Operating and Installation Instructions Display units

KERN VHP-T
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05/2016
GB
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# Technical data

<table>
<thead>
<tr>
<th>KERN</th>
<th>VHP-T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>5-digit</td>
</tr>
<tr>
<td>Resolution</td>
<td>3000</td>
</tr>
<tr>
<td>Divisions</td>
<td>1,2,5,10,20,50</td>
</tr>
<tr>
<td>Weighing Units</td>
<td>Kg</td>
</tr>
<tr>
<td>Functions</td>
<td>Totalization</td>
</tr>
<tr>
<td>Display</td>
<td>LCD 10 mm digits with back lighting</td>
</tr>
<tr>
<td>DMS weighing cells</td>
<td>Max. 6 items 700 Ω; sensibility: 1±0.2mv/V.</td>
</tr>
<tr>
<td>Range calibration</td>
<td>We recommend ≥ 50 % max.</td>
</tr>
<tr>
<td>Data output</td>
<td>RS232</td>
</tr>
<tr>
<td>Electric Supply</td>
<td>Input voltage 100 V – 240 V</td>
</tr>
<tr>
<td></td>
<td>Installed rechargeable battery: DC 6V 10Ah</td>
</tr>
<tr>
<td>Housing</td>
<td>With case: 510x340x220</td>
</tr>
<tr>
<td></td>
<td>Without case: 350x280x170</td>
</tr>
<tr>
<td>Admissible ambient temperature</td>
<td>0°C – 40°C</td>
</tr>
<tr>
<td>Net weight</td>
<td>6 kg</td>
</tr>
<tr>
<td>Operating / charge time of battery</td>
<td>13 h / 12 h</td>
</tr>
<tr>
<td>RS 232 interface</td>
<td>Serially</td>
</tr>
<tr>
<td>IP protection</td>
<td>IP 54</td>
</tr>
</tbody>
</table>
2 Device overview VHP-T

1. Printer
2. Display
3. Keyboard
4. Connections (platforms, load connection of battery)
5. Case
## 3 Keyboard overview

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="ON" /></td>
<td>• Switch-on</td>
</tr>
<tr>
<td><img src="image" alt="OFF" /></td>
<td>• Switch-off</td>
</tr>
<tr>
<td><img src="image" alt="TARE" /></td>
<td>• Taring</td>
</tr>
<tr>
<td><img src="image" alt="M 2" /></td>
<td>• Display sum total</td>
</tr>
<tr>
<td><img src="image" alt="M+" /></td>
<td>• Store weighing value</td>
</tr>
<tr>
<td><img src="image" alt="M- 5" /></td>
<td>• Delete weighing values</td>
</tr>
<tr>
<td><img src="image" alt="PRINT" /></td>
<td>• Printing</td>
</tr>
<tr>
<td><img src="image" alt="C" /></td>
<td>• Return key</td>
</tr>
<tr>
<td><img src="image" alt="DATE" /></td>
<td>• Setting the date</td>
</tr>
<tr>
<td><img src="image" alt="TIME" /></td>
<td>• Setting the time</td>
</tr>
<tr>
<td><img src="image" alt="License plate" /></td>
<td>• Entry of license plate</td>
</tr>
<tr>
<td><img src="image" alt="Switch on and off background illumination" /></td>
<td>• Switch on and off background illumination</td>
</tr>
<tr>
<td><img src="image" alt="Input of letters" /></td>
<td>• Input of letters</td>
</tr>
<tr>
<td><img src="image" alt="Input of numbers" /></td>
<td>• Input of numbers</td>
</tr>
<tr>
<td><img src="image" alt="Zero setting key" /></td>
<td>• Zero setting key</td>
</tr>
</tbody>
</table>
3.1 Overview of display

<table>
<thead>
<tr>
<th>Display</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟢⬜️</td>
<td>Battery very low</td>
</tr>
<tr>
<td>G</td>
<td>Gross weight</td>
</tr>
<tr>
<td>NT</td>
<td>Net weight</td>
</tr>
<tr>
<td>Kg</td>
<td>Weighing unit</td>
</tr>
</tbody>
</table>

4 Basic Information (General)

4.1 Proper use
The display unit acquired by you is used in combination with a weighing plate and serves to determine the weighing value of material to be weighed. It is intended to be used as a “non-automatic weighing system”, i.e. the material to be weighed is manually and carefully placed in the centre of the weighing plate. As soon as a stable weighing value is reached the weighing value can be read.

4.2 Improper Use
Do not use display unit for dynamic weighing. In the event that small quantities are removed or added to the material to be weighed, incorrect weighing results can be displayed due to the “stability compensation” in the display unit. (Example: Slowly draining fluids from a container on the balance.)
Do not leave permanent load on the weighing pan. This may damage the measuring system.
Impacts and overloading exceeding the stated maximum load (max) of the weighing plate, minus a possibly existing tare load, must be strictly avoided. Both, the weighing plate and the display unit may be damaged during this process.
Never operate display unit in explosive environment. The serial version is not explosion protected.
Changes to the display unit's design are not permitted. This may lead to incorrect weighing results, safety-related faults and destruction of the display unit.
The display unit may only be operated in accordance with the described default settings. Other areas of use must be released by KERN in writing.
4.3 Warranty

Warranty claims shall be voided in case

- Our conditions in the operation manual are ignored
- The appliance is used outside the described uses
- The appliance is modified or opened
- Mechanical damage or damage by media, liquids, natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- The measuring system is overloaded

4.4 Monitoring of Test Resources

In the framework of quality assurance the measuring-related properties of the display unit and, if applicable, the testing weight, must be checked regularly. The responsible user must define a suitable interval as well as type and scope of this test. Information is available on KERN’s home page (www.kern-sohn.com with regard to the monitoring of display units’ test substances and the test weights required for this. In KERN’s accredited DKD calibration laboratory test weights and display units may be calibrated (return to the national standard) fast and at moderate cost.

5 Basic Safety Precautions

5.1 Pay attention to the instructions in the Operation Manual

- Carefully read this operation manual before setup and commissioning, even if you are already familiar with KERN balances.
- All language versions contain a non-binding translation. The original German is binding.

5.2 Personnel training

The appliance may only be operated and maintained by trained personnel.
6 Transport and storage

6.1 Testing upon acceptance
When receiving the appliance, please check packaging immediately, and the appliance itself when unpacking for possible visible damage.

6.2 Packaging / return transport

- Keep all parts of the original packaging for a possibly required return.
- Only use original packaging for returning.
- Prior to dispatch disconnect all cables and remove loose/mobile parts.
- Reattach possibly supplied transport securing devices.
- Secure all parts such as the glass wind screen, the weighing platform, power unit etc. against shifting and damage.
7 Unpacking and placing

7.1 Installation Site, Location of Use
The display units are designed in a way that reliable weighing results are achieved in common conditions of use. Precise and fast work is achieved by selecting the right place for your display unit and your weighing plate.

On the installation site observe the following:

- Place the display unit and the weighing plate on a stable, even surface.
- Avoid extreme heat as well as temperature fluctuation caused by installing next to a radiator or in the direct sunlight;
- Protect the display unit and the weighing plate against direct draft from open windows or doors.
- Avoid jarring during weighing;
- Protect the display unit and the weighing plate against high humidity, vapours and dust.
- Do not expose the display unit to extreme dampness for longer periods of time. Non-permitted condensation (condensation of air humidity on the appliance) may occur if a cold appliance is taken to a considerably warmer environment. In this case, acclimatize the disconnected appliance for ca. 2 hours at room temperature.
- Avoid static charge of goods to be weighed or weighing container.

Major display deviations (incorrect weighing results) may be experienced should electromagnetic fields (e.g. due to mobile phones or radio equipment), static electricity accumulations or instable power supply occur. Change location or remove source of interference.
7.2 Unpacking
Carefully remove the display unit from packaging, remove plastic cover and place it in the designated work area.
and place it in the designated work area.

7.3 Scope of delivery / serial accessories:
- Display Unit
- Mains adapter for loading the battery
- RS 232 interface cable
- Operating manual
- 1 x paper roll for printer

7.4 Placing
Mount the display unit in a way that facilitates operation and where it is easy to see.

7.5 Storage battery operation (optional)
Before the first use, the battery should be charged by connecting it to the mains power supply for at least 12 hours.
Charge the battery with the help of the supplied power pack.
The LED display at the mains adapter informs you during loading about the loading status of the rechargeable battery.

- red: Voltage has dropped below prescribed minimum.
- green: Rechargeable battery completely reloaded

To conserve energy, enable the automatic switch-off function „AUTO OFF“, see chap. 8.8.
7.6 Selection of platform quantity

1. Turn on device using the - ON - button

2. Use DATE button to change into the window for date input.

3. Now enter the following password: 878586 (the last two ciphers can be ignored)

4. Use the C button to change between the individual parameters.

5. Select the parameter (8): Mode

6. Confirm by pressing the PRINT button

7. Now enter the quantity of platforms. As per standard there are 2. (up to 6 platforms available)

7.7 Adjustment

As the acceleration value due to gravity is not the same at every location on earth, each display unit with connected weighing plate must be coordinated - in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the weighing system has not already been adjusted to the location in the factory). This adjustment process must be carried out for the first commissioning, after each change of location as well as in case of fluctuating environment temperature. To receive accurate measuring values it is also recommended to adjust the display unit periodically in weighing operation.

- Prepare the required adjustment weight. The weight to be used depends on the capacity of the scale. Carry out adjustment as near as possible to the scale’s maximum weight. Info about test weights can be found on the Internet at: http://www.kern-sohn.com.
- Observe stable environmental conditions. Stabilisation requires a certain warm-up time.
Call up menu:

1. Turn on device using the **ON** button

2. Use **DATE** button to change into the window for date input.

3. Now enter the following password: 878586 (the last two ciphers can be ignored)

4. Use the C button to change between the individual parameters.

5. Select the parameter (5): Select Calibration

6. Confirm by pressing the **PRINT** button
7.8 How to carry out adjustments

Important: Always adjust both weighing platforms in a parallel manner. Not one by one. Always place the adjustment weight evenly on both platforms. In menu define the respective platform as a half.

Example: Place 15 tons of adjustment weight on both platforms. In the menu adjust each platform with the following input:

Platform 1: 7500kg
Platform 2: 7500kg

The following display appears after acknowledgement of parameter (5) Calibration:

- To select the platforms, press the C button.
- Use the button to select the respective platform.
- Carry out zero point adjustment (CAL ZERO) at platform 1 (SP1) and platform 2 (SP2). During zero point adjustment the weighing plate must not be charged.
- Always place the adjustment weight evenly on both platforms.
- Carry out adjustment at platform 1 (SP1) and platform 2 (SP2). (Please note the example above: 50% of the total load per platform must be defined.)
8 Operation

8.1 Start-up

⇒ Press ON. As soon as the weight display appears, the instrument will be ready to weigh.

8.2 Switching Off

⇒ Press OFF, the display will disappear.

8.3 Zeroing

Resetting to zero corrects the influence of light soiling on the weighing plate. If required, the device may be reset to zero at any time.

⇒ To unload the weighing system

⇒ Press 0, the zero display appears.

8.4 Simple weighing

⇒ Place/drive-on weighing goods (at walking speed)

⇒ Read weighing result.

Overload warning

Overloading exceeding the stated maximum load (max) of the device, minus a possibly existing tare load, must be strictly avoided. This could damage the instrument.

Exceeding the maximum load is indicated by the display “----”. Unload weighing system or reduce preload.
8.5 Weighing with tare

 Depositing weighing vessel. After successful standstill control press the TARE button.
 The zero display appears.

 The weight of the container is now internally saved.
 Depositing the material, the net weight will be indicated.
 Depositing the weight of the weighing container will be displayed as a minus number after removing the weighing container.
 Depositing the tare procedure can be repeated as many times as necessary, for example with initial weighing of several components for a mix (add-on weighing). The limit is reached when the taring range reaches its capacity limit.

 Depositing to delete the tare value, remove load from weighing plate and press TARE.
8.6 Manual totalizing

After pressing the button, the separate weighing results of the platforms are added up to a total result (axle) and printed out.

See printout example below:

<table>
<thead>
<tr>
<th>Axle load - report</th>
</tr>
</thead>
<tbody>
<tr>
<td>30/11/2014</td>
</tr>
<tr>
<td>SN.</td>
</tr>
<tr>
<td>HGV license plate:</td>
</tr>
<tr>
<td>Article:</td>
</tr>
<tr>
<td>Wheel 1:</td>
</tr>
<tr>
<td>Wheel 2:</td>
</tr>
<tr>
<td>Axle 1:</td>
</tr>
<tr>
<td>G =</td>
</tr>
<tr>
<td>T =</td>
</tr>
<tr>
<td>NT=</td>
</tr>
<tr>
<td>User:</td>
</tr>
</tbody>
</table>

8.7 Display background illumination

The background illumination can be turned on and off by using button.
### 8.8 Automatic switch-off function „AUTO OFF“

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Turn on device using the ON button</td>
</tr>
<tr>
<td>2.</td>
<td>Use DATE button to change into the window for date input.</td>
</tr>
<tr>
<td>3.</td>
<td>Now enter the following password: 878586 (the last two ciphers can be ignored)</td>
</tr>
<tr>
<td>4.</td>
<td>Use the C button to change between the individual parameters.</td>
</tr>
<tr>
<td>5.</td>
<td>Select the parameter (9): Select “Auto-Off time“.</td>
</tr>
<tr>
<td>6.</td>
<td>Confirm by pressing the PRINT button</td>
</tr>
<tr>
<td>7.</td>
<td>Now a time of 1-99 minutes can be defined.</td>
</tr>
<tr>
<td>8.</td>
<td>Confirm by pressing the PRINT button</td>
</tr>
</tbody>
</table>
9 Menu

Navigation in the menu:

Access to menu

1. Turn on device using the - - button

2. Use DATE button to change into the window for date input.

3. Now enter the following password: 878586 (the last two ciphers can be ignored)

4. Use the C button to change between the individual parameters.

5. Using PRINT button select the corresponding parameter.

Menu overview

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Capacity</td>
<td>• Setting weighing scale capacity</td>
</tr>
<tr>
<td>(2) Readability</td>
<td>• Setting weighing scale readability.</td>
</tr>
<tr>
<td>(3) Decimal point</td>
<td>• Setting decimal point (decimal place).</td>
</tr>
<tr>
<td>(4)</td>
<td>• (please do not modify standard setting on „5“)</td>
</tr>
<tr>
<td>(5) Calibration</td>
<td>• Adjustment of balance.</td>
</tr>
<tr>
<td>(6)</td>
<td>• Not documented</td>
</tr>
<tr>
<td>(7) Language</td>
<td>• Selection of language German and English</td>
</tr>
<tr>
<td>(8) Mode</td>
<td>• Selection of quantity of platforms (up to 6 platforms possible)</td>
</tr>
</tbody>
</table>
10 Servicing, maintenance, disposal

10.1 Cleaning
- Before cleaning, disconnect the appliance from the operating voltage.
- Do not use aggressive detergents (solvents or similar).

