

SPECIAL EQUIPMENT: SCALES TO MEET PRE-PACKAGING LEGISLATION/ATEX SCALES



2017

PROFESSIONAL
MEASURING

KERN Pictograms

	Internal adjusting: Quick setting up of the balance's accuracy with internal adjusting weight (motordriven).		Piece counting: Reference quantities selectable. Display can be switched from piece to weight.		Rechargeable battery pack: Rechargeable set.
	Adjusting program CAL: For quick setting up of the balance's accuracy. External adjusting weight required.		Recipe level A: Separate memory for the weight of the tare container and the recipe ingredients (net total).		Universal mains adapter: with universal input and optional input socket adapters for A) EU, GB B) EU, GB, CH, USA C) EU, GB, CH, USA, AUS
	Memory: Balance memory capacity, e.g. for article data, weighing data, tare weights, PLU etc.		Recipe level B: Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display.		Mains adapter: 230V/50Hz in standard version for EU. On request GB, USA or AUS version available.
	Alibi memory: Electronic archiving of weighing results, complying with the 2009/23/EC standard. For details see page 199		Recipe level C: Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display, multiplier function, adjustment of recipe when dosages are exceeded or barcode recognition.		Power supply: Integrated in balance. 230V/50Hz standard EU. More standards e.g. GB, USA or AUS on request.
	Data interface RS-232: To connect the balance to a printer, PC or network.		Totalising level A: The weights of similar items can be added together and the total can be printed out.		Weighing principle: Strain gauges Electrical resistor on an elastic deforming body.
	RS-485 data interface: To connect the balance to a printer, PC or other peripherals. High tolerance against electromagnetic disturbance.		Percentage determination: Determining the deviation in % from the target value (100 %).		Weighing principle: Tuning fork A resonating body is electromagnetically excited, causing it to oscillate.
	USB data interface: To connect the balance to a printer, PC or other peripherals.		Weighing units: Can be switched to e.g. nonmetric units at the touch of a key. See balance model. Please refer to KERN's website for more details.		Weighing principle: Electromagnetic force compensation Coil inside a permanent magnet. For the most accurate weighings.
	Bluetooth* data interface: To transfer data from the balance to a printer, PC or other peripherals.		Weighing with tolerance range: Upper and lower limiting values can be programmed individually for e.g. dosing, sorting and portioning		Weighing principle: Single cell technology Advanced version of the force compensation principle with the highest level of precision.
	WLAN data interface: To transfer data from the balance to a printer, PC or other peripherals.		Hold function: (Animal weighing program) When the weighing conditions are unstable, a stable weight is calculated as an average value.		Verification possible: The time required for verification is specified in the pictogram.
	Control outputs (optocoupler, digital I/O): To connect relays, signal lamps, valves, etc.		Protection against dust and water splashes IPxx: The type of protection is shown in the pictogram. For details see page 56.		DAKkS calibration possible (DKD): The time required for DAKkS calibration is shown in days in the pictogram.
	Interface for second balance: For direct connection of a second balance.		ATEX explosion protection: Suitable for use in hazardous industrial environments, in which there is explosion danger. The ATEX marking is specified for each device.		Package shipment: The time required for internal shipping preparations is shown in days in the pictogram.
	Network interface: For connecting the scale to an Ethernet network. With KERN products you can use a universal RS-232/LAN converter. See page 166		Stainless steel: The balance is protected against corrosion.		Pallet shipment: The time required for internal shipping preparations is shown in days in the pictogram.
	Wireless data transfer: between the weighing unit and the evaluation unit using an integrated radio module.		Suspended weighing: Load support with hook on the underside of the balance.		Warranty: The warranty period is shown in the pictogram.
	GLP/ISO log: The balance displays the weight, date and time, regardless of a printer connection.		Battery operation: Ready for battery operation. The battery type is specified for each device.		
	GLP/ISO log: With weight, date and time. Only with KERN printers, see "Accessories", see page 163.				



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, for example, 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.



DAkkS calibration 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 – ordered today, on its way tomorrow
- Sales & service hotline available from 8:00 am to 6:00 pm

reliable


- 3 years warranty for balances over € 400,-
- Precision in weighing technology for more than 170 years


competent

- DAkkS accreditation DIN EN ISO/IEC 17025
- Certified QM system DIN EN ISO 9001:2008
- Authorisation for initial verification by the manufacturer 2014/31/EU
- Medical certifications DIN EN ISO 13485 and 93/42/EEC


versatile


- One-stop shopping: from pocket balances through to floor scales – everything from one supplier
- Find the product you want at lightning speed with the “Balance Quick-Finder” at www.kern-sohn.com


 **Order hotline**
+49 [0] 7433 9933-0


 **Service hotline**
+49 [0] 7433 9933-199


 **Calibration hotline**
+49 [0] 7433 9933-196

 **Our team of consultants will assist you**
from Monday to Friday
from 8:00 am to 6:00 pm

 **Online Shop**
www.kern-sohn.com

 **E-mail order**
info@kern-sohn.com

 **Fax order**
+49 [0] 7433 9933-146

 **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.

Special equipment: Scales to meet Pre-packaging legislation

Pre-packaging legislation (FPVO)

This is anchored in the EC pre-packaging directive 76/211/EEC and serves as consumer protection within the framework of weights and measures laws when selling pre-packaged products commercially. It governs in detail the permitted tolerances (deviations) from the filling quantity stated on the sales label, as well as the quality of the verified balances being used for checking samples.

Pre-packaged products, which are produced and tested in accordance with pre-packaging legislation, carry the e symbol on their label.

Choosing the right verified checkweigher depends, on one hand, on the weighing range required and the largest permitted verification value in relation to the nominal quantity of the pre-packaged goods.

Nominal contents Q_N of the pre-packed goods	largest permitted Verification Value [e]
$\leq 10 \text{ g (ml)}$	0,1 g
from 10 g (ml) to $\leq 50 \text{ g (ml)}$	0,2 g
from 50 g (ml) to $\leq 150 \text{ g (ml)}$	0,5 g
from 150 g (ml) to $\leq 500 \text{ g (ml)}$	1,0 g
from 500 g (ml) to $\leq 2,5 \text{ kg (l)}$	2,0 g
from 2,5 kg (l) and more	5,0 g
from 10 kg (l) to $\leq 15 \text{ kg (l)}$	10 g
from 15 kg (l) to $\leq 25 \text{ kg (l)}$	20 g
from 25 kg (l) to $\leq 100 \text{ kg (l)}$	50 g

Volume values in ml or l are calculated using the weight and density of the liquid.

Order example:

The item to be checked is a pre-packaged product with a filling quantity of 250 g and an average tare value of 100 g. In accordance with the table above, a filling quantity of 250 g requires a checkweigher with a verification value [e] of maximum 1 g.

The right KERN product is either the **KERN FKTF 3K0.5LM** or the **FKTF 6K1LM**

Calibration periods for checkweighers: These are usually 1 year and are therefore shorter than the general re-verification periods in many European countries.



Sample testing of a pre-packaged item with an average tare value, e.g. the relative constant packaging weight is entered as a fixed value



Sample testing of a pre-packaged item with fluctuating packaging weight, such as glass containers, e.g. the tare weight is entered individually for each sample.



Sample testing of a pre-packaged item which is empty (destructive analysis)



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Quick-Finder Scales to meet Pre-packaging legislation

Read-out [d]	Weighing range [Max]	Model KERN	Price excl. of VAT ex works €	Page	DAYS	M	CAL EXT	MEMORY	RS 232	BATT	For an explanation on the pictos, see the front flap					
											1	○	●	●	●	●
0,5 g	3 kg	FKTF 3K0.5LM	1050,-	158	1	○	●	●	●	●	●	●	●	●	●	
1 g	6 kg	FKTF 6K1LM	1050,-	158	1	○	●	●	●	●	●	●	●	●	●	
2 g	12 kg	FKTF 12K2LM	1050,-	158	1	○	●	●	●	●	●	●	●	●	●	
5 g	30 kg	FKTF 30K5LM	1050,-	158	1	○	●	●	●	●	●	●	●	●	●	
10 g	60 kg	FKTF 60K10LM	1050,-	158	1	○	●	●	●	●	●	●	●	●	●	

● = standard ○ = option



Checkweigher with touch screen operation for sampling tests in accordance with certified pre-packaging legislation and controlling fill quantities in the production process

Modes

- ① Weighing
- ② Checkweighing function in accordance with pre-packaging legislation
- ③ Controlling fill quantities

Functions

- Capacity display with ①
- Date/time, with ①, ②, ③
- Tare deduction automatic, with ②
- 400 item memories for master data, such as limit values, tare weights, items, machine, user as well as upper limit (UL), lower limit (LL), lower limit 1 (LL 1) and lower limit 2 (LL 2) ②, ③
- Sample testing in accordance with pre-packaging legislation with average tare value ③
- Sample testing in accordance with pre-packaging legislation with fluctuating tare ③
- Sample testing in accordance with pre-packaging legislation with fluctuating tare ②, ③
- Testing in accordance with pre-packaging legislation with an empty item (destructive analysis) ③
- Daily statistics from 10 sets of measurements ③
- Weekly statistics from 49 sets of measurements ③

Features

- **Touchscreen bench scale** with special software for testing, in accordance with weights and measures regulations, that the permitted error limits (minus deviations) have been observed, in accordance with pre-packaging legislation, and for production control and monitoring when filling pre-packaged items to a target weight
- **The verifiable KERN FKTF** fulfills all the regulations of pre-packaging legislation. It has EC type approval which fulfills verification requirements, and which covers the special software for pre-packing legislation
- **The special software for pre-packaging legislation in the KERN FKTF has two functions:**
 - a) When selling pre-packaged products, filling tolerances are regulated in verification terms, in the interests of consumer

protection. Here the software supports compliance with the verification regulations of the pre-packaging legislation during certified sampling tests using the automatically generated largest permitted negative deviation compared with a given target weight (LL 2)

b) In the area of food stuff production, when setting and adjusting the production facility for filling pre-packaged goods to a target weight, the software will automatically display the lower limit value (LL 1) below which the item is not permitted.

- **Statistical function** in the form of daily or weekly records, also with date/time, machine number and user statement. Graphic display is also possible
- **Password protection** for secure manipulation of data which has been stored and collected

Technical data

- Large backlit LCD touch display, digit height 18 mm, screen diagonal 5,8" (127x74 mm)
- Dimensions weighing surface, stainless steel, WxD 340x240 mm
- Dimensions housing WxDxH 350x390x120 mm
- Optional battery operation, 6x1.5 V Size C not included, operating time up to 15 h
- Net weight approx. 7 kg
- Permissible ambient temperature 10 °C/40 °C

Accessories

- **Protective working cover**, can be re-ordered, scope of delivery: 5 items, KERN FKB-A02S05, € 40,-
- **Matrix needle printer**, to print the weights on normal paper, ideal for long-term archiving, KERN 911-013, € 350,-
- **Suitable printers** see *Accessories*

STANDARD: CAL EXT, MEMORY, RS 232, GLP, INTERN, BATT, MULTI, DMS, 1 DAY WARRANTY, 3 YEARS WARRANTY

OPTION: DAKKS +3 DAYS

FACTORY: M +3 DAYS

Model	Weighing range [Max] kg	Readout [d] g	Verification value [e] g	Minimum load [Min] g	Minimum nominal quantity g	Price excl. of VAT ex works €	Options			
							Verification		DAkkS Calibr. Certificate	
KERN								€		€
FKTF 3K0.5LM	3	0,5	0,5	10	50	1050,-	965-227	55,-	963-127	72,-
FKTF 6K1LM	6	1	1	20	150	1050,-	965-228	55,-	963-128	88,-
FKTF 12K2LM	12	2	2	40	500	1050,-	965-228	55,-	963-128	88,-
FKTF 30K5LM	30	5	5	100	2500	1050,-	965-228	55,-	963-128	88,-
FKTF 60K10LM	60	10	10	200	10000	1050,-	965-229	93,-	963-129	105,-

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.

