

SAUTER service guarantee

“We at SAUTER are only satisfied when we’ve found the very best solution for you. After all, our heritage from the Swabian Jura Mountains and the famous inventive talent of the people that live here, means we have an exceptional reputation to maintain.”

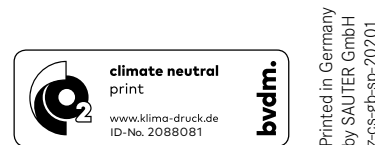
- | | | |
|--|---|---|
| <p>fast</p> <ul style="list-style-type: none"> • 24 hours delivery service – order today, on its way tomorrow • Sales & service hotline from 8:00 am to 6:00 pm | <p>reliable</p> <ul style="list-style-type: none"> • 2 years warranty | <p>diverse</p> <ul style="list-style-type: none"> • One-stop-shopping: from force gauges up to light measuring instruments – everything from one supplier • Quick as a flash, find the product you want with the “Measuring instruments Quick-Finder” at www.sauter.eu |
|--|---|---|

i www.sauter.eu
 Information on current product availability, product data sheets, user instructions, useful knowledge, technical glossary, images and much for you to download, practical topic areas, which will guide you to the right product in your industry as well as a smart search engine for measuring instruments

Our team of consultants will assist you
 from Monday to Friday
 from 8:00 am to 6:00 pm

**Do you have questions about our products?
 Our customer consultants will be pleased to assist you:**

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MEASURING TECHNOLOGY & TEST SERVICE

for industry, laboratory and quality assurance



2020

2020

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KERN Pictograms



Adjusting program (CAL):
For quick setting of the instrument's accuracy. External adjusting weight required



Control outputs (optocoupler, digital I/O):
to connect relays, signal lamps, valves, etc.



ZERO:
Resets the display to "0"



Calibration block:
standard for adjusting or correcting the measuring device



Analogue interface:
to connect a suitable peripheral device for analogue processing of the measurements



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



Peak hold function:
capturing a peak value within a measuring process



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



Rechargeable battery pack:
rechargeable set



Scan mode:
continuous capture and display of measurements



PC Software:
to transfer the measurement data from the device to a PC



Mains adapter:
230V/50Hz in standard version for EU. On request GB, AUS or USA version available



Push and Pull:
the measuring device can capture tension and compression forces



Printer:
a printer can be connected to the device to print out the measurement data



Power supply:
Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or USA on request



Length measurement:
captures the geometric dimensions of a test object or the movement during a test process



Network interface:
For connecting the scale to an Ethernet network



Motorised drive:
The mechanical movement is carried out by an electric motor



Focus function:
increases the measuring accuracy of a device within a defined measuring range



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



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



Internal memory:
to save measurements in the device memory



Fast-Move:
the total length of travel can be covered by a single lever movement



Data interface RS-232:
bidirectional, for connection of printer and PC



GLP/ISO record keeping:
of measurement data with date, time and serial number. Only with SAUTER printers



DAkKS calibration possible:
The time required for DAkKS calibration is shown in days in the pictogram



Data interface USB:
To connect the measuring instrument to a printer, PC or other peripheral devices



Measuring units:
Weighing units can be switched to e.g. non-metric at the touch of a key. Please refer to website for more details



Factory calibration:
The time required for factory calibration is specified in the pictogram



WLAN data interface:
To transfer data from the balance to a printer, PC or other peripherals



Measuring with tolerance range (limit-setting function):
Upper and lower limiting can be programmed individually. The process is supported by an audible or visual signal, see the relevant model



Package shipment:
The time required for internal shipping preparations is shown in days in the pictogram



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



Pallet shipment:
The time required for internal shipping preparations is shown in days in the pictogram

Retailer information

Sales conditions



All prices are valid as of January 1st 2020 until a new version of the SAUTER catalogue is released. In Europe, all prices do not include the applicable V.A.T.

At SAUTER there is no minimum order value. For orders less than € 15.00 there is no re-sale discount available.

Delivery Conditions: we supply ex works Balingen, i.e. the transport costs are invoiced. Any goods supplied, remain SAUTER's property until Measuring in a tolerance area (limit value function). Upper and lower limit value is programmable. The measurement process is supported by an acoustic and visual signal, see respective models 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.

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. www.kern-sohn.com/en/kern/agbs.html

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 order-specific adaptations such as special productions, cable extensions, special weights, etc. or test services such as calibration etc. Depending on the time and effort involved, there may be processing and storage costs, please ask for details.

Warranty: 2 years. (Does not apply to consumables such as batteries, rechargeable battery packs, etc.)

After-Sales-Service



Repair services within 1 week at our plant in Balingen, transportation costs are additional. Our expert Service technicians will be pleased to assist you and will make sure that your device is quickly back in operation.

Price reduction on a new device: if repair costs are exceeding the current value of the defective device, a new device will be offered at a discount price. This offer is valid only up to 2 years after warranty expiration.

Spare parts service within 48 hours, transportation costs are additional.

Visit us our online shop: www.sauter.eu

Online-Shop

At your disposal round the clock. Delivery and service via your specialist dealer.

Measuring instruments Quick-Finde

Find the product you want with the "Measuring instruments Quick-Finder" in no time.

Calibration

In our accredited DAkKS calibration laboratories, we produce internationally recognised DAkKS and Factory calibration certificates for balances and test weights as well as measuring instruments.



Services



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 the 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 not applicable. 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. Do you have queries to our hire purchase? Our customer consultants are glad to help you.

Marketing support



Catalogues, brochures, branch prospectuses – your own personalised marketing tools

Our catalogue and branch prospectuses are available free of charge. A neutral version of the catalogue, without the SAUTER address imprint, is also available for your marketing activities free of charge, larger quantities on request..

On demand we will print your company address on address labels free of charge, for the backside of the catalogue, larger quantities on request. In this way you will receive your individual marketing tool.

Our catalogues and branch prospectuses are available in following languages: DE, GB, FR, IT, ES

Special offers

Special offers, special models and opportunities – something for everybody and always up to date – just drop in!

One-Stop-Shopping

From force gauge to test stand – everything from one supplier.

Downloads

For each model there is an individual brochure, user manual or pictures.

Works calibration of further measuring devices

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 € ex works excl. of VAT	KERN	Measuring range	Price € ex works excl. of VAT
Tensile force:					
961-161V (R)	≤ 500 N	168,-	961-161 (R)	≤ 500 N	135,-
961-162V (R)	≤ 2 kN	198,-	961-162 (R)	≤ 2 kN	165,-
961-163V (R)	≤ 5 kN	258,-	961-163 (R)	≤ 5 kN	225,-
961-164V (R)	≤ 20 kN	328,-	961-164 (R)	≤ 20 kN	295,-
961-165V (R)	≤ 50 kN	328,-	961-165 (R)	≤ 50 kN	295,-
961-166V (R)	≤ 120 kN	358,-	961-166 (R)	≤ 120 kN	325,-
Compression force:					
961-261V (R)	≤ 500 N	168,-	961-261 (R)	≤ 500 N	135,-
961-262V (R)	≤ 2 kN	198,-	961-262 (R)	≤ 2 kN	165,-
961-263V (R)	≤ 5 kN	258,-	961-263 (R)	≤ 5 kN	225,-
961-264V (R)	≤ 20 kN	328,-	961-264 (R)	≤ 20 kN	295,-
961-265V (R)	≤ 50 kN	328,-	961-265 (R)	≤ 50 kN	295,-
961-266V (R)	≤ 120 kN	358,-	961-266 (R)	≤ 120 kN	325,-
Tensile and Compression force:					
961-361V (R)	≤ 500 N	278,-	961-361 (R)	≤ 500 N	245,-
961-362V (R)	≤ 2 kN	333,-	961-362 (R)	≤ 2 kN	300,-
961-363V (R)	≤ 5 kN	438,-	961-363 (R)	≤ 5 kN	405,-
961-364V (R)	≤ 20 kN	473,-	961-364 (R)	≤ 20 kN	440,-
961-365V (R)	≤ 50 kN	473,-	961-365 (R)	≤ 50 kN	440,-
961-366V (R)	≤ 120 kN	520,-	961-366 (R)	≤ 120 kN	485,-

(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. These calibration certificates meet international standards and are particularly suitable as proof of exacting calibration in the monitoring of your checking equipment, for example:

- Mechanical balances (spring balances, etc.)

- Force-measuring devices up to 120 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 websitemwww.kern-lab.com

Factory calibration certificates

KERN	Physical unit	Measuring range	Price excl. of VAT ex works €
Factory calibration			
961-161 (O)	Force: Tension	≤ 500 N	135,-
961-162 (O)	Force: Tension	≤ 2 kN	165,-
961-163 (O)	Force: Tension	≤ 5 kN	225,-
961-164	Force: Tension	10 – 20 kN	295,-
961-165	Force: Tension	≤ 50 kN	295,-
961-166	Force: Tension	≤ 120 kN	325,-
961-261 (O)	Force: Compression	10 – 500 N	135,-
961-262 (O)	Force: Compression	≤ 2 kN	165,-
961-263 (O)	Force: Compression	≤ 5 kN	225,-
961-264(O)	Force: Compression	≤ 20 kN	295,-
961-265(O)	Force: Compression	≤ 50 kN	295,-
961-266(O)	Force: Compression	≤ 120 kN	325,-
961-361 (O)	Force: Tens. and Comp.	≤ 500 N	245,-
961-362 (O)	Force: Tens. and Comp.	≤ 2 kN	300,-
961-363 (O)	Force: Tens. and Comp.	≤ 5 kN	405,-
961-364 (O)	Force: Tens. and Comp.	≤ 20 kN	440,-
961-365 (O)	Force: Tens. and Comp.	≤ 50 kN	440,-
961-366 (O)	Force: Tens. and Comp.	≤ 120 kN	485,-
961-167	Force (for digital dynamometer KERN MAP)	≤ 130 kg	120,-
961-110	Coating thickness	≤ 2000 µm F or N	120,-
961-112	Coating thickness	≤ 2000 µm FN	170,-
961-113	Wall thickness (ultra sound)	≤ 300 mm (in stainless steel)	120,-
961-114	Wall thickness (Test blocks)	≤ 300 mm	150,-
961-170	Hardness comparison plate (Shore)	For sets up to 7 plates	95,-
961-131	Hardness tester (Leeb)	400 – 800 HLD	120,-
961-132	Hardness comparison plate (Leeb)	Hardness comparison plate (for Leeb durometer)	120,-
961-270	Hardness (UCI)	200 – 800 HV	260,-
961-150	Length	≤ 300 mm	120,-
961-190	Light	≤ 200000 lx	165,-
961-100	Mass (Mechanical balances/spring balances)	≤ 5 kg	72,-
961-101	Mass (Mechanical balances/spring balances)	> 5 – 50 kg	88,-
961-102	Mass (Mechanical balances/spring balances)	> 50 – 350 kg	105,-
961-103	Mass (Mechanical balances/spring balances)	> 350 – 1500 kg	165,-
961-120	Torque wrench test devices	1 Nm – 200 Nm	170,-
Additional services			
962-116	Express service with 48 hour delivery		50,-/ instrument

Product group index 2020

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Force measurement

Note: All standard force-measuring devices are available with a factory calibration certificate as an option. All electronic force-measuring devices with a measuring range of ≤ 5 kN are also available with a DAkkS calibration certificate as an option. For details on our calibration services, please see page 98 or visit our website www.sauter.eu



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Quick-Finder

Readout [d] N	Measuring range [Max] N	Model SAUTER	Price excl. VAT, ex works €	Page
0,001	2	FH 2.	460,-	12
0,001	5	FH 5.	460,-	12
0,002	5	FL 5	500,-	14
0,005	10	FK 10.	250,-	9
0,005	10	FH 10.	460,-	12
0,005	10	FL 10	500,-	14
0,01	1	289-100	75,-	5
0,01	1	283-152	91,-	7
0,01	10	FC 10	370,-	10
0,01	20	FH 20.	460,-	12
0,01	25	FL 20	500,-	14
0,01	25	FK 25.	250,-	9
0,01	50	FC 50	370,-	10
0,01	50	FH 50.	460,-	12
0,01	50	SD 50N100.	1950,-	32
0,02	3	283-252	99,-	7
0,02	50	FK 50.	250,-	9
0,02	50	FL 50	500,-	14
0,02	100	SD 100N100.	1950,-	32
0,05	5	289-102	75,-	5
0,05	6	283-302	99,-	7
0,05	10	FA 10.	210,-	8
0,05	100	FH 100.	460,-	12
0,05	100	FK 100.	250,-	9
0,05	100	FL 100	500,-	14
0,05	200	SD 200N100.	1950,-	32
0,1	10	289-104	85,-	5
0,1	10	283-402	99,-	7
0,1	20	FA 20.	210,-	8
0,1	100	FC 100	370,-	10
0,1	200	FH 200.	460,-	12
0,1	250	FK 250.	250,-	9
0,1	250	FL 200	500,-	14
0,1	300	SD 300N100.	990,-	26

New 2020 Suitable test stands for your SAUTER force measuring device can be found from page 20 onwards

Readout [d] N	Measuring range [Max] N	Model SAUTER	Price excl. VAT, ex works €	Page
0,1	500	FC 500	370,-	10
0,1	500	FH 500.	460,-	12
0,1	500	SD 500N100.	1950,-	26
0,2	25	283-422	105,-	7
0,2	30	FA 30.	210,-	8
0,2	500	FK 500.	250,-	9
0,2	500	FL 500	500,-	14
0,25	50	FA 50.	210,-	8
0,5	50	283-483	180,-	7
0,5	100	FA 100.	210,-	8
0,5	1000	FH 1K.	780,-	13
0,5	1000	FK 1K.	250,-	9
0,5	1000	FL 1K	570,-	14
1	100	283-502	185,-	7
1	200	FA 200.	210,-	8
1	1000	FC 1K	370,-	10
1	2000	FH 2K.	780,-	13
1	2500	FL 2K	600,-	15
1	5000	FH 5K.	990,-	13
1	5000	FL 5K	990,-	15
1	10000	FL 10K	1150,-	15
5	20000	FL 20K	1190,-	15
2	200	283-602	190,-	7
2	300	FA 300.	210,-	8
2,5	500	FA 500.	210,-	8
5	500	283-902	220,-	7
5	10.000	FH 10K.	1180,-	13
10	20.000	FH 20K.	1170,-	13
10	50.000	FH 50K.	1370,-	13
20	0,005	FS 2-20	on request	18
20	0,005	FS 4-20	on request	18
50	0,01	FS 2-50	on request	18
50	0,01	FS 4-50	on request	18
50	100.000	FH 100K.	1550,-	13
100	0,02	FS 2-100	on request	18
100	0,02	FS 4-100	on request	18
200	0,05	FS 2-200	on request	18
200	0,05	FS 4-200	on request	18
500	0,1	FS 2-500	on request	18
500	0,1	FS 4-500	on request	18

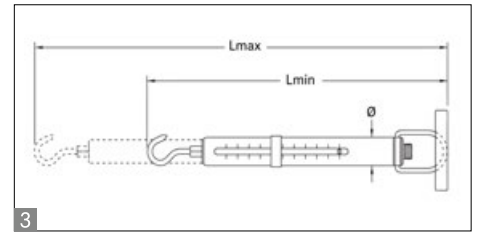
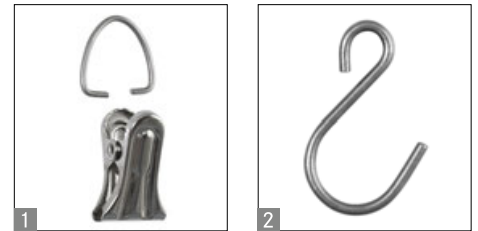
Note: You will find a wide range of further spring balances with gram division at www.sauter.eu



SAUTER 289



SAUTER 287



01

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
- **High precision:** Zero-play 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, € 25,-
- **2** Hook for spring balances 10–1000 g/0,1–10 N, SAUTER 287-A02, € 25,-



Model	Measuring range	Division	Load support	3 Dimensions			Price excl. of VAT ex works €	Option Factory calibration certificate	
				Lmin	Lmax	Ø		KERN	€
SAUTER	N	N		mm	mm	mm			
289-100	1	0,01 0,05	hook	230	335	12	75,-	961-1610	135,-
289-102	5	0,05 0,5	hook	230	335	12	75,-	961-1610	135,-
289-104	10	0,1 0,5	hook	230	335	12	85,-	961-1610	135,-

Model	Weighing range	Division	Load support	3 Dimensions			Price excl. of VAT ex works €	Option Factory calibration certificate	
				Lmin	Lmax	Ø		KERN	€
SAUTER	g	g		mm	mm	mm			
287-100	10	0,1	clip	225	330	12	75,-	961-100	72,-
287-104	50	0,5	clip	225	330	12	75,-	961-100	72,-
287-106	100	1	clip	225	330	12	75,-	961-100	72,-
287-108	500	5	clip	225	330	12	75,-	961-100	72,-
287-110	1000	10	clip	225	330	12	85,-	961-100	72,-



SAUTER 281



SAUTER 285



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

Features

- **Aluminium scale tube:** robust, long service life, rustproof
- **Gramme/Kilogram scale:** Measuring result display in grammes (SAUTER 281) or kilograms (SAUTER 285) 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 on all models of the SAUTER 285 range
- **Suspension bow:** thanks to the rotating suspension bow the scale can always be aligned to be at the very best line of sight
- **High precision:** Zero-play 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] ≤ 1 kg
- **High-quality workmanship:** Wear-resistant, colour-anodised precision scale with high resolution for accurate readout of the measuring result

Technical data

- Measuring precision: ± 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, **€ 72,-**
- **2 Pressure-Set**, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-890, **€ 80,-**
- **3 Clip**, suitable for models with weighing range ≤ 2,5 kg/25 N, SAUTER 281-151-002, **€ 8,-**
- **4 Drag pointer** for spring balances, suitable for models with weighing range < 2,5 kg/25 N, SAUTER 281-051-001, **€ 6,50**
- **Drag pointer** for spring balances, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-897, **€ 15,-**



Model	Weighing range [Max]	Division [d]	Load support	5 Dimensions			Price excl. of VAT ex works €	Option Factory calibration certificate	
				Lmin	Lmax	∅		KERN	€
SAUTER	g	g		mm	mm	mm			
281-101	10	0,1	clip	220	300	12	91,-	961-100	72,-
281-151	30	0,25	clip	220	300	12	85,-	961-100	72,-
281-201	60	0,25	clip	220	300	12	85,-	961-100	72,-
281-301	100	1	clip	220	300	12	85,-	961-100	72,-
281-401	300	2	clip	220	320	12	95,-	961-100	72,-
281-451	600	5	clip	220	320	12	99,-	961-100	72,-
281-601	1000	10	clip	220	320	12	96,-	961-100	72,-
281-752	2500	20	hook	225	325	12	105,-	961-100	72,-
285-052	5000	50	hook	370	510	32	176,-	961-100	72,-
285-102	10000	100	hook	370	510	32	185,-	961-101	88,-
285-202	20000	200	hook	370	510	32	185,-	961-101	88,-
285-352	35000	500	hook	370	460	32	190,-	961-101	88,-
285-502	50000	500	hook	370	460	32	220,-	961-101	88,-



Precise, mechanical spring balances in robust aluminium housing with Newton readout

Features

- **Aluminium scale tube:** robust, long service life, rustproof
- **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] ≥ 50 N
- **Suspension bow:** 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] ≥ 50 N
- **High precision:** Zero-play 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 readout of the measuring result

Technical data

- Measuring precision: ± 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, **€ 72,-**
- **2 Pressure-Set**, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-890, **€ 80,-**
- **3 Clip**, suitable for models with weighing range ≤ 2,5 kg/25 N, SAUTER 281-151-002, **€ 8,-**
- **4 Drag pointer** for spring balances, suitable for models with weighing range < 2,5 kg/25 N, SAUTER 281-051-001, **€ 6,50**
- **Drag pointer** for spring balances, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-897, **€ 15,-**



Model	Measuring range [Max] N	Division [d] N	Load support	5 Dimensions			Price excl. of VAT ex works €	Option	
				Lmin	Lmax	∅		Factory calibration certificate	
SAUTER				mm	mm	mm	KERN	€	
283-152	1	0,01	clip	225	305	12	91,-	961-1610	135,-
283-252	3	0,02	clip	225	325	12	99,-	961-1610	135,-
283-302	6	0,05	clip	225	325	12	99,-	961-1610	135,-
283-402	10	0,1	hook	225	325	12	99,-	961-1610	135,-
283-422	25	0,2	hook	225	325	12	105,-	961-1610	135,-
283-483	50	0,5	hook	370	510	32	180,-	961-1610	135,-
283-502	100	1	hook	370	510	32	185,-	961-1610	135,-
283-602	200	2	hook	370	510	32	190,-	961-1610	135,-
283-902	500	5	hook	370	460	32	220,-	961-1610	135,-



Mechanical force gauge for 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 below, extension rod: 90 mm

Technical data

- Measuring precision: 1 % of [Max]
- Overall dimensions W×D×H 230×60×50 mm
- Thread: M6
- Net weight approx. 0,65 kg

Accessories

- **2 Standard attachments,** SAUTER AC 43, € 45,-
- Further accessory see www.sauter.eu and page 36 et seqq.

STANDARD

OPTION

PEAK PUSH/PULL 1 DAY ISO +4 DAYS

Model	Measuring range [Max] N	Readout [d] N	Price excl. of VAT ex works €	Option Factory calibration certificate					
				Tensile force		Compressive force		Tensile/Compressive force	
				KERN	€	KERN	€	KERN	€
SAUTER FA 10.	10	0,05	210,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FA 20.*	20	0,1	210,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FA 50.	50	0,25	210,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FA 100.	100	0,5	210,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FA 200.	200	1	210,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FA 300.	300	2	210,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FA 500.	500	2,5	210,-	961-1610	135,-	961-2610	135,-	961-3610	245,-

1 *ONLY WHILE STOCKS LAST!

2 Further calibration options on request



Robust, digital force gauge for for tensile and compressive force measurements

Features

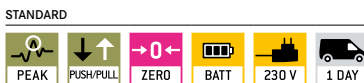
- **Turnable display:** automatic direction identification
- **Secure operability** due to the ergonomic design
- **Peak-Hold function** to capture peaks (value is “frozen” for approx. 10 seconds) or **Track function** mode for a continuous measurement indication
- **Selectable measuring units:** N,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

Technical data

- Measuring precision: 0,5 % of [Max]
- Internal measuring frequency: 1000 Hz
- Overload protection: 200 % of [Max]
- Overall dimensions W×D×H 195×82×35 mm
- Thread: M8
- Ready for use: Batteries included, 6×1,5 V AA
- Net weight approx. 0,72 kg

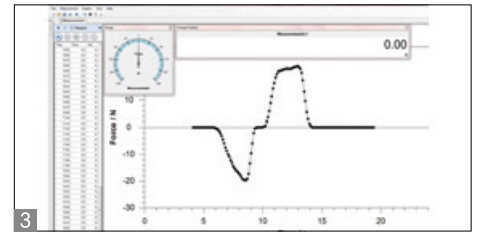
Accessories

- **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, **€ 210,-**
- **Tensiometer kit for high-capacity tensile strength testing** up to 1000 N, steel attachment and steel rolls, rolls cannot be adjusted, SAUTER FK-A02, **€ 295,-**
- **1** **Standard attachments,** SAUTER AC 430, **€ 45,-**
- Further accessory see www.sauter.eu and page 36 et seqq.



Model	Measuring range [Max] N	Readout [d] N	Price excl. of VAT ex works €	Option Factory calibration certificate					
				Tensile force		Compressive force		Tensile/Compressive force	
				KERN	€	KERN	€	KERN	€
SAUTER FK 10.	10	0,005	250,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FK 25.	25	0,01	250,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FK 50.	50	0,02	250,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FK 100.	100	0,05	250,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FK 250.	250	0,1	250,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FK 500.	500	0,2	250,-	961-1610	135,-	961-2610	135,-	961-3610	245,-
FK 1K.	1000	0,5	250,-	961-1620	165,-	961-2620	165,-	961-3620	300,-

1 Further calibration options on request



Compact force gauge for tensile and compressive force measurements

Features

- **Turnable display** with backlight
- **Peak-Hold function** to capture peaks (measurement result will be “frozen” for a short time) or **Track function** mode for a continuous measurement indication
- **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

- **Data interface USB** standard
- **Data interface RS-232 standard,** only for connection to the printer
- Selectable: AUTO-OFF function or permanent operation
- **1 Delivered in a robust carrying case**
- **Selectable measuring units:** N, kg, oz, lb
- **2 Standard attachments:** as shown below
- Can be mounted on all SAUTER test stands up to 10 kN

Technical data

- Measuring precision: 0,3 % of [Max]
- Internal measuring frequency: 1000 Hz
- Overload protection: 150 % of [Max]
- Overall dimensions W×D×H 145×73×34 mm
- Thread: M6
- Rechargeable battery pack integrated, standard, operating time up to 20 h without backlight, charging time approx. 4 h
- Net weight approx. 0,94 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-1.0, **€ 90,-**
- **3 Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, **€ 650,-**
- **RS-232/PC-Connecting cable** to connect models from the SAUTER FC range to a printer, SAUTER FC-A01, **€ 46,-**
- **2 Standard attachments,** SAUTER AC 43, **€ 45,-**
- **Matrix needle printer,** KERN YKN-01, **€ 230,-**
- **Thermal printer,** KERN YKB-01N, **€ 320,-**
- **Statistics thermal printer,** KERN YKS-01, **€ 390,-**
- **Label printer,** KERN YKE-01, **€ 590,-**
- Further accessory see www.sauter.eu and page 36 et seqq.

STANDARD



OPTION



Model	Measuring range [Max] N	Readout [d] N	Price excl. of VAT ex works €	Option DAKkS calibration certificate					
				Tensile force		Compressive force		Tensile/Compressive force	
				DAKkS KERN	€	DAKkS KERN	€	DAKkS KERN	€
SAUTER FC 10	10	0,01	370,-	963-161	135,-	963-261	135,-	963-361	245,-
FC 50	50	0,01	370,-	963-161	135,-	963-261	135,-	963-361	245,-
FC 100	100	0,1	370,-	963-161	135,-	963-261	135,-	963-361	245,-
FC 500	500	0,1	370,-	963-161	135,-	963-261	135,-	963-361	245,-
FC 1K	1000	1	370,-	963-162	165,-	963-262	165,-	963-362	300,-

1 Further calibration options on request



TIPS FROM THE EXPERTS

In addition to our range of professional measuring technology and test service we also offer a comprehensive range of balances and test service for laboratory, industry and food industry.

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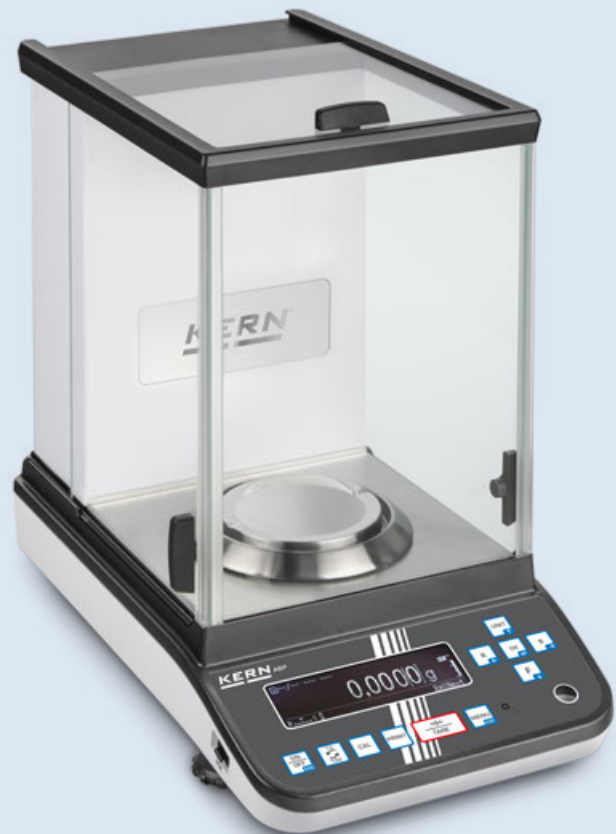
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*Stephan Ade, Head of Sales
Balances and test service*





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

Features

- **Turnable display** with backlight
- **1** Can be mounted on all SAUTER test stands up to 10 kN
- **Data interface RS-232**, standard
- **2** Standard attachments: as shown below, extension rod: 90 mm
- **3** **Delivered in a robust carrying case**
- **Selectable measuring units:** N, lb, kg
- **Peak-Hold function** to capture peaks (measurement result will be “frozen” for a short time) or **Track function** mode for a continuous measurement indication
- **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

Technical data

- Internal measuring frequency: 2000 Hz
- Transfer rate to PC: approx. 25 measured values per second
- Measuring precision: 0,5 % of [Max]
- Overload protection: 150 % of [Max]
- Overall dimensions W×D×H 66×36×230 mm
- Thread: M6
- Rechargeable battery pack integrated, standard, operating time up to 12 h without backlight, charging time approx. 4 h
- Net weight approx. 0,64 kg

Accessories

- **Relais module**, serves to transfer the output signal of the dynamometer to control direct actions, SAUTER AFH-02, **€ 340,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphical representation of the measuring process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, **€ 650,-**
- **2** **Standard attachments**, SAUTER AC 43, **€ 45,-**
- **Matrix needle printer**, KERN YKN-01, **€ 230,-**
- **Thermal printer**, KERN YKB-01N, **€ 320,-**
- **Statistics thermal printer**, KERN YKS-01, **€ 390,-**
- **Label printer**, KERN YKE-01, **€ 590,-**
- Further accessory see www.sauter.eu and page 36 et seqq.

STANDARD



OPTION



Model	Measuring range	Readout	Price excl. of VAT ex works €	Option DAKkS calibration certificate					
				Tensile force		Compressive force		Tensile/Compressive force	
				DAKkS KERN	€	DAKkS KERN	€	DAKkS KERN	€
SAUTER	[Max] N	[d] N							
FH 2.	2	0,001	460,-	-	-	-	-	-	-
FH 5.	5	0,001	460,-	-	-	-	-	-	-
FH 10.	10	0,005	460,-	963-161	135,-	963-261	135,-	963-361	245,-
FH 20.	20	0,01	460,-	963-161	135,-	963-261	135,-	963-361	245,-
FH 50.	50	0,01	460,-	963-161	135,-	963-261	135,-	963-361	245,-
FH 100.	100	0,05	460,-	963-161	135,-	963-261	135,-	963-361	245,-
FH 200.	200	0,1	460,-	963-161	135,-	963-261	135,-	963-361	245,-
FH 500.	500	0,1	460,-	963-161	135,-	963-261	135,-	963-361	245,-

Further calibration options on request



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

Features

- **Turnable display** with backlight
- **Data interface RS-232**, standard
- **Delivered in a robust carrying case**
- **Selectable measuring units:** N, kN, kg, t, lb
- **Peak-Hold function** to capture peaks (measurement result will be “frozen” for a short time) or **Track function** mode for a continuous measurement indication
- **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

Technical data

- Measuring frequency: 2000 Hz
- Transfer rate to PC: approx. 25 measured values per second
- Measuring precision: 0,5 % of [Max]
- Overload protection: 150 % of [Max]
- Dimensions housing W×D×H 66×36×230 mm
- Rechargeable battery pack integrated, standard, operating time up to 12 h without backlight, charging time approx. 4 h
- **1** Tension loops and compression plates are included in delivery
- Cable length approx 3 m

FH 1K.-FH 2K.:

- Dimensions load cell W×D×H 76,2×51×19 mm
- Thread: M12

FH 5K.-FH 20K.:

- Dimensions load cell W×D×H 76,2×51×28,2 mm
- Thread: M12

FH 50K.:

- Dimensions load cell W×D×H 108×76,3×25,5 mm
- Thread: M18 × 1,5

FH 100K.:

- Dimensions load cell W×D×H 178×152,2×51,3 mm
- Thread: M30 × 2

Accessories

- **Relais module**, serves to transfer the output signal of the dynamometer to control direct actions, SAUTER AFH-02, **€ 340,-**
- **Force-displacement data transfer software** with graphical representation of the measuring process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, **€ 650,-**
- **RS-232/PC connection cable** to connect models from the SAUTER FH range to a PC or a printer, SAUTER FH-A01, **€ 46,-**
- **Matrix needle printer**, KERN YKN-01, **€ 230,-**
- **Thermal printer**, KERN YKB-01N, **€ 320,-**
- **Statistics thermal printer**, KERN YKS-01, **€ 390,-**
- **Label printer**, KERN YKE-01, **€ 590,-**
- Further accessory see www.sauter.eu and page 36 et seqq.

STANDARD



OPTION



Model	Measuring range [Max] kN	Readout [d] N	Price excl. of VAT ex works €	Option DAkkS calibration certificate (≤ 5 kN)/Factory calibration certificates (> 5 kN)					
				Tensile force		Compressive force		Tensile/Compressive force	
SAUTER				KERN	€	KERN	€	KERN	€
FH 1K.	1	0,5	780,-	963-162	165,-	963-262	165,-	963-362	300,-
FH 2K.	2	1	780,-	963-162	165,-	963-262	165,-	963-362	300,-
FH 5K.	5	1	990,-	963-163	225,-	963-263	225,-	963-363	405,-
FH 10K.	10	5	1180,-	961-164	295,-	961-264	295,-	961-364	440,-
FH 20K.	20	10	1170,-	961-164	295,-	961-264	295,-	961-364	440,-
FH 50K.	50	10	1370,-	961-165	295,-	961-265	295,-	961-365	440,-
FH 100K.	100	50	1550,-	961-166	325,-	961-266	325,-	961-366	485,-

1 Further calibration options on request



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

Features

- **Turnable display** with backlight
- **Peak-Hold function** to capture peaks (measurement result will be “frozen” for a short time) or **Track function** mode for a continuous measurement indication
- **Metal housing** for durable usage in harsh environmental conditions
- Can be mounted on all SAUTER test stands up to 10 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 an visual signal.
- **Internal memory** for up to 500 measurement values
- **Continuous analogue output:** Linear voltage signal in dependence to the load (-2 to +2 V)
- **Data interface USB** standard

- **Data interface RS-232 standard**, only for connection to the printer
- **1** Standard attachments: as shown above
- **Selectable measuring units:** N, kN, kg, oz, lbf
- **2** Delivered in a robust carrying case

Technical data

- Internal measuring frequency: 1000 Hz
- 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
- Thread: M6
- Rechargeable battery pack integrated, standard, operating time up to 10 h without backlight, charging time approx. 8 h
- Net weight approx. 0,5 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-1.0, **€ 90,-**
- **Force-displacement data transfer software** with graphical representation of the measuring process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, **€ 650,-**
- **USB cable**, SAUTER FL-A01, **€ 46,-**
- **RS-232 adapter cable**, SAUTER FL-A04, **€ 46,-**
- **Thermal printer**, KERN YKB-01N, **€ 320,-**
- **Statistics thermal printer**, KERN YKS-01, **€ 390,-**
- **Label printer**, KERN YKE-01, **€ 590,-**
- Supports for fastening of objects as well as additional accessories, please see page 30 onwards or www.sauter.eu

STANDARD



OPTION



Model	Measuring range	Readout	Price excl. of VAT ex works €	Option DAKkS calibration certificate					
				Tensile force		Compressive force		Tensile/Compressive force	
				DAKkS KERN	€	DAKkS KERN	€	DAKkS KERN	€
SAUTER	[Max] N	[d] N							
FL 5	5	0,002	500,-	-	-	-	-	-	-
FL 10	10	0,005	500,-	963-161	135,-	963-261	135,-	963-361	245,-
FL 20	25	0,01	500,-	963-161	135,-	963-261	135,-	963-361	245,-
FL 50	50	0,02	500,-	963-161	135,-	963-261	135,-	963-361	245,-
FL 100	100	0,05	500,-	963-161	135,-	963-261	135,-	963-361	245,-
FL 200	250	0,1	500,-	963-161	135,-	963-261	135,-	963-361	245,-
FL 500	500	0,2	500,-	963-161	135,-	963-261	135,-	963-361	245,-
FL 1K	1000	0,5	570,-	963-162	165,-	963-262	165,-	963-362	300,-

Further calibration options on request



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

Features

- **Premium force gauge** with external measuring cell, tension loops included in delivery
- **Turnable display** with backlight
- **Peak-Hold function** to capture peaks (measurement result will be “frozen” for a short time) or **Track function** mode for a continuous measurement indication
- **Metal housing** for durable usage in harsh environmental conditions
- Can be mounted on all SAUTER test stands
- **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 +2 V)
- **Data interface USB** standard

- **Data interface RS-232 standard**, only for connection to the printer
- **Selectable measuring units:** N, kN, kg, oz, lbf
- **Delivered in a robust carrying case**

Technical data

- Internal measuring frequency: 1000 Hz
- 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
- Thread: M12
- Rechargeable battery pack integrated, standard, operating time up to 10 h without backlight, charging time approx. 8 h
- Net weight approx. 1,5 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-1.0, **€ 90,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, **€ 650,-**
- **USB cable**, SAUTER FL-A01, **€ 46,-**
- **RS-232 adapter cable**, SAUTER FL-A04, **€ 46,-**

STANDARD



OPTION



Model	Measuring range [Max] N	Readout [d] N	Price excl. of VAT ex works €	Option DAKKS calibration certificate (≤ 5 kN)/ Factory calibration certificates (> 5 kN)					
				Tensile force		Compressive force		Tensile/Compressive force	
				KERN	€	KERN	€	KERN	€
SAUTER FL 2K	2500	1	600,-	963-162	165,-	963-262	165,-	963-362	300,-
FL 5K	5000	1	990,-	963-163	225,-	963-263	225,-	963-363	405,-
FL 10K	10000	2	1150,-	961-164	295,-	961-264	295,-	961-364	440,-
FL 20K	20000	5	1190,-	961-164	295,-	961-264	295,-	961-364	440,-

Further calibration options on request

NEW **PREMIUM** ★★★



Note: The shown measuring cell is not included in the scope of delivery! Combine the FL TM with a measuring cell suitable for your application from the SAUTER program, such as CR P1, CR Q1, CS P1 or CS Q1

Digital Premium force gauge with graphics display for tensile and compressive force measurements, prepared for external measuring cells

Features

- **Premium force-measuring** for connection of external measuring cells (measuring cell, tension loops and pressure plates not included with delivery)
- **Adjustable nominal loads:** 5 N, 10 N, 25 N, 50 N, 100 N, 250 N, 500 N, 1 kN, 2.5 kN, 5 kN, 10 kN, 20 kN, 50 kN
- Maximum resolution 2500 d
- **Premium force gauge** with external measuring cell, tension loops and compression plates included in delivery
- **Peak-Hold function** to capture peaks (measurement result will be "frozen" for a short time) or **Track function** mode for a continuous measurement indication
- **Metal housing** for durable usage 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 (liwith-setting function):** Upper and lower liwithing can be programmed individually, in pull and push direction. The process is supported by an visual signal.

- **Internal memory** for up to 500 measurement values
- **Continuous analogue output:** Linear voltage signal in dependence to the load (-2 to +2 V)
- **Data interface USB** standard
- **Data interface RS-232 standard,** only for connection to the printer
- **Selectable measuring units:** N, kN, kg, oz, lbf

Technical data

- Internal measuring frequency: 1000 Hz
- 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
- Rechargeable battery pack integrated, standard, operating time up to 10 h without backlight, charging time approx. 8 h
- Net weight approx. 0,5 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-1.0, **€ 90,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, **€ 650,-**
- **USB cable,** SAUTER FL-A01, **€ 46,-**
- **RS-232 adapter cable,** SAUTER FL-A04, **€ 46,-**
- **Option FL-C01:** Solder connector for FL TM to measuring cell and adjusting the device, SAUTER, **€ 95,-**

STANDARD: PEAK, PUSH/PULL, MEMORY, RS 232, USB, ANALOG, GLP, PRINTER, UNIT, TOL, ACCU, 230 V, 1 DAY

OPTION: SOFTWARE, DAKKS +4 DAYS, ISO +4 DAYS

Model	Price excl. of VAT ex works €
SAUTER	
FL TM	470,-

Option DAKKS calibration certificate (≤ 5 kN)/Factory calibration certificates (> 5 kN)							
Option	Measuring range optional load cell	Tensile force		Compressive force		Tensile/Compressive force	
		KERN	€	KERN	€	KERN	€
Load cells see page S. 87-97	≤ 500 N	963-161	135,-	963-261	135,-	963-361	245,-
	≤ 2 kN	963-162	165,-	963-262	165,-	963-362	300,-
	≤ 5 kN	963-163	225,-	963-263	225,-	963-363	405,-
	≤ 20 kN	961-164	295,-	961-264	295,-	961-364	440,-
	≤ 50 kN	961-165	295,-	961-265	295,-	961-365	440,-
	≤ 120 kN	961-166	325,-	961-266	325,-	961-366	485,-

! Further calibration options on request

COMING
SOON



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



Can be mounted on all SAUTER test benches, illustration shows optional accessories, see page 36 et seq., and the manual test bench SAUTER TVL-XS, see page 20



Simultaneous measurement on up to four channels. External sensors with sensor data memory optionally available



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



Use with integrated measuring cell

The SAUTER FS premium force gauge has an integrated measuring cell for tensile and compressive force applications. Whether 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 (optionally) integrated interfaces, the data can be sent to a PC, laptop, smartphone or network for further processing.



Connections for up to four external measuring cells and Ethernet (optional)



Supplied in a high-quality and robust system case (systainer® T-LOC) including mains adapter and USB cable type C



Measurement of forces in different and dimensions possible with only one measuring device

Use with external measuring cells

The SAUTER FS premium force gauge is compatible with all SAUTER strain gauge measuring cells, see page 87et seqq. Up to 4 external measuring cells can be connected simultaneously. If all available external measuring channels are used, the internal measuring cell is deactivated as long as an external measuring cell is connected on channel 1.

Order example SAUTER FS force gauge with 2 measuring cells:

1x	FS 2-50	2-channel force gauge with integrated measuring cell for tension/compression force measurements
1x	963-361	DAkKS calibration certificate tension/compression force up to 500 N
1x	CO 100-Y1	Miniature compression load cell up to 1 kN
1x	FS 403	Two-point adjustment up to 2 kN, incl. plug and TEDS memory for SAUTER FS
1x	963-262	DAkKS calibration certificate compression force up to 2 kN
1x	CS 500-3P2	Stainless steel "S" measuring cell for tension/compression force up to 5 kN
1x	963-363	DAkKS calibration certificate tension/compression force up to 5 kN
1x	FS 410	Multi-point adjustment up to 5 kN, incl. connector and TEDS memory for SAUTER FS

Features

- 3,5" Touchscreen
- Standard version with 2 or 4 measuring channels for external force sensors (subsequently expandable from 2 to 4)
- An internal measuring cell is possible (is deactivated if an external measuring cell is plugged into slot 1)
- Suitable for 4-wire and 6-wire sensors with strain gauges
- Bridge supply voltage adjustable
- Two-point or multi-point adjustment with weights or numerical adjustment possible
- **Connection of TEDS sensors (Transducer Electronic Data Sheet)** possible
- **USB interface** for programming, data transfer and power supply as standard
- Optional interfaces: WLAN, Ethernet, Bluetooth, analogue current output (only possible individually)
- **Integrated SD card memory**
- Adjustable SI units kg, N, kN, Nm, kNm
- **Tolerance function**
- Storage of raw measured values for external evaluation
- **Peak hold function** for recording the peak value or **track function** for continuous measurement display
- **Peak value measurement**
- Module for length measurement optional (then only use of 2 force sensors possible)
- Mountable on SAUTER test benches

Technical data

- High resolution: up to 10000 points per measurement channel
- Internal measuring frequency: 1000 Hz per measuring channel
- Measurement accuracy:
 - with internal measuring cell: 0.1 % of [Max]
 - with external measuring cell: among other things from the measuring cells used
- Overall dimensions W×D×H 71×31×180 mm
- Overload protection: 150 % of [Max] with internal measuring cell
- Thread on load receptor: M6 (outside)
- Battery operation internal, standard, operating time up to 8 h without backlight,
- Charging time approx. 8 h
- External mains adapter, for connection to the USB-C socket, standard
- Net weight approx. 0,4 kg

Accessories

- **Force/displacement data transmission software** with graphic display of the measuring curve, only in conjunction with SAUTER LD, SAUTER AFH FSLD, price on request!
 - **Force/time data transmission software** with graphic display of the measurement curve, SAUTER AFH FS, price on request!
 - **Module for length measurement** with SAUTER LD length measuring device, factory option, SAUTER FS LD, price on request!
 - **Analogue output** for outputting an electrical signal as a function of load, current strength 4 mA–20 mA, not retrofittable, SAUTER FS SA, price on request!
 - **Ethernet data interface**, for connection to an IP-based Ethernet network, not retrofittable, SAUTER FS ETH, price on request!
 - **WLAN interface**, SAUTER FS WLAN, price on request!
 - **Bluetooth data interface** for wireless data transmission to PC or tablets, not retrofittable, SAUTER FS BT, price on request!
- Please note: only one optional interface can be installed at a time
- **Standard attachments**, SAUTER AC 43, € 45,-
 - Suitable measuring cells see page 87 et seqq.
 - For holders for object fixation and other accessories see www.sauter.eu and page 87 et seq.

Optional calibration see page 98 et seqq. Calibration is recommended for each measuring cell!

Assembly and adjustment of measuring cell, connector and TEDS sensors must be ordered separately, please enquire.

STANDARD

OPTION

Model	Measuring range internal measuring cell	Readability internal measuring cell	Internal measuring cell	Number of measuring channels	Price excl. of VAT ex works
SAUTER	[Max] N	[d] N			€
FS 2	–	–	–	2	on request
FS 2-20	20	0,005	•	2	on request
FS 2-50	50	0,01	•	2	on request
FS 2-100	100	0,02	•	2	on request
FS 2-200	200	0,05	•	2	on request
FS 2-500	500	0,1	•	2	on request
FS 4	–	–	–	4	on request
FS 4-20	20	0,005	•	4	on request
FS 4-50	50	0,01	•	4	on request
FS 4-100	100	0,02	•	4	on request
FS 4-200	200	0,05	•	4	on request
FS 4-500	500	0,1	•	4	on request

Adjustment	Measuring range	Model SAUTER incl. connector and TEDS sensors	Price excl. of VAT ex works
	[Max] kN		€
Numeric	–	FS 401	120,-
	0,5	FS 402	140,-
	2	FS 403	150,-
	5	FS 404	170,-
	20	FS 405	180,-
	50	FS 406	180,-
	120	FS 407	200,-
Multipoint	0,5	FS 408	180,-
	2	FS 409	210,-
	5	FS 410	240,-
	20	FS 411	270,-
	50	FS 412	270,-
	120	FS 413	300,-

NEW



Manual test bench for precise compressive force measurement in the range up to 100 N

Features

- **1** The redesigned, superfine spindle enables exact testing in a force-measurement range up to 100 N in particularly fine steps and, in conjunction with the fine-dosing crank, ensures safe, reliable operation
- **2** Main areas of application: Testing of low levels of force with short distances, such as, for example, testing keyboard overlays, biological samples (e.g. strength of leaves, etc.), blister packs (e.g. force required to push tablets out, etc.)
- For vertical and horizontal use
- **High level of security** with repeated measurements
- **Large base plate** with various holes for fixture mountings
- Suitable for all SAUTER force measuring device up to 100 N (not included with the delivery)

Technical data

- Travel distance per knob rotation (one turn): 2 mm
- Overall dimensions W×D×H 160×280×380 mm
- Net weight approx. 6 kg

STANDARD



Model	Measuring range	Price excl. of VAT ex works
SAUTER TVL-XS	[Max] N 100	€ 650,-



Manual test stand for highly accurate tensile and compressive force measurements, with length measurement

Features

- For vertical and horizontal use
- Precise measurement result
- **High level of security** with repeated measurements
- **Large base plate** with high versatility of fastening objects
- Can be used for force gauges up to 500 N (not included)
- Hook with M6 thread as standard
- **Digital length meter SAUTER LA standard:**
 - Measuring range: max. 200 mm
 - Readout: 0,01 mm
 - Zero setting possible
 - Pre-length can be set manually
- **1** Model TVL and TVL-XL in size comparison

Technical data

- Maximum travel distance: 230 mm
- Travel distance per knob rotation (stroke per one turn): 3 mm
- TVL-XL: Extended working area +250 mm
- Overall dimensions W×D×H 151×234×465 mm
- Net weight approx. 8,3 kg

Accessories

- **2** **Extension kit** for SAUTER TVL, extends the working area by 250 mm, enabling larger test pieces to be measured. The travel distance (spindle height from base plate) remains the same: 230 mm
- Overall dimensions W×D×H 200×300×250 mm
- Net weight approx. 7 kg

STANDARD



Model	Measuring range	Price excl. of VAT ex works €
SAUTER	[Max] N	
TVL.	500	370,-
TVL-XL <small>NEW</small>	500	650,-

NEW New model



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** with repeated measurements
- **Provides maximum versatility** and precise measuring results
- **Slide construction** for distance measurement
- **Large base plate** with high versatility of fastening objects
- Can be used for force gauges up to 500 N (not included)

Technical data

- Maximum height of working area: 315 mm
- Maximum stroke length: 78 mm
- Overall dimensions W×D×H 150×233×420 mm
- Net weight approx. 10,5 kg

TVP-L.:

- **Digital length meter**
 - Measuring range: 100 mm
 - Readout: 0,01 mm
 - Zero setting possible
 - Pre-length can be set manually

STANDARD

SCALE FASTMOVE 1 DAY

Model	Measuring range [Max] N	Price excl. of VAT ex works €
SAUTER TVP.	500	310,-
SAUTER TVP-L.	500	370,-

NEW



01



Universal attachment for test benches for 90 degree peel tests

Features

- **1** The attachment for peel tests, SAUTER TPE-N has been specially developed for peel testing up to 500 N. Typically this involves pulling a bonded material layer from a base material. As a general rule the significant value in this process is the force required to pull away the top layer from bonded material
- The attachment can be fitted onto all SAUTER force measuring test benches quickly and easily and thereby offers the highest level of flexibility in terms of travel path, measuring range, sample fixing ecc.
- The attachment has been designed so that a bonded material or an appropriate basic medium can be applied to the moving carriage. The test item is fixed to the force measuring device with a suitable clamp (both not

included in the scope of delivery). Then the carriage is aligned such that the start of the test item is vertically immediately below the force measuring device. By moving the test bench upwards, the carriage is moved and the test item is peeled off at a 90-degree angle to the surface

- Suitable for all SAUTER force measuring devices up to 500 N (not included)
- Suitable for SAUTER test stands TVO 1000N500S, TVO 2000N500S, TVM 5000N230N., TVM 5000N230NL, TVM 5000N240., TVM 5000N230XL., TVS 5000N240 (not included)

Technical data

- Maximum stripping length: 200 mm
- Overall dimensions W×D×H 425×100×60 mm
- Net weight approx. 4 kg

