# Moisture analyser KERN DBS
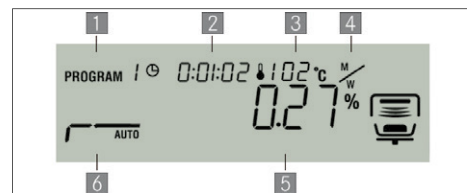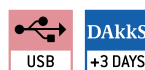


## Moisture analyser with graphics display and 10 memories for drying programs

STANDARD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CAL EXT | MEMORY | RS 232 | GLP PRINTER | UNIT | 230 V | FORCE | 1 DAY | 3 YEARS WARRANTY |

OPTION

USB | DAkkS +3 DAYS

| Model KERN | DBS 60-3 |
|---|---|
| Readout [d] | 0,001 g / 0,01 % |
| Weighing range [Max] | 60 g |
| Reproducibility weight of sample 2 g | 0,15 % |
| Reproducibility, weight of sample 10 g | 0,02 % |
| **Display after drying (Display can be switched over at any time)** | |
| Moisture [%] = Moisture content (M) from wet weight (W) | 0 - 100 % |
| Dry content [%] = Dry weight (D) from (W) | 100 - 0 % |
| ATRO [%] [(W-D) : D] · 100% | 0 - 999 % |
| Moisture content [g] (M) | Absolute value in [g] |
| Temperature range | 50 - 200 °C in steps up to 1 °C |
| Drying modes | ⌐ Standard drying<br>⌐_ Drying in levels<br>⌐ Gentle drying<br>⌐ Rapid drying |
| Switch off criteria | • Automatic unrestricted switch off (Selectable loss in weight 0,01%-0,1% in 30 s)<br>• Time controlled switch off (1 min – 12 h)<br>• Manual switch off at the press of a button |
| Recall of measurement | Interval can be set from 1 sec – 10 min<br>(Only when used with printer KERN YKB-01 or PC) |
| Overall dimensions WxDxH | 202x336x157 mm |
| Net weight | approx. 4,2 kg |
| | |
| Option DAkkS Calibr. Certificate | 963-127 |







## Features

- Backlit LCD display, digit height 15 mm
  - ① Drying program
  - ② Previous drying time
  - ③ Current temperature
  - ④ Unit of the shown result, e.g. moisture
  - ⑤ Current moisture content in %
  - ⑥ Drying mode/Status display drying
- **Halogen quartz glass heater** 400 W
- **Observation window above the sample**, useful during initial setting
- **Internal memory** for automatic run of 10 drying programs and 100 drying processes already executed
- The last value measured remains on the display until it is replaced by a new measurement
- **Sample description** for up to 99 samples, 2 digits, freely programmable, and is printed in the measuring protocol
- **Date and time display** as standard
- **10 sample plates included**
- **Application handbook:** On the internet, you will find a practical application handbook containing many examples, field reports, settings and tips for each KERN moisture analyser

## Accessories

- **Sample plates aluminium**, Ø 90 mm. Unit of 80 pieces, KERN MLB-A01A
- **Round fiberglass filter** e.g. for samples that splash or become encrusted. Box with 100 pieces, KERN RH-A02
- ⑦ **Temperature calibration set** consists of measuring sensor and display device, KERN DBS-A01
- **USB interface kit** for bi-directional data exchange between moisture analyser and computer. Scope of delivery: USB cable, driver, Software Balance Connection, KERN DBS-A02
- **Protective working cover** standard. Can be re-ordered, scope of delivery: 5 items, KERN DBS-A03S05
- **Thermal printer**, KERN YKB-01N

# KERN Pictograms:

**Internal adjusting:** Quick setting up of the balance's accuracy with internal adjusting weight (motordriven). *(CAL INT)*

**Adjusting program CAL:** For quick setting up of the balance's accuracy. External adjusting weight required. *(CAL EXT)*

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

**Alibi memory:** Electronic archiving of weighing results, complying with the 2009/23/EC standard. *(ALIBI)*

**Data interface RS-232:** To connect the balance to a printer, PC or network. *(RS 232)*

**RS-485 data interface:** To connect the balance to a printer, PC or other peripherals. High tolerance against electromagnetic disturbance. *(RS 485)*

