

Analytical balance KERN ABS-N · ABJ-NM · ACS · ACJ



**KERN ACS/ACJ** with standard data interface RS-232 and USB

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

#### Features

- ABJ-NM: Automatic internal adjustment in the case of a change in temperature  $\geq 2$  °C or timecontrolled every 4 h, guarantees high degree of accuracy and makes the balance independent of its location of use
- ABS-N: Adjusting program CAL for quick setting of the balance accuracy using an external test weight
- Dosage aid
- 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 is steady
- Identification number: 4 digits, printed on calibration protocol freely programmable
- ABJ-NM has OIML certification
- Protective working cover included with delivery

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**Technical data**

- Large LCD display, digit height 14 mm
- Dimensions of weighing surface, stainless steel,  $\varnothing$  91 mm
- Overall dimensions (incl. draught shield) W×D×H 210×340×325 mm
- Weighing space W×D×H 174×162×227 mm
- Net weight 6 kg
- Permissible ambient temperature 10 °C/30 °C

**Accessories**

- Protective working cover, scope of delivery: 5 items, KERN ACS-A02S05
- **1** Set for density determination of liquids and solids with density  $\leq/\geq$  1, the density is indicated directly on the display, KERN YDB-03
- **2** Ioniser to neutralise electrostatic charge, KERN YBI-01A
- KERN ABS-N/ABJ-NM: Data interface RS-232, interface cable included, approx. 1,5 m KERN ACS-A01
- **3** Weighing table to absorb vibrations and oscillations, which would otherwise distort the weighing result, KERN YPS-03
- Minimum weight of sample, smallest weight to be weighed, depending on the required process accuracy, only in combination with a DAkkS calibration certificate, KERN 969-103
- Further details, plenty of further accessories and suitable printers see *Accessories*



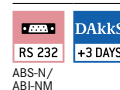
Single-cell advanced technology:

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

STANDARD



OPTION



FACTORY



Model	Weighing capacity [Max] g	Readability [d] mg	Verification value [e] mg	Minimal load [Min] mg	Reproducibility mg	Linearity mg	Option			
							Verification	DAkkS Calibr. Certificate		
<b>KERN</b>							<b>MT</b> KERN		<b>DAkkS KERN</b>	
<b>ABS 80-4N</b>	82	0,1	-	-	0,2	± 0,3	-		963-101	
<b>ABS 120-4N</b>	120	0,1	-	-	0,2	± 0,3	-		963-101	
<b>ABS 220-4N</b>	220	0,1	-	-	0,2	± 0,3	-		963-101	
<b>ABS 320-4N</b>	320	0,1	-	-	0,2	± 0,3	-		963-101	
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>ABJ 80-4NM</b>	82	0,1	1	10	0,2	± 0,3	-		963-101	
<b>ABJ 120-4NM</b>	120	0,1	1	10	0,2	± 0,3	-		963-101	
<b>ABJ 220-4NM</b>	220	0,1	1	10	0,2	± 0,3	-		963-101	
<b>ABJ 320-4NM</b>	320	0,1	1	10	0,2	± 0,3	-		963-101	
<b>ACS 80-4</b>	82	0,1	-	-	0,2	± 0,3	-		963-101	
<b>ACS 100-4</b>	120	0,1	-	-	0,2	± 0,3	-		963-101	
<b>ACS 200-4</b>	220	0,1	-	-	0,2	± 0,3	-		963-101	
<b>ACS 300-4</b>	320	0,1	-	-	0,2	± 0,3	-		963-101	
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>ACJ 80-4M</b>	82	0,1	1	10	0,2	± 0,3		965-201		963-101
<b>ACJ 100-4M</b>	120	0,1	1	10	0,2	± 0,3		965-201		963-101
<b>ACJ 200-4M</b>	220	0,1	1	10	0,2	± 0,3		965-201		963-101
<b>ACJ 300-4M</b>	320	0,1	1	10	0,2	± 0,3		965-201		963-101