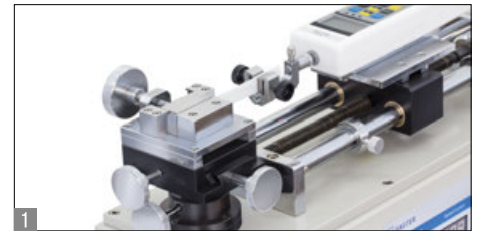
STANDARD



Model	Measuring range [Max] N	Price excl. of VAT ex works €
SAUTER TPE-N	500	720,-



THM 500N500S



Motorised test stand with digital display for horizontal force measurement where highest standards are required

Features

- **Step motor for greatest ease of use only at THM 500N500S**
 - 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 follow-up movement, even at high speeds
 - precise adjustment of the process speed using the information shown on the display
- **Easy to use**
- Efficient working
- Robust design and heavy duty metal construction
- **Linear adjustable jaw vice**
The clamping vice can be locked and finely adjusted sideways and up/down using the setting wheel (THM 500N500N)
- **Repeat function** for fatigue tests
- Digital speed display to read the process speed straightaway
- **Premium operating panel:**
 - Digital speed display
 - Digital repeat function display
 - Control of the test stand using PC software SAUTER AFH

- **Figure 2** shows the premium operating panel of SAUTER THM 500N500N
- **Solid and versatile fixing options** of SAUTER force measuring devices, see accessory page 36 et seq.
- Suitable for all SAUTER force measuring devices up to 500 N (not supplied with the product)

Technical data

- **THM-N:**
 - Minimum distance between left and right object fastening: 30 mm
 - Maximum travel distance: 220 mm (protected by electronic end switches)
 - Overall dimensions WxDxH 170x345x550 mm
 - Net weight approx. 35 kg
- **THM-S:**
 - Maximum travel distance: 240 mm (protected by electronic end switches)
 - Overall dimensions WxDxH 695x235x300 mm
 - Net weight approx. 48 kg

Accessories

- **Digital length measuring device**, measuring range 200 mm, readout 0,01 mm, details see page 45, SAUTER LB 200-2., € 1050,-
- **Mounting the length measuring device LB** onto a SAUTER test stand at the factory, SAUTER LB-A02, € 190,-
- **Linear potentiometer for length measurement**, measuring range: 300 mm, readout: 0.01 mm, for details see page 46, SAUTER LD, from € 590,-
- **Mounting the length measuring device** onto a SAUTER test stand at the factory, SAUTER LD-A06, € 260,-
- Only THM-S: **Force-displacement data transfer software** with graphical representation of the measuring process, only in combination with SAUTER LD, SAUTER AFH LD, € 250,-
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, € 115,-
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, € 650,-

STANDARD		OPTION	
THM	THM-S		SOFTWARE

Model	Measuring range	Speed range	Motor	Price excl. of VAT ex works €
	[Max] N	mm/min		
SAUTER THM 500N500N	500	50-500	Electric motor	2250,-
THM 500N500S	500	1-500	Step motor	3490,-



Robust test stand for laboratory applications

Features

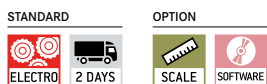
- Motorised test stand for tension and compression tests
- **Table-top design** for comfortable operation
- **Robust design** for durable use
- Easy-to-access safety switch-off
- Upper and lower end point, can be set individually
- Automatic or manual operation mode
- Can be used for force gauges up to 500 N (e.g. SAUTER FH-S, not included, for details see page 12)

Technical data

- Maximum tensile and compressive force: 500 N
- Maximum travel distance: 300 mm
- Speed accuracy: 2 % of [Max]
- Net weight approx. 25 kg

Accessories

- **Digital length measuring device**, measuring range 300 mm, readout 0,01 mm, details see page 45, SAUTER LB 300-2., € 1150,-
- **Mounting the length measuring device LB** onto a SAUTER test stand at the factory, SAUTER LB-A02, € 190,-
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, € 115,-
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, € 650,-



Model	Measuring range	Speed range	Maximum travel distance	Overall dimensions	Price
	[Max] N	mm/min	mm	W×D×H mm	excl. of VAT ex works €
SAUTER TVO 500N300.	500	15-300	300	236×428×570	1650,-

PREMIUM



01



SAUTER TVO 1000N500S

Premium test stand in table-top version
- with precise step motor



SAUTER TVO 2000N500S

Solid and flexible fixing options for many terminals and accessories from the SAUTER product range, see accessories on page 36 et seq.

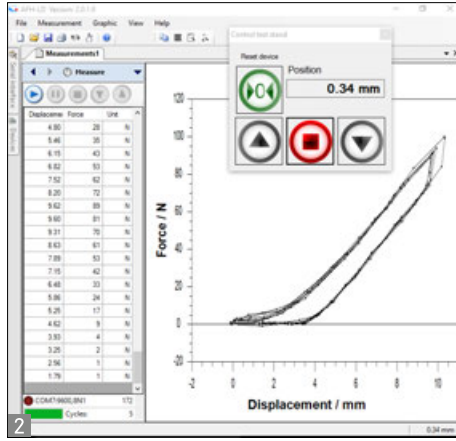


A wide range of application possibilities because of its large travelling distance



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

Motorised vertical test stand SAUTER TVO-S



01

Features

- Motorised test stand for tension/compression force testing
- **Step 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 process speed using the information shown on the display
- Automatic or manual process mode
- **1 Premium operating panel**
 - Digital speed display
 - Digital repeat function
 - **2** Control of the test stand using PC software SAUTER AFH
- **Table-top version** for easy operation
- **Robust construction**
- **3** Fixation of SAUTER force measuring devices up to 2 kN possible
- The large diagram shows the TVO 1000N500S test stand with: SAUTER FH force measuring device, length measuring device SAUTER LD as well as mounts for the force measuring device and test objects (not supplied with the product)

Technical data

- Speed accuracy: 0,5 % of [Max]
- Positioning accuracy when shutting down: ± 0,05 mm
- Dimensional drawings see instruction manual on www.sauter.eu

Accessories

- **Linear potentiometer for length measurement**, measuring range: 300 mm, readout: 0.01 mm, for details see page 46, SAUTER LD, **from € 590,-**
- **Mounting the length measuring device** onto a SAUTER test stand at the factory, SAUTER LD-A06, **€ 260,-**
- **Force-displacement data transfer software** with graphical representation of the measuring process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**

STANDARD		OPTION	
STEPPER	2 DAYS	SCALE	SOFTWARE

Model	Measuring range [Max] N	Speed range mm/min	Maximum travel distance 2 mm	Overall dimensions W×D×H mm	Price excl. of VAT ex works €
SAUTER TVO 500N500S	500	1-500	300	236×428×570	3090,-
SAUTER TVO 1000N500S	1000	1-500	500	265×405×980	3250,-
SAUTER TVO 2000N500S	2000	1-500	700	300×465×1185	4450,-

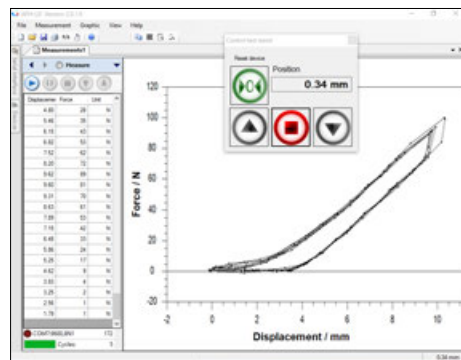
01



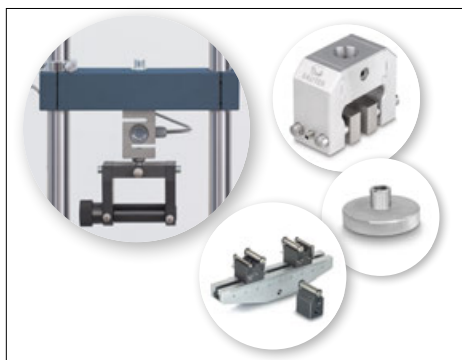
Test stand with electric motor for standard measurements



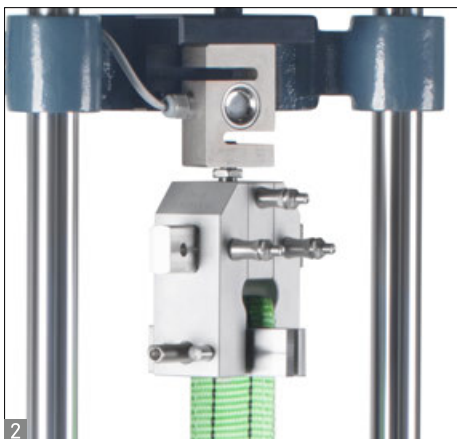
Premium operating panel
 - Digital speed display
 - Digital repeat function



Control of the test stand using SAUTER PC software AFH



Solid and flexible fixing options for many terminals and accessories from the SAUTER product range, see accessories on page 36 et seq.



Features

- **Force controlled automatic switchoff**, Teststop after achieving an adjusted limit load, only in combination with a SAUTER FH force gauge
- Maximum travel distance protected by electronic end switches
- **SAUTER LA length measuring device as standard**, to read the travel distance with a readout of 0.01 mm
- **Particularly flexible mounting options** for the most variable force measuring devices, such as, SAUTER FC, FH, FA, FK, FL:
 - 1 Direct mounting of measuring devices with internal load cell up to [Max] of 500 N (only with TVM 5000N230N. and TVM 10KN120N.)
 - 2 Direct mounting of the external measuring cell on the traverse, from 1000 N measurement range and higher
 - 3 Mount for force-measuring devices from the SAUTER FH range with external measuring cell
- The large figure shows the TVM-N test stand with: SAUTER FH force measuring device, SAUTER LB length measuring device, longer guide columns as well as mount for force measuring device and test objects (not supplied with the product)





Technical data

- Speed accuracy: 3 % of [Max]
- For dimensional and technical drawing, see operating instructions on www.sauter.eu/en/TVM-N/...TVM-NL

Accessories

- **Length measuring device** SAUTER LB, SAUTER LB 300-2., **€ 1150,-**
- **Mounting the length measuring device LB** onto a SAUTER test stand at the factory, SAUTER LB-A02, **€ 190,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD, **€ 650,-**
- 3 **Mount for force measuring devices** from the SAUTER FH range with external load cell, SAUTER TVM-A01, **€ 65,-**
- **Longer columns** with the same travel distance, up to 500 mm, SAUTER AFH 18, **€ 560,-**

STANDARD OPTION

Model	Measuring range [Max] N	Speed range mm/min	Maximum travel distance mm	Length of columns mm	Price excl. of VAT ex works €
SAUTER					
TVM 5000N230N.	5000	10-230	210	635	1910,-
TVM 5000N230NL	5000	10-230	210	1135	2180,-
TVM 10KN120N.	10000	30-120	210	1135	2600,-
TVM 20KN120N.	20000	30-120	210	1135	3410,-
TVM 30KN70N.	30000	5-70	210	1135	4080,-

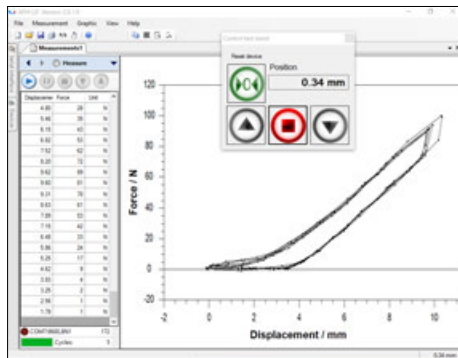


Premium test stand with step motor for precise testing up to 50 kN

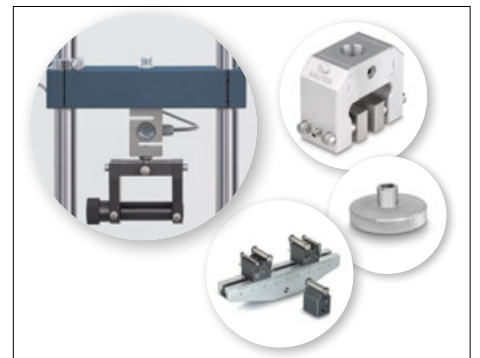


Premium operating panel

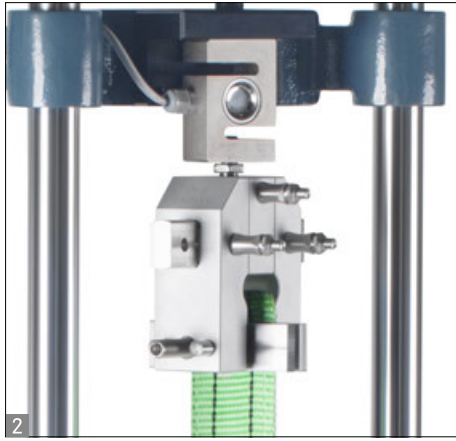
- Digital speed display: shows the displacement speed
- Digital repeat function for long-term stress test



Control of the test stand using SAUTER PC software AFH



Solid and flexible fixing options for many terminals and accessories from the SAUTER product range, see accessories on page 36 et seq.



Features

- Motorised test stand for tension/compression force testing
- **New: Step 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 follow-up movement, even at high speeds
 - precise adjustment of the process speed with indication on the display
- Maximum travel distance protected by electronic end switches
- **Large working area** by means of long guide columns as standard, which allows a wide range of fixing options
- SAUTER LA length measuring device as standard, to read the measurement range with a readout of 0.01 mm
- **Particularly flexible mounting options** for the most variable force measuring devices, such as, SAUTER FC, FH, FA, FK, FL:
 - 1 Direct mounting of measuring devices with internal load cell up to [Max] of 500 N (only at TVS 5000N240N and TVS 10KN100N)
 - 2 Direct mounting of the external measuring cell on the traverse, from 1000N measurement range and higher
 - 3 Mount for force-measuring devices from the SAUTER FH range with external measuring cell

- The large figure shows the TVS test stand with: SAUTER FH force measuring device, SAUTER LD length measuring device, longer guide columns as well as mount for force measuring device and test objects, not supplied with the product
- **For force-displacement testing:** Please order SAUTER LD length measuring device and software AFH LD as well as the factory fitting of the length measuring device with the product

Technical data

- Speed accuracy: 1 % of [Max]
- Positioning accuracy when shutting down: ± 0,05 mm
- For dimensional and technical drawing see the operating instructions on www.sauter.eu/en/TVS

Accessories

- **Linear potentiometer for length measurement**, measuring range: 300 mm, readout: 0.01 mm, for details see page 46, SAUTER LD, **from € 590,-**
- **Mounting the length measuring device LD** onto a SAUTER test stand at the factory, SAUTER LD-A06, **€ 260,-**
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, **€ 115,-**
- **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**
- 3 **Mount for force measuring devices** from the SAUTER FH range with external load cell, SAUTER TVM-A01, **€ 65,-**
- **Longer columns** with the same travel distance, up to 500 mm, SAUTER AFH 18, **€ 560,-**

STANDARD		OPTION	
STEPPER	2 DAYS	SCALE	SOFTWARE

Model	Measuring range [Max] N	Speed range mm/min	Maximum travel distance mm	Length of columns mm	Price excl. of VAT ex works €
SAUTER					
TVS 5000N240	5000	1-240	210	1135	4030,-
TVS 10KN100	10000	1-200	210	1135	5150,-
TVS 20KN100	20000	1-70	210	1135	5150,-
TVS 30KN80	30000	1-70	210	1135	5790,-
TVS 50KN80	50000	1-70	210	1135	7420,-



Manual test stand for tensile and compressive testing of springs, medium version from 50 N up to 500 N

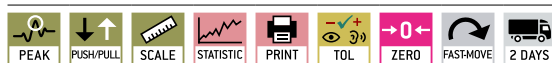
Features

- Spring tester for tension and compression tests
- Measuring device integrated in housing
- **Integrated thermal printer**
- **Digital length measuring unit SAUTER LA standard:**
 - Manual zero adjustment possible
 - Pre-length can be set manually
 - Readout: 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:** kg, lbf, N

Technical data

- Measuring precision: 0,5 % of [Max]
- Maximum stroke length: 100 mm
- Maximum height of working area: 100 mm
- Overall dimensions W×D×H 300×235×620 mm

STANDARD



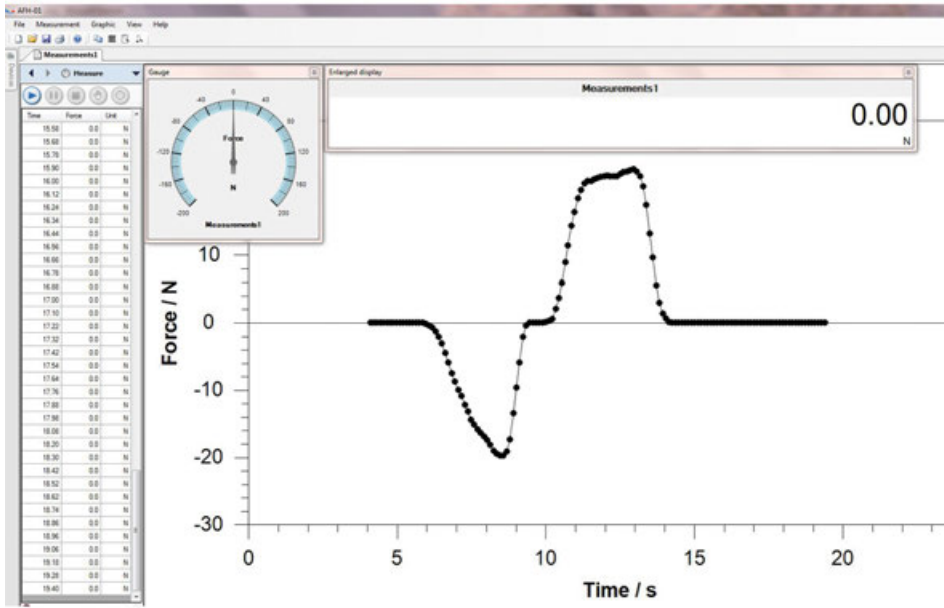
OPTION



Model	Measuring range [Max] N	Readout [d] N	Net weight kg	Price excl. of VAT ex works €	Option Factory calibration certificates compression	
					KERN	€
SAUTER SD 50N100.	50	0,01	21	1950,-	961-2610	135,-
SD 100N100.	100	0,02	21	1950,-	961-2610	135,-
SD 200N100.	200	0,05	21	1950,-	961-2610	135,-
SD 300N100.*	300	0,1	21	990,- ↓	961-2610	135,-
SD 500N100.	500	0,1	21	1950,-	961-2610	135,-

* ONLY WHILE STOCKS LAST!

↓ Price reduction



Time	Force	Unit
15.58	0.0	N
15.62	0.0	N
15.76	0.0	N
15.82	0.0	N
16.05	0.0	N
16.12	0.0	N
16.24	0.0	N
16.34	0.0	N
16.44	0.0	N
16.55	0.0	N
16.66	0.0	N
16.76	0.0	N
16.88	0.0	N
17.00	0.0	N
17.10	0.0	N
17.22	0.0	N
17.32	0.0	N
17.42	0.0	N
17.54	0.0	N
17.64	0.0	N
17.76	0.0	N
17.88	0.0	N
17.98	0.0	N
18.08	0.0	N
18.20	0.0	N
18.30	0.0	N
18.42	0.0	N
18.52	0.0	N
18.62	0.0	N
18.74	0.0	N
18.86	0.0	N
18.96	0.0	N
19.18	0.0	N
19.28	0.0	N
19.40	0.0	N



Data transfer software for force-time-measurements

Features

- Force measurements can be conducted over a very short period, i.e. seconds
- A high speed data transfer to a PC is possible (with a transfer of up to 20 data sets per second) when combining the AFH FAST with SAUTER FH, FC or FL
- AFH FAST shows the results in a Force-Time-Graph and can export the data to Microsoft Excel®
- Compatible with the following operating systems: Microsoft Windows 7/8.1/10

Technical data

- Data recording rate approx. 20 measurements per second with SAUTER FH, FC and FL
- The following interface cables are supplied with the product
 - RS-232 für SAUTER FH (FH-A01)
 - RS-232 für SAUTER FL (FL-A04)
 - USB für SAUTER FL (FL-A01)

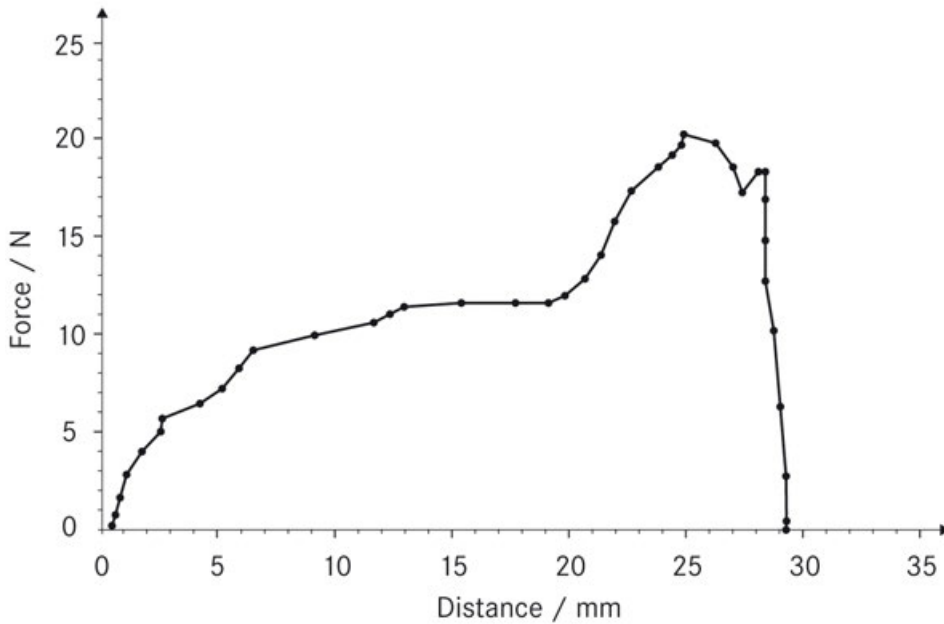
Accessories

- **RS-232/USB adapter**, to connect peripheral devices with USB connection, SAUTER AFH 12, **€ 85,-**
- **RS-232/Ethernet adapter**, for connection to an IP-based Ethernet network, SAUTER YKI-01, **€ 290,-**
- **RS-232/PC connection cable** to connect models from the SAUTER FC range to a PC, SAUTER FC-A01, **€ 46,-**

STANDARD



Model	Price excl. of VAT ex works €
SAUTER AFH FAST	115,-



Data transfer software for force-displacement-measurements

Features

- AFH FD or 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. 1 SAUTER LB resp. 2 SAUTER LD
- The measurements from both instruments are transferred continuously to the PC, synchronised by the AFH FD resp. 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 resp. LD is compatible with all instruments of series SAUTER FC, FH, FL
- 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 supply SAUTER AFH FD resp. AFH LD:
 - AFH FD resp. LD software on DVD
 - User manual
 - Interface cable RS-232 for FH (FH-A01)
 - Interface cable RS-232 for FL (FL-A04)
 - Interface cable USB for FL (FL-A01)
 - AFH FD: Interface cable RS-232 for LB (LB-A01)
 - Compatible with the following operating systems: Microsoft Windows 7/8.1/10
 - 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 stand)
 - 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

SAUTER AFH LD

- Force-displacement software (like AFH FD), but only in combination with a length measuring device of SAUTER LD series

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, depending on the force gauge)

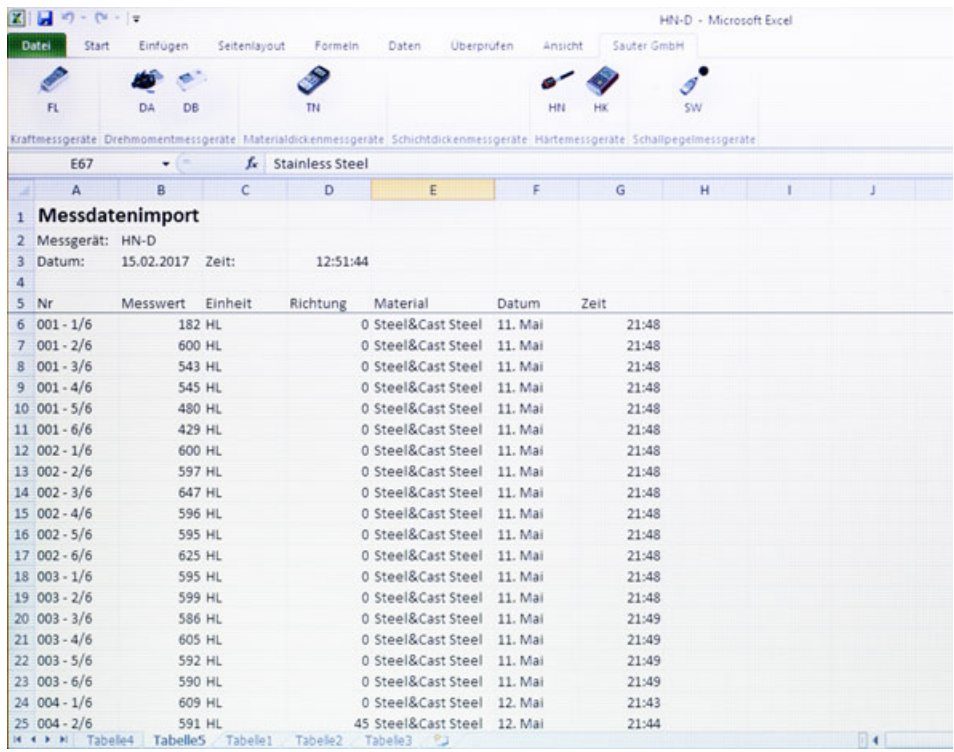
Accessories

- **Interface cable RS-232** for SAUTER FH: SAUTER FH-A01, € 46,- for SAUTER LB: SAUTER LB-A01, € 360,-
- **RS-232/USB adapter**, to connect peripheral devices with USB connection, SAUTER AFH 12, € 85,-
- **RS-232/PC connection cable** to connect models from the SAUTER FC range to a PC, SAUTER FC-A01, € 46,-

STANDARD



Model	Price excl. of VAT ex works €
SAUTER	
AFH FD	650,-
AFH LD	250,-



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-1.0 plug-in for Microsoft Excel®. By doing this, an installation and learning yet another software can be avoided
- Compatible with Microsoft Excel® 2010 et seq.
- Easy handling: The measuring instrument is connected to the PC. At the push of a button, the SAUTER AFI-1.0 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

- Scope of supply: SAUTER AFI plug-in
- Suitable for SAUTER FC, FL, DA, DB, TN-US, TN-EE, HN-D, HK-D, SW series

Accessories

- **RS-232/USB adapter** to connect force measuring instruments with USB connector, SAUTER AFH 12, **€ 85,-**
- **RS-232/Ethernet adapter** to connect force measuring instruments to an IP-based Ethernet network, SAUTER YKI-01, **€ 290,-**
- **RS-232/PC connection cable** to connect models from the SAUTER FH range to a PC or a printer, SAUTER FH-A01, **€ 46,-**
- **RS-232/PC connection cable** to connect models from the SAUTER FL range to a PC or a printer, SAUTER FL-A04, **€ 46,-**
- **USB/PC connection cable** to connect models from the SAUTER FL, TN-US, TN-EE range to a PC or a printer, SAUTER FL-A01, **€ 46,-**





Model	Price excl. of VAT ex works €
SAUTER AFI-1.0	90,-









For tension tests ≤ 500 N

	Long clamp for tension and rupture tests up to 50 N, clamping width: 3 mm, thread: M6	AC 17 € 120,- 2 pieces
	Angle bracket for tension and rupture tests up to 500 N (e.g. for cable tests), clamping width: 22 mm, thread: M6	AC 01 € 105,- 2 pieces
	Cable fixture for tension and rupture tests up to 500 N	AC 10S* € 65,-
	Fine point clamp for tension and rupture tests up to 500 N, width 15 mm, clamping width: 4 mm, thread: M6	AC 14 € 55,- 2 pieces
	Fine point clamp for tension and rupture tests up to 500 N, width 22 mm, clamping width: 4 mm, thread: M6	AC 22 € 120,- 2 pieces
	Ring fixture for tension and rupture tests up to 500 N, diameter: 23 mm, thread: M6	AC 15* € 65,- 2 pieces
	Screw tension clamp for 100 N for laboratory tensile force measurements, incl. jaws with pyramid grip, thread: M6	AD 9001 € 990,- ↓ 2 pieces <small>PREMIUM</small> ★★★
	Screw tension clamp for 100 N for laboratory tensile force measurements, incl. jaws with pyramid grip 1 with adapter structure for AD-system, 2 with M6 thread	AD 9005 € 570,- ↓ 2 pieces <small>PREMIUM</small> ★★★
	Screw tension clamp for 100 N for laboratory tensile force measurements with collar joint and jaws with pyramid grip	AD 9016 € 990,- ↓ 2 pieces <small>PREMIUM</small> ★★★
	Universal screw tension clamp for tension and compression testing up to 500 N, clamping width: up to 10 mm, jaws with pyramid grips, for further details, see page 39	AE 500 € 350,- 1 piece


For tension tests ≤ 5000 N

	Flat jaw attachment for tension tests up to 5 kN (e.g. textile, paper etc.), clamping width: 4 mm, thread: M6	AC 03 € 115,- 2 pieces
	Grip clamp attachment for insertion and pull tests up to 5 kN, clamping width: 6 mm, thread: M6	AC 09 € 85,- 2 pieces

For tension tests ≤ 5000 N

	Parallel jaw grip for tension and rupture tests up to 5 kN, clamping width: 5 mm, thread: M10	AC 12 € 78,- 2 pieces
	High capacity small clamp for tension and rupture tests up to 5 kN, clamping width: 5 mm, thread: M10	AC 16 € 125,- 2 pieces
	2 wide jaw grip attachment for tension and extraction tests up to 5 kN, clamping width: 33 mm, thread: M10	AC 18 € 125,- 2 pieces
	Rolling-clamp attachment for tension and rupture tests up to 5 kN, thread: M10	AC 11 € 69,- 2 pieces
	1-jaw-clamp attachment for tension and rupture tests up to 5 kN, clamping width: 3 mm, thread: M6	AC 13 € 78,- 2 pieces
	Eccentric roll clamp in particular for cable tests up to 5 kN, clamping width: 9 mm	AC 41 € 195,- 1 piece
	Drum clamp typically for cable connector extraction tests up to 5 kN, for test objects with ∅ from 1,5 mm up to 8 mm, thread: M10	AC 42 € 195,- 1 piece
	Screw-in tension clamp for 1 kN, for tensile force tests, jaws with pyramid grip	AD 9021 € 830,- 2 pieces <small>PREMIUM</small> ★★★
	Wedge tension clamp up to 5 kN, for tensile force tests, due to the wedge shape of the clamp the specimen is clamped automatically with increasing load, clamping width up to 10 mm, jaws with pyramid grip	AD 9080 € 2550,- ↓ 2 pieces <small>PREMIUM</small> ★★★
	Rope and thread tension clamp up to 1 kN, Suitable for wires up to a diameter of 2 mm, belts up to 7 mm width, incl. jaws with rubberised surface	AD 9120 € 900,- 2 pieces <small>PREMIUM</small> ★★★
	Universal screw tension clamp for tension and compression testing up to 2 kN, clamping width: up to 30 mm, jaws with pyramid grips, rapid adjustment to a variety of test objects thanks to the flexible clamping width, for further details, see page 40	AE 2K € 610,- 1 piece


For tension tests ≤ 5000 N



Rope and thread tension clamp
 up to 5 kN, for clamping belts, ropes, wires, etc. Suitable for wires up to a diameter of 5 mm, belts up to 8 mm. jaws with pyramid grip

AD 9121
€ 1440,-
 2 pieces


PREMIUM
 ★★★



Roller tension clamp
 up to 1 kN, can clamp on one side and eccentrically. suitable for tensile force tests with belts or any other soft, flexible, flat material with a maximum sample thickness of 7 mm, incl. rollers with pyramid grip, the opposite clamping surface is smooth.
 Suitable for test objects up to 50 mm width

AD 9205
€ 720,-
 2 pieces


PREMIUM
 ★★★



Roller tension clamp
 up to 1 kN, can clamp on one side and eccentrically. Suitable for tensile force tests with belts or any other soft, flexible, flat material with a maximum sample thickness of 7 mm, incl. rollers with smooth surface, the opposite clamping surface is rubberised.
 Suitable for test objects up to 50 mm width

AD 9206
€ 1080,-
 2 pieces


PREMIUM
 ★★★



Roller tension clamp
 up to 5 kN, symmetrisch und exzentrisch spannend. Suitable for tensile force tests with belts or any other soft, flexible, flat material with a maximum sample thickness of 7 mm, incl. rollers with pyramid grip

AD 9200
€ 2550,- ↓
 2 pieces

PREMIUM
 ★★★




Roller tension clamp
 up to 5 kN, can clamp on one side and eccentrically. Suitable for tensile force tests with belts or any other soft, flexible, flat material with a maximum sample thickness of 7 mm, incl. rollers with pyramid grip, the opposite clamping surface is smooth.
 Suitable for test objects up to 50 mm width

AD 9207
€ 1060,- ↓
 2 pieces


PREMIUM
 ★★★

For tension tests > 5000 N



Flat clamp with undulated jaws
 clamping width: 6 mm, thread: M10
 up to 10 kN


AC 31*
€ 99,- ↓
 1 piece



Wide jaw clamp with fixed jaws
 with high-performance inner jaws out of steel, jaws with pyramid grip
 clamping width: 7 mm, thread: M10
 up to 10 kN


AC 04
€ 199,-
 1 piece

For tension tests > 5000 N



Quick clamp
 for high capacity tensile tests up to 30 kN, due to the wedge shape of the clamp the specimen is clamped automatically with increasing load,
 clamping width: 8 mm, thread: M10


AC 38
€ 1010,-
 1 piece



Wedge tension clamp
 up to 10 kN, for tensile force tests, due to the wedge shape of the clamp the specimen is clamped automatically with increasing load, clamping width 10 mm, jaws with pyramid grip

AD 9085
€ 2880,-
 2 pieces

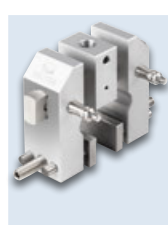
PREMIUM
 ★★★



Wedge tension clamp
 up to 10 kN, for tensile force tests, due to the wedge shape of the clamp the specimen is clamped automatically with increasing load, clamping width 8 mm, jaws with pyramid grip


AD 9090
€ 3030,-
 2 pieces

PREMIUM
 ★★★



Universal screw tension clamp
 for tension and compression testing up to 10 kN, clamping width: up to 75 mm, jaws with pyramid grips, rapid adjustment to a variety of test objects thanks to the flexible clamping with ball locking pin, for further details, see page 41


AE 10K
€ 790,-
 1 piece



Wedge tension clamp
 up to 20 kN, for tensile force tests, builds up tensile force automatically by its wedge shape, clamping width 10 mm, jaws with pyramid grip

AD 9100
€ 4320,-
 2 pieces


PREMIUM
 ★★★



Wedge tension clamp
 up to 20 kN, for tensile force tests, builds up tensile force automatically by its wedge shape, clamping width 13 mm, jaws with pyramid grip

AD 9095
€ 3420,-
 2 pieces

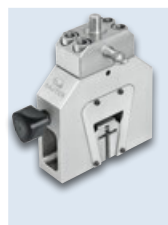
PREMIUM
 ★★★



Wedge tension clamp
 up to 50 kN, for tensile force tests, builds up tensile force automatically by its wedge shape, clamping width 13 mm, jaws with pyramid grip

AD 9096
€ 5040,-
 2 pieces

PREMIUM
 ★★★



Universal wedge tension clamp
 for tension and compression testing up to 50 kN, clamping width: up to 15 mm, jaws with pyramid grips, rapid adjustment to a variety of test objects thanks to the flexible clamping width, for further details, see page 42

AE 50K-K
€ 2150,-
 1 piece

NEW

! *ONLY WHILE STOCKS LAST ↓ Price reduction
 All prices listed here are without german legal VAT (19%)

For tension tests > 5000 N



Belt tension clamp
up to 20 kN, open at one end, suitable for tensile force tests with belts or any other soft, flexible, flat materials with a maximum sample thickness of 2,5 mm a test object width up to 22 mm

AD 9250
€ 1350,-
2 pieces



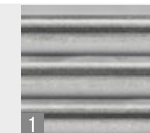
Belt tension clamp
up to 20 kN, suitable for tensile force tests with belts or any other soft, flexible, flat materials with a maximum sample thickness of 2,5 mm a test object width up to 80 mm

AD 9255
€ 1800,-
2 pieces

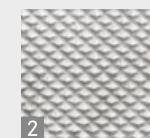


Belt tension clamp
up to 50 kN, suitable for tensile force tests with belts or any other soft, flexible, flat materials with a maximum sample thickness of 2,5 mm a test object width up to 80 mm

AD 9256
€ 3060,-
2 pieces



All premium clamps can be customised and, as an option, are available with the following types of jaw finish: **1** undulating or **2** pyramid-shaped.



For further information, please contact us or have a look on our website at www.sauter.eu

For compression tests > 500 N



Pressure disc
out of aluminium, thickness 10 mm, for compression tests up to 5 kN, diam. 110 mm, outer thread: M12

AFH 06
€ 110,-
2 pieces



Pressure disc
for compression tests up to 5 kN (e. g. plastics), \varnothing 49 mm, inner thread: M10

AC 08
€ 55,-
2 pieces



Stainless steel ball-shaped head
for compression and fracture tests up to 5 kN, (e.g. foam, glass), thread: M6/M10

AC 02
€ 55,-
2 pieces



Small 3-point bending device (steel)
up to 10 kN, central scale 80-0-80 mm. Consisting of one support beam, two support brackets and a curved fin each with permanently fixed radii, radius of the fin 3,2 mm, radii of the support brackets 3,2 + 5 mm, other radii on request. Gap between the two support brackets 4-150 mm. Width of the brackets 30 mm

AD 9300
€ 1530,-
1 piece



Small 3-point bending device (anodised aluminium)
up to 2,5 kN, central scale 80-0-80 mm. Consisting of one support beam, two support brackets and a curved fin each with permanently fixed radii, radius of the fin 3,2 mm, radii of the support brackets 3,2 + 5 mm, other radii on request. Gap between the two support brackets 4-150 mm. Width of the brackets 30 mm

AD 9305
€ 1350,-
1 piece



Small 3-point bending device (steel)
up to 10 kN, central scale 80-0-80 mm. Consisting of one support beam, two support brackets and a curved fin with interchangeable radii rollers, radius of the fin 5 mm, radii of the support brackets 5 + 10 mm, other radii on request. Gap between the two support brackets 4-150 mm. Width of the brackets 30 mm

AD 9310
€ 1530,-
1 piece



Small 3-point bending device (anodised aluminium) up to 2,5 kN, central scale 80-0-80 mm. Consisting of one support beam, two support brackets and a curved fin with interchangeable radii rollers, radius of the fin 5 mm, radii of the support brackets 5 + 10 mm, other radii on request. Gap between the two support brackets 4-150 mm. Width of the brackets 30 mm

AD 9315
€ 1350,-
1 piece



For compression tests > 500 N



Concave force sensor
with optimised radius for the measurement particularly of arms and legs up to 1 kN, thread: M6

AC 45
€ 135,-
1 piece



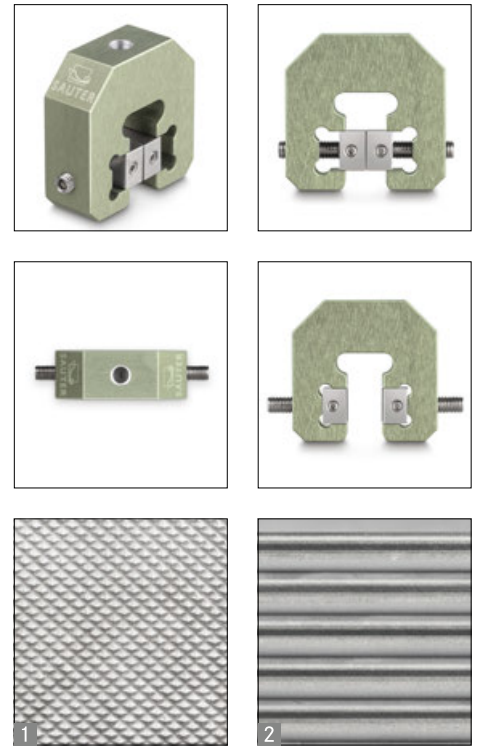
Flat square-shaped sensor
for lateral power sensing of back, chest or arm up to 1 kN, thread: M6

AC 46
€ 90,-
1 piece



Round sensor
to measure particular muscle groups, such as, for example, the shoulder up to 1 kN, inner thread: M6

AC 47
€ 95,-
1 piece



01

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

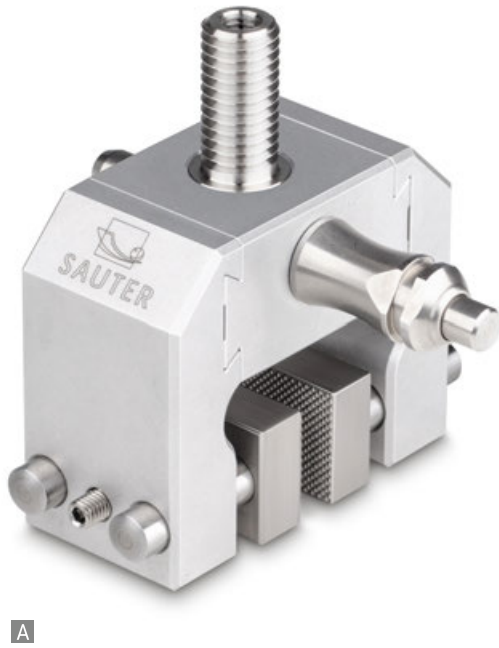
Features

- **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
 - **You can choose between different types of jaws**
 - 1 Jaws with pyramid grip as standard, W×H 32×20 mm
 - 2 Jaws with undulating grip, as well as special designs, available as options, please ask for details
 - The modular construction enables a quick adaptation and cleaning of the clamp
 - By means of the **threaded rods with a hexagon socket**, the clamp can quickly be adapted to someone's own requirements,
- test objects, operation environment, e.g. test stand or force gauge
 - 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
 - For tension and compression testing up to 500 N
 - Overload protection: 150 % of [Max]
 - Scope of supply: 1 clamp with 2 jaws with pyramid-shaped grip
 - For dimensional drawing, see www.sauter.eu

STANDARD



Model	Maximum tensile/compressive force	Range	Scope of supplies	Price excl. of VAT ex works €
SAUTER AE 500	N 500	mm 10	1 piece	350,-



Quickly fittable universal screw tension clamp for tension and compression testing for a force range up to 2 kN

Features

- **High-quality screw tension clamp** in the middle 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 **A** 15-30mm (standard) and from **B** 15-30mm (in combination with the optional, wide central section: SAUTER AE 2K-A01)
- **You can choose between different types of jaws**
 - **5** Jaws with pyramid grip as standard, W×H 32×20 mm
 - **6** Jaws with undulating grip, as well as special designs, available as options, please ask for details

- **1** The modular construction enables a quick adaptation and cleaning of the clamp
- **2** By means of the **practical ball locking pin system**, the clamp can be quickly adapted to ones' own demands, test objects, operational environment, e.g. test stand or force measuring device
- Can be used with all SAUTER force measuring devices or test stand systems
- For tension and compression testing up to 2 kN
- Overload protection: 150 % of [Max]
- Scope of supply: 1 clamp with middle section for widths from 0-15 mm, 1 adapter, 1 locking pin
- For dimensional drawing, see www.sauter.eu

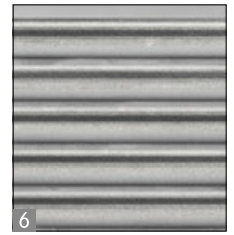
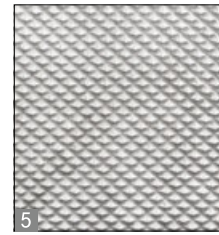
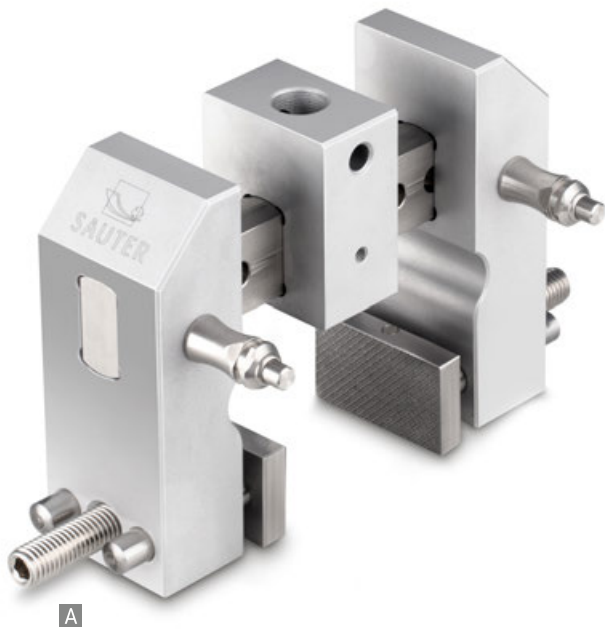
Accessories

- **3 Adapter**, connection pin between clamp and load cell/measuring device as standard, M12 thread, max. load up to 10 kN, can be reordered at any time, SAUTER AE-A01, **€ 30,-**
- **Safety pin**, stainless steel, with spring system to fix adjustable components, as standard, can be reordered at any time, SAUTER AE-A03, **€ 45,-**
- **4** Wide central section for widths from 15-30 mm, SAUTER AE 2K-A01, **€ 75,-**

STANDARD



Model	Maximum tensile/compressive force	Range mm		Scope of supplies	Price excl. of VAT ex works €
		A	B (Option)		
SAUTER AE 2K	N 2000	0-15	15-30	1 piece	610,-



Quickly fittable universal screw tension clamp for tension and compression testing for a force range up to 10 kN

Features

- **High-quality screw tension clamp** with enormous flexibility which can be adapted quickly to a wide variety of test objects
- **Solid version** for high clamp forces
- Maximum clamping width (width between the jaws): 75 mm, triple lockable **A, B, C**, can be finely adjusted using threaded rods
- **You can choose between different types of jaws**
 - **5** Jaws with pyramid grip as standard, W×H 49×30 mm
 - **6** Jaws with undulating grip, as well as special designs, available as options, please ask for details

- The **modular design** enables a quick fitting, expansion and cleaning of the clamp
- **1** By means of the **practical ball locking pin system**, the clamp can be quickly adapted to ones' own demands, test objects, operational environment, e.g. test stand or force measuring device.
- Can be used with all SAUTER force measuring devices or test stand systems
- For tension and compression testing up to 10 kN
- Overload protection: 150 % of [Max]
- Scope of supply: 1 clamp, 1 adapter, 2 safety pins
- For dimensional drawing, see www.sauter.eu

Accessories

- **2 Adapter**, connection pin between clamp and load cell/measuring device as standard, M12 thread, max. load up to 10 kN, can be reordered, SAUTER AE-A01, **€ 30,-**
- **3 Safety pin**, stainless steel, with spring system to fix adjustable components, as standard, can be reordered, SAUTER AE-A05, **€ 45,-**
- **4 Long jaws**, stainless steel, pyramid grip 2 pcs. W×H 100×30 mm, SAUTER AE-A02, **€ 70,-**

STANDARD



Model	Maximum tensile/ compressive force N	Range mm			Scope of supplies	Price excl. of VAT ex works €
		A	B	C		
SAUTER AE 10K	10000	43-75	10-43	0-10	1 piece	790,-

NEW



Quickly adjustable wedge tension clamp for tensile tests for the force range up to 50 kN

Features

- **Quality wedge tension clamp** for safe holding of test specimens up to a force of 50 kN, due to the wedge shape of the clamp the test specimen is clamped automatically with increasing load. Thus, longer and protruding objects can be tested
- Thanks to the **practical ball locking pin system**, the clamp can be quickly adapted to your own requirements, test objects, operating environments, e.g. test bench or measuring device, etc.
- **Solid version** for high clamp forces
- Maximum clamping width (width between the jaws): 15 mm
- **4** Jaws with pyramid grip as standard
- Can be used with SAUTER TVS 50K70 and FH 50K
- For train search up to 50 kN
- Overload safety: 150 % of [Max]
- Scope of delivery: 1 clamp, 1 F18 adapter, 1 locking pin
- Dimensioned drawing see www.sauter.eu
- Net weight approx. 12 kg

Accessories

- **1 Adapter**, connection pin between clamp and load cell/measuring device as standard, F18 thread, max. load up to 50 kN, SAUTER AE-07, **€ 50,-**
- **2 Adapter**, connection pin between clamp and load cell/measuring device, M18 thread, max. load up to 50 kN, SAUTER AE-08, **€ 50,-**
- **3 Safety pin**, stainless steel, with spring system to fix adjustable components, SAUTER AE-06, **€ 55,-**

STANDARD



Model	Maximum tensile/compressive force	Range	Scope of supplies	Price excl. of VAT ex works €
SAUTER AE 50K-K	N 50000	mm 0-15	1 piece	2150,-

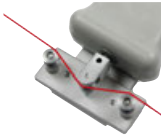
Attachments



Standard attachments kit **AC 43**
for all force gauges FA, FH,
FL and FC, thread: M6
10-500 N
€ 45,-
6 items



Standard attachments kit **AC 430**
for force gauge FK,
thread: M8
10-1000 N
€ 45,-
6 items



Tensiometer attachment **FK-A01**
optional for all FK models from
FK 10 up to FK 250
€ 210,-
1 piece



Tensiometer attachment **FK-A02**
for high-capacity tensile strength
tests up to FK 500 and FK 1K
€ 295,-
1 piece

Special solutions



Stainless steel handle bar **AFH 04**
with rubber grip for safe handling,
AFH 04 suitable for FA, FH, FL
AFK 02 suitable for FK, FC
€ 95,-
1 piece



Stainless steel handle bar **AFH 05**
with rubber grip for FH, FL with
external sensor, thread: M12
€ 55,-
1 piece



Door tester **AFH 03**
Handle (length: 300 mm) and two round
force receptor plates (ø 85 mm) as an
option to FH 1K up to FH 5K for the safe
testing of clamping forces (not approved
to DIN 18650 or similar), up to 5 kN
€ 295,-
1 piece



Tombstone tester **FA 500G**
for testing the stability of tombstones
according to VSG 4.7 up to 500 N on
the basis of FA (included),
Option: ISO calibration
961-161, **€ 135,-**
€ 350,-
1 piece



Tombstone tester **FL 500G**
for testing the stability of tombstones
according to VSG 4.7 on the basis of FL
(included), up to 500 N: FL 500G
Option: DAkkS calibration for
FL 500G: 963-261, **€ 135,-**
€ 670,-
1 piece

Interface cables



RS-232/PC connection cable **FH-A01**
to connect models from the SAUTER FH
range to a PC or a printer
€ 46,-
1 piece



RS-232/PC connection cable **FL-A04**
to connect models from the SAUTER FL,
DA range to a PC or a printer
€ 46,-
1 piece



USB/PC connection cable **FL-A01**
to connect models from the SAUTER FL,
DA range to a PC or a printer
€ 46,-
1 piece



RS-232/PC connection cable **LB-A01**
to connect models from the SAUTER LB
range to a PC
€ 360,-
1 piece



RS-232/USB adapter **AFH 12**
to connect peripheral devices with
USB interface, suitable for all balances
and measuring instruments with RS 232
output, length 0,95m, scope of supply:
adapter, CD with driver
€ 85,-
1 piece



RS-232/PC connection cable **FC-A01**
to connect models from the SAUTER FC
range to a PC or a printer
€ 46,-
1 piece

Other



Carrying strap **AC 35***
for easy and safe transportation
of the tombstone tester during
the testings
€ 9,-
1 piece



Relais module **AFH-02**
serves to transmit output signals of an
FH force measuring device to control
actions directly
€ 340,-
1 piece

! *ONLY WHILE STOCKS LAST

All prices listed here are without german legal VAT (19%)

Force measurement accessories



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

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Quick-Finder

Readout [d] mm	Measuring range [Max] mm	Model SAUTER	Price excl. VAT, ex works €	Page
0,01	200	LB 200-2.	1050,-	45
0,01	225	LD 225	590,-	46
0,01	300	LB 300-2.	1150,-	45
0,01	300	LD 300	630,-	46
0,01	500	LB 500-2.	1250,-	45



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

Features

- **Digital sliding calliper with a superior precision** even at high operation speed
- **Easy mounting** to machine tools, conveyer, test stands etc.
- Zeroing, pre-added and pre-reduced length as well as switching the unit can be done manually
- **Data interface RS-232**, standard
- **Selectable measuring units:** mm, inch

Technical data

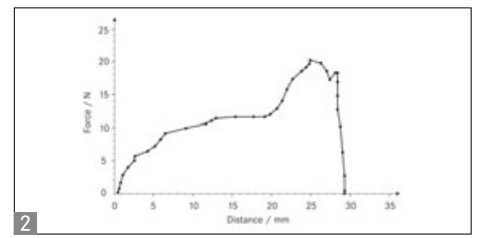
- Dimensions housing W×D×H 77×43×34 mm
- Battery operation, batteries standard (3 V CR2032)

Accessories

- **RS-232/PC connection cable**, SAUTER LB-A01, € 360,-
- **Mounting the length measuring device LB** onto a SAUTER test stand at the factory, SAUTER LB-A02, € 190,-

STANDARD				OPTION	
RS 232	ZERO	BATT	1 DAY	SOFTWARE	+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	1050,-	961-150	120,-
LB 300-2.	300	0,01	vertical	1150,-	961-150	120,-
LB 500-2.	500	0,01	vertical	1250,-	961-150	120,-



Linear potentiometer for length measurement

Features

- This linear displacement sensor, with its lengthways coupling without rods, is specially constructed for accurate recording of distances
- By means of its compact design it is also suitable for high processing speeds
- 1 Can be used in all electrical SAUTER force testing systems to determine distances e.g. within the scope of tensile or pressure testing
- Long service life: on average up to 100×10^6 cycles
- High data collection speed
- High-resolution linear position sensor with 65,000 points over the whole measuring range
- Data transfer box with 16-bit AD converter for high resolution and speed
- 2 You will need the SAUTER AFH LD software to read and evaluate data. This allows clear force-displacement analyses
- Scope of supply: Linear potentiometer, Data transfer box, mains adapter, USB cable

Technical data

- Measuring precision: $\pm 0,5 \%$ of [Max]
- Reproducibility $< 0,03 \text{ mm}$
- Internal measuring frequency: 100 Hz
- Overall dimensions WxDxH
LD 225: 374x68x38 mm
LD 300: 449x68x38 mm
- Cable length approx. 1 m
- Cable length mains adapter approx. 1,2 m
- Net weight approx. 0,7 kg

Accessories

- **Mounting the length measuring device LD** onto a SAUTER test stand at the factory, SAUTER LD-A06, **€ 260,-**
- **Force-displacement data transfer software** with graphical representation of the measuring process, only in combination with SAUTER LD, SAUTER AFH LD, **€ 250,-**

STANDARD



Model	Measuring range	Readout	Direction of measurement	Price excl. of VAT ex works €
SAUTER	[Max] mm	[d] mm		
LD 225	225	0,01	vertical/horizontal	590,-
LD 300	300	0,01	vertical/horizontal	630,-

TIPS FROM THE EXPERTS

In addition to our range of professional measuring technology and test service, we can offer you an extensive range of microscopes and refractometers.

We will offer you reliable quality at fair prices and with the shortest delivery times. Our product specialists will give you professional advice, will work with you to find the right product and will provide comprehensive support after the purchase too.

This ensures a high level of investment security and a good feeling – KERN, the nice balance manufacturer from the wilds of Southern Germany.

For all details on our ranges, please see www.kern-sohn.com or request your own personal catalogues right now: Telephone +49 7433 9933-0



#1 “No compromises with optical device”

KERN offers you a complete, carefully-designed range of biological microscopes, stereo microscopes, metallurgical microscopes, polarisation microscopes, especially flexible, preconfigured stereomicroscope sets, individually configurable stereomicroscope systems as well as microscope cameras and camera software

#2 “High-precision refractive index measurement for laboratories and industry”

Quick and easy determination of measured values, whether on site, in production or in the laboratory, ensuring safety, consistent quality and accelerating processes. This is what KERN's analog and digital refractometers stand for and at an extremely attractive price in consistently high quality.

All microscopes, microscope cameras, refractometers and a variety of practical accessories can be found in the new KERN Catalog of Microscopes & Refractometers 2020.



KERN OBE-12 · 13



*Daniel Junger,
Head of Product Management
Optical devices*



Torque measurement

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

Dynamic rotary force measurement is typically carried out using torque sensors on test objects which are rotated – during the movement.

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

The SAUTER range includes static torque measuring devices for determining the force expended when opening rotary or screw caps of bottles.

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.

Quick-Finder

Measuring range [Max] Nm	Readout [d] Nm	Model SAUTER	Price excl. VAT, ex works €	Page
0.5	0,0001	DB 0.5-4	1590,-	50
1	0,0002	DB 1-4	1590,-	50
1	0,0002	DA 1-4	1790,-	49
5	0,001	DB 5-3	1590,-	50
5	0,001	DA 5-3	1790,-	49
10	0,002	DB 10-3	1590,-	50
10	0,002	DA 10-3	1790,-	49
20	0,005	DB 20-3	1790,-	50
50	0,01	DB 50-2	1790,-	50
100	0,02	DB 100-2	1790,-	50
200	0,05	DB 200-2	1790,-	50
500	0,05	DA 500-2	1790,-	50



Irmgard Russo
Product specialist Torque measurement

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

Features

- **1 Optimised for torque testing** of bottles, jars and other packaging with screw tops with a maximum diameter of 160 mm, e.g. 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 continuous use in tough 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**
- Scope of delivery: four bottle mounts with rubber coat, sturdy carrying case
- **Internal data memory** saves up to 500 measurements. The memory contents can be transferred to the PC using optional software
- **4 USB and RS-232** data interfaces 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**

Technical data

- Selectable units: Nm, lbf-in, kgf-cm, kgf-m, ft-lbf
- Measuring precision: $\pm 0,5\%$ of [Max]
- Measuring frequency: 1000 Hz
- Usable measuring range: 5–100 % of [Max]
- Overload protection: 150 % of [Max]
- Rechargeable battery pack integrated, standard, operating time up to 18 h without backlight, charging time approx. 14 h
- Overall dimensions W×D×H 250×160×100 mm
- Net weight approx. 3 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-1.0, € 90,-
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, € 115,-
- **RS-232/PC connection cable** SAUTER FL-A04, € 46,-
- **USB/PC connection cable** SAUTER FL-A01, € 46,-

STANDARD



OPTION



Model	Measuring range [Max] Nm	Readout [d] Nm	Diameter test object mm	Price excl. of VAT ex works €	Option Factory calibration certificate	
					KERN	€
SAUTER DA 1-4	1	0,0002	10–165	1790,-	961-120	170,-
DA 5-3	5	0,001	10–165	1790,-	961-120	170,-
DA 10-3	10	0,002	10–165	1790,-	961-120	170,-



Convenient way to test the torque of tools

Features

- **1** Particularly suitable for testing torque wrenches, electric hand screwdrivers and cordless screwdrivers
- **2 Torque pick-up system** for dynamic testing of electric screwdrivers (from SAUTER DB 0.5-4 to DB 50-2)
- **Metal housing** for continuous use in tough 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** at SAUTER DB 0.5-4 up to DB 10-3
- **3 Stable mounting plate** for solid fixation at SAUTER DB 20-3 up to DB 500-2
- **USB** and **RS-232** data interfaces included
- Scope of delivery: Torque pick-up, sturdy carry case, mounting plate (models with [Max] ≥ 20 Nm)
- **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-Funktion** 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**

Technical data

- Backlit LCD graphics display
- Units can be selected: Nm, lbf-in, kgf-cm, kgf-m, ft-lbf
- Measuring precision: ± 0,5 % of [Max]
- Measuring frequency: 1000 Hz
- Usable measuring range: 5–100 % of [Max]
- Overload protection: 150 % of [Max]
- Rechargeable battery pack integrated, standard, operating time up to 18 h without backlight, charging time approx. 14 h
- Overall dimensions W×D×H 200×100×50 mm
- Net weight approx. 3 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-1.0, € 90,-
- **Force-time data transfer software** with graphic display of the measurement process, SAUTER AFH FAST, € 115,-
- **RS-232/PC connection cable** SAUTER FL-A04, € 46,-
- **USB/PC connection cable** SAUTER FL-A01, € 46,-

STANDARD



OPTION




Model	Measuring range [Max] Nm	Readout [d] Nm	Tool fitting mm/Inch	Price excl. of VAT ex works €	Option Factory calibration certificate	
					KERN	€
SAUTER DB 0.5-4	0,5	0,0001	20 mm & 3/8"	1590,-	961-120	170,-
DB 1-4	1	0,0002	20 mm & 3/8"	1590,-	961-120	170,-
DB 5-3	5	0,001	20 mm & 3/8"	1590,-	961-120	170,-
DB 10-3	10	0,002	20 mm & 3/8"	1590,-	961-120	170,-
DB 20-3	20	0,005	20 mm & 3/8"	1790,-	961-120	170,-
DB 50-2	50	0,01	20 mm & 3/8"	1790,-	961-120	170,-
DB 100-2	100	0,02	3/8"	1790,-	961-120	170,-
DB 200-2	200	0,05	1/2"	1790,-	961-120	170,-
DB 500-2	500	0,05	3/4"	1790,-	961-120	170,-




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:

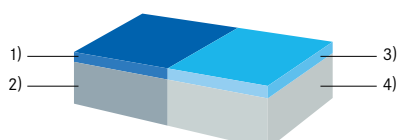
 **Typ F:** Non-magnetic coatings on magnetic metals, such as iron or steel (magnetic induction principle). Here are some sample material combinations:

- 1) [aluminium, chrome, copper, rubber, lacquer] on
- 2) [steel, iron, alloys, magnetic s tainless steel]

 **Typ N:** Insulating 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]

 **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)



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Coating thickness measurement

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Quick-Finder

Readout [d] µm	Measuring range [Max] µm	Model SAUTER	Price excl. VAT, ex works €	Page
0,1 1	100 1000	TB 1000-0.1F.	320,-	52
0,1 1	100 1000	TB 1000-0.1N.	360,-	52
0,1 1	100 1000	TB 1000-0.1FN.	400,-	52
0,1 1	100 1250	TC 1250-0.1F.	360,-	53
0,1 1	100 1250	TC 1250-0.1N.	400,-	53
0,1 1	100 1250	TC 1250-0.1FN.	460,-	53
0,1 1	100 1250	TC 1250-0.1FN-CAR.	470,-	53
0,1 1	100 1250	TE 1250-0.1F.	360,-	54
0,1 1	100 1250	TE 1250-0.1N.	400,-	54
0,1 1	100 1250	TE 1250-0.1FN.	460,-	54
0,1 1	100 1250	TF 1250-0.1FN.	530,-	55
0,1 1	100 1250	TG 1250-0.1FN.	530,-	55
0,1 1	100 2000	TB 2000-0.1F.	290,-	52



04



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

Features

- **External sensor** for difficult-to-access measuring points
- **Base plate and calibration foils** included
- **1 Delivered in a robust carrying case**
- **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 approx. 1 % of the measured value
- **Selectable measuring units:** mm, µm, mil
- **Auto-Power-Off**
- SAUTER TB 2000-0.1F: Specifically designed for the automobile industry, Precision: Standard 5 % 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
- Dimensions W×D×H 69×32×161 mm
- Battery operation, batteries standard 4× 1.5 V AA
- Net weight approx. 0,26 kg

Accessories

- **2 Calibration foils** for increased measuring accuracy (covers the range from 20 up to 2000 µm, with < 3 % tolerance), sim. to illustration, SAUTER ATB-US07, **€ 105,-**
- **3 External sensor, Type F**, SAUTER ATE 01, **€ 105,-**
- **4 External sensor, Type N**, SAUTER ATE 02, **€ 110,-**



Model	Measuring range [Max] µm	Readout [d] µm	Test object	Price excl. of VAT ex works €	Option Factory calibration certificates	
					KERN	€
TB 1000-0.1F.	100 1000	0,1 1	Non-magnetic coatings on iron, steel (F)	320,-	961-110	120,-
TB 2000-0.1F.	100 2000	0,1 1	Non-magnetic coatings on iron, steel (F)	290,-	961-110	120,-
TB 1000-0.1N.	100 1000	0,1 1	Insulating coatings on non-magnetic metals (N)	360,-	961-110	120,-
TB 1000-0.1FN.	100 1000	0,1 1	Combination instrument: F/N	400,-	961-112	170,-



04

Robust measuring device for layer thickness – compact and easy to use

Features

- Ergonomic design for easy handling
- **Data interface RS-232**, included
- **Base plate and calibration foils** included
- **Delivered in a robust carrying case**
- **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 approx. 1 % of the measured value
- **Selectable measuring units:** µm, mil

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 ± 2,5 µm
 - Offset-Accur: 1 % of measured value or ± 1 µm
- 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
- Dimensions W×D×H 65×28×131 mm
- Battery operation, batteries standard 4× 1.5 V AAA
- Net weight approx. 81 g

Accessories

- **Data transfer software**, interface cable included, SAUTER ATC-01, **€ 90,-**
- **Calibration foils** for increased measuring accuracy (covers the range from 20 up to 2000 µm, with < 3 % tolerance), SAUTER ATB-US07, **€ 105,-**

STANDARD

CAL.BLOCK FOCUS RS 232 ZERO BATT 1 DAY

OPTION

SOFTWARE +4 DAYS ISO

Model	Measuring range [Max] µm	Readout [d] µm	Test object	Price excl. of VAT ex works €	Option Factory calibration certificates	
					KERN	€
SAUTER TC 1250-0.1F.	100 1250	0,1 1	Non-magnetic coatings on iron, steel (F)	360,-	961-110	120,-
TC 1250-0.1N.	100 1250	0,1 1	Insulating coatings on non-magnetic metals (N)	400,-	961-110	120,-
TC 1250-0.1FN.	100 1250	0,1 1	Combination instrument: F/N	460,-	961-112	170,-
TC 1250-0.1FN-CAR.	100 1250	0,1 1	Combination instrument: F/N	470,-	961-112	170,-

04



Ergonomic design and external sensor for highest ease of use

Features

- **External sensor** for difficult-to-access measurements
- **Data interface RS-232**, included
- **Base plate and calibration foils** included
- **1 Delivered in a robust carrying case**
- **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 approx. 1 % of the measured value
- **Selectable measuring units:** μm , mil
- **Auto-Power-Off**

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: 1,5 mm
 - Concave: 25 mm
- Type N:
 - Convex: 3 mm
 - Flat: 5 mm
 - Concave: 50 mm
- Minimum thickness of base material: 300 μm
- Dimensions WxDxH 65x28x131 mm
- Battery operation, batteries standard
4x 1.5 V AAA
- Net weight approx. 81 g

Accessories

- **Data transfer software**, interface cable included, SAUTER ATC-01, **€ 90,-**
- **Calibration foils** for increased measuring accuracy (covers the range from 20 up to 2000 μm , with < 3 % tolerance), SAUTER ATB-US07, **€ 105,-**
- **2 External sensor**, TypeF, SAUTER ATE 01, **€ 105,-**
- **3 External sensor**, TypeN, SAUTER ATE 02, **€ 110,-**

STANDARD

OPTION

Model	Measuring range [Max] μm	Readout [d] μm	Test object	Price excl. of VAT ex works €	Option Factory calibration certificates	
					KERN	€
SAUTER TE 1250-0.1F.	100 1250	0,1 1	Non-magnetic coatings on iron, steel (F)	360,-	961-110	120,-
TE 1250-0.1N.	100 1250	0,1 1	Insulating coatings on non-magnetic metals (N)	400,-	961-110	120,-
TE 1250-0.1FN.	100 1250	0,1 1	Combination instrument: F/N	460,-	961-112	170,-

PREMIUM
★ ★ ★

PREMIUM
★ ★ ★



SAUTER TF

SAUTER TG

04

Premium coating thickness gauge for paint coating, lacquer coating 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 approx. 1 % of the measured value
- **Scan mode** for continuous measurement or single point measuring mode
- **Mini Statistics Kit:** displays the measured result, the average value and the max and the min value
- **Internal memory** up to 99 values
- **Selectable measuring units:** μm, mil
- **Base plate and calibration foils** included
- **Data interface RS-232** standard
- **2** Delivered in a robust carrying case, figure shows SAUTER TF

Technical data

- Measuring precision:
 - Standard: 3 % of measured value or ± 2,5 μm
 - Offset-Accur: 1 % of measured value or ± 1 μm
- Minimum thickness of base material: 300 μm
- Dimensions W×D×H 65×35×126 mm
- Battery operation, batteries standard 2× 1.5 V AAA
- Net weight approx. 81 g

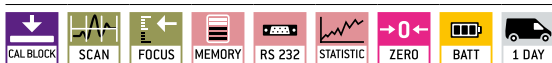
Accessories

- **Data transfer software**, interface cable included, SAUTER ATC-01, € 90,-
- **Calibration foils** for increased measuring accuracy (covers the range from 20 up to 2000 μm, with < 3 % tolerance), SAUTER ATB-US07, € 105,-
- SAUTER TG: **External sensor**, TypeFN, SAUTER ATG 01, € 130,-

SAUTER TG:

- **External sensor** for difficult-to-access measuring points

STANDARD



OPTION



Model	Measuring range [Max] μm	Readout [d] μm	Test object	Smallest sample surface (radius) mm	Price excl. of VAT ex works €	Option Factory calibration certificates	
						KERN	€
SAUTER TF 1250-0.1FN.	100 1250	0,1 1	Combination instrument: F/N	F: Convex: 1,5 Concave: 25	530,-	961-112	170,-
SAUTER TG 1250-0.1FN.	100 1250	0,1 1	Combination instrument: F/N	N: Convex: 3 Concave: 50	530,-	961-112	170,-



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.

Quick-Finder

Readout [d] mm	Measuring range [Max] mm	Model SAUTER	Price excl. VAT, ex works €	Page
0,01	30	TN 30-0.01EE	890,-	61
0,01	60	TN 60-0.01EE	1200,-	61
0,01	80	TN GOLD 80	690,-	59
0,01	80	TU 80-0.01US.	1170,-	63
0,01	80	TN 80-0.01US.	620,-	60
0,01 0,1	100	TO 100-0.01EE	1390,-	62
0,01 0,1	230	TU 230-0.01US.	1170,-	63
0,01 0,1	300	TU 300-0.01US.	1260,-	63
0,01 0,1	230	TN 230-0.01US.	620,-	60
0,01 0,1	300	TN 300-0.01US.	710,-	60
0,1	80	TN 80-0.1US.	560,-	60
0,1	200	TB 200-0.1US.	320,-	57
0,1	200	TB 200-0.1US-RED.	270,-	57
0,1	225	TD 225-0.1US.	370,-	58
0,1	230	TN 230-0.1US.	560,-	60
0,1	300	TN 300-0.1US.	660,-	60



Nadine Wenzler
Product specialist
Material thickness measurement

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Reliable material thickness gauge for daily use

05

Features

- **External sensor** for difficult-to-access measurements
- **Base plate for adjustment** incorporated
- **Auto-Power-Off**
- **Selectable measuring units:** mm, inch
- 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
- **Delivered in a robust carrying case**

Technical data

- Measuring precision: 0,5 % of [Max]
- Dimensions W×D×H 161×69×32 mm
- Battery operation, batteries standard 4× 1.5 V AA
- Net weight approx. 0,3 kg

Accessories

- **External sensor**, 5 MHz, Ø 6 mm, for thin test materials: measuring range (steel) 1-50 mm, SAUTER ATB-US01, **€ 190,-**
- **External sensor**, 5 MHz, Ø 12 mm, for hot test materials: Measuring range (steel) 1-225 mm at temperatures up to approx. 300°C, 4-100 mm at temperatures up to approx. 300 °C, SAUTER ATB-US02, **€ 295,-**
- **External sensor**, 5 MHz, Ø 10 mm, SAUTER ATU-US09, **€ 110,-**
- **External sensor**, 5 MHz, Ø 8 mm, SAUTER ATB-US06, **€ 100,-**
- **Ultrasound contact gel**, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03, **€ 30,-**

STANDARD				OPTION	

Model	Measuring range [Max] mm	Readout [d] mm	Sensor	Sound velocity m/sec	Price excl. of VAT ex works €	Option Factory calibration certificates	
						KERN	€
SAUTER TB 200-0.1US.	1,5-200	0,1	5 MHz Ø 8 mm	500-9000	320,-	961-113	120,-
TB 200-0.1US-RED.	1,5-200	0,1	5 MHz Ø 8 mm	-	270,-	961-113	120,-



1

05

Compact pocket-sized material thickness gauge

Features

- **External sensor** for difficult-to-access measuring points
- **Data interface RS-232** included
- **Base plate for adjustment** incorporated
- **Selectable measuring units:** mm, inch
- **Delivered in a robust carrying case**

Technical data

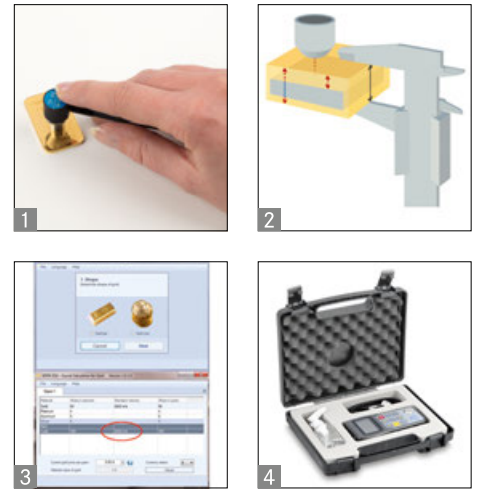
- Measuring precision: 0,5 % of [Max] + 0,1 mm
- Dimensions W×D×H 120×65×30 mm
- Battery operation, batteries standard 4× 1.5 V AAA, AUTO-OFF function to preserve batteries
- Net weight approx. 0,164 kg

Accessories

- **Data transfer software**, interface cable included, SAUTER ATC-01, **€ 90,-**
- **External sensor**, 5 MHz, ø 6 mm, for thin test materials: Measuring range (steel) 1-50 mm, SAUTER ATB-US01, **€ 190,-**
- **External sensor**, 5 MHz, ø 12 mm, for hot test materials: Measuring range (steel) 1-225 mm at normal temperatures, 4-100 mm at temperatures of up to 300 °C, SAUTER ATB-US02, **€ 295,-**
- **External sensor**, 5 MHz, ø 8 mm, SAUTER ATB-US06, **€ 100,-**
- **External sensor**, 5 MHz, ø 10 mm, SAUTER ATU-US09, **€ 110,-**
- **External sensor**, 5 MHz, ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, **€ 110,-**
- **Ultrasound contact gel**, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03, **€ 30,-**

STANDARD				OPTION	
CALBLOCK	RS 232	BATT	1 DAY	SOFTWARE	+4 DAYS

Model	Measuring range	Readout	Sensor	Sound velocity	Price excl. of VAT ex works €	Option Factory calibration certificates	
						KERN	€
SAUTER TD 225-0.1US.	[Max] mm 1,2-225	[d] mm 0,1	5 MHz ø 8 mm	m/sec 500-9000	370,-	961-113	120,-



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

05

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
- **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
- Selectable measuring units: mm, inch

- **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. The price of gold is polled on line continuously
- It is the only 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** incorporated
- **Data interface USB**, standard
- **4** Delivered in a robust carrying case

Technical data

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

Accessories

- **Ultrasound contact gel**, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03, **€ 30,-**
- **External sensor**, 7 MHz, Ø 6 mm, for thin test materials: Measuring range 0,75–80 mm (steel), SAUTER ATU-US02, **€ 110,-**



Model	Measuring range	Readout	Sensor	Sound velocity	Price excl. of VAT ex works €	Option Factory calibration certificates	
						KERN	€
SAUTER TN GOLD 80	[Max] mm 0,75–80	[d] mm 0,01	7 MHz 6 mm	m/sec 1000–9999	690,-	961-113	120,-



05

Portable measuring device for ultrasonic material thickness testing

Features

- **External sensor**
- **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
- **Delivered in a robust carrying case**

Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Dimensions W×D×H 74×32×150 mm
- Battery operation, batteries standard 2× 1.5 V AA, AUTO-OFF function to preserve batteries
- Net weight approx. 245 g

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-1.0, **€ 90,-**
- **Data transfer software**, USB interface cable included, SAUTER ATU-04, **€ 110,-**
- **External sensor**, 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, **€ 215,-**

