

## Analytical balance KERN ABT-NM



### The premium model with single-cell weighing system

#### Features

- Automatic internal adjustment in the case of a change in temperature  $\geq 0,5\text{ }^{\circ}\text{C}$  or time-controlled every 4 h, guarantees high degree of accuracy and makes the balance independent of its location of use
- 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
- Printout of a GLP-compliant calibration report conveniently at the touch of a button
- 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

- Protective working cover included with delivery

#### Technical data

- Large LCD display, digit height 14 mm
- Dimensions weighing surface  $\varnothing 80\text{ mm}$ , stainless steel
- Weighing space  $W \times D \times H 168 \times 172 \times 223\text{ mm}$
- Overall dimensions (incl. draught shield)  $W \times D \times H 217 \times 356 \times 338\text{ mm}$
- Net weight approx. 7 kg
- Permissible ambient temperature  $10\text{ }^{\circ}\text{C}/30\text{ }^{\circ}\text{C}$

#### Accessories

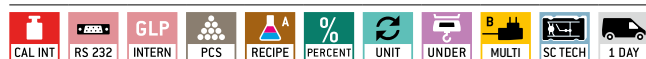
- Protective working cover, scope of delivery 5 items, KERN ABT-A02S05
- Set for density determination of liquids and solids with density  $\leq/\geq 1$ , the density is indicated directly on the display, KERN YDB-03

- Ioniser to neutralise electrostatic charge, KERN YBI-01A
- 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
- Equipment qualification: compliant qualification concept which includes the following validation services, Installation Qualification (IQ), Operating Qualification (OQ)

#### 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. 4 s (models with [d] = 0,1 mg), approx. 10 s (models with [d] = 0,01 mg) under laboratory conditions
- **Shock proof construction**
- **High corner load performance**

#### STANDARD



#### OPTION



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>DAkkS</b>
							KERN	KERN
<b>ABT 100-5NM</b>	101	0,01	1	1	0,05	$\pm 0,15$	965-201	963-101
<b>ABT 120-4NM</b>	120	0,1	1	10	0,1	$\pm 0,2$	965-201	963-101
<b>ABT 220-4NM</b>	220	0,1	1	10	0,1	$\pm 0,2$	965-201	963-101
<b>ABT 320-4NM</b>	320	0,1	1	10	0,1	$\pm 0,3$	965-201	963-101
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								
<b>ABT 120-5DNM</b>	42   120	0,01   0,1	1   1	1	0,02   0,1	$\pm 0,05   0,2$	965-201	963-101
<b>ABT 220-5DNM</b>	82   220	0,01   0,1	1   1	1	0,05   0,1	$\pm 0,1   0,2$	965-201	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.



### 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, PLU etc.



### 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