SYSTEM SOLUTIONS INDUSTRY 4.0
KERN Pictograms

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’s accuracy. External adjusting weight required

Easy Touch:
Suitable for the connection, data transmission and control through PC, tablet or smartphone

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:
To connect the balance to a printer, PC or network

RS-485 data interface:
To connect the balance to a printer, PC or other peripherals. Suitable for data transfer 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

WLAN 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:
For direct connection of a second balance

Network interface:
For connecting the scale to an Ethernet network

Wireless data transfer:
between the weighing unit and the evaluation unit using an integrated radio module

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

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

Totalising level A:
The weights of similar items can be added together and the total can be printed out

GLP/ISO log:
The balance displays serial number, user ID, weight, date and time, regardless of a printer connection

GLP/ISO log:
With weight, date and time. Only with KERN printers, see page 171–173

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

Rechargeable battery pack:
Rechargeable set

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

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

Power supply:
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

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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KERN – measuring technology and testing services from a single source

Balances & Test service catalogue
Provides a complete overview of the KERN line of balances, test weights, and services such as verification, calibration, etc.

Medical scales catalogue
Complete line of medical scales, from infant scales to patient scales, chair scales and adiposity scales, as well as hand grip dynamometers, chemist’s balances and veterinary scales.

Microscopes & refractometers catalogue
Extensive range in the area of optical instruments, such as, for example, biological microscopes, stereo microscopes, metallurgical microscopes, polarisation microscopes as well as analogue and digital refractometers.

SAUTER measuring equipment catalogue
Test instruments for industry and commerce, such as force, coating thickness, material thickness and calibration service.

DAkkS calibration service brochure
Detailed information on topics pertaining to the calibration and verification of balances, test weights, and force measuring devices.

Your advantages

**fast**
- 24 hours delivery service for products in stock – ordered today, on its way tomorrow
- Sales & service hotline available from 8:00 am to 6:00 pm

**reliable**
- Up to 3 years warranty
- Precision in weighing technology for more than 175 years

**competent**
- DAkkS accreditation DIN EN ISO/IEC 17025
- Certified QM system DIN EN ISO 9001
- Authorisation for initial verification by the manufacturer 2014/31/EU
- Medical certifications DIN EN ISO 13485 and 93/42/EWG

**versatile**
- One-stop shopping: from pocket balances through to 15 t crane balance – everything from one supplier
- Find the product you want at lightning speed with the “Balance Quick-Finder” at www.kern-sohn.com

**www.kern-sohn.com**
Information on current product availability, product data sheets, user instructions, useful knowledge, technical glossary, images and much for you to download, practical topic areas, which will guide you to the right product in your industry as well as a clever test weight and balance search engine.

Order hotline
+49 7433 9933-0

Service hotline
+49 7433 9933-199

Calibration hotline
+49 7433 9933-196

Our team of consultants will assist you
from Monday to Friday
from 8:00 am to 6:00 pm

Online Shop
www.kern-sohn.com

E-mail order
info@kern-sohn.com

Fax order
+49 7433 9933-146
We will help to combine industrial production with the latest information and communication technology, with the aim of improving quality, reducing costs and using time and resources more efficiently so that you are able to react to future requirements in a more flexible manner. You will benefit from our uniform data protocol combined with our BalanceConnection 4.0 data software, for details please see page 175/176.

The KERN team in our centre of expertise – Industry 4.0

Daniel Egeler  Edgar Litti  Ralf Kurschat  Fabian Brenner

▷ We would like to inform you and advise you

Tel. +49 7433 9933 - 200
ITsupport@kern-sohn.com
Features

- Incl. delivery: Industrial platform KERN KFP, A/D converter box KERN YKV-01, DIN rail mounting bracket
- Configuration software for adjusting and managing the KERN KDP, for large-format display of the values collected on the PC as well as transfer of this data to other Apps and programs. The displayed result can therefore be converted to any format for communication with the different user programs, such as, for example, e.g. SAP, Oracle etc.

