

# MEASURING TECHNOLOGY & TEST SERVICE

Industry | Laboratory | Quality Assurance

PROFESSIONAL MEASURING



# 2025

## It's so easy to order from SAUTER:

 Tel. +49 7433 9933-0

 E-Mail  
info.sauter@kern-sohn.com

 Online Shop  
www.kern-sohn.com

We look forward to meeting you  
in our online shop – simply use  
the QR Code:



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

### Online Shop

[www.kern-sohn.com](http://www.kern-sohn.com)

Convenient ordering or just to be inspired. You will find a huge selection of products and services in our online shop, 24/7.

### Advice from the experts

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

### 100 % product availability and dispatch service

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

### Warranty

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

### Customer service

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

### Trust through experience

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

### Accreditations/certification

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

### DAkkS calibrations

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

### Verification service

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

### Individual customer solutions

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

### Service Portal

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

### Spare parts and repair service

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

### No storage costs

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

### Still got questions?

You can find all SAUTER Service Hotlines on the inside flap

# SAUTER Pictograms



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



**Calibration block**  
Standard for adjusting or correcting the measuring device



**Peak hold function**  
Capturing a peak value within a measuring process



**Scan mode**  
Continuous capture and display of measurements



**Push and Pull**  
The measuring device can capture tension and compression forces



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



**Focus function**  
Increases the measuring accuracy of a device within a defined measuring range



**Internal memory**  
To save measurements in the device memory



**Data interface RS-232**  
Bidirectional, for connection of printer and PC



**Profibus**  
For transmitting data, e.g. between scales, measuring cells, controllers and peripheral devices over long distances. Suitable for safe, fast, fault-tolerant data transmission. Less susceptible to magnetic interference



**Profinet**  
Enables efficient data exchange between decentralised peripheral devices (balances, measuring instruments etc.) and a control unit (controller). Especially advantageous when exchanging complex measured values, device, diagnostic and process information. Savings potential through shorter commissioning times and device integration possible



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



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



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



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



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



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



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



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



**PC Software**  
To transfer the measurement data from the device to a PC



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



**Network interface**  
For connecting the scale/measuring instrument to an Ethernet network



**KERN Communication Protocol (KCP)**  
It is a standardized interface command set for KERN balances and other instruments, which allows retrieving and controlling all relevant parameters and functions of the device. KERN devices featuring KCP are thus easily integrated with computers, industrial controllers and other digital systems



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



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



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



**Protection against dust and water splashes IPxx**  
The type of protection is shown in the pictogram cf. DIN EN 60529:2000-09, IEC 60529:1989 +A1:1999+A2:2013



**ZERO**  
Resets the display to "0"



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



**Rechargeable battery pack**  
Rechargeable set



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



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



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



**Fast-Move**  
The total length of travel can be covered by a single lever movement



**Conformity assessment**  
Models with type approval for construction of verifiable systems



**DAkkS calibration possible**  
The time required for DAkkS calibration is shown in days in the pictogram



**Factory calibration (ISO)**  
The time required for factory calibration is specified in the pictogram



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



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

## SAUTER Models A-Z

281/285	6
283	7
287/289	5

### A

AE 500	34
AFH FAST	35
AFH FD/AFH LD	36
AFI 2.0	37

### C

CB	92
CE HSx	84
CE WT	85
CJ	96
CK	90
CP	88-89
CR	91
CT	93
CS	94-95
CW	98-100

### D

DA	41
DB	42
DC Y1 · DC Y2	87

### F

FA	8
FC	10
FC 1K-BT	21
FG	20
FH-M	13
FH-S	12
FK	9
FL-M	15
FL-S	14
FS	16-17
FS Set	18-19

### H

HB	60
HD	61
HE	58
HK-D/-DB	64
HMM/-NP	65
HMO	67
HN-D	66
HO	70-71

### J

JCS	80-81
JCT	48
JIT	78

### L

LB	39
----	----

### S

S71	24
SD-M	32
SO	73
SP	74
SU	75
SW	76-77

### T

TB	44
TB-US	50
TC	45
TD-US	51
TE	46
TF/TG	47
TI	62
TI-HE	59
TN-EE	54
TN-GOLD	52
TN-US	53
TO-EE	56
TU-US	55
TVL/-E/-O/XLS	22
TVM-N/-NL/-LB	28-29
TVO	25
TVO-S/-LD	26-27
TVP/-L	23
TVS/-LD	30-31

### Y

YKV	83
-----	----

## SAUTER Customer Consultants

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

### Product Specialist Measuring Technology



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

### PL, LV, LT, EE, SK, CZ, HU



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

### Product Specialist Measuring Technology



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

### SL, HR, AL, MK, BG, BA, ME, RO, GR, CY, GUS



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

### Product Specialist Measuring Technology



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

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



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

### UK, BE, IRE, IS, LUX, NL



**Maren Neff**  
Tel. +49 7433 9933-132  
Mobil +49 151 46143240  
maren.neff@kern-sohn.com

### Category Manager Industrial Measuring Technology



**Michael Stingel**  
Tel. +49 7433 9933-293  
michael.stingel@kern-sohn.com

### Sales & Marketing Manager



**Stephan Ade**  
Tel. +49 7433 9933-121  
Mobil +49 171 3060086  
ade@kern-sohn.com

## SAUTER Hotlines



Technical questions about our products?

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

### Service Hotline

for general technical questions about your SAUTER product

→ 199

### SAUTER Measuring Instruments

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

→ 555

### Industrial Scales

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

→ 333

### System Solutions Industry 4.0

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

→ 200

# Product Group Index 2025

## Force Measurement

**1**

04–37



## Length Measurement

**2**

38–39



## Torque Measurement

**3**

40–42



## Coating Thickness Measurement

**4**

43–48



## Material Thickness Measurement

**5**

49–56



## Hardness Testing of Plastics (Shore)

**6**

57–62



## Hardness Testing of Metals (Leeb)

**7**

63–68



## Hardness Testing of Metals (UCI)

**8**

69–71



## Occupational Safety, Environment

**9**

72–78



## Colour Measurement

**10**

79–81



## System Solutions Industry 4.0, Display Devices

**11**

82–85



## Load Cells

**12**

86–96



## Scale Kits

**13**

97–100



## Calibration Service

101–102



# 1



**Andreas Vossler**  
Product Specialist  
Force Measurement  
Tel. +49 7433 9933-243  
info@sauter.eu



## FORCE MEASUREMENT

### Quick-Finder

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

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

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

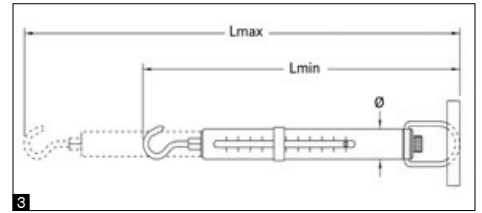
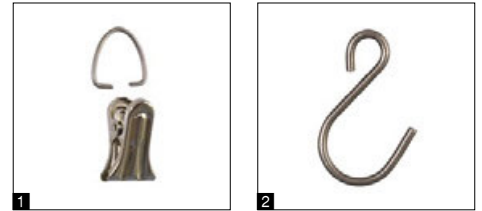
**Note:** You will find a wide range of further spring balances with gram division on the internet



SAUTER 289



SAUTER 287



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

### Features

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

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

### Technical data

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

### Accessories

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



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

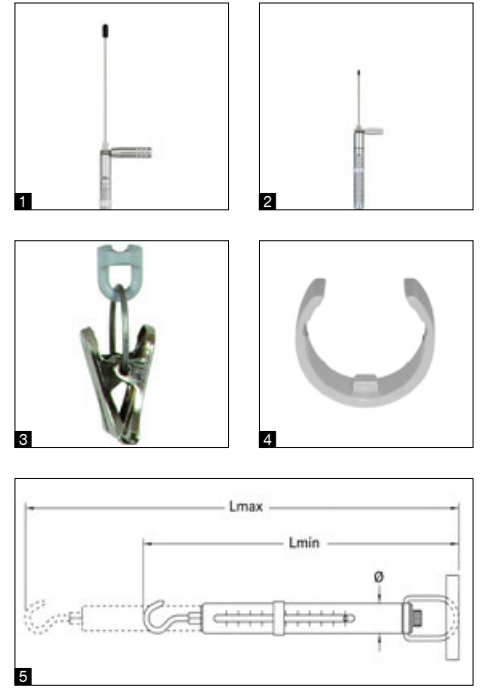
Model	Weighing range [Max]	Division [d]	Load support	Dimensions			Price excl. of VAT ex works €	Option	
				Lmin	Lmax	Ø		Factory calibration certificate	
SAUTER	g	g		mm	mm	mm		KERN	€
<b>287-100</b>	10	0,1	Clip	225	330	12,2	<b>84,-</b>	961-100	99,-
<b>287-102</b>	20	0,2	Clip	225	330	12,2	<b>82,-</b>	961-100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



SAUTER 281



SAUTER 285



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

### Features

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

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

### Technical data

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

### Accessories

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

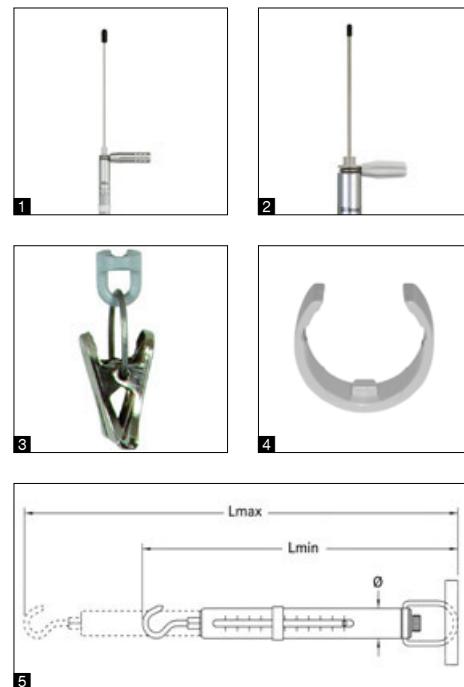
STANDARD

OPTION



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





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

### Features

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

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

### Technical data

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

### Accessories

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

STANDARD



1 DAY

OPTION



+4 DAYS

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



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

### Features

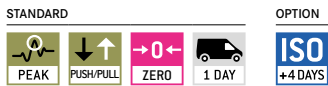
- Dual scale: shows Newton and kg
- Turnable display unit for an easy zero setting of the instrument
- Peak hold function by drag pointer
- Can be mounted on all manual test stands
- Zeroing by a short push of the switch
- **1** Delivered in a robust carrying case
- **2** Standard attachments as shown,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

### Technical data

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

### Accessories

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



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

Further calibration options on request

BASIC  
★

1



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

### Features

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

### Technical data

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

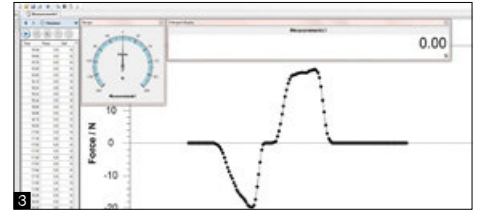
### Accessories

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

STANDARD					OPTION
PEAK	PUSH/PULL	ZERO	BATT	230 V	1 DAY
					+4 DAYS

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

Further calibration options on request



## Compact force gauge for tensile and compressive force measurements

### Features

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

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

### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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

Further calibration options on request

# INDIVIDUAL CUSTOMIZED SOLUTIONS DESIGNED TO YOUR REQUIREMENTS

## You haven't found a matching clamping solution in our assortment?

No problem, we will develop the matching clamping system that is tailored to your test system. With innovative solutions and many years of experience, we provide your team or company with technological support and jointly develop the suitable clamping system.

## CUSOS – perfectly tailored to you and your requirements

The development of your customised clamping system is carried out using the latest technologies. From the idea, during the development, the manufacturing process, to the finished product, we and our partners use the latest and most modern techniques.

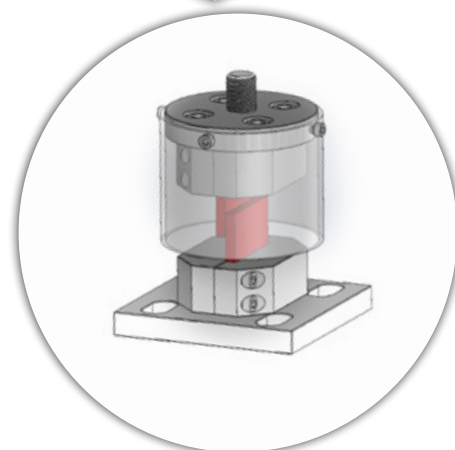
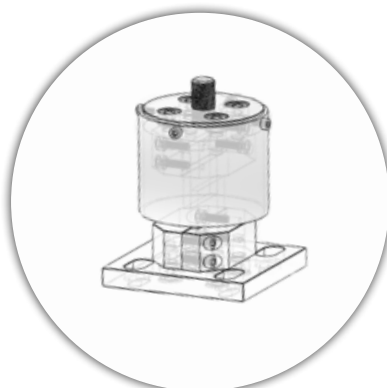
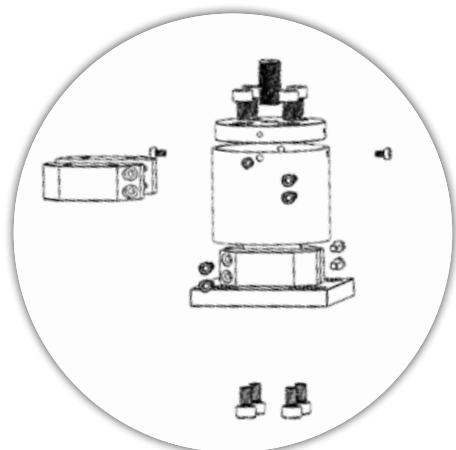
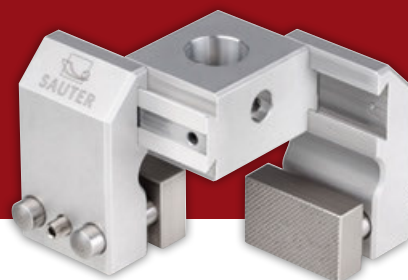
Contact us today and ask for your individual solution.



**CUSTOMIZED**  
SOLUTION SERVICE



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





FACE  
LIFT



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

### Features

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

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

### Technical data

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

### Accessories

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

STANDARD



OPTION



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

Further calibration options on request

FACE  
LIFT



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

### Features

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

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

### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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

Further calibration options on request



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

### Features

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

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

### Technical data

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

### Accessories

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

STANDARD



OPTION



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

Further calibration options on request



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

### Features

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

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

### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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

Further calibration options on request



PREMIUM



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



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

### Use with integrated load cell

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

### Use with external load cells

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



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



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



User-friendly touch pen for display included with the delivery



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



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

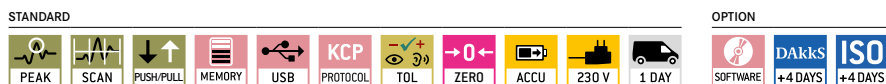


Features	Technical data	Accessories
<ul style="list-style-type: none"> <li>• 3,5" touchscreen with touch pen</li> <li>• Standard version with 2 or 4 measuring channels for external force sensors (subsequently expandable from 2 to 4)</li> <li>• An internal load cell is possible (is deactivated if an external load cell is connected)</li> <li>• Suitable for 4-wire and 6-wire sensors with strain gauges</li> <li>• Two-point adjustment with weights or numerical adjustment possible</li> <li>• The specific data of an external sensor are stored directly in the connector</li> <li>• USB interface for data transfer and power supply as standard</li> <li>• Internal device memory (16 GB)</li> <li>• Adjustable SI units: kg, N, kN, mN, MN, Nm, kNm, mNm</li> <li>• Tolerance function</li> <li>• Track function for continuous measurement display</li> <li>• Peak value measurement</li> </ul>	<ul style="list-style-type: none"> <li>• Resolution: up to 10000 points per measurement channel</li> <li>• Storage of measured values as well as their transmission to the interface with up to 1000 Hz per measuring channel</li> <li>• Measurement accuracy:                         <ul style="list-style-type: none"> <li>- with internal load cell: 0.1 % of [Max]</li> <li>- with external load cell: among other things from the load cells used</li> </ul> </li> <li>• Overload protection: 150 % of [Max] with internal measuring cell</li> <li>• Thread on load receptor: M6 (outer)</li> <li>• Rechargeable battery pack integrated, as standard, operating time up to 8 h without backlight, charging time approx. 8 h</li> <li>• External mains adapter, for connection to the USB-C connector, standard</li> <li>• Overall dimensions W×D×H 71×31×180 mm</li> <li>• Net weight approx. 0,40 kg</li> </ul>	<ul style="list-style-type: none"> <li>• For subsequent expansion to 4 measuring channels, A/D converter module, only for FS 2 and FS 2-xxx models, SAUTER FS 34, € 205,-</li> <li>• Stainless steel handle bar with rubber grip, SAUTER AFK 02, € 105,-</li> <li>• Transport case, e.g. for accessories, SAUTER FS TKZ, € 125,-</li> <li>• Standard attachments, SAUTER AC 43, € 61,-</li> <li>• Hook for tensile and fracture testing up to 500 N, thread: M6, 1 item, SAUTER AC 49, € 21,-</li> <li>• Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see <i>internet</i></li> <li>• Suitable load cells see page 86 et seq.</li> <li>• Holders for object fixation and other accessories, please see <i>internet</i></li> </ul>

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

**Order example SAUTER FS force gauge with 2 load cells:**

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



**Service required for use with external sensors**

Model	Measuring range internal load cell [Max] N	Readability internal load cell [d] N	Internal load cell	Number of measuring channels	Price excl. of VAT ex works €	Model	Adjustment of optional, external sensors	Measuring range [Max] kN	Price excl. of VAT ex works €
SAUTER FS 2	-	-	-	2	950,-	SAUTER FS 401	Numeric*	-	135,-
SAUTER FS 2-20	20	0,004	•	2	1070,-	SAUTER FS 402	Two-point	0,05	160,-
SAUTER FS 2-50	50	0,01	•	2	1070,-	SAUTER FS 403		2	170,-
SAUTER FS 2-100	100	0,02	•	2	1070,-	SAUTER FS 404		5	195,-
SAUTER FS 2-200	200	0,04	•	2	1070,-	SAUTER FS 405		20	205,-
SAUTER FS 2-500	500	0,1	•	2	1070,-	SAUTER FS 406		50	205,-
SAUTER FS 4	-	-	-	4	1070,-	SAUTER FS 407		120	225,-
SAUTER FS 4-20	20	0,004	•	4	1180,-	SAUTER FS 408		250	240,-
SAUTER FS 4-50	50	0,01	•	4	1180,-				
SAUTER FS 4-100	100	0,02	•	4	1180,-				
SAUTER FS 4-200	200	0,04	•	4	1180,-				
SAUTER FS 4-500	500	0,1	•	4	1180,-				