- **External sensor**, 7 MHz, ø 6 mm, for thin test materials: Measuring range 0,75–80 mm (steel), SAUTER ATU-US02, **€ 110,-**
- **External sensor**, 5 MHz, ø 6 mm, SAUTER ATB-US01, **€ 190,-**
- **External sensor**, 5 MHz, ø 10 mm, SAUTER ATU-US09, **€ 110,-**
- **External sensor**, 5 MHz, ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, **€ 110,-**
- **External sensor**, 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, **€ 295,-**
- **Ultrasound contact gel**, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03, **€ 30,-**

STANDARD						OPTION	
CAL.BLOCK	MEMORY	USB	ZERO	BATT	1 DAY	SOFTWARE	+4 DAYS

Model	Measuring range	Readout	Sensor	Sound velocity	Price excl. of VAT ex works €	Option Factory calibration certificates	
						KERN	€
SAUTER	[Max] mm	[d] mm		m/sec			
TN 80-0.1US.	0,75–80	0,1	7 MHz ø 6 mm	1000–9999	560,-	961-113	120,-
TN 230-0.1US.	1,2–230	0,1	5 MHz ø 10 mm	1000–9999	560,-	961-113	120,-
TN 300-0.1US.	3–300	0,1	2,5 MHz ø 14 mm	1000–9999	660,-	961-113	120,-
TN 80-0.01US.	0,75–80	0,01	7 MHz ø 6 mm	1000–9999	620,-	961-113	120,-
TN 230-0.01US.	1,2–200 230	0,01 0,1	5 MHz ø 10 mm	1000–9999	620,-	961-113	120,-
TN 300-0.01US.	3–200 300	0,01 0,1	2,5 MHz ø 14 mm	1000–9999	710,-	961-113	120,-

PREMIUM
★★★



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

05

Features

- **External sensor**
- **Data interface USB**, 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 (ATU-US12, see accessory)
- **Delivered in a robust carrying case**

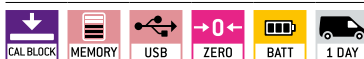
Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Dimensions W×D×H 74×32×150 mm
- Battery operation, batteries standard 2× 1.5 V AA, AUTO-OFF function to preserve batteries
- Net weight approx. 245 g
- Maximum thickness of coating (paints, lacquers or similar coatings which shall be eliminated): 3 mm

Accessories

- **Data transfer software**, USB interface cable included, SAUTER ATU-04, € 110,-
- **External sensor**, 5 MHz, Ø 10 mm, for echo-echo measuring, SAUTER ATU-US12, € 310,-
- **Ultrasound contact gel**, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03, € 30,-
Note: All following Pulse-Echo sensors can only be used in Pulse-Echo mode, not in Echo-Echo mode
- **External sensor (Pulse-Echo)**, 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, € 215,-
- **External sensor (Pulse-Echo)**, 7 MHz, Ø 6 mm, for thin test materials: Measuring range 0,75–80 mm (steel), SAUTER ATU-US02, € 110,-
- **External sensor (Pulse-Echo)**, 5 MHz, Ø 10 mm, SAUTER ATU-US09, € 110,-
- **External sensor (Pulse-Echo)**, 5 MHz, Ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, € 110,-

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 certificates	
							KERN	€
SAUTER TN 30-0.01EE	3–30	0,65–600	0,01	5 MHz Ø 10 mm	1000–9999	890,-	961-113	120,-
TN 60-0.01EE	3–60	0,65–600	0,01	5 MHz Ø 10 mm	1000–9999	1200,-	961-113	120,-

NEW



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

Features

- **Premium** thickness gauge device using ultrasonic technology: New **NT measuring technology** generation with automatic sensor adjustment (V-path correction for improved accuracy and more rapid display speed)
- **Dual measuring modes** to determine material thickness:
 - Pulse-Echo mode (up to 600 mm)
 - Echo-Echo mode (up to 100 mm)
- **Echo-Echo measurements:** Determining the actual thickness of materials regardless of any existing coating, such as, for example, paint or an anti-corrosion coating on the base metal. 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
- 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
- **Premium display** with colour TFT display (320×240) with adjustable brightness so that it can be read easily in any environmental conditions
- Large **internal data memory** for up to 100 data sets each with 100 individual values
- **Energy-saving** operation with 2× AA batteries and an operating time of at least 100 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
- **Adjustment options:** 0-point adjustment, 1-point adjustment, 2-point adjustment by measuring material of different thicknesses
- **3 different measurement modes** with 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:** GB, DE, FR, ES, IT
- Date and time can be adjusted. It is possible to store the measurement values with a time stamp

- Standard measuring probe ATU-US12 included with delivery
- **3 Delivered in a robust carrying case**

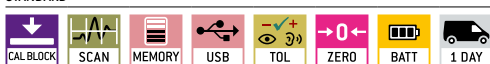
Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Dimensions W×D×H 70×31×130 mm
- Battery operation, batteries standard 2× 1.5 V AA, AUTO-OFF function to preserve batteries
- Net weight approx. 245 g
- Maximum thickness of coating (paints, lacquers or similar coatings which shall be eliminated): 3 mm

Accessories

- **External sensor**, 5 MHz, Ø 10 mm, for echo-echo measuring, SAUTER ATU-US12, **€ 310,-**
- **Ultrasound contact gel**, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03, **€ 30,-**
- Further sensors on request
- **Note:** Further details and plenty of further accessories see www.sauter.eu

STANDARD



OPTION



Model	Measuring range Echo-Echo	Measuring range Pulse-Echo	Readout [d] mm	Speed of sound m/s	Sensor	Price excl. of VAT ex works €	Option Factory calibration certificates	
							KERN	€
SAUTER TO 100-0.01EE	mm 3-100	mm 0,7-600	0,1/0,01	100-19999	5 MHz Ø 10 mm	1390,-	961-113	120,-



Premium ultrasonic thickness gauge

Features

- **External sensor** for difficult-to-access measurements
- **Base plate for adjustment** included
- **1 Data interface RS-232**
- **2 Delivered in a robust carrying case**
- **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

Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Dimensions W×D×H 76×32×132 mm
- Battery operation, batteries standard 2× 1.5 V AA
- Net weight approx. 345 g

Accessories

- **Data transfer software**, interface cable included, SAUTER ATU-04TU, **€ 110,-**
- **External sensor**, 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, **€ 215,-**
- **External sensor**, 7 MHz, ø 6 mm, for thin test materials: Measuring range 0,75–80 mm (steel), SAUTER ATU-US02, **€ 110,-**
- **External sensor**, 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, **€ 295,-**
- **External sensor**, 5 MHz, ø 10 mm, SAUTER ATU-US09, **€ 110,-**
- **External sensor**, 5 MHz, ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, **€ 110,-**
- **Ultrasound contact gel**, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03, **€ 30,-**

STANDARD



OPTION



Model	Measuring range [Max] mm	Readout [d] mm	Sensor	Sound velocity m/sec	Price excl. of VAT ex works €	Option Factory calibration certificates	
						KERN	€
SAUTER TU 80-0.01US.	0,75–80	0,01	7 MHz ø 6 mm	1000–9999	1170,-	961-113	120,-
TU 230-0.01US.	1,2–200 230	0,01 0,1	5 MHz ø 10 mm	1000–9999	1170,-	961-113	120,-
TU 300-0.01US.	3–200 300	0,01 0,1	2,5 MHz ø 14 mm	1000–9999	1260,-	961-113	120,-



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 7619-1:2012.

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 [d] HS	Measuring range [Max] HS	Hardness type	Model SAUTER	Price excl. VAT, ex works €	Page
1,0 HA	100 HA	A	HBA 100-0.	105,-	65
1,0 HA0	100 HA0	A0	HBO 100-0.	135,-	65
1,0 HD	100 HD	D	HBD 100-0.	140,-	65
0,1 HA	100 HA	A	HDA 100-1.	375,-	66
0,1 H0	100 H0	0	HDO 100-1.	375,-	66
0,1 HD	100 HD	D	HDD 100-1.	375,-	66
-	-	A/A0	TI-AC.	240,-	67
-	-	D	TI-D.	300,-	67
-	-	A/0	TI-ACL	300,-	67
-	-	D	TI-DL	360,-	67



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 7619-1 are not possible because of very narrow standard tolerances
- **Shore A** rubber, elastomers, neoprene, silicone, vinyl, soft 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), TI-D. (for Shore D)
- Delivery in a plastic box
- The measuring tips are not interchangeable

Technical data

- Measuring precision: 3 % of [Max]
- Dimensions W×D×H 60×25×115 mm
- Net weight approx. 160 g
- Screws to screw on to the TI: M7 fine thread
- Material thickness of the sample, min. 4 mm

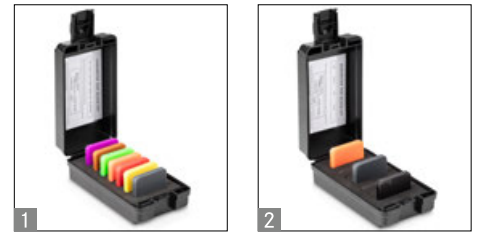
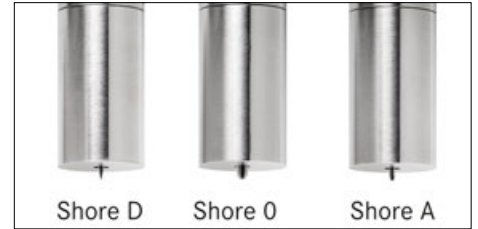
Accessories

- Shore comparison plates for testing and calibration of Shore hardness testing devices. By regular comparison, the measuring accuracy increases significantly.
- **7 hardness comparison plates** for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, **€ 95,-**
 - **3 hardness comparison plates** for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, **€ 75,-**
 - **Factory calibration of the comparison plates**, SAUTER 961-170, **€ 95,-**
 - **Test stand** for HBA and HB0, SAUTER TI-AC., **€ 240,-**
 - **Test stand** for HBD, SAUTER TI-D., **€ 300,-**

STANDARD



Model	Hardness type	Measuring range	Readout	Price excl. of VAT ex works €
		[Max] HS	[d] HS	
SAUTER				
HBA 100-0.	Shore A	100 HA	1,0 HA	105,-
HB0 100-0.	Shore A0	100 HA0	1,0 HA0	135,-
HBD 100-0.	Shore D	100 HD	1,0 HD	140,-



Professional Shore hardness tester

Features

- **Shore A, 0 and D** to measure the hardness of plastics through penetration measurement
- **Shore A** rubber, elastomers, neoprene, silicone, vinyl, soft plastics, felt, leather and similar material
- **Shore 0** foam, sponge
- **Shore D** plastics, formica, epoxides, plexiglass etc.
- **Delivered in a robust carrying case**
- Particularly recommended for internal comparison measurement. Standard calibrations e. g. to DIN 7619-1 are not possible because of very narrow standard tolerances
- Can be attached to the test stands TI-ACL (for Shore A and 0), TI-DL (for Shore D) to improve measuring uncertainty
- Large display with backlight
- Selectable: AUTO-OFF function or continuous operation, battery level indicator

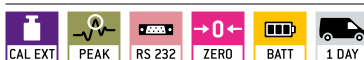
Technical data

- Tolerance: 1 % of [Max]
- Overall dimensions W×D×H 65×38×162 mm
- Net weight approx. 173 g
- Transfer via RS-232 to the PC, e.g. to Microsoft Excel®
- Battery operation, batteries standard 2× 1.5 V AAA
- Material thickness of the sample, min. 4 mm

Accessories

- **Data transfer software**, interface cable included, SAUTER ATC-01, € 90,-
- **7 hardness comparison plates** for Shore A, tolerance up to ± 2 HA, SAUTER AHBA-01, € 95,-
- **3 hardness comparison plates** for Shore D, tolerance up to ± 2 HD, SAUTER AHBD-01, € 75,-
- **Factory calibration of the comparison plates**, SAUTER 961-170, € 95,-
- **Test stand** for HDA and HD0, SAUTER TI-ACL, € 270,-
- **Test stand** for HDD, see page 67, SAUTER TI-DL, € 360,-

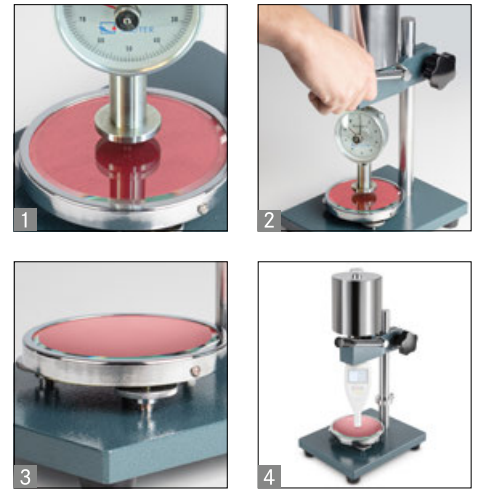
STANDARD



OPTION



Model	Hardness type	Measuring range		Readout	Price excl. of VAT ex works €
		[Max] HS	[d] HS		
SAUTER					
HDA 100-1.	Shore A	100 HA	0,1 HA		375,-
HD0 100-1.	Shore 0	100 HO	0,1 HO		375,-
HDD 100-1.	Shore D	100 HD	0,1 HD		375,-



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

Features

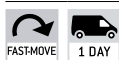
- For Shore hardness testing of plastics, leather etc.
- **1 Glass plate:** high measurement accuracy by means of superior hardness of the glass plate
- **2 Mechanical construction:** Robust design for precise measuring
- **3 Level adjustment:** For the precise levelling of the base plate, e.g. for the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

- Operation:
 1. The SAUTER hardness testing device HB or 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 table)
- The accuracy of the displayed result is approx. 25 % higher than in a manual operated test

Technical data

- Stroke length: 15 mm
- Maximum test object height: 63 mm
- Base plate \varnothing 75 mm
- Overall dimensions WxDxH
 - TI-AC: 150x110x330 mm
 - TI-D: 150x110x400 mm
 - TI-ACL: 150x110x380 mm
 - TI-DL: 150x110x450 mm

STANDARD



Model	Suitable for	Length of column	Poids de contrôle	Net weight approx.	Price excl. of VAT ex works €
		mm	kg	kg	
SAUTER					
TI-AC.	HBA, HBO	245	1	4,5	240,-
TI-D.	HBD	245	5	8,5	300,-
TI-ACL	HDA, HDO	300	1	4,5	300,-
TI-DL	HDD	300	5	8,5	360,-



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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Quick-Finder

Readout	Sensor	Model	Price excl. VAT, ex works €	Page
[d] HL		SAUTER		
1	D	HK-D.	1250,-	69
1	D	HK-DB	1281,-	69
1	D	HMM.	1090,-	70
1	D	HMO.	1770,-	72
1	D	HN-D.	1290,-	71
1	D	HMM-NP	870,-	70



Premium Leeb hardness tester – now also with hardness comparison block included

Features

- Measures all metallic samples (> 3 kg, thickness > 8 mm)
- **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
- **2 Delivered in a sturdy carrying case**
- **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 (limit-setting function):** Upper and lower limiting can be programmed individually. The process is supported by an audible and visual signal.
- **Matrix display:** Backlit multi-function display for all relevant functions at a glance
- **Robust metal housing**

Technical data

- Measuring precision: ± 1 % at 800 HLD
- Minimum sample radius (concave/convex): 50 mm (with support ring: 10 mm)
- Minimum sample material thickness: 8 mm
- The lowest weight of the test item on solid support unit: 3 kg
- Dimensions W×D×H 132×82×31 mm
- Permissible ambient temperature -10 °C/40 °C
- Battery operation, batteries not standard 2× 1.5 V AA, operating time up to 200 h
- Net weight approx. 0,45 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-1.0, **€ 90,-**
- **Data transfer software**, KERN SCD-4.0, **€ 150,-**
- **Support rings** for secure positioning, SAUTER AHMR 01, **€ 320,-**
- **Impact body** Type D, net weight approx. 5,5 g, hardness ≥ 1600 HV, tungsten carbide, Impact ball Ø 3 mm, in accordance with the standard ASTM A956-02, SAUTER AHMO D01, **€ 115,-**
- **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, **€ 640,-**
- **External impact sensor** Type D, SAUTER AHMR D, **€ 290,-**
- **External impact sensor** Type D+15. Slim front section for holes, grooves or re-entrant surfaces, SAUTER AHMR D+15, **€ 640,-**
- **External impact sensor** Type DL, for very narrow surfaces (Ø 4,5 mm), SAUTER AHMR DL, **€ 1590,-**
- **External impact sensor** Type G. High energy sensor: 900 % impact energy compared to type D, SAUTER AHMR G, **€ 1590,-**
- **Connection cable impact sensor** SAUTER HMO-A04, **€ 95,-**
- **Test block** Type D/DC, Ø 90 mm (± 1 mm), net weight < 3 kg, hardness range 790 ± 40 HL, SAUTER AHMO D02, **€ 190,-** 630 ± 40 HL, SAUTER AHMO D03, **€ 190,-** 530 ± 40 HL, SAUTER AHMO D04, **€ 190,-**
- **Factory calibration certificates** for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132, **€ 120,-**

STANDARD



OPTION



Model	Sensor	Measuring range	Readout	Test block	Price excl. of VAT ex works €	Option Factory calibration certificates	
						KERN	€
SAUTER HK-D.	Typ D	[Max] HL 170-960	[d] HL 1	Typ D/DC approx. 800 HL not standard	1250,-	961-131	120,-
SAUTER HK-DB	Typ D	[Max] HL 170-960	[d] HL 1	Typ D/DC approx. 800 HL standard	1281,- ↓	961-131	120,-

↓ Price reduction



Advanced features for demanding applications

Features

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

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

Technical data

- Measuring precision: 1 % at 800 HLD (± 6 HLD)
- Measuring range tensile strength: 375–2639 MPa (steel)
- Min. sample weight on a solid and stable support: 3 kg
- Minimum sample material thickness: 8 mm
- Minimum sample radius (concave/convex): 50 mm (with support ring: 10 mm)
- Dimensions W×D×H 80×30×150 mm
- SAUTER HMM.: External mains adaptor for printer, as standard
- Ready for use: Batteries included, 3× 1.5 V AAA, block, operating time up to 30 h, AUTO-OFF function to preserve battery life
- Net weight approx. 0,2 kg

Accessories

- Connection cable, without impact sensor, SAUTER HMM-A02, € 105,-
- **5 Attachment rings** for secure positioning, SAUTER AHMR 01, € 320,-
- **4 Impact body**, SAUTER AHMO D01, € 115,-
- **Test block** Type D/DC, Ø 90 mm (± 1 mm), net weight < 3 kg, hardness range 790 ± 40 HL, SAUTER AHMO D02, € 190,- 630 ± 40 HL, SAUTER AHMO D03, € 190,- 530 ± 40 HL, SAUTER AHMO D04, € 190,-
- **Paper roll**, 1 piece, SAUTER ATU-US11, € 15,-
- **Factory calibration certificates** for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132, € 120,-



Model	Sensor	Measuring range [Max] HL	Readout [d] HL	Price excl. of VAT ex works €	Option Factory calibration certificates	
					KERN	€
SAUTER HMM.	Typ D	170-960	1	1090,-	961-131	120,-
HMM-NP	Typ D	170-960	1	870,-	961-131	120,-



“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:** Rockwell (B & C), Vickers (HV), Brinell (HB), Leeb (HL)
- **Hardness comparison block** not included
- **Internal data memory** for up to 500 measurements with date and time
- **USB data output:** Easy to install on any PC
- **1 Delivered in a robust carrying case**

Technical data

- Measurement uncertainty ± 4 HLD
- Dimensions W×D×H 35×25×145 mm
- Operation by rechargeable battery, standard, operating time without backlight 16 h, charging time 3 h
- Mains adapter, external, standard
- Net weight approx. 0,07 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-1.0, **€ 90,-**
- **2 Test block** Type D/DC, $\varnothing 90$ mm (± 1 mm), Net weight < 3 kg, hardness range 790 \pm 40 HL, SAUTER AHMO D02, **€ 190,-** 630 \pm 40 HL, SAUTER AHMO D03, **€ 190,-** 530 \pm 40 HL, SAUTER AHMO D04, **€ 190,-**
- **Factory calibration certificates** for SAUTER AHMO D02, AHMO D03, AHMO D04, SAUTER 961-132, **€ 120,-**

07

STANDARD



OPTION



Model	Sensor	Measuring range	Readout	Price excl. of VAT ex works €	Option Factory calibration certificates	
					KERN	€
SAUTER HN-D.	Typ D	[Max] HLD 170-960	[d] HL 1	1290,-	961-131	120,-



Advanced features for professional applications

Features

- **Innovative touchscreen**
- **Automatic recognition of the impact (rebound) sensor** connected to the HMO.
- **Mobility:** In comparison with stationary table-top devices and hardness testing devices with internal sensor, 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 interface** for connection to the printer and charging the batteries
- **1 Standard block for calibration** included
- **Internal memory** 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:** Rockwell (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

- Measuring precision: 1 % at 800 HLD (± 6 HLD)
- Measuring range tensile strength: 375–2639 MPa (steel)
- Min. sample weight on a solid and stable support:
Sensor D + DC: 3 kg
Sensor G: 15 kg
- Minimum sample material thickness:
Sensor D + DC: 8 mm
Sensor G: 10 mm
- Minimum sample radius (concave/convex): 50 mm (with support ring: 10 mm)
- Dimensions WxDxH 83x24x135 mm
- Rechargeable battery pack internal, operating time up to 50 h
- Mains adapter included
- Net weight approx. 228 g

Accessories

- **Operation by rechargeable battery pack**, operating time up to 50 h, SAUTER HMO-A03, **€ 75,-**
- **External impact sensor** Type D, as standard, can be reordered, SAUTER AHMO D, **€ 340,-**
- **3 External impact sensor** Type DC. Short impact sensor for tests in holes or hollowed objects, SAUTER AHMO DC, **€ 490,-**
- **4 External impact sensor** Type G. High energy sensor: 900 % impact energy compared to type D, SAUTER AHMO G, **€ 990,-**
- **Support rings** for bended testing samples available on request, SAUTER AHMR 01, **€ 320,-**
- **5 Impact body**, SAUTER AHMO D01, **€ 115,-**
- **Connection cable impact sensor**, SAUTER HMO-A04, **€ 95,-**
- **Test block** Type D/DC, 90x50 mm (± 1 mm), net weight < 3 kg, hardness range 790 \pm 40 HL, SAUTER AHMO D02, **€ 190,-**
630 \pm 40 HL, SAUTER AHMO D03, **€ 190,-**
530 \pm 40 HL, SAUTER AHMO D04, **€ 190,-**
- **Paper roll**, 1 piece, SAUTER ATU-US11, **€ 15,-**

STANDARD



OPTION



Model	Sensor	Measuring range	Readout	Price excl. of VAT ex works €	Option Factory calibration certificates	
					KERN	€
SAUTER HMO.	Typ D	[Max] HL 170-960	[d] HL 1	1770,-	961-131	120,-



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.