Technical Data

- Weighing plate material stainless steel
- KERN YKV: Overall dimensions W=D=H 100×127×28 mm
- Permissible ambient temperature -10 °C/ 40 °C

## Table

<table>
<thead>
<tr>
<th>Model</th>
<th>Weighing capacity</th>
<th>Read-out</th>
<th>Weighing plate</th>
<th>Cable length</th>
<th>Net weight approx.</th>
<th>Price excl. of VAT ex works</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>KERN</td>
<td>[Max] kg</td>
<td>[d] g</td>
<td>mm</td>
<td>m</td>
<td>kg</td>
<td></td>
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<td>500×400×137</td>
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<td>650×500×142</td>
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<td>KGP 300K-2L</td>
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<td>650×500×142</td>
<td>3</td>
<td>22</td>
<td>780,-</td>
<td>963-129</td>
</tr>
</tbody>
</table>

Accessories

- Bluetooth data interface, KERN YKV-A02, € 60,-
- WiFi data interface, KERN YKV-A01, € 60,-
- Ethernet data interface on request
- DIN rail mounting bracket for KERN YKV, KERN YKV-A03, € 60,-
- Software BalanceConnection, flexible recording or transfer of measurements, particularly to Microsoft® Excel or Access as well as transfer of this data to other Apps and programs. The displayed result can therefore be converted to any format for communication with the different user programs, such as, for example, e.g. SAP, for details see page 175, KERN SCD-4.0, € 150,-
Modern A/D converter for the rapid recording of weighing data and forwarding it to the most varied output channels such as tablets, networks, SPS controllers, etc. – ideal for operating balances in systems or conveyors

**Features**

- With this A/D converter box your weighing processes are ready for the requirements of Industry 4.0. Simply connect a weighing platform or measuring cell, integrate the A/D converter box into the network and start weighing
- For rapid transfer of weighing data to connected networks, computers, etc.
- USB and RS-232 data interface standard, Power supply via USB interface
- Transfer formats are freely configurable
- Functions: Weighing, taring
- Internal resolution 16 million divisions
- Measuring frequency 10 Hz
- Easy configuration using the software supplied
- Robust plastic die-cast housing
- Suitable for wall mounting and DIN track mount
- Compatible with all KERN weighing platforms

- Included with delivery:
  - Industrial platform KERN KFP
  - USB cable incl. mains plug
  - DIN rail mounting bracket
  - A/D converter box KERN YKV-01
  - Configuration software for adjusting and managing the KERN KDP, for large-format display of the values collected on the PC as well as transfer of this data to other Apps and programs. The displayed result can therefore be converted to any format for communication with the different user programs, such as, for example, e.g. SAP, Oracle etc.

**Technical Data**

- Overall dimensions W×D×H 100×127×28 mm
- Net weight approx. 1.2 kg
- Permissible ambient temperature -10 °C/40 °C

**Accessories**

- Bluetooth data interface, KERN YKV-A02, € 60,-
- WiFi data interface, KERN YKV-A01, € 60,-
- DIN rail mounting bracket for KERN YKV, KERN YKV-A03, € 60,-
- Software BalanceConnection, flexible recording or transfer of measurements, particularly to Microsoft® Excel or Access as well as transfer of this data to other Apps and programs. The displayed result can therefore be converted to any format for communication with the different user programs, such as, for example, e.g. SAP, for details see page 175, KERN SCD-4.0, € 150,-

<table>
<thead>
<tr>
<th>Model</th>
<th>Standard interfaces</th>
<th>Price excl. of VAT ex works</th>
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</thead>
<tbody>
<tr>
<td>KERN</td>
<td></td>
<td></td>
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<tr>
<td>YKV-01</td>
<td>RS-232, USB</td>
<td>190,-</td>
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<tr>
<td>YKV-02</td>
<td>RS-232, Ethernet</td>
<td>240,-</td>
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</table>
**Super compact display device (rail-mounted module) for installation in switch cabinets**

### Features
- **Compact display unit for recording weighing data using strain gauge load cells, e.g. in industrial applications**
- **Due to its small size, it is particularly space-saving to install in switch cabinets**
- **Thanks to the many interface variants, the modules can be ideally integrated into existing infrastructures and systems**
- **The modules can be used either individually or as a Buslink system with a total of up to 332 DIN rail modules**

### Technical Data
- **Extremely high measurement frequency possible, up to 1600 data records/s**
- **Internal resolution 24 Bit**