\*only for sensors > 250 kN



## Practical set of premium force gauge and measuring cell

### Features

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



**Accessories**

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

STANDARD

OPTION

FS SP1, FS RY1, FS OY2

≤ 5 kN

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



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

### SAUTER FA-G

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

### SAUTER FL-G

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

### SAUTER FS-G

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

Further details and plenty of further accessories see *internet*



STANDARD

OPTION

PEAK PUSH/PULL ZERO 1 DAY ISO +4 DAYS

STANDARD

PEAK PUSH/PULL MEMORY USB ANALOG UNIT TOL

STANDARD

PEAK SCAN PUSH/PULL MEMORY USB KCP PROTOCOL TOL

OPTION

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

OPTION

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

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



## Compact force measuring instrument

### Features

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

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

### Technical data

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

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

### Accessories

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

#### STANDARD

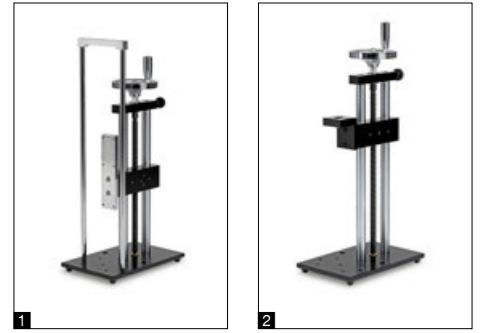


#### OPTION



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





## Manual test stand for highly accurate tensile and compressive force measurements

### Features

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

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

### Technical data

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

### Accessories

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

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

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

You can find our bundles on page 24

STANDARD



TVL, TVL-XLS

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



SAUTER TVP



SAUTER TVP-L



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

### Features

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

### Technical data

- Maximum work zone: 315 mm
- Maximum stroke length: 78 mm
- Base plate with threaded hole M6
- Overall dimensions W×D×H 150×233×420 mm
- Net weight approx. 11 kg

### Accessories

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

#### Only TVP-L:

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

STANDARD



TVP-L

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



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

### FH 500S71

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

### Accessories

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

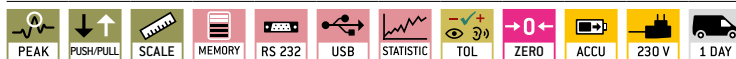
### TVL 500FHS71

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

### Accessories

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

STANDARD



OPTION



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



## Robust premium test stand for laboratory applications

### Features

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

### Technical data

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

### Accessories

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

STANDARD



OPTION



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



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



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

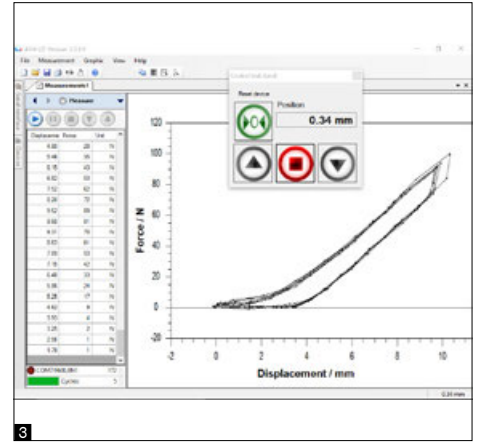


A wide range of application possibilities because of its large travelling distance



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





**Features**

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

**1 SAUTER TVO-LD**

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

**Technical data**

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

**Accessories**

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

<b>STANDARD</b>				<b>OPTION</b>	
TVO-LD	TVO-LD			TVO	

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



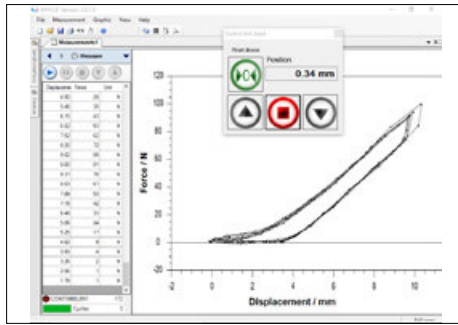
Motorised test stand incl. length measuring device LB



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



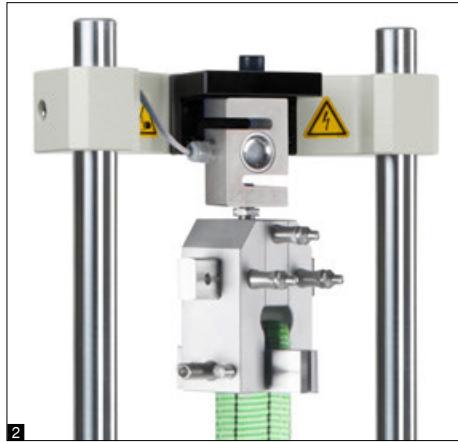
Premium operating panel  
 - Digital speed display  
 - Digital repeat function



Control of the test stand using PC software SAUTER AFH



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



**Features**

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

**SAUTER TVM-N/TVM-NL**

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

**SAUTER TVM-LB**

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

**Technical data**

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

**Accessories**

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

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

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

**1** \* ONLY WHILE STOCKS LAST



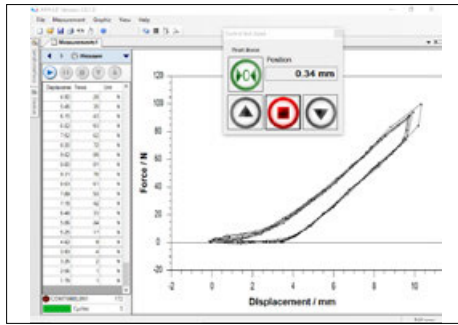
Motorised test stand incl. length measuring system LD



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



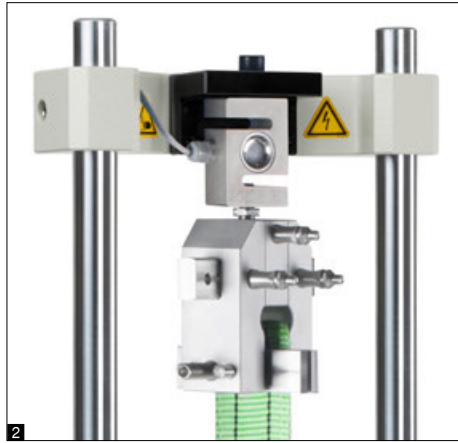
Premium operating panel  
- Digital speed display for a direct reading of the displacement speed  
- Digital repeat function for long-term stress test



Control of the test stand using PC software SAUTER AFH



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



**Features**

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

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

**Technical data**

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

**Accessories**

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

**SAUTER TVS-LD**

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

STANDARD

SCALE SOFTWARE STEPPER 2 DAYS

OPTION

SOFTWARE

TVS-LD TVS

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





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

### Características

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

### Datos técnicos

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

#### STANDARD



#### OPTION



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

**1** ONLY WHILE STOCKS LAST

# FASTENERS & ACCESSORIES

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

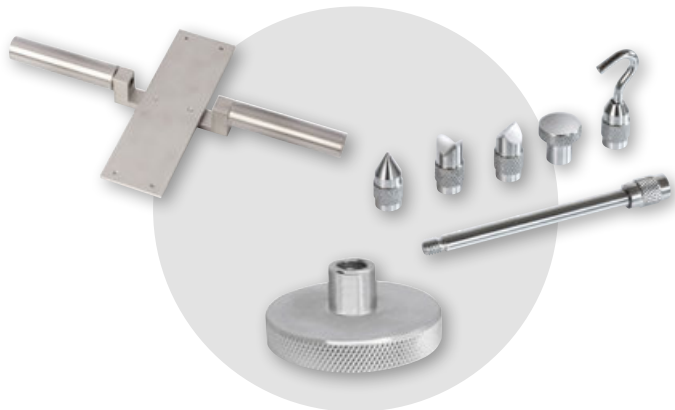
In addition to a wide selection of fasteners, SAUTER also offers suitable accessories to provide you with the ideal support for your measurements. Whether standard or customised solutions, our range has everything you need for precise and efficient measuring.

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

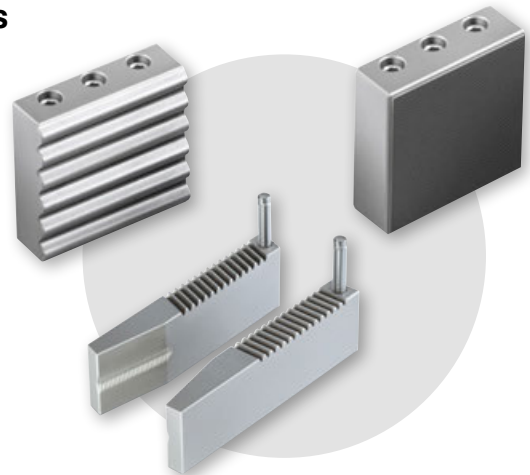


We will be happy to advise you:  
Tel. +49 7433 9933-562  
info.sauter@kern-sohn.com

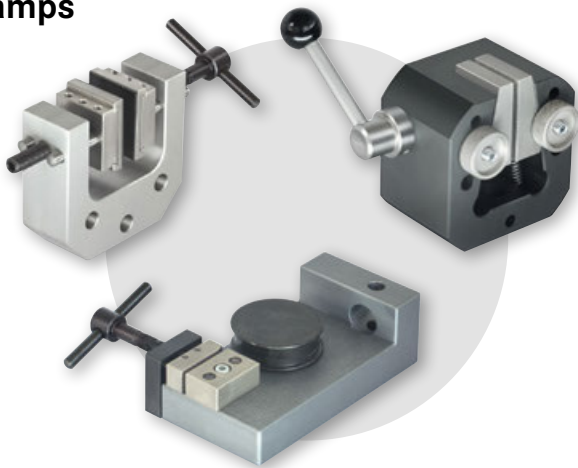
## Accessories



## Jaws



## Clamps



## Connection adapters



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

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





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

### Features

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

### Technical data

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

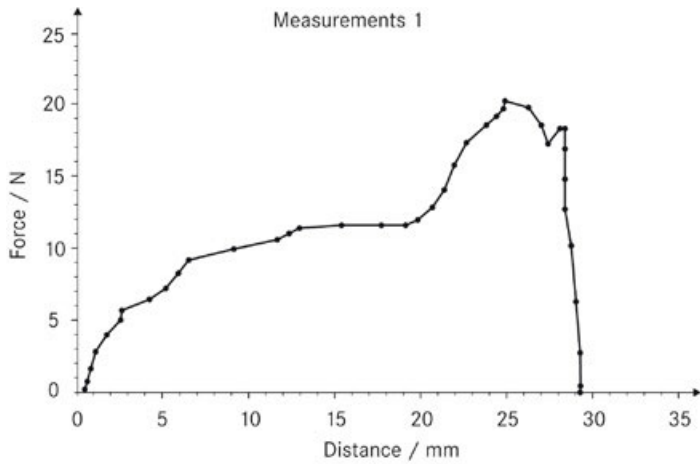
### STANDARD



1 DAY

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





## Data transfer software for force-displacement-measurements

### Features

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

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

### Technical data

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

### Accessories

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

STANDARD



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

### SAUTER AFH LD

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



No.	Messwert	Einheit	Richtung	Material	Datum	Zeit
6	1000	mL	0	Stee&Cast Steel	11. Nov	21:00
7	800	mL	0	Stee&Cast Steel	11. Nov	21:00
8	540	mL	0	Stee&Cast Steel	11. Nov	21:00
9	540	mL	0	Stee&Cast Steel	11. Nov	21:00
10	400	mL	0	Stee&Cast Steel	11. Nov	21:00
11	420	mL	0	Stee&Cast Steel	11. Nov	21:00
12	400	mL	0	Stee&Cast Steel	11. Nov	21:00
13	387	mL	0	Stee&Cast Steel	11. Nov	21:00
14	347	mL	0	Stee&Cast Steel	11. Nov	21:00
15	306	mL	0	Stee&Cast Steel	11. Nov	21:00
16	300	mL	0	Stee&Cast Steel	11. Nov	21:00
17	420	mL	0	Stee&Cast Steel	11. Nov	21:00
18	500	mL	0	Stee&Cast Steel	11. Nov	21:00
19	500	mL	0	Stee&Cast Steel	11. Nov	21:00
20	500	mL	0	Stee&Cast Steel	11. Nov	21:00
21	600	mL	0	Stee&Cast Steel	11. Nov	21:00
22	500	mL	0	Stee&Cast Steel	11. Nov	21:00
23	600	mL	0	Stee&Cast Steel	11. Nov	21:00
24	500	mL	0	Stee&Cast Steel	11. Nov	21:00
25	500	mL	0	Stee&Cast Steel	11. Nov	21:00
26	400	mL	0	Stee&Cast Steel	11. Nov	21:00
27	400	mL	0	Stee&Cast Steel	11. Nov	21:00
28	400	mL	0	Stee&Cast Steel	11. Nov	21:00
29	400	mL	0	Stee&Cast Steel	11. Nov	21:00
30	400	mL	0	Stee&Cast Steel	11. Nov	21:00
31	400	mL	0	Stee&Cast Steel	11. Nov	21:00
32	400	mL	0	Stee&Cast Steel	11. Nov	21:00
33	400	mL	0	Stee&Cast Steel	11. Nov	21:00
34	400	mL	0	Stee&Cast Steel	11. Nov	21:00
35	400	mL	0	Stee&Cast Steel	11. Nov	21:00
36	400	mL	0	Stee&Cast Steel	11. Nov	21:00
37	400	mL	0	Stee&Cast Steel	11. Nov	21:00
38	400	mL	0	Stee&Cast Steel	11. Nov	21:00
39	400	mL	0	Stee&Cast Steel	11. Nov	21:00
40	400	mL	0	Stee&Cast Steel	11. Nov	21:00
41	400	mL	0	Stee&Cast Steel	11. Nov	21:00
42	400	mL	0	Stee&Cast Steel	11. Nov	21:00
43	400	mL	0	Stee&Cast Steel	11. Nov	21:00
44	400	mL	0	Stee&Cast Steel	11. Nov	21:00
45	400	mL	0	Stee&Cast Steel	11. Nov	21:00
46	400	mL	0	Stee&Cast Steel	11. Nov	21:00
47	400	mL	0	Stee&Cast Steel	11. Nov	21:00
48	400	mL	0	Stee&Cast Steel	11. Nov	21:00
49	400	mL	0	Stee&Cast Steel	11. Nov	21:00
50	400	mL	0	Stee&Cast Steel	11. Nov	21:00
51	400	mL	0	Stee&Cast Steel	11. Nov	21:00
52	400	mL	0	Stee&Cast Steel	11. Nov	21:00
53	400	mL	0	Stee&Cast Steel	11. Nov	21:00
54	400	mL	0	Stee&Cast Steel	11. Nov	21:00
55	400	mL	0	Stee&Cast Steel	11. Nov	21:00
56	400	mL	0	Stee&Cast Steel	11. Nov	21:00
57	400	mL	0	Stee&Cast Steel	11. Nov	21:00
58	400	mL	0	Stee&Cast Steel	11. Nov	21:00
59	400	mL	0	Stee&Cast Steel	11. Nov	21:00
60	400	mL	0	Stee&Cast Steel	11. Nov	21:00
61	400	mL	0	Stee&Cast Steel	11. Nov	21:00
62	400	mL	0	Stee&Cast Steel	11. Nov	21:00
63	400	mL	0	Stee&Cast Steel	11. Nov	21:00
64	400	mL	0	Stee&Cast Steel	11. Nov	21:00
65	400	mL	0	Stee&Cast Steel	11. Nov	21:00
66	400	mL	0	Stee&Cast Steel	11. Nov	21:00
67	400	mL	0	Stee&Cast Steel	11. Nov	21:00
68	400	mL	0	Stee&Cast Steel	11. Nov	21:00
69	400	mL	0	Stee&Cast Steel	11. Nov	21:00
70	400	mL	0	Stee&Cast Steel	11. Nov	21:00
71	400	mL	0	Stee&Cast Steel	11. Nov	21:00
72	400	mL	0	Stee&Cast Steel	11. Nov	21:00
73	400	mL	0	Stee&Cast Steel	11. Nov	21:00
74	400	mL	0	Stee&Cast Steel	11. Nov	21:00
75	400	mL	0	Stee&Cast Steel	11. Nov	21:00
76	400	mL	0	Stee&Cast Steel	11. Nov	21:00
77	400	mL	0	Stee&Cast Steel	11. Nov	21:00
78	400	mL	0	Stee&Cast Steel	11. Nov	21:00
79	400	mL	0	Stee&Cast Steel	11. Nov	21:00
80	400	mL	0	Stee&Cast Steel	11. Nov	21:00
81	400	mL	0	Stee&Cast Steel	11. Nov	21:00
82	400	mL	0	Stee&Cast Steel	11. Nov	21:00
83	400	mL	0	Stee&Cast Steel	11. Nov	21:00
84	400	mL	0	Stee&Cast Steel	11. Nov	21:00
85	400	mL	0	Stee&Cast Steel	11. Nov	21:00
86	400	mL	0	Stee&Cast Steel	11. Nov	21:00
87	400	mL	0	Stee&Cast Steel	11. Nov	21:00
88	400	mL	0	Stee&Cast Steel	11. Nov	21:00
89	400	mL	0	Stee&Cast Steel	11. Nov	21:00
90	400	mL	0	Stee&Cast Steel	11. Nov	21:00
91	400	mL	0	Stee&Cast Steel	11. Nov	21:00
92	400	mL	0	Stee&Cast Steel	11. Nov	21:00
93	400	mL	0	Stee&Cast Steel	11. Nov	21:00
94	400	mL	0	Stee&Cast Steel	11. Nov	21:00
95	400	mL	0	Stee&Cast Steel	11. Nov	21:00
96	400	mL	0	Stee&Cast Steel	11. Nov	21:00
97	400	mL	0	Stee&Cast Steel	11. Nov	21:00
98	400	mL	0	Stee&Cast Steel	11. Nov	21:00
99	400	mL	0	Stee&Cast Steel	11. Nov	21:00
100	400	mL	0	Stee&Cast Steel	11. Nov	21:00



