700 | 6980,- |



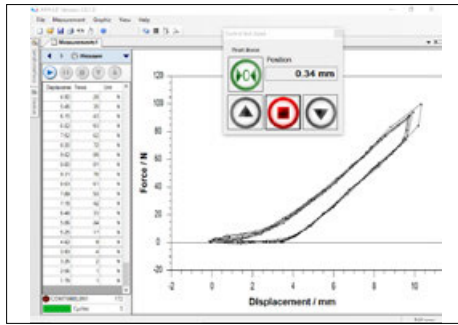
Motorised test stand incl. length measuring device LB



Test stand with electric motor for standard measurements – also available as a set



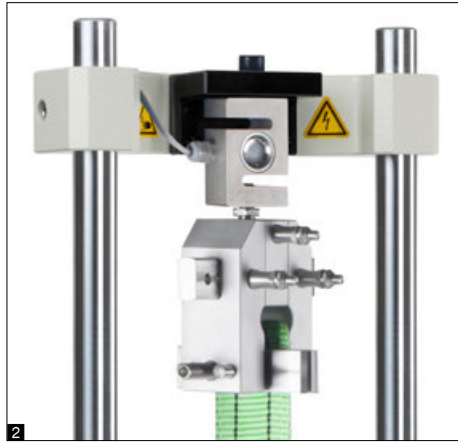
Premium operating panel
 - Digital speed display
 - Digital repeat function



Control of the test stand using PC software SAUTER AFH



Solid and flexible fixing options for many clamps and accessories from the SAUTER product range, see *accessories*



Features

- Motorised test stand for tension/compression force measurements. Also available as a practical set for force-displacement-measurements in laboratory and industry
- Force controlled automatic switchoff, teststop after achieving an adjusted limit load, only in connection with a SAUTER FH force gauge
- Maximum displacement protected by electronic end switches
- Particularly flexible mounting options for variable force SAUTER measuring devices, such as, FC, FH, FK, FL
 - **1** Direct mounting of measuring devices with internal load cell up to a measuring range of 500 N (only for TVM 5000N230N)
 - **2** Direct mounting of the external load cell on the traverse, starting with 1000 N measurement range and higher
 - **3** Holder for force measuring devices of the SAUTER FH range with external load cell

SAUTER TVM-N/TVM-NL

- SAUTER LA length measuring device as standard, to read the travel distance with a readability of 0,01 mm

SAUTER TVM-LB

- Five in one – motorised test stand, digital length measuring device LB, interface cable, data transfer software AFH FD, two interface converters AFH 12 and mounting
- With digital length measuring device LB for creating force-displacement diagrams on the PC, maximum measuring range 300 mm, readability 0,01 mm, for details see page 39

Technical data

- Maximum travel distance: 210 mm
- Speed accuracy: 3 % of [Max]

Accessories

- Only TVM: Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, € 115,-
- **3** Holder for force measuring devices of the SAUTER FH range with external load cell, SAUTER TVM-A01, € 95,-

| | | | | |
|----------|----------|---------|--------|----------|
| STANDARD | | | | OPTION |
| | | | | |
| SCALE | SOFTWARE | ELECTRO | 2 DAYS | SOFTWARE |
| | TVM-LB | | | TVM |

| Model | Measuring range [Max] N | Speed range [Max] mm/min | Length of columns mm | Price excl. of VAT ex works € |
|---|-------------------------------|--------------------------------|-------------------------|--|
| SAUTER | | | | |
| TVM 5000N230N | 5000 | 10 - 230 | 635 | 2740,- |
| TVM 5000N230NL | 5000 | 10 - 230 | 1135 | 3230,- |
| TVM 10KN120N | 10000 | 30 - 120 | 1135 | 3770,- |
| TVM 20KN120N | 20000 | 30 - 120 | 1135 | 5040,- |
| Sets incl. test stand, length measuring device, interface cable, software AFH FD, assembly: | | | | |
| TVM 5000N230N-LB* | 5000 | 10 - 230 | 635 | 4880,- |
| TVM 5000N230NL-LB* | 5000 | 10 - 230 | 1135 | 5350,- |
| TVM 10KN120N-LB* | 10000 | 30 - 120 | 1135 | 5880,- |
| TVM 20KN120N-LB* | 20000 | 30 - 120 | 1135 | 7100,- |

1 * ONLY WHILE STOCKS LAST



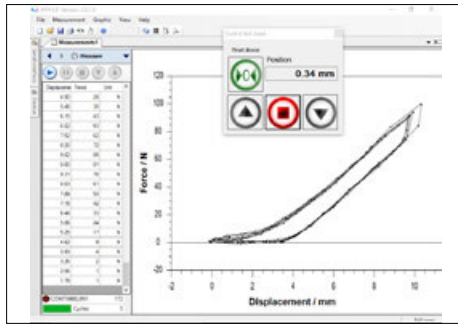
Motorised test stand incl. length measuring system LD



**Premium test stand with step motor for precise testing up to 50 kN
– also available as a set**



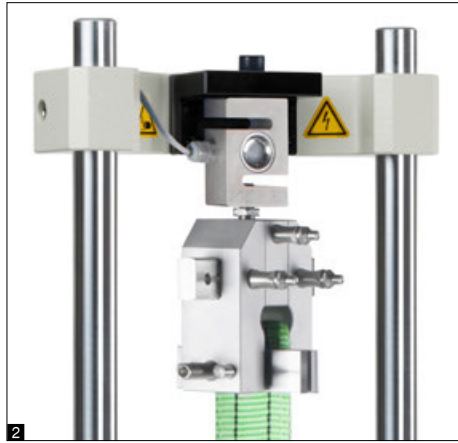
Premium operating panel
- Digital speed display for a direct reading of the displacement speed
- Digital repeat function for long-term stress test



Control of the test stand using PC software SAUTER AFH



Solid and flexible fixing options for many clamps and accessories from the SAUTER product range, see *accessories*



Features

- Motorised test stand for tension/compression force measurements. Also available as a practical set TVS-LD for force-displacement-measurements in laboratory and industry
- Stepper motor for greatest ease of use
 - for constant speed from the smallest to the maximum load
 - allows testing at minimum speed and full load
 - for higher positioning accuracy. Precise starting and stopping, without overrun, even at high speeds
 - precise adjustment of the displacement speed using the information shown on the display
- Maximum displacement protected by electronic end switches
- Large working area by means of long guide columns as standard, which allows a wide range of fixing options

- Particularly flexible mounting options for variable force measuring devices, such as, for example, SAUTER FC, FH, FK, FL:
 - **1** Direct mounting of measuring devices with internal load cell up to a measuring range of 500 N (only for TVS 5000N240)
 - **2** Direct mounting of the external load cell on the traverse, starting with 1000 N measurement range and higher
 - **3** Holder for force measuring devices of the SAUTER FH range with external load cell
- Only TVS: SAUTER LA length measuring device as standard, to read the travel distance with a readability of 0,01 mm

Technical data

- Maximum travel distance: 210 mm
- Speed accuracy: 1 % of [Max]
- Positioning accuracy when shutting down: ± 0,05 mm

Accessories

- Only TVS: Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, **€ 115,-**
- **3** Holder for force measuring devices of the SAUTER FH range with external load cell, SAUTER TVM-A01, **€ 95,-**

SAUTER TVS-LD

- Five in one – premium motorised test stand, length measuring system LD, interface cable, data transfer software AFH LD, interface converter AFH 12 and mounting
- With linear potentiometer for length measurement to create force-displacement diagrams on PC, maximum measuring range 300 mm, readability 0,01 mm, measuring accuracy 0.5 % of [Max], USB-A cable 1,5 m, high data acquisition speed

| | | | | |
|----------|----------|---------|--------|----------|
| STANDARD | | | | OPTION |
| | | | | |
| SCALE | SOFTWARE | STEPPER | 2 DAYS | SOFTWARE |
| TVS-LD | | | | TVS |

| Model | Measuring range [Max] N | Speed range [Max] mm/min | Length of columns mm | Price excl. of VAT ex works € |
|---|-------------------------------|--------------------------------|-------------------------|--|
| SAUTER | | | | |
| TVS 5000N240 | 5000 | 1 - 240 | 1135 | 5650,- |
| TVS 10KN100 | 10000 | 1 - 200 | 1135 | 7200,- |
| TVS 20KN100 | 20000 | 1 - 70 | 1135 | 7300,- |
| TVS 50KN80 | 50000 | 1 - 70 | 1135 | 10400,- |
| Sets incl. test stand, length measuring system, interface cable, software AFH LD, assembly: | | | | |
| TVS 5000N240-LD | 5000 | 1 - 240 | 1135 | 6590,- |
| TVS 10KN100-LD | 10000 | 1 - 200 | 1135 | 8150,- |
| TVS 20KN100-LD | 20000 | 1 - 70 | 1135 | 8250,- |
| TVS 50KN80-LD | 50000 | 1 - 70 | 1135 | 11290,- |



Manual test stand for tensile and compressive testing of springs, medium version up to 100 N

Características

- Spring tester for tension and compression tests
- Measuring device integrated in housing
- **1** Integrated thermal printer
- Digital length measuring unit SAUTER LA as standard:
 - Manual zero adjustment possible
 - Pre-length can be set manually
 - Readability: 0,01 mm
- 10 memories to print out the results or to calculate average values
- Measuring with tolerance range (limit-setting function): Upper and lower limit adjustable, in pull and push direction. The process is supported by an audible and visual signal
- Peak load display (peak hold)
- Selectable measuring units: N, lbf, kgf

Datos técnicos

- Measuring precision: 0,5 % of [Max]
- Maximum stroke length: 100 mm
- Maximum work zone: 100 mm
- Overall dimensions W×D×H 235×300×620 mm
- Net weight approx. 22 kg

STANDARD



OPTION



| Model | Measuring range [Max] N | Division [d] N | Price excl. of VAT ex works € | Option | |
|------------------|-------------------------|----------------|-------------------------------|---------------------------------|-------|
| | | | | Factory calibration certificate | € |
| SAUTER SD 50N100 | 50 | 0,01 | 2520,- | KERN 961-2610 | 198,- |
| SD 100N100 | 100 | 0,02 | 2520,- | 961-2610 | 198,- |

1 ONLY WHILE STOCKS LAST

FASTENERS & ACCESSORIES

It is often the little details that make a crucial difference. Fasteners such as clamps and brackets are small but essential connecting elements between measuring devices and test benches or workpieces. Precise and reproducible measurements would not be possible without them.

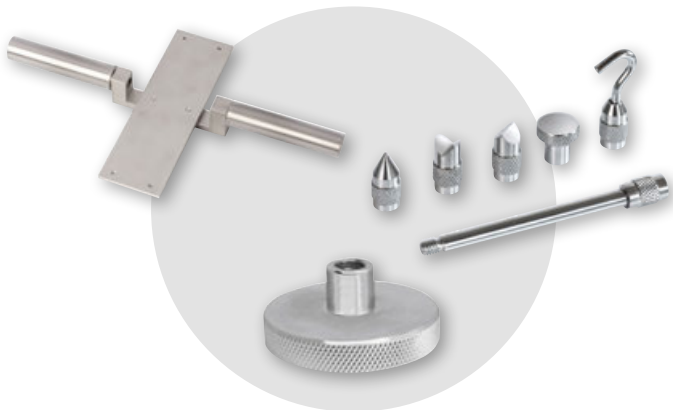
In addition to a wide selection of fasteners, SAUTER also offers suitable accessories to provide you with the ideal support for your measurements. Whether standard or customised solutions, our range has everything you need for precise and efficient measuring.

Our experts are at your side with their specialised knowledge to help you select the best components for your measuring systems.

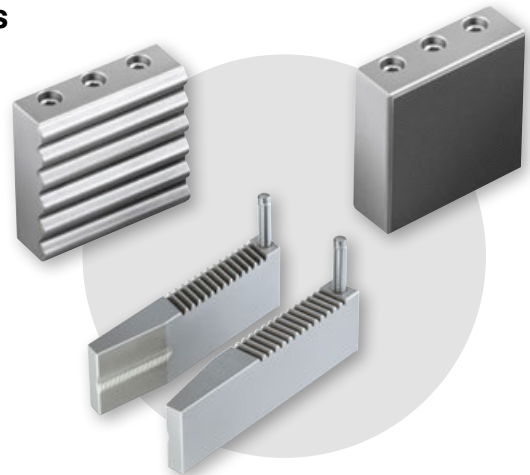


We will be happy to advise you:
Tel. +49 7433 9933-562
info.sauter@kern-sohn.com

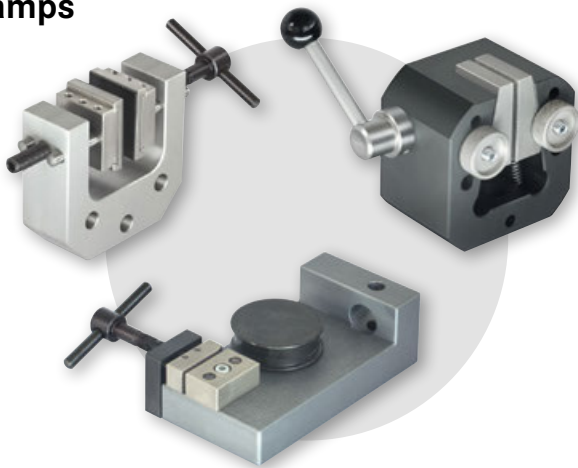
Accessories



Jaws



Clamps



Connection adapters



You can find the full range of clamps & brackets as well as the entire assortment of accessories with many other parts on our website www.kern-sohn.com

Or you can simply scan the code for detailed information, technical data and prices.





Quickly fittable universal screw tension clamp for tension and compression testing for a force range up to 500 N

Features

- High-quality screw tension clamp in the lower force range with an enormous flexibility for a fast adaptation to a wide variety of test objects
- Solid version for high clamp forces
- Flexible clamping width (width between the jaws) from 0 - 10 mm
- Jaws with pyramid grip as standard, W×H 15×10 mm
- The modular construction enables a quick adaptation and cleaning of the clamp
- The threaded rods with hexagon socket allow the test objects to be securely clamped with standard tools and thus adapted to the user's own requirements and operating conditions, e.g. use with a test stand or measuring device, etc.
- Can be used with all SAUTER force measuring devices or test stand systems
- To fix the clamp on a force gauge, there is a M6 thread on the upper side of the clamp
- Scope of supply: 1 clamp with 2 jaws with pyramid-shaped grip

Technical data

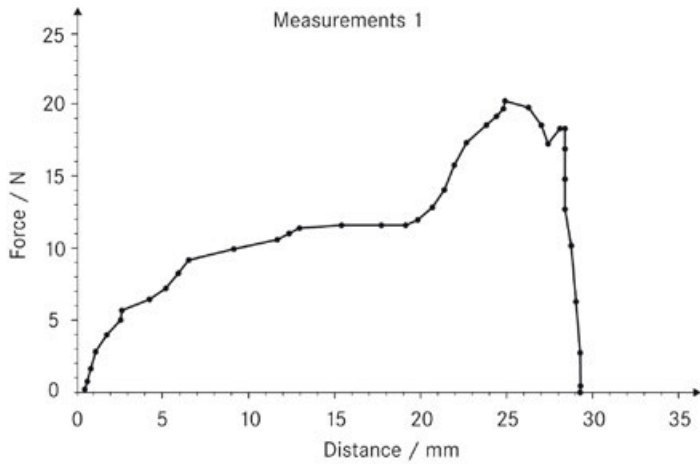
- For tension and compression testing up to 500 N
- Overload protection: 150 % of [Max]
- Overall dimensions W×D×H 51×41×15 mm
- Net weight approx. 0,10 kg

STANDARD



1 DAY

| Model | Measuring range | Price excl. of VAT ex works € |
|--------|-----------------|--|
| SAUTER | [Max] N | |
| AE 500 | 500 | 195,- |



Data transfer software for force-displacement-measurements

Features

- AFH FD/AFH LD software is designed for all applications that require the measurement of forces, depending on the displacement. Typically these are force progression graphs in penetration tests or pullout tests
- The program simultaneously requests the measurements from a force measuring device, e.g. SAUTER FH, as well as a length measuring device, e.g. SAUTER LB or SAUTER LD **1**, **2**
- The measurements from both instruments are transferred continuously to the PC, synchronised by the AFH FD/AFH LD software and exported in the form of a graphic, as well as free data format for simple processing in Microsoft Excel®
- The software AFH FD is compatible with all instruments of series SAUTER FC, FH, FL
- The software AFH LD is compatible with all instruments of series SAUTER FC, FH, FL, FS
- These measuring instruments are usually used with SAUTER test stands, in particular those from the SAUTER TVM-N and TVS range. However, it is also possible to use them with mechanical testing machines

- Further analysis functions:
 - Extension of the test object
 - Tensile and compressive force
 - Endurance testing
 - Archiving the recorded data
 - Scope of delivery for SAUTER AFH FD/AFH LD:
 - Software AFH FD/AFH LD as download
 - User manual
 - AFH FD: RS-232 interface cable for LB (LB-A01)
 - Compatible with the following operating system: Microsoft Windows 10, 11®
 - **3** Order example for a complete test system:
 - FH 5K (Digital force gauge)
 - LB 300-2 (Digital length measuring device)
 - AFH FD (Force-distance evaluation software)
 - TVM 5000N230N* (Test stand)
 - LB-A02* (Mounting LB on test stands)
 - 2× AFH 12 (RS-232/USB adapter)
 - AC 04* (Test object holder)
 - 963-163* (Force calibration)
 - 961-150* (Length calibration)
- * not necessarily required for operating the AFH FD software

Technical data

- Data recording rate max. 3 Hz (specially in combination with SAUTER FH and SAUTER LB)
- Data recording rate max. 25 Hz (in combination with SAUTER LD, dependent on measuring instrument)

Accessories

- Interface cable RS-232 (for SAUTER LB), SAUTER LB-A01, € 390,-
- RS-232/USB adapter, to connect peripheral devices with USB connection, SAUTER AFH 12, € 95,-

STANDARD



| Model | Price excl. of VAT ex works € |
|------------------|--|
| SAUTER AFH FD | 710,- |
| AFH LD | 270,- |

SAUTER AFH LD

- Force-displacement software, but only in combination with a length measuring device of SAUTER LD series

| No. | Messwert | Einheit | Richtung | Material | Datum | Zeit |
|-----|----------|---------|----------|-----------------|---------|-------|
| 6 | 1000 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 7 | 900 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 8 | 800 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 9 | 540 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 10 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 11 | 420 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 12 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 13 | 397 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 14 | 347 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 15 | 306 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 16 | 300 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 17 | 420 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 18 | 500 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 19 | 500 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 20 | 500 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 21 | 600 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 22 | 600 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 23 | 600 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 24 | 600 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 25 | 600 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 26 | 600 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 27 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 28 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 29 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 30 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 31 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 32 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 33 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 34 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 35 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 36 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 37 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 38 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 39 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 40 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 41 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 42 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 43 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 44 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 45 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 46 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 47 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 48 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 49 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 50 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 51 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 52 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 53 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 54 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 55 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 56 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 57 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 58 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 59 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 60 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 61 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 62 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 63 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 64 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 65 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 66 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 67 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 68 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 69 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 70 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 71 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 72 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 73 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 74 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 75 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 76 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 77 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 78 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 79 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 80 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 81 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 82 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 83 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 84 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 85 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 86 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 87 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 88 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 89 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 90 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 91 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 92 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 93 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 94 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 95 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 96 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 97 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 98 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 99 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |
| 100 | 400 | mL | 0 | Stee&Cast Steel | 11. Nov | 21:00 |



Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®

Features

- Ideal for transferring measuring data from the internal data memory of the measuring instrument to Microsoft Excel®
- Solution: SAUTER AFI-2.0 plug-in for Microsoft Excel®. By doing this, an installation and learning yet another software can be avoided
- Compatible with Microsoft Excel® 2013 et seq.
- Easy handling: The measuring instrument is connected to the PC. At the push of a button, the SAUTER AFI-2.0 plug-in scans all the existing serial interfaces on the PC, finds the relevant measuring instrument and then reads the measuring data memory

Technical data

- Suitable for the following ranges: SAUTER FL, FS, DA, DB, HN-D, HK-D, HK-DB, SW

Accessories

- RS-232/Ethernet adapter for connection to an IP-based Ethernet network, KERN YKI-01, **€ 380,-**
- USB/PC connection cable (USB-A/USB mini), SAUTER FL-A01, **€ 50,-**
- More details as well as free download possible in the download area of the webshop

STANDARD



2



LENGTH MEASUREMENT

Measuring geometric characteristics is one of the most common tests when carrying out material testing. The most well-known tool is the calliper gauge or the micrometer gauge (micrometer).

In this area of measurement, SAUTER confines itself to integrated calliper gauges which can be used in combination with deforming material testing.

Very often, the issue of material testing relates to a force which is exerted in connection with a specific deformation, i.e. expansion or compression of the test item.

In these cases, the force must be measured or recorded in relation to the distance travelled by the test item during the test.

Integrated calliper gauges serve to capture this distance. They are typically fitted in test stands, machines or plant.

As a guide, the following has been assembled as a sample system for a typical material test stand:

- Length measuring device, e.g. LB 300-2
- Calibration length measuring device, e.g. 961-150
- Test stand, e.g. TVM-N
- Fitting to test stand, e.g. LB-A02
- Data transfer software, e.g. AFH FD
- Force gauges, e.g. FH
- Calibration Force gauges, e.g. 961-162
- 2× RS-232/USB adapter, e.g. AFH 12



Irmgard Russo
Product Specialist
Length Measurement
Tel. +49 7433 9933-208
info@sauter.eu

Quick-Finder

| Readout | Measuring range | Model | Price excl. of VAT | Page |
|---------|-----------------|----------|--------------------|------|
| [d] | [Max] | | ex works | |
| mm | mm | SAUTER | € | |
| 0,01 | 200 | LB 200-2 | 1140,- | 39 |
| 0,01 | 300 | LB 300-2 | 1250,- | 39 |
| 0,01 | 500 | LB 500-2 | 1200,- | 39 |



Distance measurement directly in machines or sites with RS-232 interface

Features

- Digital sliding calliper with a superior precision even at high transversal movement speed
- Easy mounting to machine tools, conveyer, test stands e.g. SAUTER TVL-O, TVL-E, TVL-XLS, TVM-N etc.
- Zeroing, pre-added and pre-reduced length as well as switching the unit can be done manually
- Data interface RS-232 as standard
- Selectable measuring units: mm, inch

Technical data

- Overall dimensions W×D×H 350×42×30 mm
- Battery operation, batteries standard (3 V CR2032)

Accessories

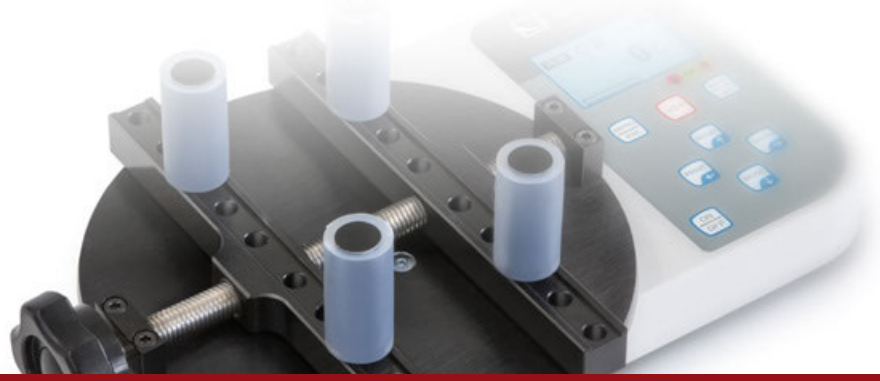
- RS-232/PC connection cable, SAUTER LB-A01, € 390,-
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02, € 210,-

| STANDARD | | | | OPTION | |
|----------|------|------|-------|----------|-------------|
| | | | | | |
| RS 232 | ZERO | BATT | 1 DAY | SOFTWARE | ISO +4 DAYS |

| Model | Measuring range [Max] mm | Readout [d] mm | Direction of measurement | Price excl. of VAT ex works € | Option | |
|--------------------|--------------------------------|----------------------|-----------------------------|--|---------------------|-------------|
| | | | | | Factory calibration | certificate |
| | | | | | KERN | € |
| SAUTER LB 200-2 | 200 | 0,01 | vertical/horizontal | 1140,- | 961-150 | 167,- |
| LB 300-2 | 300 | 0,01 | vertical/horizontal | 1250,- | 961-150 | 167,- |
| LB 500-2 | 500 | 0,01 | vertical/horizontal | 1200,- | - | - |

ONLY WHILE STOCKS LAST

3



TORQUE MEASUREMENT

There is a fundamental differentiation here between the measurement of static and dynamic torques.