### Accessories
- **Mains adapter for power supply of the KERN CE HS, mountable on DIN rail, KERN CE HSS, € 80,-**

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### Model KERN

<table>
<thead>
<tr>
<th>Features</th>
<th>CE HSA</th>
<th>CE HSE</th>
<th>CE HSP</th>
<th>CE HSR</th>
</tr>
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<tbody>
<tr>
<td><strong>Power supply</strong></td>
<td>18-32 Vdc; 4 W max.</td>
<td>18-32 Vdc; 4 W max.</td>
<td>18-32 Vdc; 4 W max.</td>
<td>18-32 Vdc; 4 W max.</td>
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<tr>
<td><strong>Load cell power supply</strong></td>
<td>5 Vdc</td>
<td>5 Vdc</td>
<td>5 Vdc</td>
<td>5 Vdc</td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>0,1 μV/d</td>
<td>0,1 μV/d</td>
<td>0,1 μV/d</td>
<td>0,1 μV/d</td>
</tr>
<tr>
<td><strong>Adjustable nominal sensitivity</strong></td>
<td>1; 1.5; 2; 2.5; 3 mV/V</td>
<td>1; 1.5; 2; 2.5; 3 mV/V</td>
<td>1; 1.5; 2; 2.5; 3 mV/V</td>
<td>1; 1.5; 2; 2.5; 3 mV/V</td>
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<tr>
<td><strong>Input voltage Unipolar @3mV/V</strong></td>
<td>-1 mV to +16 mV</td>
<td>-1 mV to +16 mV</td>
<td>-1 mV to +16 mV</td>
<td>-1 mV to +16 mV</td>
</tr>
<tr>
<td><strong>Input voltage Bipolar @3mV/V</strong></td>
<td>-16 mV to +16 mV</td>
<td>-16 mV to +16 mV</td>
<td>-16 mV to +16 mV</td>
<td>-16 mV to +16 mV</td>
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<tr>
<td><strong>A/D Conversion speed</strong></td>
<td>1600/s</td>
<td>1600/s</td>
<td>1600/s</td>
<td>1600/s</td>
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<tr>
<td><strong>Max. load cell impedance</strong></td>
<td>1200Ω</td>
<td>1200Ω</td>
<td>1200Ω</td>
<td>1200Ω</td>
</tr>
<tr>
<td><strong>Min. load cell impedance</strong></td>
<td>43,75 Ω</td>
<td>43,75 Ω</td>
<td>43,75 Ω</td>
<td>43,75 Ω</td>
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<tr>
<td><strong>Max. no. of load cells 350 Ω</strong></td>
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<td>8</td>
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<td>8</td>
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<tr>
<td><strong>Max. no. of load cells 1000 Ω</strong></td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>22</td>
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<td><strong>Max. number of d</strong></td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
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<tr>
<td><strong>Display steps</strong></td>
<td>1,2,5,10,20,50,100,200</td>
<td>1,2,5,10,20,50,100,200</td>
<td>1,2,5,10,20,50,100,200</td>
<td>1,2,5,10,20,50,100,200</td>
</tr>
<tr>
<td><strong>Communication/Interfaces</strong></td>
<td>USB</td>
<td>USB</td>
<td>USB</td>
<td>USB</td>
</tr>
<tr>
<td><strong>Dimensions W×D×H</strong></td>
<td>120×110×22 mm</td>
<td>120×110×22 mm</td>
<td>120×110×22 mm</td>
<td>120×110×22 mm</td>
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<tr>
<td><strong>Net weight g</strong></td>
<td>150</td>
<td>150</td>
<td>150</td>
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<tr>
<td><strong>Price excl. of VAT ex works €</strong></td>
<td>480,-</td>
<td>540,-</td>
<td>540,-</td>
<td>510,-</td>
</tr>
</tbody>
</table>

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**Fig. shows KERN CE HSA**

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**Your contact for technical questions**

**Stefan Herrmann**  
Tel. +49 7433 9933-214  
Fax +49 7433 9933-29214  
stefan.herrmann@kern-sohn.com
Digital platform KERN KDP

