

# Precision 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 ØxH 90x40 mm

### Technical data

- Backlit LCD display, digit height 15 mm
- Weighing plate dimensions
  - A** Ø 81 mm
  - B** Ø 105 mm
  - C** WxD 130x130 mm
  - D** WxD 150x170 mm, see enlarged picture
- Weighing plate material
  - A** Plastic, with conductive lacquer
  - B, C, D** Stainless steel

- Optional battery operation, 9 V Block, not included. AUTO-OFF function to preserve the battery
- Overall dimensions (without draught shield) WxDxH 165x230x80 mm
- Net weight approx. 1 kg
- Permissible ambient temperature 5 °C / 35 °C

### Accessories

- **Protective working cover** over keyboard and housing, standard, can be retrofitted for models with weighing plate size
  - A** KERN 440-210-002
  - B** KERN 440-330-002
  - C** KERN 440-450-002
  - D** KERN 440-530-002
- **Rechargeable battery pack internal**, operating time up to 20 h without backlight, charging time approx. 10 h, KERN FCB-A01
- **Second display**, KERN YKD-A01

- **Individual header data**: the free software KERN SHM-01 can be used to print 4 header lines on the printout for printers YKN-01, 911-0103 and YKB-01N
- **Hook for underfloor weighing** of hanging loads, standard, can be reordered, KERN 440-A01
- **RS-232/Ethernet adapter** to connect balances with an RS-232 interface to a network via Ethernet, for details see page 158, KERN YKI-01
- **Suitable test weights**, also with calibration certificate, see the internet
- **Suitable printers** and an extensive accessories range, see page 157 ff.

### STANDARD



### OPTION



Model	Weighing range [Max] g	Readout [d] g	Reproducibility g	Linearity g	Min. piece weight [Counting] g/piece	Weighing plate	Option	
							DAkkS KERN	Calibr. Certificate
440-21A	60	0,001	0,001	± 0,003	0,002	A	963-127	
440-33N	200	0,01	0,01	± 0,02	0,02	B	963-127	
440-35N	400	0,01	0,01	± 0,03	0,02	B	963-127	
440-35A	600	0,01	0,01	± 0,03	0,02	B	963-127	
440-43N	400	0,1	0,1	± 0,2	0,2	C	963-127	
440-45N	1000	0,1	0,1	± 0,2	0,2	C	963-127	
440-47N	2000	0,1	0,1	± 0,2	0,2	C	963-127	
440-49N	4000	0,1	0,1	± 0,3	0,2	D	963-127	
440-49A	6000	0,1	0,1	± 0,3	0,2	D	963-128	
440-51N	4000	1	1	± 2	2	D	963-127	
440-53N	6000	1	1	± 2	2	D	963-128	

# KERN Pictograms

 <b>Internal adjusting:</b> Quick setting up of the balance's accuracy with internal adjusting weight (motordriven).	 <b>Recipe level A:</b> Separate memory for the weight of the tare container and the recipe ingredients (net total).	 <b>Suspended weighing:</b> Load support with hook on the underside of the balance.
 <b>Adjusting program CAL:</b> For quick setting up of the balance's accuracy. External adjusting weight required.	 <b>Recipe level B:</b> Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display.	 <b>Battery operation:</b> Ready for battery operation. The battery type is specified for each device.
 <b>Memory:</b> Balance memory capacity, e.g. for article data, weighing data, tare weights, PLU etc.	 <b>Recipe level C:</b> Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display. Additional convenient functions, such as barcode and back calculation functions.	 <b>Rechargeable battery pack:</b> Rechargeable set.
 <b>Data interface RS-232:</b> To connect the balance to a printer, PC or network.	 <b>Totalising level A:</b> The weights of similar items can be added together and the total can be printed out.	 <b>Mains adapter:</b> 230V/50Hz in standard version for EU. On request GB, AUS or USA version available.
 <b>RS-485 data interface:</b> To connect the balance to a printer, PC or other peripherals. High tolerance against electromagnetic disturbance.	 <b>Totalising level C:</b> Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display. Additional convenient functions, such as barcode and back calculation.	 <b>Power supply:</b> Integrated in balance. 230V/50Hz standard EU. More standards e.g. GB, AUS or USA on request.
 <b>USB data interface:</b> To connect the balance to a printer, PC or other peripherals.	 <b>Strain gauges:</b> Electrical resistor on an elastic deforming body.	 <b>Tuning fork principle:</b> A resonating body is electromagnetically excited, causing it to oscillate.
 <b>Bluetooth 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>Electromagnetic force compensation:</b> Coil inside a permanent magnet. For the most accurate weighings.
 <b>WLAN data interface:</b> To transfer data from the balance to a printer, PC or other peripherals.	 <b>Weighing units:</b> Can be switched to e.g. non-metric units at the touch of a key. See balance model. Please refer to KERN's website for more details.	 <b>Single cell technology:</b> Advanced version of the force compensation principle with the highest level of precision.
 <b>Control outputs (optocoupler, digital I/O):</b> To connect relays, signal lamps, valves, etc.	 <b>Weighing with tolerance range:</b> Upper and lower limiting values can be programmed individually for e.g. dosing, sorting and portioning.	 <b>Verification possible:</b> The time required for verification is specified in the pictogram.
 <b>Interface for second balance:</b> For direct connection of a second balance.	 <b>Vibration-free weighing:</b> (Animal weighing program) When the weighing conditions are unstable, a stable weight is calculated as an average value.	 <b>DAkkS calibration possible:</b> The time required for DAkkS calibration is shown in days in the pictogram.
 <b>Network interface:</b> For connecting the scale to an Ethernet network. With KERN products you can use a universal RS-232/LAN converter.	 <b>Protection against dust and water splashes IPxx:</b> The type of protection is shown in the pictogram. For details see the glossary.	 <b>Package shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram.
 <b>GLP/ISO log:</b> The balance displays the weight, date and time, regardless of a printer connection.	 <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.	 <b>Pallet shipment:</b> The time required for internal shipping preparations is shown in days in the pictogram.
 <b>GLP/ISO log:</b> With weight, date and time. Only with KERN printers, see "Accessories"	 <b>Stainless steel:</b> The balance is protected against corrosion.	 <b>Warranty:</b> The warranty period is shown in the pictogram.
 <b>Piece counting:</b> Reference quantities selectable. Display can be switched from piece to weight.		

## 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 - 2000 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.

## Your KERN specialist dealer:

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 6 t
- DAkkS calibration of weights in the range of 1 mg - 500 kg
- Database supported management of checking equipment and reminder service
- Calibration of force-measuring devices
- DAkkS calibration certificates in the following languages D, GB, F, I, E, NL