

Digital force gauge SAUTER FL-S



Universal digital force gauge 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
- Metal housing for durable usage in harsh environmental conditions
- Can be mounted on all SAUTER test stands up to 10 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 +2 V)
- Data interface USB standard

- Data interface RS-232 standard, only for connection to the printer
- **1** Standard attachments: as shown above
- Selectable measuring units: N, kN, kgf, lbf
- **2** Delivered in a robust carrying case

Technical data

- Internal measuring frequency: 1000 Hz
- 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
- 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
- Data transfer software with graphic display of the measurement process, SAUTER AFH FAST  
Force-displacement only in combination with SAUTER LD, SAUTER AFH LD  
Force-displacement only in combination with SAUTER LB, SAUTER AFH FD
- USB cable, as standard, can be reordered, 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 35 onwards or our website

STANDARD











































OPTION



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

**1** Further calibration options on request

## Pictograms

 <b>Adjusting program (CAL):</b> For quick setting of the instrument's accuracy. External adjusting weight required	 <b>WLAN data interface:</b> To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 <b>Protection against dust and water splashes IPxx:</b> The type of protection is shown in the pictogram.
 <b>Calibration block:</b> Standard for adjusting or correcting the measuring device	 <b>Data interface Infrared:</b> To transfer data from the measuring instrument to a printer, PC or other peripheral devices	 <b>ZERO:</b> Resets the display to "0"
 <b>Peak hold function:</b> Capturing a peak value within a measuring process	 <b>Control outputs (optocoupler, digital I/O):</b> To connect relays, signal lamps, valves, etc.	 <b>Battery operation:</b> Ready for battery operation. The battery type is specified for each device
 <b>Scan mode:</b> Continuous capture and display of measurements	 <b>Analogue interface:</b> To connect a suitable peripheral device for analogue processing of the measurements	 <b>Rechargeable battery pack:</b> Rechargeable set
 <b>Push and Pull:</b> The measuring device can capture tension and compression forces	 <b>Analog output:</b> For output of an electrical signal depending on the load (e.g. voltage 0 V – 10 V or current 4 mA – 20 mA)	 <b>Mains adapter:</b> 230V/50Hz in standard version for EU. On request GB, AUS or USA version available
 <b>Length measurement:</b> Captures the geometric dimensions of a test object or the movement during a test process	 <b>Statistics:</b> Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.	 <b>Power supply:</b> Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or USA on request
 <b>Focus function:</b> Increases the measuring accuracy of a device within a defined measuring range	 <b>PC Software:</b> To transfer the measurement data from the device to a PC	 <b>Motorised drive:</b> The mechanical movement is carried out by a electric motor
 <b>Internal memory:</b> To save measurements in the device memory	 <b>Printer:</b> A printer can be connected to the device to print out the measurement data	 <b>Motorised drive:</b> The mechanical movement is carried out by a synchronous motor (stepper)
 <b>Data interface RS-232:</b> Bidirectional, for connection of printer and PC	 <b>Network interface:</b> For connecting the scale/measuring instrument to an Ethernet network	 <b>Fast-Move:</b> The total length of travel can be covered by a single lever movement
 <b>Profibus:</b> 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.	 <b>KERN Communication Protocol (KCP):</b> 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	 <b>Verification possible:</b> The time required for verification is specified in the pictogram
 <b>Profinet:</b> 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	 <b>GLP/ISO record keeping:</b> Of measurement data with date, time and serial number. Only with SAUTER printers	 <b>DAKkS calibration possible:</b> The time required for DAKkS calibration is shown in days in the pictogram
 <b>Data interface USB:</b> To connect the measuring instrument to a printer, PC or other peripheral devices	 <b>Measuring units:</b> Weighing units can be switched to e.g. non-metric at the touch of a key. Please refer to website for more details	 <b>Factory calibration:</b> The time required for factory calibration is specified in the pictogram
 <b>Bluetooth* data interface:</b> To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 <b>Measuring with tolerance range (limit-setting function):</b> Upper and lower limiting can be programmed individually. The process is supported by an audible or visual signal, see the relevant model	 <b>Package shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram
		 <b>Pallet shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram

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