

# 13



## SCALE KITS

Powerful balances and efficient weighing systems which support you in your work, should be adapted to your individual requirements. Standard models are therefore not sufficient under some circumstances.

Even the most comprehensive range of scales and measurement technology in some cases does not fully meet all requirements. A few weighing processes do require an individual special solution.

For this reason, we have special scale kits, with or without display device, ready for you, with which you can realize customized solutions for your applications.

All individual parts are matched to each other and thus offers the suitable solution for every case of application.

With the SAUTER scale kits, you become even more flexible in your application possibilities and benefit from a lower order effort and a price advantage.

### Quick-Finder

Nominal load	Model	Page
kg	<b>SAUTER</b>	
300	CW 300	112
300	CW 300KFB	112
300	CW 300R	113
300	CW 300RKFN	113
600	CW 600R	113
600	CW 600RKFN	113
750	CW 750	112
750	CW 750KFB	112
1500	CW 1500	112
1500	CW 1500KFB	112
1500	CW 1500R	114
1500	CW 1500RKFN	114
3000	CW 3000	112
3000	CW 3000KFB	112
3000	CW 3000R	114
3000	CW 3000RKFN	114
4500	CW 4500	112
4500	CW 4500KFB	112
4500	CW 4500R	114
4500	CW 4500RKFN	114
6000	CW 6000R	114
6000	CW 6000RKFN	114
7500	CW 7500	112
7500	CW 7500KFB	112
9000	CW 9000	112
9000	CW 9000KFB	112
9000	CW 9000R	114
9000	CW 9000RKFN	114
15000	CW 15000	112
15000	CW 15000KFB	112

# 180 YEARS

since 1844

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## KERN & SOHN



## THE STORY CONTINUES

Even after 180 or 250 years, time doesn't stand still for the company's story – and even today, KERN is already setting its course for tomorrow. A glimpse into the future:

### **The range continues to grow**


As we have done in recent years we will continue to expand our range of products and services thanks to our knowledgeable colleagues. Our workforce has already more than doubled. In addition to our headquarters in Balingen, we will be opening a second site in Southern Germany with a high-bay warehouse. International customers will also be supported by several European branches.

### **Even more accurate, more compact and more flexible**

Thanks to technological advances, our balances and measuring devices achieve ever higher resolution and measuring accuracy. Many of them have also become more compact and can be used in a flexible way in different environments. Networking has long since become reality and is an essential feature for the future. Measuring and weighing systems communicate with each other and exchange data in real time with other systems, such as ERP systems. In this way they make a contribution to controlling processes automatically and highly efficiently, as well as being able to detect errors long before the costs explode. At the same time, staff shortages do not pose a problem either.







### Software is the key to success

Our software division has become an important driver in terms of company development and will also be expanded in the future. Measuring and weighing software which has been tailored to particular industries will simplify and speed up measuring processes. It also supports our customers by analysing data automatically, detecting patterns and identifying anomalies. This enables our customers to make accurate predictions and thus improve their decision-making processes.

### Is this all still just a dream? No.

The developments outlined here are already coming through. Our plans for a new company site have gone way beyond a mere vision. This also applies to technological development. Come and be amazed by KERN.

**Our story started over 180 years ago and it continues to move forward. Go back to page 4 to find out more about our history and read more about today's generation of KERN on page 60.**



SAUTER CW

SAUTER CW KFB

## Balance kit with build-type approval for individual assembly of floor scales – suitable for use in harsh industrial environments with humid environmental conditions

### Features

- With SAUTER scale kits, individual weighing solutions can be put together, for example, individual balance manufacturing in industry, automotive manufacturing and agriculture. In this way, a wide range requirements in terms of dimensions, materials, combinations of peripheral devices etc. can be fulfilled. Especially suitable for the manufacture of platform scales, weigh hoppers, silo scales, flush-mounted floor scales and other weighing devices. Area of use: Measuring mass as well as compressive force in harsh environments

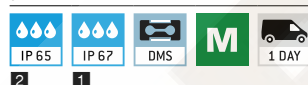
- Details for weighing cells:
  - Accuracy in accordance with OIML R60 C3
  - CE and RoHS compliant
  - **1** Protection against dust and water splashes IP67 (in accordance with EN 60529)
  - Nickel-plated steel
  - Nominal sensitivity: 3 mV/V
  - 4-wire connection
- Junction box SAUTER CJ P4PG:
  - The robust aluminium diecast housing
  - **2** Protection against dust and water splashes IP65
- Note: Use the SAUTER CW in combination with one of our display devices, for example, KFS-TM, YKV, CE HS

### Accessories

- Assembly of components, 50 kg - 350 kg, KERN 965-412
- Assembly of components, 350 kg - 1500 kg, KERN 965-413
- Assembly of components, 2900 kg - 6000 kg, KERN 965-415

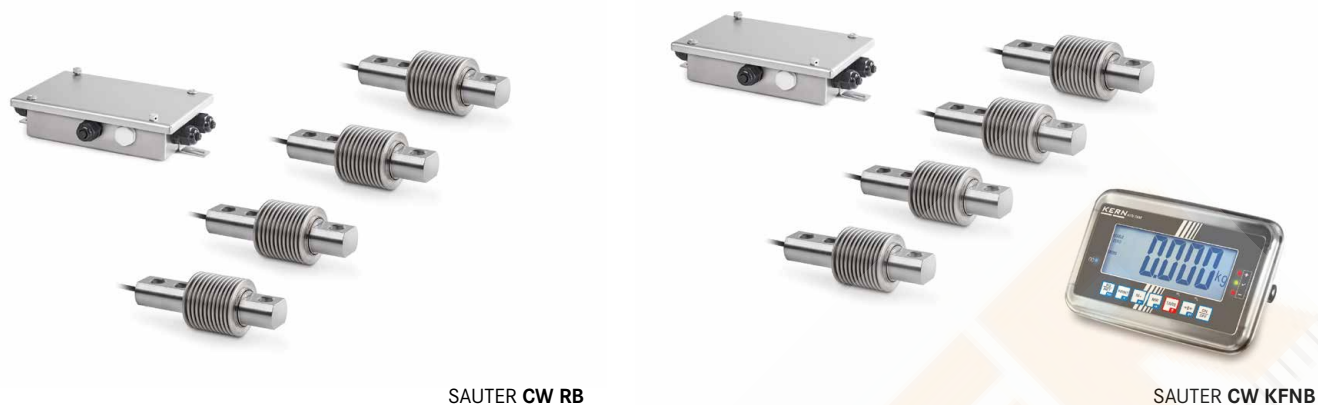
**Note:** Some weighing processes require an individual special solution. For this reason we have special scale kits available for you which you can use to create a tailor-made solution which is just right for you. In this way you can use the most varied platform sizes or individual weighing systems, e.g. within larger production plants, which match your requirements perfectly.

### STANDARD



Model	Nominal load	Scope of delivery Load cells	Scope of delivery
<b>SAUTER</b>	kg		
<b>CW 300</b>	300	4 × CB 100-3P1	
<b>CW 750</b>	750	4 × CB 250-3P1	- 4 Adjustable feet CE P2012
<b>CW 1500</b>	1500	4 × CT 500-3P2	- 4 Distance plates CE P3012
<b>CW 3000</b>	3000	4 × CT 1000-3P2	- Junction box CJ P4PG
<b>CW 4500</b>	4500	4 × CT 1500-3P1	
<b>CW 7500</b>	7500	4 × CT 2500-3P1	- 4 Adjustable feet CE P2018
<b>CW 9000</b>	9000	4 × CT 3000-3P2	- 4 Distance plates CE P3015
<b>CW 15000</b>	15000	4 × CT 5000-3P1	- Junction box CJ P4PG
<b>CW 300KFB</b>	300	4 × CB 100-3P1	- 1 Display device KFB-TM
<b>CW 750KFB</b>	750	4 × CB 250-3P1	- 4 Adjustable feet CE P2012
<b>CW 1500KFB</b>	1500	4 × CT 500-3P2	- 4 Distance plates CE P3012
<b>CW 3000KFB</b>	3000	4 × CT 1000-3P2	- Junction box CJ P4PG
<b>CW 4500KFB</b>	4500	4 × CT 1500-3P1	
<b>CW 7500KFB</b>	7500	4 × CT 2500-3P1	- 1 Display device KFB-TM
<b>CW 9000KFB</b>	9000	4 × CT 3000-3P2	- 4 Adjustable feet CE P2018
<b>CW 15000KFB</b>	15000	4 × CT 5000-3P1	- 4 Distance plates CE P3015
			- Junction box CJ P4PG





Balance kit for individual assembly of floor scales – suitable for use in harsh industrial environments with humid environmental conditions

Features

- With SAUTER scale kits, individual weighing solutions can be put together, for example, individual balance manufacturing in agriculture or the food industry. In this way, a wide range requirements in terms of dimensions, materials, combinations of peripheral devices etc. can be fulfilled. Especially suitable for the manufacture of platform scales, weigh hoppers, silo scales, weighing devices for manure spreaders in agriculture, weighing device in municipal vehicles, e.g. waste disposal or winter road services, flush-mounted floor scales and other weighing devices

- Details for weighing cells:
  - CE and RoHS compliant
  - **1** Protection against dust and water splashes IP68/IP69K
  - Stainless steel
  - 2-wire connection
  - Nominal sensitivity: 3 mV/V
- Junction box SAUTER CJ X467:
  - **2** Robust housing made of stainless steel with IP67 dust and spray protection
- Note: Use the SAUTER CW RB in combination with one of our display devices, for example, KFS-TM, YKV, CE HS

Accessories

- Assembly of components, 50 kg - 350 kg, KERN 965-412
- Assembly of components, 350 kg - 1500 kg, KERN 965-413

STANDARD

IP 67

IP 68

IP 69K

DMS

1 DAY

2

1

1

Model	Nominal load	Scope of delivery Load cells	Scope of delivery
SAUTER	kg		
CW 300R	300	4 × CB 100-3Q1	- 1 Junction box CJ X467
CW 600R	600	4 × CB 200-3Q1	
CW 300RKFNB	300	4 × CB 100-3Q1	- 1 Display device KFN-TM
CW 600RKFNB	600	4 × CB 200-3Q1	- 1 Junction box CJ X467

**Note:** Some weighing processes require an individual special solution. For this reason we have special scale kits available for you which you can use to create a tailor-made solution which is just right for you. In this way you can use the most varied platform sizes or individual weighing systems, e.g. within larger production plants, which match your requirements perfectly.



SAUTER CW R

SAUTER CW KFN

## Balance kit for individual assembly of floor scales – suitable for use in harsh industrial environments with humid environmental conditions

### Features

- With SAUTER scale kits, individual weighing solutions can be put together, for example, individual balance manufacturing in industry, automotive manufacturing and agriculture. In this way, a wide range requirements in terms of dimensions, materials, combinations of peripheral devices etc. can be fulfilled. Especially suitable for the manufacture of platform scales, weigh hoppers, silo scales, flush-mounted floor scales and other weighing devices. Area of use: Measuring mass as well as compressive force in harsh environments

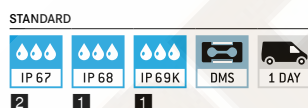
### Details for weighing cells:

- Accuracy in accordance with OIML R60 C3
- CE and RoHS compliant
- **1** Protection against dust and water splashes IP68/IP69K
- Alloy steel
- 6-wire connection
- Nominal sensitivity: 2 mV/V
- Junction box SAUTER CJ X467:
  - **2** Robust housing made of stainless steel with IP67 dust and spray protection
- Note: Use the SAUTER CW R in combination with one of our display devices, for example, KFS-TM, YKV, CE HS

### Accessories

- Assembly of components, 350 kg - 1500 kg, KERN 965-413
- Assembly of components, 2900 kg - 6000 kg, KERN 965-415

**Note:** Some weighing processes require an individual special solution. For this reason we have special scale kits available for you which you can use to create a tailor-made solution which is just right for you. In this way you can use the most varied platform sizes or individual weighing systems, e.g. within larger production plants, which match your requirements perfectly.



Model	Nominal load	Scope of delivery	Scope of delivery
	kg	Load cells	
<b>SAUTER</b>			
<b>CW 1500R</b>	1500	4 × CT 500-3Q1	
<b>CW 3000R</b>	3000	4 × CT 1000-3Q1	
<b>CW 4500R</b>	4500	4 × CT 1500-3Q1	
<b>CW 6000R</b>	6000	4 × CT 2000-3Q1	
<b>CW 9000R</b>	9000	4 × CT 3000-3Q1	
			- 4 Adjustable feet CE RQ12
			- 4 Distance plates CE P3012
			- 1 Junction box CJ X467
			- 4 Adjustable feet CE RQ35917
			- 4 Distance plates CE P3015
			- 1 Junction box CJ X467
<b>CW 1500RKFN</b>	1500	4 × CT 500-3Q1	
<b>CW 3000RKFN</b>	3000	4 × CT 1000-3Q1	
<b>CW 4500RKFN</b>	4500	4 × CT 1500-3Q1	
<b>CW 6000RKFN</b>	6000	4 × CT 2000-3Q1	
			- 1 Display device KFN-TM
			- 4 Adjustable feet CE RQ12
			- 4 Distance plates CE P3012
			- 1 Junction box CJ X467
			- 1 Display device KFN-TM
<b>CW 9000RKFN</b>	9000	4 × CT 3000-3Q1	
			- 4 Adjustable feet CE RQ35917
			- 4 Distance plates CE P3015
			- 1 Junction box CJ X467