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

### Features

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

### Technical data

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

### Accessories

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

STANDARD



# 2



## LENGTH MEASUREMENT

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

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

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

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

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

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

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



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

### Quick-Finder

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



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

### Features

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

### Technical data

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

### Accessories

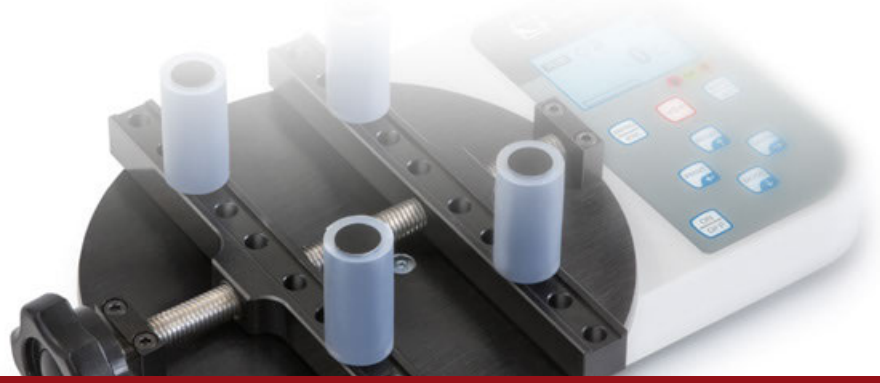
- RS-232/PC connection cable, SAUTER LB-A01, € 390,-
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02, € 210,-

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

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

ONLY WHILE STOCKS LAST

# 3



## TORQUE MEASUREMENT

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

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

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

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

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



**Helga Biselli**  
Product Specialist  
Torque Measurement  
Tel. +49 7433 9933-188  
info@sauter.eu

### Quick-Finder

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



3



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

### Features

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

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

### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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





3



## Convenient way to test the torque of tools

### Features

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

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

### Technical data

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

### Accessories

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

STANDARD



OPTION



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

# 4



## COATING THICKNESS MEASUREMENT

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

Fundamentally there are two measuring principles for determining coating thickness:



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



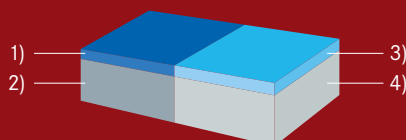
**Typ N:** Coatings on non-magnetic metals, such as aluminium (eddy current principle). Here are some sample material combinations:  
 3) [lacquer, paints, enamel, chrome, plastics] on  
 4) [aluminium, brass, sheet metal, copper, zinc, bronze]



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



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



### Quick-Finder

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



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

### Features

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

### Technical data

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

### Accessories

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



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

**1** \* ONLY WHILE STOCKS LAST



4

## Robust coating thickness gauge – compact and easy to use

### Features

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

### **2** SAUTER TC 1250-0.1FN-CAR

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

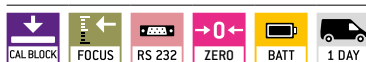
### Technical data

- Measuring precision:
  - Standard: 3 % of measured value or  $\pm 2,5 \mu\text{m}$
  - Offset-Accur: 1 % of measured value or  $\pm 1 \mu\text{m}$
- Smallest sample surface (radius)
  - Type F
    - Convex: 1,5 mm
    - Flat: 13 mm
    - Concave: 80 mm
  - Type N
    - Convex:
    - Flat:
    - Concave:
- Minimum thickness of base material: 300  $\mu\text{m}$
- Overall dimensions W×D×H 125×65×26 mm
- Battery operation, batteries standard (4×1.5 V AAA)
- Net weight approx. 0,15 kg

### Accessories

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

#### STANDARD



#### OPTION



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

**1** ONLY WHILE STOCKS LAST



## Ergonomic design and external measuring head for highest ease of use

### Features

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

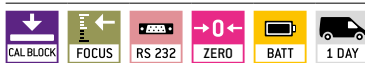
### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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





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

### Features

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

### SAUTER TG

- External sensor for difficult-to-access measuring points

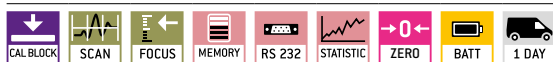
### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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

**1** \* ONLY WHILE STOCKS LAST



4



## New-generation measuring coating thickness gauge

### Features

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

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

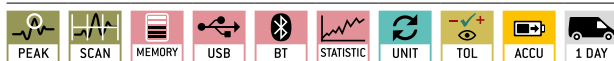
### Technical data

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

### Accessories

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

STANDARD



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

# 5



## MATERIAL THICKNESS MEASUREMENT

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

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

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

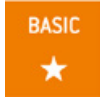
Ultrasonic measuring equipment can be used to measure all hard and homogeneous materials, such as metal, glass and hard plastics. This method can not be used to measure materials as, e.g. concrete, asphalt, teflon or wood.



**Andreas Vossler**  
Product Specialist  
Material Thickness Measurement  
Tel. +49 7433 9933-243  
info@sauter.eu

### Quick-Finder

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



5



## Reliable material thickness gauge for daily use

### Features

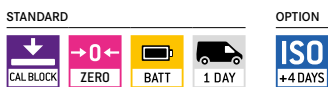
- External measuring head for difficult-to-access measuring points
- Selectable measuring units: mm, inch
- Auto-Power-Off
- Base plate for adjustment included
- Scope of delivery: Operating instructions, batteries, external measuring head (∅ 8 mm) and ultrasound contact gel
- **1** Delivered in a robust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

### Technical data

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

### Accessories

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



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



## Compact pocket-sized material thickness gauge

### Features

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

### Technical data

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

### Accessories

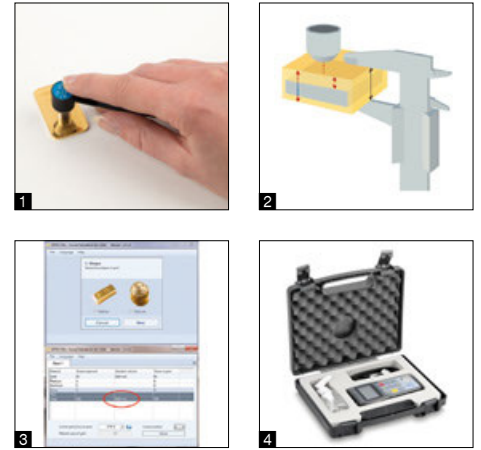
- Data transfer software, interface cable included, SAUTER ATC-01, **€ 100,-**
- External measuring head, 5 MHz, ø 6 mm, for thin test materials: measuring range (steel) up to approx. 80 mm, SAUTER ATB-US01, **€ 215,-**
- External measuring head, 5 MHz, ø 12 mm, for hot test materials: Measuring range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

STANDARD				OPTION	

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



5



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

### Features

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

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

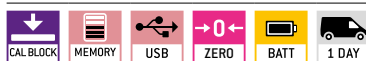
### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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



## Portable measuring device for ultrasonic material thickness testing

<p><b>Features</b></p> <ul style="list-style-type: none"> <li>External measuring head</li> <li>Data interface USB standard (only for models with readout [d] = 0,01 mm)</li> <li>Scan mode (10 measurements per sec.) or single point measuring mode possible</li> <li>Internal memory for up to 20 files (with up to 100 values per file)</li> <li>Selectable measuring units: mm, inch</li> <li>Scope of delivery: Operating instructions, batteries, device-specific measuring head and ultrasound contact gel</li> <li><b>1</b> Delivered in a robust carrying case</li> </ul>	<p><b>Technical data</b></p> <ul style="list-style-type: none"> <li>Measuring precision: 0,5 % of [Max] ± 0,04 mm</li> <li>Overall dimensions W×D×H 150×74×32 mm</li> <li>Battery operation, batteries standard (2×1.5 V AA), AUTO-OFF function to preserve the battery</li> <li>Net weight approx. 0,25 kg</li> </ul>	<p><b>Accessories</b></p> <ul style="list-style-type: none"> <li>Data transfer software, interface cable included, SAUTER ATU-04, <b>€ 120,-</b></li> <li>External measuring head, 2,5 MHz, ø 14 mm, for thick samples, in particular cast iron with rough upper surfaces: Measuring range 3–300 mm (steel), SAUTER ATU-US01, <b>€ 235,-</b></li> <li>External measuring head, 7 MHz, ø 6 mm, for thin test materials: Measuring range 0,75–80 mm (steel), SAUTER ATU-US02, <b>€ 150,-</b></li> <li>External measuring head, 5 MHz, ø 10 mm, SAUTER ATU-US09, <b>€ 150,-</b></li> <li>External measuring head, 5 MHz, ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10, <b>€ 150,-</b></li> <li>External measuring head, 5 MHz, ø 12 mm, for hot test materials: Measuring range (steel) 3–200 mm at temperatures of up to 300 °C, SAUTER ATB-US02, <b>€ 270,-</b></li> <li>Ultrasound contact gel, refill pack, approx. 70 ml, SAUTER ATB-US03, <b>€ 35,-</b></li> </ul>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

STANDARD	OPTION

[d]=0,01 mm

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

**1** \* ONLY WHILE STOCKS LAST



5



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

### Features

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

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

### Technical data

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

### Accessories

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

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

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

STANDARD						OPTION	

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



## Premium ultrasonic thickness gauge

5

### Features

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

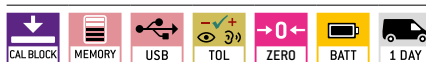
### Technical data

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

### Accessories

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

STANDARD



OPTION



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

**1** ONLY WHILE STOCKS LAST



5



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

### Features

- Dual measuring modes to determine material thickness:
  - Pulse-Echo mode (up to 600 mm)
  - Echo-Echo mode (up to 100 mm) Echo-Echo measurement: Determines the actual material thickness regardless of whether there is a coating on the base metal. In this way, the wall thickness of pipes, for example, can be determined without having to remove the coating. The measurement will be output, with the adjustment for the coating thickness taken into account
- Can be used on these materials, as well as others: Metals, plastics, ceramics, composite materials, epoxy, glass and other materials
- High-precision mode: Readout accuracy can be switched from 0.1 mm to 0.01 mm
- 1** Premium display: TFT colour display (320×240) with adjustable brightness, so that it can be read under the most varied lighting conditions
- Large internal data memory for up to 100 data sets each with 100 individual values
- Energy-saving operation with 2× AA batteries and an operating time of at least 30 hours, adjustable power-off time (sleep mode) and adjustable display switch-off (standby mode)

