KERN & SOHN –
The wide range of product champion that is situated in the Swabian Alb

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Discover the vast world of scales and measuring technology from KERN online: kern-sohn.com

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German Excellence Group Member
MITTELSTAND GLOBAL HEALTH MADE IN GERMANY

KERN
EN
BALANCES & TEST SERVICE for laboratory, industry and food industry
2023

EN

KERN®

PROFESSIONAL MEASURING

23

BALANCES & TEST SERVICE

for laboratory, industry and food industry

ambifood

How do I quickly find the product I am looking for?

The tried and tested quick search system – "Quick-Finder" ahead of each product group allows you to base the search for a certain target group on weighing data you need such as readout, weighing capacity and main features for each model.

And it's as simple as that – find the product you want in 2 steps:

1. Go to the product group index on page 3
2. Pick the appropriate product group and find the product you want using the Quick-Finder.

... or use the model name and find the product quickly and efficiently using the A-Z model list:

KERN Models A–Z

KERN Pictograms

Internal adjusting:
Quick setting up of the balance's accuracy with internal adjusting weight (motordriven)

Adjusting program CAL:
For quick setting up of the balance's accuracy. External adjusting weight required

Easy Touch:
Suitable for the connection, data transmission and control through PC or tablet.

Memory:
Balance memory capacity, e.g. for article data, weighing data, tare weights, PLUetc.

Alibi memory:
Secure, electronic archiving of weighing results, complying with the 2014/31/EU standard.

KERN Universal Port (KUP):
allows the connection of external KUP interface adapters, e.g. RS-232, RS-485, SB, Bluetooth, WLAN, Analogue, Ethernet etc. for the exchange of data and control commands, without installation effort

Data interface RS-232:
To connect the balance to a printer, PC or network

RS-485 data interface:
To connect the balance to a printer, PC or other peripherals. Suitable for data transfer over large distances. Network in bus topology is possible

USB data interface:
To connect the balance to a printer, PC or other peripherals

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

WiFi data interface:
To transfer data from the balance to a printer, PC or other peripherals

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

Interface for second balance:
For direct connection of a second balance

Network interface:
For connecting the scale 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 log:
The balance displays weight, date and time, independent of a printer connection

GLP/ISO log:
With weight, date and time.
Only with KERN printers.

Piece counting:
Reference quantities selectable. Display can be switched from piece to weight

Recipe level A:
The weights of the recipe ingredients can be added together and the total weight of the recipe can be printed out

Recipe level B:
Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display

Totalising level A:
The weights of similar items can be added together and the total can be printed out

Percentage determination:
Determining the deviation in %from the target value (100 %)

Weighing units:
Can be switched to e.g. nonmetric units. See balance model. Please refer to KERN's website for more details

Weighing with tolerance range:
(Checkweighing) Upper and lower limiting can be programmed individually, e.g. for sorting and dosing. The process is supported by an audible or visual signal, see the relevant model

Hold function:
(Animal weighing program) When the weighing conditions are unstable, a stable weight is calculated as an average value

Protection against dust and water splashes IPxx:
The type of protection is shown in the pictogram.

Suspended weighing:
Load support with hook on the underside of the balance

Battery operation:
Ready for battery operation. The battery type is specified for each device

Rechargeable battery pack:
Rechargeable set

Universal plug-in power supply:
with universal input and optional input socket adapters for
A) EU, CH, GB
B) EU, CH, GB, USA
C) EU, CH, GB, USA, AUS

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

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

Weighing principle: Strain gauges
Electrical resistor on an elastic deforming body

Weighing principle: Tuning fork
A resonating body is electromagnetically excited, causing it to oscillate

Weighing principle: Electromagnetic force compensation
Coil inside a permanent magnet. For the most accurate weighings

Weighing principle: Single cell technology:
Advanced version of the force compensation principle with the highest level of precision

Verification possible:
The time required for verification is specified in the pictogram

DAkkS calibration possible (DKD):
The time required for DAkkS calibration is shown in days in the pictogram

Factory calibration (ISO):
The time required for Factory calibration is shown in days 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

KERN – Measuring technology and testing services from a single source

Balances & Test service catalogue

Provides a complete overview of the KERN line of balances, test weights, and services such as verification, calibration, etc.

Medical scales catalogue

Complete line of medical scales, from infant scales to patient scales, chair scales and adiposity scales, as well as hand grip dynamometers, chemist's balances and veterinary scales.

Microscopes & Refractometers catalogue

Extensive range in the area of optical instruments, such as, biological microscopes, stereo microscopes, metallurgical microscopes, polarisation microscopes as well as analogue and digital refractometers.

SAUTER measuring equipment catalogue

Test instruments for industry and commerce, such as force, coating thickness, material thickness and calibration service.

Test service brochure

Detailed information on topics pertaining to the calibration and verification of balances, test weights, and force measuring devices.

Your advantages

fast

- 24 hours delivery service for products in stock – ordered today, on its way tomorrow
- Sales & service hotline available from 8:00 am to 6:00 pm

reliable

- Up to 3 years warranty
- Precision in weighing technology for more than 175 years

competent

- DAkkS accreditation DIN EN ISO/IEC 17025
- Certified QM system DIN EN ISO 9001
- Authorisation for initial verification by the manufacturer 2014/31/EU
- Medical certifications DIN EN ISO 13485 and 93/42/ EWG

versatile

- One-stop shopping: from pocket balances through to 12 t crane balance – everything from one supplier
- Find the product you want at lightning speed with the "Balance Quick-Finder" at www.kern-sohn.com

www.kern-sohn.com
Information on current product availability, product data sheets, user instructions, useful knowledge, technical glossary, images and much for you to download, practical topic areas, which will guide you to the right product in your industry as well as a clever test weight and balance search engine.

Keyword index

Product group index 2023

Rua Dominguez Alvarez, 44,
escritórios 4.16, Edifício Porto
Magnum, 4150-801 Porto

Ambifood.com

WHEN DESIGN MEETS PERFORMANCE

May we introduce...? The new models from the KERNIoTLine are celebrating their debut.

Together we can enjoy the shared, advanced-looking KERNdesign, the consistent and simplified handling, the high connectivity level, and a persuasive performace that operates across all devices.

Dive into our new KERNbrand universe.

Design

+ Trend-setting, high-quality KERN design
+ Recognisability through uniform product range
+ Reliable brand values are reflected visually and functionally in the product

Performance

+ Cross-device functionality and protocols
+ Consistently reliable performance
+ The latest technologies
+ Cross-device functionality and protocols

Philosophy

+ Sustainable due to high energy efficiency
+ Standardisation of design components across all units
+ Controlled value chain
+ Tested and monitored technology for maximum user safety

IoT ready

Are you curious about the models in the KERN IoT range and what opportunities they offer?

Then take a look at pages 8/9, because thanks to new technologies such as KUP and KCP these models are perfectly equipped for the wide range of challenges of Industry 4.0

User Interface

+ Uniform, simplified user guidance
+ Problem-free commissioning, use and expansion
+ Cross-model software

Service

+ Fast and competent help from our IoT specialists
+ Even more efficient repair process
+ Accessories can be flexibly combined

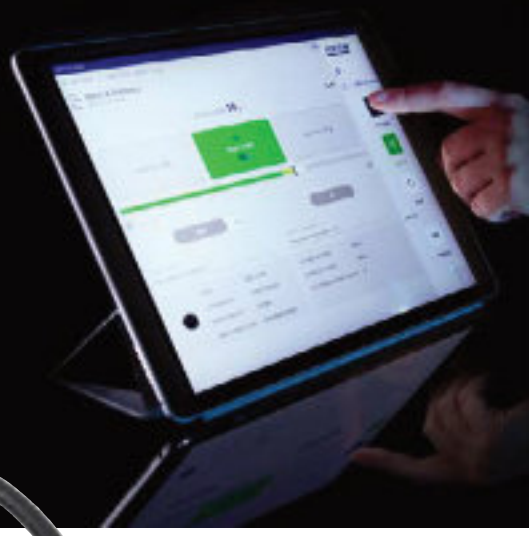
Note: Our KERN IoT accessories can be easily combined with all our IoT models.

Find the right printer and other practical accessories on page 169 or in our online shop www.kern-sohn.com

ARE YOU READY?

With the KERNUniversal Port (KUP) and the KERN Communication Protocol (KCP) we ensure the perfect integration of your KERNbalance into production or process chains for a complete, simplified work process.

Our products will make sure you are prepared for the future of weighing in the Internet of Things. Get IoT ready – with the IoT models from KERN.

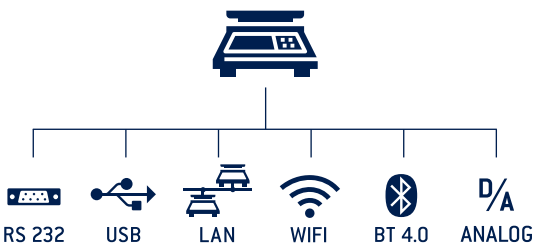


KERN Universal Port (KUP)

The integrated KERNUniversal Port (KUP) allows the connection of external KUP interface adapters such as RS-232, USB, Bluetooth, WiFi, Analogue, Ethernet etc.

The outstanding advantage here is that the KUPinterface adapters are simply plugged in, i.e. retrofitting interfaces is conveniently possible without opening the scale housing or complicated installation.

The interface adapters enable convenient transmission of weighing data to networks, PCs, smartphones, tablets, laptops, printers etc. In addition, control commands and data inputs can also be sent to the scale via the connected devices.



Tip: With the KERNKUP-13 extension box, up to three KUPinterface adapters can be operated in parallel on the scale.

KERN Communication Protocol (KCP)

The KERNCommunication Protocol (KCP) permits searching and remote control of the balance through external control devices or computers using the KERNCommunication Protocol. KCPis a standardised interface command structure for KERN balances and other measuring instruments which allows you to recall and manageall relevant parameters and device functions. You can therefore simply connect KERN models with KCPto computers, industrial control systems and other digital systems.

In a large number of cases the KERN Communication Protocol is compatible with the MT-SICSprotocol. KCPis available through all KUPs, and on the KERNKIB-TM display device through the interfaces available.

KCP – EXPORT („OUTBOUND“) – THE HIGHLIGHTS

- Stable, immediate weight
- Live transfer of weights
- Storing of gross weight, tare weight, net weight, stability, date, time etc., in the tamper-proof Alibi memory
- Output of the weighing result in percent
- Output of the weighing result in pieces (piece-counting function)
- Output of the weight at freely-definable timed intervals
- and much more

KCP – IMPORT („INBOUND“) – THE HIGHLIGHTS

- Recall of the central device data
- Setup or recall of an individual device ID number
- Setting or searching for a tare value (pre-tare value) externally
- Recall of stored weighing results from the alibi memory
- Carrying out external adjustment/ linearization
- Setting the reference values in the balance externally and outputting the weighing result in percent or in pieces
- Setting a network address for the balance (IP) – also for WiFi
- and much more

NEW IN → 2023

Innovative technology, stunning performance, improved features – all in proven KERNquality. You can see all our new additions in 2023 here – come and be inspired.

First Class products in an IP-protected stainless steel housing

→KERN PWS PRECISION BALANCE

Resistant to fine particles and water splashes, withstands high loading. Let its high performance for reliable, high precision measurements impress you.

For details, see page 34

The born stacker – happily comes back to school

→KERN EFS SCHOOL BALANCE

The uncomplicated companion for all school laboratories and other educational institutions. Easy handling, durable and robust, it can cope well with changing users. With its tremendous weighing range, it is a typical nerd and without a doubt at the top of its class.
For details, see page 15

FACE LIFT

Proven KERN models – now with a facelift!

Proven KERNmodels – now with a facelift! These KERNmodels feature plenty of improved technology (IoT, KUP)and a refreshed KERNlook:

→KERN PCB PRECISION BALANCE
For details, see page 26/27

→KERN 572 PRECISION BALANCE
For details, see page 30

→KERN CKE COUNTING BALANCE
For details, see page 85

→KERN CDS COUNTING BALANCE
For details, see page 87

→KERN IOC PLATFORM SCALES
For details, see page 104/105

→KERN DS PLATFORM SCALES
For details, see page 107

High-capacity precision balances with password-protected user administration

→KERN FES/FEJ PRECISION BALANCE

With this robust allrounder you are particularly well-equipped for the pharmaceutical industry. Here you can easily allocate and manage different users.

For details, see page 37

Our Flagship – now with fully automatic doors

→KERN ABP-A ANALYTICAL BALANCE

Our KERNShowcase model now features a super practical innovation, making your daily laboratory life easier—singlehandedly.
For details, see page 47/48

IoT ready

→IoT-ready models (with KUP)carry this icon

10

PARCEL SCALES/ PLATFORM SCALES

Here you'll find a complete summary of the KERN platform scales series and their positioning within the platform scales segment on the basis of application, price-performance ratio and functional volume.

Precision Platform Scales

DS

STAINLESS STEEL PLATFORM SCALES

▸Page 71

SFB

SXS

▸Page 72

PLATFORM SCALES WITH STAINLESS STEEL DISPLAY

SFE

IXS

INDUSTRIAL PLATFORM SCALES

EOC

IFB

IOC

IFS

▸Page 86

PARCEL SCALES

EOE

EOB

EOS

DE

Quick-Finder Parcel scales/Platform scales

Readability [d] g	Weighing capacity [Max] kg	Weighing plate W×D×H mm	Model KERN	Price excl. of VAT ex works €	Page	DAYS	M	CAL EXT	ALIBI	RS 232	KCP PROTOCOL	PCS	IP	BATT	ACCU
For an explanation on the pictos, see front flap															
0,01	3	228×228×95	DS 3K0.01S	710,–	107	1		●		○	●	●			○
0,05	8	308×318×75	DS 8K0.05	610,–	107	1		●		○	●	●			○
0,1	3	230×230×110	IFB 3K-4	480,–	106	1		●		●	●	●	●		○
0,1	10	228×228×95	DS 10K0.1S	600,–	107	1		●		○	●	●			○
0,1	16	308×318×75	DS 16K0.1	620,–	107	1		●		○	●	●			○
0,1	30	308×318×75	DS 30K0.1	680,–	107	1		●		○	●	●			○
0,1	30	500×400×125	DS 30K0.1L	1070,–	107	1		●		○	●	●			○
0,1 | 0,2	3 | 6	300×300×110	IOC 6K-4	420,–	104	1		●	○	●	●	●	●		○
0,2	6	300×240×110	IFB 6K-4	440,–	106	1		●		●	●	●	●		○
0,2	6	230×230×110	IFB 6K-4S	490,–	106	1		●		●	●	●	●		○
0,2	6	300×240×86	IXS 6K-4	790,–	109	1		●		○		●	●		○
0,2	36	308×318×75	DS 36K0.2	620,–	107	1		●		○	●	●			○
0,2	60	500×400×125	DS 60K0.2	1070,–	107	1		●		○	●	●			○
0,2	60	500×400×125	DS 65K0.5	1020,–	107	1		●		○	●	●			○
0,2 | 0,5	6 | 15	318×308×88	DE 15K0.2D	390,–	100	1		●		●		●	●	●	○
0,2 | 0,5	6 | 15	300×300×110	EOC 10K-4	390,–	102	1		●		●	●	●	●		○
0,2 | 0,5	6 | 15	300×240×110	IOC 10K-4	410,–	104	1		●	○	●	●	●	●		○
0,2 | 0,5	6 | 15	400×300×110	IOC 10K-4L	440,–	104	1		●	○	●	●	●	●		○
0,5	6	318×308×75	DE 6K0.5A	260,–	100	1		●		●		●	●	●	○
0,5	6	300×300×110	EOC 6K-4A	390,–	102	1		●		●	●	●	●		○
0,5	15	300×240×110	IFB 10K-4	445,–	106	1		●		●	●	●	●		○
0,5	15	400×300×128	IFB 10K-4L	525,–	106	1		●		●	●	●	●		○
0,5	15	300×240×86	IXS 10K-4	790,–	109	1		●		○		●	●		○
0,5	15	400×300×89	IXS 10K-4L	860,–	109	1		●		○		●	●		○
0,5	100	500×400×125	DS 100K0.5	1140,–	107	1		●		○	●	●			○
0,5 | 1	15 | 35	318×308×88	DE 35K0.5D	390,–	100	1		●		●		●	●	●	○
0,5 | 1	15 | 35	300×300×110	EOC 30K-4S	390,–	102	1		●		●	●	●	●		○
0,5 | 1	15 | 35	500×400×120	EOC 30K-4	445,–	102	1		●		●	●	●	●		○
0,5 | 1	15 | 30	400×300×110	IOC 30K-4	440,–	104	1		●	○	●	●	●	●		○
1	12	318×308×75	DE 12K1A	260,–	100	1		●		●		●	●	●	○
1	12	300×300×110	EOC 10K-3A	400,–	102	1		●		●	●	●	●		○
1	30	400×300×128	IFB 30K-3	500,–	106	1		●		●	●	●	●		○
1	30	400×300×89	IXS 30K-3	860,–	109	1		●		○		●	●		○
1	30	500×400×123	IXS 30K-3L	1030,–	109	1		●		○		●	●		○
1	150	500×400×125	DS 150K1	1140,–	107	1		●		○	●	●			○
1 | 2	3 | 6	318×308×75	DE 6K1D	230,–	100	1		●		●		●	●	●	○
1 | 2	3 | 6	300×300×110	EOC 6K-3	360,–	102	1		●		●	●	●	●		○
1 | 2	3 | 6	300×300×110	IOC 6K-3M	420,–	104	1	○	●	○	●	●	●	●		○
1 | 2	3 | 6	300×240×110	IFB 6K1DM	470,–	106	1	○	●		●	●	●	●		○
1 | 2	3 | 6	230×230×110	IFB 6K-3SM	460,–	106	1	○	●		●	●	●	●		○
1 | 2	3 | 6	300×240×86	IXS 6K-3M	810,–	109	1	○	●		○		●	●		○
1 | 2	30 | 60	318×308×88	DE 60K1D	390,–	100	1		●		●		●	●	●	○
1 | 2	30 | 60	522×406×98	DE 60K1DL	530,–	100	1		●		●		●	●	●	○
1 | 2	30 | 60	300×300×110	EOC 60K-3	390,–	102	1		●		●	●	●	●		○
1 | 2	30 | 60	500×400×120	EOC 60K-3L	460,–	102	1		●		●	●	●	●		○
1 | 2	30 | 60	400×300×110	IOC 60K-3	440,–	104	1		●	○	●	●	●	●		○
1 | 2	30 | 60	500×400×120	IOC 60K-3L	540,–	104	1		●	○	●	●	●	●		○
2	6	300×240×110	SFE 6K-3NM	530,–	108	1	○	●					●		●
2	24	318×308×75	DE 24K2A	260,–	100	1		●		●		●	●	●	○
2	24	300×300×110	EOC 20K-3A	400,–	102	1		●		●	●	●	●		○
2	60	400×300×128	IFB 60K-3	500,–	106	1		●		●	●	●	●		○
2	60	500×400×130	IFB 60K-3L	690,–	106	1		●		●	●	●	●		○
2	60	400×300×89	IXS 60K-3	860,–	109	1		●		○		●	●		○
2	60	500×400×123	IXS 60K-3L	1030,–	109	1		●		○		●	●		○
2 | 5	6 | 15	318×308×75	DE 15K2D	230,–	100	1		●		●		●	●	●	○
2 | 5	6 | 12	300×300×110	EOC 10K-3	380,–	102	1		●		●	●	●	●		○
2 | 5	6 | 15	300×240×110	IOC 10K-3M	360,–	104	1	○	●	○	●	●	●	●		○
2 | 5	6 | 15	400×300×110	IOC 10K-3LM	440,–	104	1	○	●	○	●	●	●	●		○
2 | 5	6 | 15	300×240×110	IFB 15K2DM	470,–	106	1	○	●		●	●	●	●		○
2 | 5	6 | 15	400×300×128	IFB 15K2DLM	590,–	106	1	○	●		●	●	●	●		○
2 | 5	6 | 15	300×240×86	IXS 10K-3M	820,–	109	1	○	●		○		●	●		○
2 | 5	6 | 15	400×300×89	IXS 10K-3LM	910,–	109	1	○	●		○		●	●		○
2 | 5	60 | 150	318×308×88	DE 150K2D	400,–	100	1		●		●		●	●	●	○
2 | 5	60 | 150	522×406×98	DE 150K2DL	530,–	100	1		●		●		●	●	●	○
2 | 5	60 | 150	300×300×110	EOC 100K-3	390,–	102	1		●		●	●	●	●		○
2 | 5	60 | 150	500×400×120	EOC 100K-3L	500,–	102	1		●		●	●	●	●		○
2 | 5	60 | 150	500×400×120	IOC 100K-3	530,–	104	1		●	○	●	●	●	●		○
2 | 5	60 | 150	650×500×150	IOC 100K-3L	750,–	104	1		●	○	●	●	●	●		○
5	15	315×305×57	EOE 10K-3	185,–	97	1		●						●	
5	15	315×305×57	EOB 15K5	200,–	98	1		●						●	