# Accredited Calibration with DAkkS Calibration Certificate for Force Gauges

The KERN calibration laboratory is at your side when you need to calibrate DAkkS reliably.

From the transducer to the full measuring chain, we are happy to take care of traceable calibration of your test equipment for you. Our accreditation includes the calibration of tensile and compressive force up to 5 kN according to the standards DIN EN ISO 376 and DKD-R 3-3, each with the Newton (N) display unit for a complete measuring chain (situation A) or voltage ratio/transmission coefficient (mV/V, situation B).

Below you will find a comparison of which standard meets which criteria:

Comparison of DIN EN ISO 376 and DKD-R 3-3

	ISO 376	DKD-R 3-3
<b>Standardization</b>	ISO standard (internationally standardized)	Standard of the DKD (Germany)
<b>Measuring equipment</b>	Force transducers and complete measuring chains	Force transducers and complete measuring chains
<b>Area of application</b>	Specifically force gauges for the testing of testing equipment	General force gauges
<b>Number of power stages</b>	8	5
<b>Classification/Assessment</b>	Classification in classes 00; 0,5; 1 and 2	None in standard
<b>Test sequences</b>	Fixed procedure	Processes A, B, C and D possible. Standard is A; B, C and D are reduced processes, corresponding previous knowledge is necessary
<b>Summary</b>	Higher-quality calibration, as 8 force levels are calibrated	High-quality calibration, reduced sequences with less effort possible

## Prices for DAkkS Calibration of Force Gauges and Force Transducers

Situation A: Force transducer (voltage ratio, in mV/V)<sup>\*1,2</sup>

ISO 376 (8 stages)		DKD-R 3-3 (5 stages, sequence A)	
KERN	Measuring range	KERN	Measuring range
<b>Tensile force:</b>			
963-161IV (R)	≤ 500 N	963-161V (R)	≤ 500 N
963-162IV (R)	≤ 2 kN	963-162V (R)	≤ 2 kN
963-163IV (R)	≤ 5 kN	963-163V (R)	≤ 5 kN
<b>Compression force:</b>			
963-261IV (R)	≤ 500 N	963-261V (R)	≤ 500 N
963-262IV (R)	≤ 2 kN	963-262V (R)	≤ 2 kN
963-263IV (R)	≤ 5 kN	963-263V (R)	≤ 5 kN
<b>Tensile and Compression force:</b>			
963-361IV (R)	≤ 500 N	963-361V (R)	≤ 500 N
963-362IV (R)	≤ 2 kN	963-362V (R)	≤ 2 kN
963-363IV (R)	≤ 5 kN	963-363V (R)	≤ 5 kN

Situation B: Complete force gauge (in N)<sup>\*2</sup>

ISO 376 (8 stages)		DKD-R 3-3 (5 stages, sequence A)	
KERN	Measuring range	KERN	Measuring range
<b>Tensile force:</b>			
963-161I (R)	≤ 500 N	963-161 (R)	≤ 500 N
963-162I (R)	≤ 2 kN	963-162 (R)	≤ 2 kN
963-163I (R)	≤ 5 kN	963-163 (R)	≤ 5 kN
<b>Compression force:</b>			
963-261I (R)	≤ 500 N	963-261 (R)	≤ 500 N
963-262I (R)	≤ 2 kN	963-262 (R)	≤ 2 kN
963-263I (R)	≤ 5 kN	963-263 (R)	≤ 5 kN
<b>Tensile and Compression force:</b>			
963-361I (R)	≤ 500 N	963-361 (R)	≤ 500 N
963-362I (R)	≤ 2 kN	963-362 (R)	≤ 2 kN
963-363I (R)	≤ 5 kN	963-363 (R)	≤ 5 kN

(R): Recalibration

For each force gauge without interface or from other manufacturers we charge a surcharge

<sup>\*1</sup> Compatibility with our amplifiers required

<sup>\*2</sup> Installation in our measuring equipment required

## Factory Calibration Certificates

As DAkkS calibration certificates cannot be offered for all measuring devices or measurement sizes, or where it is not customary, we then offer factory calibration certificates. This is not an accredited calibration (no proof of metrological traceability). These calibrations are carried out according to in-house specifications and are available for many measuring instruments, such as:

- Mechanical balances (spring balances, etc.)
- Force-measuring devices up to 250 kN
- Measuring devices for layer thickness 0 µm – 2000 µm
- Hardness testing devices in accordance with Leeb tests
- Ultrasonic material thickness testing device 25 mm – 300 mm

**We carry out calibrations independent of brand.** In order to avoid any unnecessary delays when processing your order, please send us the technical documents and necessary accessories with the checking device.  
Calibration time 4 working days.

## Factory Calibration for Force

Situation A: Force transducer (voltage ratio, in mV/V) <sup>*1,2</sup>		Situation B: Complete force gauge (in N) <sup>*2</sup>	
KERN	Measuring range	KERN	Measuring range
<b>Tensile force:</b>			
961-161V (R)	≤ 500 N	961-161 (R)	≤ 500 N
961-162V (R)	≤ 2 kN	961-162 (R)	≤ 2 kN
961-163V (R)	≤ 5 kN	961-163 (R)	≤ 5 kN
961-164V (R)	≤ 20 kN	961-164 (R)	≤ 20 kN
961-165V (R)	≤ 50 kN	961-165 (R)	≤ 50 kN
961-166V (R)	≤ 120 kN	961-166 (R)	≤ 120 kN
961-167V (R)	≤ 250 kN	961-167 (R)	≤ 250 kN
<b>Compression force:</b>			
961-261V (R)	≤ 500 N	961-261 (R)	≤ 500 N
961-262V (R)	≤ 2 kN	961-262 (R)	≤ 2 kN
961-263V (R)	≤ 5 kN	961-263 (R)	≤ 5 kN
961-264V (R)	≤ 20 kN	961-264 (R)	≤ 20 kN
961-265V (R)	≤ 50 kN	961-265 (R)	≤ 50 kN
961-266V (R)	≤ 120 kN	961-266 (R)	≤ 120 kN
961-267V (R)	≤ 250 kN	961-267 (R)	≤ 250 kN
<b>Tensile and Compression force:</b>			
961-361V (R)	≤ 500 N	961-361 (R)	≤ 500 N
961-362V (R)	≤ 2 kN	961-362 (R)	≤ 2 kN
961-363V (R)	≤ 5 kN	961-363 (R)	≤ 5 kN
961-364V (R)	≤ 20 kN	961-364 (R)	≤ 20 kN
961-365V (R)	≤ 50 kN	961-365 (R)	≤ 50 kN
961-366V (R)	≤ 120 kN	961-366 (R)	≤ 120 kN
961-367V (R)	≤ 250 kN	961-367 (R)	≤ 250 kN

(R): Recalibration

For each force gauge without interface or from other manufacturers we charge a surcharge

<sup>\*1</sup> Compatibility with our amplifiers required

<sup>\*2</sup> Installation in our measuring equipment required

## Factory Calibration Certificates

KERN	Physical unit	Measuring range
<b>Factory calibration</b>		
961-102K	Force (for digital dynamometer KERN MAP)	≤ 130 kg
961-110	Coating thickness	≤ 2000 µm F or N
961-112	Coating thickness	≤ 2000 µm FN
961-113	Wall thickness (ultra sound)	≤ 300 mm (in stainless steel)
961-114	Wall thickness (Test blocks)	≤ 300 mm
961-170	Hardness comparison plate (Shore)	For sets up to 7 plates
961-131	Hardness tester (Leeb)	400 – 800 HLD
961-132	Hardness comparison plate (Leeb)	Hardness comparison plate (for Leeb durometer)
961-270	Hardness (UCI)	200 – 800 HV
961-150	Length	≤ 300 mm
961-190	Light	≤ 200000 lx
961-100	Mass (Mechanical balances/ spring balances)	≤ 5 kg
961-101	Mass (Mechanical balances/ spring balances)	> 5 – 50 kg
961-102	Mass (Mechanical balances/ spring balances)	> 50 – 350 kg
961-103	Mass (Mechanical balances/ spring balances)	> 350 – 1500 kg
961-120	Torque wrench test devices	1 Nm – 200 Nm
<b>Additional services</b>		
962-116	Express service with 48 hour delivery	