

# ANALYTICAL BALANCES



PROFESSIONAL MEASURING

**2016**

# KERN Pictograms

 <p><b>Internal adjusting:</b> Quick setting up of the balance's accuracy with internal adjusting weight (motordriven).</p>	 <p><b>Piece counting:</b> Reference quantities selectable. Display can be switched from piece to weight.</p>	 <p><b>Suspended weighing:</b> Load support with hook on the underside of the balance.</p>
 <p><b>Adjusting program CAL:</b> For quick setting up of the balance's accuracy. External adjusting weight required.</p>	 <p><b>Recipe level A:</b> Separate memory for the weight of the tare container and the recipe ingredients (net total).</p>	 <p><b>Battery operation:</b> Ready for battery operation. The battery type is specified for each device.</p>
 <p><b>Memory:</b> Balance memory capacity, e.g. for article data, weighing data, tare weights, PLU etc.</p>	 <p><b>Recipe level B:</b> Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display.</p>	 <p><b>Rechargeable battery pack:</b> Rechargeable set.</p>
 <p><b>Alibi memory:</b> Electronic archiving of weighing results, complying with the 2009/23/EC standard. For details see page 214</p>	 <p><b>Recipe level C:</b> Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display, adjustment of recipe when dosages are exceeded, multiplier function, barcode.</p>	 <p><b>Universal mains adapter:</b> with universal input and optional input socket adapters for A) EU, GB B) EU, GB, CH, USA C) EU, GB, CH, USA, AUS</p>
 <p><b>Data interface RS-232:</b> To connect the balance to a printer, PC or network.</p>		 <p><b>Mains adapter:</b> 230V/50Hz in standard version for EU. On request GB, USA or AUS version available.</p>
 <p><b>RS-485 data interface:</b> To connect the balance to a printer, PC or other peripherals. High tolerance against electromagnetic disturbance.</p>	 <p><b>Totalising level A:</b> The weights of similar items can be added together and the total can be printed out.</p>	 <p><b>Power supply:</b> Integrated in balance. 230V/50Hz standard EU. More standards e.g. GB, USA or AUS on request.</p>
 <p><b>USB data interface:</b> To connect the balance to a printer, PC or other peripherals.</p>	 <p><b>Totalising level C:</b> Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display, adjustment of recipe when dosages are exceeded, multiplier function, barcode recognition.</p>	 <p><b>Weighing principle: Strain gauges</b> Electrical resistor on an elastic deforming body.</p>
 <p><b>Bluetooth* data interface:</b> To transfer data from the balance to a printer, PC or other peripherals.</p>		 <p><b>Weighing principle: Tuning fork</b> A resonating body is electromagnetically excited, causing it to oscillate.</p>
 <p><b>WLAN data interface:</b> To transfer data from the balance to a printer, PC or other peripherals.</p>	 <p><b>Percentage determination:</b> Determining the deviation in % from the target value (100 %).</p>	 <p><b>Weighing principle: Electromagnetic force compensation</b> Coil inside a permanent magnet. For the most accurate weighings.</p>
 <p><b>Control outputs (optocoupler, digital I/O):</b> To connect relays, signal lamps, valves, etc.</p>	 <p><b>Weighing units:</b> 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.</p>	 <p><b>Weighing principle: Single cell technology</b> Advanced version of the force compensation principle with the highest level of precision.</p>
 <p><b>Interface for second balance:</b> For direct connection of a second balance.</p>	 <p><b>Weighing with tolerance range:</b> Upper and lower limiting values can be programmed individually for e.g. dosing, sorting and portioning</p>	 <p><b>Verification possible:</b> The time required for verification is specified in the pictogram.</p>
 <p><b>Network interface:</b> For connecting the scale to an Ethernet network. With KERN products you can use a universal RS-232/LAN converter. See page 180</p>	 <p><b>Hold function:</b> (Animal weighing program) When the weighing conditions are unstable, a stable weight is calculated as an average value.</p>	 <p><b>DAKkS calibration possible (DKD):</b> The time required for DAKkS calibration is shown in days in the pictogram.</p>
 <p><b>Wireless data transfer:</b> between the weighing unit and the evaluation unit using an integrated radio module.</p>	 <p><b>Protection against dust and water splashes IPxx:</b> The type of protection is shown in the pictogram. For details see the glossary. See page 72.</p>	 <p><b>Package shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram.</p>
 <p><b>GLP/ISO log:</b> The balance displays the weight, date and time, regardless of a printer connection.</p>	 <p><b>ATEX explosion protection:</b> Suitable for use in hazardous industrial environments, in which there is explosion danger. The ATEX marking is specified for each device.</p>	 <p><b>Pallet shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram.</p>
 <p><b>GLP/ISO log:</b> With weight, date and time. Only with KERN printers, see "Accessories", see page 177.</p>	 <p><b>Stainless steel:</b> The balance is protected against corrosion.</p>	 <p><b>Warranty:</b> The warranty period is shown in the pictogram.</p>

# 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, 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.



## KERN DAkkS calibration service brochure

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



## KERN flyer Special offers

Compact overview of our bestselling products – just the balances/measuring instruments/microscopes your customers need! Can be customised to suit your requirements.



## The gnome guide

Travel report from KERN, the famous scientific gnome, who travelled all over the world, in order to illustrate the physical law of gravitational force. Ideal for use in school education – please request, it's free of charge.



## 170 years of KERN

Interesting and readable overview of the history of the origins of Southern German balance manufacturing, as well as the company history, which stretches right back to 1770 – please request, it's free of charge.

## Your advantages

**1 Quick Delivery**  
Items in stock are sent the same day if orders are placed before 1:00 pm (valid for parcel service delivery within the EC).

**2 Price performance ratio**  
KERN scales are always an inexpensive alternative. They are durable, uncomplicated and easy to place into operation.

**3 Direct dispatch**  
of ordered goods to your customer is available, with personalised delivery note if desired (please ask), invoice will be issued to you (third party business).

**4 3 years warranty**  
Items under € 400,- : 2 years

**5 No stock-keeping necessary.**  
KERN does the warehousing for you.

**6 Sale or return**  
within 14 days of purchase.

### Quick-Finder Analytical balances

Read-out	Weighing range	Model	Price excl. of VAT ex works €	Page	ready for shipping	M	CAL INT	CAL EXT	MEMORY	RS 232	LAN	RECIPE
[d]	[Max]	KERN			DAYS							
0,01 mg	100 g	AET 100-5AM	6500,-	50	21		●			●	●	●
0,01 mg	101 g	ABT 100-5M	1980,-	49	1	○	●			●		●
0,01   0,1 mg	42   120 g	ABT 120-5DM	2170,-	49	1	○	●			●		●
0,01   0,1 mg	82   220 g	AEJ 200-5CM	2050,-	48	1	○	●		●	●		●
0,01   0,1 mg	82   220 g	ABT 220-5DM	2370,-	49	1	○	●			●		●
0,01   0,1 mg	82   220 g	AET 200-5DAM	7400,-	50	21		●			●	●	●
0,1 mg	82 g	ABS 80-4N	970,-	47	1			●		○		●
0,1 mg	82 g	ABJ 80-4NM	1050,-	47	1	○	●			○		●
0,1 mg	120 g	ABS 120-4N	1030,-	47	1			●		○		●
0,1 mg	120 g	ABJ 120-4NM	1080,-	47	1	○	●			○		●
0,1 mg	120 g	ABT 120-4M	1490,-	49	1	○	●			●		●
0,1 mg	160 g	ALS 160-4A	930,-	46	1			●		●		●
0,1 mg	160 g	ALJ 160-4A	1030,-	46	1			●		●		●
0,1 mg	160 g	ALJ 160-4AM	1050,-	46	1	○	●			●		●
0,1 mg	160 g	AES 100-4C	1070,-	48	1			●	●	●		●
0,1 mg	160 g	AEJ 100-4CM	1150,-	48	1	○	●		●	●		●
0,1 mg	210 g	ADB 200-4	910,-	45	1			●		●		●
0,1 mg	220 g	ABS 220-4N	1070,-	47	1			●		○		●
0,1 mg	220 g	AES 200-4C	1120,-	48	1			●	●	●		●
0,1 mg	220 g	ABJ 220-4NM	1170,-	47	1	○	●			○		●
0,1 mg	220 g	AEJ 200-4CM	1200,-	48	1	○	●		●	●		●
0,1 mg	220 g	ABT 220-4M	1770,-	49	1	○	●			●		●
0,1 mg	220 g	AET 200-4NM	2800,-	50	21	○	●			●	●	●
0,1 mg	250 g	ALS 250-4A	980,-	46	1			●		●		●
0,1 mg	250 g	ALJ 250-4A	1060,-	46	1			●		●		●
0,1 mg	250 g	ALJ 250-4AM	1090,-	46	1	○	●			●		●
0,1 mg	310 g	ALJ 310-4A	1290,-	46	1			●		●		●
0,1 mg	320 g	ABS 320-4N	1240,-	47	1			●		○		●
0,1 mg	320 g	ABJ 320-4NM	1340,-	47	1	○	●			○		●
0,1 mg	320 g	ABT 320-4M	1980,-	49	1	○	●			●		●
0,1 mg	510 g	ALJ 500-4A	1950,-	46	1	○	●			●		●
0,1 mg	510 g	AET 500-4	6100,-	50	21		●			●	●	●