Dynamic torques measurement is typically carried out using torque sensors on test objects which are rotating – during the movement.

Static torques measurement, on the other hand, is always carried out when the item is at rest.

The SAUTER range includes static torques gauges for determining the torque expended when opening rotary or screw caps of any kind.

Further typical applications of static torque measuring devices are testing of assembly tools for screws and nuts, in particular torque keys and mechanical assembly tools such as cordless electric screw drivers.



Helga Biselli
Product Specialist
Torque Measurement
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info@sauter.eu

Quick-Finder

| Readout | Measuring range | Model | Price | Page |
|---------|-----------------|----------|--------------|------|
| [d] | [Max] | | excl. of VAT | |
| Nm | Nm | SAUTER | ex works | |
| | | | € | |
| 0,0001 | 0,5 | DB 0.5-4 | 1770,- | 42 |
| 0,0002 | 1 | DA 1-4 | 1980,- | 41 |
| 0,0002 | 1 | DB 1-4 | 1770,- | 42 |
| 0,001 | 5 | DA 5-3 | 1990,- | 41 |
| 0,001 | 5 | DB 5-3 | 1770,- | 42 |
| 0,002 | 10 | DA 10-3 | 1970,- | 41 |
| 0,002 | 10 | DB 10-3 | 1770,- | 42 |
| 0,005 | 20 | DB 20-3 | 2010,- | 42 |
| 0,01 | 50 | DB 50-2 | 2010,- | 42 |
| 0,02 | 100 | DB 100-2 | 2010,- | 42 |
| 0,05 | 200 | DB 200-2 | 2010,- | 42 |
| 0,1 | 500 | DB 500-2 | 2010,- | 42 |



3



Comfortable testing of screw tops, e.g. bottles, jars etc.

Features

- **1** Optimised for torque testing of bottles, jars and other packaging with screw tops with a minimum diameter of 15 mm and a maximum diameter of 160 mm, in the food industry and pharmaceutical industry, as well as in the manufacturing of cosmetics such as, for example, lipsticks, etc.
- **2** Quick pin system: The four bottle mounts (holders) are pushed in, instead of being screwed in, to save time. This allows you to reconfigure quickly for other bottle sizes
- Metal housing for durable use in harsh environmental conditions
- **3** Capacity display: A bar lights up to show how much of the measuring range is still available
- **3** LCD graphics display with backlight
- Rubber feet with anti-slip feature
- Internal data memory saves up to 500 measurements. The memory contents can be transferred to the PC using optional software

- **4** Data interface USB and RS-232 included
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Can be used in both directions of rotation
- Measuring with tolerance range (limit-setting function): Upper and lower limiting can be programmed individually. The process is supported by an audible and visual signal
- AUTO-OFF function
- Scope of delivery: four bottle holders with rubber coating, sturdy carrying case

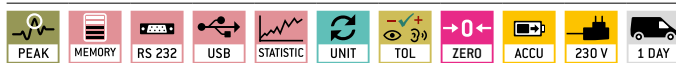
Technical data

- Selectable measuring units: Nm, kgf/cm, kgf/m, in/lbs, ft/lbs
- Measuring precision: $\pm 0,5\%$ of [Max]
- Usable measuring range: 5 - 100 % of [Max]
- Overload protection: 120 % of [Max]
- Rechargeable battery pack integrated, as standard, operating time up to 18 h without backlight, charging time approx. 14 h
- Overall dimensions WxDxH 260x160x60 mm
- Net weight approx. 3,0 kg

Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see internet
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, € 115,-

STANDARD



OPTION



| Model | Measuring range | Readout | Diameter test object | Price excl. of VAT ex works € | Option | |
|---------|-----------------|-----------|----------------------|-------------------------------|---------------------|-------------|
| | | | | | Factory Calibration | Certificate |
| SAUTER | [Max] Nm | [d] Nm | mm | | KERN | € |
| DA 1-4 | 1 | 0,0002 | 160 | 1980,- | 961-120 | 235,- |
| DA 5-3 | 5 | 0,001 | 160 | 1990,- | 961-120 | 235,- |
| DA 10-3 | 10 | 0,002 | 160 | 1970,- | 961-120 | 235,- |



3



Convenient way to test the torque of tools

Features

- **1** Particularly suitable for testing torque wrenches, electric hand screwdrivers and cordless screwdrivers
- **2** Screwing simulator for dynamic testing of electric screwdrivers (from SAUTER DB 0.5-4 to DB 50-2)
- Metal housing for durable use in harsh environmental conditions
- Capacity display: A bar lights up to show how much of the measuring range is still available
- LCD graphics display with backlight
- Rubber feet with anti-slip feature (from SAUTER DB 0.5-4 to DB 10-3)
- **3** Stable mounting plate for solid fixation (from SAUTER DB 20-3 to DB 500-2)

- Data interface USB and RS-232 included
- Internal data memory saves up to 500 measurements. The memory contents can be transferred to the PC using optional software
- Peak-Hold function to capture the peak value or Track function for continuous display of measurement
- Can be used in both directions of rotation
- Measuring with tolerance range (limit-setting function): Upper and lower limiting can be programmed individually. The process is supported by an audible and visual signal
- AUTO-OFF function
- Scope of delivery: Torque pick-up, sturdy carry case, mounting plate (for models with [Max] ≥ 20 Nm)

Technical data

- Backlit LCD graphics display
- Selectable measuring units: Nm, kgf/cm, kgf/m, in/lbs, ft/lbs
- Measuring precision: ± 0,5 % of [Max]
- Usable measuring range: 5 - 100 % of [Max]
- Overload protection: 120 % of [Max]
- Rechargeable battery pack integrated, as standard, operating time up to 18 h without backlight, charging time approx. 14 h
- Overall dimensions W×D×H 180×110×60 mm
- Net weight approx. 2,2 kg

Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see internet
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST, € 115,-

STANDARD



OPTION



| Model | Measuring range | Readout | Tool fitting | Price excl. of VAT ex works € | Option | |
|----------|-----------------|-----------|--------------|--|---------------------|-------------|
| | | | | | Factory Calibration | Certificate |
| SAUTER | [Max] Nm | [d] Nm | mm/Inch | | KERN | € |
| DB 0.5-4 | 0,5 | 0,0001 | 20 mm & 3/8" | 1770,- | 961-120 | 235,- |
| DB 1-4 | 1 | 0,0002 | 20 mm & 3/8" | 1770,- | 961-120 | 235,- |
| DB 5-3 | 5 | 0,001 | 20 mm & 3/8" | 1770,- | 961-120 | 235,- |
| DB 10-3 | 10 | 0,002 | 20 mm & 3/8" | 1770,- | 961-120 | 235,- |
| DB 20-3 | 20 | 0,005 | 20 mm & 3/8" | 2010,- | 961-120 | 235,- |
| DB 50-2 | 50 | 0,01 | 20 mm & 3/8" | 2010,- | 961-120 | 235,- |
| DB 100-2 | 100 | 0,02 | 3/8" | 2010,- | 961-120 | 235,- |
| DB 200-2 | 200 | 0,05 | 1/2" | 2010,- | 961-120 | 235,- |
| DB 500-2 | 500 | 0,1 | 3/4" | 2010,- | 961-120 | 235,- |

4



COATING THICKNESS MEASUREMENT

Measurement of coating thicknesses is known from, for example, the paint measurement for coating thickness at cars. In fact, these measurements are used much more widely in industrial applications. This is where the thickness of the surface finish is measured, such as galvanisation, zinc coating etc. or also lacquers.

Fundamentally there are two measuring principles for determining coating thickness:



Typ F: Non-magnetic coatings on magnetic metals, such as iron or steel (magnetic induction principle). Here are some sample material combinations:
 1) [chrome, copper, rubber, lacquer] on
 2) [steel, iron, alloys, magnetic stainless steel]



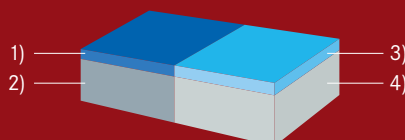
Typ N: Coatings on non-magnetic metals, such as aluminium (eddy current principle). Here are some sample material combinations:
 3) [lacquer, paints, enamel, chrome, plastics] on
 4) [aluminium, brass, sheet metal, copper, zinc, bronze]



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 Coating Thickness Measurement
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 info@sauter.eu



Typ FN: All coatings as for type F and N on all metals as for type F and N (combination of magnetic induction and eddy current principle)



Quick-Finder

| Readout | Measuring range | Model | Price | Page |
|---------|-----------------|-------------------|--------------|------|
| [d] | [Max] | | excl. of VAT | |
| µm | µm | SAUTER | ex works | |
| | | | € | |
| 0,1 | 2000 | JCT 100 | 445,- | 48 |
| 0,1 1 | 100 1000 | TB 1000-0.1F | 360,- | 44 |
| 0,1 1 | 100 1000 | TB 1000-0.1FN | 455,- | 44 |
| 0,1 1 | 100 2000 | TB 2000-0.1F | 325,- | 44 |
| 0,1 1 | 100 1250 | TC 1250-0.1F | 390,- | 45 |
| 0,1 1 | 100 1250 | TC 1250-0.1FN | 500,- | 45 |
| 0,1 1 | 100 1250 | TC 1250-0.1FN-CAR | 510,- | 45 |
| 0,1 1 | 100 1250 | TE 1250-0.1F | 410,- | 46 |
| 0,1 1 | 100 1250 | TE 1250-0.1FN | 520,- | 46 |
| 0,1 1 | 100 1250 | TE 1250-0.1N | 450,- | 46 |
| 0,1 1 | 100 1250 | TF 1250-0.1FN | 600,- | 47 |
| 0,1 1 | 100 1250 | TG 1250-0.1FN | 600,- | 47 |



Practical measuring device for measuring the thickness of layers for daily use

Features

- External sensor for difficult-to-access measuring points
- Offset-Accur: This function allows you to adjust the instrument precisely on the locally measured range by a two-point calibration. This results in a superior accuracy of 1 % (or less) of the measured value
- Selectable measuring units: μm , inch (mil)
- Auto-Power-Off
- Type F: Non-magnetic coatings on iron and steel
- Type N: Coatings on non-magnetic metals
- Base plate and calibration foils included
- **1** Delivered in a robust carrying case
- SAUTER TB 2000-0.1F: Specifically designed for the automobile industry, Precision: Standard 3 % of measured value

Technical data

- Measuring precision:
 - Standard: 3 % of measured value
 - Offset-Accur: 1 % of measured value
- Smallest sample surface (radius)
 - Type F
 - Convex: 1,5 mm
 - Flat: 6 mm
 - Concave: 25 mm
 - Type N
 - Convex: 3 mm
 - Flat: 6 mm
 - Concave: 50 mm
- Minimum thickness of base material: 300 μm
- Overall dimensions WxDxH 161x69x32 mm
- Battery operation, batteries standard (4x1.5 V AAA)
- Net weight approx. 0,75 kg

Accessories

- **2** Calibration foils for increased measuring accuracy (covers the range from 20 up to 2000 μm , with < 3 % tolerance), SAUTER ATB-US07, **€ 115,-**
- **3** External sensor, Type F, SAUTER ATE 01, **€ 116,-**
- **4** External sensor, Type N, SAUTER ATE 02, **€ 125,-**



| Model | Measuring range | Readout | Test object | Price excl. of VAT ex works € | Option | |
|---------------|------------------------|----------------------|--|--|---------------------------------|-------|
| | | | | | Factory calibration certificate | |
| SAUTER | [Max] μm | [d] μm | | | KERN | € |
| TB 1000-0.1F | 100 1000 | 0,1 1 | Type F | 360,- | 961-110 | 167,- |
| TB 2000-0.1F* | 100 2000 | 0,1 1 | Type N | 325,- | 961-110 | 167,- |
| TB 1000-0.1FN | 100 1000 | 0,1 1 | Combination instrument Type F / Type N | 455,- | 961-112 | 235,- |

1 * ONLY WHILE STOCKS LAST



4

Robust coating thickness gauge – compact and easy to use

Features

- Ergonomic design for easy handling
- Data interface RS-232 as standard
- Offset-Accur: This function allows you to adjust the instrument precisely on the locally measured range by a two-point calibration. This results in a superior accuracy of 1 % (or less) of the measured value
- Selectable measuring units: μm , inch (mil)
- Type F: Non-magnetic coatings on iron and steel
- Type N: Coatings on non-magnetic metals
- Base plate and calibration foils included
- **1** Delivered in a robust carrying case

2 SAUTER TC 1250-0.1FN-CAR

- Specifically designed for the automobile industry
- Automatic recognition of measuring mode (F or N): “point and shoot”
- Simple and convenient 1-key operation

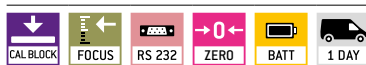
Technical data

- Measuring precision:
 - Standard: 3 % of measured value or $\pm 2,5 \mu\text{m}$
 - Offset-Accur: 1 % of measured value or $\pm 1 \mu\text{m}$
- Smallest sample surface (radius)
 - Type F
 - Convex: 1,5 mm
 - Flat: 13 mm
 - Concave: 80 mm
 - Type N
 - Convex:
 - Flat:
 - Concave:
- Minimum thickness of base material: 300 μm
- Overall dimensions WxDxH 125x65x26 mm
- Battery operation, batteries standard (4x1.5 V AAA)
- Net weight approx. 0,15 kg

Accessories

- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**
- Calibration foils for increased measuring accuracy (covers the range from 20 up to 2000 μm , with < 3 % tolerance), SAUTER ATB-US07, **€ 115,-**

STANDARD



OPTION



| Model | Measuring range | Readout | Test object | Price excl. of VAT ex works € | Option | |
|-------------------|------------------------|----------------------|--------------------------------------|--|---------------------------------|-------|
| | | | | | Factory calibration certificate | |
| SAUTER | [Max] μm | [d] μm | | | KERN | € |
| TC 1250-0.1F | 100 1250 | 0,1 1 | Type F | 390,- | 961-110 | 167,- |
| TC 1250-0.1FN | 100 1250 | 0,1 1 | Combination instrument Type F/Type N | 500,- | 961-112 | 235,- |
| TC 1250-0.1FN-CAR | 100 1250 | 0,1 1 | Combination instrument Type F/Type N | 510,- | 961-112 | 235,- |

1 ONLY WHILE STOCKS LAST



Ergonomic design and external measuring head for highest ease of use

Features

- External sensor for difficult-to-access measuring points
- Data interface RS-232 as standard
- Offset-Accur: This function allows you to adjust the instrument precisely on the locally measured range by a two-point calibration. This results in a superior accuracy of 1 % (or less) of the measured value
- Selectable measuring units: μm , inch (mil)
- Auto-Power-Off
- Type F: Non-magnetic coatings on iron and steel
- Type N: Coatings on non-magnetic metals
- Base plate and calibration foils included
- **1** Delivered in a robust carrying case

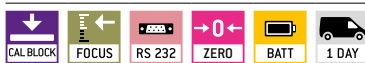
Technical data

- Measuring precision:
 - Standard: 3 % of measured value or $\pm 2,5 \mu\text{m}$
 - Offset-Accur: 1 % of measured value or $\pm 1 \mu\text{m}$
- Smallest sample surface (radius)
 - Type F
 - Convex: 1,5 mm
 - Flat: 6 mm
 - Concave: 50 mm
 - Type N
 - Convex: 1,5 mm
 - Flat: 6 mm
 - Concave: 50 mm
- Minimum thickness of base material: 300 μm
- Overall dimensions WxDxH 131x65x28 mm
- Battery operation, batteries standard (4x1.5 V AAA)
- Net weight approx. 0,10 kg

Accessories

- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**
- Calibration foils for increased measuring accuracy (covers the range from 20 up to 2000 μm , with < 3 % tolerance), SAUTER ATB-US07, **€ 115,-**
- **2** External sensor, Type F, SAUTER ATE 01, **€ 116,-**
- **3** External sensor, Type N, SAUTER ATE 02, **€ 125,-**

STANDARD



OPTION



| Model | Measuring range | Readout | Test object | Price excl. of VAT ex works € | Option | |
|---------------|------------------------|----------------------|--------------------------------------|--|---------------------------------|-------|
| | | | | | Factory calibration certificate | |
| SAUTER | [Max] μm | [d] μm | | | KERN | € |
| TE 1250-0.1F | 100 1250 | 0,1 1 | Type F | 410,- | 961-110 | 167,- |
| TE 1250-0.1N | 100 1250 | 0,1 1 | Type N | 450,- | 961-110 | 167,- |
| TE 1250-0.1FN | 100 1250 | 0,1 1 | Combination instrument Type F/Type N | 520,- | 961-112 | 235,- |



4



Premium coating thickness gauge for paint layer, lacquer layer etc.

Features

- **1** LCD display, backlit, display of all information at a glance
- Offset-Accur: This function allows you to adjust the instrument precisely on the locally measured range by a two-point calibration. This results in a superior accuracy of 1 % (or less) of the measured value
- Two different measuring modes: single measurement and scan mode for continuous measurement
- Mini Statistics Kit: displays the measured result, the average value and the max and the min value
- Internal data memory for up to 99 values
- Selectable measuring units: μm , inch (mil)
- Data interface RS-232 as standard
- Type F: Non-magnetic coatings on iron and steel
- Type N: Coatings on non-magnetic metals
- Base plate and calibration foils included
- Delivered in a robust carrying case

SAUTER TG

- External sensor for difficult-to-access measuring points

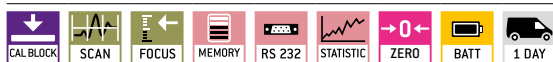
Technical data

- Measuring precision:
 - Standard: 3 % of measured value or $\pm 2,5 \mu\text{m}$
 - Offset-Accur: 1 % of measured value or $\pm 1 \mu\text{m}$
- Minimum thickness of base material: 300 μm
- Overall dimensions W×D×H 126×65×35 mm
- Battery operation, batteries standard (2×1.5 V AAA)
- Net weight approx. 0,10 kg

Accessories

- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**
- Calibration foils for increased measuring accuracy (covers the range from 20 up to 2000 μm , with < 3 % tolerance), SAUTER ATB-US07, **€ 115,-**
- SAUTER TG: External sensor, Type FN, SAUTER ATG 01, **€ 145,-**

STANDARD



OPTION



| Model | Measuring range [Max] μm | Readout [d] μm | Test object | Smallest sample surface (radius) mm | Price excl. of VAT ex works € | Option | |
|------------------------------|-------------------------------------|---------------------------|--------------------------------------|-------------------------------------|-------------------------------|---------|-----------------------------------|
| | | | | | | KERN | Factory calibration certificate € |
| SAUTER TF 1250-0.1FN* | 100 1250 | 0,1 1 | Combination instrument Type F/Type N | F: Convex: 1,5/ Concave: 25 | 600,- | 961-112 | 235,- |
| SAUTER TG 1250-0.1FN | 100 1250 | 0,1 1 | Combination instrument Type F/Type N | N: Convex: 1,5/ Concave: 50 | 600,- | 961-112 | 235,- |

1 * ONLY WHILE STOCKS LAST



4



New-generation measuring coating thickness gauge

Features

- Accurately determines the thickness of coats of paint or varnish on iron or non-iron base material
- Combination of magnetic and eddy current measuring methods enables particularly high levels of precision and flexibility. The base material is detected automatically
- Stable, reliable performance as well as non-destructive measuring
- Measuring range up to 2000 µm
- Low-wear sensor thanks to state-of-the-art technologies
- Single and two-point calibration
- Single and repeated measurements for pass/fail assessment. The three-colour LED display shows the current value attribute (green: qualified, red: below the limit value, yellow: above the limit value)

- **1** The display rotates automatically and makes it easier for the user to read the measured values from many different angles, or alternatively it can be locked in place manually
- Selection of functions with automotive mode, voice transmission, Bluetooth App and LED torch
- Bluetooth App included for communication and applications
- **2** Main application areas: Coating thickness measurement on metals in industry and research, for example in the automobile industry, metal processing, painting and inspection
- **3** Delivery in a practical box

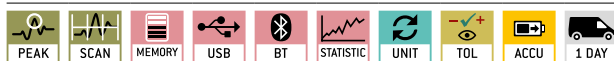
Technical data

- Measuring precision: 2 % of [Max]
- Selectable measuring units: µm, inch (mil)
- With internal sensor
- Internal data memory for up to 55 sets of values and 60 cells per set
- Overall dimensions W×D×H 152×65×35 mm
- Net weight approx. 0,20 kg

Accessories

- Calibration foils for increased measuring accuracy (covers the range from 20 up to 2000 µm, with < 3 % tolerance), SAUTER ATB-US07, € 115,-

STANDARD



| Model | Measuring range | Readout | Sensor types | Price excl. of VAT ex works € |
|---------|-----------------|-----------|--------------|-------------------------------|
| SAUTER | [Max] µm | [d] µm | | |
| JCT 100 | 2000 | 0,1 | FE NFE | 445,- |

5



MATERIAL THICKNESS MEASUREMENT

In cases, when the walls of the item to be measured are not accessible for traditional calliper gauges, the ultrasonic measuring equipment can be used.

This measurement is based on the following principle: Ultrasonic waves are directed onto one side of the material to be measured. They move with a defined speed through the material and are reflected on the other side. The measuring device measures the time required to do this and with this, calculates the thickness of the material.

In this way the wall thickness of, for example, ship's hulls, pipes, tanks and components in sites or machines can be determined.

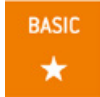
Ultrasonic measuring equipment can be used to measure all hard and homogeneous materials, such as metal, glass and hard plastics. This method can not be used to measure materials as, e.g. concrete, asphalt, teflon or wood.



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Quick-Finder

| Readout | Measuring range | Model | Price excl. of VAT | Page |
|-----------|-----------------|------------------|--------------------|------|
| [d] mm | [Max] mm | SAUTER | ex works € | |
| 0,01 | 80 | TN 80-0.01US | 700,- | 53 |
| 0,01 | 80 | TN GOLD 80 | 770,- | 52 |
| 0,01 | 80 | TU 80-0.01US | 1310,- | 55 |
| 0,01 | 230 | TN 230-0.01US | 700,- | 53 |
| 0,01 | 230 | TU 230-0.01US | 1310,- | 55 |
| 0,01 | 300 | TN 300-0.01US | 800,- | 53 |
| 0,01 | 300 | TU 300-0.01US | 1410,- | 55 |
| 0,01 | 600 | TN 30-0.01EE | 980,- | 54 |
| 0,01 | 600 | TN 60-0.01EE | 1340,- | 54 |
| 0,01 | 600 | TO 100-0.01EE | 1490,- | 56 |
| 0,1 | 80 | TN 80-0.1US | 630,- | 53 |
| 0,1 | 200 | TB 200-0.1US-RED | 345,- | 50 |
| 0,1 | 200 | TB 200-0.1US | 405,- | 50 |
| 0,1 | 225 | TD 225-0.1US | 485,- | 51 |
| 0,1 | 230 | TN 230-0.1US | 630,- | 53 |
| 0,1 | 300 | TN 300-0.1US | 740,- | 53 |



5



Reliable material thickness gauge for daily use

Features

- External measuring head for difficult-to-access measuring points
- Selectable measuring units: mm, inch
- Auto-Power-Off
- Base plate for adjustment included
- Scope of delivery: Operating instructions, batteries, external measuring head (∅ 8 mm) and ultrasound contact gel
- **1** Delivered in a robust carrying case
- TB 200-0.1US-RED: Can only analyse these materials: cast iron, aluminium, copper, brass, zinc, quartz glass, polyethylene, PVC, grey cast iron, nodular cast iron, steel

Technical data

- Measuring precision: 0,5 % of [Max]
- Overall dimensions W×D×H 161×69×32 mm
- Battery operation, batteries standard (4×1.5 V AA)
- Net weight approx. 0,30 kg

Accessories

- External measuring head, 5 MHz, ∅ 6 mm, for thin test materials: measuring range (steel) up to approx. 80 mm, SAUTER ATB-US01, **€ 215,-**
- External measuring head, 5 MHz, ∅ 12 mm, for hot test materials: Measuring range (steel) 3-200 mm at temperatures of up to 300 °C, SAUTER ATB-US02, **€ 270,-**
- External measuring head, 5 MHz, ∅ 8 mm, SAUTER ATB-US06, **€ 110,-**
- External measuring head, 5 MHz, ∅ 10 mm, SAUTER ATU-US09, **€ 150,-**
- Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, **€ 35,-**



| Model | Measuring range | Readout | Sensor | Sound velocity | Price excl. of VAT ex works | Option | |
|------------------|-----------------|-----------|----------------|----------------|-----------------------------------|---------------------|-------------|
| | | | | | | Factory Calibration | Certificate |
| SAUTER | mm | [d] mm | | m/sec | € | KERN | € |
| TB 200-0.1US | 1,5 - 200 | 0,1 | 5 MHz ∅ 8 mm | 500 - 9999 | 405,- | 961-113 | 167,- |
| TB 200-0.1US-RED | 1,5 - 200 | 0,1 | 5 MHz ∅ 8 mm | 500 - 9999 | 345,- | 961-113 | 167,- |



Compact pocket-sized material thickness gauge

Features

- External measuring head for difficult-to-access measuring points
- Selectable measuring units: mm, inch
- Data interface RS-232, included
- AUTO-OFF function to preserve the battery
- Base plate for adjustment included
- Scope of delivery: Operating instructions, batteries, external measuring head (∅ 8 mm) and ultrasound contact gel
- **1** Delivered in a robust carrying case

Technical data

- Measuring precision: 0,5 % of [Max] + 0,1 mm
- Overall dimensions W×D×H 30×65×120 mm
- Battery operation, batteries standard (4×1.5 V AAA)
- Net weight approx. 0,20 kg

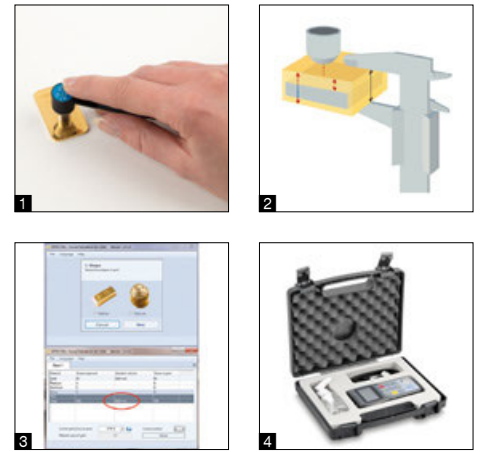
Accessories

- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**
- External measuring head, 5 MHz, ∅ 6 mm, for thin test materials: measuring range (steel) up to approx. 80 mm, SAUTER ATB-US01, **€ 215,-**
- External measuring head, 5 MHz, ∅ 12 mm, for hot test materials: Measuring range (steel) 3-200 mm at temperatures of up to 300 °C, SAUTER ATB-US02, **€ 270,-**
- External measuring head, 5 MHz, ∅ 8 mm, SAUTER ATB-US06, **€ 110,-**
- External measuring head, 5 MHz, ∅ 10 mm, SAUTER ATU-US09, **€ 150,-**
- External measuring head, 5 MHz, ∅ 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, **€ 150,-**
- Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, **€ 35,-**



| Model | Measuring range | Readout | Sensor | Sound velocity | Price excl. of VAT ex works € | Option | |
|---------------------|-----------------|-----------|----------------|----------------|--|---------------------|-------------|
| | | | | | | Factory Calibration | Certificate |
| SAUTER | mm | [d] mm | | m/sec | | KERN | € |
| TD 225-0.1US | 1,2 - 225 | 0,1 | 5 MHz ∅ 8 mm | 1000 - 9999 | 485,- | 961-113 | 167,- |

5



Ultrasonic measuring instrument for checking the authenticity of gold bars and coins

Features

- **1** You can use the TN-GOLD to determine whether gold or silver bars and coins are genuine or whether they contain a core of a different material
- The instrument measures the thickness of gold bars and gold coins using ultrasound
- Selectable measuring units: mm, inch
- **2** Process: Ultrasound waves are directed onto the test object using a sensor. The waves penetrate the test object, are then reflected from a surface opposite the object and then picked up again by the sensor. The measurement determined by this process will be compared with the material thickness as measured by a traditional calliper gauge. On the basis of the measurement given, false cores (Figure: grey) for example, those made of tungsten, lead, etc. can be easily identified, as the ultrasound reacts differently, compared with pure gold

- **3** SAUTER SSG software (included) can be used to calculate the sound velocity for various precious metal alloys. This makes it possible to determine whether coins or ingots contain false cores or whether they consist of one and the same material. Compatible with the following operating systems: Windows® 7/8/10
- Known additions in tested gold items – e.g. copper or silver – are compensated by the software
- In addition, the software determines the value of the gold item
- It is a test process which measures right through the whole bar or the whole coin without interference and thereby guarantees the highest level of certainty
- Internal memory for up to 20 files (with up to 100 values per file)
- Base plate for adjustment included
- Scope of delivery: Operating instructions, batteries, external measuring head (∅ 6 mm) and ultrasound contact gel
- **4** Delivered in a robust carrying case

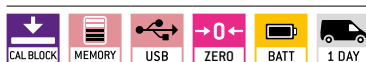
Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Overall dimensions W×D×H 150×74×32 mm
- Battery operation, batteries standard (2×1.5 V AA), AUTO-OFF function to preserve the battery
- Net weight approx. 0,25 kg

Accessories

- Data transfer software, interface cable included, SAUTER ATU-04, **€ 120,-**
- USB/PC connection cable (USB-A/USB mini), SAUTER FL-A01, **€ 50,-**
- External measuring head, 7 MHz, ∅ 6 mm, for thin test materials: Measuring range 0,75–80 mm (steel), SAUTER ATU-US02, **€ 150,-**
- Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, **€ 35,-**

STANDARD



OPTION



| Model | Measuring range | Readout | Sensor | Sound velocity | Price excl. of VAT ex works € | Option | |
|----------------------|-----------------|-------------------|----------------|----------------------|--|---------------------------------|------------|
| | | | | | | Factory Calibration Certificate | € |
| SAUTER TN GOLD 80 | mm 0,75 – 80 | [d] mm 0,01 | 7 MHz ∅ 6 mm | m/sec 1000 – 9999 | 770,- | KERN 961-113 | € 167,- |



Portable measuring device for ultrasonic material thickness testing

| | | |
|-----------------|-----------------------|--------------------|
| Features | Technical data | Accessories |
|-----------------|-----------------------|--------------------|

- External measuring head
- Data interface USB standard (only for models with readout [d] = 0,01 mm)
- Scan mode (10 measurements per sec.) or single point measuring mode possible
- Internal memory for up to 20 files (with up to 100 values per file)
- Selectable measuring units: mm, inch
- Scope of delivery: Operating instructions, batteries, device-specific measuring head and ultrasound contact gel
- **1** Delivered in a robust carrying case

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Overall dimensions W×D×H 150×74×32 mm
- Battery operation, batteries standard (2×1.5 V AA), AUTO-OFF function to preserve the battery
- Net weight approx. 0,25 kg

- Data transfer software, interface cable included, SAUTER ATU-04, **€ 120,-**
- External measuring head, 2,5 MHz, ø 14 mm, for thick samples, in particular cast iron with rough upper surfaces: Measuring range 3-300 mm (steel), SAUTER ATU-US01, **€ 235,-**
- External measuring head, 7 MHz, ø 6 mm, for thin test materials: Measuring range 0,75-80 mm (steel), SAUTER ATU-US02, **€ 150,-**
- External measuring head, 5 MHz, ø 10 mm, SAUTER ATU-US09, **€ 150,-**
- External measuring head, 5 MHz, ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, **€ 150,-**
- External measuring head, 5 MHz, ø 12 mm, for hot test materials: Measuring range (steel) 3-200 mm at temperatures of up to 300 °C, SAUTER ATB-US02, **€ 270,-**
- Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, **€ 35,-**

| | |
|-----------------|---------------|
| STANDARD | OPTION |
| | |

[d]=0,01 mm

| Model | Measuring range | Readout [d] mm | Sensor | Sound velocity m/sec | Price excl. of VAT ex works € | Option | |
|----------------------|-----------------|----------------------|-------------------|-------------------------|--|---------|-------------------------|
| | | | | | | Factory | Calibration Certificate |
| SAUTER | mm | [d] mm | | m/sec | € | KERN | € |
| TN 80-0.1US | 0,75 - 80 | 0,1 | 7 MHz ø 6 mm | 1000 - 9999 | 630,- | 961-113 | 167,- |
| TN 230-0.1US | 1,2 - 230 | 0,1 | 5 MHz ø 10 mm | 1000 - 9999 | 630,- | 961-113 | 167,- |
| TN 300-0.1US* | 3 - 300 | 0,1 | 2,5 MHz ø 14 mm | 1000 - 9999 | 740,- | 961-113 | 167,- |
| TN 80-0.01US | 0,75 - 80 | 0,01 | 7 MHz ø 6 mm | 1000 - 9999 | 700,- | 961-113 | 167,- |
| TN 230-0.01US | 1,2 - 230 | 0,01 | 5 MHz ø 10 mm | 1000 - 9999 | 700,- | 961-113 | 167,- |
| TN 300-0.01US | 3 - 300 | 0,01 | 2,5 MHz ø 14 mm | 1000 - 9999 | 800,- | 961-113 | 167,- |

1 * ONLY WHILE STOCKS LAST



5



Hand-held measuring device for ultrasonic material thickness testing in Echo-Echo principle

Features

- External measuring head
- USB data interface, as standard
- Scan mode (10 measurements per sec.) or single point measuring mode possible
- Internal memory for up to 20 files (with up to 100 values per file)
- Selectable measuring units: mm, inch
- Two measuring modes to determine material thickness:
 - Pulse-Echo mode
 - Echo-Echo mode
- Echo-Echo measuring: Determining the actual thickness of materials irrespective of any coating which might be present. In this way, the wall thickness of pipes, for example, can be determined in a non-destructive manner, without having to remove the coating and the measurement can be shown on the display, with the adjustment for the coating thickness already taken into account

- Echo-Echo measurements are only possible with the measuring head included as part of the delivery (SAUTER ATU-US12, see accessories)
- Scope of delivery: Operating instructions, batteries, external measuring head (∅ 10 mm) and ultrasound contact gel
- Delivered in a robust carrying case

Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Overall dimensions W×D×H 150×74×32 mm
- Battery operation, batteries standard (2×1.5 V AA), AUTO-OFF function to preserve the battery
- Net weight approx. 0,25 kg

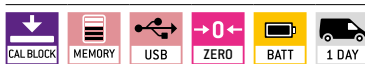
Accessories

- Data transfer software, interface cable included, SAUTER ATU-04, **€ 120,-**
- External measuring head, 5 MHz, ∅ 10 mm, for echo-echo measuring, SAUTER ATU-US12, **€ 345,-**
- Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, **€ 35,-**

Note: All following Pulse-Echo sensors can only be used in Pulse-Echo mode, not in Echo-Echo mode

- External measuring head, 2,5 MHz, ∅ 14 mm, for thick samples, in particular cast iron with rough upper surfaces: Measuring range 3-300 mm (steel), SAUTER ATU-US01, **€ 235,-**
- External measuring head, 7 MHz, ∅ 6 mm, for thin test materials: Measuring range 0,75-80 mm (steel), SAUTER ATU-US02, **€ 150,-**
- External measuring head, 5 MHz, ∅ 10 mm, SAUTER ATU-US09, **€ 150,-**
- External measuring head, 5 MHz, ∅ 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, **€ 150,-**

STANDARD



OPTION



| Model | Measuring range Echo-Echo | Measuring range Pulse-Echo | Readout [d] mm | Measuring head | Sound velocity m/sec | Price excl. of VAT ex works € | Option | |
|--------------|------------------------------|-------------------------------|----------------------|-----------------|-------------------------|--|---------------------|-------------|
| | | | | | | | Factory Calibration | Certificate |
| SAUTER | mm | mm | | | | | KERN | € |
| TN 30-0.01EE | 3 - 30 | 0,65 - 600 | 0,01 | 5 MHz ∅ 10 mm | 1000 - 9999 | 980,- | 961-113 | 167,- |
| TN 60-0.01EE | 3 - 60 | 0,7 - 600 | 0,01 | 5 MHz ∅ 10 mm | 1000 - 9999 | 1340,- | 961-113 | 167,- |



Premium ultrasonic thickness gauge

5

Features

- External measuring head for difficult-to-access measuring points
- **1** USB data interface, as standard
- Scan mode (10 measurements per sec.) or single point measuring mode possible
- Internal memory for up to 20 files (with up to 100 values per file)
- Measuring with tolerance range (limit-setting function): Upper and lower limiting can be programmed individually. The process is supported by an audible and visual signal
- Selectable measuring units: mm, inch
- Robust metal housing
- Base plate for adjustment included
- Scope of delivery: Operating instructions, batteries, device-specific measuring head and ultrasound contact gel
- **2** Delivered in a robust carrying case

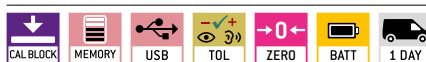
Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Overall dimensions W×D×H 130×76×32 mm
- Battery operation, batteries standard (2×1.5 V AA)
- Net weight approx. 0,50 kg

Accessories

- Software, interface cable included, SAUTER ATU-04TU, **€ 120,-**
- External measuring head, 2,5 MHz, ø 14 mm, for thick samples, in particular cast iron with rough upper surfaces: Measuring range 3-300 mm (steel), SAUTER ATU-US01, **€ 235,-**
- External measuring head, 7 MHz, ø 6 mm, for thin test materials: Measuring range 0,75-80 mm (steel), SAUTER ATU-US02, **€ 150,-**
- External measuring head, 5 MHz, ø 12 mm, for hot test materials: Measuring range (steel) 3-200 mm at temperatures of up to 300 °C, SAUTER ATB-US02, **€ 270,-**
- External measuring head, 5 MHz, ø 10 mm, SAUTER ATU-US09, **€ 150,-**
- External measuring head, 5 MHz, ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, **€ 150,-**
- Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, **€ 35,-**

STANDARD



OPTION



| Model | Measuring range | Readout | Measuring head | Sound velocity | Price excl. of VAT ex works € | Option | |
|---------------|-----------------|-----------|-------------------|----------------|-------------------------------|---------|-------------------------|
| | | | | | | Factory | Calibration Certificate |
| SAUTER | mm | [d] mm | | m/sec | | KERN | € |
| TU 80-0.01US | 0,75 - 80 | 0,01 | 7 MHz ø 6 mm | 1000 - 9999 | 1310,- | 961-113 | 167,- |
| TU 230-0.01US | 1,2 - 230 | 0,01 | 5 MHz ø 10 mm | 1000 - 9999 | 1310,- | 961-113 | 167,- |
| TU 300-0.01US | 3 - 300 | 0,01 | 2,5 MHz ø 14 mm | 1000 - 9999 | 1410,- | 961-113 | 167,- |

1 ONLY WHILE STOCKS LAST



5



Material thickness gauge for ultrasonic material thickness testing in Echo-Echo principle

Features

- Dual measuring modes to determine material thickness:
 - Pulse-Echo mode (up to 600 mm)
 - Echo-Echo mode (up to 100 mm) Echo-Echo measurement: Determines the actual material thickness regardless of whether there is a coating on the base metal. In this way, the wall thickness of pipes, for example, can be determined without having to remove the coating. The measurement will be output, with the adjustment for the coating thickness taken into account
- Can be used on these materials, as well as others: Metals, plastics, ceramics, composite materials, epoxy, glass and other materials
- High-precision mode: Readout accuracy can be switched from 0.1 mm to 0.01 mm
- 1** Premium display: TFT colour display (320x240) with adjustable brightness, so that it can be read under the most varied lighting conditions
- Large internal data memory for up to 100 data sets each with 100 individual values
- Energy-saving operation with 2x AA batteries and an operating time of at least 30 hours, adjustable power-off time (sleep mode) and adjustable display switch-off (standby mode)

- 2** USB data output for easy data download from the device memory to the PC, as standard
- Triple-calibration mode: Automatic 0-point adjustment, 1-point adjustment at a specified material thickness, 2-point precision adjustment with two specified material thicknesses
- 3 different measurement modes: standard measuring (single measurement), scan mode (for continuous measurement and display of the ACTUAL value, the MIN and MAX value of the measuring sequence) and DIFF mode with calculation of the difference between the ACTUAL measured value and a manually defined nominal thickness
- Limit alarm function: Upper and lower limit adjustable. The measurement process is supported by an audible and visual signal
- Menu languages: DE, EN, FR, ES, IT
- Date and time can be adjusted. It is possible to store the measurement values with a time stamp
- Standard measuring probe SAUTER ATU-US12 included with delivery
- Scope of delivery: Operating instructions, batteries, external measuring head (ø 10 mm) and ultrasound contact gel

- 3** Delivered in a robust carrying case
- Interface cable SAUTER FL-A01 (for use of the software) included

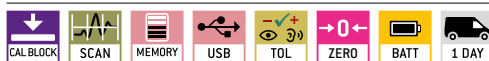
Technical data

- Measuring precision: 0,4 % of [Max] ± 0,04 mm
- Overall dimensions WxDxH 31x69x130 mm
- Battery operation, batteries standard (2x1.5 V AA), AUTO-OFF function to preserve the battery
- Net weight approx. 0,25 kg

Accessories

- External measuring head, 5 MHz, ø 10 mm, for echo-echo measuring, SAUTER ATU-US12, **€ 345,-**
- Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, **€ 35,-**
- BalanceConnection software for flexible measured value recording or transmission, compatible with Microsoft® Excel, Access and other applications, scope of delivery: 1 CD, 1 license, KERN SCD-4.0, **€ 210,-**
- Other sensors on request
- Further details and plenty of further accessories see *internet*

STANDARD



OPTION



| Model | Measuring range Echo-Echo | Measuring range Pulse-Echo | Readout [d] mm | Sensor | Sound velocity m/sec | Price excl. of VAT ex works € | Option | |
|---------------|---------------------------|----------------------------|----------------|-----------------|----------------------|-------------------------------|---------|-------------------------|
| | | | | | | | Factory | Calibration Certificate |
| SAUTER | mm | mm | | | | | KERN | € |
| TO 100-0.01EE | 3 - 100 | 0,7 - 600 | 0,01 | 5 MHz ø 10 mm | 200 - 19999 | 1490,- | 961-113 | 167,- |

6



HARDNESS TESTING OF PLASTICS (SHORE)

To determine the hardness of plastics, in 1915 Albert Shore developed an extremely simple process: A pin made of hardened metal and of a defined shape is held by a spring and is then pushed into the test item. Depending on the depth of the penetration, the material tested is either harder or softer. This procedure is described in DIN ISO 48-4.

Currently, there are two types of devices used for this test: Mechanical measuring devices with drag indicator and electronic measuring devices.

Both types of measuring devices can be operated with test stands (such as the SAUTER TI series). With a test stand, measurements can be carried out more consistently and accurately.

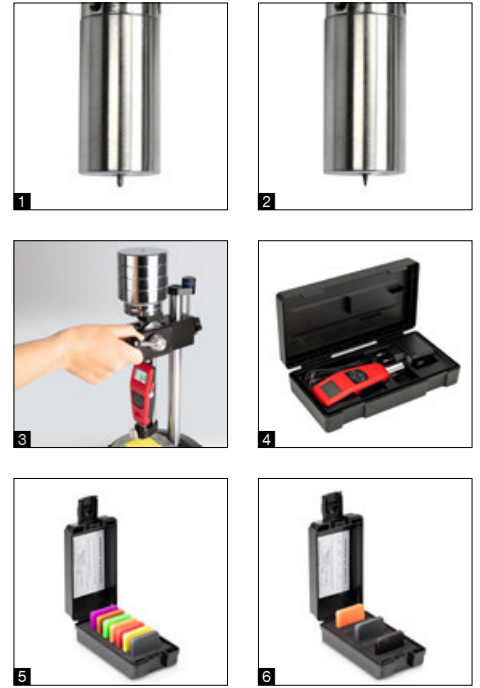
At this time, KERN does not calibrate Shore hardness testing instruments. As an alternative, we recommend that the measuring device is operated with a calibrated kit of hardness comparison plates (such as SAUTER AHBA 01).



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Hardness Testing of Plastics
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Quick-Finder

| Readout | Measuring range | Hardness scales | Model | Price excl. of VAT ex works | Page |
|------------|-----------------|-----------------|-----------|-----------------------------|------|
| [d] HS] | [Max] HS | | SAUTER | € | |
| | | | TI-AC | 270,- | 62 |
| | | | TI-ACL | 365,- | 62 |
| | | | TI-HEA | 1070,- | 59 |
| | | | TI-D | 355,- | 62 |
| | | | TI-DL | 445,- | 62 |
| | | | TI-HED | 1170,- | 59 |
| 0,1 H0 | 100 H0 | Shore 0 | H00 100-1 | 420,- | 61 |
| 0,1 HA | 100 HA | Shore A | HDA 100-1 | 420,- | 61 |
| 0,1 HA | 100 HA | Shore A | HEA 100 | 640,- | 58 |
| 0,1 HD | 100 HD | Shore D | HDD 100-1 | 420,- | 61 |
| 0,1 HD | 100 HD | Shore D | HED 100 | 750,- | 58 |
| 1 HA | 100 HA | Shore A | HBA 100-0 | 125,- | 60 |
| 1 HA0 | 100 HA0 | Shore A0 | HBO 100-0 | 130,- | 60 |
| 1 HD | 100 HD | Shore D | HBD 100-0 | 170,- | 60 |



6



Shore hardness tester with extensive functionality

Features

- To measure the hardness of plastics through penetration measurement
- **1** Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather and similar material
- **2** Shore D: Plastics, formica, epoxides, plexiglass etc.
- Different measuring modes: Average value, maximum value, chronological sequence
- Limit alarm function, which triggers an audible and visual signal when the value goes below or above the defined limits
- Entering the workpiece number is possible
- Setting the measuring time from 0 to 99 seconds
- Recommended for internal comparison measurement
- **3** Can be attached to the test stands SAUTER TI-HEA (for Shore A), SAUTER TI-HED (for Shore D) to improve the measurement result, see *accessories*
- Large display with backlight
- Battery status indicator
- USB data interface, as standard
- **4** Delivered in a robust carrying case

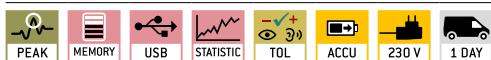
Technical data

- Test force hardness measurement
SAUTER HEA: 10 N
SAUTER HED: 50 N
- Tolerance: 1 % of [Max]
- Diameter of measuring probe: 18 mm
- Material thickness of the sample, min. 6 mm
- Internal memory for up to 500 results
- Rechargeable battery pack integrated, as standard, operating time up to 20 h without backlight, charging time approx. 3 h
- overall dimensions W×D×H 153×50×29 mm
- Net weight approx. 0,20 kg

Accessories

- Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparisons the measuring accuracy increases significantly
- **5** 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 105,-**
- **6** 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 86,-**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 132,-**
- Test stand for HEA 100, SAUTER TI-HEA, **€ 1070,-**
- Test stand for HED 100, SAUTER TI-HED, **€ 1170,-**

STANDARD



| Model | Hardness scales | Measuring range | Readability | Price excl. of VAT ex works € |
|----------------|-----------------|-----------------|-------------|-------------------------------|
| SAUTER | | [Max] | [d] | |
| HEA 100 | Shore A | 100 HA | 0,1 HA | 640,- |
| HED 100 | Shore D | 100 HD | 0,1 HD | 750,- |



Test stand for hardness testing Shore A and D

Features

- High-quality test stand for Shore hardness testing of plastics in industry and the laboratory
- **1** One test stand for two hardness scales: You just need to screw the additional weight TI-HE onto the TI-HEA test bench, so that this can then also be used for Shore D hardness testing, see *accessories*
- **2** Level adjustment: For the precise levelling of the steel base plate, e.g. for the correction of inhomogeneous test objects
- Robust design enables accurate measuring movements
- **3** Simple handling means that you can achieve repeatable measuring results
- Hardness tester is not included with delivery

Technical data

- Maximum stroke length: 20 mm
- Maximum test object height: 50 mm
- Base plate \varnothing 115 mm

Accessories

- **1** Option Shore D pour TI-HE: Additional weight for TI-HEA test stand, SAUTER TI-HE, € 103,-

STANDARD



| Model | Hardness scales | Test force hardness measurement | Overall dimensions W×D×H mm | Net weight approx. kg | Price excl. of VAT ex works € |
|------------------|-----------------|------------------------------------|-----------------------------------|-----------------------------|--|
| SAUTER TI-HEA | Shore A | 10 | 200×200×390 | 6 | 1070,- |
| TI-HED | Shore D | 50 | 200×200×470 | 10 | 1170,- |



6



Compact handheld durometer with drag indicator

Features

- Typical application: measurement of penetration (Shore)
- Particularly recommended for internal comparison measurement. Standard calibrations e.g. to DIN 48-4 are not possible because of very narrow standard tolerances
- Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather and similar material
- Shore D: Plastics, formica, epoxides, plexiglass etc.
- Shore A0: Foam, sponge etc.
- Max mode: Records the peak value indication by drag pointer
- Can be attached to the test stands SAUTER TI-AC (for Shore A and A0), SAUTER TI-D (for Shore D)
- **1** Delivery in a plastic box
- The measuring tips are not interchangeable

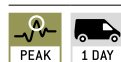
Technical data

- Measuring precision: 3 % of [Max]
- Material thickness of the sample, min. 6 mm
- Screws to screw on to the TI: M7 fine thread
- Overall dimensions WxDxH 115x60x25 mm
- Net weight approx. 0,15 kg

Accessories

- Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparisons the measuring accuracy increases significantly:
 - 2** 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 105,-**
 - 3** 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 86,-**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 132,-**
- Test stand for HBA, HBO, SAUTER TI-AC, **€ 270,-**
- Test stand for HBD, SAUTER TI-D, **€ 355,-**

STANDARD



| Model | Hardness scales | Measuring range | Readability | Price excl. of VAT ex works € |
|------------------|-----------------|-----------------|-------------|-------------------------------|
| SAUTER | | [Max] | [d] | |
| HBA 100-0 | Shore A | 100 HA | 1 HA | 125,- |
| HBO 100-0 | Shore A0 | 100 HAO | 1 HAO | 130,- |
| HBD 100-0 | Shore D | 100 HD | 1 HD | 170,- |



Professional Shore hardness tester

Features

- To measure the hardness of plastics through penetration measurement
- Particularly recommended for internal comparison measurement. Standard calibrations e.g. to DIN 48-4 are not possible because of very narrow standard tolerances
- Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather and similar material
- Shore 0: foam, sponge
- Shore D: Plastics, formica, epoxides, plexiglass etc.
- Can be attached to the test stands TI-ACL (for Shore A and 0), TI-DL (for Shore D) to improve the measurement result
- Large display with backlight
- Selectable: AUTO-OFF function or continuous operation, battery level indicator
- **1** Delivered in a robust carrying case

Technical data

- Tolerance: 1 % of [Max]
- Material thickness of the sample, min. 6 mm
- Transfer via RS-232 to the PC, e.g. to Microsoft Excel®
- Battery operation, batteries standard (2×1.5 V AAA)
- Overall dimensions W×D×H 125×70×27 mm
- Net weight approx. 0,20 kg

Accessories

- Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparisons the measuring accuracy increases significantly
- **2** 7 hardness comparison plates for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 105,-**
- **3** 3 hardness comparison plates for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 86,-**
- Factory calibration of the comparison plates, SAUTER 961-170, **€ 132,-**
- Test stand for HDA, HD0, SAUTER TI-ACL, **€ 365,-**
- Test stand for HDD, SAUTER TI-DL, **€ 445,-**
- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**

| STANDARD | | | | | | OPTION |
|----------|------|--------|------|------|-------|----------|
| | | | | | | |
| CAL EXT | PEAK | RS 232 | ZERO | BATT | 1 DAY | SOFTWARE |

| Model | Hardness scales | Measuring range | Readability | Price excl. of VAT ex works € |
|-------------------|-----------------|-----------------|-------------|-------------------------------|
| SAUTER | | [Max] | [d] | |
| HDA 100-1 | Shore A | 100 HA | 0,1 HA | 420,- |
| HDO 100-1* | Shore 0 | 100 H0 | 0,1 H0 | 420,- |
| HDD 100-1 | Shore D | 100 HD | 0,1 HD | 420,- |

1 * ONLY WHILE STOCKS LAST



6



Lever operated test stand for hardness testing with base plate made of glass

Features

- For Shore hardness testing of plastics, leather etc.
- **1** Glass plate: high measurement accuracy by means of superior hardness of the glass plate
- **2** Mechanical construction: Robust design enables accurate measuring movements
- **3** Level adjustment: For the precise levelling of the base plate, e.g. for the correction of inhomogeneous test objects
- **4** SAUTER TI-DL: with exchangeable longer column for use with digital hardness tester HD
- Hardness tester is not included with delivery

Operation:

1. The SAUTER hardness testing device HB/HD is fitted in a suspended position
 2. The test object is placed on the round testing table right under the durometer measuring tip
 3. By pressing the lever down, the test weight will be released, and this then presses the measuring tip into the test object with its own weight (see test force hardness measurement)
- The accuracy of the displayed result is about 25 % higher than in a manual operated test

Technical data

- Stroke length: 15 mm
- Base plate \varnothing 75 mm

STANDARD



| Model | Hardness scales | Test force hardness measurement | Test object height [Max] mm | Overall dimensions W×D×H mm | Net weight approx. kg | Price excl. of VAT ex works € |
|--------|-----------------|------------------------------------|-----------------------------------|-----------------------------------|-----------------------------|--|
| SAUTER | | N | | | | |
| TI-AC | Shore A | 10 | 60 | 150×200×330 | 5,0 | 270,- |
| TI-D | Shore D | 50 | 60 | 150×200×400 | 8 | 355,- |
| TI-ACL | Shore A | 10 | 290 | 150×200×580 | 6 | 365,- |
| TI-DL | Shore D | 50 | 290 | 150×200×580 | 9 | 445,- |

7



HARDNESS TESTING OF METALS (LEEB)

Determining the hardness of metals is of particular significance during the preparation and use of metallic materials. Usually, hardness is determined using test machines in accordance with Vickers, Rockwell or Brinell.

For mobile measurements, the rebound method according to Dietmar Leeb, which was first used in 1978, has prevailed. To do this, a standardised impact body (such as SAUTER AHMO D01) is shot against the item to be tested. The rebound of the impact body leads to a deformation of the upper surface, which results in a loss of kinetic energy. This loss of energy is determined by measuring the speed and herefrom the Leeb hardness value (HL) is calculated.

These measuring devices can be used in any location. Usually they are equipped with a large internal data memory, which allows to record the measurements at goods receipt or in production.

Our range is equipped with compact measuring devices of the so-called "Pen Type" shape (HN-D) or measuring devices with external sensors connected by cables.



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Hardness Testing of Metal
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Quick-Finder

| Readout | Measuring range | Sensor | Model | Price excl. of VAT ex works | Page |
|---------|-----------------|--------|--------|-----------------------------|------|
| [d] | [Max] | | SAUTER | € | |
| HL | HL | | | | |
| 1 | 960 | D | HN-D | 930,- | 66 |
| 1 | 960 | D | HMM-NP | 1060,- | 65 |
| 1 | 960 | D | HMM | 1180,- | 65 |
| 1 | 960 | D | HK-D | 1420,- | 64 |
| 1 | 960 | D | HK-DB | 1520,- | 64 |
| 1 | 960 | D | HMO | 2020,- | 67 |



7

Premium Leeb hardness tester – also with hardness comparison block included

Features

- External impact sensor standard (Type D)
- Mobility: In comparison with stationary table-top devices and testing devices with an internal sensor, using the SAUTER HK-D offers the highest level of mobility and flexibility
- All measurement directions possible (360°) thanks to an automatic compensation function
- **1** SAUTER HK-DB: Hardness comparison block, hardness approx. 800 HLD, included in delivery
- Measurement value display: Rockwell (Type A, B, C), Vickers (HV), Shore (HS), Leeb (HL), Brinell (HB)
- Internal memory for up to 600 data groups, with up to 32 values per group forming the average value of the group
- Mini statistics function: displays the measured result, the average value, the impact direction, date and time
- Automatic unit conversion: The measuring result is automatically converted into all specified hardness units

- Measuring with tolerance range and programmable limit values. The process is supported by an audible and visual signal
- Matrix display: Backlit multi-function display
- Robust metal housing
- **2** Delivered in a robust carrying case

Technical data

- Precision: ± 1 % at 800 HLD
- Minimum sample radius (concave/convex): 50 mm (with support ring: 10 mm)
- Thinnest measurable material thickness: 2 mm, with coupling on fixed base
- The lowest weight of the test item on solid support unit: 2 kg with fixed coupling
- Battery operation, 2×1.5 V AA standard, operating time up to 200 h
- Permissible ambient temperature -10 °C/40 °C
- Overall dimensions W×D×H 132×82×31 mm



Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see internet
- BalanceConnection software for flexible measured value recording or transmission, compatible with Microsoft® Excel, Access and other applications, scope of delivery: 1 CD, 1 license, KERN SCD-4.0, **€ 210,-**
- Support rings for bended test objects, SAUTER AHMR 01, **€ 370,-**
- Impact body Type D, net weight approx. 0,05 kg, hardness ≥ 1600 HV, tungsten carbide, impact ball Ø 3 mm, in accordance with standard ASTM A956-02, SAUTER AHMO D01, **€ 120,-**
- External impact sensor Type C. Low energy sensor: requires only 25 % impact energy compared to type D, for testing tiny or light objects or the surface of hardened layer, SAUTER AHMR C, **€ 690,-**
- External impact sensor Type D, SAUTER AHMR D, **€ 610,-**
- External impact sensor Type D+15. Slim front section for holes, grooves or re-entrant surfaces, SAUTER AHMR D+15, **€ 690,-**
- External impact sensor Type DL, for very narrow surfaces (Ø 4,5 mm), SAUTER AHMR DL, **€ 1720,-**
- External impact sensor Type G. High energy sensor: 900 % impact energy compared to type D, SAUTER AHMR G, **€ 1720,-**
- Connection cable impact sensor, SAUTER HMO-A04, **€ 120,-**
- **3** Test block Type D/DC, Ø 90 mm (± 1 mm), net weight < 3 kg, hardness range 790 ± 40 HL, SAUTER AHMO D02, **€ 205,-** 630 ± 40 HL, SAUTER AHMO D03, **€ 205,-** 530 ± 40 HL, SAUTER AHMO D04, **€ 205,-**
- Factory calibration certificates for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132, **€ 167,-**

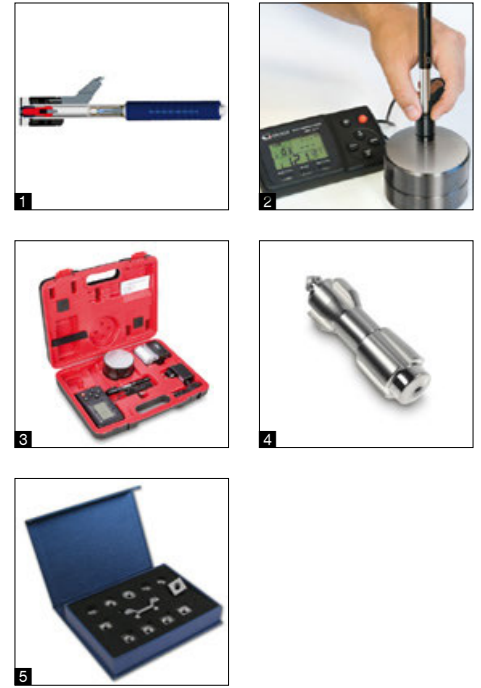
STANDARD



OPTION



| Model | Sensor | Measuring range | Readout | Test block | Net weight | Price excl. of VAT ex works € | Option | |
|--------|--------|-----------------|-----------|----------------------------|---------------|-------------------------------|---------------------------------|-------|
| | | | | | | | Factory calibration certificate | € |
| SAUTER | | HL | [d] HL | Typ D/DC approx. 800 HL | approx. kg | | KERN | |
| HK-D | D | 170 - 960 | 1 | not standard | 0,45 | 1420,- | 961-131 | 167,- |
| HK-DB | D | 170 - 960 | 1 | standard | 0,45 | 1520,- | 961-131 | 167,- |



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
- High levels of mobility and flexibility in comparison with stationary table-top devices and hardness testing devices with internal sensors
- All measurement directions possible (360°) thanks to an automatic compensation function
- **2** Hardness test block for calibration included (790 ± 40 HL)
- Internal memory for up to 9 measurement values
- Mini statistics function: displays the measured result, the average value, the impact direction, date and time
- SAUTER HMM: Infrared printer for direct output of the measuring results is included with delivery

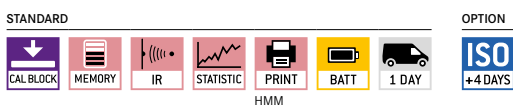
- SAUTER HMM-NP: identical product features as the SAUTER HMM model, but comes without the printer
- Measurement value display: (B & C), Vickers (HV), Brinell (HB), Shore (HSD), Leeb (HL), tensile strength (MPa)
- Automatic unit conversion: The measuring result is automatically converted into all specified hardness units
- **3** Delivered in a robust carrying case

Technical data

- 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)
- Batteries included, 3×1.5 V AAA, operating time up to 30 h, AUTO-OFF function to preserve the battery
- SAUTER HMM: External mains adapter for printer, as standard
- Overall dimensions W×D×H 150×80×30 mm

Accessories

- External impact sensor Type D, as standard, can be reordered, SAUTER AHMO D, **€ 355,-**
- Connection cable, without impact sensor, SAUTER HMM-A02, **€ 55,-**
- **5** Support rings for bended test objects, SAUTER AHMR 01, **€ 370,-**
- **4** Impact body Type D, net weight approx. 0,05 kg, hardness ≥ 1600 HV, tungsten carbide, impact ball Ø 3 mm, in accordance with standard ASTM A956-02, SAUTER AHMO D01, **€ 120,-**
- Test block Type D/DC, Ø 90 mm (± 1 mm), net weight < 3 kg, hardness range 790 ± 40 HL, SAUTER AHMO D02, **€ 205,-** 630 ± 40 HL, SAUTER AHMO D03, **€ 205,-** 530 ± 40 HL, SAUTER AHMO D04, **€ 205,-**
- Factory calibration certificates for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132, **€ 167,-**
- Paper roll, 1 piece, SAUTER ATU-US11, **€ 17,-**



| Model | Sensor | Measuring range | Readout | Net weight | Price excl. of VAT ex works € | Option | |
|--------|--------|-----------------|-----------|---------------|-------------------------------|---------------------------------|-------|
| | | | | | | Factory calibration certificate | € |
| SAUTER | | | | | | | |
| HMM | D | 170 – 960 | [d] HL | approx. kg | 1180,- | KERN | € |
| HMM-NP | D | 170 – 960 | 1 | 0,25 | 1060,- | 961-131 | 167,- |



7

“Pen type“ Leeb hardness tester for mobile hardness testing of metals

Features

- User-friendly operation: The compact version enables the product to be used in a significantly wider range of applications compared with traditional devices
- The measuring device has been designed for one-hand operation and this allows the user to work more quickly and flexibly
- Modern LCD display: Optimised for industrial applications: increased luminosity and backlight can be switched on, that way the display can be read from any angle
- All measurement directions possible (360°) thanks to an automatic compensation function
- Internal impact sensor included (Type D)
- Measurement value display: (B & C), Vickers (HV), Brinell (HB), Leeb (HL)
- Standard block for calibration not included in scope of delivery
- Internal data memory for up to 500 measurements with date and time
- Data interface USB, including USB interface cable
- **1** Delivered in a robust carrying case

Technical data

- Measurement uncertainty ± 4 HLD
- Minimum sample weight on a solid and stable support: 2 kg with fixed coupling
- Thinnest measurable material thickness: 3 mm, with coupling on fixed base
- Rechargeable battery pack integrated, as standard, operating time up to 16 h without backlight, charging time approx. 3 h
- Mains adapter external, standard
- Overall dimensions WxDxH 22x35x147 mm
- Net weight approx. 0,20 kg

Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see *internet*
- Impact body Type D, net weight approx. 0,05 kg, hardness ≥ 1600 HV, tungsten carbide, impact ball $\varnothing 3$ mm, in accordance with standard ASTM A956-02, SAUTER AHMO D01, **€ 120,-**
- **2** Test block Type D/DC, $\varnothing 90$ mm (± 1 mm), net weight < 3 kg, hardness range 790 ± 40 HL, SAUTER AHMO D02, **€ 205,-** 630 ± 40 HL, SAUTER AHMO D03, **€ 205,-** 530 ± 40 HL, SAUTER AHMO D04, **€ 205,-**
- Factory calibration certificates for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132, **€ 167,-**

STANDARD



OPTION



| Model | Sensor | Measuring range | Readout | Price excl. of VAT ex works € | Option | |
|----------------|--------|-----------------|-----------|--|---------------------------------|-------|
| | | | | | Factory calibration certificate | |
| | | | [d] HL | € | KERN | € |
| SAUTER HN-D | D | 170 – 960 | 1 | 930,- | 961-131 | 167,- |



Advanced features for professional applications

Features

- LCD touchscreen
- Automatic recognition of the impact (rebound) sensor connected to the SAUTER HMO
- Mobility: In comparison with stationary table-top devices and testing devices with an internal sensor, using the SAUTER HMO offers the highest level of mobility and flexibility
- All measurement directions possible (360°) by defining the direction of impact on the device
- USB socket for connection to the printer and charging the batteries
- **1** Hardness test block for calibration included
- Internal data memory for up to 500 values
- Mini statistics function: Displays the measure value, the average value, the difference between the maximum and minimum values, date and time
- Measurement value display: (B & C), Vickers (HV), Brinell (HB), Leeb (HL), tensile strength (MPa)
- Automatic unit conversion: The measuring result is automatically converted into all specified hardness units
- **2** Delivered in a robust carrying case

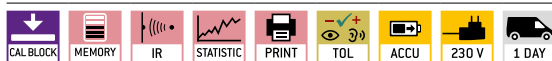
Technical data

- Precision: $\pm 1\%$ at 800 HLD (± 6 HLD)
- Measuring range tensile strength: 375–2639 MPa (steel)
- Minimum sample weight on a solid and stable support: Sensor D + DC: 2 kg with fixed coupling
- Minimum sample material thickness: Sensor D + DC: 3 mm with coupling on fixed base
- Minimum sample radius (concave/convex): 50 mm (with support ring: 10 mm)
- Internal rechargeable battery pack, operating time up to 50 h without backlight, charging time approx. 8 h, standard
- Mains adapter included
- Overall dimensions WxDxH 24x83x135 mm
- Net weight approx. 4,6 kg

Accessories

- External impact sensor Type D, as standard, can be reordered, SAUTER AHMO D, **€ 355,-**
- **3** External impact sensor Type DC. Short impact sensor for tests in holes or hollowed objects, SAUTER AHMO DC, **€ 530,-**
- on request: Support rings for bended test objects, SAUTER AHMR 01, **€ 370,-**
- **4** Impact body Type D, net weight approx. 0,05 kg, hardness ≥ 1600 HV, tungsten carbide, impact ball $\varnothing 3$ mm, in accordance with standard ASTM A956-02, SAUTER AHMO D01, **€ 120,-**
- Connection cable impact sensor, SAUTER HMO-A04, **€ 120,-**
- Test block Type D/DC, $\varnothing 90$ mm (± 1 mm), net weight < 3 kg, hardness range 790 ± 40 HL, SAUTER AHMO D02, **€ 205,-** 630 ± 40 HL, SAUTER AHMO D03, **€ 205,-** 530 ± 40 HL, SAUTER AHMO D04, **€ 205,-**
- Factory calibration certificates for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132, **€ 167,-**
- Paper roll, 1 piece, SAUTER ATU-US11, **€ 17,-**

STANDARD



OPTION



| Model | Sensor | Measuring range | Readout | Price excl. of VAT ex works € | Option | |
|---------------|--------|-----------------|-----------|--|---------------------------------|-------|
| | | | | | Factory calibration certificate | |
| | | | [d] HL | | KERN | € |
| SAUTER HMO | D | 170 - 960 | 1 | 2020,- | 961-131 | 167,- |

2025's MOST WANTED!



Most wanted and highly coveted: Discover the future of weighing and measuring technology with more than 5000 high-quality products. The new KERN product catalogues 2025 are available in five languages!

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From force-measuring devices through to hardness measuring equipment and on to measuring cells - you can find everything you need for accurate, reliable measurements.

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www.kern-sohn.com/shop/en/DOWNLOADS



8



HARDNESS TESTING OF METALS (UCI)

Ultrasonic contact impedance (UCI) hardness testing devices are filling wisely a void in the area of hardness testing.

This area of testing is, on one hand, dominated by mobile hardness testing devices which are using the Leeb procedure and, on the other hand, by stationary hardness testing devices which are predominantly carrying out destructive tests.

Because of the high demands required by this system on the minimum weight and thickness of the test object, the Leeb procedure is not suitable for the majority of tests for small test objects. A good example of this is hardness testing of the flanks of gear wheels. Often in this test, the question is whether the flanks have been hardened or whether the hardened layer has already been removed.

UCI hardness testing devices therefore are offering significantly better measurement performance at small test objects in comparison with Leeb hardness testing devices.

One advantage of the UCI hardness testing devices compared with stationary hardness testing machines is, that the test object does not have to be cut out of the whole object.

By using the optional support rings, the minimum weight of the test object can even be reduced from 300 g to 100 g.

By means of optional ISO calibration, SAUTER UCI hardness testing devices can be used not only for internal testing purposes but also for measurements where the results have to be changed externally.



Andreas Vossler
Product Specialist
Hardness Testing of Metals (UCI)
Tel. +49 7433 9933-243
info@sauter.eu

Quick-Finder

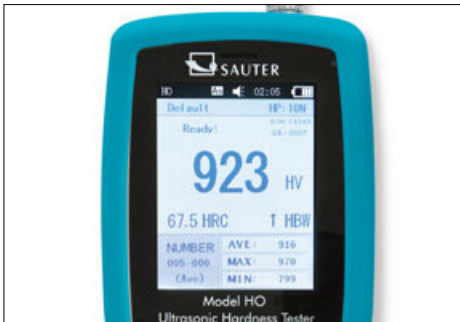
| Hardness scale | Model | Price excl. of VAT ex works € | Page |
|----------------|---------------|--|------|
| | SAUTER | | |
| HV 1 | HO 1K | 5520,- | 70 |
| HV 2 | HO 2K | 5520,- | 70 |
| HV 5 | HO 5K | 5520,- | 70 |
| HV 10 | HO 10K | 5520,- | 70 |



8



Premium UCI hardness testing device for Rockwell, Brinell and Vickers



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, protective case (turquoise), further 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

- This ultrasound hardness testing device is ideally suited for mobile hardness testing, where the main emphasis is on obtaining rapid and precise results
- The SAUTER HO measures by using a vibrating rod with ultrasonic frequency and which is pressed onto the sample with a predefined 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. This frequency displacement is matched with the corresponding Vickers hardness using appropriate adjustment of the device
- 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
- 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
- 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

- The device can be set to both standard hardness test blocks and also to up to 20 reference calibration values. In this way different materials can be measured rapidly without having to re-adjust for 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.
- 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. 5x5 mm (recommended)
- Rechargeable battery pack integrated, as standard, operating time up to 12 h without backlight, charging time approx. 8 h
- Overall dimensions WxDxH 28x83x160 mm
- Net weight approx. 0,95 kg

Accessories

- External impact sensor Type D, as standard, can be reordered, SAUTER AHMO D, € 355,-
- 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, homogenous 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,-
- 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, € 2900,-
HV 0,5, SAUTER HO-A16, € 2900,-
HV 0,8, SAUTER HO-A17, € 2900,-

SAUTER HO 1K, HO 2K

- Support ring, flat, SAUTER HO-A04N, € 510,-
- Support ring, small cylinder, ø 8-20 mm, SAUTER HO-A05N, € 510,-
- Support ring, large cylinder, ø 20-80 mm, SAUTER HO-A06N, € 510,-

SAUTER HO 5K, HO 10K

- Support ring, flat, SAUTER HO-A04, € 510,-
- Support ring, small cylinder, ø 8-20 mm, SAUTER HO-A05, € 510,-
- Support ring, large cylinder, ø 20-80 mm, SAUTER HO-A06, € 510,-
- 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 | 360,- |
| SAUTER HO 2K | HV 2 | 300 | 2 | 5520,- | 961-270 | 360,- |
| SAUTER HO 5K | HV 5 | 300 | 2 | 5520,- | 961-270 | 360,- |
| SAUTER HO 10K | HV 10 | 300 | 2 | 5520,- | 961-270 | 360,- |

9



OCCUPATIONAL SAFETY, ENVIRONMENT

Prevention of accidents as well as modern health care have got the same operational starting point in many countries. With industrialisation and the formation of conurbations, transport infrastructures and large companies, regular preventive medical examinations were introduced for wide sections of the population.

In addition to preventive medical examinations, monitoring of working conditions with defined limits was also introduced. To date, the regular checking of these limits as part of safety and accident prevention measures is domiciled as a business responsibility up till now.

For this purpose, SAUTER provides a targeted selection of the most commonly-used instruments in general measuring technology. They can be used to measure environmental influences such as noise (acoustic pressure) or light.

For regular calibration, our pick-up and return service can be used, which will save you a lot of efforts and expenses.



Irmgard Russo
Product Specialist
Occupational Safety/Environment
Tel. +49 7433 9933-208
info@sauter.eu

Quick-Finder

| Readout | Measuring range | Model | Price excl. of VAT ex works € | Page |
|-----------------------|--------------------------------|---------|--|------|
| [d] | [Max] | SAUTER | | |
| - | 420 °C | JIT 100 | 99,- | 78 |
| - | 1100 °C | JIT 200 | 160,- | 78 |
| 0,1 dB | 130 dB | SU 130 | 120,- | 75 |
| 0,1 dB | 134 dB | SW 1000 | 2250,- | 76 |
| 0,1 dB | 136 dB | SW 2000 | 1110,- | 76 |
| 0,1 1 10 100 lx | 200 2000 20000 200000 lx | SO 200K | 84,- | 73 |
| 0,1 1 10 100 lx | 200 2000 20000 200000 lx | SP 200K | 105,- | 74 |

BASIC
★



Photometer for precise light measurement up to 200,000 Lux

Features

- Helps to determine if workplace lighting meets standard requirements, e.g. DIN EN 12464-1 "Lighting of workplaces indoors"
- Photo sensor: silicon diode
- Cosine correction for angular incident light
- Track function for continuous recording of changing environmental conditions
- Peak Hold function to capture peak value
- Selectable measuring units: fc (foot-candle), lux
- Sturdy protective cover for the photo sensor
- Increased service life: Impact protection by means of a protective casing
- **1** Delivery in a robust box

Technical data

- Measuring frequency: 2 Hz
- Cable length (Photo sensor) approx. 1 m
- Battery operation, batteries standard (9 V block), AUTO-OFF function to preserve the battery
- Overall dimensions W×D×H 160×72×40 mm
- Net weight approx. 0,25 kg



| Model | Measuring range | Readout | Price excl. of VAT ex works € | Option | |
|-------------------|-----------------|-----------|--|---------------------------------|-------|
| | | | | Factory calibration certificate | |
| SAUTER SO 200K | [Max] lx | [d] lx | 84,- | KERN | € |
| | 200 | 0,1 | | | |
| | 2000 | 1 | | 961-190 | 325,- |
| | 20000 | 10 | | | |
| | 200000 | 100 | | | |

BASIC
★



Compact photometer, optimised for accurate light measurement, including LED light measurement

9

Features

- For measuring illumination of office workstations, production workstations, etc.
- Photo sensor: silicon diode, filtered
- Cosine correction for angular incident light
- Data-hold function, to freeze the current measurement
- **1** Rotatable sensor unit (+90 and -180°) for optimum alignment to the light source
- Track function for continuous recording of changing environmental conditions
- By pressing the key, the current measured value can be frozen until the key is pressed again
- Selectable measuring units: fc (foot-candle), lux
- Easy to toggle between units at the press of a button
- Option of fitting a stand on the rear of the housing, 1/4" thread
- Sturdy protective cover for the photo sensor
- **2** Increased service life: Impact protection through delivery in a soft box with light protection

Technical data

- Measurement precision up to 20.000 Lux: ± 4 % of the result + 10 scale intervals
- Measurement precision from 20.000 Lux: ± 5 % of the result + 10 scale intervals
- Repeatability: ± 2 % of [Max]
- Temperature error: ± 0,1 % von [Max]/°C
- Measuring frequency: 2 Hz
- Ready for use: Batteries included, 9 V block, operating time up to 200 h
- Overall dimensions W×D×H 185×68×38 mm
- Net weight approx. 0,15 kg

| | |
|---|--|
| STANDARD | OPTION |
|  BATT |  1 DAY |
| |  ISO ±10 DAYS |

| Model | Measuring range | Readout | Price excl. of VAT ex works € | Option | |
|-------------------|-----------------|-----------|--|---------------------------------|------------|
| | | | | Factory calibration certificate | € |
| SAUTER SP 200K | [Max] lx | [d] lx | 105,- | KERN 961-190 | € 325,- |
| | 200 | 0,1 | | | |
| | 2000 | 1 | | | |
| | 20000 | 10 | | | |
| | 200000 | 100 | | | |

BASIC
★



Versatile sound level meter

Features

- Sound level meter with basic functions for measuring noise in areas such as, environment, mechanical applications, car industry and much more
- Measures the sound intensity in the workplace
- Helps in differentiating between normal noise influences, and excessive noise, nuisances e.g. in a production hall
- **1** Data interface RS-232, included
- Multi measuring functions:
 - Lp: Standard sound level measuring function
 - Leq: Energy equivalent sound level measuring mode (type A)
 - Ln: Shows the deviation from a pre-defined limit in %

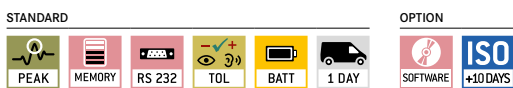
- Selectable methods of evaluation:
 - A: As sensitive as the human ear
 - C: Sensitive for noisier environmental conditions, where there are machines, plant, motors etc.
 - F: For areas with constant sound intensity
- Limit value function: programmable value for the maximum level value
- Track function for continuous recording of changing environmental conditions
- Peak Hold function to capture peak value
- Internal memory for 30 measured values, transferable to PC with SAUTER ATC-01
- **2** Delivered in a robust carrying case

Technical data

- Measuring precision: 3 % of [Max]
- Battery operation, batteries standard (4×1.5 V AAA)
- Overall dimensions W×D×H 223×62×25 mm
- Net weight approx. 0,20 kg

Accessories

- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**
- Adjustment device for regular adjustment of the sound level meter, SAUTER ASU-01, **€ 290,-**
- Foam protective cover, SAUTER ASU-02, **€ 8,-**



| Model | Type | Measuring range [Min]-[Max] dB | Readout [d] dB | Price excl. of VAT ex works € | Option | |
|--------|-------|--------------------------------------|----------------------|--|---------------------------------|-------|
| | | | | | Factory Calibration Certificate | € |
| SAUTER | Lp A | 30 - 130 | 0,1 | 120,- | KERN | € |
| SU 130 | Leq C | | | | 961-281 | 240,- |
| | Ln F | | | | | |



9

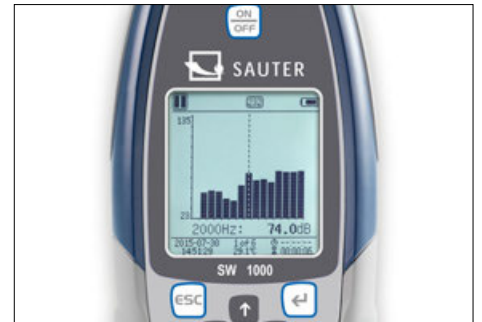
First-class professional Class I, Class II sound level meter



Data logging function with date and time in the device...



... and data transfer using MicroSD (4G) memory card (included in delivery), RS-232 or USB



Different sound pressure levels can be selected, such as, LAeq, LcPeak, LaF, LaFMax, LaFMin, SD, SEL, E



Features

- Ideal for measurements for workplaces outdoor, e.g. at airports, on building sites, in road traffic etc. with wide frequency access
- Modern microcontroller architecture for increased stability and accuracy
- A specially-developed algorithm permits a compliant dynamic range of more than 120 dB! (SW 1000: > 123 dB; SW 2000: > 122 dB)
- Three profiles and 14 user-defined measurements can be calculated in parallel with different frequency and time weighting
- LN statistics and display of the graph showing the progression of time
- User-defined integral interval measurement up to a maximum of 24 hours is possible
- Frequency weighting (filter) A, B, C, Z
- Time interval during measurement: F (fast), S (slow), I (pulse)
- Freely-definable limits for the output of an optical alarm signal
- Peak Hold function to capture peak value
- Octave function for targeted sound analysis, can be expanded to 1/3 octave through the purchase of a licence
- TRACK function with graphic display of a measurement
- Calibration mode (with optional calibrator)
- Trigger mode: external start/stop of measurement via 3,5 mm connector
- Automatic measurement for timer function is possible
- Operating languages: EN, DE, FR, ES, PT
- **2** Option of fitting a stand on the rear of the housing, 1/4" thread
- **1** Delivery in robust transport case

Technical data

- Applicable standards:
 - IEC61672-1:2014-07
 - GB/T3785.1-2010
 - 1/1 Octave in accordance with IEC 61260:2014
- 1/2" microphone
- Output (direct or alternating current) AC (max 5 VRMS), DC (10 mV/DB)
- Mains adapter external, standard
- Battery operation possible, 4x1.5 V AA not included, operating time up to 10 h
- Permissible ambient temperature -10 °C/50 °C
- Overall dimensions WxDxH 200x85x40 mm
- Net weight approx. 0,40 kg

Accessories

- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see *internet*
- **2** Stand, WxDxH 430x90x90 mm, SAUTER SW-A05, **€ 70,-**
- SD-memory card, storage capacity 4 GB, SAUTER SW-A04, **€ 54,-**
- Foam protective cover, SAUTER SW-A03, **€ 47,-**
- **3** Calibrator for regular adjustment of the sound level meter, class 1, as well as testing the linearity of sound level meters
 - Applicable standards: IEC60942:2003 Class 1, ANSI S1.40-1984, GB/T 15173-1994.
 - Output frequency 1 kHz (+/- 0,5 %)
 - Output of acoustic pressure, can be selected at 94 dB or 114 dB (± 0.3 dB)
 - Distortion factor < 2 %
 - Stabilisation time < 10 s
 - Permissible ambient temperature range -10 °C/50 °C
 - The calibrator is designed for 1/2" as well as 1/4" microphones (adapter included in the delivery) in accordance with the IEC 61094-4 standard
 - Battery operation, 2x 1.5 V AA, not standard, operating time up to 40 hours
 - Dimensions WxDxH 70x70x48 mm
 - Net weight approx. 137 g, SAUTER BSWA-01, **€ 800,-**
- Factory calibration certificate, for calibrator, SAUTER 961-291, **€ 300,-**
- DAkkS calibration certificate, for calibrator, SAUTER 963-291, **€ 270,-**
- Expansion of the octave band to 1/3 octave, SAUTER SW-A10, **€ 440,-**

| | | | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--------|--|--|
| STANDARD | | | | | | | | | | OPTION | | |
| | | | | | | | | | | | | |

| Model | Accuracy class | Measuring range linear [Min]-[Max] dB | Readout [d] dB | Frequency range [Min]-[Max] kHz | Sensitivity mv/Pa | Price excl. of VAT ex works € | Option | |
|-----------------------|----------------|---------------------------------------|----------------|---------------------------------|-------------------|-------------------------------|---------------------------------|-------|
| | | | | | | | Factory Calibration Certificate | € |
| SAUTER SW 1000 | Class 1 | 20 - 134 | 0,1 | 0,01 - 20 | 50 | 2250,- | 961-281 | 240,- |
| SAUTER SW 2000 | Class 2 | 25 - 136 | 0,1 | 0,02 - 12,5 | 40 | 1110,- | 961-281 | 240,- |



Infrared thermometer for industry, environmental engineering and maintenance work

9

Features

- **1** Determines the temperature of surfaces precisely
- Light EBTN colour display for optimum readability under the most varied environmental conditions
- MAX/MIN/AVG/DIF value memory to store the highest, lowest and average measured temperatures in a defined period of time as well as the difference between the highest and lowest value
- Limit-alarm function with memory for five temperatures or emission values respectively, which trigger an audible and visual signal (three-colour LED) when the value goes below or above these values
- **2** Main application areas: Temperature measurement in industry (e.g. metal processing, machine construction), environmental engineering, agriculture, laboratory and maintenance work (e.g. wind turbines)

SAUTER JIT 100

- Laser (Class 2 < 1 mW) to mark the measurement point
- Locked measurement for processes where the temperature needs to be monitored, i.e. the measured values are locked and protected from external influences
- With mounting hole for column mount

SAUTER JIT 200

- Double laser for even better positioning
- Hold function for measurements
- Time-based measurement is possible
- Internal data memory for up to 99 measurements with date and time
- With mounting thread for column mount

Technical data

- Laser class 2
- Tolerance range: +/- 1,5 °C or +/- 1,5 %
- Battery operation, 9 V block standard, operating time up to 9 h

STANDARD



JIT 200 JIT 200 JIT 200 JIT 200

| Model | Measuring range | D:S Optic | Overall dimensions W×D×H | Net weight approx. | Price excl. of VAT ex works € |
|---------|-----------------|-----------|-----------------------------|--------------------|--|
| SAUTER | °C | | mm | kg | |
| JIT 100 | -32 - 420 | 12:1 | 162×90×48 | 0,25 | 99,- |
| JIT 200 | -32 - 1100 | 20:1 | 179×127×53 | 0,35 | 160,- |

10



COLOUR MEASUREMENT

Everything is so bright and colourful here...

The colours all around us are of vital importance in describing our world. But because perception of colour is different from person to person and is influenced by factors such as age and gender, it is highly subjective. Therefore, in industrial colour schemes, sensors are used to produce a comparable, objective and repeatable measurement result.

To achieve this all factors which could influence the perceived colours are reduced to a minimum. These may be, for example, the lighting, background or surface.

By doing this it is possible to imitate human perception of colour, but at the same time obtain measurements in a technical way such that even the smallest differences or deviations in colour are detected. In many sectors, the colour of the product is an indicator of quality, particularly for products which are in circulation for a long period of time. It is very important in this case that the visual impression of the products remains constant at all times, so as to avoid consumer confusion.



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Measuring Colour
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Quick-Finder

| Measuring aperture | Model | Price excl. of VAT ex works € | Page |
|--|----------------|--|------|
| | SAUTER | | |
| MAV: \varnothing 8 mm / \varnothing 10 mm, SAV: \varnothing 4 mm / \varnothing 5 mm | JCS 200 | 1950,- | 80 |
| MAV: \varnothing 8 mm / \varnothing 10 mm, SAV: \varnothing 4 mm / \varnothing 5 mm, LAV: 1 x 3 mm | JCS 100 | 3300,- | 80 |



Versatile colour spectrometer for professional use

10



Determine wavelengths and colour spectra precisely, qualify and compare colours using current standards



Characterise colours comprehensively – taking the gloss into account or not



Developed for quality control of colours in the textile, printing and plastics industry and many other sectors



Features

- Precise colour spectrometer for determining wavelengths and colour spectra
- Identifies a range of chroma parameters
- You can select the standard observation angle as 2 or 10 degrees, several light source modes, several colour spaces
- Geometric optical D/8 structure, i.e. the angle at which the light is reflected from the sample is recorded is 8 degrees. This structure is suitable for highly diverse materials and surfaces
- Measurement process: the dual optical trail system simultaneously records the SCI and the SCE spectrum of a sample. This combination enables precise, comprehensive characterisation of the colour, both taking the gloss into account and not taking the gloss into account
- With LED light source to support fluorescence measurements
- The integrated white panel for reference is protected against contamination and guarantees the measuring accuracy
- Portable design, robust construction
- Wobble-free, dustproof and shockproof
- Full spectrum with long service life and low power consumption

- **■** Developed for quality control of colours, in the textile, printing, ceramic, food processing and cosmetics industries, for example
- Ideal for use in the laboratory and industry:
 - USB data interface, as standard
 - Rapid, accurate measurement of the SCI and SCE spectrum, simultaneously within a second
 - Colour display with simple touch operation
- Offers the most varied calibration algorithms
- Supports several national and international standards and parameters, including spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC and Hunter), YI (ASTM 01925, ASTM 313), colour spectrum index of Mt, touch colour fastness, colour authenticity, thickness, coverage rate, 555 colour classification as well as Munsell (C2)

Technical data

- Displayed accuracy: 0,01 of [Max]
- Standard deviation: 0,08
- Light source: LED, UV
- Overall dimensions W×D×H 188×94×68 mm
- Net weight approx. 0,30 kg

10

STANDARD

| | | | | | |
|--------|-----|----|------|-------|-------|
| | | | | | |
| MEMORY | USB | BT | ACCU | 230 V | 1 DAY |

| Model | Measuring aperture | Observation angle | Price excl. of VAT ex works € |
|----------------|--|-------------------|-------------------------------|
| SAUTER | | | |
| JCS 100 | MAV: \varnothing 8 mm / \varnothing 10 mm SAV: \varnothing 4 mm / \varnothing 5 mm LAV: 1 x 3 mm | 2° 10° | 3300,- |
| JCS 200 | MAV: \varnothing 8 mm / \varnothing 10 mm SAV: \varnothing 4 mm / \varnothing 5 mm | 2° 10° | 1950,- |

11



SYSTEM SOLUTIONS INDUSTRY 4.0, DISPLAY DEVICES

BALANCE MANUFACTURE

Load cell + Junction Box + KERN YKV

FORCE MEASUREMENT

Load cell + SAUTER FL + Software



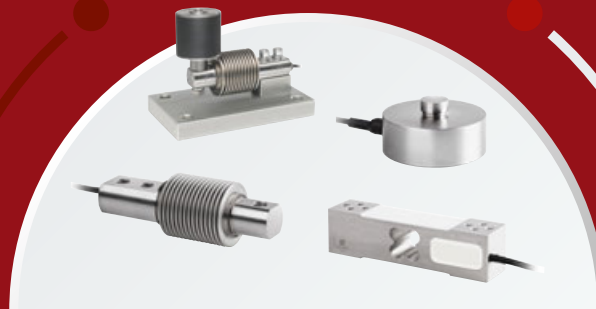
BALANCE CONSTRUCTION

Load cell + Evaluation device



BALANCE MANUFACTURE

Load cell + KERN YKV +
KERN Software BalanceConnection



BALANCE MANUFACTURE

Load cell + Junction Box +
evaluation device



We help to interlink industrial production with state-of-the-art information and communication technology with the aim of increasing quality, using costs, time and resources more efficiently and being able to react more flexibly to the demands of the future. You can benefit from our standardized data protocols in conjunction with our BalanceConnection 4.0 data software, for details see Internet.

The SAUTER team of our competence center – Industry 4.0 (IoT)



Daniel Egeler

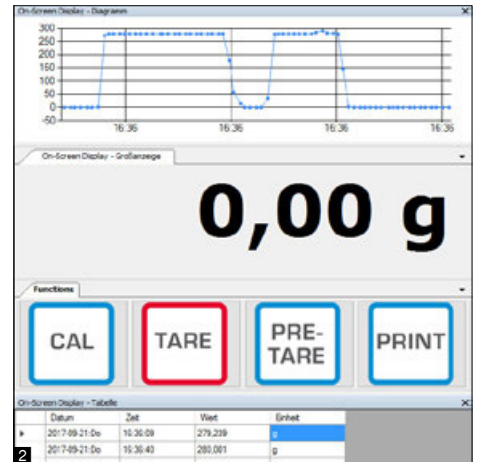
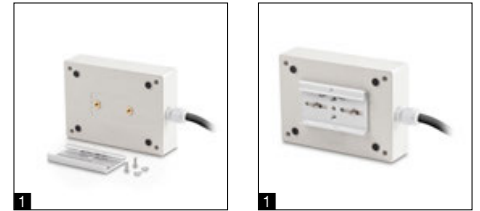


Ralf Schmiegl



Maximilian Pfister

We are glad to inform and advise you
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Modern digital weighing transmitter for the rapid recording of weighing data and forwarding it to the most varied output channels such as tablets, networks, SPS controllers, etc. – ideal for operating balances in systems or conveyors

Features Technical data Accessories

- Simply connect a weighing platform or measuring cell, integrate the digital weighing transmitter into the network and start weighing
- For rapid transfer of weighing data to connected networks, computers, etc.
- USB and RS-232 data interface standard, Power supply via USB interface
- Transfer formats are freely configurable
- Functions: Weighing, taring
- Measuring frequency 10 Hz
- Easy configuration using the software supplied
- Robust plastic die-cast housing
- **1** Suitable for wall mounting and DIN track mount
- Compatible with all KERN weighing platforms
- included with the delivery:
 - Digital weighing transmitter KERN YKV
 - USB cable incl. mains plug
 - DIN rail mounting bracket
 - Configuration software for adjusting and managing, enables the display and transfer of values, for example to a PC as well as conversion for different user programs such as SAP, Oracle etc.

- Overall dimensions WxDxH 100x140x36 mm
- Net weight approx. 0,35 kg
- Permissible ambient temperature -10 °C/40 °C

- Bluetooth data interface, KERN YKV-A02, **€ 98,-**
- WiFi interface, KERN YKV-A01, **€ 98,-**
- **2** BalanceConnection software for flexible measured value recording or transmission, compatible with Microsoft® Excel, Access and other applications, Scope of supplies: Download link for 1 license, KERN SCD-4.0-DL, **€ 210,-**

| | | | | | | | | | | | |
|----------|--|--|--------|--|--|--|--|--|--|---------|--|
| STANDARD | | | | | | | | | | FACTORY | |
| | | | | | | | | | | | |
| | | | YKV-02 | | | | | | | | |

| Model | Standard interfaces | Price excl. of VAT ex works € |
|-------------|-----------------------|-------------------------------|
| KERN YKV-01 | RS-232, USB | 265,- |
| KERN YKV-02 | RS-232, USB, Ethernet | 320,- |

11



Compact display device (rail-mounted module) for installation in switch cabinets

Features

- Compact display unit for recording weighing data using strain gauge load cells
- It is particularly space-saving to install in switch cabinets
- Thanks to the many interface variants, the modules can be ideally integrated into existing infrastructures and systems
- The modules can be used either individually or as a Buslink system with a total of up to 332 DIN rail modules
- Configuration of the module conveniently via a connected PC with the suitable software (Download see *Internet*)
- Bright LED display for optical control and settings
- Time-saving G-Cal™ (Geographic Calibration) technology for fast and accurate calibration without weights conveniently over a network or the Internet worldwide

- Convenient communication via remote devices
- Backup and restore function via USB port
- Can handle various industrial protocols such as Ethernet IP, Modbus TCP, Modbus RTU, FINS, PROFIBUS DP and PROFINET (according to model)
- Extremely high measurement frequency possible, up to 1600 data records/second
- Internal resolution 24 Bit

Technical data

- 7 segment LED display, digit height 7,62 mm
- Dimensions W×D×H 120×101×23 mm
- Power supply 18-32 Vdc; 4 W max.
- Power supply load cell 5 Vdc
- Sensitivity 0,1 µV/d
- Adjustable nominal sensitivity 1; 1.5; 2; 2.5; 3 mV/V
- Input voltage unipolar @3mV/V: -1 mV to + 16 mV
- Input voltage bipolar @3mV/V: -16 mV to +16 mV

- Max. load cell impedance 1200 Ω
- Min. load cell impedance 43,75 Ω
- Max. no. of load cells 350 Ω: 8
- Max. no. of load cells 1000 Ω: 22
- Max. resolution d 10.000
- Display steps 1, 2, 5, 10, 20, 50, 100, 200
- Permissible ambient temperature -10 °C/40 °C

Accessories

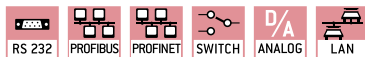
- Mains adapter for voltage supply to the KERN CE, can be fitted on the DIN rail, KERN CE HSS, **€ 90,-**
- Large display with superior display size, KERN YKD-A02, **€ 310,-**
- For further accessories, such as load and load cells, torque sensors and weighing platforms (strain gauge based only) from the SAUTER and KERN range, see *internet*
- Further accessories such as DIN rail, housing as well as individual assembly, configuration, adjustment, etc. on request

Note: Models optionally also available verified, please enquire

STANDARD



OPTION



| Model | Communication Interfaces | Digital I/O | Analog output | Price excl. of VAT ex works € |
|---------------|--------------------------|--------------------|---------------|-------------------------------|
| SAUTER | | | | |
| CE HSAIO* | USB | 3 input / 4 output | 0/4-20/24 mA | 920,- |
| CE HSP* | USB, PROFIBUS | 3 input / 4 output | - | 590,- |
| CE HSR* | USB, RS-232, RS-422 | 3 input / 4 output | - | 560,- |
| CE HSN | USB, PROFINET | 3 input / 4 output | - | 830,- |

* ONLY WHILE STOCKS LAST



Analogue weighing transmitter to amplify the DMS signal with current or voltage output (depending on model)

Features

- Output signal voltage or current
- Suitable for transfer to SPS, analogue measuring card etc.
- Integrated overvoltage protection
- Polarity reversal protection at the input and protection of the output
- CE WT1-Y4 and CE WT2-Y4: up to 4 sensors connectable without junction box
- Scope of delivery: weighing transmitter, connection plug for sensor, cable incl. plug for output signal and power supply
- 12V DC or 24V DC voltage source (depending on model) required (e.g. for 24V voltage source CE is HSS compatible)
- Compatible with all analogue SAUTER load cells and analogue KERN weighing platforms

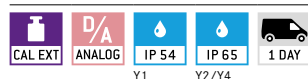
Technical data

- Measuring range 0 - 20 mV
- Accuracy: $\leq \pm 0.1\%$ F.S.
- Ambient temperature: -20 to +85 °C
- Overall dimensions WxDxH
 CE WTY1: 110x45x32 mm, see larger picture
1 CE WTY2: 110x45x32 mm
2 CE WTY4: 110x45x32 mm

Accessories

- Mains adapter for power supply of the KERN CE (only for models with 24 V), KERN CE HSS, **€ 90,-**

STANDARD



| Model | Sensor connections | Supply voltage | Output signal | Housing | Class of protection | Net weight approx. | Price excl. of VAT ex works |
|---------------|--------------------|----------------|----------------------|-------------|---------------------|--------------------|-----------------------------|
| | | | | | | kg | € |
| SAUTER | | | | | | | |
| CE WT1-Y1 | 1 | 12V | analogue (4 - 20 mA) | Steel plate | IP54 | 0,25 | 175,- |
| CE WT2-Y1 | 1 | 24V | analogue (4 - 20 mA) | Steel plate | IP54 | 0,25 | 175,- |
| CE WT3-Y1 | 1 | 12V | analogue (0 +/-5V) | Steel plate | IP54 | 0,25 | 175,- |
| CE WT4-Y1 | 1 | 24V | analogue (0 +/-5V) | Steel plate | IP54 | 0,25 | 175,- |
| CE WT1-Y2 | 1 | 12V | analogue (4 - 20 mA) | Aluminium | IP65 | 0,50 | 270,- |
| CE WT2-Y2 | 1 | 24V | analogue (4 - 20 mA) | Aluminium | IP65 | 0,50 | 270,- |
| CE WT1-Y4 | 4 | 12V | analogue (4 - 20 mA) | Aluminium | IP65 | 0,85 | 350,- |
| CE WT2-Y4 | 4 | 24V | analogue (4 - 20 mA) | Aluminium | IP65 | 0,85 | 350,- |

1 ONLY WHILE STOCKS LAST

12



LOAD CELLS

Various accuracy classes with nominal loads from 300 g to 100 t and protection classes up to IP69K are available to you in the SAUTER product range. Whatever the project – whether it's the development of customised weighing systems, installation in silos and storage tanks or in shelving for continuous inventory, for special application in mechanical engineering or in any type of test stand – SAUTER can offer you just the right load cell.

Of course, we can also supply you with the appropriate accessories such as load corners, pivot heads, display devices, junction boxes or the relevant calibration certificate at the same time.

Any special requests? Do you need special load cells, other capacities or cable lengths, individual force test stands or a special mount for your test item? No problem, our product specialist for load cells Mr Stefan Herrmann is available at any time to help you and will work with you to develop a customised concept for your application.

| Accuracy class | Combined error |
|----------------|----------------|
| C5 | ≤ 0,01 % |
| C4 | ≤ 0,015 % |
| C3 | ≤ 0,02 % |
| C2 | ≤ 0,03 % |
| C1 | ≤ 0,05 % |
| G1 | ≤ 0,1 % |
| G2 | ≤ 0,2 % |
| G3 | ≤ 0,3 % |
| G5 | ≤ 0,5 % |
| G10 | ≤ 1,0 % |



Note

Individual scale construction according to your individual requirements, also possible with third-party components see *Scale kits*



Stefan Herrmann

Product Specialist

Load Cells

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Tip: Analogue torque sensors are compatible with the SAUTER CE HSx display device (rail-mounted module)

DC Y1
Static torque sensor made from alloy steel

Technical data

- High precision (comprehensive Error 0,5 % F.S.)
- RoHS compliant
- For monitoring or measurement of static torques, tests of manual torque wrenches or transfer of static load torques
- Nominal sensitivity: 1,0~1,5 mV/V, depending on nominal load
- Supply voltage max. 10 V DC
- 4-wire connection
- Simple and quick installation
- High torsional stiffness
- Cable length approx. 2 m

DC Y2
Static torque sensor made from alloy steel

Technical data

- High precision (comprehensive Error 0,5 % F.S.)
- RoHS compliant
- Protection against dust and water splashes IP65 (in accordance with EN 60529)
- For monitoring or measurement of static torques, tests of manual torque wrenches or transfer of static load torques
- Nominal sensitivity: 1,5 mV/V
- Supply voltage max. 15 V DC
- 4-wire connection
- High torsional stiffness
- Cable length approx. 2 m

Other designs and nominal loads on request

STANDARD



STANDARD



OPTION



| Model | Nominal load | Price excl. of VAT ex works |
|-----------|--------------|-----------------------------------|
| SAUTER | Nm | € |
| DC 5-Y1 | 5 | 290,- |
| DC 10-Y1 | 10 | 285,- |
| DC 20-Y1 | 20 | 285,- |
| DC 50-Y1 | 50 | 285,- |
| DC 100-Y1 | 100 | 285,- |
| DC 200-Y1 | 200 | 285,- |
| DC 500-Y1 | 500 | 360,- |

| Model | Nominal load | Price excl. of VAT ex works |
|------------|--------------|-----------------------------------|
| SAUTER | Nm | € |
| DC 200M-Y2 | 0,2 | 490,- |
| DC 1-Y2 | 1 | 490,- |
| DC 10-Y2 | 10 | 490,- |
| DC 20-Y2 | 20 | 490,- |
| DC 50-Y2 | 50 | 490,- |

Tip: Further details and technical data sheet as well as an extensive range of accessories can be found on the *internet*



CP P4 · CP Y4
Single-point load cell
made of anodised aluminium

Technical data

- CP P4: Accuracy in accordance with OIML R60 C3
- CP Y4: Accuracy in accordance with OIML R60 C2
- CE and RoHS compliant
- Protection against dust and water splashes IP65 (in accordance with EN 60529)
- Aluminium, anodised
- Suitable for price-computing scales, bench scales, platform scales, etc.
- Maximum platform size: 200×200 mm
- Nominal sensitivity: 0,9 mV/V
- 4-wire connection
- Cable length approx. 0,4 m

CP P1 · CP Y1
Single-point load cell
made of anodised aluminium

Technical data

- CP P1: Accuracy in accordance with OIML R60 C3
- CP Y1: Accuracy in accordance with OIML R60 C2
- CE and RoHS compliant
- Protection against dust and water splashes IP65 (in accordance with EN 60529)
- Aluminium, anodised
- Suitable for price-computing scales, bench scales, platform scales, etc.
- Maximum platform size: 250×350 mm
- Nominal sensitivity: 2 mV/V
- 4-wire connection
- Note: Version in accordance with OIML R60 C4 or C5 on request

CP P3
Single-point load cell
made of anodised aluminium

Technical data

- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Protection against dust and water splashes IP65 (in accordance with EN 60529)
- Aluminium, anodised
- Suitable for price-computing scales, bench scales, platform scales, etc.
- Maximum platform size: 350×400 mm
- Nominal sensitivity: 2 mV/V
- 4-wire connection
- Cable length approx. 3 m
- Note: Version in accordance with OIML R60 C4 or C5 on request

STANDARD OPTION

IP 65 1 DAY DAKKS ISO
 +3 DAYS +4 DAYS

STANDARD OPTION

IP 65 M 1 DAY DAKKS ISO
 +3 DAYS +4 DAYS

CP P1

STANDARD OPTION

IP 65 1 DAY DAKKS ISO
 +3 DAYS +4 DAYS

| Model | Nominal load | Price |
|-------------------|--------------|--------------|
| | kg | excl. of VAT |
| | | ex works |
| | | € |
| SAUTER | | |
| CP 300-0P4 | 0,3 | 65,- |
| CP 600-0P4 | 0,6 | 65,- |
| ECO design | | |
| CP 300-0Y4 | 0,3 | 55,- |
| CP 1500-0Y4 | 1,5 | 55,- |
| CP 3000-0Y4 | 3 | 55,- |

| Model | Nominal load | Cable length | Price |
|--|--------------|--------------|--------------|
| | kg | m | excl. of VAT |
| | | | ex works |
| | | | € |
| SAUTER | | | |
| CP 3-3P1 | 3 | 0,4 | 60,- |
| CP 3-2-3P1 | 3 | 2 | 74,- |
| CP 5-3P1 | 5 | 0,4 | 60,- |
| CP 6-3P1 | 6 | 0,4 | 60,- |
| CP 8-3P1 | 8 | 0,4 | 60,- |
| CP 10-3P1 | 10 | 0,4 | 60,- |
| CP 10-3-3P1 | 10 | 3 | 78,- |
| CP 15-3P1 | 15 | 0,4 | 60,- |
| CP 15-3-3P1 | 15 | 3 | 78,- |
| CP 20-3P1 | 20 | 0,4 | 60,- |
| CP 30-3P1 | 30 | 0,4 | 60,- |
| CP 35-3P1 | 35 | 0,4 | 60,- |
| CP 35-3-3P1 | 35 | 3 | 78,- |
| CP 40-3P1 | 40 | 0,4 | 60,- |
| CP 50-3P1 | 50 | 0,4 | 60,- |
| CP 50-2-3P1 | 50 | 2 | 74,- |
| ECO design (without EC type approval) | | | |
| CP 3-2Y1 | 3 | 0,45 | 33,- |
| CP 5-2Y1 | 5 | 0,45 | 33,- |
| CP 10-2Y1 | 10 | 0,45 | 33,- |
| CP 15-2Y1 | 15 | 0,45 | 33,- |
| CP 20-2Y1 | 20 | 0,45 | 33,- |
| CP 30-2Y1 | 30 | 0,45 | 33,- |
| CP 100-3-3Y1 | 100 | 3 | 50,- |

New model

| Model | Nominal load | Price |
|---------------|--------------|--------------|
| | kg | excl. of VAT |
| | | ex works |
| | | € |
| SAUTER | | |
| CP 30-3P3 | 30 | 76,- |
| CP 40-3P3 | 40 | 76,- |
| CP 50-3P3 | 50 | 76,- |
| CP 75-3P3 | 75 | 76,- |
| CP 100-3P3 | 100 | 77,- |

Tip: Further details and technical data sheet as well as an extensive range of accessories can be found on the *internet*



CP P2
Single-point load cell
made of aluminium

Technical data

- Accuracy in accordance with OIML R60 C3
- RoHS compliant
- Protection against dust and water splashes IP65 (in accordance with EN 60529)
- Aluminium alloy, anodized
- Suitable for price computing scales, bench scales etc.
- Maximum platform size
CP P2, 100 – 300 kg: 400×400 mm
CP P2, 400 – 500 kg: 450×450 mm
- CP P2: 4-wire connection
- Nominal sensitivity: 2 mV/V
- Cable length
CP P2: 2 m
- Note: Version in accordance with OIML R60 C4 or C5 on request

CP P7
Single-Point load cell
made from stainless steel

Technical data

- Accuracy in accordance with OIML R60 C3
- RoHS compliant
- Protection against dust and water splashes IP67 (in accordance with EN 60529)
- Stainless steel
- Area of application: Mass as well as compressive force measurement in harsh environmental conditions
- Suitable for price computing scales, bench scales etc.
- Maximum platform size: 400×400 mm
- 6-wire connection
- Nominal sensitivity: 2 mV/V
- Cable length: 1 m
- Note: Version in accordance with OIML R60 C4 on request

CP P8
Single-point load cell
made of aluminium

Technical data

- Accuracy in accordance with OIML R60 C3
- RoHS compliant
- Protection against dust and water splashes IP65 (in accordance with EN 60529)
- Aluminium alloy, anodized
- Suitable for price computing scales, bench scales etc.
- Maximum platform size 600×600 mm
- 6-wire connection
- Nominal sensitivity: 2 mV/V
- Cable length 3 m
- Note: Version in accordance with OIML R60 C4 or C5 on request

Tip: Further details and technical data sheet as well as an extensive range of accessories can be found on the *internet*

STANDARD OPTION

IP 65 1 DAY +3 DAYS +4 DAYS

STANDARD OPTION

IP 67 1 DAY +3 DAYS +4 DAYS

STANDARD OPTION

IP 65 1 DAY +3 DAYS +4 DAYS

| Model | Nominal load | Price excl. of VAT ex works |
|------------|--------------|-----------------------------------|
| SAUTER | kg | € |
| CP 100-3P2 | 100 | 81,- |
| CP 150-3P2 | 150 | 81,- |
| CP 200-3P2 | 200 | 81,- |
| CP 300-3P2 | 300 | 81,- |
| CP 400-3P2 | 400 | 81,- |
| CP 500-3P2 | 500 | 81,- |

| Model | Nominal load | Price excl. of VAT ex works |
|------------|--------------|-----------------------------------|
| SAUTER | kg | € |
| CP 30-3P7 | 30 | 270,- |
| CP 50-3P7 | 50 | 270,- |
| CP 75-3P7 | 75 | 270,- |
| CP 100-3P7 | 100 | 270,- |
| CP 150-3P7 | 150 | 270,- |

| Model | Nominal load | Price excl. of VAT ex works |
|------------|--------------|-----------------------------------|
| SAUTER | kg | € |
| CP 50-3P8 | 50 | 123,- |
| CP 100-3P8 | 100 | 123,- |
| CP 150-3P8 | 150 | 123,- |
| CP 200-3P8 | 200 | 123,- |
| CP 250-3P8 | 250 | 123,- |
| CP 300-3P8 | 300 | 123,- |
| CP 500-3P8 | 500 | 123,- |
| CP 600-3P8 | 600 | 123,- |



CK P1



CK P2



CK P4



CK Y1



CK Y4



CK P1 · CK P2 · CK P4 Miniature load cell made of aluminium

Technical data

- High level of accuracy
- Comprehensive error
CK P1 / CK P2: 0,03 %
CK P4: 0,05 %
- Protection against dust and water splashes
IP65 (in accordance with EN 60529)
- Aluminium
- Suitable for small scales and kitchen scales
and force-measuring devices
- Cable length: 0,25 m

CK Y1 · CK Y4 Flat miniature alloy steel load cell

Technical data

- Accuracy in accordance with OIML C1
- RoHS compliant
- High precision
(comprehensive Error 0,05 % F.S.)
- Very low design
- Ideal, for example, for the construction
of personal floor scales, kitchen scales,
postal scales or other scales with minimal
structural height
- Cable length: 0,45 m

CK Y1

- Protection against dust and
water splashes IP66
- Scope of delivery: 1 piece
- Full bridge circuit(junction box required
to connect several measuring cells)

CK Y4

- Protection against dust and
water splashes IP65
- Scope of delivery: 4 pieces
- Quarter bridge circuit: 4 weighing cells
are connected to a full bridge
- No junction box necessary
- No corner adjustment

CD P1 Loadcell made of stainless steel

Technical data

- Accuracy in accordance with OIML R60 C3
- RoHS compliant
- Protection against dust and water splashes
IP68 (in accordance with EN 60529),
hermetically encapsulated
- Stainless steel
- Area of application: Measuring mass
as well as compressive force
- Suitable for vehicle scales, weigh hoppers,
vehicle testing equipment, test stands
- Nominal sensitivity: 2 mV/V
- Cable length: 15 m
- Note: EX version or accuracy class C4 on
request

Accessories

- Pressure piece for CD 10-3P1, CD 20-3P1,
steel, stainless, SAUTER CE P10330, **€ 98,-**
- Pressure piece for CD 40-3P1, CD 50-3P1,
steel, stainless, SAUTER CE P10350, **€ 92,-**
- **1** Mounting kit, steel, stainless,
suitable for CD 10-3P1, CD 20-3P1,
SAUTER CE P41430, **€ 720,-**
- Mounting kit, steel, stainless,
suitable for CD 40-3P1, CD 50-3P1,
SAUTER CE P14150, **€ 730,-**

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Tip: Further details and technical data sheet
as well as an extensive range of accessories
can be found on the *internet*

| STANDARD | OPTION |
|----------------|------------------------------------|
| IP 65 1 DAY | DAKkS +3 DAYS ISO +4 DAYS |

| Model | Nominal load kg | Price excl. of VAT ex works € |
|---------------|--------------------|--|
| SAUTER | | |
| CK 600-0P1 | 0,6 | 33,- |
| CK 1-0P1 | 1 | 33,- |
| CK 2-0P1 | 2 | 33,- |
| CK 3-0P1 | 3 | 33,- |
| CK 5-0P1 | 5 | 33,- |
| CK 6-0P1 | 6 | 34,- |
| CK 300-0P2* | 0,3 | 49,- |
| CK 600-0P2* | 0,6 | 49,- |
| CK 300-0P4 | 0,3 | 44,- |
| CK 500-0P4 | 0,5 | 44,- |

1 * ONLY WHILE STOCKS LAST

| STANDARD | OPTION |
|----------------|-------------------------|
| IP 65 CK Y4 | IP 66 CK Y1 1 DAY |

| Model | Nominal load kg | Price excl. of VAT ex works € |
|---------------|--------------------|--|
| SAUTER | | |
| CK 10-Y1 | 10 | 23,- |
| CK 30-Y1 | 30 | 23,- |
| CK 10-Y4 | 10 | 23,- |
| CK 30-Y4 | 30 | 25,- |
| CK 50-Y4 | 50 | 25,- |



| STANDARD | OPTION |
|---------------------|--|
| IP 68 M 1 DAY | ISO +4 DAYS [Max] ≤ 25 t/250 kN |

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|--------------|--|
| SAUTER | | |
| CD 10-3P1 | 10 t/100 kN | 460,- |
| CD 20-3P1 | 20 t/200 kN | 460,- |
| CD 40-3P1 | 40 t/400 kN | 460,- |
| CD 50-3P1 | 50 t/500 kN | 460,- |

1 ONLY WHILE STOCKS LAST



CR Q1 Loadcell made of stainless steel

Technical data

- Accuracy in accordance with OIML R60 C1
- RoHS compliant
- Protection against dust and water splashes IP68 (in accordance with EN 60529), hermetically encapsulated
- Stainless steel
- Area of application: Measuring mass as well as compressive force
- Suitable for vehicle scales, weigh hoppers, vehicle testing equipment, test stands
- Nominal sensitivity: 2 mV/V
- Cable length 10 m

Accessories

- Load corner, steel, galvanised, suitable for CR Q1
 - [Max] ≤ 10 t: SAUTER CE Q42901, € 265,-
 - [Max] ≥ 20 t: SAUTER CE Q42902, € 420,-
- Load corner, steel, stainless, suitable for CR Q1
 - [Max] ≤ 10 t: SAUTER CE RQ42901, € 475,-
 - [Max] ≥ 20 t: SAUTER CE RQ42902, € 810,-



| | |
|----------|---------------------|
| STANDARD | OPTION |
| IP 68 | ISO |
| 1 DAY | +4 DAYS |
| | [Max] ≤ 25 t/250 kN |

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|--------------|-------------------------------|
| SAUTER | | |
| CR 2500-1Q1 | 2,5 t/25 kN | 285,- |
| CR 5000-1Q1 | 5 t/50 kN | 285,- |
| CR 10000-1Q1 | 10 t/100 kN | 285,- |
| CR 20000-1Q1 | 20 t/200 kN | 560,- |
| CR 30000-1Q1 | 30 t/300 kN | 560,- |

CR P1 Loadcell made of stainless steel

Technical data

- Accuracy in accordance with OIML R60 C3
- RoHS compliant
- Protection against dust and water splashes IP68 (in accordance with EN 60529), hermetically encapsulated
- Stainless steel
- Area of application: Measuring mass as well as compressive force
- Suitable for weighbridges, handing scales, silo scales and other types of balances, test stands, etc.
- Nominal sensitivity: 1 – 2 mV/V, depending on nominal load
- Cable length
 - [Max] ≤ 1000 kg: 3 m
 - [Max] ≥ 2000 kg: 6 m

