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# FORCE MEASUREMENT

## Quick-Finder

Readout	Measuring range	Model	Page
[d]	[Max]		
N	N	SAUTER	
0,001	2	FH 2	14
0,001	5	FH 5	14
0,002	5	FL 5	16
0,004	20	FS 2-20	18
0,004	20	FS 4-20	18
0,005	10	FH 10	14
0,005	10	FK 10	12
0,005	10	FL 10	16
0,01	10	FC 10	13
0,01	20	FH 20	14
0,01	25	FK 25	12
0,01	25	FL 20	16
0,01	50	FC 50	13
0,01	50	FH 50	14
0,01	50	FS 2-50	18
0,01	50	FS 4-50	18
0,01	50	SD 50N100	38
0,02	50	FK 50	12
0,02	50	FL 50	16
0,02	100	FS 2-100	18
0,02	100	FS 2-100OY2	20
0,02	100	FS 4-100	18
0,02	100	SD 100N100	38
0,04	200	FS 2-200	18
0,04	200	FS 4-200	18
0,05	10	FA 10	11
0,05	100	FH 100	14
0,05	100	FK 100	12
0,05	100	FL 100	16
0,05	100	TVL 100FHS71	29
0,05	200	SD 200N100	38
0,1	20	FA 20	11
0,1	100	FC 100	13
0,1	200	FH 200	14
0,1	250	FK 250	12
0,1	250	FL 200	16
0,1	500	FC 500	13
0,1	500	FH 500	14
0,1	500	FH 500S71	28
0,1	500	FS 2-500	18
0,1	500	FS 2-500OY1	20
0,1	500	FS 2-500OY2	20
0,1	500	FS 4-500	18
0,1	500	FS 500G	22
0,1	500	SD 500N100	38
0,1	500	TVL 500FHS71	28

Readout	Measuring range	Model	Page
[d]	[Max]		
N	N	SAUTER	
0,2	500	FK 500	12
0,2	500	FL 500	16
0,2	500	FL 500G	22
0,2	1000	FS 2-1KOY2	20
0,2	1000	FS 2-1KSP1	20
0,4	2000	FS 2-2KOY1	20
0,5	100	FA 100	11
0,5	1000	FH 1K	15
0,5	1000	FK 1K	12
0,5	1000	FL 1K	16
0,5	1000	FL 1KG	22
0,5	2500	FS 2-2KSP1	20
0,25	50	FA 50	11
1	200	FA 200	11
1	1000	FC 1K	13
1	1000	FC 1K-BT	23
1	2000	FH 2K	15
1	2500	FL 2K	17
1	5000	FH 5K	15
1	5000	FS 2-5KOY1	20
1	5000	FS 2-5KRY1	20
1	5000	FS 2-5KSP1	20
2	300	FA 300	11
2	5000	FL 5K	17
2	10000	FS 2-10KRY1	20
2	10000	FS 2-10KSP1	20
2,5	500	FA 500	11
2,5	500	FA 500G	22
4	20000	FS 2-20KOY1	20
4	20000	FS 2-20KSP1	20
5	10000	FH 10K	15
5	10000	FL 10K	17
5	25000	FS 2-25KRQ1	20
10	20000	FH 20K	15
10	20000	FL 20K	17
10	50000	FH 50K	15
10	50000	FS 2-50KRQ1	20
10	50000	FS 2-50KRY1	20
10	50000	FS 2-50KSP1	20
20	100000	FS 2-100KRQ1	20
20	100000	FS 2-100KRY1	20
20	100000	FS 2-100KSP1	20
40	200000	FS 2-200KRY1	20
50	100000	FH 100K	15

■ News 2024

Suitable test stands for your SAUTER force measuring device can be found from page 25 onwards

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

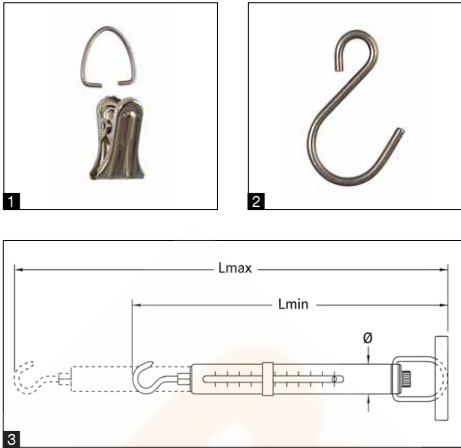
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SAUTER 289



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

STANDARD



1 DAY

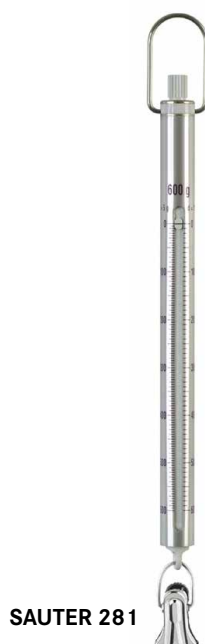
OPTION



+4 DAYS

Model	Measuring range	Division	Load support	3 Dimensions			Option
				Lmin	Lmax	Ø	
	[Max] N	[d] N		mm	mm	mm	KERN
SAUTER							
289-100	1	0,01   0,05	Hook	230	335	12,2	961-1610
289-102	5	0,05   0,5	Hook	230	335	12,2	961-1610
289-104	10	0,1   0,5	Hook	235	335	12,2	961-1610

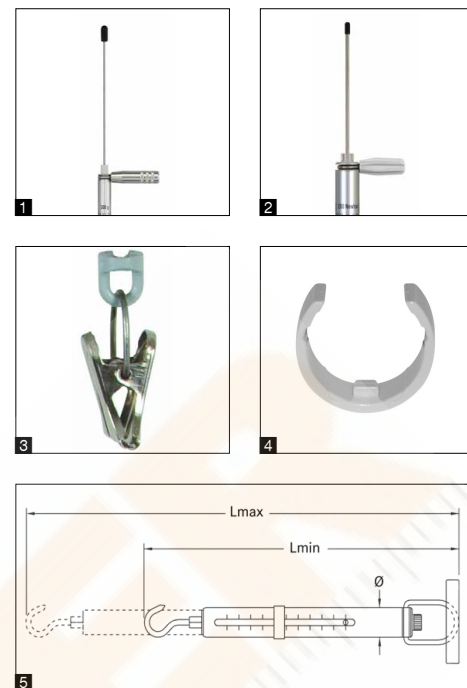
Modell	Weighing range	Division	Load support	3 Dimensions			Option
				Lmin	Lmax	Ø	
	[Max] N	[d] N		mm	mm	mm	KERN
SAUTER							
287-100	10	0,1	Clip	225	330	12,2	961-100
287-102	20	0,2	Clip	225	330	12,2	961-100
287-104	50	0,5	Clip	225	330	12,2	961-100
287-106	100	1	Clip	225	330	12,2	961-100
287-108	500	5	Clip	225	330	12,2	961-100
287-110	1000	10	Clip	225	330	12,2	961-100



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
- Suspension bow: thanks to the rotating suspension bow the scale can always be aligned to be at the very best line of sight

- High precision: 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] ≤ 1 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 kg/25 N, SAUTER 281-890
- 2** Pressure-Set, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-890
- 3** Clip, suitable for models with weighing range ≤ 2,5 kg/25 N, SAUTER 281-151-002
- 4** Drag pointer for spring balances, suitable for models with weighing range < 2,5 kg/25 N, SAUTER 281-051-001
- Drag pointer for spring balances, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-897

STANDARD



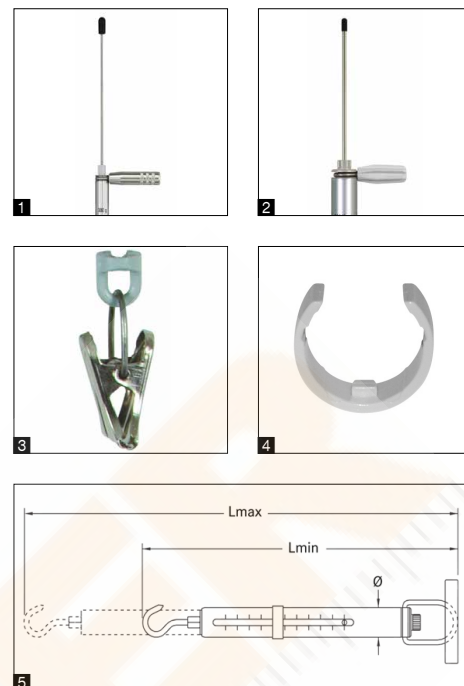
1 DAY

OPTION



+4 DAYS

Model	Weighing range [Max] N	Division [d] N	Load support	5 Dimensions			Option Factory calibration certificate
				Lmin	Lmax	Ø	
				mm	mm	mm	
<b>SAUTER</b>							<b>KERN</b>
<b>281-101</b>	10	0,1	Clip	220	300	12	961-100
<b>281-151</b>	30	0,25	Clip	220	300	12	961-100
<b>281-201</b>	60	0,5	Clip	220	300	12	961-100
<b>281-301</b>	100	1	Clip	220	300	12	961-100
<b>281-401</b>	300	2	Clip	225	325	12	961-100
<b>281-451</b>	600	5	Clip	225	325	12	961-100
<b>281-601</b>	1000	10	Clip	225	325	12	961-100
<b>281-752</b>	2500	20	Hook	225	325	12	961-100
<b>285-052</b>	5000	50	Hook	370	510	32	961-100
<b>285-102</b>	10000	100	Hook	370	510	32	961-101
<b>285-202</b>	20000	200	Hook	370	510	32	961-101
<b>285-352</b>	35000	500	Hook	370	460	32	961-101
<b>285-502</b>	50000	500	Hook	370	460	32	961-101



## 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] ≥ 50 N
- Suspension bow: thanks to the rotating suspension bow the scale can always be aligned to be at the very best line of sight on all models of the SAUTER 283 range with [Max] ≥ 50 N
- High precision: 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
- **2** Pressure-Set, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-890
- **3** Clip, suitable for models with weighing range ≤ 2,5 kg/25 N, SAUTER 281-151-002
- **4** Drag pointer for spring balances, suitable for models with weighing range < 2,5 kg/25 N, SAUTER 281-051-001
- Drag pointer for spring balances, suitable for models with weighing range ≥ 5 kg/50 N, SAUTER 285-897



Model	Measuring range [Max] N	Division [d] N	Load support	5 Dimensions			Option Factory calibration certificate
				Lmin	Lmax	Ø	
				mm	mm	mm	
<b>SAUTER</b>							<b>KERN</b>
<b>283-152</b>	1	0,01	Hook	225	305	12	961-1610
<b>283-252</b>	3	0,02	Hook	225	325	12	961-1610
<b>283-302</b>	6	0,05	Hook	225	325	12	961-1610
<b>283-402</b>	10	0,1	Hook	225	325	12	961-1610
<b>283-422</b>	25	0,2	Hook	225	325	12	961-1610
<b>283-483</b>	50	0,5	Hook	370	510	32	961-1610
<b>283-502</b>	100	1	Hook	370	510	32	961-1610
<b>283-602</b>	200	2	Hook	370	510	32	961-1610
<b>283-902</b>	500	5	Hook	370	510	32	961-1610





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
- Further accessories see internet

STANDARD



PEAK



PUSH/PULL



ZERO



1 DAY

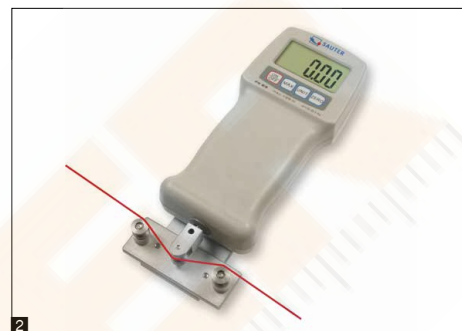
OPTION



ISO  
+4 DAYS


Model	Measuring range	Division	Option Factory calibration certificate		
			Tensile force	Compressive force	Tensile/Compressive force
	[Max] N	[d] N	KERN	KERN	KERN
SAUTER					
FA 10	10	0,05	961-1610	961-2610	961-3610
FA 20	20	0,1	961-1610	961-2610	961-3610
FA 50	50	0,25	961-1610	961-2610	961-3610
FA 100	100	0,5	961-1610	961-2610	961-3610
FA 200	200	1	961-1610	961-2610	961-3610
FA 300	300	2	961-1610	961-2610	961-3610
FA 500	500	2,5	961-1610	961-2610	961-3610

Further calibration options on request



## 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, kgf, ozf
- Auto-Power-Off
-  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

-  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 Ø 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
- Tensiometer kit for high-capacity tensile strength testing up to 1000 N, steel attachment and steel rolls, rolls cannot be adjusted, SAUTER FK-A02
-  Standard attachments as standard, set can be reordered, SAUTER AC 430
- Further accessories see internet

#### STANDARD

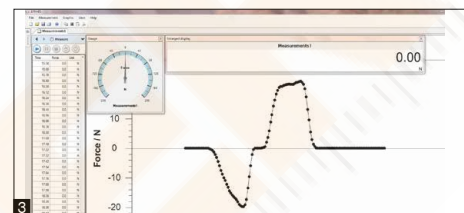
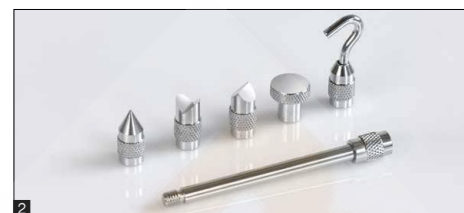


#### OPTION



Model	Measuring range	Readability	Option Factory calibration certificate		
			Tensile force	Compressive force	Tensile/Compressive force
<b>SAUTER</b>	[Max] N	[d] N	KERN	KERN	KERN
<b>FK 10</b>	10	0,005	961-1610	961-2610	961-3610
<b>FK 25</b>	25	0,01	961-1610	961-2610	961-3610
<b>FK 50</b>	50	0,02	961-1610	961-2610	961-3610
<b>FK 100</b>	100	0,05	961-1610	961-2610	961-3610
<b>FK 250</b>	250	0,1	961-1610	961-2610	961-3610
<b>FK 500</b>	500	0,2	961-1610	961-2610	961-3610
<b>FK 1K</b>	1000	0,5	961-1620	961-2620	961-3620

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

- **1** Delivered in a robust carrying case
- Selectable measuring units: N, kgf, ozf, lbf
- **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
- **2** Standard attachments as standard, set can be reordered, SAUTER AC 43
- Further accessories see internet

#### STANDARD



#### OPTION



Model	Measuring range	Readability	Option DAKKS Calibration Certificate		
			Tensile force	Compressive force	Tensile/Compressive force
SAUTER	[Max] N	[d] N	DAKKS KERN	DAKKS KERN	DAKKS KERN
FC 10	10	0,01	963-161	963-261	963-361
FC 50	50	0,01	963-161	963-261	963-361
FC 100	100	0,1	963-161	963-261	963-361
FC 500	500	0,1	963-161	963-261	963-361
FC 1K	1000	1	963-162	963-262	963-362

Further calibration options on request



Save with our practical bundles of test stand, force gauge and matching clamps, e.g. SAUTER FH 500S71, consisting of:

- 1× FH 500
- 1× AE 500 (Details see page 43)

You can find our bundles on page 28/29

## 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
- Data interface RS-232 as standard
- **2** Standard attachments as shown, extension rod: 90 mm
- **3** Delivered in a robust carrying case
- 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

### 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 W×D×H 356×66×36 mm
- Thread: M6
- Rechargeable battery pack integrated, as standard, operating time up to 12 h without backlight, charging time approx. 4 h
- Net weight approx. 0,65 kg

### Accessories

- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST
- RS-232/PC-connecting cable to connect models from the SAUTER FH range to a PC, SAUTER FH-A01
- **2** Standard attachments as standard, set can be reordered, SAUTER AC 43
- Further accessories see internet

#### STANDARD



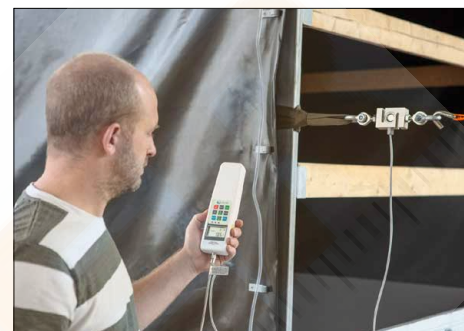
#### OPTION



Model	Measuring range	Readability	Option DAKKS Calibration Certificate		
			Tensile force	Compressive force	Tensile/Compressive force
SAUTER	[Max] N	[d] N	DAKKS KERN	DAKKS KERN	DAKKS KERN
FH 2	2	0,001	-	-	-
FH 5	5	0,001	-	-	-
FH 10	10	0,005	963-161	963-261	963-361
FH 20	20	0,01	963-161	963-261	963-361
FH 50	50	0,01	963-161	963-261	963-361
FH 100	100	0,05	963-161	963-261	963-361
FH 200	200	0,1	963-161	963-261	963-361
FH 500	500	0,1	963-161	963-261	963-361

Further calibration options on request






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

### Features

- Turnable display with backlight
- Data interface RS-232 as standard
- Delivered in a robust carrying case
- 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

### Technical data

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

### Accessories

- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST
- RS-232/PC-connecting cable to connect models from the SAUTER FH range to a PC, SAUTER FH-A01
- Further accessories see internet

#### STANDARD



#### OPTION



Model	Measuring range [Max] N	Readability [d] N	Option <b>DAkS Calibration Certificate</b> (≤ 5 kN) / <b>Factory calibration certificate</b> (> 5 kN)		
			Tensile force	Compressive force	Tensile/Compressive force
<b>SAUTER</b>			KERN	KERN	KERN
<b>FH 1K</b>	1000	0,5	963-162	963-262	963-362
<b>FH 2K</b>	2000	1	963-162	963-262	963-362
<b>FH 5K</b>	5000	1	963-163	963-263	963-363
<b>FH 10K</b>	10000	5	961-164	961-264	961-364
<b>FH 20K</b>	20000	10	961-164	961-264	961-364
<b>FH 50K</b>	50000	10	961-165	961-265	961-365
<b>FH 100K</b>	100000	50	961-166	961-266	961-366

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
- **1** Standard attachments: as shown
- Selectable measuring units: N, kN, kgf, lbf
- **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 W×D×H 215×75×30 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
- USB cable, included with the delivery, can be ordered separately, USB/PC connection cable (USB-A/USB mini), SAUTER FL-A01
- RS-232 adapter cable, SAUTER FL-A04
- Holders for object fixation and other accessories, please see internet

#### STANDARD



#### OPTION



Model	Measuring range	Readability	Option DAKKS Calibration Certificate		
			Tensile force	Compressive force	Tensile/Compressive force
SAUTER	[Max] N	[d] N	DAKKS KERN	DAKKS KERN	DAKKS KERN
FL 5	5	0,002	-	-	-
FL 10	10	0,005	963-161	963-261	963-361
FL 20	25	0,01	963-161	963-261	963-361
FL 50	50	0,02	963-161	963-261	963-361
FL 100	100	0,05	963-161	963-261	963-361
FL 200	250	0,1	963-161	963-261	963-361
FL 500	500	0,2	963-161	963-261	963-361
FL 1K	1000	0,5	963-162	963-262	963-362

Further calibration options on request



PREMIUM



## 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
- USB cable, included with the delivery, can be ordered separately, USB/PC connection cable (USB-A/USB mini), SAUTER FL-A01
- RS-232 adapter cable, SAUTER FL-A04
- Holders for object fixation and other accessories, please see internet

#### STANDARD



#### OPTION



Model	Measuring range	Readability	Option <b>DAkkS Calibration Certificate</b> (≤ 5 kN) / <b>Factory calibration certificate</b> (> 5 kN)		
			Tensile force	Compressive force	Tensile/Compressive force
<b>SAUTER</b>	[Max] N	[d] N	KERN	KERN	KERN
<b>FL 2K</b>	2500	1	963-162	963-262	963-362
<b>FL 5K</b>	5000	2	963-163	963-263	963-363
<b>FL 10K</b>	10000	5	961-164	961-264	961-364
<b>FL 20K</b>	20000	10	961-164	961-264	961-364

Further calibration options on request

PREMIUM



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



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



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

## 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.



Can be mounted on all SAUTER test stands, illustration shows optional accessories, as well as the SAUTER TVL-XS manual test stand



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



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



## Features

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

## Technical data

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

## Accessories

- For subsequent expansion to 4 measuring channels: A/D converter module, only for FS 2 and FS 2-xxx models, SAUTER FS 34
- Stainless steel handle bar with rubber grip, SAUTER AFK 02
- Transport case, e.g. for accessories, SAUTER FS TKZ
- Standard attachments, SAUTER AC 43
- Hook for tensile and fracture testing up to 500 N, thread: M6, 1 item, SAUTER AC 49
- Plug-In for data transfer of measuring data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-2.0, see internet
- Suitable load cells see page 98 et seq.
- Holders for object fixation and other accessories, please see internet or see page 39 et seq.

Optional calibration, see page 115

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×	FS 404	Two-point adjustment up to 5 kN, incl. connector and memory for SAUTER FS
1×	963-363	DAkkS calibration certificate tension/compression force up to 5 kN

## STANDARD



## OPTION



Model	Measuring range internal load cell	Readability internal load cell	Internal load cell	Number of measuring channels
SAUTER	[Max] N	[d] N		
FS 2	-	-	-	2
FS 2-20	20	0,004	•	2
FS 2-50	50	0,01	•	2
FS 2-100	100	0,02	•	2
FS 2-200	200	0,04	•	2
FS 2-500	500	0,1	•	2
FS 4	-	-	-	4
FS 4-20	20	0,004	•	4
FS 4-50	50	0,01	•	4
FS 4-100	100	0,02	•	4
FS 4-200	200	0,04	•	4
FS 4-500	500	0,1	•	4

## Service required for use with external sensors:

Model	Adjustment of optional, external sensors	Measuring range [Max] kN
SAUTER		
FS 401	Numeric*	-
FS 402		0,5
FS 403		2
FS 404		5
FS 405	Two-point	20
FS 406		50
FS 407		120
FS 408		250

\*only for sensors > 250 kN

1



**FS SP1**  
For tensile and compressive  
force measurements

**NEW**

**FS RY1**  
For tensile and compressive force measurements

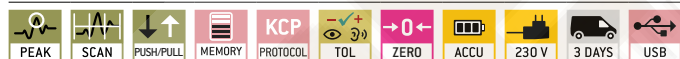
## Practical set of premium force gauge and measuring cell

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:

- The 4-wire "S" load cell made of nickel-plated steel for force and mass measurement/for tensile and compressive force measurements CS P1 (for details see set FS SP1)
- The load cell made of alloyed steel CR Y1 for tension and compressive force measurements (for details see set FS RY1)
- The load cell made of stainless steel CR Q1 for compressive force measurements (details see set FS RQ1)
- Miniature button-type load cells made of stainless steel CO Y1 for compressive force measurements (details see set FS OY1) or CO Y2 for tensile and compressive force measurements (details see set FS OY2)

### STANDARD



### OPTION



\* only for FS SP1, FS RY1, FS OY2  
\*\* up to 5 kN

### FS SP1

Model	Measuring range	Readability	Load cell in the set	Option <b>DAkKS</b> calib. cert. (< 5 kN) / <b>Factory</b> calib. cert. (> 5 kN)		
				Tensile force	Compressive force	Tensile/Comp. force
SAUTER	[Max] N	[d] N		DAkKS KERN	DAkKS KERN	DAkKS KERN
<b>FS 2-1KSP1</b>	1000	0,2	CS 100-3P1	963-162	963-262	963-362
<b>FS 2-2KSP1</b>	2500	0,5	CS 250-3P1	963-163	963-263	963-363
<b>FS 2-5KSP1</b>	5000	1	CS 500-3P1	963-163	963-263	963-363
<b>FS 2-10KSP1</b>	10000	2	CS 1000-3P1	961-164	961-264	961-364
<b>FS 2-20KSP1</b>	20000	4	CS 2000-3P1	961-164	961-264	961-364
<b>FS 2-50KSP1</b>	50000	10	CS 5000-3P1	961-165	961-265	961-365
<b>FS 2-100KSP1</b>	100000	20	CS 10000-3P1	961-166	961-266	961-366