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Hardness testing of metals (UCI)

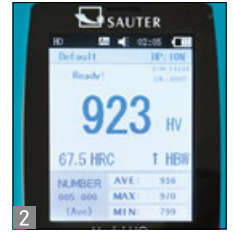
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Quick-Finder

Model	Hardness scale	Price excl. VAT, ex works €	Page
SAUTER			
HO 1K	HV 1	4500,-	74
HO 2K	HV 2	4500,-	74
HO 5K	HV 5	4500,-	74
HO 10K	HV10	4500,-	74
HO 3M	HV 0,3	8300,-	76
HO 5M	HV 0,5	8300,-	76
HO 8M	HV 0,8	8300,-	76
HO 10M	HV1	8300,-	76



PREMIUM
★ ★ ★



Premium UCI hardness testing device for Rockwell, Brinell and Vickers

Features

- **Application:** This ultrasound hardness testing device is ideally suited for mobile hardness testing, where the main emphasis is on obtaining rapid and precise results.
- **Principle:** The SAUTER HO measures by using a vibrating rod which vibrates at ultrasonic frequency and is pressed onto the sample at a defined test force. At the lower end there is a Vickers indenter. Its resonant frequency increases as soon as an indentation is created when it comes into contact with the sample. Through appropriate adjustment of the device, the resulting change in resonant frequency is matched with the corresponding Vickers hardness.
- **Examples:** The 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:** Means that the testing is almost nondestructive, small penetrations means that the testing is less destructive
- **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 on the weight of the test object can be widely omitted
- **Standards:** The device meets following technical standards: DIN 50159-1-2008; ASTM-A1038-2005; JB/T9377-2013
- **Measurement data memory** saves up to 1000 measurement groups each with 20 individual values
- **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
- **Calibration:** The device can be set to both standard hardness test blocks and also to up to 20 reference calibration values. When doing this it is possible to measure different materials quickly, without having to re-adjust the device to the individual materials
- **Scope of delivery:** Standard block for calibration, USB cable, Display unit, UCI sensor unit, transport case, software to transfer the saved data to the PC, accessories

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
- Measuring precision: ± 3 HV; ± 1,5 HR; ± 3 % HB
- Measuring time: adjustable from 1-5 sec.
- Display units: HRC, HV, HBS, HBW, HK, HRA, HRD, HR15N, HR30N, HR45N, HS, HRF, HR15T, HR30T, HR45T, HRB.
- Rechargeable battery integrated, standard, operating time up to 12 h without backlight, charging time approx. 8 h
- Minimum weight of the test object: 300 g for direct measurement with the sensor (included); 100 g with support ring (optional)
- Minimum thickness of the test object: 2 mm
- Minimum dimensions the test surface size around: approx. 5×5 mm (recommended)
- Overall dimensions W×D×H 160×83×28 mm
- Permissible ambient temperature -10 °C/40 °C
- Net weight approx. 0,93 kg

Mobile ultrasound hardness testing device SAUTER HO



Accessories

- **External impact sensor** Type D, Leeb standard sensor, can be reordered at any time, SAUTER AHMO D, € 340,-
- **3 Support ring, flat**, SAUTER HO-A04, € 450,-
- **4 Support ring, small cylinder**, \varnothing 8-20 mm, SAUTER HO-A05, € 450,-
- **5 Support ring, large cylinder**, \varnothing 20-80 mm, SAUTER HO-A06, € 460,-
- **6 Deep-hole protective cover**, SAUTER HO-A07, € 235,-
- **7 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, \varnothing 90 mm, including calibration certificate, each, € 395,-
 28 to 35 HRC: SAUTER HO-A09
 38 to 43 HRC: SAUTER HO-A10
 48 to 53 HRC: SAUTER HO-A11
 58 to 63 HRC: SAUTER HO-A12
- **8 Test stand** for repeatable movements during testing. In this way you can avoid errors which could occur with manual handling of the sensor. This ensures even more stable measurements and more precise measuring results. Smooth-running mechanical system, stroke length 34 mm, maximum height of the test object within the test bench 240 mm, swivel probe device for measurements outside the base plate, very robust construction, net weight approx. 9 kg, SAUTER HO-A08, € 1490,-

STANDARD



OPTION



Model	Hardness scale	Min. weight of test item	Min. thickness of test item	Price excl. of VAT ex works €	Option Factory calibration certificates	
					KERN	€
SAUTER		g	mm			
HO 1K	HV 1	300	2	4500,-	961-270	260,-
HO 2K	HV 2	300	2	4500,-	961-270	260,-
HO 5K	HV 5	300	2	4500,-	961-270	260,-
HO 10K	HV10	300	2	4500,-	961-270	260,-



Premium UCI hardness testing device for Rockwell, Brinell and Vickers with a motorised sensor for automated measurement processes

Features

- This range has **identical product features as SAUTER HO range**, but is fitted with a **motorised sensor for automated measurement processes** instead of the manual probe
- **1** The motorised sensor has got a magnetic support ring, which fixes the sensor on the test object in a safe way. For non-magnetic test items, the motorised sensor can be easily fixed by hand using an ergonomically-shaped support ring
- A motor inside the probe independently takes on the process of pressing the indenter into the test item, which helps to minimise incorrect use by the operator
- **2 One-button function:** the measurement process can be started with a single keypress. By this particularly easy operation, the user can carry out most demanding hardness tests without a longer training period.
- Virtually non-destructive testing: the resulting penetrations can only be seen under a microscope
- **Short duration of measurement:** only 2 seconds
- **Higher accuracy and repeatability** than with manual probes
- **Particularly suitable for small, thin parts** thanks to the automated testing procedure
- **Designed for parts with hardened surfaces**, because of the low penetration depth of the indenter
- Scope of supply: 1 display device, 1 motorised sensor, 1 transport case, 1 connection cable sensor/display device, 1 USB cable, 1 hardness comparison plate, 1 power supply (EU), 1 Allen key, software to transfer the saved data to a PC

Accessories

- **3 Test stand** for round, flat objects for use with these motorised sensors: HO-A15 to -A18. This test stand is ideal for hardness testing of round objects such as **4** pipes or rods up from \varnothing 80 mm. Its lightweight aluminium construction enables a fatigue-free operation. The precise adjustment of the sensor position and the use of motorised sensors enables a very fast working procedure. Net weight approx. 1.6 kg, overall dimensions WxDxH 205x142x284mm, SAUTER HO-A19, **€ 1900,-**
- **Motorised sensor** as an accessory for models in the SAUTER HO range
 Test force 0,3 N, HO-A15, **€ 6900,-**
 Test force 0,5 N, HO-A16, **€ 6900,-**
 Test force 0,8 N, HO-A17, **€ 6900,-**
 Test force 1 N, HO-A18, **€ 6900,-**
- **Display device**, as standard, can be reordered, SAUTER HO-A03, **€ 1150,-**
- **5 Transport case with standard accessories** for operation with a motorised sensor, as standard, can be reordered, SAUTER HO-A21, **€ 460,-**

STANDARD

CALBLOCK MEMORY USB STATISTIC SOFTWARE UNIT TOL ACCU 230 V 1 DAY

OPTION

ISO +4 DAYS

Model	Hardness scale	Test force	Attachment ring \varnothing mm	Sensor length mm	Min. weight of test item g	Min. thickness of test item mm	Price excl. of VAT ex works €	Option	
								Factory calibration certificates	
								KERN	€
SAUTER HO 3M	HV 0,3	0,3	46	198	300	2	8300,-	961-270	260,-
HO 5M	HV 0,5	0,5	46	198	300	2	8300,-	961-270	260,-
HO 8M	HV 0,8	0,8	46	198	300	2	8300,-	961-270	260,-
HO 10M	HV 1	1	46	198	300	2	8300,-	961-270	260,-



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.

Furthermore we can offer a practical carrying case, for a safe transport of all devices (MPS-A07, € 115,- please refer to www.sauter.eu for more details).

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

Nadine Wenzler
Product specialist
Occupational safety/Environment

Tel. +49 7433 9933-205
Fax +49 7433 9933-29205
nadine.wenzler@kern-sohn.com

Quick-Finder

Readout	Measuring range	Model	Price excl. VAT, ex works €	P.
[d] lx/dB	[Max] lx/dB	SAUTER		
0,1 1 10 100 lx	200 2000 20000 200000 lx	SO 200K.	85,-	78
0,1 1 10 100 lx	200 2000 20000 200000 lx	SP 200K	95,-	79
0,1 dB	130 dB	SU 130.	110,-	80
0,1 dB	134 dB	SW 1000	1750,-	81
0,1 dB	136 dB	SW 2000	960,-	81



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
- **Sturdy protective cover** for the photo sensor
- **Increased service life:** Impact protection by means of a protective casing
- **Delivery in a robust box**
- **Track function** for continuous recording of changing environmental conditions
- **Peak Hold Mode** to capture peaks
- **Selectable measuring units:** fc (foot-candle), lx

Technical data

- Measuring frequency: 2 Hz
- Cable length (Photo sensor) approx. 1 m
- Dimensions W×D×H 100×60×28 mm
- Battery operation, battery not standard (9 V Block), AUTO-OFF function for battery conservation
- Net weight approx. 250 g

09

STANDARD			OPTION
PEAK	BATT	1 DAY	ISO +10DAYS

Model	Measuring range [Max] lx	Readout [d] lx	Price excl. of VAT ex works €	Option Factory calibration certificates	
				KERN	€
SAUTER	200	0,1	85,-	961-190	165,-
SO 200K.	2000	1			
	20000	10			
	200000	100			



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

Features

- For measuring illumination of office workstations, production workstations, etc.
- **Photo sensor:** Silicon diode, filtered
- **Cosine correction** for incidence of light at an angle
- **Data-hold function**, to freeze the current measurement
- **1 Rotatable sensor unit** (+90 and -180°) for optimum alignment to the light source
- **Sturdy protective cover** for the photo sensor
- **2 Increased service life:** Impact protection by means of delivery in a soft box with light protection
- **TRACK function** for continuous recording of variable environmental conditions
- **Peak hold function** to capture the peak value
- **Selectable units:** fc (foot-candle), lux
- Easy to toggle between units by a keypress
- Option of fitting a stand on the rear of the housing, 1/4" thread

Technical data

- Measuring precision up to 20.000 Lux: \pm (4 % of the result + 10 scale intervals)
- Measuring precision from 20,000 Lux: \pm (5 % of the result + 10 scale intervals)
- Repeatability: \pm 2 % of [Max]
- Temperature error: \pm 0,1 % of [Max]/°C
- Measuring frequency: 2 Hz
- Dimensions W×D×H 185×68×38 mm
- Ready to use: Battery included, 9 V block, operating time up to 200 hours
- Net weight approx. 130 g



Model	Measuring range	Readout	Price excl. of VAT ex works €	Option Factory calibration certificates	
				KERN	€
SAUTER	[Max] lx	[d] lx	95,-	961-190	165,-
SP 200K	0-200	0,1			
	200-2000	1			
	2000-20000	10			
	2000-200000	100			



Professional sound level meter

Features

- **Professional sound level meter** 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
- **2 Delivered in a robust carrying case**
- **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 target value for go/no-go test values
- **Track function** for continuous recording of changing environmental conditions
- **Peak Hold Mode** to capture peaks
- **Internal memory for measured values**, for 30 measurements. Can be displayed on the PC

Technical data

- Measuring precision: 3 % of [Max]
- Dimensions W×D×H 236×63×26 mm
- Battery operation, batteries standard 4× 1.5 V AAA
- Net weight approx. 170 g

Accessories

- **Data transfer software**, interface cable included, SAUTER ATC-01, **€ 90,-**
- **Adjustment device** for regular adjustment of the sound level meter, SAUTER ASU-01, **€ 260,-**
- **Foam windshield**, SAUTER ASU-02, **€ 5,-**

STANDARD



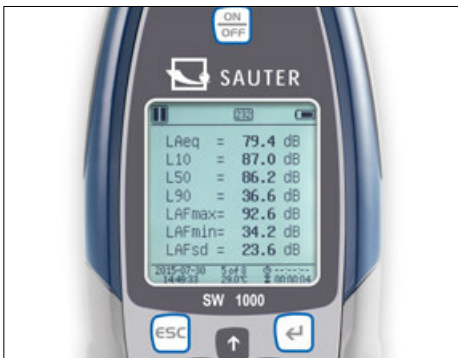
OPTION



Model	Type	Measuring range	Readout	Price excl. of VAT ex works €
SAUTER		[Max] dB	[d] dB	
SU 130.	Lp A	30-130	0,1	110,-
	Lp C	35-130		
	Lp F	35-130		



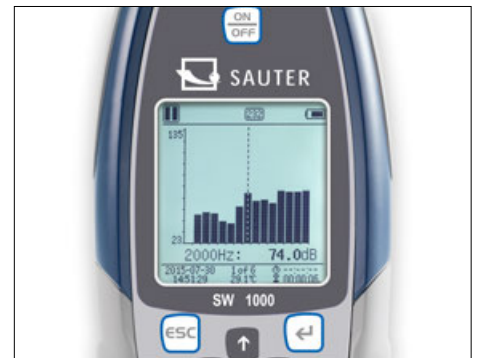
First-class professional Class I, Class II sound level meter



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 broad access to spectrum thanks to the highly-accurate 24-Bit A/D converter
- **Floating point evaluation** for higher level of accuracy and better stability
- The **optimised analogue frontend switch** reduces the ambient noise and increases the linear measuring range
- 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 the peak value
- **Octavo function** for targeted sound analysis
- **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
- **Selectable frequency for recording measurements:** 10, 5, 2 Hz
- **Operating languages:** GB, DE, FR, ES, PT
- **1** Delivery in robust transport case
- **2** Option of fitting a stand on the rear of the housing, 1/4" thread

Technical data

- Applicable standards: IEC61672-1:2014-07 GB/T3785.1-2010 1/1 Octave in accordance with IEC 61260:2014
- 1/2" microphone
- Permissible ambient temperature range -10 °C/50 °C
- Output (direct or alternating current) AC (max 5 VRMS), DC (10 mV/DB)
- Mains operation as standard
- Battery operation, 4x 1.5 V AA, not included, operating time up to 10 h
- Dimensions WxDxH 80x36x300 mm
- Net weight approx. 400 g

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-1.0, **€ 90,-**
- **2** Stand, WxDxH 430x90x90 mm, 1250x750x750 mm (moved out), SAUTER SW-A05, **€ 60,-**
- SD-memory card, storage capacity 4 GB, SAUTER SW-A04, **€ 45,-**
- **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, **€ 710,-**
- **Foam windshield**, SAUTER SW-A03, **€ 40,-**

STANDARD



OPTION



Model	Accuracy class	Measuring range Linear dB	Frequency range kHz	Sensitivity mV/Pa	Price excl. of VAT ex works €	Option DAKKS calibration certificate		Option Factory calibration certificates	
						DAKKS KERN	€	KERN	€
SAUTER SW 1000	1	20-134	0,01-20	50	1750,-	963-281	270,-	961-281	190,-
SAUTER SW 2000	2	25-136	0,02-12,5	40	960,-	963-281	270,-	961-281	190,-



TIPS FROM THE EXPERTS

In addition to our range of professional measuring technology and test service, we also offer you a comprehensive range of medical scales.

We will offer you reliable quality at fair prices and with the shortest delivery times. Our product specialists will give you professional advice, will work with you to find the right product and will provide comprehensive support after the purchase too.

This ensures a high level of investment security and a good feeling – KERN, the nice balance manufacturer from the wilds of Southern Germany.

For all details on our ranges, please see www.kern-sohn.com or request your own personal catalogues right now: Telephone +49 7433 9933-0

#1 “Medical products from KERN – products you can rely on”

For years an established name in hospitals, doctors' surgeries, rehabilitation clinics and nursing homes.

Wherever reliable quality is important, look no further than the complete KERN range of medical scales, from baby scales, to personal scales, chair scales, obesity scales through to hand grip dynamometers.

KERN 2020 catalogue for medical balances and devices – this is where you will find everything for day-to-day tasks in the medical environment!



*Hendrik Neff, product specialist
Medical scales*





System solutions Industry 4.0 (IoT)/Display devices

FORCE MEASUREMENT

Load cell + SAUTER FL + Software



BALANCE MANUFACTURE

Load cell + Junction Box + KERN YKV



BALANCE MANUFACTURE

Load cell + display device



BALANCE MANUFACTURE

Load cell + KERN YKV + KERN Software BalanceConnection



BALANCE MANUFACTURE

Load cell + Junction Box + display device



We help to dovetail 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 in our centre of expertise – Industry 4.0 (IoT)



Daniel Egeler



Edgar Litt

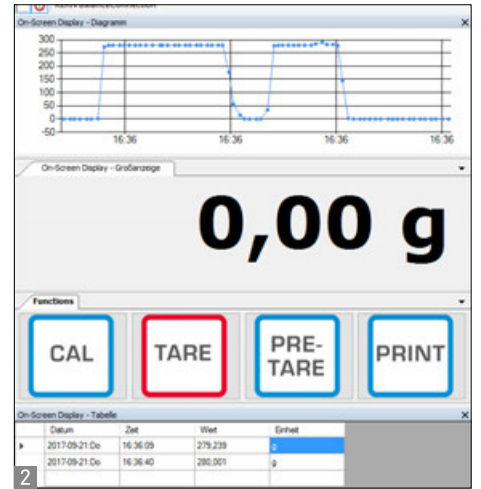


Ralf Kurschat



Fabian Brenner

▷ **We would like to inform you and advise you**
Tel. +49 7433 9933-200
ITsupport@kern-sohn.com



Modern A/D converter 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

- With this A/D converter box your weighing processes are ready for the requirements of Industry 4.0. Simply connect a weighing platform or measuring cell, integrate the A/D converter box 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
- Internal resolution 16 million divisions
- 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 delivery:
 - Industrial platform KERN KFP
 - USB cable incl. mains plug
 - DIN rail mounting bracket
 - **2** Configuration software for adjusting and managing the KERN YKV-01, for large-format display of the values collected on the PC as well as transfer of this data to other Apps and programs. The displayed result can therefore be converted to any format for communication with the different user programs, such as, for example, e.g. SAP, Oracle etc.

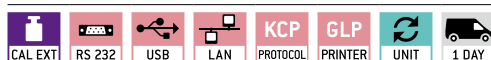
Technical Data

- Overall dimensions W×D×H 100×127×28 mm
- Net weight approx. 1,2 kg
- Permissible ambient temperature -10 °C/40 °C

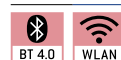
Accessories

- **Bluetooth data interface**, KERN YKV-A02, € 60,-
- **WiFi data interface**, KERN YKV-A01, € 60,-
- **DIN rail mounting bracket** for KERN YKV, KERN YKV-A03, € 60,-
- **Software BalanceConnection**, flexible recording or transfer of measurements, particularly to Microsoft® Excel or Access as well as transfer of this data to other Apps and programs. The displayed result can therefore be converted to any format for communication with the different user programs, such as, for example, e.g. SAP, for details see Internet, KERN SCD-4.0, € 150,-

STANDARD



FACTORY



Model	Standard interfaces	Price excl. of VAT ex works €
SAUTER		
YKV-01	RS-232, USB	190,-
YKV-02	RS-232, USB, Ethernet	240,-

NEW

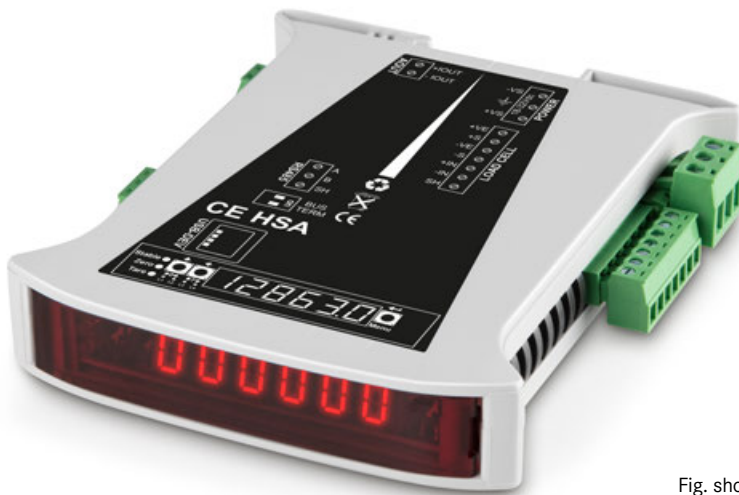


Fig. shows KERN CE HSA

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

Features

- Compact display unit for recording weighing data using strain gauge load cells, e.g. in industrial applications
- **A** Due to its small size, 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
- The configuration of the module can be carried out conveniently via a connected PC with the supplied software
- 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 and Profibus DP

- Extremely high measurement frequency possible, up to 1600 data records/s
- Internal resolution 24 Bit

Technical Data

- LCD display, digit height 7,6 mm
- Overall dimensions W×D×H 101×120×22,5 mm
- Permissible ambient temperature -10 °C/40°C

Accessories

- Mains adapter for power supply of the KERN CE HSx, mountable on DIN rail, KERN CE HSS, € 80,-

Features	Model KERN			
	CE HSA	CE HSE	CE HSP	CE HSR
Power supply	18-32 Vdc; 4 W max.	18-32 Vdc; 4 W max.	18-32 Vdc; 4 W max.	18-32 Vdc; 4 W max.
Load cell power supply	5 Vdc	5 Vdc	5 Vdc	5 Vdc
Sensitivity	0,1 µV/d	0,1 µV/d	0,1 µV/d	0,1 µV/d
Adjustable nominal sensitivity	1; 1.5; 2; 2.5; 3 mV/V	1; 1.5; 2; 2.5; 3 mV/V	1; 1.5; 2; 2.5; 3 mV/V	1; 1.5; 2; 2.5; 3 mV/V
Input voltage Unipolar @3mV/V	-1 mV to +16 mV	-1 mV to +16 mV	-1 mV to +16 mV	-1 mV to +16 mV
Input voltage Bipolar @3mV/V	-16 mV to +16 mV	-16 mV to +16 mV	-16 mV to +16 mV	-16 mV to +16 mV
A/D Conversion speed	1600/s	1600/s	1600/s	1600/s
Max. load cell impedance	1200Ω	1200Ω	1200Ω	1200Ω
Min. load cell impedance	43,75 Ω	43,75 Ω	43,75 Ω	43,75 Ω
Max. no. of load cells 350 Ω	8	8	8	8
Max. no. of load cells 1000 Ω	22	22	22	22
Max. number of d	10.000	10.000	10.000	10.000
Display steps	1,2,5, 10,20,50,100,200	1,2,5, 10,20,50,100,200	1,2,5, 10,20,50,100,200	1,2,5, 10,20,50,100,200
Communication/Interfaces	USB	USB, Ethernet	USB, Profibus	USB, RS232/422
Analog output	0/4-20/24mA	-	-	-
Dimensions W×D×H	120×110×22 mm	120×110×22 mm	120×110×22 mm	120×110×22 mm
Net weight g	150	150	150	150
Price excl. of VAT ex works €	480,-	540,-	540,-	510,-



Load cells

Accuracy classes with nominal loads from 300 g to 100 t and protection classes up to IP69K are available to you from now 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 bench – SAUTER can offer you just the right measuring 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 benches or a special mount for your test item? No problem, our product specialist for force-measuring cells Mr Stefan Herrmann is available at any time to help you further and will work with you to develop a customised concept for your application.



Stefan Herrmann

Product specialist Load cells

Tel. +49 7433 9933-214

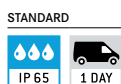
Fax +49 7433 9933-29214

stefan.herrmann@kern-sohn.com



CP P4

Single-point load cells made of anodised aluminium



- CE and RoHS compliant
- Accuracy class L
- Dust and spray protection to IP65 (in accordance with EN 60529)
- Aluminium, anodised
- Suitable for price-computing scales, bench scales, platform scales, etc.
- Maximum platform size 200×200 mm
- 4-wire connection
- Nominal sensitivity: 0,9 mV/V

CP P1

Single-point load cells made of anodised aluminium



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

CP P3

Single-point load cells made of anodised aluminium



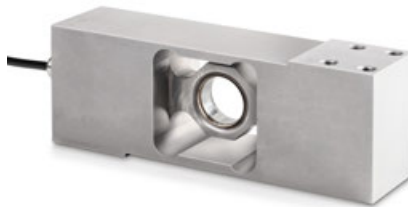
- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Dust and spray protection to IP65 (in accordance with EN 60529)
- Suitable for price-computing scales, bench scales, platform scales, etc.
- Maximum platform size 350×400 mm
- 4-wire connection
- Nominal sensitivity: 2 mV/V
- Note: Version in accordance with OIML R60 C4 on request

Model	Nominal load	Price excl. of VAT ex works €
SAUTER	kg	
CP 300-0P4	0,3	60,-
CP 600-0P4	0,6	60,-

Model	Nominal load	Price excl. of VAT ex works €
SAUTER	kg	
CP 3-3P1	3	50,-
CP 5-3P1	5	50,-
CP 6-3P1	6	50,-
CP 8-3P1	8	50,-
CP 10-3P1	10	50,-
CP 15-3P1	15	50,-
CP 20-3P1	20	50,-
CP 30-3P1	30	50,-
CP 35-3P1	35	50,-
CP 40-3P1	40	50,-
CP 50-3P1	50	50,-

Model	Nominal load	Price excl. of VAT ex works €
SAUTER	kg	
CP 50-3P3	50	65,-
CP 75-3P3	75	65,-

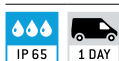
! Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu



CP P2

Single-point load cell of aluminium

STANDARD



- Accuracy in accordance with OIML R60 C3
- Dust and spray protection to IP65 (in accordance with EN 60529)
- Aluminium, anodised
- Suitable for price-computing scales, bench scales, etc.
- Maximum platform size 100–300 kg: 400×400 mm
- Maximum platform size 400–500 kg: 450×450 mm
- Nominal sensitivity: 2 mV/V
- Note: Version in accordance with OIML R60 C4 or C5 on request

CP P9

Single-point load cells of stainless steel

STANDARD



- Accuracy in accordance with OIML R60 C3
- Dust and spray protection to 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, checkweighers
- Maximum platform size 10–50 kg: 400×400 mm
- Maximum platform size 100–500 kg: 800×800 mm
- 4-wire connection (10–50 kg)
- 6-wire connection (100–500 kg)
- Nominal sensitivity: 2 mV/V
- Note: Version in accordance with OIML R60 C4 or C5 on request

Model	Nominal load kg	Price excl. of VAT ex works €
SAUTER		
CP 100-3P2	100	70,-
CP 150-3P2	150	70,-
CP 200-3P2	200	70,-
CP 300-3P2	300	70,-
CP 400-3P2	400	70,-
CP 500-3P2	500	70,-

Model	Nominal load kg	Price excl. of VAT ex works €
SAUTER		
CP 10-3P9	10	330,-
CP 20-3P9	20	330,-
CP 50-3P9	50	330,-
CP 100-3P9	100	500,-
CP 200-3P9	200	500,-
CP 300-3P9	300	500,-
CP 400-3P9	400	500,-
CP 500-3P9	500	500,-

! Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu



Fig. shows optional accessory, mounting kit
■ SAUTER CE P4136

CD P1

Load cells made of stainless steel



- Accuracy class C3
- Dust and spray protection to 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 benches
- Note: EX version or accuracy class C4 on request
- Nominal sensitivity: 2 mV/V

CD P2

Load cells made of stainless steel



- Accuracy in accordance with OIML R60 C2
- Dust and spray protection to IP68 (in accordance with EN 60529), hermetically encapsulated
- Stainless steel
- Area of application: Tensile and compressive force measurement
- Suitable for vehicle scales, weigh hoppers, vehicle testing equipment, test benches, suspended scales
- Nominal sensitivity: 1,5 mV/V
- Please ask for delivery time

Accessories CD P1:

- Pressure piece, steel, rustproof, suitable for CD 10-3P1, CD 20-3P1, SAUTER CE P10330, **€ 75,-**
- Pressure piece, steel, rustproof, suitable for CD 40-3P1, CD 50-3P1, SAUTER CE P10350, **€ 75,-**
- **■** Mounting kit, steel, rustproof, suitable for CD 10-3P1, CD 20-3P1, SAUTER CE P41430, **€ 580,-**
- Mounting kit, steel, rustproof, suitable for CD 40-3P1, CD 50-3P1, SAUTER CE P14150, **€ 590,-**

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CD 10-3P1	10 t/100 kN	350,-
CD 20-3P1	20 t/200 kN	350,-
CD 40-3P1	40 t/400 kN	350,-
CD 50-3P1	50 t/500 kN	350,-

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CD 10-2P2	10 t/100 kN	990,-
CD 20-2P2	20 t/200 kN	990,-
CD 30-2P2	30 t/300 kN	1550,-
CD 50-2P2	50 t/500 kN	1700,-
CD 100-2P2	100 t/1000 kN	2700,-

! Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu

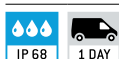


Fig. shows accessories, load corner **1** SAUTER CE Q42901, for further accessories please visit our online shop

CR Q1

Load cells made of stainless steel

STANDARD



- Accuracy class C1
- Dust and spray protection to 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 benches
- Nominal sensitivity: 2 mV/V

CR P1

Load cells made of stainless steel

STANDARD



- Accuracy in accordance with OIML R60 C3
- Dust and spray protection to IP68 (in accordance with EN 60529), hermetically encapsulated
- Stainless steel
- Area of application: Measuring mass as well as compressive force
- Suitable for truck scales, suspended scales, silo scales and other diverse scales, test benches, etc.
- Nominal sensitivity: 1–2 mV/V

Accessories CR Q1:

- **1** Load corner, steel, galvanised, suitable for CR Q1 with nominal load ≤ 10 t, SAUTER CE Q42901, **€ 220,-**
- Load corner, steel, galvanised, suitable for CR Q1 with nominal load ≥ 20 t, SAUTER CE Q42902, **€ 360,-**
- Load corner, steel, rustproof, suitable for CR Q1 with nominal load ≤ 10 t, SAUTER CE RQ42901, **€ 430,-**
- Load corner, steel, rustproof, suitable for CR Q1 with nominal load ≥ 20 t, SAUTER CE RQ42902, **€ 730,-**

Accessories CR P1:

- Load corner for CR 1000-3P1, CR 250-3P1, CR 500-3P1 Steel, incl. pressure piece, SAUTER CE P244011, **€ 510,-**
- Pressure piece for CR 1000-3P1, CR 250-3P1, CR 500-3P1 steel, SAUTER CE P244012, **€ 99,-**
- Load corner for CR 2000-3P1 steel, rustproof, incl. pressure piece, SAUTER CE P244021, **€ 620,-**
- Pressure piece for CR 2000-3P1 steel, rust-proof SAUTER CE P244022, **€ 105,-**

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CR 2500-1Q1	2,5 t/25 kN	260,-
CR 5000-1Q1	5 t/50 kN	260,-
CR 10000-1Q1	10 t/100 kN	260,-
CR 20000-1Q1	20 t/200 kN	460,-
CR 30000-1Q1	30 t/300 kN	460,-

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CR 60-3P1	60 kg/0,6 kN	760,-
CR 130-3P1	130 kg/1,3 kN	760,-
CR 250-3P1	250 kg/2,5 kN	760,-
CR 500-3P1	500 kg/5 kN	760,-
CR 1000-3P1	1000 kg/10 kN	760,-
CR 2000-3P1	2000 kg/20 kN	760,-

! Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu



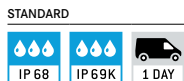
Fig. shows accessories, base plate **1** SAUTER CE Q30903 and bearings **2** SAUTER CE Q30904, for further accessories please visit our online shop



Fig. shows optional accessory load corner **3** SAUTER CE P4022

CB Q1 · CB Q2

Bending beam and shear beam measuring cells made from stainless steel



- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Dust and spray protection to 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
- Note: Accuracy class OIML R60 C6 or EX version on request

Model	Nominal load	Price excl. of VAT ex works €
SAUTER	kg	
CB 5-3Q1	5	185,-
CB 10-3Q1	10	185,-
CB 20-3Q1	20	185,-
CB 30-3Q1	30	185,-
CB 50-3Q1	50	185,-
CB 75-3Q1	75	185,-
CB 100-3Q1	100	195,-
CB 150-3Q1	150	185,-
CB 200-3Q1	200	185,-
CB 250-3Q1	250	185,-
CB 300-3Q1	300	185,-
CB 500-3Q1	500	185,-
CB 750-3Q2	750	195,-
CB 1000-3Q2	1000	195,-
CB 1500-3Q2	1500	195,-

CT P1

Measuring cells made from stainless steel



- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Dust and spray protection to 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 diverse scales
- 4-wire connection
- Nominal sensitivity: 3 mV/V

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

Accessories CB Q1 · CB Q2:

- Traction device, steel, galvanised, suitable for CB Q1, SAUTER CE Q30901, € 75,-
- Traction device, steel, rustproof, suitable for CB Q2, SAUTER CE Q34905, € 80,-
- **1** Base plate, steel, galvanised, suitable for CB Q1, SAUTER CE Q30903, € 90,-
- Base plate, steel, rustproof, suitable for CB Q1, SAUTER CE RQ30903, € 175,-
- Base plate, steel, rustproof, suitable for CB Q2, SAUTER CE Q34903, € 85,-
- **2** Bearing, steel, rustproof, suitable for CB Q1 (nominal load 5 kg–50 kg), SAUTER CE Q30904, € 105,-
- Bearing, steel, rustproof, suitable for CB Q1 (nominal load 75 kg–300 kg), SAUTER CE Q30905, € 105,-
- Bearing, steel, rustproof, suitable for CB 500-3Q1, SAUTER CE Q30906, € 180,-
- Bearing, steel, rustproof, suitable for CB 750-3Q2, CB 1000-3Q2, CB 1500-3Q2, SAUTER CE Q34906, € 165,-
- Load corner, steel, galvanised, suitable for CB Q1, SAUTER CE Q30907, € 195,-
- Load corner, steel, rustproof, suitable for CB Q1, SAUTER CE RQ30907, € 280,-
- Adjustable foot, steel, rustproof, suitable for SAUTER CE Q34901, € 60,-

Accessories CB P1:

- Adjustable foot, steel, nickel-plated, load base M12 for CT 500-3P1, CT 1000-3P1 and CT 1500-3P1, SAUTER CE P2012, € 22,-
- **3** Load corner, steel, nickel-plated for CT 500-3P1, CT 1000-3P1 and CT 1500-3P1, SAUTER CE P4022, € 115,-
- Spacer plates for bending beam CB P1 made from steel, SAUTER CE P3012, € 8,-

Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu



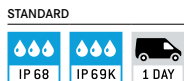
Fig. shows optional accessory load corner 1 SAUTER CE RQ35903



Fig. shows optional accessory load corner 2 SAUTER CE P4022

CT Q1

Shear beam made from stainless steel



- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Dust and spray protection to 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
- Note: EX version on request

Model	Nominal load	Price
SAUTER	kg	excl. of VAT ex works €
CT 300-3Q1	300	180,-
CT 500-3Q1	500	180,-
CT 750-3Q1	750	180,-
CT 1000-3Q1	1000	180,-
CT 1500-3Q1	1500	180,-
CT 2000-3Q1	2000	180,-
CT 3000-3Q1	3000	340,-
CT 5000-3Q1	5000	340,-
CT 7500-3Q1	7500	450,-
CT 10000-3Q1	10000	450,-

CT P1 · CT P2

Measuring cells made from stainless steel



- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- Dust and spray protection to 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
- Note: EX version, 6-wire connection and accuracy class C4 or C5 on request
- **CT P2:** Delivery with calibrated characteristic value, if several cells are ordered

Model	Nominal load	Price
SAUTER	kg	excl. of VAT ex works €
CT 500-3P1	500	90,-
CT 1000-3P1	1000	90,-
CT 1500-3P1	1500	90,-
CT 2500-3P1	2500	110,-
CT 3000-3P1	3000	110,-
CT 5000-3P1	5000	110,-
CT 10000-3P1	10000	160,-
CT 500-3P2	500	95,-
CT 1000-3P2	1000	95,-
CT 3000-3P2	3000	115,-
CT 5000-3P2	5000	115,-
CT 10000-3P2	10000	165,-

Accessories CT Q1:

- Base plate, steel, rustproof, suitable for CT Q1, SAUTER CE RQ35911, € 185,-
- Base plate, steel, rustproof, suitable for CT 3000-3Q1, CT 5000-3Q1, SAUTER CE RQ35912, € 355,-
- Base plate, steel, rustproof, suitable for CT 7500-3Q1, CT 10000-3Q1, SAUTER CE RQ35919, € 780,-
- Bearing, steel, rustproof, suitable for CT Q1, SAUTER CE RQ35909, € 135,-
- Bearing, steel, rustproof, suitable for CT 3000-3Q1, CT 5000-3Q1, SAUTER CE RQ35910, € 260,-
- Bearing, steel, rustproof, suitable for CT 7500-3Q1, CT 10000-3Q1, SAUTER CE RQ35918, € 600,-
- Load corner, steel, rustproof, suitable for CT Q1, SAUTER CE RQ35902, € 350,-
- 1 Load corner, steel, rustproof, suitable for CT 3000-3Q1, CT 5000-3Q1, SAUTER CE RQ35903, € 515,-

Accessories CT P1:

- Load corner, steel, rustproof, suitable for CT 10000-3P1, CT 10000-3P2, SAUTER CE P40210, € 385,-
- 2 Load corner, steel, nickel-plated, suitable for CT 500-3P1, CT 1000-3P1, CT 1500-3P1, SAUTER CE P4022, € 115,-
- Load corner, steel, nickel-plated, suitable for CT 2500-3P1, CT 3000-3P1, CT 5000-3P1, SAUTER CE P4025, € 200,-
- Adjustable foot, steel, rustproof, suitable for CT 500-3P1, CT 1000-3P1, CT 1500-3P1, SAUTER CE P2012, € 22,-
- Adjustable foot, steel, rustproof, suitable for CT 2500-3P1, CT 3000-3P1, CT 5000-3P1, SAUTER CE P2018, € 29,-
- Adjustable foot, steel, rustproof, suitable for CT 10000-3P1, SAUTER CE P2024, € 85,-
- Spacer plate for CT 500-3P1, CT 500-3P2, CT 1000-3P1, CT 1000-3P2 and CT 1500-3P1, SAUTER CE P3012, € 8,-
- Spacer plate for CT 2500-3P1, CT 3000-3P1, CT 3000-3P2, CT 5000-3P1 and CT 5000-3P2 SAUTER CE P3015, € 8,-
- Spacer plate for CT 10000-3P1 and CT 10000-3P2 SAUTER CE P30110, € 8,-

! Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu



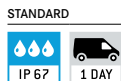
Fig. shows optional accessory **1** SAUTER CE R20, for further accessories please visit our online shop



Fig. shows optional accessory traction device **2** SAUTER CE Q12, for further accessories please visit our online shop

CS P1

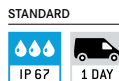
4-wire “S” measuring cells made of nickel-plated steel for force and mass measurement



- Accuracy in accordance with OIML R60 class C3
- Dust and spray protection to IP67 (in accordance with EN 60529), welded to create a hermetic seal
- Nickel-plated steel
- Scope of application: for tensile and compressive force measurement
- Suitable for handing scales, weigh hoppers and other weighing devices as well as force measurement devices and test benches
- 4-wire connection
- Note: EX version and accuracy class C4 on request
- Nominal sensitivity: 2 mV/V

CS Q1

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



- Accuracy class C3
- Dust and spray protection to IP67 (in accordance with EN 60529), hermetically encapsulated
- Nickel-plated steel
- Scope of application: for tensile and compressive force measurement
- Suitable for handing scales, weigh hoppers and other weighing devices as well as force measurement devices and test benches
- 6-wire connection
- Nominal sensitivity: 2 mV/V

Accessories CT P1:

- Traction device, steel, galvanised, suitable for CS P1, SAUTER CE Q12, **€ 145,-**
- Rod end, steel, galvanised, suitable for CS 25-3P1, CS 50-3P1, SAUTER CE R8, **€ 17,-**
- Rod end, steel, rustproof, suitable for CS 25-3P1, CS 50-3P1, SAUTER CE RR8, **€ 45,-**
- Rod end, steel, rustproof, suitable for CS 100-3P1, CS 150-3P1, SAUTER CE RR10, **€ 55,-**
- Rod end, steel, galvanised, suitable for CS 100-3P1, CS 150-3P1, SAUTER CE R10, **€ 19,-**
- Rod end, steel, galvanised, suitable for CS P1, CS P2 with 50 kg ≥ nominal load ≤ 1 t, SAUTER CE R12, **€ 40,-**
- Rod end, steel, rustproof, suitable for CS P1, CS P2 with 50 kg ≥ nominal load ≤ 1 t, SAUTER CE RR12, **€ 65,-**
- **1** Rod end, steel, galvanised, suitable for CS 2000-3P1, CS 2500-3P1, CS 5000-3P1, SAUTER CE R20, **€ 80,-**
- Rod end, steel, rustproof, suitable for CS 2000-3P1, CS 2500-3P1, CS 5000-3P1, SAUTER CE RR20, **€ 125,-**

Accessories CT Q1:

- **2** Traction device, steel, galvanised, suitable for CS P1, SAUTER CE Q12, **€ 145,-**
- Traction device, steel, galvanised, suitable for CS 1500-3Q1, CS 2000-3Q1, SAUTER CE Q16, **€ 300,-**
- Traction device, steel, galvanised, suitable for CS 3000-3Q1, CS 5000-3Q1, CS 6000-3Q1, SAUTER CE Q24, **€ 430,-**
- Rod end, steel, galvanised, suitable for CS P1, CS P2 with 50 kg ≥ nominal load ≤ 1 t, SAUTER CE R12, **€ 40,-**
- Rod end, steel, rustproof, suitable for CS P1, CS P2 with 50 kg ≥ nominal load ≤ 1 t, SAUTER CE RR12, **€ 65,-**
- Rod end, steel, galvanised, suitable for CS 1500-3Q1, CS 2000-3Q1, SAUTER CE R16, **€ 60,-**
- Rod end, steel, rustproof, suitable for CS 1500-3Q1, CS 2000-3Q1, SAUTER CE RR16, **€ 100,-**
- Rod end, steel, galvanised, suitable for CS 3000-3Q1, CS 5000-3Q1, CS 6000-3Q1, SAUTER CE R24, **€ 95,-**
- Rod end, steel, rustproof, suitable for CS 3000-3Q1, CS 5000-3Q1, CS 6000-3Q1, SAUTER CE RR24, **€ 150,-**

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CS 25-3P1	25 kg/250 N	160,-
CS 50-3P1	50 kg/500 N	160,-
CS 100-3P1	100 kg/1 kN	175,-
CS 150-3P1	150 kg/1,5 kN	160,-
CS 250-3P1	250 kg/2,5 kN	160,-
CS 500-3P1	500 kg/5 kN	160,-
CS 600-3P1	600 kg/6 kN	160,-
CS 750-3P1	750 kg/7,5 kN	160,-
CS 1000-3P1	1 t/10 kN	180,-
CS 1500-3P1	1.5 t/15 kN	180,-
CS 2000-3P1	2 t/20 kN	200,-
CS 2500-3P1	2.5 t/25 kN	200,-
CS 5000-3P1	5 t/50 kN	200,-
CS 7500-3P1	7.5 t/75 kN	390,-
CS 10000-3P1	10 t/100 kN	390,-
CS 15000-3P1	15 t/150 kN	560,-
CS 20000-3P1	20 t/200 kN	570,-
CS 30000-3P1	30 t/300 kN	1490,-

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CS 50-3Q1	50 kg /500 N	180,-
CS 100-3Q1	100 kg /1 kN	180,-
CS 150-3Q1	150 kg /1,5 kN	180,-
CS 200-3Q1	200 kg /2 kN	180,-
CS 300-3Q1	300 kg /3 kN	180,-
CS 500-3Q1	500 kg /5 kN	180,-
CS 750-3Q1	750 kg /7,5 kN	180,-
CS 1000-3Q1	1 t /10 kN	180,-
CS 1500-3Q1	1.5 t /15 kN	200,-
CS 2000-3Q1	2 t /20 kN	200,-
CS 3000-3Q1	3 t /30 kN	300,-
CS 5000-3Q1	5 t /50 kN	300,-
CS 6000-3Q1	6 t /60 kN	300,-

! Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu



NEW

CS P2 0,5-7,5 t



NEW

CS P2 50-250 kg



NEW

CS Y1



NEW

CO Y1



NEW

CO Y2/CO Y3

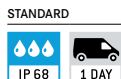


NEW

CO Y4

CS P2

“S” measuring cells/load cells made of stainless steel

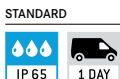


CS P2:

- Accuracy in accordance with OIML C3
- RoHS compliant
- Dust and spray protection to IP68
- Stainless steel
- Scope of application: measuring mass as well as force
- Suitable for handling scales, silo scales, force test benches and other diverse scales
- Nominal sensitivity: 2.0 ± 0.004
- **CS P2 50-250 kg:** Miniature “S” measuring cells/load cells made of stainless steel

CS Y1

Miniature “S” measuring cells/load cells made of stainless steel



CS Y1:

- RoHS compliant
- Dust and spray protection to IP65
- Stainless steel
- Scope of application: for tensile and compressive force measurement, measuring mass as well as force
- Suitable for force test benches, handling scales, silo scales and other diverse scales
- Nominal sensitivity: 1,3 – 2 mV/V

CO Y1 – Y4

Miniature button-type measuring cells made of stainless steel



CO Y1, CO Y3, CO Y4, CO Y2

CO Y1/CO Y4:

- RoHS compliant
- Dust and spray protection to IP65/IP67
- Scope of application: compressive force applications
- Suitable for measuring mass as well as force and force test benches
- Nominal sensitivity: 1.0 – 1.5mV/V

CO Y2/Y3:

- RoHS compliant
- Dust and spray protection to IP65/IP66
- Scope of application: for tensile and compressive force measurement
- Suitable for measuring mass as well as force and force test benches
- Nominal sensitivity: 1,5 – 2 mV/V

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CS 50-3P2	50 kg (≈500 N)	395,-
CS 100-3P2	100 kg (≈1 kN)	395,-
CS 250-3P2	250 kg (≈2,5 kN)	395,-
CS 500-3P2	500 kg (≈5 kN)	305,-
CS 1000-3P2	1 t (≈10 kN)	305,-
CS 2000-3P2	2 t (≈20 kN)	305,-
CS 5000-3P2	5 t (≈50 kN)	365,-
CS 7500-3P2	7.5 t (≈75 kN)	365,-

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CS 1-Y1	1 kg (≈10 N)	290,-
CS 2-Y1	2 kg (≈20 N)	290,-
CS 5-Y1	5 kg (≈50 N)	290,-
CS 10-Y1	10 kg (≈100 N)	290,-
CS 20-Y1	20 kg (≈200 N)	290,-

Model	Nominal load	Price excl. of VAT ex works €
SAUTER		
CO 10-Y1	10 kg (≈100 N)	155,-
CO 20-Y1	20 kg (≈200 N)	155,-
CO 50-Y1	50 kg (≈500 N)	155,-
CO 100-Y1	100 kg (≈1 kN)	155,-
CO 200-Y1	200 kg (≈2 kN)	155,-
CO 500-Y1	500 kg (≈5 kN)	180,-
CO 1000-Y1	1000 kg (≈10 kN)	180,-
CO 2000-Y1	2000 kg (≈20 kN)	205,-
CO 10-Y2	10 kg (≈100 N)	220,-
CO 20-Y2	20 kg (≈200 N)	220,-
CO 50-Y2	50 kg (≈500 N)	220,-
CO 100-Y2	100 kg (≈1 kN)	275,-
CO 200-Y2	200 kg (≈2 kN)	275,-
CO 500-Y2	500 kg (≈5 kN)	275,-
CO 1000-Y2	1000 kg (≈10 kN)	275,-
CO 2000-Y2	2000 kg (≈20 kN)	300,-
CO 5-Y3	5 kg (≈50 N)	330,-
CO 10-Y3	10 kg (≈100 N)	330,-
CO 5-Y4	5 kg (≈50 N)	205,-
CO 10-Y4	10 kg (≈100 N)	205,-



CK P1



CK P2



CK P3



CK P4



CJ P4



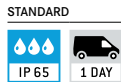
CJ P6



CJ P4PG

CK P1-4

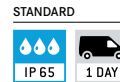
Miniature load cells made of aluminium



- Dust and spray protection to IP65 (in accordance with EN 60529)
- Aluminium
- High level of accuracy
- Suitable for small scales and kitchen scales and force-measuring devices
- 4-wire connection

CJ P

Junctionbox CJ P for connecting several measuring cells to one evaluation unit



- Prepared for 4-wire and 6-wire measuring cells
- Models available for 2, 4, 6 or 8 load cells
- Robust aluminium die-cast housing with protection against dust and spray to IP65

Model	Nominal load	Price excl. of VAT ex works
SAUTER	kg	€
CK 600-0P1	0,6	27,-
CK 1-0P1	1	27,-
CK 2-0P1	2	27,-
CK 3-0P1	3	28,-
CK 5-0P1	5	27,-
CK 6-0P1	6	27,-
CK 300-0P2	0,3	41,-
CK 600-0P2	0,6	41,-
CK 1000-0P3	1	24,-
CK 100-0P4	0,1	35,-
CK 120-0P4	0,12	35,-
CK 300-0P4	0,3	35,-
CK 500-0P4	0,5	35,-

Model	Number of connections	Price excl. of VAT ex works
SAUTER		€
CJ P2	2	75,-
CJ P4	4	75,-
CJ P4PG	4	80,-
CJ P6	6	95,-
CJ P8	8	95,-

! Tip: Further details and technical data sheet as well as extensive accessories can be found at www.sauter.eu

NEW at SAUTER and in the KERN calibration laboratory:

We can optionally supply measuring cells with a digital D7 or analogue ALMEMO® measuring connector for your Ahlborn measuring device. In addition, you can choose between numerical, two-point or multi-point adjustment. We can also supply the required DAkkS calibration certificate (up to 120 kN tension/compression) ²⁾

Example:



CR Q1

analog measuring connector ALMEMO® D26 ¹⁾

Calibration certificate ²⁾

or



CD P1

digital measuring connector ALMEMO® D7 ¹⁾

Calibration certificate ²⁾

In order to be able to calibrate your electrode with analog measuring connector ALMEMO® D26 according to your requirements, please inform us when ordering and send us your Ahlborn device. This is not necessary for digital measuring connector ALMEMO® D7!

- 1) Measuring device is not included with the delivery, measuring connector only !
- 2) Possible calibration services please see table on page 16

Calibration	Measuring range [Max] kN	analog measuring connector ALMEMOR D26 TEDS +/-26mV, mounted on measuring cell		Digital connector D7 ALMEMO® mounted on measuring cell	
		Model SAUTER	Price excl. of VAT ex works €	Model SAUTER	Price excl. of VAT ex works €
Numerical		CE D26401	190,-	CE D7401	390,-
Two-point adjustment	0,5	CE D26402	210,-	CE D7402	400,-
	2	CE D26403	210,-	CE D7403	400,-
	5	CE D26404	210,-	CE D7404	400,-
	20	CE D26405	210,-	CE D7405	400,-
	50	CE D26406	210,-	CE D7406	400,-
Multi-point adjustment	120	CE D26407	210,-	CE D7407	400,-
	0,5	CE D26408	260,- ↓	CE D7408	450,-
	2	CE D26409	260,- ↓	CE D7409	450,-
	5	CE D26410	260,- ↓	CE D7410	450,-
	20	CE D26411	260,- ↓	CE D7411	450,-
	50	CE D26412	260,- ↓	CE D7412	450,-
	120	CE D26413	260,- ↓	CE D7413	450,-

↓ Price reduction

Accredited calibration with DAkkS calibration certificate for force gauges

The KERN calibration laboratory is at your side when you need to calibrate DAkkS 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 pressure 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	Sequences A, B, C, D possible Standard is sequence A B, C and D are reduced sequences, relevant 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 DAkkS 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	181,-	963-161V (R)	≤ 500 N	168,-
963-162IV (R)	≤ 2 kN	214,-	963-162V (R)	≤ 2 kN	198,-
963-163IV (R)	≤ 5 kN	280,-	963-163V (R)	≤ 5 kN	258,-
Compression force:					
963-261IV (R)	≤ 500 N	181,-	963-261V (R)	≤ 500 N	168,-
963-262IV (R)	≤ 2 kN	214,-	963-262V (R)	≤ 2 kN	198,-
963-263IV (R)	≤ 5 kN	280,-	963-263V (R)	≤ 5 kN	258,-
Tensile and Compression force:					
963-361IV (R)	≤ 500 N	302,-	963-361V (R)	≤ 500 N	278,-
963-362IV (R)	≤ 2 kN	363,-	963-362V (R)	≤ 2 kN	333,-
963-363IV (R)	≤ 5 kN	478,-	963-363V (R)	≤ 5 kN	438,-

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	149,-	963-161 (R)	≤ 500 N	135,-
963-162I (R)	≤ 2 kN	182,-	963-162 (R)	≤ 2 kN	165,-
963-163I (R)	≤ 5 kN	248,-	963-163 (R)	≤ 5 kN	225,-
Compression force:					
963-261I (R)	≤ 500 N	149,-	963-261 (R)	≤ 500 N	135,-
963-262I (R)	≤ 2 kN	182,-	963-262 (R)	≤ 2 kN	165,-
963-263I (R)	≤ 5 kN	248,-	963-263 (R)	≤ 5 kN	225,-
Tensile and Compression force:					
963-361I (R)	≤ 500 N	270,-	963-361 (R)	≤ 500 N	245,-
963-362I (R)	≤ 2 kN	330,-	963-362 (R)	≤ 2 kN	300,-
963-363I (R)	≤ 5 kN	446,-	963-363 (R)	≤ 5 kN	405,-

(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