* Shipment via freight forwarder. Please ask for dimensions, gross weight, shipping costs

● = standard ○ = option

10

Quick-Finder Parcel scales/Platform scales

Readability [d] g	Weighing capacity [Max] kg	Weighing plate W×D×H mm	Model KERN	Price excl. of VAT ex works €	Page	DAYS	M	CAL EXT	ALIBI	RS 232	KCP PROTOCOL	PCS	IP	BATT	ACCU
For an explanation on the pictos, see front flap															
5	15	300×240×110	SFE 10K-3NM	510,–	108	1	○	●					●		●
5	15	400×300×130	SFE 10K-3LNM	600,–	108	1	○	●					●		●
5	60	318×308×75	DE 60K5A	260,–	100	1		●		●		●	●	●	○
5	60	300×300×110	EOC 60K-3A	400,–	102	1		●		●	●	●	●		○
5	150	500×400×130	IFB 100K-3	695,–	106	1		●		●	●	●	●		○
5	150	650×500×142	IFB 100K-3L	680,–	106	1		●		●	●	●	●		○
5	150	500×400×123	IXS 100K-3	1020,–	109	1		●		○		●	●		○
5	150	650×500×133,5	IXS 100K-3L	1250,–	109	2*		●		○		●	●		○
5 | 10	15 | 35	318×308×75	DE 35K5D	230,–	100	1		●		●		●	●	●	○
5 | 10	15 | 35	522×403×83	DE 35K5DL	375,–	100	1		●		●		●	●	●	○
5 | 10	15 | 35	300×300×110	EOC 30K-3	390,–	102	1		●		●	●	●	●		○
5 | 10	15 | 35	500×400×120	EOC 30K-3L	445,–	102	1		●		●	●	●	●		○
5 | 10	15 | 30	400×300×110	IOC 30K-3M	440,–	104	1	○	●	○	●	●	●	●		○
5 | 10	15 | 30	400×300×128	IFB 30K5DM	550,–	106	1	○	●		●	●	●	●		○
5 | 10	15 | 30	400×300×89	IXS 30K-2M	910,–	109	1	○	●		○		●	●		○
5 | 10	15 | 30	500×400×123	IXS 30K-2LM	1080,–	109	1	○	●		○		●	●		○
5 | 10	150 | 300	522×406×98	DE 300K5DL	530,–	100	1		●		●		●	●	●	○
5 | 10	150 | 300	500×400×120	EOC 300K-3	460,–	102	1		●		●	●	●	●		○
5 | 10	150 | 300	650×500×150	IOC 300K-3	760,–	104	1		●	○	●	●	●	●		○
10	30	300×240×110	SFE 30K-2NM	530,–	108	1	○	●					●		●
10	35	315×305×57	EOE 30K-2	185,–	97	1		●						●	
10	35	315×305×57	EOB 35K10	200,–	98	1		●						●	
10	120	318×308×75	DE 120K10A	260,–	100	1		●		●		●	●	●	○
10	120	500×400×120	EOC 100K-2A	455,–	102	1		●		●	●	●	●		○
10	300	650×500×142	IFB 300K-2	970,–	106	1		●		●	●	●	●		○
10	300	650×500×133,5	IXS 300K-2	1250,–	109	2*		●		○		●	●		○
10 | 20	30 | 60	318×308×75	DE 60K10D	230,–	100	1		●		●		●	●	●	○
10 | 20	30 | 60	522×403×83	DE 60K10DL	375,–	100	1		●		●		●	●	●	○
10 | 20	30 | 60	300×300×110	EOC 60K-2	390,–	102	1		●		●	●	●	●		○
10 | 20	30 | 60	500×400×120	EOC 60K-2L	445,–	102	1		●		●	●	●	●		○
10 | 20	30 | 60	400×300×110	IOC 60K-2M	440,–	104	1	○	●	○	●	●	●	●		○
10 | 20	30 | 60	500×400×120	IOC 60K-2LM	540,–	104	1	○	●	○	●	●	●	●		○
10 | 20	30 | 60	400×300×128	IFB 60K10DM	550,–	106	1	○	●		●	●	●	●		○
10 | 20	30 | 60	500×400×130	IFB 60K10DLM	710,–	106	1	○	●		●	●	●	●		○
10 | 20	30 | 60	400×300×89	IXS 60K-2M	910,–	109	1	○	●		○		●	●		○
10 | 20	30 | 60	500×400×123	IXS 60K-2LM	1080,–	109	1	○	●		○		●	●		○
10 | 20	300 | 600	800×600×200	IOC 600K-2	850,–	104	1		●	○	●	●	●	●		○
20	60	315×305×57	EOE 60K-2	185,–	97	1		●						●	
20	60	550×550×58	EOE 60K-2L	320,–	97	1		●						●	
20	60	315×305×57	EOB 60K20	200,–	98	1		●						●	
20	60	550×550×58	EOB 60K20L	390,–	98	1		●						●	
20	60	400×300×130	SFE 60K-2NM	590,–	108	1	○	●					●		●
20	60	500×400×140	SFE 60K-2LNM	710,–	108	1	○	●					●		●
20	600	800×600×200	IFB 600K-2	1280,–	106	2*		●		●	●	●	●		○
20 | 50	60 | 150	318×308×75	DE 150K20D	230,–	100	1		●		●		●	●	●	○
20 | 50	60 | 150	522×403×83	DE 150K20DL	375,–	100	1		●		●		●	●	●	○
20 | 50	60 | 150	650×500×89	DE 150K20DXL	530,–	100	1		●		●		●	●	●	○
20 | 50	60 | 150	300×300×110	EOC 100K-2	390,–	102	1		●		●	●	●	●		○
20 | 50	60 | 150	500×400×120	EOC 100K-2L	420,–	102	1		●		●	●	●	●		○
20 | 50	60 | 150	950×500×60	EOC 100K-2XXL	680,–	102	1		●		●	●	●	●		○
20 | 50	60 | 150	600×500×150	EOC 100K-2XL	660,–	102	1		●		●	●	●	●		○
20 | 50	60 | 150	500×400×120	IOC 100K-2M	530,–	104	1	○	●	○	●	●	●	●		○
20 | 50	60 | 150	650×500×150	IOC 100K-2LM	750,–	104	1	○	●	○	●	●	●	●		○
20 | 50	60 | 150	500×400×130	IFB 150K20DM	690,–	106	1	○	●		●	●	●	●		○
20 | 50	60 | 150	650×500×142	IFB 150K20DLM	910,–	106	1	○	●		●	●	●	●		○
20 | 50	60 | 150	500×400×123	IXS 100K-2M	1080,–	109	1	○	●		○		●	●		○
20 | 50	60 | 150	650×500×133,5	IXS 100K-2LM	1260,–	109	2*	○	●		○		●	●		○
50	150	315×305×57	EOE 100K-2	185,–	97	1		●						●	
50	150	550×550×58	EOE 150K50L	320,–	97	1		●						●	
50	150	950×500×58	EOE 150K50XL	370,–	97	1		●						●	
50	150	315×305×57	EOB 150K50	200,–	98	1		●						●	
50	150	550×550×58	EOB 150K50L	390,–	98	1		●						●	
50	150	950×500×58	EOB 150K50XL	470,–	98	1		●						●	
50	150	950×500×58	EOS 150K50XL	510,–	99	1		●						●	
50	150	400×300×130	SFE 100K-2NM	620,–	108	1	○	●					●		●
50	150	500×400×140	SFE 100K-2LNM	690,–	108	1	○	●					●		●
50	150	650×500×140	SFE 100K-2XLNM	980,–	108	1	○	●					●		●
50 | 100	150 | 300	522×403×83	DE 300K50D	375,–	100	1		●		●		●	●	●	○
50 | 100	150 | 300	650×500×95	DE 300K50DL	530,–	100	1		●		●		●	●	●	○
50 | 100	150 | 300	500×400×120	EOC 300K-2	460,–	102	1		●		●	●	●	●		○

* Shipment via freight forwarder. Please ask for dimensions, gross weight, shipping costs

● = standard ○ = option

Quick-Finder Parcel scales/Platform scales

Readability [d] g	Weighing capacity [Max] kg	Weighing plate W×D×H mm	Model KERN	Price excl. of VAT ex works €	Page	DAYS	M	CAL EXT	ALIBI	RS 232	KCP PROTOCOL	PCS	IP	BATT	ACCU
For an explanation on the pictos, see front flap															
50 | 100	150 | 300	600×500×150	**EOC 300K-2L**	**660,–**	102	1		●		●	●	●	●		○
50 | 100	150 | 300	650×500×150	**IOC 300K-2M**	**760,–**	104	1	○	●	○	●	●	●	●		○
50 | 100	150 | 300	650×500×142	**IFB 300K50DM**	**890,–**	106	1	○	●		●	●	●	●		○
50 | 100	150 | 300	650×500×133,5	**IXS 300K-2M**	**1270,–**	109	2*	○	●		○		●	●		○
100	300	315×305×57	**EOE 300K100**	**185,–**	97	1		●						●	
100	300	550×550×58	**EOE 300K100L**	**320,–**	97	1		●						●	
100	300	950×500×58	**EOE 300K100XL**	**370,–**	97	1		●						●	
100	300	315×305×57	**EOB 300K100A**	**200,–**	98	1		●						●	
100	300	550×550×58	**EOB 300K100L**	**390,–**	98	1		●						●	
100	300	950×500×58	**EOB 300K100XL**	**470,–**	98	1		●						●	
100	300	950×500×58	**EOS 300K100XL**	**510,–**	99	1		●						●	
100	300	650×500×140	**SFE 300K-1LNM**	**960,–**	108	1	○	●					●		●
100 | 200	300 | 600	800×600×200	**IOC 600K-1M**	**850,–**	104	2*	○	●	○	●	●	●	●		○
100 | 200	300 | 600	800×600×200	**IFB 600K-1M**	**1350,–**	106	2*	○	●		●	●	●	●		○

* Shipment via freight forwarder. Please ask for dimensions, gross weight, shipping costs

● = standard ○ = option

10


A


C


1

Parcel scales with big platform for fast and easy weighing in the office, production, dispatch etc.

Features

- High mobility: thanks to battery operation, compact, lightweight construction, it is suitable for the use in several locations
- Wall mount for display device, standard
- Hold function: When the weighing conditions are unstable, a stable weight is calculated determining an average value

Technical data

- Large LCD display, digit height 25 mm
- Weighing plate dimensions, steel, painted
  A W×D×H315×305×57 mm
  B W×D×H550×550×58 mm, see larger picture
  C W×D×H950×500×58 mm
- Dimensions of display device W×D×H 235×114×51 mm
- Optional battery operation, 4×1.5 V AA not included in scope of delivery, operating time up to 100 h
- Permissible ambient temperature 5 °C/35 °C

Accessories

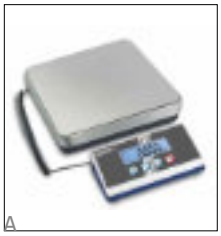
- Protective working cover over the display device, scope of delivery: 5 items, KERNEOB-A04BS05, **€ 44,–**
- Stand to elevate display device, for models with weighing plate size A, Height of stand approx. 480 mm KERNEOB-A01N, **€ 70,–**
- Stand to elevate display device, height of stand approx. 1000 mm, KERNEOB-A02B, **€ 142,–**
- 1 Non-slip rubber mat, W×D×H 945×505×5 mm, KERNEOE-A01, **€ 50,–**

10

STANDARD

OPTION

Model KERN	Weighing capacity [Max] kg	Readability [d] g	Reproducibility g	Linearity g	Weighing plate	Net weight approx. kg	Price excl. of VAT ex works €	Option DAkkS Calibr. Certificate DAkkS KERN	€
EOE 10K-3	15	5	5	± 10	A	4,0	**185,-**	963-128	112,-
EOE 30K-2	35	10	10	± 20	A	4,0	**185,-**	963-128	112,-
EOE 60K-2	60	20	20	± 40	A	4,0	**185,-**	963-129	139,-
EOE 60K-2L	60	20	20	± 40	B	14	**320,-**	963-129	139,-
EOE 100K-2	150	50	50	± 100	A	4,0	**185,-**	963-129	139,-
EOE150K50L	150	50	50	± 100	B	14	**320,-**	963-129	139,-
EOE150K50XL	150	50	50	± 100	C	18	**370,-**	963-129	139,-
EOE300K100	300	100	100	± 200	A	4,0	**185,-**	963-129	139,-
EOE300K100L	300	100	100	± 200	B	14	**320,-**	963-129	139,-
EOE300K100XL	300	100	100	± 200	C	18	**370,-**	963-129	139,-


A


C


1


2


3

Allround parcel scale with robust stainless steel weighing plate - also with XL platform and large weighing ranges

Features

- Weighing plate stainless steel, painted steel base
- Simple and convenient 4-key operation
- Wall mount for display device, standard
- Hold function: When the weighing conditions are unstable, a stable weight is calculated determining an average value
- Protective working cover included with delivery
- Universal external mains adapter included with delivery

Technical data

- Large LCD display, digit height 25 mm
- Weighing plate dimensions, stainless steel
  - A W×D×H 315×305×57 mm
  - B W×D×H 550×550×58 mm, see larger picture
  - C W×D×H 950×500×58 mm
- Dimensions of display device W×D×H 235×114×51 mm
- Optional battery operation, 4×1.5 V AA not included in scope of delivery, operating time up to 60 h
- Permissible ambient temperature 5 °C/35 °C

Accessories

- Protective working cover over the display device, scope of delivery: 5 items, KERNEOB-A04BS05, **€ 44,–**
- 1 Stand to elevate display device, height of stand approx. 1000 mm, KERNEOB-A02B, **€ 142,–**
- 2 Stand to elevate display device, for models with weighing plate size A, Height of stand approx. 480 mm KERNEOB-A01N, **€ 70,–**
- 3 Non-slip rubber mat, W×D×H 945×505×5 mm, KERNEOE-A01, **€ 50,–**

10

STANDARD

OPTION

Model KERN	Weighing capacity [Max] kg	Readability [d] g	Reproducibility g	Linearity g	Weighing plate	Cable length (Spiral cable) approx. m	Net weight approx. kg	Price excl. of VAT ex works €	Option DAkkS Calibr. Certificate DAkkS KERN	€
EOB 15K5	15	5	5	± 10	A	1,8	3,8	**200,-**	963-128	112,-
EOB 35K10	35	10	10	± 20	A	1,8	3,8	**200,-**	963-128	112,-
EOB 60K20	60	20	20	± 40	A	1,8	3,8	**200,-**	963-129	139,-
EOB 60K20L	60	20	20	± 40	B	2,7	13	**390,-**	963-129	139,-
EOB 150K50	150	50	50	± 100	A	1,8	3,8	**200,-**	963-129	139,-
EOB 150K50L	150	50	50	± 100	B	2,7	13	**390,-**	963-129	139,-
EOB 150K50XL	150	50	50	± 100	C	2,7	17	**470,-**	963-129	139,-
EOB 300K100A	300	100	100	± 200	A	1,8	3,8	**200,-**	963-129	139,-
EOB 300K100L	300	100	100	± 200	B	2,7	13	**390,-**	963-129	139,-
EOB 300K100XL	300	100	100	± 200	C	2,7	17	**470,-**	963-129	139,-

Heavyduty parcel and veterinary platform scale with extra large stainless steel weighing plate

Features

- Weighing plate stainless steel, painted steel base
- Simple and convenient 4-key operation
- Wall mount for display device, standard
- Hold function: When the weighing conditions are unstable, a stable weight is calculated determining an average value
- 1 The scale can be easily transported using rollers and a handle and does not require much storage space
- Protective working cover included with delivery
- Non-slip rubber mat included with delivery
- Universal external mains adapter included with delivery

Technical data

- Large LCD display, digit height 25 mm
- Weighing plate dimensions, W×D×H 950×500×58 mm, stainless steel
- Dimensions of display device W×D×H 235×114×51 mm
- Cable length display device, spiral cable, approx. 2,7 m
- Optional battery operation, 4×1.5 V AA not included in scope of delivery, operating time up to 60 h
- Permissible ambient temperature 5 °C/35 °C

Accessories

- Protective working cover over the display device, scope of delivery: 5 items, KERNEOB-A04BS05, **€ 44,–**
- 2 Stand to elevate display device, height of stand approx. 1000 mm, KERNEOB-A02B, **€ 142,–**

10

STANDARD

CAL EXT | UNIT | MOVE | BATT | MULTI | DMS | 1 DAY

OPTION

DAkkS +3 DAYS

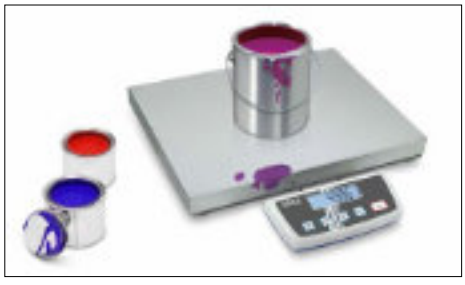
Model KERN	Weighing capacity [Max] kg	Readability [d] g	Reproducibility g	Linearity g	Net weight approx. kg	**Price** excl. of VAT ex works €	Option **DAkkS Calibr. Certificate** DAkkS KERN €
EOS150K50XL	150	50	50	± 100	17	**510,-**	963-129 139,-
EOS300K100XL	300	100	100	± 200	17	**510,-**	963-129 139,-

10

A long-term successful model with dust and spray protected display device

Piece counting

Animal weighing



Recipe-weighing


A


E


2

Features

- High mobility: thanks to battery operation/ rechargeable battery operation (optional), compact, lightweight construction, it is suitable for the use in several locations (production, warehouse, dispatch department etc.)
- Display device flexible positioning e. g. free-standing or screwed to the wall
- 1 Display device: Plastics, protection against dust and water splashes IP65
- Weighing plate stainless steel, painted steel base
- PRE-TARE function for manual subtraction of a known container weight, useful for checking fill-levels
- With the recipe function you can weigh the different ingredients of a mixture. As a check, you can also call up the total weight of all the ingredients
- Freely programmable weighing unit, e.g. display direct in special units such as length of thread g/m, paper weight g/m², or similar
- Protective working cover included with delivery

Technical data

- Large backlit LCD display, digit height 25 mm
- Weighing plate dimensions, stainless steel
  - A W×D×H 318×308×75 mm
  - B W×D×H 318×308×88 mm
  - C W×D×H 522×403×83 mm, see larger picture
  - D W×D×H 522×406×98 mm
  - E W×D×H 650×500×89 mm
- Dimensions of display device W×D×H 225×110×56 mm
- Optional battery operation, 9 V block not included in scope of delivery, operating time up to 12 h
- Permissible ambient temperature 5 °C/35 °C

Accessories

- Protective working cover over the display device, scope of delivery: 5 items, KERNDE-A12S05, **€ 44,–**
- Internal rechargeable battery pack, operating time up to 30 h without backlight, charging time approx. 10 h, KERNNDE-A02, **€ 60,–**
- Mount to fasten the display device to the platform, for models with weighing plate size B , C , KERNDE-A11N, **€ 42,–**
- Wall mount for display device, KERNDE-A13, **€ 32,–**
- 2 Stand to elevate display device, height of stand approx. 480 mm, KERNDE-A10, **€ 140,–**
- Individual header data: the free software SHM-01 can be used to print header lines on the printout when using printers YKN-01 and YKB-01N
- Further details, plenty of further accessories and suitable printers see *Accessories*

10

STANDARD: CAL EXT, RS 232, GLP PRINTER, PCS, SUM, PERCENT, UNIT, MOVE, IP 65, BATT, MULTI, DMS, 1 DAY

OPTION: ACCU, DAkkS +3 DAYS

1

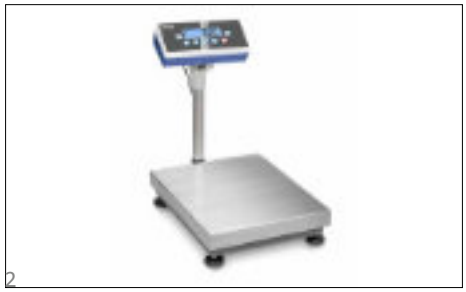
Model KERN	Weighing capacity [Max] kg	Readability [d] g	Reproducibility g	Linearity g	Smallest part weight [Normal] g/piece	Cable length approx. m	Net weight approx. kg	Weighing plate	Price excl. of VAT ex works €	Option DAkkS Calibr. Certificate DAkkS KERN	€
Multi-range balance, with increasing load it switches automatically to the next largest weighing range [Max] and readout [d] and when the load is fully removed, the balance switches back to the lower range											
DE 15K0.2D	6 | 15	0,2 | 0,5	0,2 | 0,5	± 0,8 | 2	4	1	4	B	**390,-**	963-128	112,-
DE 35K0.5D	15 | 35	0,5 | 1	0,5 | 1	± 2 | 4	10	1	7	B	**390,-**	963-128	112,-
DE 60K1D	30 | 60	1 | 2	1 | 2	± 4 | 8	20	1,47	7	B	**390,-**	963-129	139,-
DE 60K1DL	30 | 60	1 | 2	1 | 2	± 4 | 8	20	1,4	15	C	**530,-**	963-129	139,-
DE 150K2D	60 | 150	2 | 5	2 | 5	± 8 | 20	40	1,6	7	B	**400,-**	963-129	139,-
DE 150K2DL	60 | 150	2 | 5	2 | 5	± 8 | 20	40	1,4	15	C	**530,-**	963-129	139,-
DE 300K5DL	150 | 300	5 | 10	5 | 10	± 20 | 40	100	1,4	15	C	**530,-**	963-129	139,-
DE 6K1D	3 | 6	1 | 2	1 | 2	± 3 | 6	40	1,4	4,8	A	**230,-**	963-128	112,-
DE 15K2D	6 | 15	2 | 5	2 | 5	± 6 | 15	100	1,4	4,8	A	**230,-**	963-128	112,-
DE 35K5D	15 | 35	5 | 10	5 | 10	± 15 | 30	100	1,4	4,8	A	**230,-**	963-128	112,-
DE 35K5DL	15 | 35	5 | 10	5 | 10	± 15 | 30	100	1,4	16	D	**375,-**	963-128	112,-
DE 60K10D	30 | 60	10 | 20	10 | 20	± 30 | 60	200	1,4	4,8	A	**230,-**	963-129	139,-
DE 60K10DL	30 | 60	10 | 20	10 | 20	± 30 | 60	200	1,4	16	D	**375,-**	963-129	139,-
DE 150K20D	60 | 150	20 | 50	20 | 50	± 60 | 150	400	1,5	5	A	**230,-**	963-129	139,-
DE 150K20DL	60 | 150	20 | 50	20 | 50	± 60 | 150	400	1,5	16	D	**375,-**	963-129	139,-
DE 150K20DXL	60 | 150	20 | 50	20 | 50	± 60 | 150	400	1,4	28	E	**530,-**	963-129	139,-
DE 300K50D	150 | 300	50 | 100	50 | 100	± 150 | 300	2000	1,25	16	D	**375,-**	963-129	139,-
DE 300K50DL	150 | 300	50 | 100	50 | 100	± 150 | 300	2000	1,05	28	E	**530,-**	963-129	139,-
DE 6K0.5A	6	0,5	0,5	± 1,5	10	1,4	4,8	A	**260,-**	963-128	112,-
DE 12K1A	12	1	1	± 3	20	1,4	4,8	A	**260,-**	963-128	112,-
DE 24K2A	24	2	2	± 6	40	1,4	4,8	A	**260,-**	963-128	112,-
DE 60K5A	60	5	5	± 15	100	1,4	4,8	A	**260,-**	963-129	139,-
DE 120K10A	120	10	10	± 30	200	1,4	5,0	A	**260,-**	963-129	139,-

Robust and high-resolution platform scale with practical Flip/Flop display device for greatest ease of use

Weighing instead of counting! Because the counting function is so easy to use, you can rapidly record large numbers of small parts – which saves time and money

Practical Flip/Flop display device: flexible positioning e.g. free-standing or screwed to the wall (optional). By rotating the upper housing shell you can determine the angle of the display as well as the cable outlet. Factory Option for an additional cost, delivery time + 2 working days, KERNKIB-M01, see *Accessories* on the right, please indicate when placing your order


1


2


3

Features

- High mobility: thanks to rechargeable battery operation (optional), compact, lightweight construction, it is suitable for the use in several locations (laboratory, production, quality control, commissioning etc.)
- 1 Platform: weighing plate stainless steel, painted steel base, silicone-coated aluminium load cell, protection against dust and water splashes IP65. Level indicator and levelling feet for precise levelling of the scale, fitted as standard, to give the most accurate weighing result
- Weighing with tolerance range (checkweighing): a visual and audible signal helps with portioning, dispensing or grading
- Hold function: When the weighing conditions are unstable, a stable weight is calculated determining an average value
- Benchtop stand incl. wall mount for display device as standard
- Protective working cover included with delivery
- Searching and remote control of the balance using external control devices or computers with the KERN Communication Protocol (KCP). KCP is a standardised interface command structure for KERN balances and other instruments which allows you to recall and manage all relevant parameters and device functions. You can therefore simply connect KERN devices with KCP to computers, industrial control systems and other digital systems. In a large number of cases the KCP is compatible with the MT-SICS protocol.

Technical data

- Large backlit LCD display, digit height 25 mm
- Weighing plate dimensions, stainless steel
  - A W×D×H300×300×110 mm
  - B W×D×H500×400×120 mm, see larger picture
  - C W×D×H600×500×150 mm
  - D W×D×H950×500×60 mm
- Dimensions of display device W×D×H 268×115×80 mm
- Permissible ambient temperature -10 °C/40 °C

Accessories

- Protective working cover, scope of delivery 5 items, KERNEOC-A01S05, **€ 44,–**
- Internal rechargable battery pack, operating time up to 43 h without backlight, charging time approx. 3 h, KERNKFB-A01, **€ 40,–**
- 2 Stand to elevate display device, height of stand approx. 330 mm, KERNEOC-A05, **€ 70,–**
- 3 Mount to fasten the display device to the platform, KERNEOC-A03, **€ 33,–**
- Benchtop stand incl. wall mount for display device, KERNEOC-A04, **€ 33,–**
- Modification of the display device, to move the cable outlet to the front of the display device, ideal e.g. for subsequent wall installation of the display device (standard configuration ex works: rear outlet), Factory Option, delivery time + 2 working days, KERNKIB-M01, **€ 104,–**

STANDARD: CAL EXT · RS 232 · KCP PROTOCOL · GLP PRINTER · PCS · SUM · PERCENT · TOL · MOVE · IP 65 · MULTI · DMS · 1 DAY

OPTION: ACCU · DAkkS +3 DAYS

1

Model KERN	Weighing capacity [Max] kg	Readability [d] g	Reproducibility g	Linearity g	Smallest part weight [Normal] g/piece	Weighing plate	Cable length approx. m	Net weight approx. kg	Price excl. of VAT ex works €	Option DAkkS Calibr. Certificate DAkkS KERN	€
Multi-range balance, with increasing load it switches automatically to the next largest weighing range [Max] and readout [d] and when the load is fully removed, the balance switches back to the lower range											
EOC 10K-4	6 | 15	0,2 | 0,5	0,2 | 0,5	± 0,6 | 1,5	5	A	3	6	**390,-**	963-128	112,-
EOC 30K-4S	15 | 35	0,5 | 1	0,5 | 1	± 1,5 | 3	10	B	3	9	**390,-**	963-128	112,-
EOC 30K-4	15 | 35	0,5 | 1	0,5 | 1	± 1,5 | 3	10	A	3	6	**445,-**	963-128	112,-
EOC 60K-3	30 | 60	1 | 2	1 | 2	± 3 | 6	20	A	3	6	**390,-**	963-129	139,-
EOC 60K-3L	30 | 60	1 | 2	1 | 2	± 3 | 6	20	B	3	9	**460,-**	963-129	139,-
EOC 100K-3	60 | 150	2 | 5	2 | 5	± 6 | 15	50	A	3	6	**390,-**	963-129	139,-
EOC 100K-3L	60 | 150	2 | 5	2 | 5	± 6 | 15	50	B	3	9	**500,-**	963-129	139,-
EOC 300K-3	150 | 300	5 | 10	5 | 10	± 15 | 30	100	B	3	9	**460,-**	963-129	139,-
EOC 6K-3	3 | 6	1 | 2	1 | 2	± 3 | 6	2,5	A	3	6	**360,-**	963-128	112,-
EOC 10K-3	6 | 12	2 | 5	2 | 5	± 6 | 15	5	A	3	6	**380,-**	963-128	112,-
EOC 30K-3	15 | 35	5 | 10	5 | 10	± 15 | 30	10	A	3	6	**390,-**	963-128	112,-
EOC 30K-3L	15 | 35	5 | 10	5 | 10	± 15 | 30	10	B	3	9	**445,-**	963-128	112,-
EOC 60K-2	30 | 60	10 | 20	10 | 20	± 30 | 60	20	A	3	6	**390,-**	963-129	139,-
EOC 60K-2L	30 | 60	10 | 20	10 | 20	± 30 | 60	20	B	3	9	**445,-**	963-129	139,-
EOC 100K-2	60 | 150	20 | 50	20 | 50	± 60 | 150	50	A	3	6	**390,-**	963-129	139,-
EOC 100K-2L	60 | 150	20 | 50	20 | 50	± 60 | 150	50	B	3	9	**420,-**	963-129	139,-
EOC 100K-2XL	60 | 150	20 | 50	20 | 50	± 60 | 150	50	C	3	19	**660,-**	963-129	139,-
EOC 100K-2XXL	60 | 150	20 | 50	20 | 50	± 60 | 150	100	D	2,7	17	**680,-**	963-129	139,-
EOC 300K-2	150 | 300	50 | 100	50 | 100	± 150 | 300	100	B	3	9	**460,-**	963-129	139,-
EOC 300K-2L	150 | 300	50 | 100	50 | 100	± 150 | 300	100	C	3	19	**660,-**	963-129	139,-
EOC 6K-4A	6	0,5	0,5	± 1,5	2,5	A	3	6	**390,-**	963-128	112,-
EOC 10K-3A	12	1	1	± 3	5	A	3	6	**400,-**	963-128	112,-
EOC 20K-3A	24	2	2	± 6	10	A	3	6	**400,-**	963-128	112,-
EOC 60K-3A	60	5	5	± 15	20	A	3	6	**400,-**	963-129	139,-
EOC 100K-2A	120	10	10	± 30	50	B	3	9	**455,-**	963-129	139,-

EasyTouch

IoT ready

10

Allround platform scale with a wide range of communication options and EC type approval [M] - also available as high-resolution version with fine display

Verification plug, for verified balances this enables you to separate the display device and platform without affecting the verification, e.g. for installing the scale in a packing and dispatch table, pit frame etc. at a later date. Please order this item when making the scale purchase, see *Accessory*

Practical Flip/Flop display device: flexible positioning e.g. free-standing or screwed to the wall (optional). By rotating the upper housing shell you can determine the angle of the display as well as the cable outlet.
Factory Option for an additional cost, delivery time + 2 working days, KERNKIB-M01, see *Accessories* on the right, please indicate when placing your order

Features

- Industry 4.0: A wide range of (optional) data interfaces allows easy transfer of weighing data to tablets, laptops, PCs, networks, smartphones, printers, etc.
- Searching and remote control of the balance using external control devices or computers with the KERN Communication Protocol (KCP). KCP is a standardised interface command structure for KERN balances and other instruments which allows you to recall and manage all relevant parameters and device functions. You can therefwore simply connect KERN devices with KCP to computers, industrial control systems and other digital systems. In a large number of cases the KCP is compatible with the MT-SICS protocol. Only possible through data interface RS-232, other interfaces on request, for details see page 8/ 9
- Standardised, simplified concept of operation
- High mobility: thanks to rechargeable battery operation (optional), compact, lightweight construction, it is suitable for the use in several locations (laboratory, production, quality control, commissioning etc.)
- Platform: weighing plate stainless steel, painted steel base, silicone-coated aluminium load cell, protection against dust and water splashes IP65
- Level indicator and levelling feet for precise levelling of the scale, fitted as standard, to give the most accurate weighing result

Technical data

- Large LCD display, digit height 25 mm
- Weighing plate dimensions, stainless steel, W×D×H×
  - A 300×240×110 mm, B 300×300×110 mm
  - C 400×300×110 mm, D 500×400×120 mm
  - E 650×500×150 mm, F 800×600×200 mm
- Dimensions of display device W×D×H 268×115×80 mm
- Cable length display device approx. 3 m
- Permissible ambient temperature -10 °C/40 °C

Accessories

- Protective working cover, scope of delivery 5 items, KERN EOC-A01S05, **€ 55,–**
- Stand to elevate display device, height of stand approx. 330 mm, KERN EOC-A05, **€ 70,–**
- Mount to fasten the display device to the platform, KERN EOC-A03, **€ 33,–**
- Benchtop stand incl. wall mount for display device, KERN EOC-A04, **€ 33,–**
- Internal rechargeable battery pack, operating time up to 26 h with backlight, charging time approx. 3 h, KERN KFB-A01, **€ 40,–**
- USB data interface, for transferring weighing to the PC, printer etc., must be ordered at purchase, KERN KIB-A03, **€ 120,–**
- Bluetooth data interface for wireless data transfer to PC or tablets, must be ordered at purchase, KERN KIB-A04, **€ 110,–**
- WiFi interface for wireless connection of the balance to networks and WiFi capable devices, such as tablets, laptops or smartphones, continuous data transfer, must be ordered at purchase, KERN KIB-A10, **€ 130,–**
- Ethernet data interface, to connect an IP-based Ethernet network, continuous data transfer, must be ordered at purchase, KERN KIB-A02, **€ 165,–**
- Signal lamp, including interface, for visual support of weighing with tolerance range, must be ordered at purchase, KERN KIB-A06, **€ 470,–**
- Alibi memory, for paperless archiving of the weighing results with ID no., gross/net/tare value, date and time, must be ordered at purchase, KERN KIB-A13, **€ 164,–**
- Alibi memory, including USB interface for exporting weighing results to external data storage media, such as, for example, USB sticks, hard drives, etc., must be ordered at purchase, KERN KIB-A01, **€ 175,–**
- 1 Verification plug, for verified balances this enables you to separate the display device and platform without affecting the verification, e.g. for installing the scale in a packing and dispatch table, pit frame etc. at a later date. Please order this at the same time as you purchase your scale, KERN KIB-A12, **€ 164,–**
- Modification of the display device, to move the cable outlet to the front of the display device, ideal e.g. for subsequent wall installation of the display device (standard configuration ex works: rear outlet), Factory Option, delivery time + 2 working days, KERN KIB-M01, **€ 104,–**
- Note: In addition to the RS-232 data interface, which is integrated as standard, only one other data interface can be installed and operated