**Pictograms**

<p> <b>Internal adjusting:</b> Quick setting up of the balance's accuracy with internal adjusting weight (motordriven)</p> <p> <b>Adjusting program CAL:</b> For quick setting up of the balance's accuracy. External adjusting weight required</p> <p> <b>Easy Touch:</b> Suitable for the connection, data transmission and control through PC, tablet or smartphone.</p> <p> <b>Memory:</b> Balance memory capacity, e.g. for article data, weighing data, tare weights, PLU etc.</p> <p> <b>Alibi memory:</b> Secure, electronic archiving of weighing results, complying with the 2014/31/EU standard</p> <p> <b>Data interface RS-232:</b> To connect the balance to a printer, PC or network</p> <p> <b>RS-485 data interface:</b> To connect the balance to a printer, PC or other peripherals. Suitable for data transfer over large distances. Network in bus topology is possible</p> <p> <b>USB data interface:</b> To connect the balance to a printer, PC or other peripherals</p> <p> <b>Bluetooth* data interface:</b> To transfer data from the balance to a printer, PC or other peripherals</p> <p> <b>WiFi data interface:</b> To transfer data from the balance to a printer, PC or other peripherals</p> <p> <b>Control outputs (optocoupler, digital I/O):</b> To connect relays, signal lamps, valves, etc.</p> <p> <b>Analogue interface:</b> to connect a suitable peripheral device for analogue processing of the measurements</p> <p> <b>Interface for second balance:</b> For direct connection of a second balance</p> <p> <b>Network interface:</b> For connecting the scale to an Ethernet network</p>	<p> <b>KERN Communication Protocol (KCP):</b> 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</p> <p> <b>GLP/ISO log:</b> The balance displays serial number, user ID, weight, date and time, regardless of a printer connection</p> <p> <b>GLP/ISO log:</b> With weight, date and time. Only with KERN printers</p> <p> <b>Piece counting:</b> Reference quantities selectable. Display can be switched from piece to weight</p> <p> <b>Recipe level A:</b> The weights of the recipe ingredients can be added together and the total weight of the recipe can be printed out</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>Totalising level A:</b> The weights of similar items can be added together and the total can be printed out</p> <p> <b>Percentage determination:</b> Determining the deviation in % from the target value (100 %)</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 with tolerance range:</b> (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</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>Protection against dust and water splashes IPxx:</b> The type of protection is shown in the pictogram</p>	<p> <b>Suspended weighing:</b> Load support with hook on the underside of the balance</p> <p> <b>Battery operation:</b> Ready for battery operation. The battery type is specified for each device</p> <p> <b>Rechargeable battery pack:</b> Rechargeable set</p> <p> <b>Universal mains adapter:</b> with universal input and optional input socket adapters for A) EU, CH, GB; B) EU, CH, GB, USA; C) EU, CH, GB, USA, AUS</p> <p> <b>Mains adapter:</b> 230V/50Hz in standard version for EU, CH. On request GB, USA or AUS version available</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>Weighing principle: Strain gauges:</b> Electrical resistor on an elastic deforming body</p> <p> <b>Weighing principle: Tuning fork:</b> A resonating body is electromagnetically excited, causing it to oscillate</p> <p> <b>Weighing principle: Electromagnetic force compensation:</b> Coil inside a permanent magnet. For the most accurate weighings</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>Verification possible:</b> The time required for verification is specified in the pictogram</p> <p> <b>DAKkS calibration possible (DKD):</b> The time required for DAKkS calibration is shown in days in the pictogram</p> <p> <b>Factory calibration (ISO):</b> The time required for Factory calibration is shown in days in the pictogram</p> <p> <b>Package shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram</p> <p> <b>Pallet shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram</p>
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**KERN – Precision is our business**

To ensure the high precision of your balance KERN offers you the the appropriate test weight in the international OIML error limit classes E1-M3 from 1 mg - 2500 kg. In combination with a DAKkS calibration certificate the best pre-requisite for proper balance calibration.

The KERN DAKkS calibration laboratory 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.

**Range of services:**

- DAKkS calibration of balances with a maximum load of up to 50 t
- DAKkS calibration of weights in the range of 1 mg - 2500 kg
- Volume determination and measuring of magnetic susceptibility (magnetic characteristics) for test weights
- Database supported management of checking equipment and reminder service
- Calibration of force-measuring devices
- DAKkS calibration certificates in the following languages DE, EN, FR, IT, ES, NL, PL
- Conformity evaluation and reverification of balances and test weights

**Your KERN specialist dealer:**