

Installation Instructions

U-shaped weighing bridge

KERN KFU

Version 1.1
05/2012
GB



KFU-IA-e-1211



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Version 1.1 05/2012

Installation instructions U-shaped Weighing bridge

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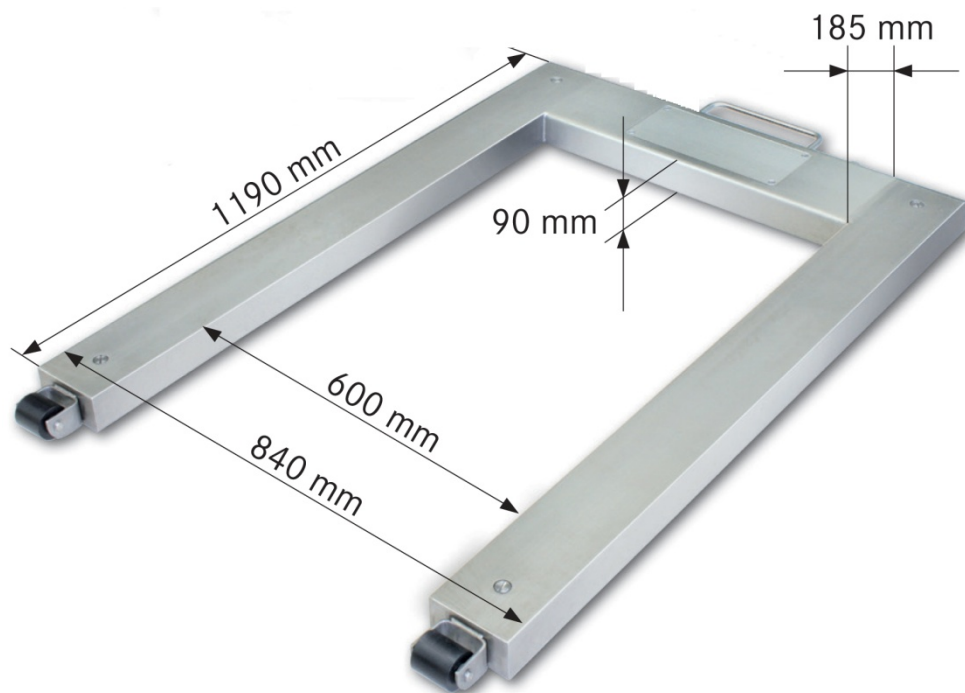
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English

1. Technical data

Model	Weighing range Max kg	Readability d g	Verification value e g	Minimum load Min kg	Preload additive kg	Cable length approx. m	Net weight approx. kg
Painted steel							
KFU 600V20M	600	200	200	4	120	5	41
KFU 1500V20M	1500	500	500	10	300	5	41
Stainlees steel							
KFU 600V30M	600	200	200	4	120	5	42
KFU 1500V30M	1500	500	500	10	300	5	42

Dimensions:



2 Appliance overview

There are two versions of the U-weighing bridge, painted steel (_V20) and stainless steel (_V30).



- ① Rollers for comfortable transport
- ② Covering connection box
- ③ Holding grip for comfortable transport
- ④ Oscillating weighing cell feet and weighing cells

3 Basic Information (General)

3.1 Documentation

This installation instructions contain all data about placement and commissioning of the U-weighing bridges KERN KFU.

In combination with a display unit, in the following named weighing system, operation and configuration can be seen in the manual of the display unit.

3.2 Proper use

The KERN KFU is designed for weighing Euro-pallets and containers with the dimensions of Euro-pallets. It is provided for use as „non-automatic balance“. As soon as a stable weighing value is reached the weighing value can be read.

3.3 Improper Use

Do not leave permanent load on the weighing plate. This may damage the measuring system.

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Impacts and overloading exceeding the stated maximum load (max) of the weighing system, minus a possibly existing tare load, must be strictly avoided. This could damage the weighing system.

Never operate the unit in explosive environment. The serial version is not explosion protected.

Changes to the weighing system's design are not permitted. This may lead to incorrect weighing results, safety-related faults and destruction of the weighing system.

The weighing system may only be operated in accordance with the described default settings. Other areas of use must be released by KERN in writing.

3.4 Warranty

Warranty claims shall be voided in case

- Our conditions in the operation manual are ignored
- The appliance is used outside the described uses
- Structural changes of the unit
- Mechanical damage and damage caused by media, liquids
- Natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- Overloading of the measuring system

3.5 Monitoring of Test Resources

In the framework of quality assurance the measuring-related properties of the weighing system 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 balance test substances and the test weights required for the weighing system. In KERN's accredited DKD calibration laboratory test weights and weighing systems may be calibrated (return to the national standard) fast and at moderate cost.