10

STANDARD: CAL EXT · KCP PROTOCOL · GLP PRINTER · RS 232 · PCS · SUM · PERCENT · TOL · MOVE · IP 65 · MULTI · DMS · 1 DAY · 2 DAYS

OPTION: ET · ACCU · DAkkS +3 DAYS

FACTORY: ALIBI · USB · BT 4.0 · WIFI · LAN · M +3 DAYS

F

Model KERN	Weighing capacity [Max] kg	Readability [d] g	Verification value [e] g	Minimal load [Min] g	Weighing plate	Price excl. of VAT ex works €	Verification KERN	Verification €	Option DAkkS Calibr. Certificate KERN	Option DAkkS Calibr. Certificate €
Multi-range balance, with increasing load it switches automatically to the next largest weighing range [Max] and readout [d] and when the load is fully removed, the balance switches back to the lower range										
IOC 6K-4	3 | 6	0,1 | 0,2	–	–	B	**420,-**	–	–	963-128	112,-
IOC 10K-4	6 | 15	0,2 | 0,5	–	–	A	**410,-**	–	–	963-128	112,-
IOC 10K-4L	6 | 15	0,2 | 0,5	–	–	C	**440,-**	–	–	963-128	112,-
IOC 30K-4	15 | 30	0,5 | 1	–	–	C	**440,-**	–	–	963-128	112,-
IOC 60K-3	30 | 60	1 | 2	–	–	C	**440,-**	–	–	963-129	139,-
IOC 60K-3L	30 | 60	1 | 2	–	–	D	**540,-**	–	–	963-129	139,-
IOC 100K-3	60 | 150	2 | 5	–	–	D	**530,-**	–	–	963-129	139,-
IOC 100K-3L	60 | 150	2 | 5	–	–	E	**750,-**	–	–	963-129	139,-
IOC 300K-3	150 | 300	5 | 10	–	–	E	**760,-**	–	–	963-129	139,-
IOC 600K-2	300 | 600	10 | 20	–	–	F	**850,-**	–	–	963-130	196,-
Note: For applications that require verification, please order verification at the same time, initial verification at a later date is not possible. Verification at the factory, we need to know the full address of the location of use.										
IOC 6K-3M	3 | 6	1 | 2	1 | 2	20 | 40	B	**420,-**	965-228	80,-	963-128	112,-
IOC 10K-3M	6 | 15	2 | 5	2 | 5	40 | 100	A	**360,-**	965-228	80,-	963-128	112,-
IOC 10K-3LM	6 | 15	2 | 5	2 | 5	40 | 100	C	**440,-**	965-228	80,-	963-128	112,-
IOC 30K-3M	15 | 30	5 | 10	5 | 10	100 | 200	C	**440,-**	965-228	80,-	963-128	112,-
IOC 60K-2M	30 | 60	10 | 20	10 | 20	200 | 400	C	**440,-**	965-229	105,-	963-129	139,-
IOC 60K-2LM	30 | 60	10 | 20	10 | 20	200 | 400	D	**540,-**	965-229	105,-	963-129	139,-
IOC 100K-2M	60 | 150	20 | 50	20 | 50	400 | 1000	D	**530,-**	965-229	105,-	963-129	139,-
IOC 100K-2LM	60 | 150	20 | 50	20 | 50	400 | 1000	E	**750,-**	965-229	105,-	963-129	139,-
IOC 300K-2M	150 | 300	50 | 100	50 | 100	1000 | 2000	E	**760,-**	965-229	105,-	963-129	139,-
IOC 600K-1M	300 | 600	100 | 200	100 | 200	2000 | 4000	F	**850,-**	965-230	150,-	963-130	196,-
It is essential that a verified balance which transfers measurements to external devices using an interface, has an alibi memory (KIB-A13). It is not possible to upgrade later.										


A


2

High-resolution industrial scale in heavy version with EC type approval [M], now also up to [Max] 600 kg

Features

- Tough industry standard suitable for use in harsh industrial applications
- 1 Platform: weighing plate stainless steel, painted steel base, silicone-coated aluminium load cell, protection against dust and water splashes IP65
- Benchtop stand incl. wall mount for display device as standard
- Protective working cover included with delivery

Technical data

- Large backlit LCD display, digit height 52 mm
- Weighing plate dimensions, stainless steel W×D×H
  A 230×230×110mm, B 300×240×110 mm
  C 400×300×128 mm, D 500×400×130 mm
  E 650×500×142 mm, F 800×600×200 mm
- Dimensions of display device W×D×H 250×160×58 mm
- Cable length of display device approx. 3 m
- Permissible ambient temperature -10 °C/40 °C

Accessories

- Protective working cover, scope of delivery 5 items, KERNKFB-A02S05, **€ 44,–**
- 2 Stand to elevate display device, for models with weighing plate size
  A - E : Height of stand approx. 330 mm, KERNIFB-A01, **€ 68,–**
  D - F : Height of stand approx. 600 mm, KERNIFB-A02, **€ 81,–**
  A - F : Stand to elevate display device, Height of stand approx. 800 mm, KERNBFS-A07, **€ 170,–**
- Internal rechargable battery pack, operating time up to 35 h without backlight, charging time approx. 12 h, must be ordered at purchase, KERNKFB-A01, **€ 40,–**
- Bluetooth data interface, must be ordered at purchase, not in combination with verification, KERNKFB-A03, **€ 160,–**
- Analogue module, not possible in combination with signal lamp, must be ordered at purchase, 0–10 V, KERNKFB-A04, **€ 170,–**
  4–20 mA, KERNKFB-A05, **€ 170,–**
- Signal lamp for visual support of weighing with tolerance range, KERNCFS-A03, **€ 330,–**
- Y-cable for parallel connection of two terminal devices to the RS-232 interface on the scale, e.g. signal lamp and printer, KERNCFS-A04, **€ 38,–**

10

STANDARD: CAL EXT, RS 232, KCP PROTOCOL, GLP PRINTER, PCS, SUM, TOL, MOVE, IP 65, MULTI, DMS, 1 DAY, 2 DAYS
OPTION: ET, DAkkS +3 DAYS
FACTORY: BT 2.0, ANALOG, ACCU, M +3 DAYS

1 F IFB-M

Model KERN	Weighing capacity [Max] kg	Readability [d] g	Verification value [e] g	Minimal load [Min] g	Net weight approx. kg	Weighing plate	Price excl. of VAT ex works €	Verification KERN	Verification €	Option DAkkS Calibr. Certificate KERN	DAkkS Calibr. Certificate €
IFB 3K-4	3	0,1	-	-	4,6	A	**480,-**	-	-	963-127	93,-
IFB 6K-4S	6	0,2	-	-	4,6	A	**490,-**	-	-	963-128	112,-
IFB 6K-4	6	0,2	-	-	5	B	**440,-**	-	-	963-128	112,-
IFB 10K-4	15	0,5	-	-	5	B	**445,-**	-	-	963-128	112,-
IFB 10K-4L	15	0,5	-	-	8	C	**525,-**	-	-	963-128	112,-
IFB 30K-3	30	1	-	-	8	C	**500,-**	-	-	963-128	112,-
IFB 60K-3	60	2	-	-	8	C	**500,-**	-	-	963-129	139,-
IFB 60K-3L	60	2	-	-	11	D	**690,-**	-	-	963-129	139,-
IFB 100K-3	150	5	-	-	11	D	**695,-**	-	-	963-129	139,-
IFB 100K-3L	150	5	-	-	20	E	**680,-**	-	-	963-129	139,-
IFB 300K-2	300	10	-	-	20	E	**970,-**	-	-	963-129	139,-
IFB 600K-2	600	20	-	-	44	F	**1280,-**	-	-	963-130	196,-
Multi-range balance, with increasing load it switches automatically to the next largest weighing range [Max] and readout [d] and when the load is fully removed, the balance switches back to the lower range											
IFB 6K-3SM	3 | 6	1 | 2	1 | 2	20 | 40	4,6	A	**460,-**	965-228	80,-	963-128	112,-
IFB 6K1DM	3 | 6	1 | 2	1 | 2	20 | 40	5	B	**470,-**	965-228	80,-	963-128	112,-
IFB 15K2DM	6 | 15	2 | 5	2 | 5	40 | 100	5	B	**470,-**	965-228	80,-	963-128	112,-
IFB 15K2DLM	6 | 15	2 | 5	2 | 5	40 | 100	8	C	**590,-**	965-228	80,-	963-128	112,-
IFB 30K5DM	15 | 30	5 | 10	5 | 10	100 | 200	8	C	**550,-**	965-228	80,-	963-128	112,-
IFB 60K10DM	30 | 60	10 | 20	10 | 20	200 | 400	8	C	**550,-**	965-229	105,-	963-129	139,-
IFB 60K10DLM	30 | 60	10 | 20	10 | 20	200 | 400	11	D	**710,-**	965-229	105,-	963-129	139,-
IFB 150K20DM	60 | 150	20 | 50	20 | 50	400 | 1000	11	D	**690,-**	965-229	105,-	963-129	139,-
IFB 150K20DLM	60 | 150	20 | 50	20 | 50	400 | 1000	20	E	**910,-**	965-229	105,-	963-129	139,-
IFB 300K50DM	150 | 300	50 | 100	50 | 100	1000 | 2000	20	E	**890,-**	965-229	105,-	963-129	139,-
IFB 600K-1M	300 | 600	100 | 200	100 | 200	2000 | 4000	44	F	**1350,-**	965-230	150,-	963-130	196,-

Note: For applications that require verification, please order verification at the same time, initial verification at a later date is not possible.
Verification at the factory, we need to know the full address of the location of use.


A


B


1


2

Precision industrial scale with laboratory accuracy, ideal for the various possibilities of Industrie 4.0 applications

Features

- High-capacity precision balance, ideal for high volume or heavy samples to be weighed with a high degree of accuracy
- User guidance step by step on display by Yes/No dialogue
- Numerical subtraction of tare weight for known container weight. Useful for checking fill-levels
- Precise counting: The automatic reference weight optimisation of reference weight gradually improves the average piece weight value
- Freely programmable weighing unit, e.g. display direct in special units such as length of wire g/m, surface weight g/m², or else
- KERN Universal Port (KUP): permits the connection of an external KUP interface adapter, such as, for example, RS-232, USB, Bluetooth or Ethernet, for the exchange of data and control commands, without any installation outlay, for details see page 8/9
- KERN Communication Protocol (KCP): The KCP permits searching and remote control of the balance using external control devices or computers
- Standardised, simplified concept of operation
- Protective working cover included with delivery

Technical data

- Large backlit LCD display, digit height 21 mm
- Weighing plate dimensions, stainless steel
  - A W×D×H 228×228×95 mm
  - B W×D×H 308×318×75 mm
  - C W×D×H 500×400×125 mm, see larger picture
- Dimensions of display device W×D×H 225×115×60 mm
- Permissible ambient temperature -10 °C/40 °C

Accessories

- Protective working cover over the display device, scope of delivery: 5 items, KERN DE-A12S05, **€ 44,–**
- 1 Stand to elevate display device, height of stand approx. 480 mm, for models with weighing plate size A , B , KERN DE-A10, **€ 140,–** for models with weighing plate size C , KERN DS-A03, **€ 140,–**
- Mount to fasten the display device to the platform, for models with weighing plate size B , C , KERN DE-A11N, **€ 42,–**
- Wall mount for display device, KERN DS-A02, **€ 33,–**
- 2 Set for underfloor weighing, consists of platform, bow, hook, only for models with weighing plate B , KERN DS-A01, **€ 230,–**
- External data interface RS-232, Interface cable included, KERN YKUP-01, **€ 68,–**
- External data interface USB, Interface cable included, KERN YKUP-03, **€ 98,–**
- Extension-Box, KERN YKUP-13, **€ 98,–**
- Further details, plenty of further accessories and suitable printers see Accessories

10

STANDARD

OPTION

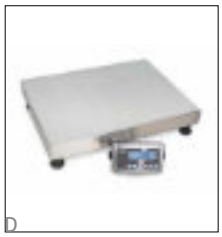
B

Model KERN	Weighing capacity [Max] kg	Readability [d] g	Smallest part weight [Normal] g/piece	Cable length of display device m	Net weight approx. kg	Resolution Points	Weighing plate	Price excl. of VAT ex works €	Option DAkkS Calibr. Certificate DAkkS KERN	€
DS 3K0.01S	3	0,01	0,1	2	4,2	300.000	A	**710,-**	963-127	93,-
DS 5K0.05S	5	0,05	0,1	2	4,2	100.000	A	**620,-**	963-127	93,-
DS 8K0.05	8	0,05	0,5	2	8	160.000	B	**610,-**	963-128	112,-
DS 10K0.1S	10	0,1	1	2	4,2	100.000	A	**600,-**	963-128	112,-
DS 16K0.1	16	0,1	1	2	8	160.000	B	**620,-**	963-128	112,-
DS 20K0.1	20	0,1	1	2	8	200.000	A	**640,-**	963-128	112,-
DS 30K0.1	30	0,1	1	2	8	300.000	B	**680,-**	963-128	112,-
DS 30K0.1L	30	0,1	1	0,6	10	300.000	C	**1070,-**	963-128	112,-
DS 36K0.2	36	0,2	1	0,6	10	180.000	B	**620,-**	963-128	112,-
DS 36K0.2L	36	0,2	1	0,6	10	180.000	C	**1000,-**	963-128	112,-
DS 60K0.2	60	0,2	2	0,6	10	300.000	C	**1070,-**	963-129	139,-
DS 65K0.5	60	0,2	2	0,6	10	300.000	C	**1020,-**	963-129	139,-
DS 100K0.5	100	0,5	5	0,6	10	200.000	C	**1140,-**	963-129	139,-
DS 150K1	150	1	10	0,6	10	150.000	C	**1140,-**	963-129	139,-


1


B


C


D


2


3

Platform scale with dust and spray protection IP65 and EC type approval [M]

Features

- Platform scale protected to IP65 with stainless steel display device, for industrial applications, hygienic and easy to clean
- 1 Platform: weighing plate stainless steel, painted steel base, silicone-coated aluminium load cell, protection against dust and water splashes IP65
- Display device: Stainless steel, protection against dust and water splashes IP65, flexible positioning, e.g. free-standing or mounted to the wall, for details see KERNKFE-TM
- Weighing with tolerance range (checkweighing): a visual and audible signal helps with portioning, dispensing or grading
- Hold function: When the weighing conditions are unstable, a stable weight is calculated determining an average value
- PRE-TARE function for manual subtraction of a known container weight, useful for checking fill-levels (only for non-verified models)

Technical data

- Large backlit LCD display, digit height 22 mm
- Weighing plate dimensions, stainless steel
  - A W×D×H300×240×110 mm, see larger picture
  - B W×D×H400×300×130 mm
  - C W×D×H500×400×140 mm
  - D W×D×H650×500×140 mm
- Dimensions of display device W×D×H 195×120×70 mm
- Rechargeable battery pack integrated, as standard, operating time up to 35 h without backlight, charging time approx. 12 h
- Cable length of display device approx. 3 m
- Permissible ambient temperature -10 °C/40 °C

Accessories

- Stand to elevate display device, for models with weighing plate size
  - A –D : Height of stand approx. 200 mm, KERNSFE-A01, **€ 75,–** 2
  - B–D : Height of stand approx. 400 mm, KERNSFE-A02, **€ 75,–** 2
  - C –D : Height of stand approx. 600 mm, KERNSFE-A03, **€ 95,–** 3
- Tare pan made from stainless steel, overall dimensions W×D×H,400×300×45 mm, KERNRFS-A02, **€ 75,–**

10

STANDARD: CAL EXT, SUM, TOL, MOVE, IP 65, ACCU, MULTI, DMS, 1 DAY — OPTION: DAkkS +3 DAYS — FACTORY: M +3 DAYS

Model KERN	Weighing capacity [Max] kg	Readability [d] g	Verification value [e] g	Minimal load [Min] g	Net weight approx. kg	Weighing plate	Price excl. of VAT ex works €	Verification KERN	Verification €	Option DAkkS Calibr. Certificate KERN	DAkkS Calibr. Certificate €
SFE 6K-3NM	6	2	2	40	6	A	**530,-**	965-228	80,-	963-128	112,-
SFE 10K-3NM	15	5	5	100	6	A	**510,-**	965-228	80,-	963-128	112,-
SFE 10K-3LNM	15	5	5	100	8	B	**600,-**	965-228	80,-	963-128	112,-
SFE 30K-2NM	30	10	10	200	6	A	**530,-**	965-228	80,-	963-128	112,-
SFE 60K-2NM	60	20	20	400	8	B	**590,-**	965-229	105,-	963-129	139,-
SFE 60K-2LNM	60	20	20	400	12	C	**710,-**	965-229	105,-	963-129	139,-
SFE 100K-2NM	150	50	50	1000	8	B	**620,-**	965-229	105,-	963-129	139,-
SFE 100K-2LNM	150	50	50	1000	12	C	**690,-**	965-229	105,-	963-129	139,-
SFE 100K-2XLNM	150	50	50	1000	22	D	**980,-**	965-229	105,-	963-129	139,-
SFE 300K-1LNM	300	100	100	2000	22	D	**960,-**	965-229	105,-	963-129	139,-

Note: For applications that require verification, please order verification at the same time, initial verification at a later date is not possible.
Verification at the factory, we need to know the full address of the location of use.

Platform scale with stainless steel display device with IP68 rating, XL-display und EC type approval [M] – now also as high resolution version with high-resolution display

Piece-counting function

Durable stainless steel weighing plate

Stainless steel display device with protection IP68, hygienic and easy to clean


1


2


3

Features

- Tough industry standard suitable for use in harsh industrial applications
- 1 Platform: weighing plate stainless steel, painted steel base, silicone-coated aluminium load cell, protection against dust and water splashes IP65, Substruction in wing design, extremely resistant to bending
- Superior display size: digit height 55 mm, bright backlight for easy reading of weighing results, even in poor lighting conditions
- 2 Display device: Stainless steel, protection against dust and water splashes IP68, integrated power supply
- ESD drain to protect against electrostatic discharge e.g. for electrostatically-charged weighing objects or people who work with the scale
- Thanks to interfaces such as RS-232, RS-485 and Bluetooth (optional) the scale can easily be connected to existing networks and facilitates the data exchange between the scale and printer^

Technical data

- Large backlit LCD display, digit height 55 mm
- Weighing plate dimensions, stainless steel W×D×H
  A 300×240×86 mm, B 400×300×89 mm
  C 500×400×123mm, D 650×500×133,5mm
- Dimensions of display device W×D×H 232×150×80 mm
- Cable length of display device approx. 3 m
- Permissible ambient temperature -10 °C/40 °C

Accessories

- 3 Stand to elevate display device
  A -D Height of stand approx. 50 mm, KERNIXS-A01, **€ 93,–**
  A -D Height of stand approx. 200 mm, KERNIXS-A02, **€ 118,–**
  B -D Height of stand approx. 400 mm, KERNIXS-A03, **€ 95,–**
  C -D Height of stand approx. 600 mm, KERNIXS-A04, **€ 120,–**
- Internal rechargeable battery pack, operating time up to 80 h without backlight, charging time approx. 12 h, must be ordered at purchase, KERNGAB-A04, **€ 42,–**
- Data interface RS-232, interface cable included, approx. 1,5 m, must be ordered at purchase, must be ordered at purchase, KERNKXS-A04, **€ 109,–**
- Data interface RS-485, must be ordered at purchase, KERNKXS-A01, **€ 160,–**
- Bluetooth data interface for wireless data transfer to PC or tablets, must be ordered at purchase, not in combination with verification, KERNKXS-A02, **€ 200,–**
- Foot switch, must be ordered at purchase, KERNKXS-A03, **€ 140,–**
- Roller conveyor attachment, with smooth-running, hot-dip galvanised steel rollers with ball bearings, robust aluminium profile frame for models with weighing plate size
  B KERNYRO-01, **€ 720,–**
  C KERNYRO-02, **€ 740,–**
  D KERNYRO-03, **€ 1060,–**
- Further details, plenty of further accessories and suitable printers see *Accessories*

*Note: only one of the port options can be built in for use

10

STANDARD: CAL EXT, PCS, SUM, TOL, MOVE, IP 65 (1), IP 68 (2), 230 V, DMS, 1 DAY, 2 DAYS (D)
OPTION: ET, DAkkS +3 DAYS
FACTORY: RS 232 *, RS 485 *, BT, ACCU, M +3 DAYS IXS-M

Model KERN	Weighing range [Max] kg	Readability [d] g	Verification value [e] g	Minimal load [Min] g	Net weight approx. kg	Weighing plate	Price excl. of VAT ex works €	Verification KERN	Verification €	Option DAkkS Calibr. Certificate KERN	DAkkS Calibr. Certificate €
IXS 6K-4	6	0,2	-	-	6	A	**790,-**	-	-	963-128	112,-
IXS 10K-4	15	0,5	-	-	6	A	**790,-**	-	-	963-128	112,-
IXS 10K-4L	15	0,5	-	-	11	B	**860,-**	-	-	963-128	112,-
IXS 30K-3	30	1	-	-	11	B	**860,-**	-	-	963-128	112,-
IXS 30K-3L	30	1	-	-	22	C	**1030,-**	-	-	963-128	112,-
IXS 60K-3	60	2	-	-	11	B	**860,-**	-	-	963-129	139,-
IXS 60K-3L	60	2	-	-	22	C	**1030,-**	-	-	963-129	139,-
IXS 100K-3	150	5	-	-	22	C	**1020,-**	-	-	963-129	139,-
IXS 100K-3L	150	5	-	-	36	D	**1250,-**	-	-	963-129	139,-
IXS 300K-2	300	10	-	-	36	D	**1250,-**	-	-	963-129	139,-
Multi-range balance, with increasing load it switches automatically to the next largest weighing range [Max] and readout [d] and when the load is fully removed, the balance switches back to the lower range											
IXS 6K-3M	3 | 6	1 | 2	1 | 2	20 | 40	6	A	**810,-**	965-228	80,-	963-128	112,-
IXS 10K-3M	6 | 15	2 | 5	2 | 5	40 | 100	6	A	**820,-**	965-228	80,-	963-128	112,-
IXS 10K-3LM	6 | 15	2 | 5	2 | 5	40 | 100	11	B	**910,-**	965-228	80,-	963-128	112,-
IXS 30K-2M	15 | 30	5 | 10	5 | 10	100 | 200	11	B	**910,-**	965-228	80,-	963-128	112,-
IXS 30K-2LM	15 | 30	5 | 10	5 | 10	100 | 200	22	C	**1080,-**	965-228	80,-	963-128	112,-
IXS 60K-2M	30 | 60	10 | 20	10 | 20	200 | 400	11	B	**910,-**	965-229	105,-	963-129	139,-
IXS 60K-2LM	30 | 60	10 | 20	10 | 20	200 | 400	22	C	**1080,-**	965-229	105,-	963-129	139,-
IXS 100K-2M	60 | 150	20 | 50	20 | 50	400 | 1000	22	C	**1080,-**	965-229	105,-	963-129	139,-
IXS 100K-2LM	60 | 150	20 | 50	20 | 50	400 | 1000	36	D	**1260,-**	965-229	105,-	963-129	139,-
IXS 300K-2M	150 | 300	50 | 100	50 | 100	1000 | 2000	36	D	**1270,-**	965-229	105,-	963-129	139,-

Note: For applications that require verification, please order verification at the same time, initial verification at a later date is not possible.
Verification at the factory, we need to know the full address of the location of use.

! ONLY WHILE STOCKS LAST

18 DAKKS CALIBRATION SERVICE/ VERIFICATION SERVICE

The DAkkS (German accreditation body)

The DAkkS is the national accreditation body of the Federal Republic of Germany. According to Regulation (EC) No. 765/2008 and the Accreditation Body Act (AkkStelleG), the DAkkS acts in the public interest as the sole service provider for accreditation in Germany.

In order to be able to fulfil its sovereign accreditation tasks, the DAkkS was entrusted by the Federal Government. As an entrusted body, the DAkkS is subject to federal supervision.

Only an accredited calibration laboratory can issue a DAkkS calibration certificate. This defines not only the measuring method as well as the measuring result, but also gives information on tracing the test medium to national standards and the relevant uncertainty of measurement.

> **You are certified to ...**
> ISO 9001, QS 9000, GLP, GMP, TS16949

> **You need …**
> to control your measuring equipment

> **Our solution …**
> DAkkS calibration certificate; (traceability, measuring uncertainty, internationally recognised)

KERN – Precision is our business

The KERN calibration laboratory for electronic balances and weights has been accredited by DKD since 1994 and today is one of the most modern and best-equipped DAkkS calibration laboratories for balances, test weights and force measurement in Europe.

Thanks to the high level of automation, we can carry out DAkkS calibration of balances, test weights and force-measuring devices 24 hours a day, 7 days a week.

Do you have any further requests or questions on this matter? We would be pleased to help you or visit us on the web at **www.kern-lab.com**

DAkkS calibration

Why? DAkkS calibration is always necessary when checking equipment (balance or test weight) is to be used in a QM process (e.g. to ISO 9000ff, GS 9000, TS 16949, VDA 6.1, FDA, GLP, GMP, GMP etc.)

What? Any checking equipment in proper condition can be DAkkS calibrated

How? Determination of accuracy throughout the world by a laboratory which is accredited to DIN EN ISO 17025. Traceability to internationally recognised standards. The DAkkS calibration certificate confirms both the measurement characteristics of the checking equipment and the general requirements for the control of checking equipment.

Where? Internationally recognised – this is monitored by ILAC (International Laboratory Accreditation Cooperation) and e.g. DAkkS (German calibration service) in Germany

When? The operator control the use of checking equipment and periodic recalibration time intervals themselves

Range of services:

- DAkkS calibration of balances with a maximum load of up to 50.000 kg
- DAkkS calibration of weights in the range of 1 mg – 2.500 kg. Calibrations can be carried out in the following classes: E1, E2, F1, F2, M1, M2, M3
- DAkkS calibration of force gauges and force transducers
- Volume determination for weights of accuracy class E1
- Measuring of sensitivity (magnetic characteristics)
- Factory calibration in various sizes:
- Force (sensors and measuring devices), hardness (Shore, UCI, Leeb, etc.), thickness of coatings and walls, torque wrench testing devices, and much more
- Conformity assessments and recalibration of balances and weights at the KERN verification point, working closely with the verification authorities

And on top of all these services, we also offer additional services – see page 212/213.

Balance & weight in the quality management system

Do you already use all the modules of the KERNprecision package for maximum accuracy and reliability of your balance?

KERN precision package

As per ISO 9001, TS 16949, VDA 6.x, FDA, GLP, GMP, ...

Balance	+	DAkkS calibration certificate for the balance	+	Adjustment/Validation with KERN test weights	+	DAkkS-calibration certificate for the test weight	=	Maximum reliability for your measurements
	+						=	*Balance not adjusted, traceable*
	+		+				=	*Balance adjusted, weight not traceable*
			+		+		=	*Balance adjusted, not traceable*
	+		+		+		=	*Balance adjusted, completely traceable*

Information & ordering: kern-sohn.com/qmb

The KERN calibration laboratory (D-K-19408-01-00)

KERN has a highly-automated DAkkS laboratory with accreditation to DIN EN ISO/IEC 17025 in the field of balances, test weights and force measurement. By using the most modern calibration technology with high-end calibration robots in fully air-conditioned laboratories, the measurement uncertainty and process times are reduced to a minimum, and also the quality of the calibration is increased.

As an accredited and certified calibration service provider with decades of experience, KERN offers you an extensive range of services, which will leave no demand unfulfilled. The accreditation applies to the extent specified in the appendix to the certificate D-K-19408-01-00.

We offer the following services:

Waagen:

- DAkkS calibration up to 50 t
- Minimum sample weight (in use)
- Usage accuracy
- Adjustment at the location of installation
- Certificate of conformity
- Equipment qualification:
  - > Design qualification (DQ)
  - > Installation qualification (IQ)
  - > Function qualification (OQ)
  - > Performance qualification (PQ)
  - > Maintenance qualification (MQ)
- Verification

Weights:

- DAkkS calibration up to 2.5 t (OIML classes E1 – M3)
- Volume determination for OIML class E1
- Measuring of sensitivity (magnetic characteristics)
- Verification

Force measuring devices and force transducers:

- DAkkS calibration up to 5 kN

Factory calibration for:

- Force measuring devices and force transducers ≤ 250 kN
- Hardness
- Layer thickness
- Material thickness
- Temperature of moisture analysers

Our commitment to satisfy our customers never stops. Perhaps this is one of the reasons why our roots can perhaps be traced so far back in history. **Discover the KERN route to success: fast - competent - reliable - versatile!**

The order process

1. You will receive a **reminder** that your test equipment is due or you will generate online a quotation for new or existing test equipment
2. Submission or collection of your test equipment
3. Initial inspection of your goods, to check that they are suitable for calibration, and are complete, etc.
4. You will get a detailed order confirmation
5. Our experts will carry out initial calibration
6. Checked for conformity with required tolerances and if required, any necessary actions which arise from this are carried out
7. Before these actions are carried out, we will contact you (in so far as no individual processing has been agreed with you beforehand)
8. After your approval the necessary actions will be implemented and the calibration will be completed
9. After that your test equipment will be returned to you without delay, together with the appropriate calibration certificates
10. We will monitor your recalibration periods and will send you a reminder about your next calibration, free of charge

Our service

▸Reminder service
The continuous cyclic recalibration of your checking equipment is an integral part of the reliable management of test equipment. You can rely on us to support you, and we will remind you in time, free of charge, when the next recalibration is due. In addition, you have the option of managing your test equipment online by yourself (cf. 1, 10).

▸Quote generator
You will be impressed by our price-to-performance ratio. Request a non-binding quotation or create it yourself to suit your specifications at www.kern-lab.com (cf. 1)

▸Collection service
We will be pleased to arrange a pick up by our forwarding agent the goods from your premises. You only need to tell us the weight and dimensions of your package and leave the rest to us (cf. 2)

▸Repair and reconditioning of balances and weights
KERN will get your weights back up to standard, regardless of the manufacturer. Whether it is adjustment, marking, sand blasting or lacquering - the aim here is compliance and long-term stability. Any repairs of balances and instruments which may be necessary can be carried out quickly and easily (cf. 5, 6)

▸Individual processing
In order to avoid delays with future orders, we would be pleased to incorporate your individual requirements for future processing of such calibration results. Even for smaller issues such as the printing of calibration certificates (stapling, punching, double-sided) we can work to your requirements (cf. 8).

▸Express service and dispatch
If you need a particularly fast service, you can use your DAkkS express service. You will receive your test equipment after only 2 days (cf. 9).

www.kern-lab.com – the central portal for everything you need to know about the extensive KERN calibration services

On our website you will always find the latest news and useful information about testing and measuring devices, calibration, legal metrology and expansions to our range of services. You will also find numerous online services on the website.

Database supported management of test equipment

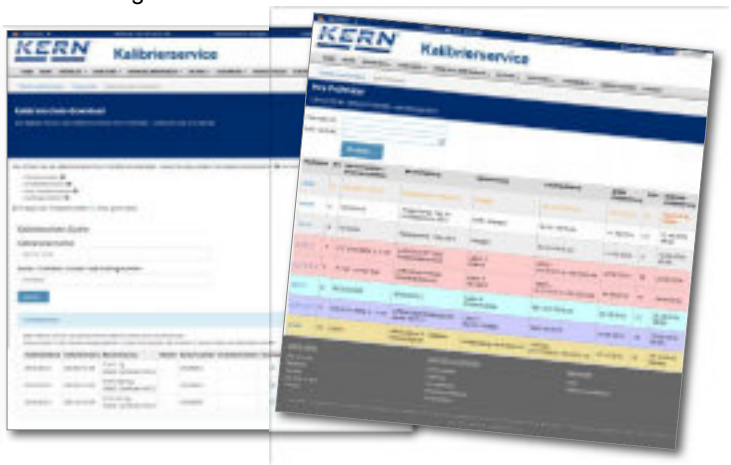
Information on your test equipment which has been calibrated by us is stored in our database. In this way it is possible to make trend calculations. You will therefore get an overview about the long-term stability and trend behaviour of your test equipment as well as the necessary recalibration period can easily be determined and specified.

Paperless documentation

So there is no administrative effort, we can handle all calibration documentation in a paperless process. From quotation, through to order confirmation, delivery note and invoice right up to calibration certificate, you will receive all documents by e-mail or you can retrieve them online. Would you prefer to receive your certificate or your invoice in paper form, for example? Of course this is not a problem either. We will send you everything you require by post.

Calibration certificate download

By using our download service you can easily download your calibration certificates as soon as the calibration work is complete and you will have access to them at any time in the future. Simply create your user account on www.kern-lab.com and you will never have to look for your certificates again.



DAkkS Calibration of balances

Any balance will only give correct results if it is checked regularly, i.e. calibrated correctly and adjusted when required. A balance is only a reliable measuring and checking tool if it is calibrated and this calibration is documented. The issued DAkkS calibration certificates are proof of the metrological traceability to national and international standards, as required by the DIN EN ISO 9000 and DIN EN ISO/IEC 17025 standards, amongst others. KERN recommends a recalibration period of one year. The standard does not give a defined recalibration period. KERN recommends that, with intensive (daily) use, you to recalibrate your balance every 6 months and at normal (weekly) use, every 12 months.

THE ADVANTAGES OF USING THE KERN ON-SITE CALIBRATION:

+ **Calibration on-site** at your premises in the field of use
+ **No risk of damage** during transportation
+ **Low downtime**
+ **Cross-brand servicing**, basic inspection and adjustment by a specialist
+ You tell us **when you would like us to come**
+ **Device training** for qualified users

a) KERN on-site calibration (we visit you)

In Germany, KERN has a close-knit network of KERN DAkkS calibration laboratory employees, who can carry out on-site calibration of balances up to 50 tonnes.

This on-site testing service is metrologically recommended, as your balance is in its field of use and can be calibrated without any possible transportation problems.

Lower downtime and personal contact with our expert are the major benefits of this service.

Preparatory maintenance work by agreement. Prices for on-site calibration on request.

You tell us when you would like us to come, giving us details of the balances to be tested. Our on-site DAkkS calibration team will then get in touch with you immediately and will discuss the process with you at your premises – it's straight forward and professional.

This KERN calibration service is also independent of the brand.

Please feel free to contact us at Phone +49 7433 9933-400 or E-Mail: testservices-onsite@kern-sohn.com

THE ADVANTAGES OF USING THE KERN IN-HOUSE CALIBRATION:

+ **Short calibration time:** Test time in the laboratory is only four working days
+ **Competence:** Calibration laboratory, which complies with the highest standards in the area of metrology
+ **Independent management** of the recalibration calendar for your individual measuring instrument is possible
+ **Cross-brand service:** Measuring devices from any manufacturer can be calibrated independently
+ **Repair:** Any necessary repairs can be carried out immediately, if you wish

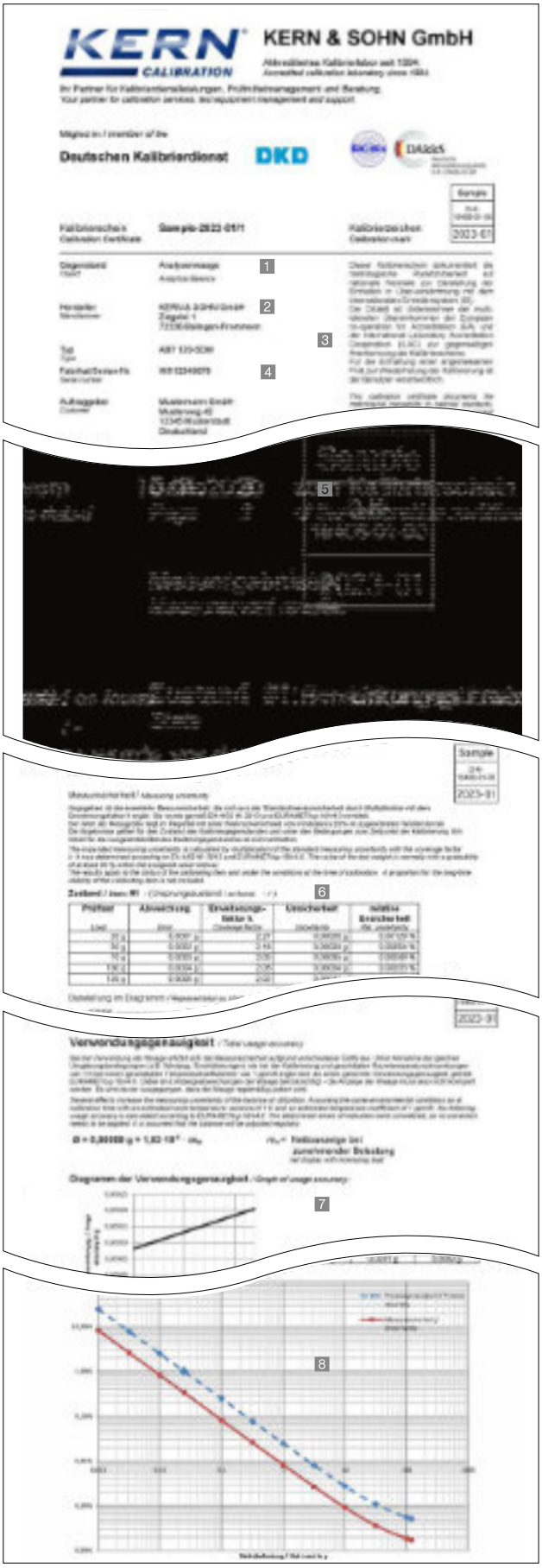
b) Calibration at the KERN factory (you send your balance to us)

Recommended for new devices and for balances which can be affordably transported, as then there is no need for us to travel to carry out the calibration on-site. Repairs can be carried out at the same time, quickly and in full.

The process would be as follows:

Day 1:	Send your balance to the KERN calibration laboratory in Balingen.
Day 2 to 3:	Evaluation and calibration of your balance by our specialists.
Day 4:	After positive validation, your balance is returned.

Please feel free to contact us at Phone +49 7433 9933-400 or E-Mail: recalibration-balances@kern-sohn.com

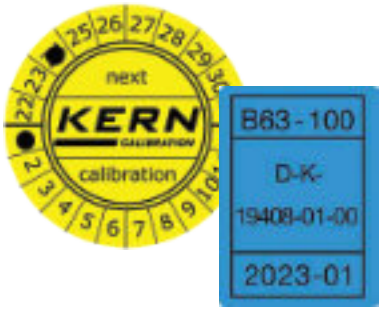


DAkkS calibration certificate for balances (extract)

To get reliable weighing results you need to have calibrated balances. KERN offers you an extensive calibration service for your balances – You have the choice:

Recalibration

- The recalibration schedule depends on the frequency of use, the conditions of use and the safety requirements.
- We would recommend that you recalibrate your balances every 6 months if they are used intensively, and every 12 months with normal use.
- The KERN calibration service is independent of the brand.



Initial calibration and recalibration of balance at the KERN factory	KERN	Price excl. of VAT ex works €
Weighing capacity		
Analytical balances		
[Max] ≤ 5 kg	963-101	**182,-**
[Max] > 5 kg	963-102	**230,-**
Precision balances/Industrial scales		
[Max] ≤ 5 kg	963-127	**93,-**
[Max] > 5 kg – 50 kg	963-128	**112,-**
[Max] > 50 kg – 350 kg	963-129	**139,-**
[Max] > 350 kg – 1500 kg	963-130	**196,-**
[Max] > 1500 kg – 2900 kg [1)]	963-131	**260,-**
[Max] > 2900 kg – 6000 kg [1)]	963-132	**520,-**
[Max] > 6000 kg – 12000 kg [1)]	963-133	**590,-**
Hanging scales/Crane scales		
[Max] ≤ 5 kg	963-127H	**93,-**
[Max] > 5 kg – 50 kg	963-128H	**112,-**
[Max] > 50 kg – 350 kg	963-129H	**131,-**
[Max] > 350 kg – 1500 kg	963-130H	**235,-**
[Max] > 1500 kg – 2900 kg	963-131H	**355,-**
[Max] > 2900 kg – 6000 kg	963-132H	**590,-**
[Max] > 6000 kg – 12000 kg [3)]	963-133H	**830,-**
Preparation for recalibration (cleaning, adjustment, function test)	969-003R	**24,-**
Additional services		
Minimum weight of sample (for details see page 215)	969-103	**10,-**
Additional measurement points (as part of the) weighing test	963-140	**5,20/** measurement point
Additional measurement points (as part of the) repeatability testing	963-140	**5,20/** each further measurement point
DAkkS Express service with delivery time 48 hours (only on initial purchase, details see p. 210)	962-116	**52,-/ scale**
Express shipping: Express supplement for guaranteed delivery on the next working day (if ready for shipment before 12:00 noon)	962-115 in GER only (other countries on request)	**21,-/ parcel**

[1)] Floor scales & axle load scales only (Price per weighing panel). Please ask for further details.
[2)] On request
[3)] Processing time 4 working days
[4)] Processing time 15 working days

1 Official document
2 Item to be calibrated
3 Traceability, see page 225
4 Identification/Applicant
5 Metrological component
6 Uncertainty of measurement, see page 225
7 Application accuracy, see page 223
8 Minimum weight of sample (additional price)

Minimum weight of sample (in use)

What is the lightest item you can weigh on your balance, while still achieving accurate and reliable weighing results?What exactly is the limit?

The KERNminimum sample weight protocol accounts for the established minimum sample weight of your balance and its location of installation and use with the relative measuring uncertainty. With various safety coefficients and required weighing accuracy (process accuracy), depending on standard or quality-related requirements on the balance being used.

The higher the selected safety coefficient, the higher the safety when using the balance in a particular process. Typical perturbations when using the balance e.g. small fluctuations in temperature are taken into account. In easily predictable conditions in a professional environment of use, KERNrecommends a safety coefficient of 3. For critical processes, a correspondingly higher factor should be selected. The minimum sample weight protocol contains a diagram as well as a table, from which you can ascertain the minimum sample weight for your balance, depending on the process.

Adjustment at the location of installation

Why?

Adjustment at the location of installation is necessary, as the measuring results of balances depend on the local gravitational force (gravitational acceleration) and therefore depend on the location of use. KERNcan carry this out just before shipping at the factor, individually to suit the location of installation.

What are the advantages of carrying out adjustment at the location of installation?

- The balance gives reliable measurement results at the location of installation.
- No time-consuming on-site adjustment necessary.
- You do not need a Service Engineer or any additional weights.
- The balance is ready for immediate use.

Pricing table for adjustment at the location of installation

Weighing capacity	KERN	Price excl. of VAT ex works €
[Max] ≤ 5 kg	961-247	**39,-**
[Max] > 5 – 50 kg	961-248	**48,-**
[Max] > 50 – 350 kg	961-249	**56,-**
[Max] > 350 – 1500 kg	961-250	**90,-**
[Max] > 1500 – 2900 kg	961-251	**119,-**
[Max] > 2900 – 6000 kg	961-252	**240,-**
[Max] > 6000 – 12000 kg	961-253	**270,-**

For adjustment to the location of installation you need the value for gravitational acceleration at the location of installation, which KERNcan calculate using the point of use. The procedure is suitable for balances with a resolution of <60,000 d. For higher resolutions we recommend a balance with an internal adjusting weight or adjustment with a calibrated adjusting weight at the location of installation.

Certificate of conformity

With a certificate of conformity you get a statement about whether the balance meets your defined requirements.
In conjunction with a DAkkScalibration certificate it serves as documented proof that the balance fulfils the required process demands. When doing this the process owner for the balance can select from different temperature specifications – depending on its individual requirements:

Conformity evaluation on the basis of the:	KERN		Price excl. of VAT ex works €
Usage accuracy*	relative absolute	969-511 969-512	on request
Calibration results*	relative absolute	969-513 969-514	on request
Measurements as manufacturer or customer specification	Foreign device Customer specifications KERNdevices	969-515 969-516 969-517	on request

relative = %/ absolute = g

*as attachment to the DAkkScalibration certificate (Details see www.kern-lab.com)

Example for absolute customer tolerance (absolute) (Item no. 969-511):

No.	Tare	Load	Display	Deviation	Uncertainty	Customertolerance	Conformity[1)]
1	0 g	500 g	500,00 g	0,00 g	± 0,013 g	± 0,05 g	
2	0 g	1000 g	1000,00 g	0,00 g	± 0,015 g	± 0,05 g	
3	0 g	1500 g	1500,01 g	0,01 g	± 0,017 g	± 0,05 g	
4	0 g	2000 g	2000,01 g	0,01 g	± 0,020 g	± 0,10 g	
5	0 g	3000 g	3000,02 g	0,02 g	± 0,022 g	± 0,10 g	

1) Evaluationcriteria: |[Deviation]| + [extended measuring uncertainty] ≤ [tolerance]

Documented quality of your balances in the log book

Consistently high product quality requires the use of measuring and test equipment that provides comprehensible, consistent and reproducible results. Hence, quality management systems require that measuring and test equipment produces a detailed traceable description and documentation of calibration results and conformity statements. Work not documented is work not done.

Equipment qualification is documentary evidence that a equipment is suitable for the intended purpose and is working faultlessly. A balance log book is used to record all activities and results required for the qualification and monitoring of balances during routine operation. This includes the installation and commissioning of the balances, routine tests, maintenance as well as the recording of special events (failures, repairs, change of location).

The structure of the balance log book is based on the qualification process of the balance. The requirements for the qualification system such as DIN EN ISO 9001, DIN EN ISO/IEC 17025, GLP/GMP, VDA must be taken into account. The log book supports the user in his/her daily work with the balance and is meant to serve as necessary evidence during inspections and audits. The responsibility for maintaining the log book and its appropriate use is to be borne by the user.

Our proposal: Count on our support!

KERN offers this qualification concept throughout. Our validation services are carried out on the spot by technicians of our calibration laboratory and comprise among other things: installation, measurement test inclusive DAkks calibration certificate as well as records in your qualification log book.

We give you advice already when selecting a new device, for example KERN ADB/ADJ, ALS/ALJ, ABS/ABJ, ACJ, ABT, ABP, PLS/PLJ, PNS/PNJ, EG-N, PBS/PBJ, PES/PEJ, about the options of device qualification, as required and will be happy to set up an appointment for qualification at the place of installation. We offer individual calibration and maintenance agreements for the periodically required requalification.

Further information can be found at www.kern-lab.com

Important elements of equipment qualification:

Design qualification (DQ)

With the design qualification, all requirements on which you as a user depend are defined. The purchase decision is made on the basis of the design specifications and the available devices. Careful selection in the DQ can prevent subsequent deficiencies.

Installation qualification (IQ)

All steps to be taken for the installation and commissioning of the equipment are described in detail in the installation qualification. These include among others:

- checking for completeness of delivery and assurance that the delivered equipment meets the required specifications
- a description of the ambient conditions at the place of installation
- proper installation and assurance that the equipment is ready for operation after installation
- documentation of equipment configuration and equipment settings
- Recording and installation of connected peripherals units

Function qualification (OQ)

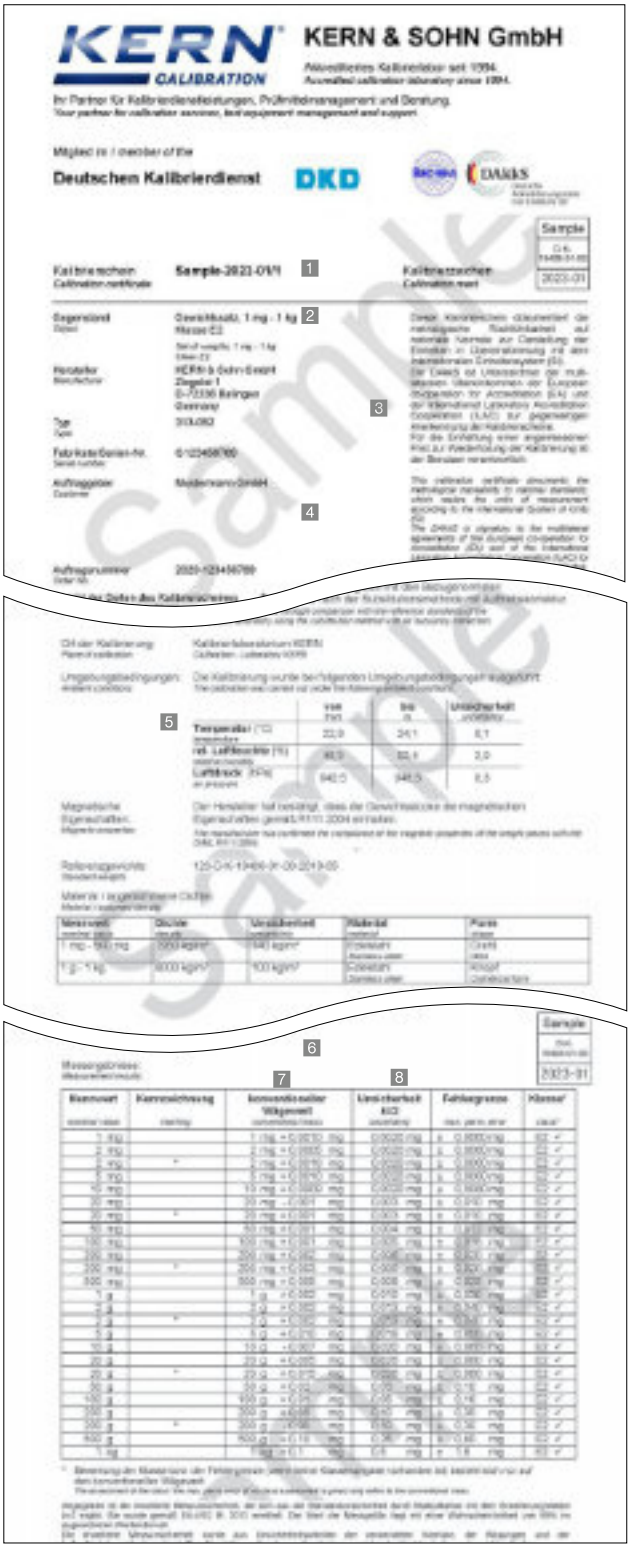
The operational qualification describes the metrological test performed for the balance at the place of installation. In the course of this all parameters that define the efficiency of a measurement will be checked. Functional qualification is carried out with the help of a standard operating procedure (SOP) and recorded in a calibration certificate. The OQ must be carried out by trained staff with the help of qualified aids (such as certified weights that are traceable to an approved standard). Briefing / training of users must be assured and recorded in the OQ.

Performance qualification (PQ)

The PQ represents documented evidence that the balance or weighing system functions in the selected application as intended. This will be assured by a qualification test of the equipment under real conditions with respect to its surroundings and the problem definition (such as traceable data transmission). If the balance or weighing system is “merely“ to be used for weighing it will not be necessary to carry out a PQ as the ability to function has already been proven during the metrological test (OQ).

Maintenance qualification (MQ)

The periodical maintenance, cleaning work and complete metrological test of the balance/weighing system is documented in the MQ by a trained authorised engineer. The results are documented on a DAkkS calibration certificate. Maintenance is carried out with the help of a maintenance schedule.



DAkkS calibration certificate for test weights (extract).
For more details on our calibration service and other useful information, please see the internet at www.kern-lab.com

1 Official document
2 Item to be calibrated
3 Traceability, see page 225
4 Identification/Applicant
5 Environmental conditions
6 Metrological component
7 Conventional mass
8 Uncertainty of measurement, see page 225

Traceable KERN test weights – Calibration of test weights

Calibrated measuring equipment requires calibrated checking equipment. For balances, these are calibrated test weights, also called “standard weights”.

KERN will calibrate your test weights

- In all classes with permissible error limits E1–M3 according to OIML R111:2004 (for tolerance tables, see page 180), in sizes 1 mg to 2500 kg.
- With free nominal value
- Newton (N)
- Independent of design (special designs)

The advantages of using the KERN in-house calibration

You send your test weights to us.

- Excellent price performance ratio
- The quickest processing time
  - DAkkS standard service: 4 working days
  - DAkkS express service: 48 hrs (new weights)
- The most modern calibration methods with robot controlled comparators allow the most accurate calibration results and fastest throughput time
- KERN DAkkS calibration certificates are internationally recognised
- A calibration service which is independent of the brand
- KERN also reconditions existing customer weights (e.g. cleaning or readjustment)
- On request, we can also provide a pick-up and collection service with our parcel service

The advantages of using the KERN on-site calibration

We visit you.

We would be pleased to visit you within Germany and carry out the calibration of your reference standards to OIML classes M1–M3, 10 kg–2500 kg with permissible error limits, using our mobile MACOS system. Minimized downtime of your checking equipment and direct contact with our expert are the major benefits of this service. Price on request.

Recalibration

- The recalibration schedule depends on the frequency of use, the conditions of use and the safety requirements
- In terms of standardisation, no particular recalibration interval is specified
- We would recommend that you recalibrate your test weights every six months if they are used intensively, and every 12 months with normal use
- We would be pleased to monitor your recalibration schedule

Recalibration price of test weights (DAkkS calibration)

Class acc. →	E1 with volume determination		E1 without volume determination		E2		F1/F2 * F2 only		M1/M2/M3	
Nominal value ↓	**KERN**	**Price €** excl. of VAT ex works	**KERN**	**Price €** excl. of VAT ex works	**KERN**	**Price €** excl. of VAT ex works	**KERN**	**Price €** excl. of VAT ex works	**KERN**	**Price €** excl. of VAT ex works
1 mg	–	–	962-251R	**72,-**	962-351R	**32,-**	962-451R	**21,-**	962-651R	**17,-**
2 mg	–	–	962-252R	**72,-**	962-352R	**32,-**	962-452R	**21,-**	962-652R	**17,-**
5 mg	–	–	962-253R	**72,-**	962-353R	**32,-**	962-453R	**21,-**	962-653R	**17,-**
10 mg	–	–	962-254R	**72,-**	962-354R	**32,-**	962-454R	**21,-**	962-654R	**17,-**
20 mg	–	–	962-255R	**72,-**	962-355R	**32,-**	962-455R	**21,-**	962-655R	**17,-**
50 mg	–	–	962-256R	**72,-**	962-356R	**32,-**	962-456R	**21,-**	962-656R	**17,-**
100 mg	–	–	962-257R	**72,-**	962-357R	**32,-**	962-457R	**21,-**	962-657R	**17,-**
200 mg	–	–	962-258R	**72,-**	962-358R	**32,-**	962-458R	**21,-**	962-658R	**17,-**
500 mg	–	–	962-259R	**72,-**	962-359R	**32,-**	962-459R	**21,-**	962-659R	**17,-**
1 g	963-231	**235,-**	962-231R	**72,-**	962-331R	**32,-**	962-431R	**21,-**	962-631R	**17,-**
2 g	963-232	**235,-**	962-232R	**72,-**	962-332R	**32,-**	962-432R	**21,-**	962-632R	**17,-**
5 g	963-233	**235,-**	962-233R	**72,-**	962-333R	**32,-**	962-433R	**21,-**	962-633R	**17,-**
10 g	963-234	**235,-**	962-234R	**72,-**	962-334R	**32,-**	962-434R	**21,-**	962-634R	**17,-**
20 g	963-235	**235,-**	962-235R	**72,-**	962-335R	**32,-**	962-435R	**21,-**	962-635R	**17,-**
50 g	963-236	**235,-**	962-236R	**72,-**	962-336R	**32,-**	962-436R	**21,-**	962-636R	**17,-**
100 g	963-237	**235,-**	962-237R	**72,-**	962-337R	**40,-**	962-437R	**23,-**	962-637R	**19,-**
200 g	963-238	**235,-**	962-238R	**72,-**	962-338R	**40,-**	962-438R	**23,-**	962-638R	**19,-**
500 g	963-239	**235,-**	962-239R	**72,-**	962-339R	**40,-**	962-439R	**23,-**	962-639R	**19,-**
1 kg	963-241	**235,-**	962-241R	**72,-**	962-341R	**40,-**	962-441R	**23,-**	962-641R	**19,-**
2 kg	963-242	**520,-**	962-242R	**89,-**	962-342R	**49,-**	962-442R	**29,-**	962-642R	**20,-**
5 kg	963-243	**520,-**	962-243R	**89,-**	962-343R	**49,-**	962-443R	**29,-**	962-643R	**20,-**
10 kg	963-244	**520,-**	962-244R	**89,-**	962-344R	**49,-**	962-444R	**29,-**	962-644R	**20,-**
20 kg	963-245	**1280,-**	962-245R	**720,-**	962-345R	**64,-**	962-445R	**33,-**	962-645R	**25,-**
50 kg	963-246	**1500,-**	962-246R	**800,-**	962-346R	**74,-**	962-446R	**45,-**	962-646R	**27,-**
100 kg	–	–	–	–	–	–	962-591R*	**134,-**	962-691R	**72,-**
200 kg	–	–	–	–	–	–	962-592R*	**134,-**	962-692R	**72,-**
500 kg	–	–	–	–	–	–	962-593R*	**134,-**	962-693R	**72,-**
1000 kg	–	–	–	–	–	–	–	–	962-694R	**158,-**
2000 kg	–	–	–	–	–	–	–	–	962-695R	**290,-**
1 mg–500 mg	–	–	962-250R	**465,-**	962-350R	**220,-**	962-450R	**116,-**	962-650R	**72,-**
1 mg–50 g	963-201	**1330,-**	962-201R	**770,-**	962-301R	**360,-**	962-401R	**193,-**	962-601R	**123,-**
1 mg–100 g	963-202	**1450,-**	962-202R	**790,-**	962-302R	**395,-**	962-402R	**205,-**	962-602R	**129,-**
1 mg–200 g	963-203	**1670,-**	962-203R	**870,-**	962-303R	**455,-**	962-403R	**230,-**	962-603R	**145,-**
1 mg–500 g	963-204	**1770,-**	962-204R	**910,-**	962-304R	**485,-**	962-404R	**240,-**	962-604R	**151,-**
1 mg–1 kg	963-205	**1890,-**	962-205R	**980,-**	962-305R	**520,-**	962-405R	**250,-**	962-605R	**159,-**
1 mg–2 kg	963-206	**2460,-**	962-206R	**1040,-**	962-306R	**570,-**	962-406R	**290,-**	962-606R	**175-**
1 mg–5 kg	963-207	**2750,-**	962-207R	**1080,-**	962-307R	**610,-**	962-407R	**305,-**	962-607R	**185,-**
1 mg–10 kg	963-208	**3130,-**	962-208R	**1120,-**	962-308R	**650,-**	962-408R	**330,-**	962-608R	**193,-**
1 g–50 g	963-215	**960,-**	962-215R	**340,-**	962-315R	**149,-**	962-415R	**78,-**	962-615R	**48,-**
1 g–100 g	963-216	**1050,-**	962-216R	**370,-**	962-316R	**178,-**	962-416R	**89,-**	962-616R	**57,-**
1 g–200 g	963-217	**1280,-**	962-217R	**445,-**	962-317R	**235,-**	962-417R	**113,-**	962-617R	**70,-**
1 g–500 g	963-218	**1390,-**	962-218R	**490,-**	962-318R	**270,-**	962-418R	**126,-**	962-618R	**79,-**
1 g–1 kg	963-219	**1520,-**	962-219R	**520,-**	962-319R	**300,-**	962-419R	**138,-**	962-619R	**85,-**
1 g–2 kg	963-220	**2130,-**	962-220R	**600,-**	962-320R	**370,-**	962-420R	**174,-**	962-620R	**103,-**
1 g–5 kg	963-221	**2500,-**	962-221R	**620,-**	962-321R	**415,-**	962-421R	**192,-**	962-621R	**111,-**
1 g–10 kg	963-222	**2910,-**	962-222R	**670,-**	962-322R	**450,-**	962-422R	**210,-**	962-622R	**120,-**

Additional costs for preparation, overhaul and adjustment before the calibration	**KERN**	**Price** excl. of VAT ex works **€**
Preparation of weights (e.g. cleaning, etc.)		
Single weight	969-001R	**5,-**
Weight set	969-002R	**20,-**
Subsequent services are carried out after confirmation		
Continued overhaul of weights (e.g. wet-cleaning, markings, repair, special packaging, adjustment E1 (DAkkS only), E2 ...)	969-005R	**T & M basis**
Adjustment, per weight only available for weights with adjustment chamber (F1–M3)	969-010R	**15,-**
Second calibration after adjustment or substitution, per weight		
Class E1	969-210R	**63,-**
Class E1 incl. volume determination	969-211R	**230,-**
Class E2	969-310R	**30,-**
Class F1/F2	969-410R	**20,-**
Class M1–M3	969-610R	**16,-**
Testing of magnetic properties according to OIML R111:2004, per weight	961-115(R)	**15,-**
Calibration of NON-OIML test weights, additional price per weight	–	**8,-**

KERN DAkkS Express Service

DAkkS standard service Class E2–M3	4 working days
DAkkS standard service Class E1, 1 mg–500 mg, and recalibration 1 g–10 kg with a known volume	10 working days
Class E1, ≥ 1 g, incl. volume determination (new weights)	15 working days

DAkkS Express service in 48 hours except for class E1

- Urgent order is received at KERN by 12:00 noon at the latest
- Ready for shipping at KERN within two working days, at 12:00 noon
- Return by standard parcel service or express shipping (Costs and processing time on request)
- Additional cost for DAkkS Express Service, for each KERN test weight KERN KERN 962-115 **€ 21,–**
- For Express shipping, see page 214

Verification prices for test weights and (crane) scales

Class acc. → OIML R111:2004	E2 with verification certificate		F1 with verification certificate		M1 with verification certificate	
Nominal value ↓	**KERN**	**Price** excl. of VAT ex works **€**	**KERN**	**Price** excl. of VAT ex works **€**	**KERN**	**Price** excl. of VAT ex works **€**
1 mg	952-351	**51,-**	952-451	**44,-**	952-651	**30,-**
2 mg	952-352	**51,-**	952-452	**44,-**	952-652	**30,-**
5 mg	952-353	**51,-**	952-453	**44,-**	952-653	**30,-**
10 mg	952-354	**51,-**	952-454	**44,-**	952-654	**30,-**
20 mg	952-355	**51,-**	952-455	**44,-**	952-655	**30,-**
50 mg	952-356	**51,-**	952-456	**44,-**	952-656	**30,-**
100 mg	952-357	**51,-**	952-457	**44,-**	952-657	**30,-**
200 mg	952-358	**51,-**	952-458	**44,-**	952-658	**30,-**
500 mg	952-359	**51,-**	952-459	**44,-**	952-659	**30,-**
1 g	952-331	**51,-**	952-431	**44,-**	952-631	**30,-**
2 g	952-332	**51,-**	952-432	**44,-**	952-632	**30,-**
5 g	952-333	**51,-**	952-433	**44,-**	952-633	**30,-**
10 g	952-334	**51,-**	952-434	**44,-**	952-634	**30,-**
20 g	952-335	**51,-**	952-435	**44,-**	952-635	**30,-**
50 g	952-336	**51,-**	952-436	**44,-**	952-636	**30,-**
100 g	952-337	**57,-**	952-437	**44,-**	952-637	**30,-**
200 g	952-338	**57,-**	952-438	**46,-**	952-638	**30,-**
500 g	952-339	**57,-**	952-439	**46,-**	952-639	**30,-**
1 kg	952-341	**57,-**	952-441	**46,-**	952-641	**30,-**
2 kg	952-342	**65,-**	952-442	**51,-**	952-642	**32,-**
5 kg	952-343	**65,-**	952-443	**51,-**	952-643	**32,-**
10 kg	952-344	**65,-**	952-444	**51,-**	952-644	**40,-**
20 kg	952-345	**75,-**	952-445	**53,-**	952-645	**46,-**
50 kg	-	-	952-446	**64,-**	952-646	**48,-**
1 mg–500 mg	952-350	**255,-**	952-450	**134,-**	952-650	**84,-**
1 mg–50 g	952-301	**420,-**	952-401	**220,-**	952-601	**140,-**
1 mg–100 g	952-302	**455,-**	952-402	**240,-**	952-602	**149,-**
1 mg–200 g	952-303	**510,-**	952-403	**265,-**	952-603	**166,-**
1 mg–500 g	952-304	**550,-**	952-404	**275,-**	952-604	**174,-**
1 mg–1 kg	952-305	**570,-**	952-405	**290,-**	952-605	**183,-**
1 mg–2 kg	952-306	**660,-**	952-406	**330,-**	952-606	**200,-**
1 mg–5 kg	952-307	**710,-**	952-407	**355,-**	952-607	**215,-**
1 mg–10 kg	952-308	**750,-**	952-408	**380,-**	952-608	**220,-**
1 g–50 g	952-315	**168,-**	952-415	**97,-**	952-615	**64,-**
1 g–100 g	952-316	**200,-**	952-416	**103,-**	952-616	**68,-**
1 g–200 g	952-317	**260,-**	952-417	**131,-**	952-617	**81,-**
1 g–500 g	952-318	**300,-**	952-418	**145,-**	952-618	**90,-**
1 g–1 kg	952-319	**325,-**	952-419	**159,-**	952-619	**99,-**
1 g–2 kg	952-320	**405,-**	952-420	**200,-**	952-620	**118,-**
1 g–5 kg	952-321	**450,-**	952-421	**220,-**	952-621	**129,-**
1 g–10 kg	952-322	**495,-**	952-422	**245,-**	952-622	**138,-**

KERN verification delivery time

Standard verification service Class E2–M1	6 working days

Additional costs for preparation, overhaul and adjustment before the verification	**KERN**	**Price** excl. of VAT ex works **€**
Preparation of weights (e.g. cleaning, etc.)		
Single weight	969-008R	**5,-**
Weight set	969-009R	**19,-**
Subsequent services are carried out after confirmation		
Continued overhaul of weights (e.g. wet-cleaning, markings, repair, special packaging, adjustment E2 ...)	969-005R	**T & M basis**
Adjustment, per weight only available for weights with adjustment chamber (F1/F2 – M1)	969-010R	**15,-**
Verification after adjustment or substitution, per weight		
Class E2	969-310R	**30,-**
Class F1/F2	969-410R	**20,-**
Class M1	969-610R	**16,-**

Verification prices for balances	**Reverification KERN**	**Price** excl. of VAT ex works **€**
Accuracy class I (precision balances) [1]		
[Max] ≤ 5 kg [1]	950-101R	**225,-**
[Max] > 5 kg [1]	950-102R	**290,-**
Accuracy class II (precision balances) [1]		
[Max] ≤ 5 kg [1]	950-116R	**114,-**
[Max] > 5 kg – 50 kg [1]	950-117R	**139,-**
[Max] > 50 kg – 350 kg [1]	950-118R	**215,-**
Accuracy class III-IV [1]		
Bench scales and industrial scales (excl. crane scales)		
[Max] ≤ 5 kg [1]	950-127R	**109,-**
[Max] > 5 kg – 50 kg [1]	950-128R	**109,-**
[Max] > 50 kg – 350 kg [1]	950-129R	**175,-**
[Max] > 350 kg – 1500 kg [1]	950-130R	**255,-**
[Max] > 1500 kg – 2900 kg [1]	950-131R	**355,-**
[Max] > 2900 kg – 6000 kg [1]	950-132R	**550,-**
Crane scales		
[Max] > 50 kg – 350 kg [1]	950-129HR	**190,-**
[Max] > 350 kg – 1500 kg [1]	950-130HR	**315,-**
[Max] > 1500 kg – 2900 kg [1]	950-131HR	**455,-**
[Max] > 2900 kg – 6000 kg [1]	950-132HR	**690,-**
[Max] > 6000 kg – 12000 kg [1]	950-133HR	**1100,-**

[1] Processing time 4 working days, [2] Processing time 15 working days, [1)2)] Preparation of reverification of balances, 969-006R, **€ 24,-**

Accredited calibration with DAkkS calibration certificate for force gauges

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

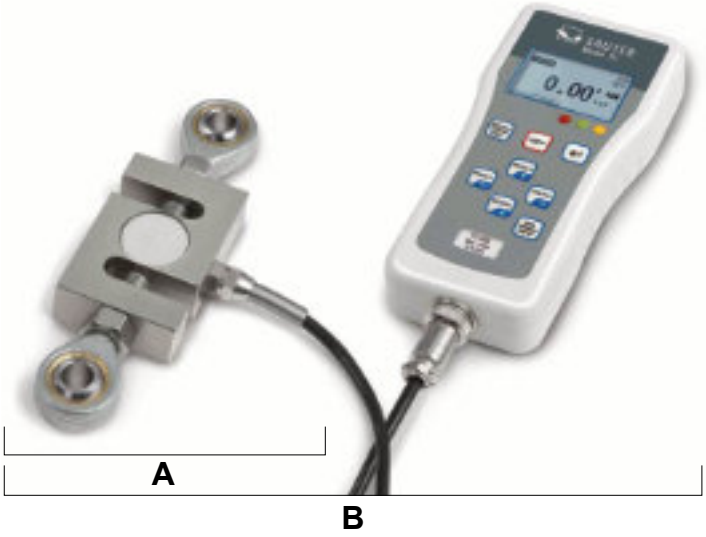
From the transducer to the full measuring chain, we are happy to take care of traceable calibration of your test equipment for you. Our accreditation includes the calibration of tensile and pressure force up to 5 kN according to the standards DIN EN ISO 376 and DKD-R3-3, each with the Newton (N) display 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-R3-3

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

We can offer you a calibration solution for the following situations:



Situation A:

Separate force transducer,
display unit mV/V

Situation B:

Complete force gauge (N),
consisting of transducer,
amplifier and display,
display unit N

▸See also tables, right side

You can find further information on this topic at: **www.kern-lab.com**

DAkkS Calibration certificate for force-measuring devices (extract).

Prices for DAkkS calibration of force gauges and force transducers

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

	ISO 376 (8 stages)			DKD-R3-3 (5 stages, sequence A)	
KERN	**Measuring range**	**Price €** ex works excl. of VAT	**KERN**	**Measuring range**	**Price €** ex works excl. of VAT
Tensile force:					
963-161IV (R)	≤ 500 N	**225,-**	963-161V (R)	≤ 500 N	**210,-**
963-162IV (R)	≤ 2 kN	**270,-**	963-162V (R)	≤ 2 kN	**250,-**
963-163IV (R)	≤ 5 kN	**350,-**	963-163V (R)	≤ 5 kN	**325,-**
Compression force:					
963-261IV (R)	≤ 500 N	**225,-**	963-261V (R)	≤ 500 N	**210,-**
963-262IV (R)	≤ 2 kN	**270,-**	963-262V (R)	≤ 2 kN	**250,-**
963-263IV (R)	≤ 5 kN	**350,-**	963-263V (R)	≤ 5 kN	**325,-**
Tensile and Compression force:					
963-361IV (R)	≤ 500 N	**375,-**	963-361V (R)	≤ 500 N	**350,-**
963-362IV (R)	≤ 2 kN	**450,-**	963-362V (R)	≤ 2 kN	**420,-**
963-363IV (R)	≤ 5 kN	**600,-**	963-363V (R)	≤ 5 kN	**550,-**

Situation B: Complete force gauge (in N)*2

	ISO 376 (8 stages)			DKD-R3-3 (5 stages, sequence A)	
KERN	**Measuring range**	**Price €** ex works excl. of VAT	**KERN**	**Measuring range**	**Price €** ex works excl. of VAT
Tensile force:					
963-161I (R)	≤ 500 N	**186,-**	963-161 (R)	≤ 500 N	**168,-**
963-162I (R)	≤ 2 kN	**225,-**	963-162 (R)	≤ 2 kN	**205,-**
963-163I (R)	≤ 5 kN	**310,-**	963-163 (R)	≤ 5 kN	**285,-**
Compression force:					
963-261I (R)	≤ 500 N	**186,-**	963-261 (R)	≤ 500 N	**168,-**
963-262I (R)	≤ 2 kN	**225,-**	963-262 (R)	≤ 2 kN	**205,-**
963-263I (R)	≤ 5 kN	**310,-**	963-263 (R)	≤ 5 kN	**285,-**
Tensile and Compression force:					
963-361I (R)	≤ 500 N	**335,-**	963-361 (R)	≤ 500 N	**305,-**
963-362I (R)	≤ 2 kN	**415,-**	963-362 (R)	≤ 2 kN	**375,-**
963-363I (R)	≤ 5 kN	**560,-**	963-363 (R)	≤ 5 kN	**500,-**

Factory calibration for force

Situation A: Force transducer (voltage ratio, in mV/V)*1,2 **Situation B: Complete force gauge (in N)*2**

KERN	Measuring range	Price € ex works excl. of VAT	KERN	Measuring range	Price € ex works excl. of VAT
Tensile force:					
961-161V (R)	≤ 500 N	**210,-**	961-161 (R)	≤ 500 N	**168,-**
961-162V (R)	≤ 2 kN	**250,-**	961-162 (R)	≤ 2 kN	**205,-**
961-163V (R)	≤ 5 kN	**325,-**	961-163 (R)	≤ 5 kN	**285,-**
961-164V (R)	≤ 20 kN	**415,-**	961-164 (R)	≤ 20 kN	**370,-**
961-165V (R)	≤ 50 kN	**415,-**	961-165 (R)	≤ 50 kN	**370,-**
961-166V (R)	≤ 250 kN	**445,-**	961-166 (R)	≤ 120 kN	**410,-**
Compression force:					
961-261V (R)	≤ 500 N	**210,-**	961-261 (R)	≤ 500 N	**168,-**
961-262V (R)	≤ 2 kN	**250,-**	961-262 (R)	≤ 2 kN	**205,-**
961-263V (R)	≤ 5 kN	**325,-**	961-263 (R)	≤ 5 kN	**285,-**
961-264V (R)	≤ 20 kN	**415,-**	961-264 (R)	≤ 20 kN	**370,-**
961-265V (R)	≤ 50 kN	**415,-**	961-265 (R)	≤ 50 kN	**370,-**
961-266V (R)	≤ 250 kN	**445,-**	961-266 (R)	≤ 120 kN	**410,-**
Tensile and Compression force:					
961-361V (R)	≤ 500 N	**350,-**	961-361 (R)	≤ 500 N	**305,-**
961-362V (R)	≤ 2 kN	**420,-**	961-362 (R)	≤ 2 kN	**375,-**
961-363V (R)	≤ 5 kN	**550,-**	961-363 (R)	≤ 5 kN	**500,-**
961-364V (R)	≤ 20 kN	**590,-**	961-364 (R)	≤ 20 kN	**550,-**
961-365V (R)	≤ 50 kN	**590,-**	961-365 (R)	≤ 50 kN	**550,-**
961-366V (R)	≤ 250 kN	**650,-**	961-366 (R)	≤ 120 kN	**600,-**

(R): Recalibration

For each force gauge without interface or from other manufacturers we charge a surcharge of € 10,- for the additional effort.

*1 Compatibility with our amplifiers required

*2 Installation in our measuring equipment required

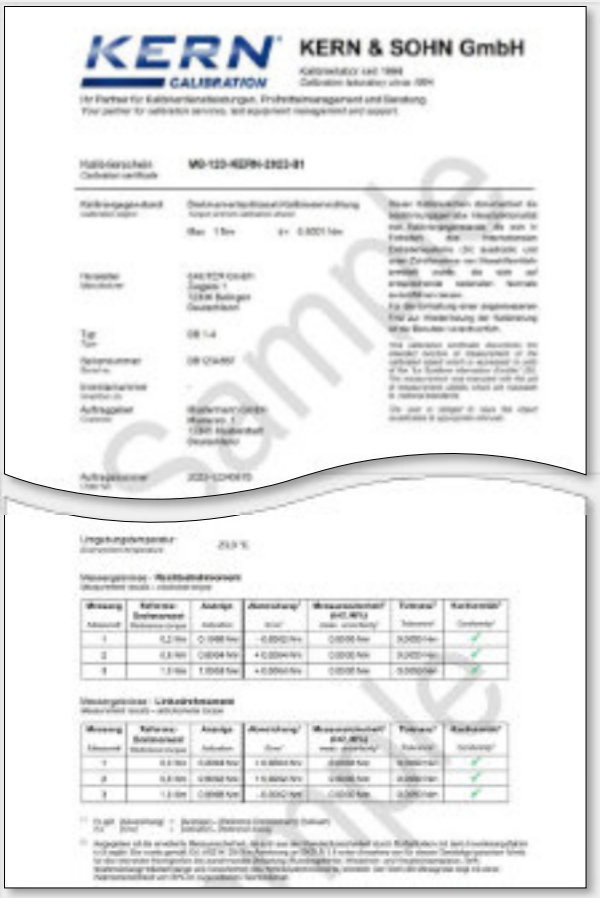
Factory calibration certificates

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. These calibration certificates meet international standards and are particularly suitable as proof of exacting calibration in the monitoring of your checking equipment, for example:

- Mechanical balances (spring balances, etc.)
- Force-measuring devices up to 250 kN (see also page 221)
- 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.

For up-to-date information on test services for further measuring variables please see p. 221 or visit our website www.kern-lab.com



Factory calibration certificate for torque wrench test devices
(extract from the factory calibration certificate)
Further details on the internet at www.kern-lab.com

KERN	Measuring device	Measuring range	Price excl. of VAT ex works €
Factory calibration			
961-110	Coating thickness	≤ 2000 µm F or N	**150,–**
961-112	Coating thickness	≤ 2000 µm FN	**210,–**
961-113	Wall thickness (ultra sound)	≤ 300 mm (in stainless steel)	**150,–**
961-114	Wall thickness (Test blocks)	≤ 300 mm	**187,–**
961-170	Hardness comparison plate (Shore)	For sets up to 7 plates	**119,–**
961-131	Hardness tester (Leeb)	400 – 800 HLD	**150,–**
961-132	Hardness comparison plate (Leeb)	Hardness comparison plate (for Leeb durometer)	**150,–**
961-270	Hardness (UCI)	200 - 800 HV	**325,–**
961-150	Length	≤ 300 mm	**150,–**
961-190	Light	≤ 200000 lx	**205,–**
961-100	Mechanical balances/ spring balances	≤ 5 kg	**89,–**
961-101	Mechanical balances/ spring balances	> 5 – 50 kg	**110,–**
961-102	Mechanical balances/ spring balances	> 50 – 350 kg	**131,–**
961-103	Mechanical balances/ spring balances	> 350 – 1500 kg	**205,–**
961-102K	Digital dynamometer KERN MAP	≤ 130 kg	**150,–**
961-120 (R)	Torque wrench test devices	1 Nm - 200 Nm	**210,-**
964-305	Temperature calibration for moisture analyzer*		**174,-**
Additional services			
962-116	Express service with 48 hour delivery		**52,–**/ instrument

(R): Recalibration
For each force gauge without interface or from other manufacturers we charge a surcharge of € 10,- for the additional effort.

*Calibration available for the following models:
DAB 100-3, DAB 200-2, DBS-60-3, DLB 160-3A, MLS 150-2A, MLS 65-3A, MLB 50-3N, MLB 50-3C, MLB 50-3, DLT 100-3N, MLS 50-3D, MLS 50-3C

A

Accuracy classes for test weights

E, F, M ▸***Error limit classes***

Adjusting of measurement equipment

Precise setting of a measurement value via a professional intervention in the measurement system.

Adjusting the weighing range of a balance

Either with the external test weight via the **adjusting program CAL**, or with the **internal automatic adjustment** resp. **adjusting switch**. It is necessary with variations in temperature, a change of environmental conditions, change of location, etc.
Recommended as a daily check routine.

Alibi memory

For weighings where verification is mandatory, and which are to be analysed and processed by a PC (e.g. printing out a packing list using a PC instead of a printer connected directly to the balance) electronic archiving is required by the metrological authorities by a verifiable data memory which cannot be manipulated. Alibi memories from KERN fulfil this requirement. They are for paperless archiving of weighing results. For KERN products the alibi memory is fitted inside the balance, right between where the weight is determined and the output to the PC.
All data transferred to the PC is stored with date, time and all important weights for at least three months. These stored data strings can be displayed on the balance at any time. The data in the alibi memory can be deleted, but not changed.

Application accuracy

Allowance for measuring uncertainty during practical use of a balance. Is given in the appendix to the DKD calibration certificate.

ATEX

Derived from **AT**mosphère **EX**plosibles. (explosive atmosphere). A synonym for EU guidelines, which controls the quality and use of equipment in hazardous industrial environments, where there is explosion danger, e.g. by handling of flammable substances, which are present in high concentrations in the form of gas, mist, vapour or dust. Therefore see also directives 2014/34/EU as well as 1999/92/EU.

B

Balances which are verified/not approved for verification

Metrologically almost identical. For verified balances certain details are regulated by law, e.g. software changes and additional markings.

C

CAL

Adjusting the balance is triggered with an external test weight by using the CAL key on the key pad or on the touch display of the display device or the CAL menu option. This will guarantee the consistent high accuracy of the balance.

Calibration of measurement equipment

Determination of the precision of a measurement value without intervention in the measurement system. Example: to check a balance you load a ▸***test weight*** upon it. The term "Calibrating" was formerly also used for ▸***Adjusting***.

Calibration Certificate DKD/DAkkS

See product group 18 "Calibration service"

Calibration or verification

DAkkS-Calibration is possible for every balance in perfect condition. DAkkS calibration (DKD) is a private service monitored by the state for ensuring high quality requirements according to ISO 9000ff and others, e.g. in production or research. **Verifying (conformity assessment)** is only possible for type-approved balances marked with the green **M** ▸***Verification***

Commercial error limit

Permitted tolerance (plus and minus) of measuring devices where verification is mandatory when used within their verification validity period. This tolerance is double the permissible error limit, in so far as this is not specified otherwise in the Weights and Measures Act).

Conformity assessment

Procedure for confirming warranted characteristics in accordance with recognised rules. For balances this relates to verification.

Conformity declaration from the manufacturer

The manufacturer declares that the product fulfils the applicable EU directives. With electronic balances this is always in conjunction with the CE mark.

Control of measuring equipment in the QM system in conjunction with quality standards

An organisation certified to a quality standard such as DIN EN ISO 9001 ff. e.g. a production plant is obliged to adhere to a defined quality standard within the framework of its quality management system. To do this, it is imperative to have a measurement equipment which is working accurately. Chapter 7.1.5 "Resources for monitoring and measuring" of DIN EN ISO 9001:2015-11 states that measuring equipment must be calibrated at defined intervals and before use. The measurement devices and measurement standards needed to do this must:

- be traced back to international or national standards.
  (▸***Traceability to the National Standard***)
- their uncertainty of measurement must be known - they must be marked with a clear identification
- the test must be documented

The ▸***DAkkS calibration (DKD)*** fulfils all these requirements.

Conventional mass of weights

The problem is the air movement, which makes the weight appear lighter. In order to avoid this "distortion" in daily use, all weights are adjusted to the unit specifications given in R111, e.g. it is accepted that: material density of the weights is 8000 kg/m³, air density is 1.2 kg/m³ and measuring temperature is 20°C.

Counting resolution

The counting resolution is calculated in points from the ratio of the weighing range [Max] divided by the smallest part weight. It is a statement of counting accuracy.

D

DAkkS = German accreditation authority

▸***Calibration Certificate DKD/DAkkS***
See product group 18 "Calibration service"

Data interface

To connect the balance to a printer, PC, network or a second balance. Typical interfaces are, for example, RS-232, RS-485, USB, Bluetooth, LAN, Digital I/O, DUAL, LAN etc. The interface parameters can be set using the balance. The interfaces available are stated in the model description.

Density determination

One of the main areas of application for laboratory balances is determining densities, e.g. determining the specific weight of liquids and solids. To do this you will need a highly accurate precision or analytical balance and a density set. It is particularly convenient if the balance can calculate and display the density right away.
It has become apparent that by means of weigting when in the process of determining the density of liquids and solids according to the buoyancy method particularly accurate results can be obtained (Archimedes' principle).

a) Density determination of liquids: By means of measuring the buoyancy with a glass plummet with known volume immersed in the liquid to be measured
b) Density determination of solid bodies:

$$\rho = \frac{A}{A-B} \cdot \rho_0$$

ρ = Density of sample
A = Weight of sample in air
B = Weight of sample in auxiliary liquid
ρ_0 = Density of the auxiliary liquid

Applications:
a) Pre-packaged goods control, whenever a product is sold according to its volume [cm³]. This volume is calculated with weight [g] : density [g/cm³].
b) Materials analysis

DMS = Strain gauge

An electrical resistor strip that is glued to an elastic deforming body made of aluminium. As the strain gauge is mechanically deformed its resistance value changes, allowing the measured value to be calculated.

Draught shield

Required for balances with ▸***Readout*** d ≤ 1 mg, to avoid disturbing air movements.

Dual-range balance

As the load increases, the balance switches automatically to the next largest range, for both, weighing range [Max] as well as readout [d].

E

Error limit classes for test weights according to EU directive OIML R111

For further details, see product group 17 "Test weights"

F

FACTORY

These options can only be carried out at KERN factory.

FORCE= Electromagnetic force compensation

A counterforce is created by means of a coil in a permanent magnet. This counterforce is the same as the load of the weight being measured on the scale and therefore equalising. The measured value is calculated via the change in the coil current.

G

GLP= Good Laboratory Practice

▸***ISO/ GLP***

Gravitational acceleration

▸***Gravitational force***

Gravitational force

very important influence for precise electronic balances. Due to the varying influence balances have to be ▸***adjusted at the location of use***.

H

HACCP

= Hazard Analysis and Critical Control Points (HACCP) The HACCP concept is a preventative system, which is designed to guarantee the safety of foodstuffs EC regulation 852/2004 mandates the use of the HACCP concept for all companies which are involved in production, processing and sales of foodstuffs.

ISO 9000ff/DIN EN ISO 9000ff

Quality Management System in the form of a DIN Norm for quality assurance in a factory.

ISO calibration/ISO certificate = factory calibration certificate

Testing measurement devices for accuracy in accordance with a procedure which is recognised, but not accredited.

ISO/GLP record keeping

Quality Assurance Systems demands record keeping of weighing results and correct adjusting of the balance, giving details of date, time and balance identification. The easiest way to obtain this documentation is by means of a connected printer.

J

Junction Box

For connection and simple corner adjustment of several load cells.

K

KCP

KCP is an universal communication protocol between laboratory balances, industrial scales or other measuring instruments and digital devices, such as a computer, server or process management system. Due to the universal protocol structure, one measuring instrument can be replaced by another without adapting the communication interface.

L

Linearity/Precision

Greatest deviation of the weight displayed of a balance with regard to the value of the respective test weight in terms of plus and minus across the whole weighing range.

M

Minimum load [Min]

Lower limit of the verifiable weighing range. Is marked on the verification mark. The function of the balance is also given below the minimum load.

Minimum sample weight

Indicates the smallest weight which can be determined, depending on the process accuracy required.

Multi-division balance / Multi-range balance

On multi-division balances, the weighing range is subdivided several times, each with a different readability. The readability [d] changes automatically with increasing and decreasing load. Multi-rasnge balances have several weighing ranges with different maximum loads and different numerical increments. Switching takes effect automatically when the load increases; switching back to the lower weighing range only takes effect when the scale has been completely unloaded.

N

Newton

Newton (N) is the unit for physical force values. A Newton is the force required to accelerate a 1 kg mass at rest to a speed of 1 m/s within one second.

Notified body

Neutral and independent, predominantly government bodies, which are formally appointed by the EC. They are engaged in the field of verification for conformity evaluations (initial verification) and type-approval test within the scope of type approvals.

O

Optimisation of reference weight (when piece counting)

See product group 9 "Counting balances/ Counting systems".

P

Percentage determination

Example: Reference weight prior to drying: 50g = balance display 100%. After drying 40g = balance display 80% absolute (dry mass) or 20% relative (humidity).

Permissible ambient temperature

Measuring errors are possible if you use the balances outside the permitted specified ambient temperature range.
With verified balances this is stated on the identification plate.

PLU (Price Look Up)

This refers to a data memory in price-computing retail scales for the base price of sales items.

Pre-packaging legislation (FPVO)

Ensures that pre-packed goods are filled correctly, for example, in food industry. The Weights and Measures Act governs the permissible weight and volume tolerances.

PRE-TARE

Entering and saving a tare weight (e.g. container weight) through weighing or manual entry using the balance keypad before the actual weighing process. When you subsequently place the tare container on the balance, the balance will show zero immediately – saves time. Particularly useful e.g. for checking fill levels

Proof of compatibility

This documents the verification compatibility for combinations of weighing modules such as display devices, load cells and connecting elements.

R

Readout [d]

Smallest readable weight increment on a digital display.

Recalibration

Periodic checking of the precision of measurement equipment/checking equipment (e.g. balances/weights) to control accuracy, ▸***Control of measurement equipment***

Reference weight (when piece counting)

See product group 9 “Counting balances/ Counting systems”.

Reproducibility (standard deviation)

Sequenced measure of conformity in repeated weighing (e.g. balances) subject to the same conditions. Mostly 1 [d] or less. Quality feature.

Resolution of a balance

The resolution is calculated from the weighing range [Max] divided by the readout [d], e. g. [Max] 420 g : [d] 0.001 g = 420,000 points. The resolution is a quality feature – the higher, the better.

S

SC-TECH= Single-Cell-Technology

▸***FORCE***. The load cell consists of a single aluminium block, which gives a very high measurement quality.

Semi-micro balance

Analytical balance with a readout [d] = 0,01 mg

Smallest part weight when counting

The smallest piece weight, which a balance can accept for piece counting. For the relevant model, enter “g/piece” in the product data table.

T

T-FORK= Tuning fork principle

A resonating body (like a tuning fork) is electromagnetically excited, causing it to oscillate. The measured value is calculated via the change in frequency corresponding to the load of the weight being measured on the scale.

Taring, automatic

▸***PRE-TARE***

Taring, subtractive

The available weighing range of a balance is reduced by the value of the tare load. Example: weighing range of a balance Max 6000g, Tare (= container) 470g, available weighing range 5530g.

Test weight, external (previously calibration weight)

For adjusting or checking the balance accuracy ▸***Adjusting the weighing range***. The external test weight can be DAkkS calibrated at any time, even afterwards, see product group 18 “Calibration Service”.

Test weight, internal

Like test weight external, but installed in the balance and powered.

Totalising

Various individual weighings are added automatically to aggregate, e.g. all individual weighings of a batch.

Traceability to the National Standard

A pre-requisite for every perfect measurement is the validated comprehensive proof that the measuring equipment can be traced back to the international or national standards. In Germany the statutory binding standards are available from the PTB.

Type approval for balances

Strict process to test whether a balance fulfils the verification requirements. A balance can only be verified, if it has got a type approval from a ▸***notified body.***

U

Uncertainty of measurement of a balance (= standard deviation)

Determined for each balance according to a precisely given test method and documented in the ▸***Calibration certificate***. It depends on various factors, both, internal and external. Uncertainty of measurement increases by a rising charge of the balance, see product group 18 “Calibration Service”

V

Verification

Verification, in accordance with the new terminology “Conformity assessment”. Only balances with ▸***EC type approval*** can be evaluated for conformity. These balances have an identification plate with the metrology marking **M**. The state requires assessment for conformity and this assessment serves as consumer protection. According to EU directive 2014/31/EEC balances must be officially assessed for conformity (calibrated) if they are used as follows:

a) in commercial trade when the price of a commodity is determined by weighing.
b) in the manufacture of pharmaceuticals in pharmacies and analysis in pharmaceutical and medical laboratories.
c) for official purposes.
d) in the production of prepackaging.
e) in medical applications.

Every balance is tested by KERN and marked with a conformity mark. Its accuracy within the framework of permissible tolerances is thereby confirmed. EU verification applies to all member states of the EU.

Verification classes of balances

Class I – Analytical balance (precision balance),
Class II – precision balance,
Class III – industrial scale (commercial scale).

Verification of a balance with adjusting program CAL EXT

The adjusting program is sealed with an official mark after the verification. Thus the verification is only valid for the specific location of use. ▸***Gravitational force***
To be able to correctly adjust the balance to your location of use, it is necessary to advise the location of use and postcode. See individual model details for the information as to whether verification can be carried out in the factory or at the location of use.

Verification of a balance with automatic internal adjusting CAL INT

The above restrictions in respect of the location of use do not apply, because the automatic internal adjusting works also after verification, therefore it is not sealed. In this case, verification does not depend on the location.

Verification validity for balances

Generally 2 years for all verification classes, for control balances generally 1 year, after expiry the balance has to be re-verified.

Verification value [e]

Measure of the verification tolerance, depending on balance, mostly between 1 [d] and 10 [d] ▸***Readout***

W

Weighing range [Max]

is the working range of the balance. The balance can be loaded up to the specified upper limit.