

Compact laboratory balance KERN 440



The classic balance in the laboratory

Features

- **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
- **Ring-shaped draught shield** standard, only for models with weighing plate size **A**, weighing space  $\varnothing \times H$  90×40 mm
- **Protective working cover** included with delivery

Technical data

- Backlit LCD display, digit height 15 mm
- Dimensions weighing surface
  - A**  $\varnothing$  81 mm
  - B**  $\varnothing$  105 mm
  - C** W×D 130×130 mm
  - D** W×D 150×170 mm, see larger picture
- Weighing plate material
  - A** plastic, with conductive lacquer
  - B, C, D** stainless steel
- Overall dimensions (without draught shield) W×D×H 165×230×80 mm
- Optional battery operation, 9 V block not included, operating time up to 20 h, AUTO-OFF function to preserve the battery
- Net weight approx. 0,95 kg
- Permissible ambient temperature 5 °C/35 °C

Accessories

- **Protective working cover**, scope of delivery: 5 items, for models with weighing plate size
  - A** KERN 440-210-002S05
  - B** KERN 440-330-002S05
  - C** KERN 440-450-002S05
  - D** KERN 440-530-002S05
- **Internal rechargeable battery pack**, operating time up to 20 h without backlight, charging time approx. 10 h, KERN FCB-A01
- **Hook for underfloor weighing**, KERN 440-A01
- **RS-232/Ethernet adapter** for connection to an IP-based Ethernet network, KERN YKI-01
- **Individual header data**: the free software SHM-01 can be used to print 4 header lines on the printout when using printers 911-013, YKN-01, YKB-01N, YKE-01 and YKC-01 (in combination with YKI-02)
- Further details, plenty of further accessories and suitable printers see *Accessories*

STANDARD



OPTION



Model	Weighing capacity [Max] g	Readability [d] g	Reproducibility g	Linearity g	Weighing plate	Option	
						DAkKS Calibr. Certificate	DAkKS KERN
440-21A	60	0,001	0,001	± 0,003	<b>A</b>	963-127	
440-33N	200	0,01	0,01	± 0,02	<b>B</b>	963-127	
440-35N	400	0,01	0,01	± 0,03	<b>B</b>	963-127	
440-35A	600	0,01	0,01	± 0,03	<b>B</b>	963-127	
440-43N	400	0,1	0,1	± 0,2	<b>C</b>	963-127	
440-45N	1000	0,1	0,1	± 0,2	<b>C</b>	963-127	
440-47N	2000	0,1	0,1	± 0,2	<b>C</b>	963-127	
440-49N	4000	0,1	0,1	± 0,3	<b>D</b>	963-127	
440-49A	6000	0,1	0,1	± 0,3	<b>D</b>	963-128	
440-51N	4000	1	1	± 2	<b>D</b>	963-127	
440-53N	6000	1	1	± 2	<b>D</b>	963-128	

## Pictograms

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

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

## Your KERN specialist dealer: