## **KERN BALANCES & TEST SERVICES CATALOGUE 2019**

Analytical balances KERN ABP





KER



**I KERN ABP 100-5DM** with optional ionizer

NEW: Extremely fast ionization process, thanks to the latest generation of KERN ionization technology to neutralise electrostatic charge for fixed installation in the analytical balance. Particularly convenient handling as you no longer need a separate device. Simply enable the ionizer fan at the push of a button. Suitable for all models

Premium analytical balance with the latest Single-Cell Generation for extremely rapid, stable weighing results



**Bright OLED display** with large viewing angle for the very best readout from a wide range of lines of sight or poor lighting conditions



USB data interfaces and RS-232 for transferring weighing data to the PC, tablet, printer, USB as well as connecting external devices, such as barcode scanner (option), numeric keypad (option) etc.



**GLP/ISO record keeping** professional and detailed GLP protocol, so that the scale is fully compliant with the relevant standard requirements according to ISO, GLP and GMP

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# KERN

## Analytical balances KERN ABP



## Features

- This new generation of analytical balances combines the highest level of precision with large weighing capacities. Thanks to the new Single-Cell Generation, the weighing result is displayed in a fraction of the time with comparable models. Together with the intuitively structured menu, this means that you can work efficiently and rapidly
- **Navigation pad** for super quick navigating through the menus
- Automatic internal adjustment in the case of a change in temperature ≥ 1 °C or timecontrolled every 4 h, guarantees high degree of accuracy and makes the balance independent of its location of use. For applications which do not require verification the time interval can be individually adjusted
- The **Minimum weight of sample** can be manually stored in the device or automatically calculated. For weighings below this value, the balance issues a warning message
- **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
- Individual user settings for up to 10 users can be saved: user name/user number (can be printed out or added to the record for each process), password, menu language, user profiles, accessing user settings via barcode, additional guest mode for users who are not logged in, authorizations, eg. B. balance adjustment, changing settings or conditioning or modification of a recipe only by the authorized person & performing the formulation by the user



- U.S. FDA 21 Part 11: assists you in data integrity in accordance with U.S. Pat. FDA 21 Part 11 (for example (weighing result, sample ID, user name, scales ID, ...)
- Menu language DE, GB
- 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.
- 2 Multi-function weighing plate included with delivery, minimises the effect of currents of air in the weighing space and therefore significantly improves the stabilization time and repeatability. In addition samples, sample paper, PCR containers, micro centrifuge tubes and many other items which protrude can be easily fixed in place and weighed easily
- Protective working cover included with delivery

## **Technical data**

- Luminescent OLED display, digit height 14 mm, bright with high contrast, for easy reading of the weight, even in poor lighting conditions
- Dimensions weighing surface Ø 91 mm
- Overall dimensions (incl. draught shield)
  W×D×H 213×407×344 mm
- Weighing space W×D×H 166×156×220 mm
- Net weight approx. 8 kg
- Permissible ambient temperature 10 °C/30 °C



## Accessories

- **Protective working cover**, scope of delivery: 5 items, KERN YBA-A06S05
- **Draft shield rear panel with integrated ionizer** to neutralise electrostatic charge. Is fitted in place of the existing glass rear panel of the draft shield. Suitable for all models in the KERN ABP range, please order at the time you order your balance, the scope of delivery is the rear panel, ionizer, power supply. Factory Option, KERN ABP-A01
- El 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), KERN 961-231B
- 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. 2 s! (models with [d] = 0,1 mg), approx. 8 s! (models with [d] = 0,01 mg) under laboratory conditions

- Shock proof construction
- High corner load performance



Model	Weighing	Readability	Verification	Minimal load	Reproduci-	Linearity		Option			
	capacity		value		bility			Verification		DAkkS Calibr. Certificate	
	[Max]	[d]	[e]	[Min]				MD		DAkkS	
KERN	g	mg	mg	mg	mg	mg		KERN		KERN	
ABP 100-4M	120	0,1	1	10	0,1	± 0,2		965-201		963-101	
ABP 200-4M	220	0,1	1	10	0,1	± 0,2		965-201		963-101	
ABP 300-4M	320	0,1	1	10	0,1	± 0,3		965-201		963-101	
Dual-range balance switches automatically to the next largest weighing capacity [Max] and readibility [d]											
ABP 100-5DM	52   120	0,01   0,1	1	1	0,02   0,1	± 0,03   0,3		965-201		963-101	
ABP 200-5DM	102   220	0,01   0,1	1	1	0,02   0,1	± 0,03   0,3		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											

## **KERN BALANCES & TEST SERVICES CATALOGUE 2019**

KCP

PROTOCOL



## Pictograms

#### Internal adjusting:

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

#### Adjusting program CAL:

For quick setting up of the balance's accuracy. External adjusting weight required



CAL EXT

#### Easy Touch:

Suitable for the connection, data transmission and control through PC, tablet or smartphone Memory:

#### Balance memory capacity, e.g. for article data, MEMORY

weighing data, tare weights, PLU etc. Alibi memory:

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



• 6534 •

ALIBI

## 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 RS 485 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



## WLAN 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



ANALOG

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



Network interface: For connecting the scale to an Ethernet network



#### Wireless data transfer:

between the weighing unit and the evaluation unit using an integrated radio module

\*The Bluetooth<sup>®</sup> word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by KERN & SOHN GmbH is under license. Other trademarks and trade names are those of their respective owners.

### **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 bestequipped 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.

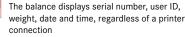
#### Range of services:

- · 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, GB, FR, IT, ES, NL, PL
- · Conformity evaluation and reverification of balances and test weights



PCS

GLP/ISO log:



**KERN Communication Protocol (KCP):** 

It is a standardized interface command set for

KERN balances and other instruments, which

parameters and functions of the device. KERN

devices featuring KCP are thus easily integrated

with computers, industrial controllers and other

allows retrieving and controlling all relevant

## GLP/ISO log:

With weight, date and time. Only with KERN PRINTER printers

## **Piece counting:**

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

#### Recipe level A: 4

The weights of the recipe ingredients can be RECIPE 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

#### **Recipe level C: ∠**<sup>c</sup>



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



The weights of similar items can be added SUM together and the total can be printed out

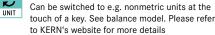


TOL

Percentage determination:

Determining the deviation in % from the target value (100 %)

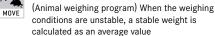
#### Weighing units: S

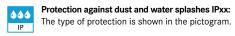


#### Weighing with tolerance range: ○ 3)

(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

#### M-Hold function:





#### Stainless steel:

The balance is protected against corrosion

#### Suspended weighing:

Load support with hook on the underside of the balance

#### **Battery operation:**

Ready for battery operation. The battery type is BATT specified for each device



INOX

Rechargeable battery pack: Rechargeable set



## Universal mains adapter:

with universal input and optional input socket adapters for A) EU, CH; B) EU, CH, GB, USA; C) EU, CH, GB, USA, AUS

#### Mains adapter:

230V/50Hz in standard version for EU. On 230 V request GB, USA or AUS version available

#### Power supply:



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



SC TECH

Μ

+3 DAYS

DAkkS

+3 DAYS

1 DAY

2 DAYS

Your KERN specialist dealer:

#### Weighing principle: Tuning fork: A resonating body is electromagnetically

excited, causing it to oscillate

#### s T compensation FORCE

accurate weighings

Verification possible:

Package shipment:

Pallet shipment:

DAkkS calibration possible:

shown in days in the pictogram

the pictogram

## Weighing principle: Electromagnetic force Coil inside a permanent magnet. For the most

Weighing principle: Single cell technology:

The time required for verification is specified in

Advanced version of the force compensation

principle with the highest level of precision

The time required for DAkkS calibration is

The time required for internal shipping

The time required for internal shipping

preparations is shown in days in the pictogram

preparations is shown in days in the pictogram