2

SCHOOL BALANCES

As entry-level models, KERN school balances cover the most important basic applications of laboratory balances and offer simple operation, easy readability and an optimal price-performance ratio. The KERN School balances can be used flexibly and independent of location thanks to battery operation and are therefore the ideal choice for school or teaching purposes.

Our recommendation: the EFS school balance in our product range, a space-saving and inexpensive allrounder for school teaching programs and universities.

Quick-Finder School Balances

Readability [d] g	Weighing capacity [Max] g	Model KERN	Page	DAYS	CAL EXT	RS 232	PCS	RECIPE	BATT
				For an explanation on the pictos, see the front flap					
0,001	100	**EMB 100-3**	14	1	●				●
0,001	200	**EMB 200-3**	14	1	●				●
0,001	200	**EMB 200-3V**	15	1	●	●			●
0,001	300	**EMS 300-3**	16	1	●		●	○	●
0,01	200	**EMB 200-2**	14	1	●				●
0,01	500	**EHA 500-2**	17	1	●		●		●
0,01	500	**EFS 500-2**	13	1	●				●
0,01	600	**EMB 600-2**	14	1	●				●
0,01	1000	**EMB 1000-2**	14	1	●				●
0,01	2000	**EMB 2000-2**	14	1	●				●
0,01	2000	**EMB 2000-2V**	15	1	●	●			●
0,01	3000	**EMS 3000-2**	16	1	●		●	○	●
0,1	220	**EFS 200-1S05**	13	1	●				●
0,1	500	**EMB 500-1**	14	1	●				●
0,1	500	**EMB 500-1BE**	14	1	●				●
0,1	500	**EHA 500-1**	17	1	●		●		●
0,1	620	**EFS 600-1S05**	13	1	●				●
0,1	1000	**EHA 1000-1**	17	1	●		●		●
0,1	1200	**EMB 1200-1**	14	1	●				●
0,1	3000	**EHA 3000-1**	17	1	●		●		●
0,1	3000	**EFS 3000-1**	13	1	●				●
0,1	3000	**EMB 3000-1**	14	1	●				●
0,1	6000	**EMB 6000-1**	14	1	●				●
0,1	6000	**EMS 6K0.1**	16	1	●		●	○	●
0,1	12000	**EMS 12K0.1**	16	1	●		●	○	●
1	2200	**EMB 2200-0**	14	1	●				●
1	2200	**EFS 2000-0S05**	13	1	●				●
1	3000	**EHA 3000-0**	17	1	●		●		●
1	5200	**EMB 5.2K1**	14	1	●				●
1	5200	**EFS 5000-0S05**	13	1	●				●
1	6000	**EMS 6K1**	16	1	●		●	○	●
1	12000	**EMS 12K1**	16	1	●		●	○	●
5	5200	**EMB 5.2K5**	14	1	●				●

● Standard ○ Option

SCHOOL ★ 5×


1


1


2

Perfect school balances for experimental teaching – easy to use, space-saving, stackable

Features

- Simple and convenient 2-key operation, making them ideal for use in schools and universities
- Tare function facilitates formulation work
- Particularly flat design
- Secure and non-slip positioning with rubber feet
- 1 Stackable for space-saving storage
- 2 Practical battery operation using standard batteries ensures a high level of flexibility and freedom from mains adapters, sockets, chargers, etc.

Technical data

- Large LCD display, digit height 15 mm
- Dimensions weighing surface, plastic, W×D 134×127 mm
- Overall dimensions W×D×H 145×205×46,5 mm
- Battery operation, 4×1.5 V AA standard, operating time up to 200 h
- Integrated AUTO-OFF function to preserve the batteries
- Net weight approx. 0,45 kg
- Permissible ambient temperature 10 °C/40 °C

Accessories

- External universal mains adapter, with universal input and optional input socket adapters for EU, CH, GB, US, KERN YKA-27

Note: The models with the suffix -S05 are delivered in a set of 5 units. i.e. the price given in the table refers to 5 items. Cannot be delivered individually. The calibration prices refers to one single balance

STANDARD: CAL EXT · UNIT · BATT · DMS · 1 DAY

OPTION: B MULTI · DAkkS +3 DAYS

Model	Weighing capacity	Readability	Reproducibility	Linearity	Quantity delivered (balance)	Options DAkkS Calibr. Certificate DAkkS
KERN	[Max] g	[d] g	g	g		KERN
EFS 500-2	500	0,01	0,01 g	± 0,03	1	963-127
EFS 200-1S05	220	0,1	0,1 g	± 0,3	5	963-127
EFS 600-1S05	620	0,1	0,1 g	± 0,3	5	963-127
EFS 3000-1	3000	0,1	0,1 g	± 0,3	1	963-127
EFS 2000-0S05	2200	1	1 g	± 3	5	963-127
EFS 5000-0S05	5200	1	1 g	± 3	5	963-128

SCHOOL ★★

Entry level laboratory balance with tremendous weighing performance

Features

- Simple and convenient 2-key operation
- Tare function facilitates formulation work
- Particularly flat design
- Ready for use: Batteries included
- A Ring-shaped draught shield standard, only for models with weighing plate size A, weighing space ø×H 96×35 mm
- Hook for underfloor weighing standard
- 1 Also available as KERN EMB 500-1BE Black Edition
- Note: With the optional auxiliary set for density determination KERN YDB-04 also well suited for school and teaching operation, see *Accessories*

Technical data

- Large LCD display, digit height 15 mm
- Dimensions weighing surface
  A ø 82 mm, plastic, with conductive lacquer
  B ø 105 mm, plastic
  C ø 150 mm, plastic, see larger picture
- Overall dimensions W×D×H
  A 170×244×54 mm
  B, C 170×244×39 mm
- Batteries included, 9 V block, respectively 2×1.5 V AA
- Net weight approx. 0,85 kg
- Permissible ambient temperature 5 °C/35 °C

Accessories

- Stainless steel weighing plate, only for models with weighing plate size B, KERN EMB-A02
- External universal mains adapter, with universal input and optional input socket adapters for EU, CH, GB, US, KERN YKA-03N
- 2 Ancillary kit for density determination of liquids and solids with density > 1. Scope of supplies: Bridge for holding the beaker (ø 102 mm), hook (H 139 mm), KERN YDB-04

STANDARD: CAL EXT, UNIT, UNDER, BATT, DMS, 1 DAY
OPTION: MULTI, DAkkS +3 DAYS

Model	Weighing capacity	Readability	Reproducibility	Linearity	Weighing plate	Options DAkkS Calibr. Certificate DAkkS
KERN	[Max] g	[d] g	g	g		KERN
EMB 100-3	100	0,001	0,001 g	± 0,005	A	963-127
EMB 200-3	200	0,001	0,001 g	± 0,005	A	963-127
EMB 200-2	200	0,01	0,01 g	± 0,02	B	963-127
EMB 600-2	600	0,01	0,01 g	± 0,03	B	963-127
EMB 1000-2	1000	0,01	0,01 g	± 0,05	C	963-127
EMB 2000-2	2000	0,01	0,01 g	± 0,05	C	963-127
EMB 500-1	500	0,1	0,1 g	± 0,2	C	963-127
EMB 500-1BE	500	0,1	0,1 g	± 0,2	C	963-127
EMB 1200-1	1200	0,1	0,1 g	± 0,3	C	963-127
EMB 3000-1	3000	0,1	0,1 g	± 0,3	C	963-127
EMB 6000-1	6000	0,1	0,1 g	± 0,3	C	963-128
EMB 2200-0	2200	1	1 g	± 2	C	963-127
EMB 5.2K1	5200	1	1 g	± 3	C	963-128
EMB 5.2K5	5200	5	5 g	± 10	C	963-128