10.2 Servicing, maintenance
The appliance may only be opened by trained service technicians who are authorized by Kern. Before opening, disconnect from power supply.

10.3 Disposal
Disposal of packaging and appliance must be carried out by operator according to valid national or regional law of the location where the appliance is used.

10.4 Error messages

<table>
<thead>
<tr>
<th>Error message</th>
<th>Description</th>
<th>Possible causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/-RRR(EEE)</td>
<td>No defined signal</td>
<td>- Weighing platform not connected.</td>
</tr>
<tr>
<td></td>
<td>Overload display</td>
<td>- Too much weight on the weighing platform.</td>
</tr>
<tr>
<td></td>
<td>Underload display</td>
<td>- Insufficient weight on the weighing platform.</td>
</tr>
</tbody>
</table>

Should other error messages occur, switch balance off and then on again. If the error message remains inform manufacturer.
11 Instant help

In case of an error in the program process, briefly turn off the display unit and disconnect from power supply. The weighing process must then be restarted from the beginning.

Help:

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>The displayed weight does not glow.</td>
<td>• The display unit is not switched on.</td>
</tr>
<tr>
<td></td>
<td>• Mains power supply interrupted (mains cable defective).</td>
</tr>
<tr>
<td></td>
<td>• Power supply interrupted.</td>
</tr>
<tr>
<td></td>
<td>• (Rechargeable) batteries are inserted incorrectly or empty</td>
</tr>
<tr>
<td></td>
<td>• No (rechargeable) batteries inserted.</td>
</tr>
<tr>
<td>The displayed weight is permanently changing</td>
<td>• Draught/air movement</td>
</tr>
<tr>
<td></td>
<td>• Table/floor vibrations</td>
</tr>
<tr>
<td></td>
<td>• Weighing pan has contact with other objects.</td>
</tr>
<tr>
<td></td>
<td>• Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</td>
</tr>
<tr>
<td>The weighing result is obviously incorrect</td>
<td>• The display of the balance is not at zero</td>
</tr>
<tr>
<td></td>
<td>• Adjustment is no longer correct.</td>
</tr>
<tr>
<td></td>
<td>• Great fluctuations in temperature.</td>
</tr>
<tr>
<td></td>
<td>• Warm-up time was ignored.</td>
</tr>
<tr>
<td></td>
<td>• Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</td>
</tr>
</tbody>
</table>

Should other error messages occur, switch display unit off and then on again. If the error message remains inform manufacturer.
## 12 Configure display unit

1. Turn on device using the **ON** button

2. Use **DATE** button to change into the window for date input.

3. Now enter the following password: 878586 (the last two ciphers in the display can be ignored)

4. Use the C button to change between the individual parameters.

5. Select the parameter (1) capacity.

6. Confirm by pressing the **PRINT** button
   
Enter capacity with the numeric keypad and subsequently confirm with **PRINT** button.

7. Use the **DATE** button to return to the parameter list

8. Select the parameter (2) readability.

   Confirm by pressing the **PRINT** button
   
Enter readability via the numeric keypad and subsequently confirm with **PRINT** button. (Possible values: 1,2,5,10,20,50)

9. Use the **DATE** button to return to the parameter list
10. Select the parameter (3) decimal point.
   Confirm by pressing the \[\text{PRINT}\] button.
Enter the decimal point (decimal places) via the numeric keyboard. Possible values: 0-3)

11. Confirm by pressing the \[\text{PRINT}\] button

12. Use the \[\text{DATE}\] button to return to the parameter list

13. Select the parameter (8) Mode.
Enter the corresponding platform quantity via the numeric keyboard. (up to 6 platforms available)

14. Use the \[\text{DATE}\] button to return to the parameter list

15. Select the parameter (5) Calibration.

16. Adjusting the balance (see item 6.8)

13 Declaration of Conformity
To view the current EC/EU Declaration of Conformity go to:

\[\text{www.kern-sohn.com/ce}\]