4 Basic Safety Precautions

4.1 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.

4.2 Personnel training

The appliance may only be operated and maintained by trained personnel. The installation of the display unit is restricted to specialist staff possessing well acquainted knowledge with the workings of weighing scales.

5 Transport and storage

5.1 Testing upon acceptance

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

5.2 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 against slipping and damage.

6 Unpacking, Setup and Commissioning

6.1 Installation Site, Location of Use

The U-weighing bridges are designed in a way that reliable weighing results are achieved in common conditions of use.

You will work accurately and fast, if you select the right location for your weighing system.

Therefore, observe the following for the installation site:

- Place the weighing system on a firm, level surface;
The foundation at the installation site must be able to carry the weight of the weighing system as well as the weight of the maximum load.
- Avoid extreme heat as well as temperature fluctuation caused by installing next to a radiator or in the direct sunlight;
- Protect the weighing system against direct draughts due to open windows and doors;
- Avoid jarring during weighing
- Protect the weighing system against high humidity, vapours and dust;
- Do not expose the device 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.
- Do not lean the weighing system against the wall.
- Do not move the weighing system when it is loaded.
- Keep away chemical substances such as liquids or gases which may attack or damage the weighing system inside or outside.
- Keep the IP-protection of the unit

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.

6.2 Unpacking and placement



CAUTION
Danger for the back!

The weighing system is quite heavy. Always use an according lifting device to lift it out of the packaging or to transport it to the required placement site

Unpacking:

- ⇒ Remove the outer packaging.
- ⇒ Lift the weighing system off the packaging material, see note of caution.
- ⇒ Secure the weighing system that it cannot fall down when it is lifted.
- ⇒ Make sure that the contents of the packaging is complete.

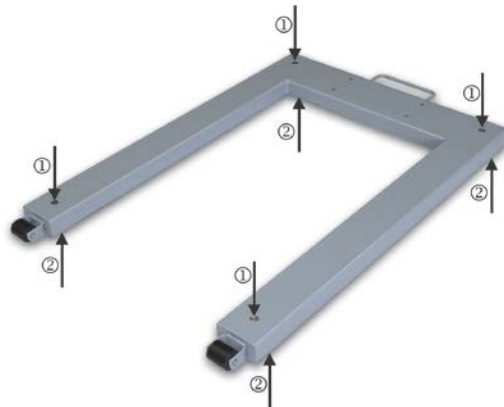
Scope of delivery:

- U-weighing bridge with assembled connection cable
- 4 weighing cell feet
- Instruction Manual

Placing:

Make sure that the surface of the placement site, especially around the weighing cell feet, is even. Small unevenness can be offset by adjustment of the weighing cell feet.

- ⇒ Before a final placement install the four weighing cell feet. For transporting lift-off the handle and move it on the conveyor rollers.
- ⇒ Settle down the weighing system and check if it is positioned evenly and all the four feet touch the floor. Remove the covering screw and carry out adjustment if necessary by turning the adjustment screw on the four weighing cells.



- ① Position adjustment screw of the weighing cell feet
- ② Position of weighing cell

- ⇒ Make sure that during lifting and settling the connection cable is not squeezed or damaged.

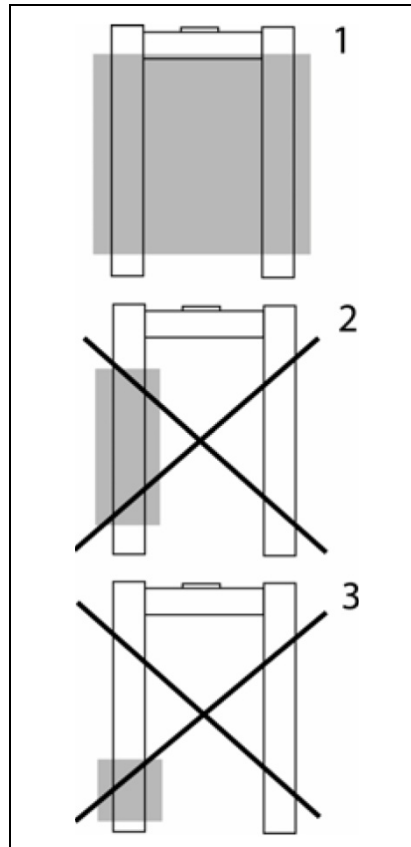
7 Operation

Information about

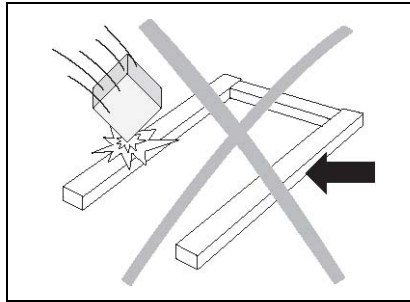
- **Mains connection**
Mains is connected via the connection cable of the display unit.
- **Initial Commissioning**
- **Connection of peripheral devices**
- **Adjustment, linearization and verification**
Only the complete balance can be verified, that means the U-weighing bridge in connection with an appropriate display unit.

You will find the accurate operation in the operating instructions which are included in the scope of delivery.

7.1 Operation limits



The U-weighing bridge is designed for an even distributed load.



- Avoid falling load, shock loads and impacts from the side.
- The forks of the fork lift truck may not touch the pallet or the balance during weighing process.
- Do not move the balance at any moment, when it is loaded.

7.2 Load/unload the weighing system

- ⇒ Place the load on the scales using a pallet lifting truck, a crane or a forklift truck. Ensure that the load is not swinging when it is placed onto the scales.
- ⇒ Lift the load first vertically at least 10 cm above the scales before it is removed or newly placed.

8 Service, maintenance, disposal



Before any maintenance, cleaning and repair works, separate the device from mains voltage.

8.1 Daily checks

- ⇒ Ensure that all the four feet touch the floor.
- ⇒ Ensure that the connection cable to the display unit and the mains connection cable of the display unit are not damaged.
- ⇒ Make sure that the balance is free of dirt, especially under the edges of the balance.

8.2 Cleaning

- ⚠ Remove regularly corrosive substances.
- ⚠ Keep IP protection.
- ⚠ Do not point a water or steam jet onto the weighing cells.

U-weighing bridge, painted steel

- ⇒ Clean the weighing system with a soft cloth soaked in mild cleaning agent. Ensure that no liquid penetrates into the device. Rub with a dry clean cloth.

U-Weighing bridge, stainless steel

- ⇒ Clean the stainless steel parts with a soft cloth soaked in cleaning agent appropriate for stainless steel.
- ⇒ For stainless steel sheet do not use cleaning agents which contain sodium hydroxide, acetic acid, hydrochloric acid, sulphuric acid or citric acid.
- ⇒ Do not use metallic brushes or cleaning sponges of steel wool as this will cause superficial corrosion.

8.3 Service, maintenance

- ⇒ The appliance may only be opened by trained service technicians who are authorized by KERN.
- ⇒ Make sure that the weighing system is calibrated regularly, see chap. Testing instruments control.

8.4 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.

8.5 Instant help

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

Help:

Fault

The displayed weight is permanently changing

Possible cause

- Draught/air movement
- Sites with vibration.
- Weighing plate has contact with other objects.
- Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

The weighing result is obviously incorrect

- No zero display when balance unloaded
- Adjustment is no longer correct.
- Great fluctuations in temperature.
- The balance is on an uneven surface.
- Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

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

9 Service documentation

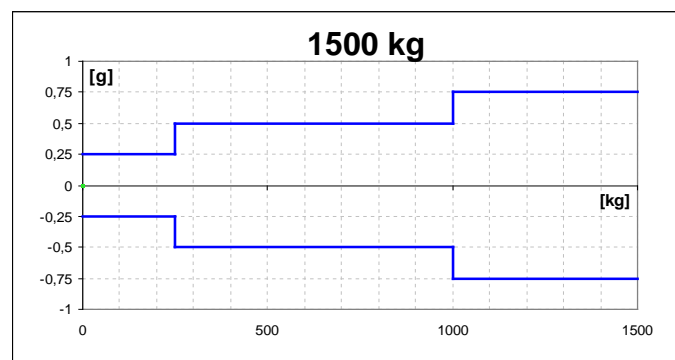
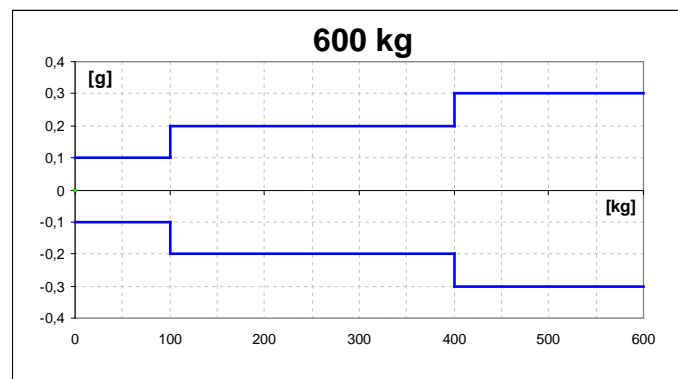
- i**
- This chapter is only provided for a specialist of balances !
 - The weighing bridges are carried out in DMS sensor technology, at every corner there is a DMS weighing cell.
 - The analogue-digital conversion takes place in the display unit. There are also saved all balance and country specific data.