Universal weighing platforms for flexible connection into process chains

**Features**
- **Industry 4.0 process chains:** these weighing platforms can be easily integrated into your process chain. All recorded values can be easily transferred and processed further in your system as digital data and data that has already been compared using the many interfaces available. This saves cost, time and resources and ensures even more effective working.
- **Connecting the balance with a tablet or PC** offers the advantage of being able to use the apps and programs which are on that device. These apps and programs are usually already tailored to your needs, are easy and convenient to use and can often be expanded as needed. This offers you the maximum level of flexibility when displaying, processing and saving the recorded weighing data.
- **Searching and remote control of the balance** using external control devices or computers with the KERN Communication Protocol (KCP). KCP is a standardised interface command structure for KERN balances and other instruments which allows you to recall and manage all relevant parameters and device functions. You can therefore simply connect KERN devices with KCP to computers, industrial control systems and other digital systems. In a large number of cases the KCP is compatible with the MT-SICS protocol.
- **PRE-TARE function** for manual subtraction of a known container weight, useful for checking fill-levels.
- **Freely programmable weighing unit** (e.g. display direct in special units such as length of thread g/m, paper weight g/m², or similar).
- **Level indicator and levelling feet** for precise levelling of the scale, fitted as standard, to give the most accurate weighing result.
- **Draught shield** standard for models with weighing plate size, weighing space W×D×H 146×146×80 mm.
- **Included with delivery:**
  - **Software BalanceConnection** for adjusting and managing the KERN KDP, for large-format display of the values collected on the PC as well as transfer of this data to other Apps and programs.

**Technical Data**
- **Dimensions weighing surface**
  - Ø 105 mm
  - W×D 160×160 mm, see larger picture
- **Weighing plate material**
  - plastic, with conductive lacquer
  - stainless steel
- **Overall dimensions** W×D×H 165×166×75 mm (without draught shield)
- **Cable length** approx. 1.2 m
- **Net weight** approx. 1.0 kg
- **Permissible ambient temperature** 5 °C / 35 °C

**Accessories**
- **Bluetooth data interface** for wireless data transfer to PC or tablets, must be ordered at purchase, KERN KDP-A03, € 50,-
- **WiFi interface** for wireless connection of the balance to networks and WiFi capable devices, such as tablets, laptops or smartphones, must be ordered at purchase, please ask for delivery time, KERN KDP-A01, € 50,-
- **Ethernet data interface,** to connect an IP-based Ethernet network, must be ordered at purchase, not in combination with verification, KERN KDP-A02, € 100,-

### Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Weighing capacity [Max]</th>
<th>Read-out [d]</th>
<th>Reproducibility</th>
<th>Linearity</th>
<th>Weighing plate</th>
<th>Price excl. of VAT ex works</th>
<th>Options</th>
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<tr>
<td>KERN</td>
<td>g</td>
<td>g</td>
<td>g</td>
<td>g</td>
<td>mm</td>
<td>€</td>
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<td>KDP 300-3</td>
<td>350</td>
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**Options**
- **Dakks Calibr. Certificate**
  - DAkkS
  - Other KERN

**Price**
- **€**
  - 963-127
  - 72,-
  - 963-128
  - 88,-
KERN & SOHN GmbH
Balances, Test weights, Microscopes,
D AkkS calibration laboratory
Ziegelei 1
72336 Balingen
Germany

Tel. +49 7433 9933-0
Fax +49 7433 9933-149

info@kern-sohn.com
www.kern-sohn.com

1769
Ancestor Johann Jakob Sauter built the Hahn inclination scale out of iron, a foundation stone for weighing for the balance industry in Southern Germany

1844
KERN is founded – precision balances are produced

1863
A proud Gottlieb Kern with his staff

1880
Pharmaceutical balance with Aesculap

1923
Inflation – KERN wages are paid with self printed currency

1980
The electronic balance ousts mechanical devices

1994
Accredited DKD laboratory (ISO 17025)

2000
New premises in Balingen

2002
Existing QM system certification in accordance with DIN EN ISO 9001:2000 standards

2007
Approval for the manufacture of medical products (DIN EN 13485 and 93/42/EEC)

2009
Approval for the manufacture and sale of height rods (DIN EN 13485 and 93/42/EEC)

2012
Verification point for non-automatic balances and test weights.
New customer portal www.kern-sohn.com goes live

2014
Expansion of the product range to include optical instruments (microscopes and refractometers)

2015
Inauguration of Ziegelei 2.0 with computer-controlled high-bay warehouse

2017
Come with KERN into the digital future: Expansion of the model ranges compatible with Industry 4.0, as well as the related services

2019
Significant anniversary year! 25 years of accredited DKD laboratory 175 years of KERN & SOHN 250 years of balance manufacture in the Sauter family-owned company

2020
Construction of Ziegelei 3.0, extension of administration building

2023
A proud Gottlieb Kern with his staff