Accessories

- Load corner for CR 1000-3P1, CR 250-3P1, CR 500-3P1, steel, incl. pressure piece, SAUTER CE P244011, € 600,-
- Pressure piece for CR 1000-3P1, CR 250-3P1, CR 500-3P1, steel, SAUTER CE P244012, € 115,-
- Load corner for CR 2000-3P1, steel, stainless incl. pressure piece, SAUTER CE P244021, € 720,-
- Pressure piece for CR 2000-3P1, steel, stainless, SAUTER CE P244022, € 125,-

| | |
|----------|---------------------|
| STANDARD | OPTION |
| IP 68 | DAkkS |
| 4 DAYS | +3 DAYS |
| | +4 DAYS |
| | [Max] ≤ 500 kg/5 kN |

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|---------------|-------------------------------|
| SAUTER | | |
| CR 60-3P1 | 60 kg/0,6 kN | 930,- |
| CR 130-3P1 | 130 kg/1,3 kN | 980,- |
| CR 250-3P1 | 250 kg/2,5 kN | 890,- |
| CR 500-3P1 | 500 kg/5 kN | 860,- |
| CR 1000-3P1 | 1000 kg/10 kN | 860,- |
| CR 2000-3P1 | 2000 kg/20 kN | 860,- |

■ ONLY WHILE STOCKS LAST

CR Y1 Loadcell made of steel alloy

Technical data

- Accuracy in accordance with OIML R60 C1
- RoHS compliant
- High precision comprehensive Error 0,05 % F.S.)
- Protection against dust and water splashes IP68 (in accordance with EN 60529), hermetically encapsulated
- Stainless steel
- Area of application: for weight, tensile and compressive force measurement
- Suitable for weight measurement as well as force and force test stands
- Force transmission via pressure piece or threaded hole
- Nominal sensitivity: 2 mV/V
- Cable length: 3 m
- Pressure piece included with delivery
- Thread for pressure piece or other force application:
 - up to 5000 kg M16×1,5,
 - from 10000 kg M32×1,5

Tip: Further details and technical data sheet as well as an extensive range of accessories can be found on the *internet*

| | |
|----------|---------------------|
| STANDARD | OPTION |
| IP 68 | DAkkS |
| 1 DAY | +3 DAYS |
| | +4 DAYS |
| | [Max] ≤ 500 kg/5 kN |

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|--------------|-------------------------------|
| SAUTER | | |
| CR 500-1Y1 | 0,5 t/5 kN | 270,- |
| CR 1000-1Y1 | 1 t/10 kN | 270,- |
| CR 5000-1Y1 | 5 t/50 kN | 270,- |
| CR 10000-1Y1 | 10 t/100 kN | 430,- |
| CR 20000-1Y1 | 20 t/200 kN | 430,- |



CB Q1 · CB Q2

Bending beam and shear beam load cell made from stainless steel

Technical data

- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Protection against dust and water splashes IP68/IP69K (in accordance with EN 60529), welded to create a hermetic seal
- Stainless steel
- Area of application: Measuring mass as well as compressive force in harsh environments
- Suitable for platform scales, weigh hoppers, floor scales and other weighing devices
- 4-wire connection
- Nominal sensitivity: 2 mV/V
- Cable length: 3 m
- Note: Accuracy class OIML R60 C6 or EX version on request

CB P1

Bending beams made from stainless steel

Technical data

- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Protection against dust and water splashes IP67 (in accordance with EN 60529), hermetically encapsulated
- Nickel-plated steel
- Area of application: Measuring mass as well as compressive force in harsh environments
- Suitable for platform scales, silo scales, bed scales and other types of scales
- 4-wire connection
- Nominal sensitivity: 3 mV/V
- Cable length: 3 m

Accessories CB Q1 · CB Q2

- Traction device, steel, galvanised, suitable for CB Q1, SAUTER CE Q30901, **€ 85,-**
- Traction device, steel, stainless, suitable for CB Q2, SAUTER CE Q34905, **€ 90,-**
- **1** Base plate, steel, galvanised, suitable for CB Q1, SAUTER CE Q30903, **€ 100,-**
- Base plate, steel, stainless, suitable for CB Q1, SAUTER CE RQ30903, **€ 190,-**
- Base plate, steel, stainless, suitable for CB Q2, SAUTER CE Q34903, **€ 95,-**
- **1** Bearing, steel, stainless, suitable for CB Q1 5 – 50 kg, SAUTER CE Q30904, **€ 120,-** 75 – 300 kg, SAUTER CE Q30905, **€ 120,-** CB 500-3Q1, SAUTER CE Q30906, **€ 205,-**
- Bearing, steel, stainless, suitable for CB Q2, SAUTER CE Q34906, **€ 190,-**
- Load corner, steel, stainless, suitable for CB Q1, SAUTER CE RQ30907, **€ 315,-**
- Adjustable foot, steel, stainless, suitable for CB Q2, SAUTER CE Q34901, **€ 70,-**

Accessories CB P1

- Adjustable foot, steel, nickel-plated, M12 thread, suitable for CB P1, SAUTER CE P2012, **€ 27,-**
- **2** Load corner, steel, nickel-plated, suitable for CB P1, SAUTER CE P4022, **€ 195,-**
- Distance plate for bending beams CB P1 made from steel, SAUTER CE P3012, **€ 9,-**



STANDARD

IP 68 IP 69K 1 DAY

OPTION

DAkkS ISO +3 DAYS +4 DAYS

[Max] ≤ 500 kg



STANDARD

IP 67 M 1 DAY

OPTION

DAkkS ISO +3 DAYS +4 DAYS

| Model | Nominal load | Price excl. of VAT ex works |
|--------------|--------------|-----------------------------|
| SAUTER | kg | € |
| CB 5-3Q1 | 5 | 230,- |
| CB 10-3Q1 | 10 | 230,- |
| CB 20-3Q1 | 20 | 230,- |
| CB 30-3Q1 | 30 | 230,- |
| CB 50-3Q1 | 50 | 230,- |
| CB 75-3Q1 | 75 | 230,- |
| CB 100-3Q1 | 100 | 230,- |
| CB 150-3Q1 | 150 | 230,- |
| CB 200-3Q1 | 200 | 230,- |
| CB 250-3Q1 | 250 | 230,- |
| CB 300-3Q1 | 300 | 230,- |
| CB 500-3Q1 | 500 | 230,- |
| CB 750-3Q2* | 750 | 240,- |
| CB 1000-3Q2* | 1000 | 240,- |
| CB 1500-3Q2* | 1500 | 240,- |

| Model | Nominal load | Price excl. of VAT ex works |
|------------|--------------|-----------------------------|
| SAUTER | kg | € |
| CB 100-3P1 | 100 | 114,- |
| CB 250-3P1 | 250 | 114,- |

1 * ONLY WHILE STOCKS LAST



CT Q1
Shear beam
made from stainless steel

Technical data

- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Protection against dust and water splashes IP68/IP69K (in accordance with EN 60529), welded to create a hermetic seal
- Stainless steel
- Area of application: Measuring mass as well as compressive force in harsh environments
- Suitable for platform scales, weigh hoppers, flush-mounted floor scales and other weighing devices
- 6-wire connection
- Nominal sensitivity: 2 mV/V
- Cable length: 5 m
- Note: EX version on request

CT P1 · CT P2
Shear beam
made from stainless steel

Technical data

- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Protection against dust and water splashes IP67 (in accordance with EN 60529), welded to create a hermetic seal
- Nickel-plated steel
- Area of application: Measuring mass as well as compressive force in harsh environments
- Suitable for platform scales, weigh hoppers, flush-mounted floor scales and other weighing devices
- 4-wire connection
- Nominal sensitivity: 3 mV/V
- Cable length
[Max] ≤ 1000 kg: 4 m
[Max] ≥ 1500 kg: 6 m
- CT P2: Delivery with calibrated sensitivity, when ordering several cells

Accessories CT Q1

- Base plate, steel, stainless, suitable for CT Q1: SAUTER CE RQ35911, **€ 200,-**
- CT 3000-3Q1, CT 5000-3Q1: SAUTER CE RQ35912, **€ 200,-**
- CT 7500-3Q1, CT 10000-3Q1: SAUTER CE RQ35919, **€ 860,-**
- Bearing, steel, stainless, suitable for CT Q1: SAUTER CE RQ35909, **€ 165,-**
- CT 3000-3Q1, CT 5000-3Q1: SAUTER CE RQ35910, **€ 320,-**
- CT 7500-3Q1, CT 10000-3Q1: SAUTER CE RQ35918, **€ 390,-**
- Load corner, steel, stainless, suitable for CT Q1: SAUTER CE RQ35902, **€ 420,-**
- **1** Load corner, steel, stainless, suitable for CT 3000-3Q1, CT 5000-3Q1, SAUTER CE RQ35903, **€ 620,-**

Accessories CT P1 · CT P2

- Load corner, steel, stainless, suitable for CT 10000-3P1, CT 10000-3P2, SAUTER CE P40210, **€ 510,-**
- **2** Load corner, steel, nickel-plated, suitable for CT 500-3P1, CT 1000-3P1, CT 1500-3P1, SAUTER CE P4022, **€ 195,-**
- Load corner, steel, nickel-plated, suitable for CT 2500-3P1, CT 3000-3P1, CT 5000-3P1, SAUTER CE P4025, **€ 260,-**
- Adjustable foot, steel, nickel-plated, M12 thread, suitable for CT 500-3P1, CT 1000-3P1, CT 1500-3P1, SAUTER CE P2012, **€ 27,-**
- Adjustable foot, steel, nickel-plated, M18 thread, suitable for CT 2500-3P1, CT 3000-3P1, CT 5000-3P1, SAUTER CE P2018, **€ 38,-**
- Adjustable foot, steel, nickel-plated, M24 thread, suitable for CT 10000-3P1, SAUTER CE P2024, **€ 113,-**
- Distance plate, suitable for CT 500-3P1, CT 500-3P2, CT 1000-3P1, CT 1000-3P2, CT 1500-3P1: SAUTER CE P3012, **€ 9,-**
- CT 2500-3P1, CT 3000-3P1, CT 3000-3P2, CT 5000-3P1, CT 5000-3P2: SAUTER CE P3015, **€ 10,-**
- CT 10000-3P1, CT 10000-3P2: SAUTER CE P30110, **€ 27,-**



STANDARD: IP 68, IP 69K, 1 DAY
OPTION: DAKkS +3 DAYS, ISO +4 DAYS [Max] ≤ 500 kg

| Model | Nominal load kg | Price excl. of VAT ex works € |
|--------------|--------------------|--|
| SAUTER | | |
| CT 300-3Q1 | 300 | 220,- |
| CT 500-3Q1 | 500 | 220,- |
| CT 750-3Q1 | 750 | 220,- |
| CT 1000-3Q1 | 1000 | 220,- |
| CT 1500-3Q1 | 1500 | 220,- |
| CT 2000-3Q1 | 2000 | 220,- |
| CT 3000-3Q1 | 3000 | 435,- |
| CT 5000-3Q1 | 5000 | 435,- |
| CT 7500-3Q1 | 7500 | 570,- |
| CT 10000-3Q1 | 10000 | 570,- |



STANDARD: IP 67, M, 1 DAY
OPTION: DAKkS +3 DAYS, ISO +4 DAYS [Max] ≤ 500 kg

| Model | Nominal load kg | Price excl. of VAT ex works € |
|--------------|--------------------|--|
| SAUTER | | |
| CT 500-3P1 | 500 | 98,- |
| CT 1000-3P1 | 1000 | 98,- |
| CT 1500-3P1 | 1500 | 98,- |
| CT 2500-3P1 | 2500 | 119,- |
| CT 3000-3P1 | 3000 | 119,- |
| CT 5000-3P1 | 5000 | 119,- |
| CT 10000-3P1 | 10000 | 173,- |
| CT 500-3P2 | 500 | 103,- |
| CT 1000-3P2 | 1000 | 103,- |
| CT 5000-3P2 | 5000 | 124,- |
| CT 3000-3P2 | 3000 | 125,- |
| CT 10000-3P2 | 10000 | 178,- |



CS P1
4-wire “S” measuring cell
made of nickel-plated steel
for force and mass measurement

Technical data

- Accuracy in accordance with OIML R60 C3
- RoHS compliant
- Protection against dust and water splashes IP67 (in accordance with EN 60529), welded to create a hermetic seal
- Nickel-plated steel
- Area of application: for tensile and compressive force measurement
- Suitable for handling scales, weigh hoppers and other weighing devices as well as force measurement devices and test stands
- **1** 4-wire connection
- Nominal sensitivity: 2 mV/V
- Cable length
 [Max] ≤ 1500 kg: 3 m
 [Max] ≥ 2000 kg: 6 m
- Note: EX version or accuracy class C4 on request

CS Q1
6-wire “S” measuring cell
made of nickel-plated steel
for force and mass measurement

Technical data

- Accuracy in accordance with OIML R60 C3
- RoHS compliant
- Protection against dust and water splashes IP67 (in accordance with EN 60529), ermetically encapsulated
- Nickel-plated steel
- Area of application: for tensile and compressive force measurement
- Suitable for handling scales, weigh hoppers and other weighing devices as well as force measurement devices and test stands
- **1** 6-wire connection
- Nominal sensitivity: 2 mV/V
- Cable length: 5 m

1 With 6-wire measuring circuits, the cable can be shortened without affecting the temperature compensation and the actual characteristic value. For 4-wire measuring circuits the cable length should not be changed

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STANDARD: IP 67, 1 DAY

OPTION: DAKKS +3 DAYS, ISO +4 DAYS

[Max] ≤ 500 kg/5 kN, [Max] ≤ 25 t/250 kN

STANDARD: IP 67, 1 DAY

OPTION: DAKKS +3 DAYS, ISO +4 DAYS

[Max] ≤ 500 kg/5 kN, [Max] ≤ 12 t/120 kN

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|---------------|-------------------------------|
| SAUTER | | |
| CS 25-3P1 | 25 kg/250 N | 200,- |
| CS 50-3P1 | 50 kg/500 N | 200,- |
| CS 100-3P1 | 100 kg/1 kN | 200,- |
| CS 150-3P1 | 150 kg/1,5 kN | 200,- |
| CS 250-3P1 | 250 kg/2,5 kN | 200,- |
| CS 500-3P1 | 500 kg/5 kN | 200,- |
| CS 600-3P1 | 600 kg/6 kN | 200,- |
| CS 750-3P1 | 750 kg/7,5 kN | 200,- |
| CS 1000-3P1 | 1 t/10 kN | 230,- |
| CS 1500-3P1 | 1,5 t/15 kN | 230,- |
| CS 2000-3P1 | 2 t/20 kN | 260,- |
| CS 2500-3P1 | 2,5 t/25 kN | 260,- |
| CS 5000-3P1 | 5 t/50 kN | 260,- |
| CS 7500-3P1 | 7,5 t/75 kN | 530,- |
| CS 10000-3P1 | 10 t/100 kN | 530,- |
| CS 15000-3P1 | 15 t/150 kN | 690,- |
| CS 20000-3P1 | 20 t/200 kN | 760,- |
| CS 30000-3P1 | 30 t/300 kN | 1950,- |

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|---------------|-------------------------------|
| SAUTER | | |
| CS 50-3Q1 | 50 kg/500 N | 215,- |
| CS 100-3Q1 | 100 kg/1 kN | 215,- |
| CS 150-3Q1 | 150 kg/1,5 kN | 215,- |
| CS 200-3Q1 | 200 kg/2 kN | 215,- |
| CS 300-3Q1 | 300 kg/3 kN | 215,- |
| CS 500-3Q1 | 500 kg/5 kN | 215,- |
| CS 750-3Q1 | 750 kg/7,5 kN | 215,- |
| CS 1000-3Q1 | 1 t/10 kN | 215,- |
| CS 1500-3Q1 | 1,5 t/15 kN | 250,- |
| CS 2000-3Q1 | 2 t/20 kN | 250,- |
| CS 3000-3Q1 | 3 t/30 kN | 370,- |
| CS 5000-3Q1 | 5 t/50 kN | 370,- |
| CS 6000-3Q1 | 6 t/60 kN | 370,- |



CO Y1



CO Y2/CO Y3

CO Y4



CS Y1
Miniature "S"-load/force measuring cell made of stainless steel

Technical data

- High precision (comprehensive Error 0,05 % F.S.)
- Accuracy in accordance with OIML C1
- RoHS compliant
- Protection against dust and water splashes IP65
- Stainless steel
- Area of application: Tensile and compressive applications, mass and force measurement
- Suitable for force test stands, hanging scales, silo scales and various other balances
- 4-wire connection
- Nominal sensitivity: 1,3 – 2 mV/V, depending on nominal load
- Cable length: 2 m

CO Y1 · CO Y2 · CO Y3 · CO Y4
Miniature cylindrical load cell made from stainless steel

Technical data

- RoHS compliant
 - Suitable for weight measurement as well as force and force test stands
 - 4-wire connection
- CO Y1 · CO Y4**
- High precision (comprehensive Error 0,5 % F.S.)
 - Accuracy in accordance with OIML G5
 - Area of application: Compressive applications
 - Nominal sensitivity: 1,0 – 1,5 mV/V, depending on nominal load
- CO Y2 · CO Y3**
- High level of accuracy, Comprehensive error CO Y2: 0,5 % F. S. | CO Y3: 0,1 % F. S.
 - Accuracy in accordance with OIML G5 (CO Y2) | G10 (CO Y3)
 - Area of application: Tensile and compressive applications
 - Nominal sensitivity: 1,5 – 2 mV/V, depending on nominal load
 - Cable length: 2 m

CO Y5
Tension and compression force measuring cell made from stainless steel

Technical data

- Accuracy in accordance with OIML R60 G1
- CE and RoHS compliant
- Protection against dust and water splashes IP66 (in accordance with EN 60529)
- Stainless steel
- Very low design
- Suitable for test stands, force gauges, automation systems, etc.
- 4-wire connection
- Nominal sensitivity: CO 0.5-Y5, CO 1-Y5: 1 mV/V
CO 5-Y5, CO 10-Y5: 2 mV/V
- Cable length: 2 m

STANDARD OPTION

IP 65 1 DAY ISO
+4 DAYS

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|--------------|-------------------------------|
| SAUTER | | |
| CS 1-Y1 | 1 kg/10 N | 345,- |
| CS 2-Y1 | 2 kg/20 N | 345,- |
| CS 5-Y1 | 5 kg/50 N | 345,- |
| CS 10-Y1 | 10 kg/100 N | 345,- |
| CS 20-Y1 | 20 kg/200 N | 345,- |

STANDARD OPTION

IP 65 IP 66 IP 67 1 DAY DAkkS ISO
+3 DAYS +4 DAYS
[Max] ≤ 500 kg/5 kN

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|---------------|-------------------------------|
| SAUTER | | |
| CO 10-Y1 | 10 kg/100 N | 170,- |
| CO 20-Y1 | 20 kg/200 N | 170,- |
| CO 50-Y1 | 50 kg/500 N | 170,- |
| CO 100-Y1 | 100 kg/1 kN | 170,- |
| CO 200-Y1 | 200 kg/2 kN | 170,- |
| CO 500-Y1 | 500 kg/5 kN | 200,- |
| CO 1000-Y1 | 1000 kg/10 kN | 200,- |
| CO 2000-Y1 | 2000 kg/20 kN | 235,- |
| CO 10-Y2 | 10 kg/100 N | 250,- |
| CO 20-Y2 | 20 kg/200 N | 250,- |
| CO 50-Y2 | 50 kg/500 N | 250,- |
| CO 100-Y2 | 100 kg/1 kN | 310,- |
| CO 200-Y2 | 200 kg/2 kN | 310,- |
| CO 500-Y2 | 500 kg/5 kN | 310,- |
| CO 1000-Y2 | 1000 kg/10 kN | 310,- |
| CO 2000-Y2 | 2000 kg/20 kN | 345,- |
| CO 5-Y3* | 5 kg/50 N | 380,- |
| CO 10-Y3* | 10 kg/100 N | 380,- |
| CO 5-Y4* | 5 kg/50 N | 235,- |
| CO 10-Y4* | 10 kg/100 N | 230,- |

* ONLY WHILE STOCKS LAST

STANDARD OPTION

IP 66 1 DAY DAkkS ISO
+3 DAYS +4 DAYS
[Max] ≥ 1 kg/10 N

| Model | Nominal load | Price excl. of VAT ex works € |
|---------------|--------------|-------------------------------|
| SAUTER | | |
| CO 0.5-Y5 | 0,5 kg/5 N | 365,- |
| CO 1-Y5 | 1 kg/10 N | 365,- |
| CO 5-Y5 | 5 kg/50 N | 365,- |
| CO 10-Y5 | 10 kg/100 N | 365,- |



CJ P4



CJ P4PG



CJ X467



CJ X468

CJ P
Junction box for the connection of several measuring cells to an evaluation unit

Features

- Prepared for 4-wire and 6-wire measuring cells
- The robust aluminium diecast housing
- Protection against dust and water splashes IP65

CJ X
Junction box for the connection of several measuring cells to an evaluation unit

Features

- Prepared for 4-wire and 6-wire measuring cells

CJ X467

- Robust housing made of stainless steel with IP67 dust and spray protection

CJ X468

- The robust aluminium diecast housing, Protection against dust and water splashes IP68

STANDARD

| Model | Number of connection options | Price excl. of VAT ex works € |
|---------------|------------------------------|-------------------------------|
| SAUTER | | |
| CJ P2* | 2 | 87,- |
| CJ P4 | 4 | 87,- |
| CJ P4PG | 4 | 98,- |

I * ONLY WHILE STOCKS LAST

STANDARD

CJ X467 CJ X468

| Model | Number of connection options | Price excl. of VAT ex works € |
|---------------|------------------------------|-------------------------------|
| SAUTER | | |
| CJ X467 | 4 | 220,- |
| CJ X468 | 4 | 130,- |

Tip: Further details and technical data sheet as well as an extensive range of accessories can be found on the *internet*

13



SCALE KITS

Powerful balances and efficient weighing systems which support you in your work, should be adapted to your individual requirements. Standard models are therefore not sufficient under some circumstances.

Even the most comprehensive range of scales and measurement technology in some cases does not fully meet all requirements. A few weighing processes do require an individual special solution.

For this reason, we have special scale kits, with or without display device, ready for you, with which you can realize customized solutions for your applications.

All individual parts are matched to each other and thus offers the suitable solution for every case of application.

With the SAUTER scale kits, you become even more flexible in your application possibilities and benefit from a lower order effort and a price advantage.

Would you like advice on this? Our product specialist will be happy to assist you with your inquiries and will create a personal concept together with you.



Stefan Herrmann

Product Specialist

Scale Kits

Tel. +49 7433 9933-214

stefan.herrmann@kern-sohn.com

Quick-Finder

| Nominal load | Model | Price excl. of VAT ex works € | Page |
|--------------|---------------|--|------|
| kg | SAUTER | | |
| 300 | CW 300 | 640,- | 98 |
| 300 | CW 300KFB | 920,- | 98 |
| 300 | CW 300R | 1090,- | 99 |
| 300 | CW 300RKFN | 1490,- | 99 |
| 600 | CW 600R | 1090,- | 99 |
| 600 | CW 600RKFN | 1490,- | 99 |
| 750 | CW 750 | 640,- | 98 |
| 750 | CW 750KFB | 920,- | 98 |
| 1500 | CW 1500 | 580,- | 98 |
| 1500 | CW 1500KFB | 860,- | 98 |
| 1500 | CW 1500R | 1200,- | 100 |
| 1500 | CW 1500RKFN | 1610,- | 100 |
| 3000 | CW 3000 | 590,- | 98 |
| 3000 | CW 3000KFB | 860,- | 98 |
| 3000 | CW 3000R | 1610,- | 100 |
| 3000 | CW 3000RKFN | 1610,- | 100 |
| 4500 | CW 4500 | 580,- | 98 |
| 4500 | CW 4500KFB | 860,- | 98 |
| 4500 | CW 4500R | 1200,- | 100 |
| 4500 | CW 4500RKFN | 1610,- | 100 |
| 6000 | CW 6000R | 1200,- | 100 |
| 6000 | CW 6000RKFN | 1610,- | 100 |
| 7500 | CW 7500 | 680,- | 98 |
| 7500 | CW 7500KFB | 970,- | 98 |
| 9000 | CW 9000 | 680,- | 98 |
| 9000 | CW 9000KFB | 980,- | 98 |
| 9000 | CW 9000R | 2890,- | 100 |
| 9000 | CW 9000RKFN | 3290,- | 100 |
| 15000 | CW 15000 | 690,- | 98 |
| 15000 | CW 15000KFB | 980,- | 98 |



SAUTER CW

SAUTER CW KFB



Scale kit with build-type approval for individual assembly of floor scales – suitable for use in harsh industrial environments with humid environmental conditions

Features

- Weighing solutions, e.g. for industry, automotive manufacturing and agriculture, in order to fulfil the diverse requirements in terms of dimensions, materials, combinations of peripheral devices, etc. Especially suitable, for example, for the manufacture of platform scales, weigh hoppers, silo scales, as well as flush-mounted floor scales. Area of use: Measuring mass and compressive force in harsh environments

Details for weighing cells:

- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- **1** Protection against dust and water splashes IP67 (in accordance with EN 60529)
- Nickel-plated steel
- Nominal sensitivity: 3 mV/V
- 4-wire connection
- Junctionbox SAUTER CJ P4PG:
 - The robust aluminium diecast housing
 - **2** Protection against dust and water splashes IP65
- Note: Use the SAUTER CW in combination with one of our display devices, for example, KFS-TM, YKV, CE HS (see *internet*)

Accessories

- Assembly of components, 50 kg - 350 kg, KERN 965-412, **€ 119,-**
- Assembly of components, 350 kg - 1500 kg, KERN 965-413, **€ 143,-**
- Assembly of components, 2900 kg - 6000 kg, KERN 965-415, **€ 300,-**

Note: For individual special solutions we have special scale kits available for you which you can use to create a tailor-made solution which is just right for you. In this way you can use the most varied platform sizes or individual weighing systems, e.g. within larger production plants, which match your requirements perfectly.

13

STANDARD

| | | | | |
|-------------|-------------|-----|---|-------|
| JB IP 65 | LC IP 67 | DMS | M | 1 DAY |
| 2 | 1 | | | |

| Model | Nominal load kg | Scope of delivery Load cells | Scope of delivery | Price excl. of VAT ex works € |
|--------------------|--------------------|------------------------------|--|--|
| SAUTER | | | | |
| CW 300 | 300 | 4 × CB 100-3P1 | | 640,- |
| CW 750 | 750 | 4 × CB 250-3P1 | - 4 Adjustable feet CE P2012 | 640,- |
| CW 1500 | 1500 | 4 × CT 500-3P2 | - 4 Distance plates CE P3012 | 580,- |
| CW 3000 | 3000 | 4 × CT 1000-3P2 | - 1 Junction box CJ P4PG | 590,- |
| CW 4500 | 4500 | 4 × CT 1500-3P1 | | 580,- |
| CW 7500 | 7500 | 4 × CT 2500-3P1 | - 4 Adjustable feet CE P2018 | 680,- |
| CW 9000 | 9000 | 4 × CT 3000-3P2 | - 4 Distance plates CE P3015 | 680,- |
| CW 15000 | 15000 | 4 × CT 5000-3P1 | - 1 Junction box CJ P4PG | 690,- |
| CW 300KFB | 300 | 4 × CB 100-3P1 | - 1 Display device KFB-TM | 920,- |
| CW 750KFB | 750 | 4 × CB 250-3P1 | - 4 Adjustable feet CE P2012 | 920,- |
| CW 1500KFB | 1500 | 4 × CT 500-3P2 | - 4 Distance plates CE P3012 | 860,- |
| CW 3000KFB | 3000 | 4 × CT 1000-3P2 | - 1 Junction box CJ P4PG | 860,- |
| CW 4500KFB | 4500 | 4 × CT 1500-3P1 | | 860,- |
| CW 7500KFB | 7500 | 4 × CT 2500-3P1 | - 1 Display device KFB-TM | 970,- |
| CW 9000KFB | 9000 | 4 × CT 3000-3P2 | - 4 Adjustable feet CE P2018 | 980,- |
| CW 15000KFB | 15000 | 4 × CT 5000-3P1 | - 4 Distance plates CE P3015 - 1 Junction box CJ P4PG | 980,- |



SAUTER CW RB

SAUTER CW KFNB



Scale kit for individual assembly of floor scales – suitable for use in harsh industrial environments with humid environmental conditions

Features

- With SAUTER scale kits, individual weighing solutions can be put together, for example, individual balance manufacturing in agriculture or the food industry. In this way, a wide range requirements in terms of dimensions, materials, combinations of peripheral devices etc. can be fulfilled. Especially suitable for the manufacture of platform scales, weigh hoppers, silo scales, weighing devices for manure spreaders in agriculture, weighing device in municipal vehicles, e.g. waste disposal or winter road services, flush-mounted floor scales and other weighing devices

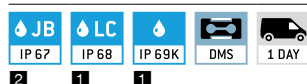
- Details for weighing cells:
 - CE and RoHS compliant
 - **1** Protection against dust and water splashes IP68/IP69K
 - Stainless steel
 - 2-wire connection
 - Nominal sensitivity: 3 mV/V
- Junctionbox SAUTER CJ X467:
 - **2** Robust housing made of stainless steel with IP67 dust and spray protection
- Note: Use the SAUTER CW RB in combination with one of our display devices, for example, KFS-TM, YKV, CE HS (see *internet*)

Accessories

- Assembly of components, 50 kg - 350 kg, KERN 965-412, **€ 119,-**
- Assembly of components, 350 kg - 1500 kg, KERN 965-413, **€ 143,-**

Note: For individual special solutions we have special scale kits available for you which you can use to create a tailor-made solution which is just right for you. In this way you can use the most varied platform sizes or individual weighing systems, e.g. within larger production plants, which match your requirements perfectly.

STANDARD



| Model | Nominal load | Scope of delivery Load cells | Scope of delivery | Price excl. of VAT ex works € |
|--------------------|--------------|------------------------------|----------------------------|-------------------------------|
| SAUTER | kg | | | |
| CW 300R | 300 | 4 × CB 100-3Q1 | - 1 Junction box CJ X467 | 1090,- |
| CW 600R | 600 | 4 × CB 200-3Q1 | | 1090,- |
| CW 300RKFNB | 300 | 4 × CB 100-3Q1 | - 1 Display device KFNB-TM | 1490,- |
| CW 600RKFNB | 600 | 4 × CB 200-3Q1 | - 1 Junction box CJ X467 | 1490,- |



SAUTER CW R

SAUTER CW KFN



Scale kit for individual assembly of floor scales – suitable for use in harsh industrial environments with humid environmental conditions

Features

- With SAUTER scale kits, individual weighing solutions can be put together, for example, individual balance manufacturing in industry, automotive manufacturing and agriculture. In this way, a wide range requirements in terms of dimensions, materials, combinations of peripheral devices etc. can be fulfilled. Especially suitable for the manufacture of platform scales, weigh hoppers, silo scales, flush-mounted floor scales and other weighing devices. Area of use: Measuring mass as well as compressive force in harsh environments

Details for weighing cells:

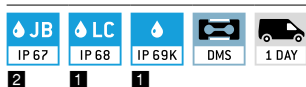
- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- **1** Protection against dust and water splashes IP68/IP69K
- alloy steel
- 6-wire connection
- Nominal sensitivity: 2 mV/V
- Junctionbox SAUTER CJ X467:
 - **2** Robust housing made of stainless steel with IP67 dust and spray protection
- Note: Use the SAUTER CW R in combination with one of our display devices, for example, KFS-TM, YKV, CE HS (see *internet*)

Accessories

- Assembly of components, 350 kg - 1500 kg, KERN 965-413, **€ 143,-**
- Assembly of components, 2900 kg - 6000 kg, KERN 965-415, **€ 300,-**

Note: For individual special solutions we have special scale kits available for you which you can use to create a tailor-made solution which is just right for you. In this way you can use the most varied platform sizes or individual weighing systems, e.g. within larger production plants, which match your requirements perfectly.

STANDARD



| Model | Nominal load | Scope of delivery Load cells | Scope of delivery | Price excl. of VAT ex works € |
|--------------------|--------------|------------------------------|---|-------------------------------|
| SAUTER | kg | | | |
| CW 1500R | 1500 | 4 × CT 500-3Q1 | - 4 Adjustable feet CE RQ.12 | 1200,- |
| CW 3000R | 3000 | 4 × CT 1000-3Q1 | - 4 Distance plates CE P30.12 | 1610,- |
| CW 4500R | 4500 | 4 × CT 1500-3Q1 | - 1 Junction box CJ X467 | 1200,- |
| CW 6000R | 6000 | 4 × CT 2000-3Q1 | | 1200,- |
| CW 9000R | 9000 | 4 × CT 3000-3Q1 | 4 Adjustable feet CE RQ359.17 - 4 Distance plates CE P30.15 - 1 Junction box CJ X467 | 2890,- |
| CW 1500RKFN | 1500 | 4 × CT 500-3Q1 | - 1 Display device KFN-TM | 1610,- |
| CW 3000RKFN | 3000 | 4 × CT 1000-3Q1 | - 4 Adjustable feet CE RQ.12 | 1610,- |
| CW 4500RKFN | 4500 | 4 × CT 1500-3Q1 | - 4 Distance plates CE P30.12 | 1610,- |
| CW 6000RKFN | 6000 | 4 × CT 2000-3Q1 | - 1 Junction box CJ X467 | 1610,- |
| CW 9000RKFN | 9000 | 4 × CT 3000-3Q1 | - 1 Display device KFN-TM - 4 Adjustable feet CE RQ359.17 - 4 Distance plates CE P30.15 - 1 Junction box CJ X467 | 3290,- |

Accredited Calibration with Calibration Certificate for Force Gauges

The KERN calibration laboratory is at your side when you need to calibrate with accreditation reliably. From the transducer to the full measuring chain, we are happy to take care of traceable calibration of your test equipment for you. Our accreditation includes the calibration of tensile and compressive force up to 5 kN according to the standards DIN EN ISO 376 and DKD-R 3-3, each with the Newton (N) display unit for a complete measuring chain (situation A) or voltage ratio/transmission coefficient (mV/V, situation B).

Below you will find a comparison of which standard meets which criteria:

Comparison of DIN EN ISO 376 and DKD-R 3-3

| | ISO 376 | DKD-R 3-3 |
|----------------------------------|--|--|
| Standardization | ISO standard (internationally standardized) | Standard of the DKD (Germany) |
| Measuring equipment | Force transducers and complete measuring chains | Force transducers and complete measuring chains |
| Area of application | Specifically force gauges for the testing of testing equipment | General force gauges |
| Number of power stages | 8 | 5 |
| Classification/Assessment | Classification in classes 00; 0,5; 1 and 2 | None in standard |
| Test sequences | Fixed procedure | Processes A, B, C and D possible. Standard is A; B, C and D are reduced processes, corresponding previous knowledge is necessary |
| Summary | Higher-quality calibration, as 8 force levels are calibrated | High-quality calibration, reduced sequences with less effort possible |

Prices for accredited Calibration of Force Gauges and Force Transducers

Situation A: Force transducer (voltage ratio, in mV/V)*^{1,2}

| ISO 376 (8 stages) | | | DKD-R 3-3 (5 stages, sequence A) | | |
|---------------------------------------|-----------------|-------------------------------|----------------------------------|-----------------|-------------------------------|
| KERN | Measuring range | Price € ex works excl. of VAT | KERN | Measuring range | Price € ex works excl. of VAT |
| Tensile force: | | | | | |
| 963-161IV (R) | ≤ 500 N | 250,- | 963-161V (R) | ≤ 500 N | 235,- |
| 963-162IV (R) | ≤ 2 kN | 300,- | 963-162V (R) | ≤ 2 kN | 280,- |
| 963-163IV (R) | ≤ 5 kN | 390,- | 963-163V (R) | ≤ 5 kN | 360,- |
| Compression force: | | | | | |
| 963-261IV (R) | ≤ 500 N | 250,- | 963-261V (R) | ≤ 500 N | 235,- |
| 963-262IV (R) | ≤ 2 kN | 300,- | 963-262V (R) | ≤ 2 kN | 280,- |
| 963-263IV (R) | ≤ 5 kN | 390,- | 963-263V (R) | ≤ 5 kN | 360,- |
| Tensile and Compression force: | | | | | |
| 963-361IV (R) | ≤ 500 N | 420,- | 963-361V (R) | ≤ 500 N | 390,- |
| 963-362IV (R) | ≤ 2 kN | 500,- | 963-362V (R) | ≤ 2 kN | 465,- |
| 963-363IV (R) | ≤ 5 kN | 670,- | 963-363V (R) | ≤ 5 kN | 610,- |

Situation B: Complete force gauge (in N)**²

| ISO 376 (8 stages) | | | DKD-R 3-3 (5 stages, sequence A) | | |
|---------------------------------------|-----------------|-------------------------------|----------------------------------|-----------------|-------------------------------|
| KERN | Measuring range | Price € ex works excl. of VAT | KERN | Measuring range | Price € ex works excl. of VAT |
| Tensile force: | | | | | |
| 963-161I (R) | ≤ 500 N | 205,- | 963-161 (R) | ≤ 500 N | 187,- |
| 963-162I (R) | ≤ 2 kN | 250,- | 963-162 (R) | ≤ 2 kN | 225,- |
| 963-163I (R) | ≤ 5 kN | 345,- | 963-163 (R) | ≤ 5 kN | 315,- |
| Compression force: | | | | | |
| 963-261I (R) | ≤ 500 N | 205,- | 963-261 (R) | ≤ 500 N | 187,- |
| 963-262I (R) | ≤ 2 kN | 250,- | 963-262 (R) | ≤ 2 kN | 225,- |
| 963-263I (R) | ≤ 5 kN | 345,- | 963-263 (R) | ≤ 5 kN | 315,- |
| Tensile and Compression force: | | | | | |
| 963-361I (R) | ≤ 500 N | 375,- | 963-361 (R) | ≤ 500 N | 340,- |
| 963-362I (R) | ≤ 2 kN | 460,- | 963-362 (R) | ≤ 2 kN | 420,- |
| 963-363I (R) | ≤ 5 kN | 620,- | 963-363 (R) | ≤ 5 kN | 560,- |

(R): Recalibration

For each force gauge without interface or from other manufacturers we charge a surcharge of € 10,- for the additional effort.

¹ Compatibility with our amplifiers required

² Installation in our measuring equipment required

Factory Calibration Certificates

As DAkkS calibration certificates cannot be offered for all measuring devices or measurement sizes, or where it is not customary, we then offer factory calibration certificates. This is not an accredited calibration (no proof of metrological traceability). These calibrations are carried out according to in-house specifications and are available for many measuring instruments, such as:

- Mechanical balances (spring balances, etc.)
- Force-measuring devices up to 250 kN
- Measuring devices for layer thickness 0 µm – 2000 µm
- Hardness testing devices in accordance with Leeb tests
- Ultrasonic material thickness testing device 25 mm – 300 mm

We carry out calibrations independent of brand. In order to avoid any unnecessary delays when processing your order, please send us the technical documents and necessary accessories with the checking device. Calibration time 4 working days.

For up-to-date information on test services for further measuring sizes, please visit our website www.kern-lab.com

Factory Calibration for Force

| Situation A: Force transducer (voltage ratio, in mV/V) ^{*1,2} | | | Situation B: Complete force gauge (in N) ^{*2} | | |
|---|-----------------|-------------------------------|---|-----------------|-------------------------------|
| KERN | Measuring range | Price excl. of VAT ex works € | KERN | Measuring range | Price excl. of VAT ex works € |
| Tensile force: | | | | | |
| 961-161V (R) | ≤ 500 N | 235,- | 961-161 (R) | ≤ 500 N | 187,- |
| 961-162V (R) | ≤ 2 kN | 280,- | 961-162 (R) | ≤ 2 kN | 225,- |
| 961-163V (R) | ≤ 5 kN | 360,- | 961-163 (R) | ≤ 5 kN | 315,- |
| 961-164V (R) | ≤ 20 kN | 460,- | 961-164 (R) | ≤ 20 kN | 410,- |
| 961-165V (R) | ≤ 50 kN | 460,- | 961-165 (R) | ≤ 50 kN | 410,- |
| 961-166V (R) | ≤ 120 kN | 495,- | 961-166 (R) | ≤ 120 kN | 455,- |
| 961-167V (R) | ≤ 250 kN | 495,- | 961-167 (R) | ≤ 250 kN | 455,- |
| Compression force: | | | | | |
| 961-261V (R) | ≤ 500 N | 235,- | 961-261 (R) | ≤ 500 N | 187,- |
| 961-262V (R) | ≤ 2 kN | 280,- | 961-262 (R) | ≤ 2 kN | 225,- |
| 961-263V (R) | ≤ 5 kN | 360,- | 961-263 (R) | ≤ 5 kN | 315,- |
| 961-264V (R) | ≤ 20 kN | 460,- | 961-264 (R) | ≤ 20 kN | 410,- |
| 961-265V (R) | ≤ 50 kN | 460,- | 961-265 (R) | ≤ 50 kN | 410,- |
| 961-266V (R) | ≤ 120 kN | 495,- | 961-266 (R) | ≤ 120 kN | 455,- |
| 961-267V (R) | ≤ 250 kN | 495,- | 961-267 (R) | ≤ 250 kN | 455,- |
| Tensile and Compression force: | | | | | |
| 961-361V (R) | ≤ 500 N | 390,- | 961-361 (R) | ≤ 500 N | 340,- |
| 961-362V (R) | ≤ 2 kN | 465,- | 961-362 (R) | ≤ 2 kN | 420,- |
| 961-363V (R) | ≤ 5 kN | 610,- | 961-363 (R) | ≤ 5 kN | 560,- |
| 961-364V (R) | ≤ 20 kN | 660,- | 961-364 (R) | ≤ 20 kN | 610,- |
| 961-365V (R) | ≤ 50 kN | 660,- | 961-365 (R) | ≤ 50 kN | 610,- |
| 961-366V (R) | ≤ 120 kN | 720,- | 961-366 (R) | ≤ 120 kN | 670,- |
| 961-367V (R) | ≤ 250 kN | 720,- | 961-367 (R) | ≤ 250 kN | 670,- |

(R): Recalibration

For each force gauge without interface or from other manufacturers we charge a surcharge of € 10,- for the additional effort.

^{*1} Compatibility with our amplifiers required

^{*2} Installation in our measuring equipment required

Factory Calibration Certificates

| KERN | Physical unit | Measuring range | Price excl. of VAT ex works € |
|----------------------------|---|--|-------------------------------|
| Factory calibration | | | |
| 961-102K | Force (for digital dynamometer KERN MAP) | ≤ 130 kg | 167,- |
| 961-110 | Coating thickness | ≤ 2000 µm F or N | 167,- |
| 961-112 | Coating thickness | ≤ 2000 µm FN | 235,- |
| 961-113 | Wall thickness (ultra sound) | ≤ 300 mm (in stainless steel) | 167,- |
| 961-170 | Hardness comparison plate (Shore) | For sets up to 7 plates | 132,- |
| 961-131 | Hardness tester (Leeb) | 400 – 800 HLD | 167,- |
| 961-132 | Hardness comparison plate (Leeb) | Hardness comparison plate (for Leeb durometer) | 167,- |
| 961-270 | Hardness (UCI) | 200 – 800 HV | 360,- |
| 961-150 | Length | ≤ 300 mm | 167,- |
| 961-190 | Light | ≤ 200000 lx | 325,- |
| 961-100 | Mass (Mechanical balances/ spring balances) | ≤ 5 kg | 99,- |
| 961-101 | Mass (Mechanical balances/ spring balances) | > 5 – 50 kg | 123,- |
| 961-102 | Mass (Mechanical balances/ spring balances) | > 50 – 350 kg | 146,- |
| 961-103 | Mass (Mechanical balances/ spring balances) | > 350 – 1500 kg | 225,- |
| 961-120 | Torque wrench test devices | 1 Nm – 200 Nm | 235,- |
| Additional services | | | |
| 962-116 | Express service with 48 hour delivery | | 52,-/ instrument |

Retailer Information

Sales conditions

All prices are valid as of January 1st 2025, Subject to change without notice. Current prices at www.kern-sohn.com. In Europe, all prices do not include the applicable V.A.T.

Delivery Conditions

We supply ex works Balingen, e.g. the transport costs are invoiced. With our contract logistics partners we always offer you shipping at a good rate. When shipping to islands or other more distant areas, or areas which are difficult to access, the transport costs may possibly be higher, please ask for details. Any goods supplied remain KERN's property until complete payment for the goods sold has been received.



Delivery is usually via courier service.



When you see this symbol by truck, please ask for prices.n.

Extract from general terms and conditions

Court of jurisdiction/Legal domicile:

72336 Balingen, Germany;
Commercial register N°: HRB 400865,
AG Stuttgart; Managing director: Albert Sauter
For the full Terms and Conditions,
please refer to the website.

<https://www.kern-sohn.com/shop/en/IMPRESSUM/AGB2/>

All dimensions are approximate. Technical changes in the course of further development, printing faults, price changes and product changes are likely in individual cases, due to product modifications as well as error.

Sale or return

within 14 days of purchase. Not valid for Software and order-specific adaptations such as special productions, cable extensions, special weights, etc. or test services such as calibration, verification, etc. Depending on the time and effort involved, there may be processing and storage costs, please ask for details.

Warranty

→ 3 years for products with list price \geq € 500.00

→ 2 years for components as well as products with list price $<$ € 500.00

→ 1 year for pallet truck scales

Does not apply to consumables such as batteries, rechargeable battery packs, etc.

Service

KERN DirectCash

The quick, secure COD procedure for protection against non-payment. With the KERN DirectCash COD system, you can safely deliver orders to end customers with unknown credit rating, with no risk of non-payment. Please request further details on this procedure.

Hire Purchase

Financing is available using KERN hire purchase – easy and convenient. Hire Purchase gives you the option of purchasing any product from our range against a simple monthly installment. The product value is financed over the period of the agreement. On payment of the last installment, the ownership of the contract item automatically transfers from the contractor to the contractee. The Hire Purchase Agreement can – if you so choose – be set for a period of between one and five years. This package includes the transfer of items as well as the guarantee for the entire transfer period.

Compared with buying the product, KERN hire purchase offers the advantage that the initial financial investment is largely unnecessary. This is particularly relevant when purchasing a number of products, for example when refitting a laboratory, a company department or a hospital ward. In addition the monthly installments constitute a direct cost and the item does not have to be capitalised by the purchaser.

After-Sales-Service

Repair service

Within 1 week at our plant in Balingen, transportation costs are additional. In urgent cases, if requested by customer, a replacement device will be provided until all repairs are completed; please ask.

Price reduction for a new device

If repair costs exceed the current value of the defective device, a new device will be offered for a discount price. This offer is valid only up to 2 years after warranty expiration.

Spare parts service

Usually within 48 hours, transportation costs are additional.

Marketing support

KERN catalogues, brochures, branch prospectuses – your own personalised marketing tools

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Calibration Certificate with accreditation symbol

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