

Digital Force Gauge SAUTER FL-M



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

Further calibration options on request

 Adjusting program (CAL) For quick setting of the instrument's accuracy. External adjusting weight required	 Bluetooth* data interface To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 Measuring units Weighing units can be switched to e.g. non-metric. Please refer to website for more details	 Conformity assessment Models with type approval for construction of verifiable systems
 Calibration block Standard for adjusting or correcting the measuring device	 WIFI 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	 DAkkS calibration possible The time required for DAkkS calibration is shown in days in the pictogram
 Peak hold function Capturing a peak value within a measuring process	 Data interface infrared To transfer data from the measuring instrument to a printer, PC or other peripheral devices	 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	 Factory calibration (ISO) The time required for factory calibration is specified in the pictogram
 Scan mode Continuous capture and display of measurements	 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	 Package shipment The time required for internal shipping preparations is shown in days in the pictogram
 Push and Pull The measuring device can capture tension and compression forces	 Analogue interface To connect a suitable peripheral device for analogue processing of the measurements	 ZERO Resets the display to "0"	 Pallet shipment The time required for internal shipping preparations is shown in days in the pictogram
 Length measurement Captures the geometric dimensions of a test object or the movement during a test process	 Analogue output For output of an electrical signal depending on the load (e.g. voltage 0 V – 10 V or current 4 mA – 20 mA)	 Rechargeable battery pack Rechargeable set	
 Focus function Increases the measuring accuracy of a device within a defined measuring range	 Statistics Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.	 Plug-in power supply 230V/50Hz in standard version for EU. On request GB, AUS or US version available	
 Internal memory To save measurements in the device memory	 PC Software To transfer the measurement data from the device to a PC	 Integrated power supply unit Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or US on request	
 Data interface RS-232 Bidirectional, for connection of printer and PC	 Printer A printer can be connected to the device to print out the measurement data	 Motorised drive The mechanical movement is carried out by an electric motor	
 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	 Network interface For connecting the scale/measuring instrument to an Ethernet network	 Motorised drive The mechanical movement is carried out by a synchronous motor (stepper)	
 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	 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	 Fast-Move The total length of travel can be covered by a single lever movement	
 Data interface USB To connect the measuring instrument to a printer, PC or other peripheral devices	 GLP/ISO record keeping of measurement data with date, time and serial number. Only with SAUTER printers		