■ = News 2016

● = Standard

○ = Option



**HIGH-LIGHT**

**Your product specialist's recommendation:**



**Cable-based display device offers maximum flexibility of operation**



**Ergonomically optimised design**



**Large weighing space for high-volume samples or big weighing pans**



**Bettina Hampe**

Product specialist Analytical balances

**KERN ADB**

only € **910,-**

▶ page 45

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NEW



03

## The price leader in analytical balances

### Features

- Optimised price performance ratio, ideal for laboratories, universities, schools
- **Large glass draught shield** with 3 sliding doors for easy access to the items being weighed. Also ideal for large, light samples such as polystyrene, tissue, plastic parts, etc.
- The **wired display device** can be adjusted differently to suit the ergonomic requirements of the user or the workplace. In addition, it eliminates any heat effect on the weighing system from the display device
- **Ergonomically optimised keypad** for left and righthanded users
- **Percentage determination:** makes it possible to store a given weight value (100 %) and to determine deviations from this target value
- **Adjusting program CAL**, external test weights at an additional price, see page 188 ff.

### Technical data

- Large backlit LCD display with digit height 19,6 mm
- Dimensions of weighing plate, stainless steel, Ø 90 mm
- Overall dimensions WxDxH 190x475x295 mm
- Weighing space WxDxH 215x205x295 mm
- External mains adapter standard, EU, GB, AUS
- Cable length of display device approx. 0,5 m
- Permissible ambient temperature 10 °C / 30 °C
- Net weight approx. 6 kg

### Accessories

- **Protective working cover**, standard. Can be re-ordered, scope of delivery 5 pieces, KERN ADB-A01S05, € 30,-
- **1 Ioniser** to neutralise electrostatic charge, see page 183, KERN YBI-01, € 1350,-
- **2 Weighing table** to absorb vibrations and oscillations, which would otherwise distort the weighing result, see page 183, KERN YPS-03, € 900,-
- **3 Precious stones plate**, aluminium with practical spout, WxDxH 83x66x23 mm, weighing space, KERN AEJ-A05, € 40,-
- **Suitable printers** and further, extensive accessories from page 177

STANDARD



OPTION



Model	Weighing range	Readout	Reproducibility	Linearity	Min. piece weight Counting mg/piece	Price excl. of VAT ex works €	Option DAkKS Calibr. Certificate	
							DKD KERN	€
KERN ADB 200-4	[Max] g 210	[d] mg 0,1	mg 0,2	mg ± 0,4	0,1	910,-	963-101	138,-

03



Range of analytical balances, with large weighing ranges, also with EC type approval [M]

Features

- 1 only ALJ-A: **Automatic internal adjustment** in the case of a change in temperature > 1,5 °C
- 2 only ALS-A: **Adjusting program CAL** for quick setting of the balance accuracy, external test weights at an additional price, see page 188 ff.
- Ergonomically optimised keypad** for left and righthanded users
- Large glass draught shield** with 3 sliding doors for easy access to the items being weighed
- Compact size**, practical for small spaces
- Percentage determination:** makes it possible to store a given weight value (100 %) and to determine deviations from this target value

Technical data

- Backlit LCD display, digit height 17 mm
- Weighing plate dimensions, stainless steel, Ø 80 mm
- Overall dimensions (incl. draught shield) WxDxH 210x340x330 mm
- Weighing space WxDxH 160x140x205 mm
- Net weight approx. 6,2 kg
- Permissible ambient temperature 5 °C / 35 °C

Accessories

- Protective working cover**, scope of delivery: 5 items, KERN ALJ-A01S05, € 40,-
- Protective dust cover**, KERN ABS-A08, € 30,-

- Set for density determination** of liquids and solids with density  $\leq 1$ , for details see page 182, KERN YDB-03, € 520,-
- Ioniser** to neutralise electrostatic charge, see page 184, KERN YBI-01, € 1350,-
- Weighing table** to absorb vibrations and oscillations, which would otherwise distort the weighing result, see page 183, KERN YPS-03, € 900,-
- Suitable printers** and further, extensive accessories from page 177 ff.

STANDARD



OPTION

FACTORY



Model	Weighing range [Max] g	Readout [d] mg	Verification value [e] mg	Minimum load [Min] mg	Linearity mg	Price excl. of VAT ex works €	Options			
							Verification		DAkkS Calibr. Certificate	
							MT KERN	€	DKD KERN	€
<b>ALS 160-4A</b>	160	0,1	-	-	± 0,3	<b>930,-</b> ↓	-	-	963-101	138,-
<b>ALS 250-4A</b>	250	0,1	-	-	± 0,3	<b>980,-</b> ↓	-	-	963-101	138,-

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.

<b>ALJ 160-4A</b>	160	0,1	-	-	± 0,3	<b>1030,-</b>	-	-	963-101	138,-
<b>ALJ 160-4AM</b>	160	0,1	1	10	± 0,3	<b>1050,-</b> ↓	965-201	110,-	963-101	138,-
<b>ALJ 250-4A</b>	250	0,1	-	-	± 0,3	<b>1060,-</b>	-	-	963-101	138,-
<b>ALJ 250-4AM</b>	250	0,1	1	10	± 0,3	<b>1090,-</b> ↓	965-201	110,-	963-101	138,-
<b>ALJ 310-4A</b>	310	0,1	-	-	± 0,3	<b>1290,-</b>	-	-	963-101	138,-
<b>ALJ 500-4A</b> <small>NEW</small>	510	0,1	-	-	± 0,4	<b>1950,-</b>	-	-	963-101	138,-

↓ Price reduction

NEW New model

# Analytical balance KERN ABS-N · ABJ-NM



03

- 6** Single-cell advanced technology:
- Fully automatic manufactured weighing cell from one piece of material
  - Stable temperature behaviour
  - Short stabilisation time: Steady weight values within approx. 3 sec under laboratory conditions
  - Shock proof construction
  - High corner load performance

The bestseller in analytical balances, with high-quality single-cell weighing system, also with EC type approval [M]

## Features

- **1** only ABJ-NM: **Automatic internal adjustment** in the case of a temperature change > 2 °C and time-controlled every 4 hours
- **2** only ABS-N: **Adjusting program CAL**, external test weights at an additional price, see page 188 ff.
- **Dosage aid:** High-stability mode and other filter settings can be selected
- **Simple recipe weighing and documenting** with a combined tare/print function. In addition, the ingredients for the recipe are numbered automatically and printed out with their corresponding number and nominal weight

- **Automatic data output** to the PC/printer each time the balance has obtained a stable weighing result
- **Identification number:** 4 digits, printed on calibration protocol freely programmable
- ABJ-NM has OIML certification

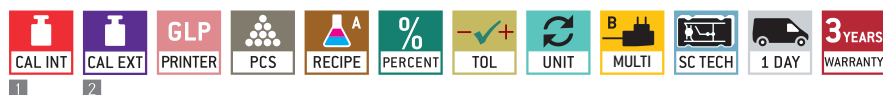
## Technical data

- Large LCD display, digit height 14 mm
- Weighing plate dimensions, stainless steel, Ø 91 mm
- Overall dimensions WxDxH 210x340x325 mm
- Weighing space WxDxH 174x162x227 mm
- Permissible ambient temperature 10 °C / 30 °C
- Net weight approx. 6 kg

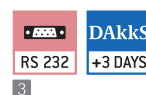
## Accessories

- **Protective working cover** standard. Can be re-ordered, scope of delivery: 5 items, KERN ACS-A02S05, € 60,-
- **3** **Data interface RS-232** interface cable included, KERN ACS-A01, € 75,-
- **5** **Set for density determination** of liquids and solids with density  $\leq/\geq 1$ , for details see page 182, KERN YDB-03, € 520,-
- **7** **Ioniser** to neutralise electrostatic charge, see page 184, KERN YBI-01, € 1350,-
- **4** **Weighing table** to absorb vibrations and oscillations, which would otherwise distort the weighing result, see page 184, KERN YPS-03, € 900,-
- **Suitable printers** see page 177 ff.

### STANDARD



### OPTION



### FACTORY



Model	Weighing range [Max] g	Readout [d] mg	Verification value [e] mg	Minimum load [Min] mg	Reproducibility mg	Linearity mg	Price excl. of VAT ex works €	Options			
								Verification		DAkkS Calibr. Certificate	
								M D KERN	€	DKD KERN	€
ABS 80-4N	82	0,1	-	-	0,2	± 0,3	970,-	-	-	963-101	138,-
ABS 120-4N	120	0,1	-	-	0,2	± 0,3	1030,-	-	-	963-101	138,-
ABS 220-4N	220	0,1	-	-	0,2	± 0,3	1070,-	-	-	963-101	138,-
ABS 320-4N	320	0,1	-	-	0,2	± 0,3	1240,-	-	-	963-101	138,-
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.											
ABJ 80-4NM	82	0,1	1	10	0,2	± 0,3	1050,-	965-201	110,-	963-101	138,-
ABJ 120-4NM	120	0,1	1	10	0,2	± 0,3	1080,-	965-201	110,-	963-101	138,-
ABJ 220-4NM	220	0,1	1	10	0,2	± 0,3	1170,-	965-201	110,-	963-101	138,-
ABJ 320-4NM	320	0,1	1	10	0,2	± 0,3	1340,-	965-201	110,-	963-101	138,-

03



## Compact high-end analytical balance with useful pipette calibration program and alibi memory

### Features

- 1 only AEJ-CM: **Automatic internal adjustment** in the case of a change in temperature > 0,8 °C and time-controlled every 3 hours
- 2 **Intuitive pipette calibration function** to ensure data integrity and to minimise the risks in the daily work with your pipettes
- Higher weighing speed by switching off the last digit
- Modern all glass draught wind shield** for ideal visibility of the weighing object
- Dispensing mode:** By pressing one key you can set all relevant parameters for dispensing
- Alibi memory:** Paperless archiving of up to 100,000 weighing results. Additional information on page 11.

- Note:** For weighings where verification is mandatory, and which are to be analysed and processed by a PC, the legislative body requires electronic archiving using a verifiable, non-manipulatable data memory
- Internal memory** for up to 999 weighing results, 1000 items or recipe ingredients, 100 container weights, 100 users

### Technical data

- Large backlit LCD display, digit height 17 mm
- Weighing plate dimensions, stainless steel, Ø 85 mm
- Overall dimensions WxDxH 206x335x335 mm
- Weighing space WxDxH 168x160x225 mm
- Net weight approx. 5 kg
- Permissible ambient temperature 18 °C / 30 °C

### Accessories

- Protective working cover**, standard. Can be re-ordered, scope of delivery: 5 items, KERN ALS-A02S05, **€ 35,-**
- Set for density determination** of liquids and solids with density  $\leq 1$ , Step-by-step user guidance and calculated density shown immediately on the display. For interesting facts about density determination see page 214, KERN YDB-03, **€ 520,-**
- only AEJ-CM: **Alibi memory software** for viewing and saving data from the alibi memory onto a PC connected to the system, KERN PET-A16, **€ 300,-**
- WLAN interface** for wireless connection to networks and WLAN capable devices, such as tablets, laptops or smartphones, must be ordered at purchase, please ask for delivery time, KERN PLJ-A06, **€ 135,-**
- Suitable printers** see page 177 ff.

STANDARD

																		<b>OPTION</b>	<b>FACTORY</b>
																	<b>+3 DAYS</b>		<b>+3 DAYS</b>

1 only AEJ-CM

Model	Weighing range [Max] g	Readout [d] mg	Verification value [e] mg	Minimum load [Min] mg	Reproducibility mg	Linearity mg	Price excl. of VAT ex works €	Options											
								Verification		DAkKS Calibr. Certificate									
								MT KERN	€	DKD KERN	€								
KERN																			
AES 100-4C	160	0,1	-	-	0,2	± 0,2	1070,-	-	-	963-101	138,-								
AES 200-4C	220	0,1	-	-	0,2	± 0,2	1120,-	-	-	963-101	138,-								
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.																			
AEJ 200-5CM	82   220	0,01   0,1	1   1	1	0,04   0,1	± 0,1   0,2	2050,-	965-201	110,-	963-101	138,-								
AEJ 100-4CM	160	0,1	1	10	0,2	± 0,3	1150,-	965-201	110,-	963-101	138,-								
AEJ 200-4CM	220	0,1	1	10	0,2	± 0,3	1200,-	965-201	110,-	963-101	138,-								



# Analytical balance KERN ABT



03

- Single-cell advanced technology:
- Fully automatic manufacture weighing cell from one piece of material
  - Stable temperature behaviour
  - Short stabilisation time
  - Shock proof construction
  - High corner load performance

## The premium model with single-cell weighing system

### Features

- **Automatic internal adjustment** in the case of a change in temperature > 0,5 °C and time-controlled every 4 hours
- **Dosage aid:** High-stability mode and other filter settings can be selected
- **Simple recipe weighing and documenting** with a combined tare/print function. In addition, the ingredients for the recipe are numbered automatically and printed out with their corresponding number and nominal weight
- **Identification number:** 4 digits, printed on calibration protocol freely programmable
- **Automatic data output to the PC/printer** each time the balance is steady

- **Large glass draught shield** with 3 sliding doors for easy access to the items being weighed

### Technical data

- Large LCD display, digit height 14 mm
- Weighing plate dimensions Ø 80 mm
- Overall dimensions WxDxH 217x356x338 mm
- Weighing space WxDxH 168x172x223 mm
- Net weight approx. 7 kg
- Permissible ambient temperature 10 °C / 30 °C

### Accessories

- **Protective working cover**, standard. Can be re-ordered, scope of delivery: 5 items, KERN ABT-A02S05, € 50,-
- **1 Set for density determination** of liquids and solids with density  $\leq/\geq 1$ . The density is indicated directly on the display, for details see page 182, KERN YDB-03, € 520,-
- **2 Ioniser** to neutralise electrostatic charge, see page 184, KERN YBI-01, € 1350,-
- **3 Weighing table** to absorb vibrations and oscillations, which would otherwise distort the weighing result, see page 184, KERN YPS-03, € 900,-
- **Suitable printers** see page 177 ff.

### STANDARD



### OPTION



### FACTORY



Model	Weighing range [Max] g	Readout [d] mg	Verification value [e] mg	Minimum load [Min] mg	Reproducibility mg	Linearity mg	Price excl. of VAT ex works €	Options			
								Verification		DAkkS Calibr. Certificate	
								MI KERN	€	DKD KERN	€
ABT 120-4M	120	0,1	1	10	0,1	± 0,2	1490,-	965-201	110,-	963-101	138,-
ABT 220-4M	220	0,1	1	10	0,1	± 0,2	1770,-	965-201	110,-	963-101	138,-
ABT 320-4M	320	0,1	1	10	0,1	± 0,3	1980,-	965-201	110,-	963-101	138,-
ABT 100-5M	101	0,01	1	1	0,05	± 0,15	1980,-	965-201	110,-	963-101	138,-

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.

Dual-range balance switches automatically to the next largest weighing range [Max] and readout [d].

ABT 120-5DM	42   120	0,01   0,1	1   1	1	0,02   0,1	± 0,05   0,2	2170,-	965-201	110,-	963-101	138,-
ABT 220-5DM	82   220	0,01   0,1	1   1	1	0,05   0,1	± 0,1   0,2	2370,-	965-201	110,-	963-101	138,-

PREMIUM



KERN AET [d] = 0,1 mg

**Note** for information on further useful functions for this range, please see pages 6 and 7

KERN AET [d] = 0,01 mg

Premium touchscreen analytical balance with the complete range of functions for demanding processes



**Software supported pipette calibration in accordance with ISO 8655:** The user is guided through the pipette calibration procedure step by step, in accordance with the requirements of the norm. This helps to ensure that the pipetting volumes are correct and minimises the risks in daily pipetting work



**Convenient recipe-weighing:** complete recipes with all recipe ingredients and associated target values, names, tolerances, tare weights etc. can be stored. If there is an excess amount of one recipe ingredient the practical back calculation function automatically calculates the new target weights of the other ingredients

