# KERN EMS 12K1 Weighing Scale Owner's Manual



**BALANCES & TEST SERVICE 2023**
**SCHOOL BALANCES**


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

Contents



## 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
- 1 Draught shield standard for models with weighing plate size A , weighing space W×D×H 145×145×65 mm
- Suitable for common school LIMS systems

## 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
- Overall dimensions W×D×H 200×280×63 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

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


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


**Internal adjusting:**
Quick setting up of the balance‘s accuracy with internal adjusting weight (motor driven)


**Adjusting program CAL:**
For quick setting up of the balance‘saccuracy. External adjusting weight required


**Easy Touch:**
Suitable for the connection, data transmission and control through PCor tablet.

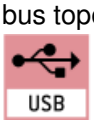

**Memory:**
Balance memory capacity, e.g. for article data, weighing data, tare weights, PLU etc.


**Alibi memory:**
Secure, electronic archiving of weighingresults, complying with the 2014/31/EUstandard.


**KERN Universal Port (KUP):**
allows the connection of external KUPinterface adapters, e.g. RS-232, RS-485, SB,Bluetooth, WLAN, Analogue, Ethernethe exchange of data and control commands,without installation effort


**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, PCor other peripherals. Suitable for dattransfer over large distances. Networin 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 toa printer, PC or other peripherals


**WiFi data interface:**

To transfer data from the balance toa 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:**

For direct connection of a second balance


**Network interface:**

For connecting the scale to an Ethernet network


**KERN Communication Protocol (KCP):**

It is a standardized interface command set for KERN balances and other instru ments,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


**GLP/ISO log:**

The balance displays weight, date and time, independent of a printer connection


**GLP/ISO log:**

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


**Piece counting:**

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


**Recipe level A:**

The weights of the recipe ingredients can be 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


**Totalising level A:**

The weights of similar items can be added 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 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 conditions are un stable, 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 balance

**Battery operation:**
Ready for battery operation. The battery type is specified for each device

**Rechargeable battery pack:**
Rechargeable set

**Universal plug-in power supply:**
with universal input and optional input socket 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

**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:**
Advanced version of the force compensation principle with the highest level of precision


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


**DAkkS calibration possible (DKD):**
The time required for DAkkS calibration is shown in days in the pictogram


**Factory calibration (ISO):**
The time required for Factory calibration is shown in days in the pictogram


**Package shipment:**
The time required for internal shipping preparations is shown in days in the pictogram


**Pallet shipment:**
The time required for internal shipping preparations is shown in days in the pictogram



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## Documents / Resources

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|  | KERN EMS 12K1 Weighing Scale [pdf] Owner's Manual<br>EMS 300-3, EMS 3000-2, EMS 6K0.1, EMS 12K0.1, EMS 6K1, EMS 12K1, EMS 12K1 Weighing Scale, Weighing Scale, Scale |