**USB data interface:** To connect the balance to a printer, PC or other peripherals. *(USB)*

**Bluetooth\* data interface:** To transfer data from the balance to a printer, PC or other peripherals. *(BT)*

**WLAN data interface:** To transfer data from the balance to a printer, PC or other peripherals. *(WLAN)*

**Control outputs (optocoupler, digital I/O):** To connect relays, signal lamps, valves, etc. *(SWITCH)*

**Interface for second balance:** For direct connection of a second balance. *(DUAL)*

**Network interface:** For connecting the scale to an Ethernet network. With KERN products you can use a universal RS-232/LAN converter. *(LAN)*

**Wireless data transfer:** between the weighing unit and the evaluation unit using an integrated radio module. *(RC)*

**GLP/ISO log:** The balance displays the weight, date and time, regardless of a printer connection. *(GLP INTERN)*

**GLP/ISO log:** With weight, date and time. Only with KERN printers. *(GLP PRINTER)*

**Piece counting:** Reference quantities selectable. Display can be switched from piece to weight. *(PCS)*

**Recipe level A:** Separate memory for the weight of the tare container and the recipe ingredients (net total). *(RECIPE A)*

**Recipe level B:** Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display. *(RECIPE B)*

**Recipe level C:** Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display, adjustment of recipe when dosages are exceeded, multiplier function, barcode. *(RECIPE C)*

**Totalising level A:** The weights of similar items can be added together and the total can be printed out. *(SUM A)*

**Totalising level C:** Internal memory for complete recipes with name and target value of the recipe ingredients. User guidance through display, adjustment of recipe when dosages are exceeded, multiplier function, barcode recognition. *(SUM C)*

**Percentage determination:** Determining the deviation in % from the target value (100 %). *(PERCENT)*

**Weighing units:** 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. *(UNIT)*

**Weighing with tolerance range:** Upper and lower limiting values can be programmed individually for e.g. dosing, sorting and portioning. *(TOL)*

**Hold function:** (Animal weighing program) When the weighing conditions are unstable, a stable weight is calculated as an average value. *(MOVE)*

**Protection against dust and water splashes IPxx:** The type of protection is shown in the pictogram. *(IP)*

**ATEX explosion protection:** Suitable for use in hazardous industrial environments, in which there is explosion danger. The ATEX marking is specified for each device. *(ATEX)*

**Stainless steel:** The balance is protected against corrosion. *(INOX)*

**Suspended weighing:** Load support with hook on the underside of the balance. *(UNDER)*

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

**Rechargeable battery pack:** Rechargeable set. *(ACCU)*

**Universal mains adapter:** with universal input and optional input socket adapters for
A) EU, GB
B) EU, GB, CH, USA
C) EU, GB, CH, USA, AUS *(MULTI)*

**Mains adapter:** 230V/50Hz in standard version for EU. On request GB, USA or AUS version available. *(230 V)*

**Power supply:** Integrated in balance. 230V/50Hz standard EU. More standards e.g. GB, USA or AUS on request. *(230 V)*

**Weighing principle: Strain gauge** Electrical resistor on an elastic deforming body. *(DMS)*

**Weighing principle: Tuning fork** A resonating body is electromagnetically excited, causing it to oscillate. *(T-FORK)*

**Weighing principle: Electromagnetic force compensation** Coil inside a permanent magnet. For the most accurate weighings. *(FORCE)*

**Weighing principle: Single cell technology** Advanced version of the force compensation principle with the highest level of precision. *(SC TECH)*

**Verification possible:** The time required for verification is specified in the pictogram. *(M +3 DAYS)*

**DAkkS calibration possible (DKD):** The time required for DAkkS calibration is shown in days in the pictogram. *(DAkkS +3 DAYS)*

**Package shipment:** The time required for internal shipping preparations is shown in days in the pictogram. *(1 DAY)*

**Pallet shipment:** The time required for internal shipping preparations is shown in days in the pictogram. *(2 DAYS)*

**Warranty:** The warranty period is shown in the pictogram. *(3 YEARS WARRANTY)*

## 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 - 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.
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
- 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, PL

## Your KERN specialist dealer: