PROFESSIONAL MEASURING
SINCE 1844

KERN

Product brochure

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SAUTER FS 4-500

Premium force gauge with integrated load cell and connection possibility for up to 4 external load cells

ENGLISH

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APPLICATION EXAMPLE

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FEATURES

- Use with integrated load cell
  The SAUTER FS premium force gauge has an load measuring cell for tensile and compressive force applications. Either 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 load cells
  The SAUTER FS premium force gauge is compatible with all SAUTER strain gauge measuring cells, see *Measuring Cells*. Up to 4 external measuring cells can be connected simultaneously. If an external measuring channel is used, the internal load cell is deactivated as long as an external load cell is connected.
- Measurement of forces in different tensile or compression directions possible with only one measuring device
- 3,5" touchscreen with touch pen
- Standard version with 4 measuring channels for external force sensors
- An internal load cell is possible (is deactivated if an external load 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 data transfer and power supply as standard
- Internal device memory (16 GB)
- Tolerance function
- Track function for continuous measurement display
- Peak value measurement
- Mountable on all SAUTER test stands
- Supplied in a high-quality and robust system case (systainer® T-LOC) including plug-in power supply and USB cable type C
- Tip: Order the practical system case (systainer® T-LOC) for storing and transporting of accessories, clamps, sensors, etc. at the same time, SAUTER FS TKZ, see accessories

TECHNICAL DATA

- 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 load cell: 0.1% of [Max]
  - with external load cell: among other things from the load cells used
- Overall dimensions 71×31×180 mm
- Overload protection: 150% of [Max] with internal measuring cell
- Thread on load receptor: M6 (outer)
- Rechargeable battery pack integrated, as standard, operating time up to 8 h without backlight, charging time approx. 8 h
- External mains adapter, for connection to the USB-C connector, standard
- Net weight approx. 0,45 kg

MAIN SCOPE OF APPLICATIONS

- Test laboratories
- Research and development
- Automotive industry
- Maintenance and servicing
- Plastics technology

PICTOGRAMS

Standard

Option

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MODEL OVERVIEW

Model	Measuring range [Max]	Readability [d]
FS 2		
FS 4		
FS 2-20	20 N	0,004 N
FS 4-20	20 N	0,004 N
FS 2-50	50 N	0,01 N
FS 4-50	50 N	0,01 N
FS 2-100	100 N	0,02 N
FS 4-100	100 N	0,02 N
FS 2-200	200 N	0,04 N
FS 4-200	200 N	0,04 N
FS 2-500	500 N	0,1 N
FS 4-500	500 N	0,1 N

ACCESSORIES

Model	Description
AC 14	Screw tension clamp with jaws AC 14 (up to 500 N | width 16 mm, | clamping width 4 mm | 2 piece)
AC 14R	Screw tension clamp with jaws AC 14R (up to 500 N | width 16 mm, | clamping width 4 mm | 1 piece)
AC 43	Standard attachments AC 43

Model	Description
AE 01	Standard Clamp AE 01
AE 02	Standard Clamp AE 02
AE 03	Strip tension clamp AE 03 (up to 500 N | width 40 mm, | clamping width 2,5 mm | 1)
AE 04	Strip tension clamp AE 04 (up to 500 N | width 15 mm, | clamping width 6 mm | 1)
AE 05	Rope and thread tension clamp AE 05 (up to 500 N | width , | clamping width 2,5 mm | 1)
AE 06	Cable pull-off clamp AE 06
AE 07	Wedge Clamp with jaws AE 07 (up to 500 N | width 14 mm, | clamping width 6 mm | 1)
AE 500	Screw tension clamp with jaws AE 500
AFK 02	Stainless steel handle with plastic coating AFK 02
AFM 05	Adapter AFM 05 (External thread M10 | Threaded hole M6)
AFM 06	Adapter AFM 06 (Threaded hole M10 | Threaded hole M6)
AFM 07	Adapter AFM 07 (External thread M10 | Threaded hole M6)
AFM 12	Adapter AFM 12 (Threaded hole M6 | Threaded hole M6)
AFM 15	Adapter AFM 15 (Threaded hole M12 | Threaded hole M6)
CD 20-3P1	Load/force measuring cell CD 20-3P1, Nominal load 20000 kg / 200 kN
CO 0.5-Y5	Load/force measuring cell CO 0.5-Y5, Nominal load 500 g / 5 N
CO 1-Y5	Load/force measuring cell CO 1-Y5, Nominal load 1 kg / 10 N
CO 5-Y4	Load/force measuring cell CO 5-Y4, Nominal load 5 kg / 50 N
CO 5-Y5	Load/force measuring cell CO 5-Y5, Nominal load 5 kg / 50 N
CO 10-Y1	Load/force measuring cell CO 10-Y1, Nominal load 10 kg / 100 N
CO 10-Y2	Load/force measuring cell CO 10-Y2, Nominal load 10 kg / 100 N
CO 10-Y3	Load/force measuring cell CO 10-Y3, Nominal load 10 kg / 100 N
CO 10-Y4	Load/force measuring cell CO 10-Y4, Nominal load 10 kg / 100 N
CO 10-Y5	Load/force measuring cell CO 10-Y5, Nominal load 10 kg / 100 N
CO 20-Y1	Load/force measuring cell CO 20-Y1, Nominal load 20 kg / 200 N
CO 20-Y2	Load/force measuring cell CO 20-Y2, Nominal load 20 kg / 200 N
CO 50-Y1	Load/force measuring cell CO 50-Y1, Nominal load 50 kg / 500 N
CO 50-Y2	Load/force measuring cell CO 50-Y2, Nominal load 50 kg / 500 N
CO 100-Y1	Load/force measuring cell CO 100-Y1, Nominal load 100 kg / 1 kN
CO 100-Y2	Load/force measuring cell CO 100-Y2, Nominal load 100 kg / 1 kN
CO 200-Y1	Load/force measuring cell CO 200-Y1, Nominal load 200 kg / 2 kN

Model	Description
CO 200-Y2	Load/force measuring cell CO 200-Y2, Nominal load 200 kg / 2 kN
CO 500-Y1	Load/force measuring cell CO 500-Y1, Nominal load 500 kg / 5 kN
CO 500-Y2	Load/force measuring cell CO 500-Y2, Nominal load 500 kg / 5 kN
CO 1000-Y1	Load/force measuring cell CO 1000-Y1, Nominal load 1000 kg / 10 kN
CO 1000-Y2	Load/force measuring cell CO 1000-Y2, Nominal load 1000 kg / 10 kN
CO 2000-Y1	Load/force measuring cell CO 2000-Y1, Nominal load 2000 kg / 20 kN
CO 2000-Y2	Load/force measuring cell CO 2000-Y2, Nominal load 2000 kg / 20 kN
CR 60-3P1	Load/force measuring cell CR 60-3P1, Nominal load 60 kg / 600 N
CR 130-3P1	Load/force measuring cell CR 130-3P1, Nominal load 130 kg / 1,3 kN
CR 250-3P1	Load/force measuring cell CR 250-3P1, Nominal load 250 kg / 2,5 kN
CR 500-1Y1	Load/force measuring cell CR 500-1Y1, Nominal load 500 kg / 5 kN
CR 500-3P1	Load/force measuring cell CR 500-3P1, Nominal load 500 kg / 5 kN
CR 1000-1Y1	Load/force measuring cell CR 1000-1Y1, Nominal load 1000 kg / 10 kN
CR 2000-3P1	Load/force measuring cell CR 2000-3P1, Nominal load 2000 kg / 20 kN
CR 2500-1Q1	Load/force measuring cell CR 2500-1Q1, Nominal load 2500 kg / 25 kN
CR 5000-1Q1	Load/force measuring cell CR 5000-1Q1, Nominal load 5000 kg / 50 kN
CR 5000-1Y1	Load/force measuring cell CR 5000-1Y1, Nominal load 5000 kg / 50 kN
CR 10000-1Q1	Load/force measuring cell CR 10000-1Q1, Nominal load 10000 kg / 100 kN
CR 10000-1Y1	Load/force measuring cell CR 10000-1Y1, Nominal load 10000 kg / 100 kN
CR 20000-1Q1	Load/force measuring cell CR 20000-1Q1, Nominal load 20000 kg / 200 kN
CR 20000-1Y1	Load/force measuring cell CR 20000-1Y1, Nominal load 20000 kg / 200 kN
CR 30000-1Q1	Load/force measuring cell CR 30000-1Q1, Nominal load 30000 kg / 300 kN
CS 1-Y1	Load/force measuring cell CS 1-Y1, Nominal load 1 kg / 10 N
CS 2-Y1	Load/force measuring cell CS 2-Y1, Nominal load 2 kg / 20 N
CS 5-Y1	Load/force measuring cell CS 5-Y1, Nominal load 5 kg / 50 N
CS 10-Y1	Load/force measuring cell CS 10-Y1, Nominal load 10 kg / 100 N
CS 20-Y1	Load/force measuring cell CS 20-Y1, Nominal load 20 kg / 200 N
CS 25-3P1	Load/force measuring cell CS 25-3P1, Nominal load 25 kg / 250 N
CS 50-3P1	Load/force measuring cell CS 50-3P1, Nominal load 50 kg / 500 N
CS 50-3P2	Load/force measuring cell CS 50-3P2, Nominal load 50 kg / 500 N
CS 50-3Q1	Load/force measuring cell CS 50-3Q1, Nominal load 50 kg / 500 N

Model	Description
CS 100-3P1	Load/force measuring cell CS 100-3P1, Nominal load 100 kg / 1 kN
CS 100-3P2	Load/force measuring cell CS 100-3P2, Nominal load 100 kg / 1 kN
CS 100-3Q1	Load/force measuring cell CS 100-3Q1, Nominal load 100 kg / 1 kN
CS 150-3P1	Load/force measuring cell CS 150-3P1, Nominal load 150 kg / 1,5 kN
CS 150-3Q1	Load/force measuring cell CS 150-3Q1, Nominal load 150 kg / 1,5 kN
CS 200-3Q1	Load/force measuring cell CS 200-3Q1, Nominal load 200 kg / 2 kN
CS 250-3P1	Load/force measuring cell CS 250-3P1, Nominal load 250 kg / 2,5 kN
CS 250-3P2	Load/force measuring cell CS 250-3P2, Nominal load 250 kg / 2,5 kN
CS 300-3Q1	Load/force measuring cell CS 300-3Q1, Nominal load 300 kg / 3 kN
CS 500-3P1	Load/force measuring cell CS 500-3P1, Nominal load 500 kg / 5 kN
CS 500-3P2	Load/force measuring cell CS 500-3P2, Nominal load 500 kg / 5 kN
CS 500-3Q1	Load/force measuring cell CS 500-3Q1, Nominal load 500 kg / 5 kN
CS 600-3P1	Load/force measuring cell CS 600-3P1, Nominal load 600 kg / 6 kN
CS 750-3P1	Load/force measuring cell CS 750-3P1, Nominal load 750 kg / 7,5 kN
CS 750-3Q1	Load/force measuring cell CS 750-3Q1, Nominal load 750 kg / 7,5 kN
CS 1000-3P1	Load/force measuring cell CS 1000-3P1, Nominal load 1000 kg / 10 kN
CS 1000-3Q1	Load/force measuring cell CS 1000-3Q1, Nominal load 1000 kg / 10 kN
CS 1500-3P1	Load/force measuring cell CS 1500-3P1, Nominal load 1500 kg / 15 kN
CS 1500-3Q1	Load/force measuring cell CS 1500-3Q1, Nominal load 1500 kg / 15 kN
CS 2000-3P1	Load/force measuring cell CS 2000-3P1, Nominal load 2000 kg / 20 kN
CS 2000-3P2	Load/force measuring cell CS 2000-3P2, Nominal load 2000 kg / 20 kN
CS 2000-3Q1	Load/force measuring cell CS 2000-3Q1, Nominal load 2000 kg / 20 kN
CS 2500-3P1	Load/force measuring cell CS 2500-3P1, Nominal load 2500 kg / 25 kN
CS 3000-3Q1	Load/force measuring cell CS 3000-3Q1, Nominal load 3000 kg / 30 kN
CS 5000-3P1	Load/force measuring cell CS 5000-3P1, Nominal load 5000 kg / 50 kN
CS 5000-3P2	Load/force measuring cell CS 5000-3P2, Nominal load 5000 kg / 50 kN
CS 5000-3Q1	Load/force measuring cell CS 5000-3Q1, Nominal load 5000 kg / 50 kN
CS 6000-3Q1	Load/force measuring cell CS 6000-3Q1, Nominal load 6000 kg / 60 kN
CS 7500-3P1	Load/force measuring cell CS 7500-3P1, Nominal load 7500 kg / 75 kN
CS 7500-3P2	Load/force measuring cell CS 7500-3P2, Nominal load 7500 kg / 75 kN
CS 10000-3P1	Load/force measuring cell CS 10000-3P1, Nominal load 10000 kg / 100 kN

Model	Description
CS 15000-3P1	Load/force measuring cell CS 15000-3P1, Nominal load 15000 kg / 150 kN
CS 20000-3P1	Load/force measuring cell CS 20000-3P1, Nominal load 20000 kg / 200 kN
CS 30000-3P1	Load/force measuring cell CS 30000-3P1, Nominal load 30000 kg / 300 kN
FS-E07	Power supply unit EURO FS-E07
YKA-01	Schuko> UK Plug Power Adapters YKA-01

SOFTWARE

Model	Description
AFH LD	Data transfer software for force-displacement-measurements AFH LD
Sauter Readout	Data transfer software Sauter Readout

SERVICES

Model	Description
961-161	Factory calibration certificate 961-161 (tension | N)
961-261	Factory calibration certificate 961-261 (compression | N)
961-361	Factory calibration certificate 961-361 (tension, compression | N)
963-161	DAkkS calibration certificate 963-161 (force direction tension | measurement result unit N | calibration standard DKD-R 3-3 - sequence A)
963-261	DAkkS calibration certificate 963-261 (force direction compression | measurement result unit N | calibration standard DKD-R 3-3 - sequence A)
963-361	DAkkS calibration certificate 963-361 (force direction tension, compression | measurement result unit N | calibration standard DKD-R 3-3 - sequence A)
970-106	Warranty extension (+2 years) 970-106

KERN Pictogram Overview

	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
	Memory: Device-internal memory capacity, e.g. for article data, measuring data, tare weights, PLU etc.
	Data Interface USB: For connection to printers, PCs or other peripheral devices
	KERN Communication Protocol (KCP): 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
	Measuring with tolerance range (checkweighing): Upper and lower limit values can be programmed, e.g. for sorting, portioning or for measuring coatings or material thicknesses. The process is supported by an acoustic and/or optical signal
	ZERO: Reset the display to 0
	Rechargeable battery pack: Rechargeable set
	Plug-in power supply: 230V/50Hz in standard version for EU, CH. On request GB, USA or AUS version available
	Package shipment by courier service: The duration of internal product provision is one day
	PC Software: to transfer the measurements from the device to a PC
	Factory calibration (ISO): Factory calibration takes 4 working days
	Accredited calibration (DKD): The duration of the accredited calibration is 3 working days

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