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

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

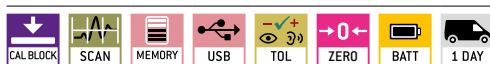
### Technical data

- Measuring precision: 0,4 % of [Max] ± 0,04 mm
- Overall dimensions W×D×H 31×69×130 mm
- Battery operation, batteries standard (2×1.5 V AA), AUTO-OFF function to preserve the battery
- Net weight approx. 0,25 kg

### Accessories

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

#### STANDARD



#### OPTION



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



# 6



## HARDNESS TESTING OF PLASTICS (SHORE)

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

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

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

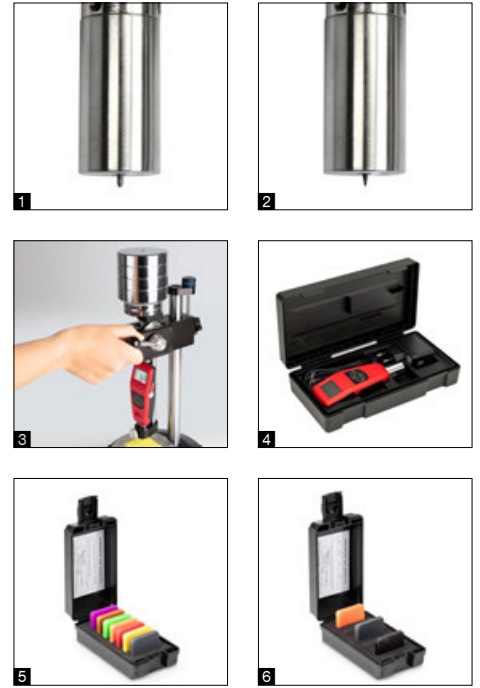
At this time, KERN does not calibrate Shore hardness testing instruments. As an alternative, we recommend that the measuring device is operated with a calibrated kit of hardness comparison plates (such as SAUTER AHBA 01).



**Andreas Vossler**  
Product Specialist  
Hardness Testing of Plastics  
Tel. +49 7433 9933-243  
info@sauter.eu

### Quick-Finder

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



6



## Shore hardness tester with extensive functionality

### Features

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

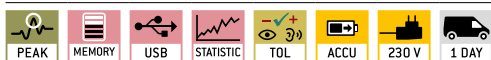
### Technical data

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

### Accessories

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

### STANDARD



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



## Test stand for hardness testing Shore A and D

### Features

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

### Technical data

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

### Accessories

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

STANDARD



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



6



## Compact handheld durometer with drag indicator

### Features

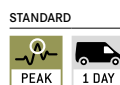
- Typical application: measurement of penetration (Shore)
- Particularly recommended for internal comparison measurement. Standard calibrations e.g. to DIN 48-4 are not possible because of very narrow standard tolerances
- Shore A: Rubber, elastomers, neoprene, silicone, vinyl, so plastics, felt, leather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

### Technical data

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

### Accessories

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



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



## Professional Shore hardness tester

### Features

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

### Technical data

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

### Accessories

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

STANDARD



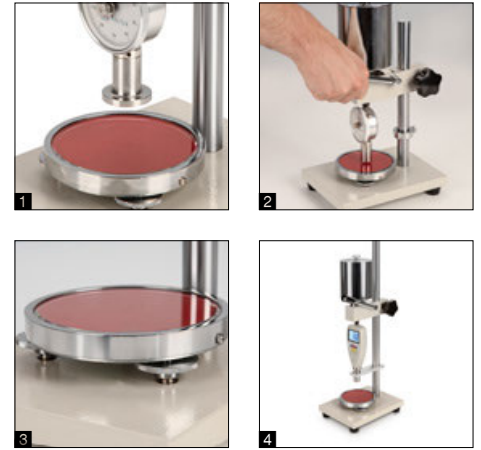
OPTION



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

**1** \* ONLY WHILE STOCKS LAST





6



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

### Features

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

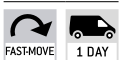
### Operation:

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

### Technical data

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

STANDARD



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

# 7



## HARDNESS TESTING OF METALS (LEEB)

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

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

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

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



**Andreas Vossler**  
Product Specialist  
Hardness Testing of Metal  
Tel. +49 7433 9933-243  
info@sauter.eu

### Quick-Finder

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



7

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

### Features

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

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

### Technical data

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



### Accessories

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

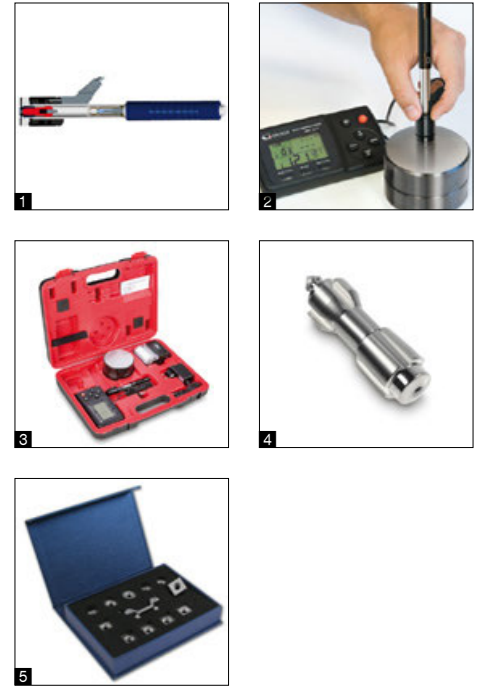
### STANDARD



### OPTION



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



## Advanced features for demanding applications

### Features

- **1** Impact (rebound) sensor: The bounce module is accelerated by a spring against the item being tested. Depending on how hard the object is, the kinetic energy of the module will be absorbed. The speed reduction will be measured and converted to Leeb hardness values
- External impact sensor (Type D) included
- High levels of mobility and flexibility in comparison with stationary table-top devices and hardness testing devices with internal sensors
- All measurement directions possible (360°) thanks to an automatic compensation function
- **2** Hardness test block for calibration included (790 ± 40 HL)
- Internal memory for up to 9 measurement values
- Mini statistics function: displays the measured result, the average value, the impact direction, date and time
- SAUTER HMM: Infrared printer for direct output of the measuring results is included with delivery

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

### Technical data

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

### Accessories

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



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



7

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

### Features

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

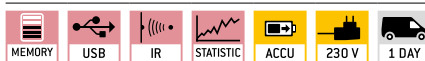
### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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





## Advanced features for professional applications

### Features

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

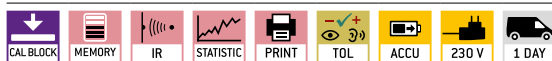
### Technical data

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

### Accessories

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

#### STANDARD



#### OPTION



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

# 2025's MOST WANTED!



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

## **BALANCES AND TEST SERVICE**

Get a full overview of the wide range from KERN, including our high-quality balances, test weights and services such as verification and calibration services.

## **MEDICAL SCALES**

Our medical scales cover the full array: baby scales to personal scales, chair scales and adiposity scales through to hand grip dynamometers, pharmaceutical balances and veterinary scales, we offer the complete range.

## **MICROSCOPES AND REFRACTOMETERS**

Discover our large range of optical instruments, such as, for example our compound, polarisation or fluorescence microscopes, or our analogue and digital refractometers.

## **SAUTER MEASURING TECHNOLOGY**

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

## **TEST SERVICE BROCHURE**

Detailed information on all topics pertaining to the calibration and conformity assessment of balances, test weights and measuring devices.

All catalogues and information material are available for you to download as PDF files from our website:  
[www.kern-sohn.com/shop/en/DOWNLOADS](http://www.kern-sohn.com/shop/en/DOWNLOADS)



# 8



## HARDNESS TESTING OF METALS (UCI)

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

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

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

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

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

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

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



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

### Quick-Finder

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



8



## Premium UCI hardness testing device for Rockwell, Brinell and Vickers



### Mini statistics function:

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



### Scope of delivery:

Standard block for calibration (approx. 61 HRC), USB cable, display unit, UCI sensor unit, transport case, software to transfer the saved data to the PC, protective case (turquoise), further accessories



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





**Features**

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

- The device can be set to both standard hardness test blocks and also to up to 20 reference calibration values. In this way different materials can be measured rapidly without having to re-adjust for individual materials

**Technical data**

- Measuring ranges: HRC: 20,3–68; HRB: 41–100; HRA: 61-85,6; HV: 80–1599; HB: 76–618; Tensile strength: 255–2180 N/mm<sup>2</sup>
- Measurement precision: ± 3 % HV; ± 1,5 HR; ± 3 % HB
- Display units: HRC, HV, HBS, HBW, HK, HRA, HRD, HR15N, HR30N, HR45N, HS, HRF, HR15T, HR30T, HR45T, HRB.
- Minimum weight of the test object: 300 g for direct measurement with the sensor (included); 100 g with supporting ring (optional)
- Minimum dimensions the test surface size around: approx. 5×5 mm (recommended)
- Rechargeable battery pack integrated, as standard, operating time up to 12 h without backlight, charging time approx. 8 h
- Overall dimensions W×D×H 28×83×160 mm
- Net weight approx. 0,95 kg

