PROFESSIONAL MEASURING
SINCE 1844

KERN

Product brochure

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SAUTER FS 2-20KSP1

Ready-assembled set consisting of premium force gauge FS 2 and external "S" measuring cell CS 2000-3P1 for tensile and compressive force measurements

ENGLISH



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FEATURES

Premium force-measuring device FS 2

- Measurement of forces in different tensile or compression directions possible with only one measuring device
- 3,5" touchscreen with touch pen
- Standard version with 2 measuring channels for external force sensors (subsequently expandable from 2 to 4)
- The specific data of an external sensor are stored directly in the connector
- Track function for continuous measurement display
- Peak value measurement
- Tolerance function
- Internal device memory (16 GB)
- USB interface for data transfer and power supply as standard
- Two-point adjustment with weights or numerical adjustment possible
- Supplied in a high-quality and robust system case (systainer® T-LOC) including plug-in power supply and USB cable type C

4-wire “S” measuring cell made of nickel-plated steel for force and mass measurement CS 2000-3P1

- Accuracy class in accordance with OIML C3
- Nominal sensitivity: 2 mV/V
- Protection against dust and water splashes IP67 (in accordance with EN 60529), hermetically encapsulated
- Area of application: for tensile and compressive force measurement

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
- Mounting - force application: Threaded hole M20 × 1,5
- Mounting - force dissipation: Threaded hole M20 × 1,5
- 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. 1,6 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 2-1KSP1	1 kN	0,2 N
FS 2-2KSP1	2,5 kN	0,5 N
FS 2-5KSP1	5 kN	1 N
FS 2-10KSP1	10 kN	2 N
FS 2-20KSP1	20 kN	4 N
FS 2-50KSP1	50 kN	10 N
FS 2-100KSP1	100 kN	20 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)
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

Model	Description
AE 07	Wedge Clamp with jaws AE 07 (up to 500 N | width 14 mm, | clamping width 6 mm | 1)
CE R20	Rod end CE R20
CE RR20	Rod end CE RR20
CJ P2	Junctionbox CJ P2, Number of connection options: 2, aluminium,
CJ P4	Junctionbox CJ P4, Number of connection options: 4, aluminium, IP65
CJ P4PG	Junctionbox CJ P4PG, Number of connection options: 4, aluminium,
CJ X467	Junctionbox CJ X467, Number of connection options: 4, stainless steel,
CJ X468	Junctionbox CJ X468, Number of connection options: 4, aluminium,
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
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

Model	Description
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
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

Model	Description
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
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
DC 1-Y2	Torque sensor DC 1-Y2, Nominal load 1 Nm
DC 5-Y1	Torque sensor DC 5-Y1, Nominal load 5 Nm
DC 10-Y1	Torque sensor DC 10-Y1, Nominal load 10 Nm
DC 10-Y2	Torque sensor DC 10-Y2, Nominal load 10 Nm

Model	Description
DC 20-Y1	Torque sensor DC 20-Y1, Nominal load 20 Nm
DC 20-Y2	Torque sensor DC 20-Y2, Nominal load 20 Nm
DC 50-Y1	Torque sensor DC 50-Y1, Nominal load 50 Nm
DC 50-Y2	Torque sensor DC 50-Y2, Nominal load 50 Nm
DC 100-Y1	Torque sensor DC 100-Y1, Nominal load 100 Nm
DC 200-Y1	Torque sensor DC 200-Y1, Nominal load 200 Nm
DC 200M-Y2	Torque sensor DC 200M-Y2, Nominal load 0,2 Nm
DC 500-Y1	Torque sensor DC 500-Y1, Nominal load 500 Nm
FS-E07	Power supply unit EURO FS-E07
FS 34	A / D converter module FS 34
FS TKZ	Transport case FS TKZ
YKA-01	Schuko> UK Plug Power Adapters YKA-01
YKV-01	Digital weighing transmitter YKV-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
961-164	Factory calibration certificate 961-164 (force direction tension | 5 kN – 20 kN | measurement result unit N | calibration standard KERN)
961-264	Factory calibration certificate 961-264 (force direction compression | 5 kN – 20 kN | measurement result unit N | calibration standard KERN)
961-364	Factory calibration certificate 961-364 (force direction tension, compression | 5 kN – 20 kN | measurement result unit N | calibration standard KERN)
963-164	DAkkS calibration certificate 963-164 (force direction tension | 5 kN – 20 kN | measurement result unit N | calibration standard DKD-R 3-3 - sequence A)
963-264	DAkkS calibration certificate 963-264 (force direction compression | 5 kN – 20 kN | measurement result unit N | calibration standard DKD-R 3-3 - sequence A)
963-364	DAkkS calibration certificate 963-364 (force direction tension, compression | 5 kN – 20 kN | measurement result unit N | calibration standard DKD-R 3-3 - sequence A)

Model	Description
970-107	Warranty extension (+2 years) 970-107

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
	Load Cell: Protection against dust and water splashes IP67
	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 are three days
	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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