SAUTER

## Digital force gauge SAUTER FL-S



**PREMIUM**
★★★



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## Premium force measuring instrument with graphic-assisted display and integrated measuring cell

### Features

· **Turnable display** with backlight
· **Peak-Hold function** to capture peaks (measurement result will be "frozen" for a short time) or **Track function** mode for a continuous measurement indication (period of time approx. 10 s)
· **Metal housing** for durable usage in harsh environmental conditions
· Can be mounted on all SAUTER test stands
· **Capacity display:** A bar lights up to show how much of the measuring range is still available
· **Measuring with tolerance range (limit-setting function):** Upper and lower limiting can be programmed individually, in pull and push direction. The process is supported by an visual signal.
· **Internal memory** for up to 500 measurement values
· **Continuous analogue output:** Linear voltage signal in dependence to the load (-2 to +2 V)

· 1 Standard attachments: as shown above
· **Selectable measuring units:** N, kN, kg, oz, lbf
· 2 **Delivered in a robust carrying case**

### Technical data

· Internal measuring frequency: 1000 Hz
· Precision: 0,2 % of [Max]
· Overload protection: 120 % of [Max]
· Dimensions W×D×H 175×75×30 mm
· Thread: M6
· Rechargeable battery pack integrated, standard, operating time up to 10 h without backlight, charging time approx. 8 h
· Net weight approx. 0,5 kg

### Accessories

· **Plug-In for data transfer of measuring** data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-1.0
· **Force-displacement data transfer software** with graphical representation of the measuring process, only in combination with SAUTER LD, SAUTER AFH LD
· **Force-time data transfer software** for graphical representation on the PC and data transfer to Microsoft Excel®, SAUTER AFH FAST
· **Force-displacement data transfer software** with graphic display of the measurement process, only in combination with SAUTER LB, SAUTER AFH FD
· **USB cable,** SAUTER FL-A01
· **RS-232 adapter cable,** SAUTER FL-A04
· **Thermal printer,** KERN YKB-01N
· **Statistics thermal printer,** KERN YKS-01
· **Label printer,** KERN YKE-01
· Supports for fastening of objects as well as additional accessories, please see page 30 onwards or our website

**STANDARD**

| PEAK | PUSH/PULL | MEMORY | RS 232 | USB | ANALOG | PRINTER | UNIT | TOL | ACCU | 230 V | 1 DAY |

**OPTION**

| SOFTWARE | DAkkS +4 DAYS | ISO +4 DAYS |

| Model | Measuring range | Readout | | Option **DAkkS calibration certificate** | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **Tensile force** | | **Compressive force** | | **Tensile/Compressive force** | |
| | [Max] | [d] | | **DAkkS** | | **DAkkS** | | **DAkkS** | |
| SAUTER | N | N | | KERN | | KERN | | 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 | |

## 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 a 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.

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**Your KERN specialist dealer:**

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