

# TORQUE MEASUREMENT

PROFESSIONAL  
MEASURING



175  
KERN & SOHN

Balance manufacture in the  
Sauter family-owned company

250

2019

# KERN 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.



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



**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



**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.



**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 at the touch of a key. 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



**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.



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



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



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



**Factory calibration:**  
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.

## Sales conditions



**All prices are valid as of January 1st 2019** until a new version of the SAUTER catalogue is released. In Europe, all prices do not include the applicable V.A.T.

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

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



Delivery is usually via courier service.



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

### Extract from general terms and conditions:

Court of jurisdiction/Legal domicile: 72336 Balingen, Germany;  
Commercial register N°: HRB 400865, AG Stuttgart;  
Managing director: Albert Sauter. For the full Terms and Conditions, please refer to the website. [www.kern-sohn.com/en/kern/agbs.html](http://www.kern-sohn.com/en/kern/agbs.html)

**Price changes and product changes** are likely in individual cases due to product modifications as well as error.

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

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

## After-Sales-Service



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

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

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

## Visit us our online shop: [www.sauter.eu](http://www.sauter.eu)

### Online-Shop

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

### Measuring instruments Quick-Finde

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

### Calibration

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



## Services



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

### Hire Purchase

Financing is available using KERN hire purchase – easy and convenient.

Hire Purchase gives you the option of purchasing any product from the range against a simple monthly installment. The product value is financed over the period of the agreement. On payment of the last installment, the ownership of the contract item automatically transfers from the contractor to the contractee.

The Hire Purchase Agreement can – if you so choose – be set for a period of between one and five years. This package includes the transfer of items as well as the guarantee for the entire transfer period.

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

## Marketing support



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

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

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

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

### Special offers

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

### One-Stop-Shopping

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

### Downloads

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

## Torque measurement



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

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

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

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

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

### Quick-Finder

Measuring range [Max] Nm	Readout [d] Nm	Model SAUTER	Price excl. VAT, ex works €	Page
0.5	0,0001	<b>DB 0.5-4</b>	<b>1590,-</b>	42
1	0,0002	<b>DB 1-4</b>	<b>1590,-</b>	42
1	0,0002	<b>DA 1-4</b>	<b>1790,-</b>	41
5	0,001	<b>DB 5-3</b>	<b>1590,-</b>	42
5	0,001	<b>DA 5-3</b>	<b>1790,-</b>	41
10	0,002	<b>DB 10-3</b>	<b>1590,-</b>	42
10	0,002	<b>DA 10-3</b>	<b>1790,-</b>	41
20	0,005	<b>DB 20-3</b>	<b>1790,-</b>	42
50	0,01	<b>DB 50-2</b>	<b>1790,-</b>	42
100	0,02	<b>DB 100-2</b>	<b>1790,-</b>	42
200	0,05	<b>DB 200-2</b>	<b>1790,-</b>	42
500	0,05	<b>DA 500-2</b>	<b>1790,-</b>	42



**Irmgard Russo**  
Product specialist Torque measurement

Tel. +49 7433 9933-208  
Fax +49 7433 9933-29208  
russo@kern-sohn.com



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

### Features

- **1 Optimised for torque testing** of bottles, jars and other packaging with screw tops with a maximum diameter of 160 mm, e.g. in the food industry and pharmaceutical industry, as well as in the manufacturing of cosmetics such as, for example, lipsticks, etc.
- **2 Quick pin system:** The four bottle mounts (holders) are pushed in, instead of being screwed in, to save time. This allows you to reconfigure quickly for other bottle sizes
- **Metal housing** for continuous use in tough environmental conditions
- **3 Capacity display:** A bar lights up to show how much of the measuring range is still available.
- **3 LCD graphics display** with backlight
- **Rubber feet with anti-slip feature**
- Scope of delivery: four bottle mounts with rubber coat, sturdy carrying case
- **Internal data memory** saves up to 500 measurements. The memory contents can be transferred to the PC using optional software
- **4 USB and RS-232** data interfaces included
- **Peak hold function** to capture the peak value or **Track function** for continuous display of measurement
- **Can be used in both directions of rotation**
- **Measuring with tolerance range (limit-setting function):** Upper and lower limiting can be programmed individually. The process is supported by an audible and visual signal
- **AUTO-OFF function**

### Technical data

- Selectable units: Nm, lbf-in, kgf-cm, kgf-m, ft-lbf
- Precision:  $\pm 0,5\%$  of [Max]
- Measuring frequency: 1000 Hz
- Usable measuring range: 5–100 % of [Max]
- Overload protection: 150 % of [Max]
- Rechargeable battery pack integrated, standard, operating time up to 18 h without backlight, charging time approx. 14 h
- Overall dimensions W×D×H 250×160×100 mm
- Net weight approx. 3 kg

### Accessories

- **Plug-In for data transfer of measuring data** from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-1.0, € 90,-
- **Force-time data transfer software** for graphical representation on the PC and data transfer to Microsoft Excel®, SAUTER AFH FAST, € 115,-
- **RS-232/PC connection cable** SAUTER FL-A04, € 49,-
- **USB/PC connection cable** SAUTER FL-A01, € 49,-

STANDARD



OPTION



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

Price reduction



## Convenient way to test the torque of tools

### Features

- **1** Particularly suitable for testing torque wrenches, electric hand screwdrivers and cordless screwdrivers
- **2 Torque pick-up system** for dynamic testing of electric screwdrivers (from SAUTER DB 0.5-4 to DB 50-2)
- **Metal housing** for continuous use in tough environmental conditions
- **Capacity display:** A bar lights up to show how much of the measuring range is still available.
- **LCD graphics display** with backlight
- **Rubber feet with anti-slip feature** at SAUTER DB 0.5-4 up to DB 10-3
- **3 Stable mounting plate** for solid fixation at SAUTER DB 20-3 up to DB 500-2
- **USB and RS-232** data interfaces included
- Scope of delivery: Torque pick-up, sturdy carry case, mounting plate (models with [Max] ≥ 20 Nm)
- **Internal data memory** saves up to 500 measurements. The memory contents can be transferred to the PC using optional software
- **Peak hold function** to capture the peak value or **Track-Funktion** for continuous display of measurement
- **Can be used in both directions of rotation**
- **Measuring with tolerance range (limit-setting function):** Upper and lower limiting can be programmed individually. The process is supported by an audible and visual signal
- **AUTO-OFF function**

### Technical data

- Backlit LCD graphics display
- Units can be selected: Nm, lbf-in, kgf-cm, kgf-m, ft-lbf
- Precision: ± 0,5 % of [Max]
- Measuring frequency: 1000 Hz
- Usable measuring range: 5–100 % of [Max]
- Overload protection: 150 % of [Max]
- Rechargeable battery pack integrated, standard, operating time up to 18 h without backlight, charging time approx. 14 h
- Overall dimensions W×D×H 200×100×50 mm
- Net weight approx. 3 kg

### Accessories

- **Plug-In for data transfer of measuring data** from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-1.0, € 90,-
- **Force-time data transfer software** for graphical representation on the PC and data transfer to Microsoft Excel®, SAUTER AFH FAST, € 115,-
- **RS-232/PC connection cable** SAUTER FL-A04, € 49,-
- **USB/PC connection cable** SAUTER FL-A01, € 49,-

#### STANDARD



#### OPTION



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

↓ Price reduction

## fast

- 24 hours delivery service – order today, on its way tomorrow
- Sales & service hotline from 8:00 am to 6:00 pm

## reliable

- 2 years warranty

## diverse

- One-stop-shopping: from force gauges up to light measuring instruments – everything from one supplier
- Quick as a flash, find the product you want with the “Measuring instruments Quick-Finder” at [www.sauter.eu](http://www.sauter.eu)



## Our team of consultants will assist you

from Monday to Friday  
from 8:00 am to 6:00 pm



## [www.sauter.eu](http://www.sauter.eu)

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

## SAUTER service guarantee

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

Printed in Germany  
by SAUTER GmbH  
z-cs-gb-sp-20191

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

### Product specialist Measuring technology



#### Irmgard Russo

Tel. +49 7433 9933-208  
Fax +49 7433 9933-29208  
[russo@kern-sohn.com](mailto:russo@kern-sohn.com)

### FR, Maghreb, UK, IE



#### Maren Möwert

Tel. +49 7433 9933-132  
Fax +49 7433 9933-29132  
Mobil +49 151 46143240  
[maren.moewert@kern-sohn.com](mailto:maren.moewert@kern-sohn.com)

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



#### Florian Bächle

Tel. +49 7433 9933-118  
Fax +49 7433 9933-29118  
Mobil +49- [0]151 44568364  
[florian.baechle@kern-sohn.com](mailto:florian.baechle@kern-sohn.com)

### GR, CY, BU, RO, SK, CZ, AL, Ex-Yugoslavia



#### Aleksandar Delić

Tel. +49 7433 9933-120  
Fax +49 7433 9933-29120  
Mobil +49 151 11196197  
[aleksandar.delic@kern-sohn.com](mailto:aleksandar.delic@kern-sohn.com)

### North America, Near- & Middle East, Africa, Asia, Oceania, TR



#### Corinna Klaass

Tel. +49 7433 9933-215  
Fax +49 7433 9933-29215  
Mobil +49 [0]151 44568364  
[klaass@kern-sohn.com](mailto:klaass@kern-sohn.com)

### NL, Germany (CP 4)



#### Taras Mikitisin

Tel. +49 7433 9933-143  
Fax +49 7433 9933-29143  
Mobil +49 171 5590115  
[mikitisin@kern-sohn.com](mailto:mikitisin@kern-sohn.com)

### GUS



#### Inna Wandler

Tel. +49 7433 9933-167  
Fax +49 7433 9933-29167  
Mobil +49 151 46143234  
[wandler@kern-sohn.com](mailto:wandler@kern-sohn.com)

### HU, Germany (CP 5, 6)



#### Fabienne Kolbus

Tel. +49 7433 9933-305  
Fax +49 7433 9933-29305  
Mobil +49 171 3031168  
[fabienne.kolbus@kern-sohn.com](mailto:fabienne.kolbus@kern-sohn.com)

### Technical Service



#### Stefan Rothmund

Tel. +49 7433 9933-179  
Fax +49 7433 9933-195  
[rothmund@kern-sohn.com](mailto:rothmund@kern-sohn.com)

### DAkKS Calibration Service



FR, BeNeLux, DK, TR, GR, Africa,  
America, Oceania, DE (CP 8, 9),  
**Athina Ioakimidou**

Tel. +49 7433 9933-123  
Fax +49 7433 9933-29123  
[athina.ioakimidou@kern-sohn.com](mailto:athina.ioakimidou@kern-sohn.com)



Sauter GmbH  
c/o KERN & SOHN GmbH  
Ziegelei 1  
72336 Balingen  
Germany

Tel. +49 7433 9933-0  
Fax +49 7433 9933-149

[info@sauter.eu](mailto:info@sauter.eu)  
[www.sauter.eu](http://www.sauter.eu)