### FS RY1

Model	Measuring range	Readability	Load cell in the set	Option <b>DAkKS</b> calib. cert. (< 5 kN) / <b>Factory</b> calib. cert. (> 5 kN)		
				Tensile force	Compressive force	Tensile/Comp. force
SAUTER	[Max] N	[d] N		DAkKS KERN	DAkKS KERN	DAkKS KERN
<b>FS 2-5KRY1</b>	5000	1	CR 500-1Y1	963-163	963-263	963-363
<b>FS 2-10KRY1</b>	10000	2	CR 1000-1Y1	961-164	961-264	961-364
<b>FS 2-50KRY1</b>	50000	10	CR 5000-1Y1	961-165	961-265	961-365
<b>FS 2-100KRY1</b>	100000	20	CR 10000-1Y1	961-166	961-266	961-366
<b>FS 2-200KRY1</b>	200000	40	CR 20000-1Y1	961-167	961-267	961-367



**SAUTER FS RQ1**

For compressive force measurements

**SAUTER FS OY1**

For compressive force measurements

**SAUTER FS OY2**

For tensile and compressive force measurements

**FS RQ1**

Model	Measuring range	Readability	Load cell in the set	Option <b>DAkkS</b> calib. cert. (< 5 kN) / <b>Factory</b> calib. cert. (> 5 kN)		
				Tensile force	Compressive force	Tensile/Comp. force
	[Max] N	[d] N		DAkkS KERN	DAkkS KERN	DAkkS KERN
<b>SAUTER</b>						
<b>FS 2-25KRQ1</b>	25000	5	CR 2500-1Q1	-	961-265	-
<b>FS 2-50KRQ1</b>	50000	10	CR 5000-1Q1	-	961-265	-
<b>FS 2-100KRQ1</b>	100000	20	CR 10000-1Q1	-	961-266	-

**FS OY1**

Model	Measuring range	Readability	Load cell in the set	Option <b>DAkkS</b> calib. cert. (≤ 5 kN) / <b>Factory</b> calib. cert. (> 5 kN)		
				Tensile force	Compressive force	Tensile/Comp. force
	[Max] N	[d] N		DAkkS KERN	DAkkS KERN	DAkkS KERN
<b>SAUTER</b>						
<b>FS 2-500OY1</b>	500	0,1	CO 50-Y1	-	963-261	-
<b>FS 2-2KOY1</b>	2000	0,4	CO 200-Y1	-	963-262	-
<b>FS 2-5KOY1</b>	5000	1	CO 500-Y1	-	963-263	-
<b>FS 2-20KOY1</b>	20000	4	CO 2000-Y1	-	961-264	-

**FS OY2**

Model	Measuring range	Readability	Load cell in the set	Option <b>DAkkS</b> calib. cert. (< 5 kN) / <b>Factory</b> calib. cert. (> 5 kN)		
				Tensile force	Compressive force	Tensile/Comp. force
	[Max] N	[d] N		DAkkS KERN	DAkkS KERN	DAkkS KERN
<b>SAUTER</b>						
<b>FS 2-100OY2</b>	100	0,02	CO 10-Y2	963-161	963-261	963-361
<b>FS 2-500OY2</b>	500	0,1	CO 50-Y2	963-161	963-261	963-361
<b>FS 2-1KOY2</b>	1000	0,2	CO 100-Y2	963-162	963-262	963-362

**Accessories**

- A/D converter module for expansion from 2 to 4 external measuring channels, SAUTER FS 34
- Transport case, e.g. for accessories (only suitable for measuring range up to 10.000 N), SAUTER FS TKZ
- 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
- Holders for object fixation and other accessories



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

### SAUTER FA-G

- Pressure disc with foam rubber attachment for pressure tests
- 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 testing
- 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

For further details and a wide range of accessories, see Internet



#### STANDARD



#### OPTION



#### STANDARD



#### OPTION



#### STANDARD



#### OPTION



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 %
Option	Tensile force	961-1610	961-161	961-162	961-161
Factory calibration certificate	Compressive force	961-2610	961-261	961-262	961-261
	Tensile/Compressive force	961-3610	961-361	961-362	961-361
Option	Tensile force	-	963-161	963-162	963-161
DAkKS Calibration certificate	Compressive force	-	963-261	963-262	963-261
	Tensile/Compressive force	-	963-361	963-362	963-361



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

- **2** Delivered in a robust carrying case
- Turnable display with backlight
- Selectable: AUTO-OFF function or continuous operation, charge indicator

Technical data

- Transmission rate to PC: up to 200 measured values/second
- Measuring precision: 0,3 % of [Max]
- Overload protection: 15 0% 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

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

Accessories

- Spare needles (set of 15 pieces) for concrete tester SAUTER BT-A01
- Further accessories see internet and page 39 et seqq.

STANDARD

PEAK

PUSH/PULL

MEMORY

RS 232

USB

UNIT

TOL

ZERO

ACCU

230 V

1 DAY

OPTION

SOFTWARE

DAkKS

ISO

+4 DAYS

+4 DAYS

Model	Measuring range	Readability	Option <b>DAkKS</b> Calibration Certificate	
			Tensile force	Compressive force
<b>SAUTER</b>	[Max] N	[d] N	<b>DAkKS</b> <b>KERN</b>	<b>DAkKS</b> <b>KERN</b>
<b>FC 1K-BT</b>	1000	1	963-162	963-262



# 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.

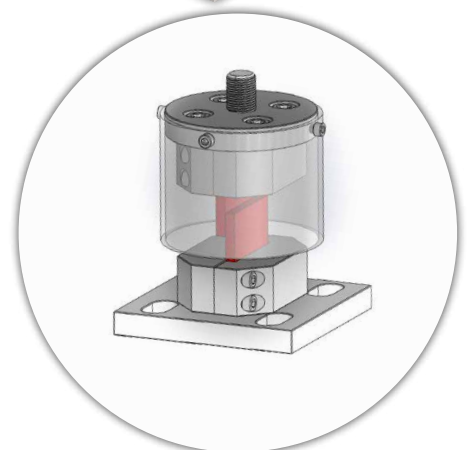
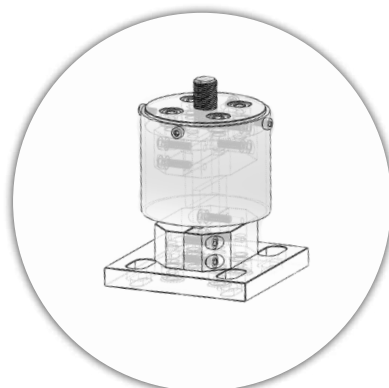
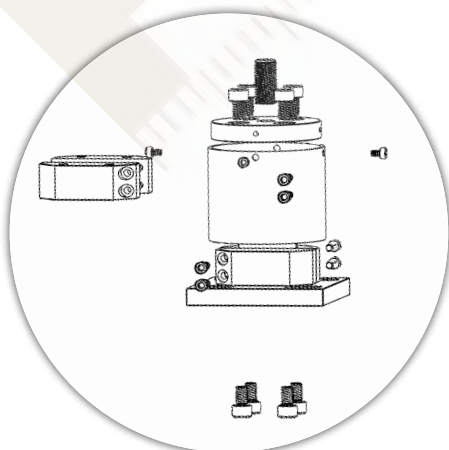
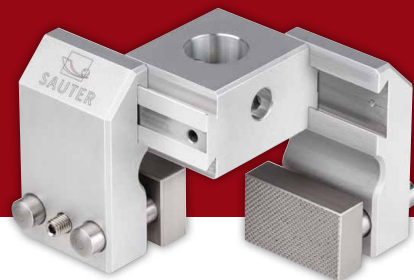
## CUSOS – perfectly tailored to you and your requirements

