KERN BALANCES & TEST SERVICES 2022

KERN

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 III, weighing space Ø×H 90×40 mm
- Protective working cover included with delivery

Technical data

- Backlit LCD display, digit height 15 mm
- $\boldsymbol{\cdot}$ Dimensions weighing surface
 - A Ø 81 mm
 - ₿ Ø 105 mm
 - C W×D 130×130 mm
- W×D 150×170 mm, see larger picture
- · Weighing plate material
 - plastic, with conductive lacquer, , , D Stainless Steel
- Overall dimensions (without draught shield)
 W×D×H 165×230×80 mm
- Optional battery operation, 9 V block, standard, 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
 KERN 440-210-002S05
 KERN 440-330-002S05
 KERN 440-450-002S05
- KERN 440-530-002S05
- Internal rechargable 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*

SIANDARD							OPTION	OPTION							
	• 688. •	GLP		^	%	C	^-–	É		в			1	m	DAkkS
CAL EXT	RS 232	PRINTER	PCS	RECIPE	PERCENT	UNIT	MOVE	UNDER	BATT	MULTI	DMS	1 DAY	ET	ACCU	+3 DAYS

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

KERN BALANCES & TEST SERVICES 2022

Pictograms

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: 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.

Data interface RS-232:

• 6550.• To connect the balance to a printer, PC or RS 232 network



RS-485 data interface:

To connect the balance to a printer, PC or other peripherals. Suitable for datatransfer 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:

KERN – Precision is our business

For direct connection of a second balance



balance calibration.

ment in Europe

Range of services:

characteristics) for test weights

· Calibration of force-measuring devices

Network interface:

For connecting the scale to an Ethernet network

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

The KERN DAkkS calibration laboratory today is one of the most modern and bestequipped DAkkS calibration laboratories for balances, test weights and force-measure-

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.

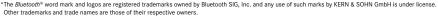
· Volume determination and measuring of magnetic susceptibility (magnetic

· Conformity evaluation and reverification of balances and test weights

· Database supported management of checking equipment and reminder service

· DAkkS calibration certificates in the following languages DE, EN, FR, IT, ES, NL, PL

· 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





KCP

PROTOCOL

GLP/ISO log: GI P With weight, date and time. Only with KERN PRINTER printers.

Piece counting:

connection

digital systems GLP/ISO log:

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

KERN Communication Protocol (KCP):

It is a standardized interface command set for

KERN balances and other instruments, which

devices featuring KCP are thus easily integrated

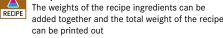
with computers, industrial controllers and other

The balance displays serial number, user ID,

weight, date and time, regardless of a printer

allows retrieving and controlling all relevant parameters and functions of the device. KERN

Recipe level A:



Recipe level B:

Internal memory for complete recipes with name RECIPE and target value of the recipe ingredients. User guidance through display

Totalising level A:

Η' The weights of similar items can be added SUM 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 UNIT 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 MOVE conditions are unstable, a stable weight is calculated as an average value



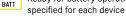
Protection against dust and water splashes IPxx:

The type of protection is shown in the pictogram.

Suspended weighing: ÷. Load support with hook on the underside of the UNDER balance

Battery operation:







Ready for battery operation. The battery type is

Rechargeable battery pack: Rechargeable set



Universal plug-in power supply:

with universal input and optional input socket MULTI 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

1	DMS

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:

DAkkS calibration possible (DKD):

is shown in days in the pictogram

Factory calibration (ISO):

Package shipment:

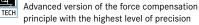
Pallet shipment:

The time required for DAkkS calibration

The time required for Factory calibration

The time required for internal shipping preparations

The time required for internal shipping preparations



Verification possible: The time required for verification is specified in the pictogram

М +3 DAYS

DAkkS

+3 DAYS

ISO

+4 DAYS

1 DAY

ò

2 DAYS

Your KERN specialist dealer: