

Digital force gauge SAUTER FH-M



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
- Force-displacement only in combination with SAUTER LD, SAUTER AFH LD
- Force-displacement only in combination with SAUTER LB, SAUTER AFH FD
- RS-232/PC-Connection cable to connect models from the SAUTER FH range to a PC, SAUTER FH-A01
- Further accessories see page 40 onwards or our website

STANDARD



OPTION



Model	Measuring range [Max] kN	Readout [d] N	Dimensions load cell W×D×H mm	Thread	Option DAkkS calibration certificate (≤ 5 kN)/ Factory calibration certificate (> 5 kN)		
					Tensile force	Compressive force	Tensile/Compressive force
SAUTER					KERN	KERN	KERN
FH 1K	1	0,5	76×51×19	M12	963-162	963-262	963-362
FH 2K	2	1	76×51×19	M12	963-162	963-262	963-362
FH 5K	5	1	76,2×51×28,2	M12	963-163	963-263	963-363
FH 10K	10	5	76,2×51×28,2	M12	961-164	961-264	961-364
FH 20K	20	10	76,2×51×28,2	M12	961-164	961-264	961-364
FH 50K	50	10	108×76×25,5	M18×1,5	961-165	961-265	961-365
FH 100K	100	50	178×125×51	M30×2	961-166	961-266	961-366

Further calibration options on request

Digital force gauge SAUTER FH-S



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

- 1 x FH 500
- 1 x AE 500 (Details see page 44)

You can find our bundles on page 26/27

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 WxDxH 230x66x36 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
- Force-displacement only in combination with SAUTER LD, SAUTER AFH LD
- Force-displacement only in combination with SAUTER LB, SAUTER AFH FD
- RS-232/PC-Connection 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 page 40 onwards or our website

STANDARD



OPTION



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



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



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.



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



Data interface USB:
To connect the measuring instrument to a printer, PC or other peripheral devices



Bluetooth* data interface:
To transfer data from the balance/measuring instrument to a printer, PC or other peripherals



WLAN data interface:
To transfer data from the balance/measuring instrument to a printer, PC or other peripherals



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



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)



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



Network interface:
For connecting the scale/measuring instrument to an Ethernet network



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



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. 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



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



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



Plug-in power supply:
230V/50Hz in standard version for EU. On request GB, AUS or USA version available



Integrated power supply unit:
Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or USA on request



Motorised drive:
The mechanical movement is carried out by an 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



Verification possible:
Models with type approval for construction of verifiable systems



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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