**Accessories**

- External impact sensor Type D, as standard, can be reordered, SAUTER AHMO D, € 355,-
- Calibration and adjustment plate (hardness test blocks) with defined and tested steel hardness for regular testing and adjustment of hardness testing devices. The hardness values are indicated. A key feature of the plates is the low-granular, homogenous finish of the steel, ø 90 mm  
28 to 35 HRC, SAUTER HO-A09, € 440,-  
38 to 43 HRC, SAUTER HO-A10, € 440,-

- 48 to 53 HRC, SAUTER HO-A11, € 440,-
- 58 to 63 HRC, SAUTER HO-A12, € 440,-
- Test stand for repeatable movements during testing. Smooth-running mechanical system, stroke length 34 mm, maximum height of the test object within the test stand 240 mm, swivel probe device for measurements outside the base plate, very robust construction, net weight approx. 9 kg, SAUTER HO-A08, € 1610,-
- Motorised probe. Enables testing at the touch of a button while maintaining the same procedure (while stocks last)  
HV 0,3, SAUTER HO-A15, € 2900,-  
HV 0,5, SAUTER HO-A16, € 2900,-  
HV 0,8, SAUTER HO-A17, € 2900,-

**SAUTER HO 1K, HO 2K**

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

**SAUTER HO 5K, HO 10K**

- Support ring, flat, SAUTER HO-A04, € 510,-
- Support ring, small cylinder, ø 8-20 mm, SAUTER HO-A05, € 510,-
- Support ring, large cylinder, ø 20-80 mm, SAUTER HO-A06, € 510,-
- Deep-hole protective cover, SAUTER HO-A07, € 280,-

STANDARD



OPTION



Model	Hardness scale	Min. weight of test item	Min. thickness of test item	Price excl. of VAT ex works €	Option	
					Factory Calibration Certificate	
		g	mm		KERN	€
SAUTER HO 1K	HV 1	300	2	5520,-	961-270	360,-
SAUTER HO 2K	HV 2	300	2	5520,-	961-270	360,-
SAUTER HO 5K	HV 5	300	2	5520,-	961-270	360,-
SAUTER HO 10K	HV 10	300	2	5520,-	961-270	360,-

# 9



## OCCUPATIONAL SAFETY, ENVIRONMENT

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

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

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

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



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

### Quick-Finder

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



BASIC  
★



## Photometer for precise light measurement up to 200,000 Lux

### Features

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

### Technical data

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



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

BASIC  
★



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

9

### Features

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

### Technical data

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

STANDARD	OPTION
BATT	1 DAY
ISO	+10 DAYS

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

BASIC  
★



## Versatile sound level meter

### Features

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

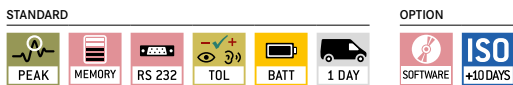
- Selectable methods of evaluation:
  - A: As sensitive as the human ear
  - C: Sensitive for noisier environmental conditions, where there are machines, plant, motors etc.
  - F: For areas with constant sound intensity
- Limit value function: programmable value for the maximum level value
- Track function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

### Technical data

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

### Accessories

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

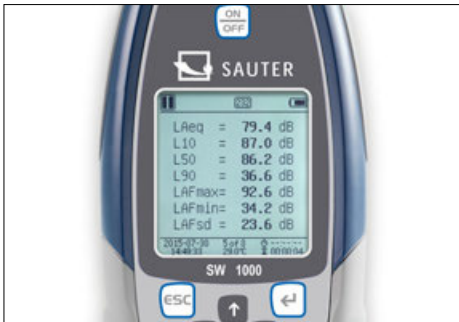


Model	Type	Measuring range [Min]-[Max] dB	Readout [d] dB	Price excl. of VAT ex works €	Option	
					Factory Calibration Certificate	€
SAUTER	Lp A	30 - 130	0,1	120,-	KERN	€
SU 130	Leq C				961-281	240,-
	Ln F					



9

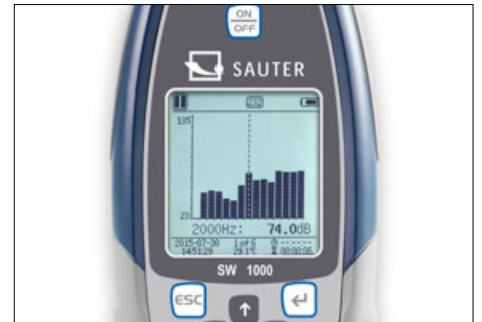
## First-class professional Class I, Class II sound level meter



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



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



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



**Features**

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

**Technical data**

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

**Accessories**

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

STANDARD										OPTION		

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





## Infrared thermometer for industry, environmental engineering and maintenance work

9

### Features

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

### SAUTER JIT 100

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

### SAUTER JIT 200

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

### Technical data

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

STANDARD



JIT 200 JIT 200 JIT 200 JIT 200

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



# 10



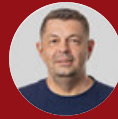
## COLOUR MEASUREMENT

### Everything is so bright and colourful here...

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

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

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



**Dietmar Paul**  
Product Specialist  
Measuring Colour  
Tel. +49 7433 9933-216  
info@sauter.eu

### Quick-Finder

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



## Versatile colour spectrometer for professional use

10



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



Characterise colours comprehensively – taking the gloss into account or not



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



**Features**

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

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

**Technical data**

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

STANDARD

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

# 11



## SYSTEM SOLUTIONS INDUSTRY 4.0, DISPLAY DEVICES

### BALANCE MANUFACTURE

Load cell + Junction Box + KERN YKV

### FORCE MEASUREMENT

Load cell + SAUTER FL + Software



### BALANCE CONSTRUCTION

Load cell + Evaluation device



### BALANCE MANUFACTURE

Load cell + KERN YKV +  
KERN Software BalanceConnection



### BALANCE MANUFACTURE

Load cell + Junction Box  
+ evaluation device



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

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



Daniel Egeler



Ralf Schmiegl

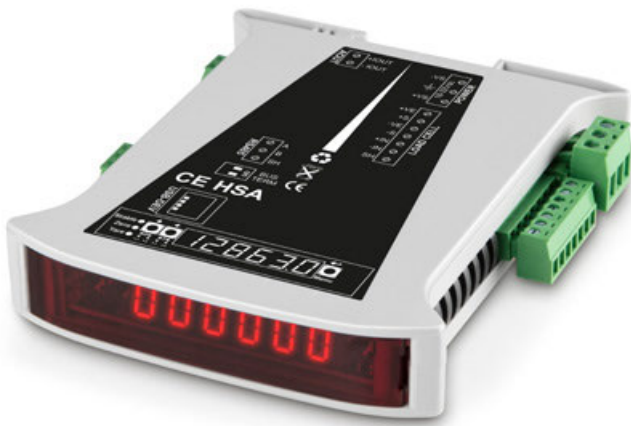


Maximilian Pfister

We are glad to inform and advise you  
Tel. +49 7433 9933-200  
etsales@kern-sohn.com







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

### Features

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

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

### Technical data

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

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

### Accessories

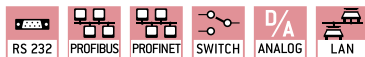
- Mains adapter for voltage supply to the KERN CE, can be fitted on the DIN rail, KERN CE HSS, **€ 90,-**
- Large display with superior display size, KERN YKD-A02, **€ 310,-**
- For further accessories, such as load and load cells, torque sensors and weighing platforms (strain gauge based only) from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

**Note:** Models optionally also available verified, please enquire

#### STANDARD



#### OPTION



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

\* ONLY WHILE STOCKS LAST



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

<b>Features</b>	<b>Technical data</b>	<b>Accessories</b>
-----------------	-----------------------	--------------------