SCHOOL ★★★

2

School balance with integrated density determination function

Features

- Easy density determination: Thanks to the self-explanatory, graphic-assisted control panel, the density of solids and liquids can be determined in seconds, making them ideal for use in schools and universities. Note: Balance and appropriate set for density determination should be ordered at the same time, see *Accessories*
- Hook for underfloor weighing standard
- Self-explanatory, graphic control panel, the workings steps can be understood immediately, even without operating instructions
  - no learning time = reduces costs
  - ideal for untrained users
  - visualised process avoids operating errors
- The 4 steps are carried out from left to right:
  1 Tare the balance by pressing the [TARE] key
  2 Select density determination mode (solids/liquids)
  3 Weighing of samples/plummets in air
  4 Weighing of samples/plummets in liquid.
  The density will be shown on the display right away
- Particularly flat design

Technical data

- Large LCD display, digit height 15 mm
- Dimensions weighing surface, plastic
  A ø 82 mm
  B ø 150 mm, see larger picture
- Overall dimensions W×D×H 175×250×55 mm
- Batteries included, 9 V block, operating time up to 12 h, AUTO-OFF function preserves the battery
- Net weight approx. 0,85 kg
- Permissible ambient temperature 5 °C/35 °C
- Also with carat weighing unit:
  EMB 200-3V: [Max] 1000 ct/ [d] 0,005 ct
  EMB 2000-2V: [Max] 10000 ct/ [d] 0,05 ct

Accessories

KERN EMB 200-3V:

- 5 Ancillary kit for density determination of liquids and solids with density > 1. Scope of supplies: Bridge for holding the beaker (ø 102 mm), hook (H 139 mm), KERN YDB-04
- 6 Set for density determination of liquids and solids with density ≤/≥ 1. Scope of delivery: Weighing plate, beaker (H×ø 71×51 mm), sample holder, plummet, KERN YDB-01
- DAkkS-Calibration certificate for the plummet (20 g), KERN 962-335V

KERN EMB 2000-2V:

- 7 Set for density determination of liquids and solids with density ≤/≥ 1. Scope of delivery: Weighing plate, beaker (H×ø 135×100 mm), sample holder, plummet KERN YDB-02
- DAkkS-Calibration certificate for the plummet (200 g), KERN 962-338V
- Thermometer, KERN YDB-A03

STANDARD

OPTION

Model	Weighing capacity	Readability	Reproducibility	Linearity	Weighing plate	Options
	[Max]	[d]				DAkkS Calibr. Certificate DAkkS
KERN	g	g	g	g		KERN
EMB 200-3V	200	0,001	0,002 g	± 0,005	A	963-127
EMB 2000-2V	2000	0,01	0,02 g	± 0,05	B	963-127

SCHOOL ★★★

Entry level model in the low-cost range with large weighing plate

Features

- Especially suitable for use in schools and universities, for example for biology, chemistry, physics
- Large, shock proof weighing plate made of plastic
- Particularly flat design
- Ergonomically optimised key pad with large keys and a high-contrast LCD display
- Secure and non-slip positioning with rubber feet
- Adjusting program CAL for quick setting of the balance accuracy, external test weights at an additional price, see *Test weights*
- A Draught shield standard for models with weighing plate size A, weighing space W×D×H 145×145×65 mm

Technical data

- Large LCD display, digit height 25 mm
- Dimensions weighing surface
  A ⌀ 105 mm, plastic, with conductive lacquer
  B W×D 175×190 mm, plastic, see larger picture
- Overall dimensions W×D×H 200×280×65 mm
- Optional battery operation, 9 V block not included in scope of delivery, operating time up to 40 h
- Mains adapter external, standard
- Net weight approx. 1,4 kg
- Permissible ambient temperature 5 °C/35 °C

Accessories

- 1 Stainless steel weighing plate, only for models with weighing plate size B, KERN EMS-A01