Special equipment: ATEX scales

ATEX – Safe weighing in potentially explosive atmospheres!

ATEX is derived from the French words for explosive atmosphere (**AT**mosphère **EX**plosible) and is a synonym for EU guidelines, for the quality and the use of equipment in hazardous industrial environments

ATEX balances were developed specifically for those areas where there is explosion danger, e.g. through handling of flammable substances, which are present in high concentrations in the form of gas, mist, vapour or dust.

Typical fields of application are to be found, for example, in the crude oil processing industry, e.g. in all kinds of refineries. But also in the pharmaceutical or chemical industries, where you are processing oils, alcohols or Benzenes, in the manufacture of paints and lacquers, as well as in the cosmetics industry in the manufacture of alcohol-based cosmetics.

Note: Power supply to the ATEX scales is from a power source outside the explosion-proof area.



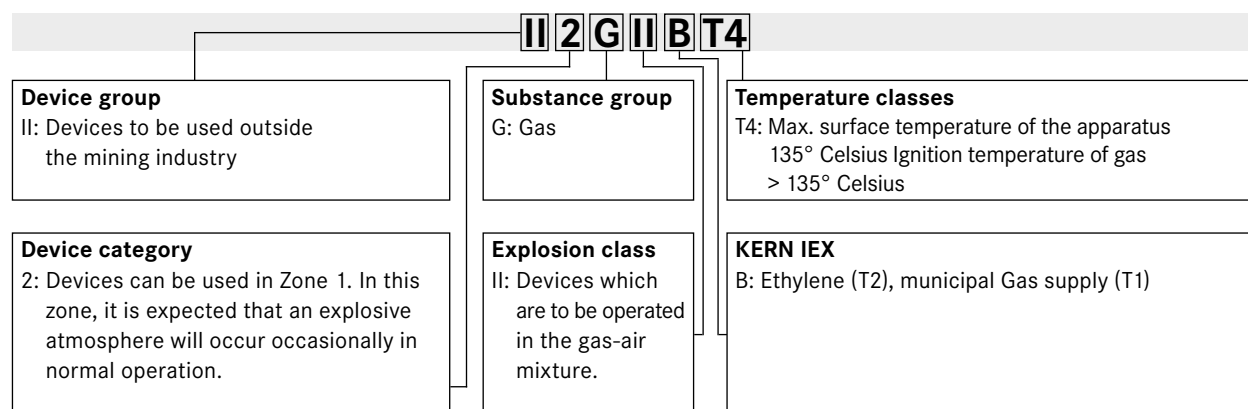
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ATEX balances are divided into different protection classes, depending on the level of danger.

The KERN ATEX balances are permitted for the following protection classes:

Model KERN IEX: **II 2 G II B T4**



Quick-Finder ATEX scales

Read-out [d]	Weighing range [Max]	Model KERN	Price excl. of VAT ex works €	Page	DAYS M CAL EXT PCS TOL IP ATEX INOX	For an explanation on the pictos, see the front flap											
0,2 g	6 kg	IEX 6K-4EU	2200,-	160	21	●	●	●	●	●	●	●	●	●	●		
0,2 g	6 kg	IEX 6K-4UK	2200,-	160	21		●	●	●	●	●	●	●	●	●		
0,5 g	15 kg	IEX 10K-4EU	2200,-	160	21	●	●	●	●	●	●	●	●	●	●		
0,5 g	15 kg	IEX 10K-4UK	2200,-	160	21		●	●	●	●	●	●	●	●	●		
1 g	30 kg	IEX 30K-3EU	2500,-	160	21	●	●	●	●	●	●	●	●	●	●		
1 g	30 kg	IEX 30K-3UK	2500,-	160	21		●	●	●	●	●	●	●	●	●		
2 g	6 kg	IEX 6K-3MEU	1950,-	160	21	○	●	●	●	●	●	●	●	●	●		
2 g	6 kg	IEX 6K-3MUK	2150,-	160	21	○	●	●	●	●	●	●	●	●	●		
2 g	60 kg	IEX 60K-3EU	2500,-	160	21		●	●	●	●	●	●	●	●	●		
2 g	60 kg	IEX 60K-3UK	2500,-	160	21		●	●	●	●	●	●	●	●	●		
5 g	15 kg	IEX 10K-3MEU	1950,-	160	21	○	●	●	●	●	●	●	●	●	●		
5 g	15 kg	IEX 10K-3MUK	2150,-	160	21	○	●	●	●	●	●	●	●	●	●		
5 g	150 kg	IEX 100K-3EU	3200,-	160	21		●	●	●	●	●	●	●	●	●		
5 g	150 kg	IEX 100K-3UK	3200,-	160	21		●	●	●	●	●	●	●	●	●		
10 g	30 kg	IEX 30K-2MEU	2200,-	160	21	○	●	●	●	●	●	●	●	●	●		
10 g	30 kg	IEX 30K-2MUK	2450,-	160	21	○	●	●	●	●	●	●	●	●	●		
20 g	60 kg	IEX 60K-2MEU	2200,-	160	21	○	●	●	●	●	●	●	●	●	●		
20 g	60 kg	IEX 60K-2MUK	2450,-	160	21	○	●	●	●	●	●	●	●	●	●		
50 g	150 kg	IEX 100K-1MEU	2950,-	160	21	○	●	●	●	●	●	●	●	●	●		
50 g	150 kg	IEX 100K-1MUK	3150,-	160	21	○	●	●	●	●	●	●	●	●	●		



3 **Power supply** using power supply outside the explosion-proof area using a 20 m long cable with 4 screw coupling to fix the display device. Power supply included with delivery. Please indicate the type required at purchase, e.g.:

European power supply: IEX 6K-3MEU
UK power supply: IEX 6K-3MUK

Platform scale with ATEX approval in explosion class II B, with EC type approval [M] – now also as high resolution version with high-resolution display

Features

- Class of protection II 2G IIB T4
- **1 Platform:** weighing plate stainless steel, painted steel base, silicone-coated aluminium load cell, protection against dust and water splashes IP65
- **2 Display device:** stainless steel, protection against dust and water splashes IP67

- The range has European ATEX approval: II 2G IIB T4 for use in hazardous industrial environments Zone 1, where there is explosion danger, e.g. through handling of flammable substances, which are present in high concentrations in the form of gas, mist, vapour
- Particularly suitable for:
Paint industry, petrochemical industry, chemical industry, cosmetics industry, plastics industry

Technical data

- Backlit LCD display, digit height 18 mm
- Weighing plate dimensions, stainless steel W×D×H
A 300×300×70 mm
B 500×400×105 mm
- Dimensions of display device W×D×H 170×172×76 mm (incl. benchtop stand: W×D×H 226×250×120 mm)
- Cable length of display device approx. 2,5 m
- Permissible ambient temperature -10 °C/40 °C

STANDARD



Model	Weighing range [Max] kg	Readout [d] g	Verification value [e] g	Minimal load [Min] g	Net weight approx. kg	Weighing plate	Price excl. of VAT ex works €	Options			
								Verification		DAkkS Calibr. Certificate	
								M M M KERN	€	DKD KERN	€
IEX 6K-4EU <small>NEW</small>	6	0,2	-	-	10	A	2200,-	-	-	963-128	88,-
IEX 6K-4UK <small>NEW</small>	6	0,2	-	-	10	A	2200,-	-	-	963-128	88,-
IEX 10K-4EU <small>NEW</small>	15	0,5	-	-	10	A	2200,-	-	-	963-128	88,-
IEX 10K-4UK <small>NEW</small>	15	0,5	-	-	10	A	2200,-	-	-	963-128	88,-
IEX 30K-3EU <small>NEW</small>	30	1	-	-	19	B	2500,-	-	-	963-128	88,-
IEX 30K-3UK <small>NEW</small>	30	1	-	-	19	B	2500,-	-	-	963-128	88,-
IEX 60K-3EU <small>NEW</small>	60	2	-	-	19	B	2500,-	-	-	963-129	105,-
IEX 60K-3UK <small>NEW</small>	60	2	-	-	19	B	2500,-	-	-	963-129	105,-
IEX 100K-3EU <small>NEW</small>	150	5	-	-	19	B	3200,-	-	-	963-129	105,-
IEX 100K-3UK <small>NEW</small>	150	5	-	-	19	B	3200,-	-	-	963-129	105,-

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.

IEX 6K-3MEU	6	2	2	40	10	A	1950,-	965-228	55,-	963-128	88,-
IEX 6K-3MUK	6	2	2	40	10	A	2150,-	965-228	55,-	963-128	88,-
IEX 10K-3MEU	15	5	5	100	10	A	1950,-	965-228	55,-	963-128	88,-
IEX 10K-3MUK	15	5	5	100	10	A	2150,-	965-228	55,-	963-128	88,-
IEX 30K-2MEU	30	10	10	200	19	B	2200,-	965-228	55,-	963-128	88,-
IEX 30K-2MUK	30	10	10	200	19	B	2450,-	965-228	55,-	963-128	88,-
IEX 60K-2MEU	60	20	20	400	19	B	2200,-	965-229	93,-	963-129	105,-
IEX 60K-2MUK	60	20	20	400	19	B	2450,-	965-229	93,-	963-129	105,-
IEX 100K-1MUK	150	50	50	1000	19	B	3150,-	965-229	93,-	963-129	105,-
IEX 100K-1MEU	150	50	50	1000	19	B	2950,-	965-229	93,-	963-129	105,-

NEW New Model



”

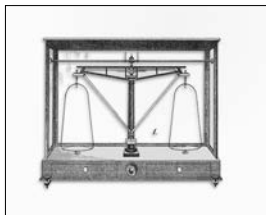
Specially for those areas in your business where you are dealing with substances which are highly flammable, combustible or explosive, KERN has ATEX balances its range. They are produced with the utmost care in accordance with internationally applicable safety standards and for this reason they can be integrated seamlessly into your safety plan.

“

*Taras Mikitisin,
Product specialist ATEX scales*

Tradition and innovation for more than 170 years

An independent family business, KERN since already 7 generations is synonymous with quality and reliability in customer service.



► 1844

KERN is founded – precision balances are produced



► 1863

A proud Gottlieb Kern with his staff



► 1880

Pharmaceutical balance with Aesculap



► 1923

Inflation – KERN wages are paid with self printed currency



► 1980

The electronic balance ousts mechanical devices



► 1994

Accredited DKD laboratory (ISO 17025)



► 2000

New premises in Balingen



► 2002

Existing QM system certification in accordance with DIN EN ISO 9001:2000 standards



► 2007

Approval for the manufacture of medical products (DIN EN 13485 and 93/42/EEC)



► 2008

Authorisation for initial verification by the manufacturer (2009/23/EU)



► 2009

Approval for the manufacture and sale of height rods (DIN EN 13485 and 93/42/EEC)



► 2012

Verification point for non-automatic balances and test weights.

New customer portal www.kern-sohn.com goes live



► 2014

Expansion of the product range to include optical instruments (microscopes and refractometers)



► 2015

Inauguration of Ziegelei 2.0 with computer-controlled high-bay warehouse

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