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

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

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

11

STANDARD

CAL EXT	ANALOG	IP 54	IP 65	1 DAY
		Y1	Y2/Y4	

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

**1** ONLY WHILE STOCKS LAST

# 12



## LOAD CELLS

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

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

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

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



### Note

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



### Stefan Herrmann

Product Specialist

Load Cells

Tel. +49 7433 9933-214

stefan.herrmann@kern-sohn.com



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

**DC Y1**  
**Static torque sensor made from alloy steel**

**Technical data**

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

**DC Y2**  
**Static torque sensor made from alloy steel**

**Technical data**

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

Other designs and nominal loads on request

STANDARD



1 DAY

STANDARD



IP 65



1 DAY

OPTION



+4 DAYS

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

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

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



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

**Technical data**

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

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

**Technical data**

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

**CP P3**  
Single-point load cell  
made of anodised aluminium

**Technical data**

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

STANDARD      OPTION

STANDARD      OPTION

CP P1

STANDARD      OPTION

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

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

New model

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

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





### CP P2 Single-point load cell made of aluminium

#### Technical data

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

### CP P7 Single-Point load cell made from stainless steel

#### Technical data

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

### CP P8 Single-point load cell made of aluminium

#### Technical data

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

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

STANDARD      OPTION

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

STANDARD      OPTION

IP 67   1 DAY      DAkkS   ISO  
+3 DAYS   +4 DAYS

STANDARD      OPTION

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

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

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

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



CK P1



CK P2



CK P4



CK Y1



CK Y4



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

#### Technical data

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

### CK Y1 · CK Y4 Flat miniature alloy steel load cell

#### Technical data

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

#### CK Y1

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

#### CK Y4

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

### CD P1 Loadcell made of stainless steel

#### Technical data

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

#### Accessories

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

12

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

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

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

**1** \* ONLY WHILE STOCKS LAST

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

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



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

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

**1** ONLY WHILE STOCKS LAST



### CR Q1 Loadcell made of stainless steel

#### Technical data

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

#### Accessories

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



STANDARD: IP 68, 1 DAY

OPTION: ISO +4 DAYS, [Max] ≤ 25 t/250 kN

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

### CR P1 Loadcell made of stainless steel

#### Technical data

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

#### Accessories

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

STANDARD: IP 68, 4 DAYS

OPTION: DAkkS +3 DAYS, ISO +4 DAYS, [Max] ≤ 500 kg/5 kN

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

■ ONLY WHILE STOCKS LAST

### CR Y1 Loadcell made of steel alloy

#### Technical data

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

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

STANDARD: IP 68, 1 DAY

OPTION: DAkkS +3 DAYS, ISO +4 DAYS, [Max] ≤ 500 kg/5 kN

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



### CB Q1 · CB Q2

#### Bending beam and shear beam load cell made from stainless steel

##### Technical data

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

### CB P1

#### Bending beams made from stainless steel

##### Technical data

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

##### Accessories CB Q1 · CB Q2

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

##### Accessories CB P1

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



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



STANDARD			OPTION	
IP 67	M	1 DAY	+3 DAYS	+4 DAYS

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

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

**1** \* ONLY WHILE STOCKS LAST



**CT Q1**  
**Shear beam**  
**made from stainless steel**

**Technical data**

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

**CT P1 · CT P2**  
**Shear beam**  
**made from stainless steel**

**Technical data**

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

**Accessories CT Q1**

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

**Accessories CT P1 · CT P2**

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



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

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



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

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



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

**Technical data**

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

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

**Technical data**

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

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

12

STANDARD: IP 67, 1 DAY

OPTION: DAkkS +3 DAYS, ISO +4 DAYS

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

STANDARD: IP 67, 1 DAY

OPTION: DAkkS +3 DAYS, ISO +4 DAYS

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

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

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





CO Y1



CO Y2/CO Y3

CO Y4



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

**Technical data**

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

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

**Technical data**

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

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

**Technical data**

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

STANDARD      OPTION

IP 65   1 DAY      ISO  
+4 DAYS

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

STANDARD      OPTION

IP 65   IP 66   IP 67   1 DAY      DAkkS   ISO  
+3 DAYS   +4 DAYS  
CO Y1, CO Y2   CO Y3   CO Y4   [Max] ≤ 500 kg/5 kN

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

\* ONLY WHILE STOCKS LAST

STANDARD      OPTION

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

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



CJ P4



CJ P4PG



CJ X467



CJ X468

## CJ P

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

#### Features

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

## CJ X

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

#### Features

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

#### CJ X467

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

#### CJ X468

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

STANDARD



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

**I** \* ONLY WHILE STOCKS LAST

STANDARD



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

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

# 13



## SCALE KITS

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

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

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

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

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

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



**Stefan Herrmann**

Product Specialist

Scale Kits

Tel. +49 7433 9933-214

stefan.herrmann@kern-sohn.com

### Quick-Finder

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



SAUTER CW

SAUTER CW KFB



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

### Features

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

### Details for weighing cells:

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

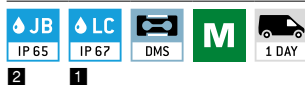
### Accessories

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

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

13

STANDARD



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



SAUTER CW RB

SAUTER CW KFNB



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

### Features

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

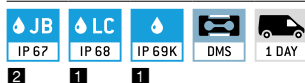
- Details for weighing cells:
  - CE and RoHS compliant
  - **1** Protection against dust and water splashes IP68/IP69K
  - Stainless steel
  - 2-wire connection
  - Nominal sensitivity: 3 mV/V
- Junctionbox SAUTER CJ X467:
  - **2** Robust housing made of stainless steel with IP67 dust and spray protection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

### Accessories

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

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

STANDARD



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



SAUTER CW R

SAUTER CW KFN



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

### Features

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

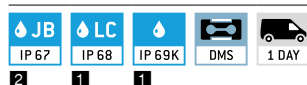
- Details for weighing cells:
  - Accuracy in accordance with OIML R60 C3
  - CE and RoHS compliant
  - **1** Protection against dust and water splashes IP68/IP69K
  - alloy steel
  - 6-wire connection
  - Nominal sensitivity: 2 mV/V
- Junctionbox SAUTER CJ X467:
  - **2** Robust housing made of stainless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

### Accessories

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

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

### STANDARD



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



# Accredited Calibration with Calibration Certificate for Force Gauges

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

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

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

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

## Prices for accredited Calibration of Force Gauges and Force Transducers

Situation A: Force transducer (voltage ratio, in mV/V)\*<sup>1,2</sup>

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
<b>Tensile force:</b>					
963-161IV (R)	≤ 500 N	250,-	963-161V (R)	≤ 500 N	235,-
963-162IV (R)	≤ 2 kN	300,-	963-162V (R)	≤ 2 kN	280,-
963-163IV (R)	≤ 5 kN	390,-	963-163V (R)	≤ 5 kN	360,-
<b>Compression force:</b>					
963-261IV (R)	≤ 500 N	250,-	963-261V (R)	≤ 500 N	235,-
963-262IV (R)	≤ 2 kN	300,-	963-262V (R)	≤ 2 kN	280,-
963-263IV (R)	≤ 5 kN	390,-	963-263V (R)	≤ 5 kN	360,-
<b>Tensile and Compression force:</b>					
963-361IV (R)	≤ 500 N	420,-	963-361V (R)	≤ 500 N	390,-
963-362IV (R)	≤ 2 kN	500,-	963-362V (R)	≤ 2 kN	465,-
963-363IV (R)	≤ 5 kN	670,-	963-363V (R)	≤ 5 kN	610,-

Situation B: Complete force gauge (in N)\*\*<sup>2</sup>

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
<b>Tensile force:</b>					
963-161I (R)	≤ 500 N	205,-	963-161 (R)	≤ 500 N	187,-
963-162I (R)	≤ 2 kN	250,-	963-162 (R)	≤ 2 kN	225,-
963-163I (R)	≤ 5 kN	345,-	963-163 (R)	≤ 5 kN	315,-
<b>Compression force:</b>					
963-261I (R)	≤ 500 N	205,-	963-261 (R)	≤ 500 N	187,-
963-262I (R)	≤ 2 kN	250,-	963-262 (R)	≤ 2 kN	225,-
963-263I (R)	≤ 5 kN	345,-	963-263 (R)	≤ 5 kN	315,-
<b>Tensile and Compression force:</b>					
963-361I (R)	≤ 500 N	375,-	963-361 (R)	≤ 500 N	340,-
963-362I (R)	≤ 2 kN	460,-	963-362 (R)	≤ 2 kN	420,-
963-363I (R)	≤ 5 kN	620,-	963-363 (R)	≤ 5 kN	560,-

(R): Recalibration

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

<sup>1</sup> Compatibility with our amplifiers required

<sup>2</sup> Installation in our measuring equipment required

## Factory Calibration Certificates

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

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

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

**For up-to-date information on test services for further measuring sizes, please visit our website [www.kern-lab.com](http://www.kern-lab.com)**

## Factory Calibration for Force

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

(R): Recalibration

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

<sup>\*1</sup> Compatibility with our amplifiers required

<sup>\*2</sup> Installation in our measuring equipment required

## Factory Calibration Certificates

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

# Retailer Information

## Sales conditions

---

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

### Delivery Conditions

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



Delivery is usually via courier service.



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

### Extract from general terms and conditions

#### Court of jurisdiction/Legal domicile:

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

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

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

### Sale or return

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

### Warranty

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

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

→ 1 year for pallet truck scales

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

## Service

---

### KERN DirectCash

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

### Hire Purchase

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

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

## After-Sales-Service

---

### Repair service

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

### Price reduction for a new device

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

### Spare parts service

Usually within 48 hours, transportation costs are additional.

## Marketing support

---

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

This catalogue and branch prospectuses are available free of charge. A neutral version of the catalogue, without the KERN address imprint, is also available free of charge for your marketing activities as PDF document. The KERN catalogue and branch prospectuses are available in the following languages: DE, EN, FR, IT, ES.

### Calibration Certificate with accreditation symbol

---

Upon request, you will receive a Calibration Certificate with accreditation symbol (Deutsche Akkreditierungsstelle GmbH – German accreditation point), which documents the precision of your SAUTER measuring instrument in detail and also serves as your proof that you monitor your checking equipment in a Quality Management System to ISO 9001.

### Accessories

---

Further extensive accessories for all our models can also be found in the KERN online shop [www.kern-sohn.com](http://www.kern-sohn.com)

## The oldest Precision Balance Factory in Germany

### SAUTER GmbH

c/o KERN & SOHN GmbH

Ziegelei 1  
72336 Balingen  
Germany  
Tel. +49 7433 9933-0  
info@sauter.eu  
www.kern-sohn.com

Discover the multifaceted World of Balances and Measuring Technology  
from SAUTER online: [www.kern-sohn.com](http://www.kern-sohn.com)



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



Follow us on our social media channels too



Printed in Germany by SAUTER GmbH  
z-cs-en-kp-20251