9.1 Overview, setting specification, tolerances

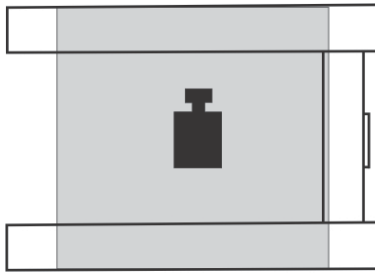
Test and setting specification:

Capacity	600 kg	1500 kg
Readability	200 g	500 g
Min	4 kg	10 kg
Max	600 kg	1500 kg
1/3 corner load	200 kg	500 kg
Tolerance	200 g	500 g

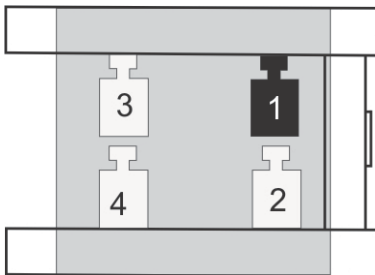
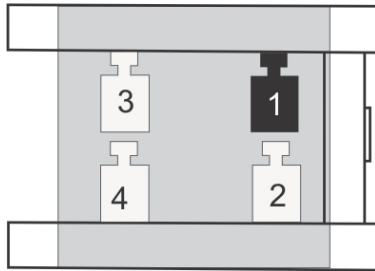
Verification data and tolerances acc. to OIML:



9.2 Checking and adjustment of the corner load



0.00 kg



Checking the corner load

- Put pallet
- Put test weights in the centre on the pallet and tare.
- The balance displays -0-.
- Place the test weights subsequently at all four corners, observe order 1, 2, 3, 4.
- Now the divergences are displayed with sign, write down the values. If there are divergences beyond the tolerances (see chap. 9.1), an adjustment will be necessary.

Adjusting the corner load

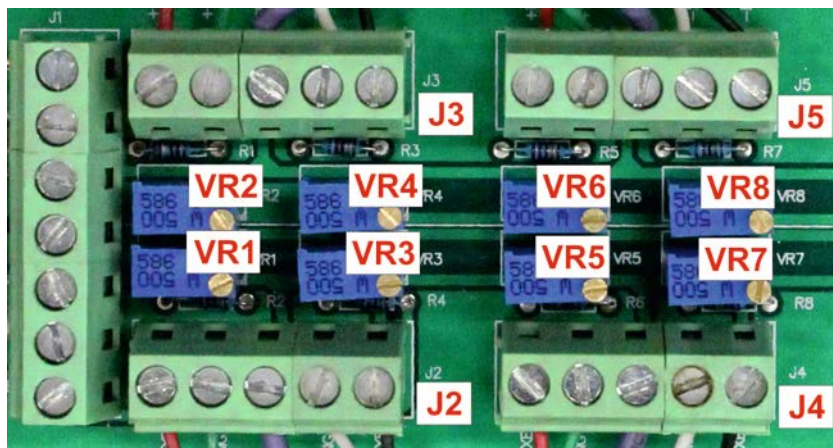
Preparation:

- For a better control of the changes which are resulting during adjustment, select the highest readability for control purposes in the configuration menu.
- Open the connection box

Adjustment rule:

The corner (weighing cell) with the largest minus divergence must be set to zero. Do not misadjust this corner even after several adjustment cycles.

Adjustment at the analogue print



Adjustment of weighing cell J2 takes place at the potentiometer VR1 and VR2.
Adjustment of weighing cell J3 takes place at the potentiometer VR3 and VR4.
Adjustment of weighing cell J4 takes place at the potentiometer VR5 and VR6.
Adjustment of weighing cell J5 takes place at the potentiometer VR7 and VR8.
Increase the value turning to the right, reduce the value turning to the left.

10 Preload / Deadload settings

Platform type	Platform dimension (mm)	Load cell	TC	Class	Max	E _{max}	E _{min}	Y	n	Dead-load	T _{min}	T _{max}	Z	Cable-
		Type	No.		Preload	-1	-4		-3	(kg)	-5	-6	or	length
					(kg)	(kg)	(g)						DR	(m)
Painted steel														
KFU 600V20M	840 x 1190	H8C	D09-03.19	C3	0	500kg	0	10000	3000	33kg	-10	40	3000	5
KFU 1500V20M	840 x 1190	SQB	TC6911	C3	0	1000kg	0	10000	3000	33kg	-10	40	3000	5
Stainlees steel														
KFU 600V30M	840 x 1190	H8C	D09-03.19	C3	0	500kg	0	10000	3000	38kg	-10	40	3000	5
KFU 1500V30M	840 x 1190	SQB	TC6911	C3	0	1000kg	0	10000	3000	38kg	-10	40	3000	5