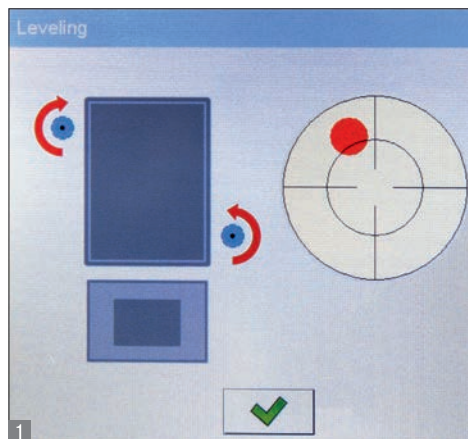
### Modes

- ① Weighing
- ② Piece counting
- ③ Checkweighing
- ④ Dispensing
- ⑤ Percentage determination
- ⑥ Density determination
- ⑦ Animal weighing
- ⑧ Recipe weighing
- ⑨ Statistical function
- ⑩ Pipette calibration
- ⑪ Differential weighing
- ⑫ Statistical Quality Control (SQC)

### Functions

- Capacity display, with ① - ⑫
- Dispensing aid, with ④, ⑤
- Net/gross display, permanent, with ① - ⑫
- Variable reference quantity, with ②
- Automatic reference optimisation, with ②
- PRE-TARE numerical or from the memory unit, with ① - ⑫
- Input of item or batch description, operator etc., with ① - ⑫
- Freely programmable weighing unit, e.g. display direct in special units such as length of thread g/m, grammage g/m<sup>2</sup>, or similar, with ① - ⑫
- Date/time, with ① - ⑫
- Statistical function, as stand-alone application
- GLP printout, with ① - ⑫
- Individual printout configuration, with ① - ⑫

# Analytical balance KERN AET



## Features

- **Intuitive operation, increases efficiency and saves costs:** Easy entering of item data at the PC, call up of items on the balance using the connected barcode or RFID scanner, output of weighing data using the large or second display or control outputs, data transfer to the PC, printer or alibi memory.
- **Individual user settings can be stored**
  - User name and number
  - Password
  - Menu language
  - User profile
  - Additional guest mode for users without log-in
  - Authorisations, e.g. capture or modification of a recipe only by those with authorisation, recipe weighing can be carried out by the user
- **Best-before dates** can be stored and printed for each item
- **Difference determination:** Weighing a sample before and after a machining process and automatic output of the difference value
- **Multiplier function:** recipes and their ingredients can be multiplied at will at the press of a button, which is ideal for the production of larger containers, bulk packs etc.
- **Enormous database (1 GB)** for thousands of weighing results, items, recipes, recipe ingredients, container weights, user data etc.
- **Alibi memory:** paperless archive of weighing results, see page 214
- **Electronic level indicator** continuously checks the position of the balance, sounds an alarm when the device is out of balance and gives visual instructions on how to correct the situation

- **High level of process reliability:** you can define limit values for selected parameters, such as, for example, temperature, levelling, minimum load, adjustment, etc. When the value falls outside these limits, a warning message will be issued and this can be stored with the measuring result
- **only AET 200-5DM: Grid weighing pan, metal draught shield and hook for suspended weighing** as standard
- **only AET-NM/DAM:**
  - WLAN data interface to transfer data from the balance to a printer, PC or other peripheral devices
  - Enormous database (8 GB)
  - Faster Dual-Core Processor (2 x 1 GB)

## Technical data

- Backlit and touch-sensitive LCD display with digit height 21 mm, screen diagonal 5,7" (approx. 145 mm), WxH 115x86 mm. Dimensions of display device WxDxH 215x156x71 mm
- Weighing plate dimensions, stainless steel, Ø 85 mm
- Dimensions housing WxDxH on all models with [d] = 0,01 mg: 348x540x217 mm [d] = 0,1 mg: 160x168x225 mm
- Weighing space WxDxH 168x160x225 mm
- Permissible ambient temperature 18 °C / 30 °C

## Accessories

- **Protective working cover** over the display device, standard. Can be re-ordered, suitable for the series AET, PET, ILT, scope of delivery: 5 items, KERN ILT-A02S05, € 19,-
- **Protective dust cover**, for models AET 500-4 and AET 200-4NM, KERN ABS-A08, € 30,-
- **RS-232 barcode scanner**, hand-held version, dimensions WxDxH 152x84x63 mm, for details see page 184, KERN PET-A05, € 350,-
- **USB barcode scanner**, hand-held version, dimensions WxDxH 152x84x63 mm, for details see page 184, KERN PET-A09, € 350,-
- **USB keyboard** for easy capture of items, descriptions etc., dimensions WxDxH 440x128x24 mm, for details see page 187, KERN PET-A06, € 45,-
- **Second display**, dimensions WxDxH 150x33x80 mm, for details see page 184, KERN PET-A03, € 210,-
- **Direct thermal label printer**, software for easy editing of (adhesive) labels included, for details see page 184, KERN PET-A13, € 980,-
- **Thermal transfer and direct thermal label printer**, software for easy editing of (adhesive) labels included, for details see page 184, KERN PET-A14, € 1000,-
- **Software for database management**, for convenient maintenance of item data at the PC. Data transfer to the balance using the interface cable (see page 180), for details see page 184, KERN PET-A01, € 300,-
- **Set for density determination** of liquids and solids  $\leq/\geq 1$ . The internal density determination software in the balance takes you through the process, step by step, and shows the density on the display. For details see page 183, KERN YDB-03, € 520,-

STANDARD



OPTION

Model	Weighing range [Max] g	Readout [d] mg	Verification value [e] mg	Minimum load [Min] mg	Reproducibility mg	Linearität mg	Price excl. of VAT ex works €	Options			
								Verification		DAkkS Calibr. Certificate	
								MT KERN	€	DKD KERN	€
AET 500-4	510	0,1	-	-	0,2	± 0,5	6100,-	-	-	963-101	138,-
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.											
Dual-range balance switches automatically to the next largest weighing range [Max] and readout [d].											
AET 200-5DAM	82   220	0,01   0,1	-	-	0,04   0,1	± 0,1   0,2	7400,-	-	-	963-101	138,-
AET 100-5AM	100	0,01	-	-	0,05	± 0,1	6500,-	-	-	963-101	138,-
AET 200-4NM	220	0,1	1	10	0,2	± 0,3	2800,-	965-201	110,-	963-101	138,-

## Often it is the small things which make daily laboratory life easier.

On this page we have put together a small selection of practical accessories for your demanding weighing processes.

For additional details and further accessories, please see page 176



### Weighing table

Accurate measuring results require stable working conditions! The KERN YPS-03 weighing table has been constructed to absorb vibrations and oscillations, which would otherwise distort the weighing result. Suitable for all KERN analytical balances with total dimensions  $\leq$  WxD 270x410 mm.

KERN YPS-03, € 900,-

### Ioniser to neutralise electrostatic charge

Goods to be weighed which are non-conductive, such as plastic, china, glass, etc often carry electrostatic charge. The electromagnetic field which then occurs between the goods to be weighed and the balance can cause the weighing result to be distorted by up to a gramme. Suitable for all KERN analytical balances.

KERN YBI-01, € 1350,-



### Protective dust cover

For protection from dust and light. Suitable for all KERN analytical balances, except KERN ADB, AET 100-5AM, AET 200-5DAM.

KERN ABS-A08, € 30,-



### Thermal statistics printer

For printing weights, recipes etc. or for GLP record keeping of weighing data with date and time print. With extensive statistical functions for the analysis of measurements series. Suitable for all KERN analytical balances (except AET).

KERN YKS-01, € 390,-

### Universal density set

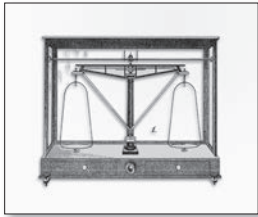
Universal density set for precise and convenient density determination of liquids and solids  $\leq/\geq$  1. Suitable for all KERN analytical balances.

KERN YDB-03, € 520,-



# 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/EC)



► 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](http://www.kern-sohn.com) goes live



► 2014

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



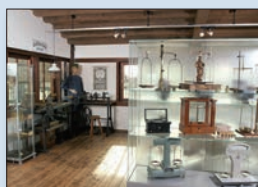
► 2015

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



## Our Tip

Come to see the Museum of scale and weight ...



How a scale learned to weigh! Come and experience KERN history in the Zollernschloss at Balingen ...



[www.balingen.de](http://www.balingen.de)  
→ "Kultur"

## KERN – Tradition and Innovation for over 170 years

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

### 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  
2009/23/EC
- 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](http://www.kern-sohn.com)

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

 **Online-Shop**  
[www.kern-sohn.com](http://www.kern-sohn.com)


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

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+49 [0] 7433 9933-199

 **E-mail order**  
[info@kern-sohn.com](mailto:info@kern-sohn.com)

 **[www.kern-sohn.com](http://www.kern-sohn.com)**  
For product specification sheets, user manuals, useful information, technical glossary pictures and much more as well as a smart search engine for test weights and balances

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

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

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