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





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

Features

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

Technical data

- Travel distance per knob rotation (stroke per one turn): 2 mm
- Overall dimensions W×D×H 300×250×160 mm
- Net weight approx. 4,6 kg

Save with our practical bundles of test stand, force gauge and matching clamps, e.g. SAUTER TVL 100FHS71, consisting of:

- 1× TVL-XS
- 1× FH 100 (Details see page 14)
- 2× AE 500 (Details see page 43)

You can find our bundles on page 28/29

STANDARD



Model

SAUTER	Measuring range
TVL-XS*	[Max] N 100

1 \* ONLY WHILE STOCKS LAST





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** NEW: SAUTER TVL-O, Manual test bench without SAUTER LA length measuring device
- **2** NEW: 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-XL, 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
- Digital length measuring device, measuring range 200 mm, readability 0,01 mm, details see page 49, SAUTER LB 200-2
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST
  - Force-displacement only in combination with SAUTER LB, SAUTER AFH FD

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 14)
- 2× AE 500 (Details see page 43)

You can find our bundles on page 28/29

STANDARD



SCALE 1 DAY

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
SAUTER					
TVL-XLS	500	230	Length measuring device with display	200×300×800	12
TVL	1000	230		151×234×465	9
TVL-O	1000	230	Length measuring device with display and data interface (optional)	151×234×465	9
TVL-E	2000	290		154×240×550	9

**NEW** New model

SAUTER TVP



SAUTER TVP-L



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

Features

- Provides quick and consistent testing
- High level of security 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

- Digital length measuring device, measuring range 200 mm, readability 0,01 mm, details see page 49, SAUTER LB 200-2
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST  
Force-displacement only in combination with SAUTER LB, SAUTER AFH FD

STANDARD

SCALE

FASTMOVE

1 DAY

TVP-L

Model	Measuring range
	[Max] N
SAUTER TVP	500
SAUTER TVP-L	500



## 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 testing

### Accessories

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

### 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 testing

### Accessories

- Digital length measuring device, measuring range 200 mm, readability 0,01 mm, details see page 51, SAUTER LB 200-2
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST
- Force-displacement only in combination with SAUTER LB, SAUTER AFH FD

#### STANDARD



#### OPTION



Model	Measuring range [Max] N	Readout [d] N	Scope of supplies	Option DAkkS Calibration Certificate		
				Tensile force DAkkS KERN	Compressive force DAkkS KERN	Tensile/Compressive force DAkkS KERN
<b>SAUTER</b>						
<b>FH 500S71</b>	500	0,1	1× FH 500 1× AE 500	963-161	963-261	963-361
<b>TVL 500FHS71</b>	500	0,1	1× TVL 1× FH 500 2× AE 500	963-161	963-261	963-361



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

- Features**

  - All-in-One: test stand with digital force-measuring device and 2 clamps
  - For precise, manual testing through a pitch of 2 mm/rotation
  - Assembly and configuration of the parts is not required and therefore saves time and effort
  - For tensile force and compressive force testing
- Accessories**

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

STANDARD

PEAK

PUSH/PULL

MEMORY

RS 232

STATISTIC

TOL

ZERO

ACCU

230 V

1 DAY

OPTION

SWITCH

SOFTWARE

DAkKS  
+4 DAYS

ISO  
+4 DAYS

Model	Measuring range [Max] N	Readout [d] N	Scope of supplies	Option <b>DAkKS Calibration Certificate</b>		
				<b>Tensile force</b> DAkKS KERN	<b>Compressive force</b> DAkKS KERN	<b>Tensile/Compressive force</b> DAkKS KERN
SAUTER						
TVL 100FHS71	100	0,05	1× TVL 1× FH 100 2× AE 500	963-161	963-261	963-361

1



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

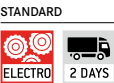
Features

- Easy to use
- Efficient working
- Robust design and heavy duty metal construction
- 1 Linear adjustable jaw vice. The clamping vice can be locked and finely adjusted sideways and up/down using the setting wheel
- Repeat function for fatigue tests
- Digital speed display to read the traverse rate straightaway
- Premium operating panel:
  - Digital speed display
  - Digital repeat function display
  - Control of the test stand using PC software SAUTER AFH

- 2 Figure shows the premium operating panel of SAUTER THM 500N500N
- Solid and versatile fixing options of SAUTER force measuring devices, see *Accessories* Page 39
- Suitable for all SAUTER force gauges up to 500 N (not included in delivery)

Technical data

- Minimum distance between left and right object fastening: 30 mm
- Maximum travel distance: 220 mm (protected by electronic end switches)
- Overall dimensions W×D×H 550×170×345 mm
- Net weight approx. 34 kg



Model	Measuring range	Speed range	Motor
	[Max] N	[Max] mm/min	
SAUTER THM 500N500N*	500	50 – 500	Electric motor


1 \* ONLY WHILE STOCKS LAST





Robust premium test stand for laboratory applications

Features

- Motorised test stand for tension/compression force testing
- 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
-  Suitable for all SAUTER force gauges up to 500 N, e.g. SAUTER FH-S, for details see page 14 (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 49, SAUTER LB 300-2
- Mounting the length measuring device LB onto a SAUTER test stand at the factory, SAUTER LB-A02
- Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST  
Force-displacement only in combination with SAUTER LB, SAUTER AFH FD

STANDARD



OPTION



Model	Measuring range	Speed range	Maximum travel distance
	[Max] N	[Max] mm/min	mm
SAUTER TVO 500N300	500	15 - 300	270



Motorised test stand incl. length measuring system LD

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



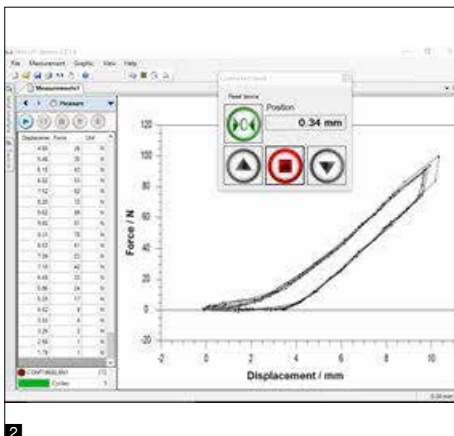
Solid and flexible fixing options for many clamps and accessories from the SAUTER product range, see *Accessories*



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 testing
- NEW: Now also available as a practical set TVO-LD for force-displacement-measurements in laboratory and industry
- Set 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
- 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

- **1** Premium operating panel:
  - Digital speed display
  - Digital repeat function display
  - Control of the test stand using PC software SAUTER AFH **2**
- Table-top design for comfortable operation
- Robust construction
- Set TVO-LD: 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
- Set TVO-LD: Data Transfer Software SAUTER AFH LD included with the delivery
- **3** Fixation of SAUTER force measuring devices up to 2 kN possible

## 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
- **3** Holder for force gauges with external measuring cell on test stands, for comfortable reading of the measured value, SAUTER TVO-A01
- Force gauges see page 12 et seq., clamps and other accessories see page 39 et seq.

STANDARD				OPTION	
SCALE	SOFTWARE	STEPPER	2 DAYS	SOFTWARE	
TVO-LD	TVO-LD			TVO	

Model	Measuring range	Speed range	Maximum travel distance
	[Max] N	[Max] mm/min	mm
<b>SAUTER</b>			
<b>TVO 500N500S</b>	500	1 - 500	270
<b>TVO 1000N500S</b>	1000	1 - 500	500
<b>TVO 2000N500S</b>	2000	1 - 500	700
Sets incl. test stand, length measuring system, interface cable, software AFH LD, assembly:			
<b>TVO 500N500S-LD</b>	500	1 - 500	270
<b>TVO 1000N500S-LD</b>	1000	1 - 500	500
<b>TVO 2000N500S-LD</b>	2000	1 - 500	700

**New model**

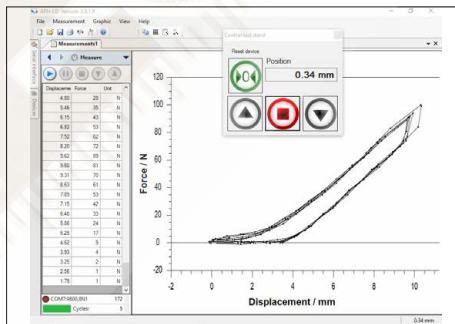


Motorised test stand incl.  
length measuring device LB

**Test stand with electric motor for standard measurements –  
now 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 testing
- NEW: Now also available as a practical set for force-displacement-measurements in laboratory and industry
- Set 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
- 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
- SAUTER LA length measuring device as standard, to read the travel distance with a readability of 0,01 mm (only for TVM)
- Particularly flexible mounting options for variable force measuring devices, such as, 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 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
- Set TVM-LB: 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 49

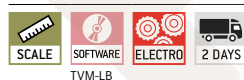
## Technical data

- 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
- **3** Holder for force measuring devices of the SAUTER FH range with external load cell, SAUTER TVM-A01
- Force gauges see page 11 et seq., clamps and other accessories see page 39 et seq.

### STANDARD



TVM-LB

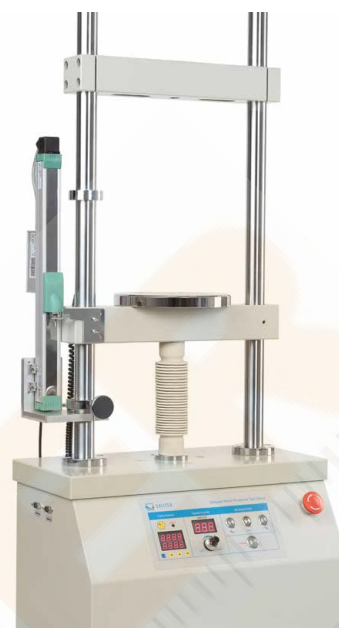
### OPTION



TVM

Model	Measuring range	Speed range	Length of columns
	[Max] N	[Max] mm/min	mm
<b>SAUTER</b>			
<b>TVM 5000N230N</b>	5000	10 – 230	635
<b>TVM 5000N230NL</b>	5000	10 – 230	1135
<b>TVM 10KN120N</b>	10000	30 – 120	1135
<b>TVM 20KN120N</b>	20000	30 – 120	1135
Sets incl. test stand, length measuring device, interface cable, software AFH FD, assembly:			
<b>TVM 5000N230N-LB</b> <small>NEW</small>	5000	10 – 230	635
<b>TVM 5000N230NL-LB</b> <small>NEW</small>	5000	10 – 230	1135
<b>TVM 10KN120N-LB</b> <small>NEW</small>	10000	30 – 120	1135
<b>TVM 20KN120N-LB</b> <small>NEW</small>	20000	30 – 120	1135

**NEW** New model



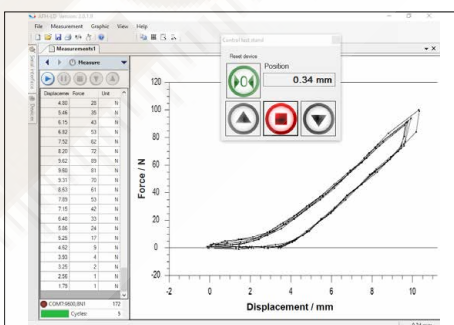
Motorised test stand incl.  
length measuring system LD

**Premium test stand with step motor for precise testing up to 50 kN –  
now 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 testing
- NEW: Now also available as a practical set TVS-LD for force-displacement-measurements in laboratory and industry
- Set 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
- 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
- Only TVS: SAUTER LA length measuring device as standard, to read the travel distance with a readability of 0,01 mm

- Set TVS-LD: 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
- Set TVS-LD: Data Transfer Software SAUTER AFH LD included with the delivery
- 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

## Technical data

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

## Accessories

- Only TVS: Data transfer software with graphic display of the measurement process, force-time, SAUTER AFH FAST
- **3** Holder for force measuring devices of the SAUTER FH range with external load cell, SAUTER TVM-A01
- Force gauges see page 11 et seq., clamps and other accessories see page 39 et seq.

STANDARD				OPTION	
TVS-LD				TVS	

Model		Measuring range	Speed range	Length of columns
		[Max] N	[Max] mm/min	mm
<b>SAUTER</b>				
<b>TVS 5000N240</b>		5000	1 – 240	1135
<b>TVS 10KN100</b>		10000	1 – 200	1135
<b>TVS 20KN100</b>		20000	1 – 70	1135
<b>TVS 50KN80</b>		50000	1 – 70	1135
Sets incl. test stand, length measuring system, interface cable, software AFH LD, assembly:				
<b>TVS 5000N240-LD</b>		5000	1 – 240	1135
<b>TVS 10KN100-LD</b>		10000	1 – 200	1135
<b>TVS 20KN100-LD</b>		20000	1 – 70	1135
<b>TVS 50KN80-LD</b>		50000	1 – 70	1135

New model



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

Features

- Spring tester for tension and compression tests
- Measuring device integrated in housing
- Integrated thermal printer
- Digital length measuring unit SAUTER LA 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

Technical data

- 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

PEAK

PUSH/PULL

SCALE

STATISTIC

PRINT

TOL

ZERO

FASTMOVE

2 DAYS

OPTION









ISO +4 DAYS

Model	Measuring range	Readability	Option
			Factory calibration certificate
SAUTER	[Max] N	[d] N	KERN
SD 50N100	50	0,01	961-2610
SD 100N100	100	0,02	961-2610
SD 200N100	200	0,05	961-2610
SD 500N100	500	0,1	961-2610

ONLY WHILE STOCKS LAST



## For Tension Tests ≤ 500 N

	<b>Long clamp</b>	<b>AC 17R</b>
	for tension and rupture tests up to 500 N, clamping width: 3 mm, thread: M6	1 piece <b>AC 17</b>
		2 pieces
	<b>Angle bracket</b>	<b>AC 01R</b>
	for tension and rupture tests up to 500 N (e.g. for cable tests), clamping width: 22 mm, thread: M6	1 piece <b>AC 01</b>
		2 pieces
	<b>Fine point clamp</b>	<b>AC 14R</b>
	for tension and rupture tests up to 500 N, width 15 mm, clamping width: 4 mm, thread: M6	1 piece <b>AC 14</b>
		2 pieces
	<b>Fine point clamp</b>	<b>AC 22R</b>
	for tension and rupture tests up to 500 N, width 22 mm, clamping width: 4 mm, thread: M6	1 piece <b>AC 22</b>
		2 pieces
	<b>Screw tension clamp</b>	<b>AD 9001</b>
	for 100 N for laboratory tensile force measurements, incl. jaws with pyramid grip, clamping width: 4 mm, thread: M6	1 piece
	Further jaws on request	
	<b>Screw tension clamp</b>	<b>AD 9005</b>
	for 400 N for laboratory tensile force measurements, incl. jaws with pyramid grip	1 piece
	<b>1</b> with adapter structure for AD-system, <b>2</b> with M6 thread, clamping width: 8 mm	
	Further jaws on request	

## For Tension Tests ≤ 5000 N

	<b>Flat jaw attachment</b>	<b>AC 03R</b>
	for tension tests up to 5 kN (e.g. textile, paper etc.), clamping width: 4 mm, thread: M6	1 piece <b>AC 03</b>
		2 pieces
	<b>Parallel jaw grip</b>	<b>AC 12R</b>
	for tension and rupture tests up to 5 kN, clamping width: 5 mm, thread: M10	1 piece <b>AC 12</b>
		2 pieces
	<b>High capacity small clamp</b>	<b>AC 16R*</b>
	for tension and rupture tests up to 5 kN, clamping width: 5 mm, thread: M10	1 piece <b>AC 16*</b>
		2 pieces
	<b>2 wide jaw grip attachment</b>	<b>AC 18R</b>
	for tension and extraction tests up to 5 kN, jaw width 60 mm, clamping width: 33 mm, thread: M10	1 piece <b>AC 18</b>
		2 pieces
	<b>Rolling-clamp attachment</b>	<b>AC 11R</b>
	for tension and rupture tests up to 5 kN, thread: M10	1 piece
	<b>Eccentric roll clamp</b>	<b>AC 41*</b>
	in particular for cable tests up to 5 kN, 10×30 mm slotted hole, clamping width: 9 mm	1 piece
	<b>Drum clamp</b>	<b>AC 42*</b>
	typically for cable connector extraction tests up to 5 kN, for test objects with Ø from 1,5 mm up to 8 mm, thread: M10	1 piece
	<b>Wedge tension clamp</b>	<b>AD 9080</b>
	up to 5 kN, for tensile force tests, due to the wedge shape of the clamp the specimen is clamped automatically with increasing load, clamping width up to 10 mm, jaws with pyramid grip	1 piece
		
	<b>Rope and thread tension clamp</b>	<b>AD 9120</b>
	up to 1 kN, Suitable for wires up to a diameter of 2 mm, belts up to 7 mm width, incl. jaws with rubberised surface	1 piece
		

**!** \*ONLY WHILE STOCKS LAST

**Rope and thread tension clamp**

up to 5 kN, for clamping belts, ropes, wires, etc.

Suitable for wires up to a diameter of 5 mm, belts up to 8 mm. Jaws with pyramid grip

**AD 9121**

1 piece

**Roller tension clamp**

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

Suitable for test objects up to 50 mm width

**AD 9205**

1 piece

**Roller tension clamp**

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

Suitable for test objects up to 50 mm width

**AD 9207**

1 piece

**Belt tension clamp**

up to 10 kN, open at one end, suitable for tensile force tests with belts or any other soft, flexible, flat materials with a maximum sample thickness of 2,5 mm a test object width up to 22 mm

**AD 9250**

1 piece

**Belt tension clamp**

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

**AD 9255**

1 piece

**Wedge tension clamp**

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

**AD 9090**

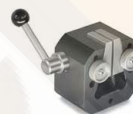
1 piece

**Wedge tension clamp**

up to 20kN, for tensile force tests, due to the wedge shape of the clamp the specimen is clamped automatically with increasing load, clamping width up to 13 mm, incl. jaws with pyramid grip  
Further jaws on request

**AD 9095**

1 piece

**Wedge tension clamp**




up to 50kN, for tensile force tests, due to the wedge shape of the clamp the specimen is clamped automatically with increasing load, clamping width up to 13 mm, incl. jaws with pyramid grip  
Further jaws on request

**AD 9096**

1 piece

**Tip**

Have you not found the right fastener? We are happy to manufacture individual fastening options according to your specifications, for all details see page 24

	<b>Concave force sensor</b> with optimised radius for the measurement particularly of arms and legs up to 1 kN, inner thread: M6	<b>AC 45</b>  1 piece
	<b>Flat square-shaped sensor</b> for lateral power sensing of back, chest or arm up to 1 kN, inner thread: M6	<b>AC 46</b>  1 piece
	<b>Round sensor</b> to measure particular muscle groups, such as, for example, the shoulder up to 1 kN, inner thread: M6	<b>AC 47</b>  1 piece
	<b>Pressure disc</b> out of aluminium, thickness 10 mm, for compression tests up to 5 kN, diam. 110 mm, outer thread: M12	<b>AFH 06</b>  1 piece
	<b>Pressure disc</b> for compression tests up to 5 kN (e.g. plastics), $\varnothing$ 49 mm, inner thread: M10	<b>AC 08R*</b> 1 piece <b>AC 08*</b> 2 pieces
	<b>Ball-shaped head made of nickel-plated steel</b> for compression and fracture tests up to 5 kN, (e.g. foam, glass), thread: M6/M10 Ball radius: 5mm/8mm	<b>AC 02</b>  1 piece each
	<b>Small 3-point bending device (steel)</b> up to 10 kN, central scale 80-0-80 mm. Consisting of one support beam, two support brackets and a curved fin each with permanently fixed radii, radii on request. Gap between the two support brackets 4-170 mm. Width of the brackets 30 mm	<b>AD 9300</b>  1 piece  

	<b>Threaded adapters</b> made of steel for SAUTER force measuring devices, clamps and test stands, external thread 1: M6 external thread 2: M12	<b>AFM 14</b>  1 piece  
	<b>Threaded adapters</b> made of steel, for SAUTER force gauges, clamps and test stands, external thread: M10 internal thread: M6	<b>AFM 05</b>  1 piece  
	<b>Threaded adapters</b> made of steel, for SAUTER force gauges, clamps and test stands, external thread: M12 internal thread: M10	<b>AFM 16</b>  1 piece  
	<b>Threaded adapters</b> made of steel for SAUTER force gauges and clamps, external thread: M6 internal thread: M8	<b>AFM 22</b>  1 piece  
	<b>Threaded adapters</b> made of steel, for SAUTER force gauges, clamps and test stands, external thread: M10 internal thread: M6	<b>AFM 07</b>  1 piece  
	<b>Grub screw</b> made of steel for SAUTER clamps and test stands, external thread: M6	<b>AFM 20</b>  1 piece  
	<b>Threaded adapters</b> made of steel, for SAUTER force gauges,	<b>AFM 23</b>  1 piece  

Numerous more adapters can be found at the Internet

internal thread: M8

Numerous more adapters on request.

**Standard small clamp**

Opening width (inside the jaws): 0–7 mm, for tensile tests up to 500 N, thread M6.  
Overload protection: 150 % of [Max].  
Easy handling without tools, the opening and closing of the jaws can be made with the rotary knob on the upper side.  
Presetting of the jaw opening via attached screws. Pretension due to built-in springs

**AE 01**

1 piece

**Wide jaw clamp**

Opening width (inside the jaws): 0–6 mm, for tensile tests up to 500 N, thread M6.  
Overload protection: 150 % of [Max].  
Easy handling without tools, the opening and closing of the jaws can be made with the rotary knobs on the upper side

**AE 02**

1 piece

**Belt tension clamps**

Opening width (inside the jaws): 0–4 mm, for tensile tests up to 500 N, thread M6.  
Overload protection: 150 % of [Max].  
Easy handling without tools, the opening and closing of the jaws can be made with the lever on the upper side

**AE 03**

1 piece

**Belt tension clamps**

Opening width (inside the jaws): 0–6 mm, for tensile tests up to 500 N, thread M6.  
Overload protection: 150 % of [Max].  
Easy handling without tools, the opening and closing of the jaws can be made with the lever on the upper side

**AE 04**

1 piece

**Rope and thread tension clamps**

Opening width (inside the jaws): 0–5 mm, for tensile tests up to 500 N, thread M6.  
Overload protection: 150 % of [Max].  
Easy handling without tools, test item can simply be wrapped around the screw and fastened via the clamping screw

**AE 05**

1 piece

**Cable removal clamp**

Opening width (inside the jaws): 1,5–6 mm, for tensile tests up to 500 N, thread M6.  
Overload protection: 150 % of [Max].  
Easy handling without tools, test item can simply be inserted into the appropriate recess and be tested

**AE 06**

1 piece

**Wedge tension clamp**

Opening width (inside the jaws): 0–6 mm, for tensile tests up to 500 N, thread M6.  
Overload protection: 150 % of [Max].  
Easy handling without tools, test item can simply be inserted into the open clamp.  
It closes automatically during a tensile test

**AE 07**

1 piece

For Compression Tests  $\leq 5000$  N**Stainless steel pressure disc**

For compression tests up to 5 kN,  $\varnothing$  47 mm, internal thread M6, foam rubber attachment for sensitive surfaces included in scope of delivery

**AE 08**

1 piece







1

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



Model	Measuring range
SAUTER	[Max] N
AE 500	500

## Attachments

1



<b>Standard attachments kit</b> for all force gauges FA, FH, FL, FC and FS, thread: M6 10–500 N	<b>AC 43</b>  6 items
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<b>Standard attachments kit</b> for force gauge FK, thread: M8 10–1000 N	<b>AC 430</b>  6 items
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<b>Tensiometer attachment</b> optional for all FK models from FK 10 up to FK 250	<b>FK-A01</b>  1 piece
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<b>Tensiometer attachment</b> for high-capacity tensile strength tests up to FK 500 and FK 1K	<b>FK-A02</b>  1 piece
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## Special Solutions



<b>Stainless steel handle bar</b> with rubber grip for safe handling, AFH 04 suitable for FA, FH, FL AFK 02 suitable for FK, FC and FS	<b>AFH 04</b>  1 piece <b>AFK 02</b>  1 piece
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<b>Stainless steel handle bar</b> with rubber grip for FH, FL with external sensor, thread: M12	<b>AFH 05</b>  1 piece
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<b>Door tester</b> Handle (length: 300 mm) and two round force receptor plates (ø 85 mm) as an option to FH 1K up to FH 5K for the safe testing of clamping forces (not approved to DIN 18650 or similar), up to 5 kN	<b>AFH 03</b>  1 piece
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## Interface Cables



<b>RS-232/PC connection cable</b> to connect models from the SAUTER FH range to a PC	<b>FH-A01</b>  1 piece
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<b>RS-232/PC connection cable</b> to connect models from the SAUTER FL, DA and DB range to a PC	<b>FL-A04</b>  1 piece
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<b>USB/PC connection cable</b> to connect models from the SAUTER FL, DA and DB range to a PC	<b>FL-A01</b>  1 piece
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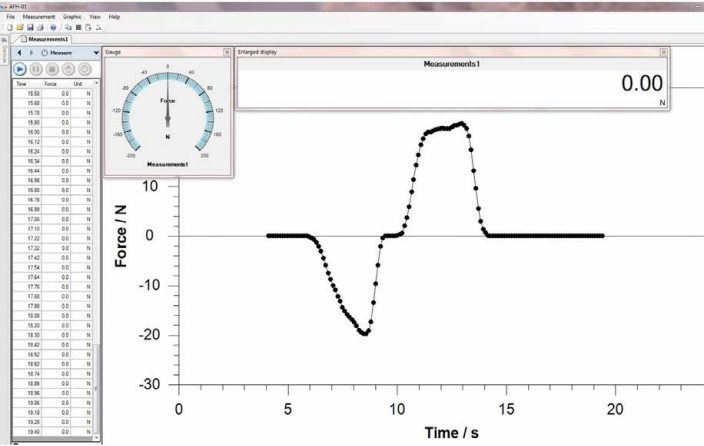
<b>RS-232/PC connection cable</b> to connect models from the SAUTER LB range to a PC	<b>LB-A01</b>  1 piece
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<b>RS-232/USB adapter</b> to connect peripheral devices with USB interface, suitable for all balances and measuring instruments with RS 232 output, scope of supply: adapter, CD with driver	<b>AFH 12</b>  1 piece
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<b>RS-232 connection cable</b> to connect models from the SAUTER FC range to a PC	<b>FC-A01</b>  1 piece
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	A	B	C	D	E	F	G	H	I	J	K
1	Time	Force	Unit	Unit	DeviceName	DeviceName	DeviceName	DeviceName	DeviceName	DeviceName	DeviceName
2	4.12908091	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
3	4.218979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
4	4.318979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
5	4.418979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
6	4.518979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
7	4.618979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
8	4.718979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
9	4.818979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
10	4.918979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
11	5.018979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
12	5.118979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
13	5.218979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
14	5.318979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
15	5.418979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
16	5.518979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
17	5.618979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
18	5.718979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
19	5.818979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
20	5.918979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
21	6.018979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
22	6.118979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
23	6.218979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
24	6.318979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
25	6.418979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
26	6.518979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
27	6.618979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
28	6.718979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
29	6.818979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
30	6.918979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1
31	7.018979508	0 s	N	PH 200	NAN	NAN	NAN	NAN	NAN	2011-11-09T11:51:26.0937552+01:00	0.1



Data transfer software for force-time-measurements


Features

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

Technical data

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

Accessories

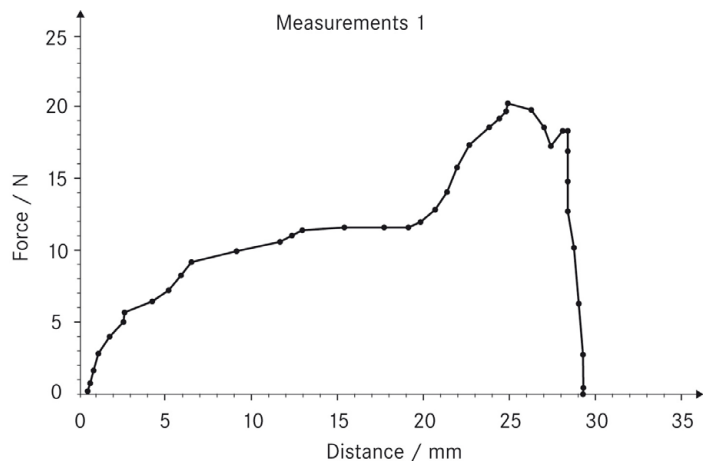
-  RS-232/USB adapter, to connect peripheral devices with USB connection, SAUTER AFH 12
- RS-232/Ethernet adapter for connection to an IP-based Ethernet network, KERN YKI-01

STANDARD



Model

SAUTER  
AFH FAST



## 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 on DVD
    - User manual
    - RS 232 interface cable for FH (FH-A01)
    - USB interface cable for FL (FL-A01)
    - AFH FD: RS 232 interface cable for LB (LB-A01)
  - Compatible with the following operating system: Microsoft Windows from version 10
  - **3** Order example for a complete test system:
    - FH 5K (Digital force gauge)
    - LB 300-2 (Digital length measuring device)
    - AFH FD (Force-distance evaluation software)
    - TVM 5000N230N\* (Test stand)
    - LB-A02\* (Mounting LB on test 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 FH: SAUTER FH-A01 for SAUTER LB: SAUTER LB-A01
- RS-232/USB adapter, to connect peripheral devices with USB connection, SAUTER AFH 12

### STANDARD



### Model

#### SAUTER

AFH FD

AFH LD

### SAUTER AFH LD

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



Nr.	Messwert	Einheit	Richtung	Material	Datum	Zeit
6. 001-1/6	182 HL		0	Steel&Cast Steel	11. Mai	21:48
7. 001-2/6	600 HL		0	Steel&Cast Steel	11. Mai	21:48
8. 001-3/6	543 HL		0	Steel&Cast Steel	11. Mai	21:48
9. 001-4/6	545 HL		0	Steel&Cast Steel	11. Mai	21:48
10. 001-5/6	480 HL		0	Steel&Cast Steel	11. Mai	21:48
11. 001-6/6	429 HL		0	Steel&Cast Steel	11. Mai	21:48
12. 002-1/6	600 HL		0	Steel&Cast Steel	11. Mai	21:48
13. 002-2/6	597 HL		0	Steel&Cast Steel	11. Mai	21:48
14. 002-3/6	547 HL		0	Steel&Cast Steel	11. Mai	21:48
15. 002-4/6	596 HL		0	Steel&Cast Steel	11. Mai	21:48
16. 002-5/6	595 HL		0	Steel&Cast Steel	11. Mai	21:48
17. 002-6/6	425 HL		0	Steel&Cast Steel	11. Mai	21:48
18. 003-1/6	595 HL		0	Steel&Cast Steel	11. Mai	21:48
19. 003-2/6	599 HL		0	Steel&Cast Steel	11. Mai	21:48
20. 003-3/6	586 HL		0	Steel&Cast Steel	11. Mai	21:49
21. 003-4/6	605 HL		0	Steel&Cast Steel	11. Mai	21:49
22. 003-5/6	582 HL		0	Steel&Cast Steel	11. Mai	21:49
23. 003-6/6	590 HL		0	Steel&Cast Steel	11. Mai	21:49
24. 004-1/6	609 HL		0	Steel&Cast Steel	12. Mai	21:43
25. 004-2/6	591 HL		0	Steel&Cast Steel	12. Mai	21:44

## 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
- USB/PC connection cable (USB-A/USB mini), SAUTER FL-A01
- More details as well as free download possible in the download area of the webshop

STANDARD

