

Digital force gauge SAUTER FS

NEW **PREMIUM**
★ ★ ★



Measurement of forces in different tensile or compressive 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

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

Use with integrated measuring cell

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

Use with external measuring cells

The SAUTER FS premium force gauge is compatible with all SAUTER strain gauge measuring cells, see page 88 et seq. Up to 4 external measuring cells can be connected simultaneously. If all available external measuring channels are used, the internal measuring cell is deactivated as long as an external measuring cell is connected.



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



Can be mounted on all SAUTER test benches, illustration shows optional accessories, see page 35 et seq., and the manual test bench SAUTER TVL-XS, see page 19 et seq.



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



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

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Features

- 3,5" Touchscreen
- Standard version with 2 or 4 measuring channels for external force sensors (subsequently expandable from 2 to 4)
- An internal measuring cell is possible (is deactivated if an external measuring cell is 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 programming, data transfer and power supply as standard
- Integrated SD card memory
- Adjustable SI units kg, N, kN, mN, MN, Nm, kNm, mNm
- Tolerance function
- Track function for continuous measurement display
- Peak value measurement
- Mountable on SAUTER test benches

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 measuring cell: 0.1 % of [Max]
 - with external measuring cell: among other things from the measuring cells used
- Overall dimensions W×D×H 71×31×180 mm
- Overload protection: 150 % of [Max] with internal measuring cell
- Thread on load receptor: M6 (outside)
- Battery operation internal, standard, operating time up to 8 h, Charging time approx. 8 h
- External mains adapter, for connection to the USB-C socket, standard
- Net weight approx. 0,4 kg

Accessories

- A/D converter module, only for models FS 2 and FS 2-xxx, SAUTER FS 34
- Stainless steel handle bar with rubber grip for safe handling, SAUTER AFK 02
- Transport case, e.g. for accessories, SAUTER FS TKZ
- Standard attachments, SAUTER AC 43
- Suitable measuring cells see page 86 et seqq.
- Supports for fastening of objects as well as additional accessories, please see page 35 onwards or our website

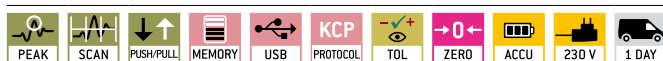
Optional calibration see page 97 et seqq. Calibration is recommended for each measuring cell!

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 measuring cells:

1x	FS 2-50	2-channel force gauge with integrated measuring cell for tension/compression force measurements
1x	963-361	DAkks calibration certificate tension/compression force up to 500 N
1x	CO 100-Y1	Miniature compression load cell up to 1 kN
1x	FS 403	Two-point adjustment up to 2 kN, incl. plug and memory for SAUTER FS
1x	963-262	DAkks calibration certificate compression force up to 2 kN
1x	CS 500-3P2	Stainless steel "S" measuring cell for tension/compression force up to 5 kN
1x	963-363	DAkks calibration certificate tension/compression force up to 5 kN
1x	FS 404	Two-point adjustment up to 5 kN, incl. connector and memory for SAUTER FS

STANDARD



OPTION











































Model	Measuring range internal measuring cell	Readability internal measuring cell	Internal measuring 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
SAUTER		[Max] kN
FS 401	Numeric*	-
FS 402	Two-point	0,5
FS 403		2
FS 404		5
FS 405		20
FS 406		50
FS 407		120
FS 408		250

*only for sensors > 250 kN

Pictograms

 Adjusting program (CAL): For quick setting of the instrument's accuracy. External adjusting weight required	 WLAN data interface: To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 Protection against dust and water splashes IPxx: The type of protection is shown in the pictogram cf. DIN EN 60529:2000-09, IEC 60529:1989+A1:1999+A2:2013
 Calibration block: Standard for adjusting or correcting the measuring device	 Data interface Infrared: To transfer data from the measuring instrument to a printer, PC or other peripheral devices	 ZERO: Resets the display to "0"
 Peak hold function: Capturing a peak value within a measuring process	 Control outputs (optocoupler, digital I/O): To connect relays, signal lamps, valves, etc.	 Battery operation: Ready for battery operation. The battery type is specified for each device
 Scan mode: Continuous capture and display of measurements	 Analogue interface: To connect a suitable peripheral device for analogue processing of the measurements	 Rechargeable battery pack: Rechargeable set
 Push and Pull: The measuring device can capture tension and compression forces	 Analog output: For output of an electrical signal depending on the load (e.g. voltage 0 V – 10 V or current 4 mA – 20 mA)	 Plug-in power supply: 230V/50Hz in standard version for EU. On request GB, AUS or USA version available
 Length measurement: Captures the geometric dimensions of a test object or the movement during a test process	 Statistics: Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.	 Integrated power supply unit: Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or USA on request
 Focus function: Increases the measuring accuracy of a device within a defined measuring range	 PC Software: To transfer the measurement data from the device to a PC	 Motorised drive: The mechanical movement is carried out by a electric motor
 Internal memory: To save measurements in the device memory	 Printer: A printer can be connected to the device to print out the measurement data	 Motorised drive: The mechanical movement is carried out by a synchronous motor (stepper)
 Data interface RS-232: Bidirectional, for connection of printer and PC	 Network interface: For connecting the scale/measuring instrument to an Ethernet network	 Fast-Move: The total length of travel can be covered by a single lever movement
 Profibus: For transmitting data, e.g. between scales, measuring cells, controllers and peripheral devices over long distances. Suitable for safe, fast, fault-tolerant data transmission. Less susceptible to magnetic interference.	 KERN Communication Protocol (KCP): It is a standardized interface command set for KERN balances and other instruments, which allows retrieving and controlling all relevant parameters and functions of the device. KERN devices featuring KCP are thus easily integrated with computers, industrial controllers and other digital systems	 Verification possible: The time required for verification is specified in the pictogram
 Profinet: Enables efficient data exchange between decentralised peripheral devices (balances, measuring cells, measuring instruments etc.) and a control unit (controller). Especially advantageous when exchanging complex measured values, device, diagnostic and process information. Savings potential through shorter commissioning times and device integration possible	 GLP/ISO record keeping: Of measurement data with date, time and serial number. Only with SAUTER printers	 DAkKS calibration possible: The time required for DAkKS calibration is shown in days in the pictogram
 Profinet: Enables efficient data exchange between decentralised peripheral devices (balances, measuring cells, measuring instruments etc.) and a control unit (controller). Especially advantageous when exchanging complex measured values, device, diagnostic and process information. Savings potential through shorter commissioning times and device integration possible	 GLP/ISO record keeping: Of measurement data with date, time and serial number. Only with SAUTER printers	 Factory calibration: The time required for factory calibration is specified in the pictogram
 Data interface USB: To connect the measuring instrument to a printer, PC or other peripheral devices	 Measuring units: Weighing units can be switched to e.g. non-metric. Please refer to website for more details	 Package shipment: The time required for internal shipping preparations is shown in days in the pictogram
 Bluetooth* data interface: To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 Measuring with tolerance range (limit-setting function): Upper and lower limiting can be programmed individually. The process is supported by an audible or visual signal, see the relevant model	 Pallet shipment: The time required for internal shipping preparations is shown in days in the pictogram

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