STANDARD

OPTION

Model	Weighing capacity	Readability	Reproducibility	Linearity	Weighing plate	Options
	[Max]	[d]				DAkkS Calibr. Certificate
KERN	g	g	g	g		DAkkS KERN
EMS 300-3	300	0,001	0,002 g	± 0,005	A	963-127
EMS 3000-2	3000	0,01	0,02 g	± 0,05	B	963-127
EMS 6K0.1	6000	0,1	0,1 g	± 0,3	B	963-128
EMS 12K0.1	12000	0,1	0,1 g	± 0,3	B	963-128
EMS 6K1	6000	1	1 g	± 3	B	963-128
EMS 12K1	12000	1	1 g	± 3	B	963-128

SCHOOL ★★★

The compact all-round model with robust stainless steel weighing plate for use in laboratories, industries, and for teaching

Features

- Thanks to its compact, robust design, its bright display and high precision, this range is ideal for use in laboratories, quality control, production as well in schools and universities for teaching e.g. biology, chemistry and physics
- Large, shock proof weighing plate made from stainless steel, can be removed and therefore is hygienic and easy to clean
- 1 Particularly flat design
- Ergonomically-optimised key pad with large keys and a high-contrast LCD screen
- 2 Secure and non-slip positioning with rubber feet
- Level indicator and levelling feet for precise levelling of the scale, fitted as standard, to give the most accurate weighing result
- Adjusting program CAL for quick setting of the balance accuracy using an external test weight at an additional price, see *Test weights*

Technical data

- Large backlit LCD display, digit height 22 mm
- Dimensions weighing surface, stainless steel
  - A ⌀ 105 mm
  - B W×D 120×120 mm, see larger picture
- Overall dimensions W×D×H 225×160×50 mm
- Optional battery operation, 2×1.5 V AA not included in scope of delivery, operating time up to 70 h
- Mains adapter external, standard
- Net weight approx. 0,50 kg
- Permissible ambient temperature 5 °C/40 °C

Accessories

- US-Plug, KERN YKA-40-US

STANDARD

OPTION

Model	Weighing capacity	Readability	Reproducibility	Linearity	Weighing plate	Options DAkkS Calibr. Certificate DAkkS KERN
KERN	[Max] g	[d] g	g	g		
EHA 500-2	500	0,01	0,03 g	± 0,03	A	963-127
EHA 500-1	500	0,1	0,3 g	± 0,3	A	963-127
EHA 1000-1	1000	0,1	0,3 g	± 0,3	B	963-127
EHA 3000-1	3000	0,1	0,3 g	± 0,3	B	963-127
EHA 3000-0	3000	1	3 g	± 2	B	963-127

WHEN DESIGN MEETS PERFORMANCE

May we introduce...? The new models from the KERN IoT Line are celebrating their debut.

Together we can enjoy the shared, advanced-looking KERN design, the consistent and simplified handling, the high connectivity level, and a persuasive performace that operates across all devices.

Dive into our new KERN brand universe.

Design

+ Trend-setting, high-quality KERN design
+ Recognisability through uniform product range
+ Reliable brand values are reflected visually and functionally in the product

Performance

+ Cross-device functionality and protocols
+ Consistently reliable performance
+ The latest technologies
+ Cross-device functionality and protocols

Philosophy

+ Sustainable due to high energy efficiency
+ Standardisation of design components across all units
+ Controlled value chain
+ Tested and monitored technology for maximum user safety

IoT ready

Are you curious about the models in the KERN IoT range and what opportunities they offer?

Then take a look at pages 20/21, because thanks to new technologies such as KUP and KCP these models are perfectly equipped for the wide range of challenges of Industry 4.0

User Interface

+ Uniform, simplified user guidance
+ Problem-free commissioning, use and expansion
+ Cross-model software

Service

+ Fast and competent help from our IoT specialists
+ Even more efficient repair process
+ Accessories can be flexibly combined

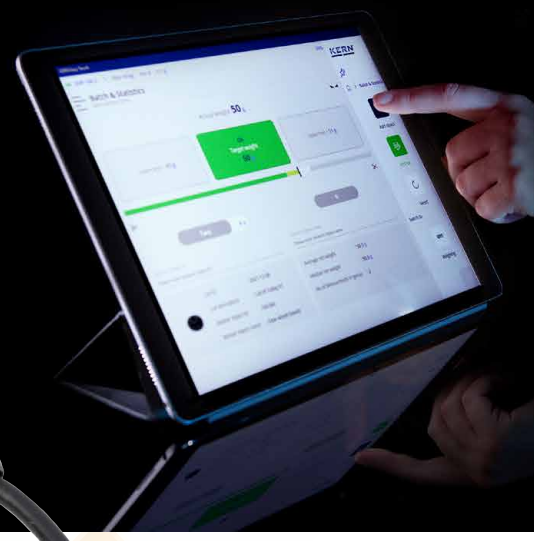
Note: Our KERN IoT accessories can be easily combined with all our IoT models.

Find the right printer and other practical accessories in *Accessories* and on the internet

ARE YOU READY?

With the KERN Universal Port (KUP) and the KERN Communication Protocol (KCP) we ensure the perfect integration of your KERN balance into production or process chains for a complete, simplified work process.

Our products will make sure you are prepared for the future of weighing in the Internet of Things. Get IoT ready – with the IoT models from KERN.



KERN Universal Port (KUP)

The integrated KERN Universal Port (KUP) allows the connection of external KUP interface adapters such as RS-232, USB, Bluetooth, WiFi, Analogue, Ethernet etc.

The outstanding advantage here is that the KUP interface adapters are simply plugged in, i.e. retrofitting interfaces is conveniently possible without opening the scale housing or complicated installation.

The interface adapters enable convenient transmission of weighing data to networks, PCs, smartphones, tablets, laptops, printers etc. In addition, control commands and data inputs can also be sent to the scale via the connected devices.

WiFi
KERN KUP-05

RS-232
KERN KUP-01

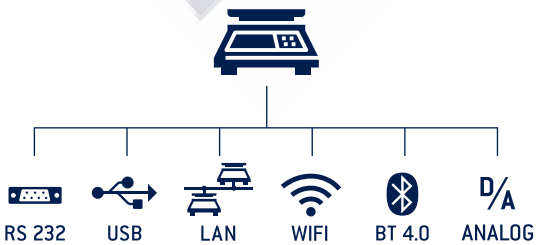
USB
KERN KUP-03

Ethernet
KERN KUP-04

Bluetooth
KERN KUP-06

Analogue
KERN KUP-08

KERN interface adapter



Tip: With the KERN KUP-13 extension box, up to three KUP interface adapters can be operated in parallel on the scale.

KERN Communication Protocol (KCP)

The KERN Communication Protocol (KCP) permits searching and remote control of the balance through computers or CRM/ERP systems using the KERN Communication Protocol. KCP is a standardised interface command structure for KERN balances and other measuring instruments which allows you to recall and manage all relevant parameters and device functions. You can therefore simply connect KERN models with KCP to computers, industrial control systems and other digital systems.

In a large number of cases the KERN Communication Protocol is compatible with the MT-SICS protocol. KCP is available through all KUPs, and on the KERN KIB-TM display device through the interfaces available.

KCP – Export („Outbound“) – the Highlights

- Stable, immediate weight
- Live transfer of weights
- Storing of gross weight, tare weight, net weight, stability, date, time etc., in the tamper-proof Alibi memory
- Output of the weighing result in percent
- Output of the weighing result in pieces (piece-counting function)
- Output of the weight at freely-definable timed intervals
- and much more

KCP – Import („Inbound“) – the Highlights

- Recall of the central device data
- Setup or recall of an individual device ID number
- Setting or searching for a tare value (pre-tare value) externally
- Recall of stored weighing results from the alibi memory
- Carrying out external adjustment/ linearization
- Setting the reference values in the balance externally and outputting the weighing result in percent or in pieces
- Setting a network address for the balance (IP) – also for WiFi
- and much more

Still have questions?

We will be happy to give you more comprehensive information on this topic – talk to us: