Crane scale

HFD

Translation of the original german version

Operating instructions / logbook

Version	3.0
	2024-05
	en
	HFD-BA-e-2430

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English

KERN HFD

Crane scale

Operating instructions / logbook

Version 3.0 2024-05 Translation

Contents

1 Introduction

1.1 General notes on these instructions

INFORMATION

Read the operating instructions completely before using the appliance. Only use the appliance in accordance with the specifications described in these operating instructions. This serves to protect against personal injury and damage to property.

These operating instructions contain the information you need to use your appliance as intended.

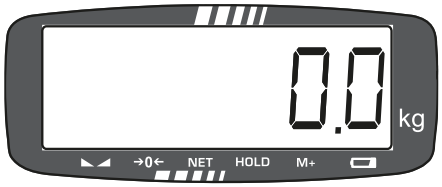
These operating instructions are trasnlated from the original German version.

1.2 Presentation conventions

1.2.1 Representations of the text

Text	Designation
●	Enumeration
⇨	Instruction for action
1. **2.** **...**	Steps in assembly / installation instructions, the sequence of which must be followed
[ ]	Square brackets are used to display buttons *Example:* **[X]** button
< >	Angle brackets are used to display content that is shown on the device display (e.g. menu items, parameters, notifications, ...) *Example:* **<MENU>**

1.2.2 Representations of the device operation

Symbol	Meaning
	Short keystroke
	Long button press / press and hold button
	Display on the scales (example illustration)

1.2.3 Binding information

Important and binding information describes facts that must be emphasised, which you must take note of and which are always valid (e.g. legal provisions or terms and conditions).

INFORMATION

Here you will find important binding information

1.2.4 Additional information, tips and recommendations

Additional information, tips and recommendations can be found here

2 Description of the device

2.1 Description of the device

This scale is a crane scale. Crane scales are used, for example, in industrial environments in test benches or on construction sites, port facilities and freight centres.

2.2 Intended use

The scale you have purchased is used to determine the weight of goods to be weighed. It is intended for use as a "non-automatic scale", i.e. the load is attached to the hook of the scale manually, vertically and without jerking.

The scales may only be used for lifting and weighing freely moving loads.

Once a stable weight value has been reached, the weight value can be read off.

2.3 Technical data

KERN	HFD 600K-1	HFD 1T-4	HFD 3T-3
Item number / type	HFD 600k-1	HFD 1T-4	HFD 3T-3
Readability (d)	0.05 kg 0.1 kg 0.2 kg	0.1 kg 0.2 kg 0.5 kg	0.2 kg 0.5 kg 1 kg
Weighing range (max)	150 kg 300 kg 600 kg	300 kg 600 kg 1500 kg	600 kg 1500 kg 3000 kg
Taring range (subtractive)	599.8 kg	1499.5 kg	2999 kg
Reproducibility	0.05 kg 0.1 kg; 0.2 kg	0.1 kg; 0.2 kg; 0.5 kg	0.2 kg; 0.5 kg; 1 kg
Linearity	± 0.1 kg ± 0.2 kg; ± 0.4 kg	± 0.2 kg; ± 0.4 kg; ± 1 kg	± 0.4 kg; ± 1 kg; ± 2 kg
Recommended calibration weight, not included (class)	600 kg (M1)	1 tonne (M1)	3 tonnes (M1)
Settling time (typical)	2 s		
Precision	0.2 % of max.		
Warm-up time	10 min		
Weighing units	kg		
Air humidity	max. 80 % rel. (non-condensing)		
Permissible ambient temperature	-10°C ... + 40°C		
Permissible battery charging temperature	0°C ... + 40°C		
Auto off	3 min, 5min, 15 min, off		
Display	LCD		
	Digit height (large characters) 30mm		
Material hook, eyelet, shackle	Hook: unalloyed forged steel		
	Shackle: unalloyed forged steel		
Housing material	Cast aluminium, lacquered		
Net weight (kg)	9	9	10
Input voltage power supply unit	110V - 240V AC 50 - 60Hz		
Input voltage Device	12 V, 2500 mA		
Battery	7.4 V, 5200 mAh		
	Operating time 30 h (backlight on)		
	Operating time 70 h (backlight off)		
	Charging time 12 h		

KERN	HFD 6T-3	HFD 10T-3
Item number / type	HFD 6T-3	HFD 10T-3
Readability (d)	0.5 kg; 1 kg; 2 kg	1 kg; 2 kg; 5 kg
Weighing range (max)	1 500 kg; 3 000 kg; 6 000 kg	3 000 kg; 6 000 kg; 12 000 kg
Taring range (subtractive)	5 998 kg	9 995 kg
Reproducibility	0.5 kg; 1 kg; 2 kg	1 kg; 2 kg; 5 kg
Linearity	± 1 kg; ± 2 kg; ± 4 kg	± 2 kg; ± 4 kg; ± 10 kg
Recommended calibration weight, not included (class)	6 tonnes (M1)	10 tonnes (M1)
Settling time (typical)	2 s	
Precision	0.2 % of max.	
Warm-up time	30 min	
Weighing units	kg	
Air humidity	max. 80 % rel. (non-condensing)	
Permissible ambient temperature	-10°C ... + 40°C	
Permissible battery charging temperature	0°C ... + 40°C	
Auto off	3 min, 5min, 15 min, off	
Display	LCD	
	Digit height (large characters) 30 mm	
Material hook, shackle	Hook: unalloyed forged steel	
	Shackle: unalloyed forged steel	
Housing material	Cast aluminium, lacquered	
Net weight (kg)	15	20
Input voltage power supply unit	110 - 240 V, 50 - 60 Hz	
Input voltage device	12 V, 2500 mA	
Battery	7.4 V, 5200 mAh	
	Operating time 30 h (backlight on)	
	Operating time 70 h (backlight off)	
	Charging time 12 h	

KERN	HFD 600K-1M	HFD 1T-4M	HFD 3T-3M
Item number / type	THFD 600K-1M-A	THFD 1T-4M-A	THFD 3T-3M-A
Readability (d)	0.2 kg	0.5 kg	1 kg
Weighing range (max)	600 kg	1500 kg	3000 kg
Taring range (subtractive)	599.8 kg	1499.5 kg	2999 kg
Reproducibility	0.2 kg	0.5 kg	1 kg
Linearity	± 0.2 kg;	± 0.5 kg;	± 1 kg
Recommended calibration weight, not included (class)	600 kg (M1)	1.5 tonnes (M1)	3 tonnes (M1)
Calibration value (e)	0.2 kg	0.5 kg	1 kg
Calibration class	III	III	III
Settling time (typical)	2 s		
Precision	0.2 % of max.		
Warm-up time	10 min		
Weighing units	kg		
Air humidity	max. 80 % rel. (non-condensing)		
Permissible ambient temperature	-10°C ... + 40°C		
Permissible battery charging temperature	0°C ... + 40°C		
Auto off	3 min, 5min, 15 min, off		
Display	LCD		
	Digit height (large characters) 30mm		
Material hook, shackle	Hook: unalloyed forged steel		
	Shackle: unalloyed forged steel		
Housing material	Cast aluminium, lacquered		
Net weight (kg)	9	9	10
Input voltage power supply unit	110V - 240V AC 50 - 60Hz		
Input voltage device	12 V, 2500 mA		
Battery	7.4 V, 5200 mAh		
	Operating time 30 h (backlight on)		
	Operating time 70 h (backlight off)		
	Charging time 12 h		

KERN	HFD 6T-3M	HFD 10T-3M
Item number / type	THFD 6T-3M-A	HFD 10T-3M-A
Readability (d)	2 kg	5 kg
Weighing range (max)	6 000 kg	12 000 kg
Taring range (subtractive)	5 998 kg	11 995 kg
Reproducibility	2 kg	5 kg
Linearity	±2 kg;	±5 kg;
Recommended calibration weight, not included (class)	6 tonnes (M1)	10 tonnes (M1)
Calibration value (e)	2 kg	5 kg
Calibration class	III	III
Settling time (typical)	2 s	
Precision	0.2 % of max.	
Warm-up time	10 min	
Weighing units	kg	
Air humidity	max. 80 % rel. (non-condensing)	
Permissible ambient temperature	-10°C ... + 40°C	
Permissible battery charging temperature	0°C ... + 40°C	
Auto off	3 min, 5min, 15 min, off	
Display	LCD	
	Digit height (large characters) 30 mm	
Material hook, shackle	Hook: unalloyed forged steel	
	Shackle: unalloyed forged steel	
Housing material	Cast aluminium, lacquered	
Net weight (kg)	15	20
Input voltage power supply unit	110 - 240 V, 50 - 60 Hz	
Input voltage Device	12 V, 2500 mA	
Battery	7.4 V, 5200 mAh	
	Operating time 30 h (backlight on)	
	Operating time 70 h (backlight off)	
	Charging time 12 h	

KERN	HFD 600k-1IP	HFD 1T-4IP	HFD 3T-3IP
Item number / type	THFD 600K-1IP-A	THFD 1T-4IP-A	THFD 3T-3IP-A
Readability (d)	0.05 kg 0.1 kg 0.2 kg	0.1 kg 0.2kg 0.5 kg	0.2 kg 0.5 kg 1 kg
Weighing range (max)	150 kg 300 kg 600 kg	300 kg 600 kg 1500 kg	600 kg 1500 kg 3000 kg
Taring range (subtractive)	599,8	1499.5 kg	2999 kg
Reproducibility	0.05 kg 0.1 kg; 0.2 kg	0.1 kg; 0.2 kg; 0.5 kg	0.2 kg; 0.5 kg; 1 kg
Linearity	± 0.1 kg ± 0.2 kg; ± 0.4 kg	± 0.2 kg; ± 0.4 kg; ± 1 kg	± 0.4 kg; ± 1 kg; ± 2 kg
Recommended calibration weight, not included (class)	600 kg (M1)	1 tonne (M1)	3 tonnes (M1)
Settling time (typical)	2 s		
Precision	0.2 % of max.		
Warm-up time	10 min		
Weighing units	kg		
Air humidity	max. 80 % rel. (non-condensing)		
Permissible ambient temperature	-10°C ... + 40°C		
Permissible battery charging temperature	0°C ... + 40°C		
Auto off	3 min, 5min, 15 min, off		
Display	LCD		
	Digit height (large characters) 30mm		
Material hook, shackle	Hook: unalloyed forged steel		
	Shackle: unalloyed forged steel		
Housing material	Cast aluminium, lacquered		
Net weight (kg)	9	9	10
Input voltage power supply unit	110V - 240V AC 50 - 60Hz		
Input voltage device	12 V, 2500 mA		
Battery	7.4 V, 5200mAh		
	Operating time 30 h (backlight on)		
	Operating time 70 h (backlight off)		
	Charging time 12 h		
Dust and splash water protection	IP 67		

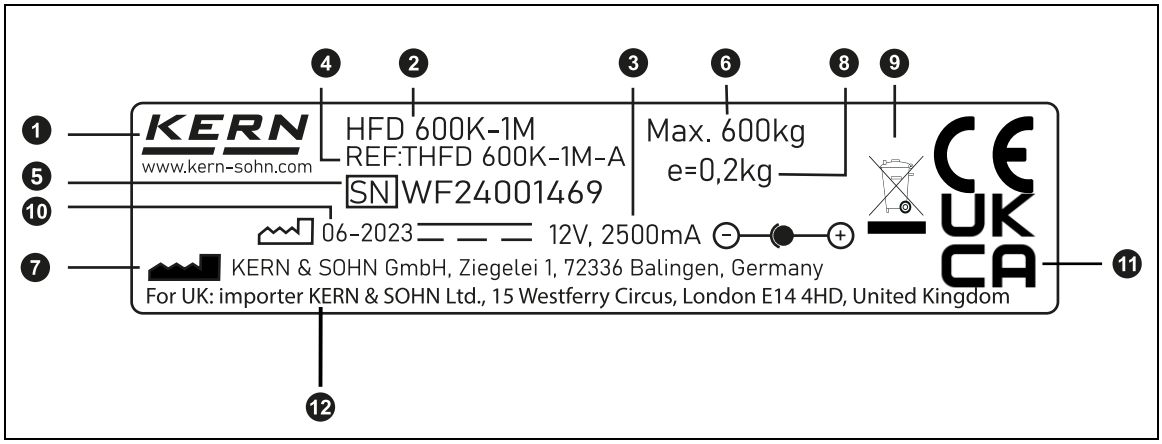
KERN	HFD 6T-3IP	HFD 10T-3IP
Item number / type	THFD 6T-3IP-A	THFD 10T-3IP-A
Readability (d)	0.5 kg; 1 kg; 2 kg	1 kg; 2 kg; 5 kg
Weighing range (max)	1 500 kg; 3 000 kg; 6 000 kg	3 000 kg; 6 000 kg; 12 000 kg
Taring range (subtractive)	5 998 kg	11 995 kg
Reproducibility	0.5 kg; 1 kg; 2 kg	1 kg; 2 kg; 5 kg
Linearity	± 1 kg; ± 2 kg; ± 4 kg	± 2 kg; ± 4 kg; ± 10 kg
Recommended calibration weight, not included (class)	6 tonnes (M1)	12 tonnes (M1)
Settling time (typical)	2 s	
Precision	0.2 % of Max.	
Warm-up time	10 min	
Weighing units	kg	
Air humidity	max. 80 % rel. (non-condensing)	
Permissible ambient temperature	-10°C ... + 40°C	
Permissible battery charging temperature	0°C ... + 40°C	
Auto off	3 min, 5min, 15 min, off	
Display	LCD	
	Digit height (large characters) 30 mm	
Material hook, shackle	Hook: unalloyed forged steel	
	Shackle: unalloyed forged steel	
Housing material	Cast aluminium, lacquered	
Net weight (kg)	15	22
Input voltage power supply unit	110 - 240 V, 50 - 60 Hz	
Input voltage device	12 V, 2500 mA	
Battery	7.4 V, 5200mAh	
	Operating time 30 h (backlight on)	
	Operating time 70 h (backlight off)	
	Charging time 12 h	
Dust and splash water protection	IP 67	

Remote control (standard):

Battery	23A (1 x 12V)
Dimensions (mm)	48 x 16 x 95 (W x D x H)

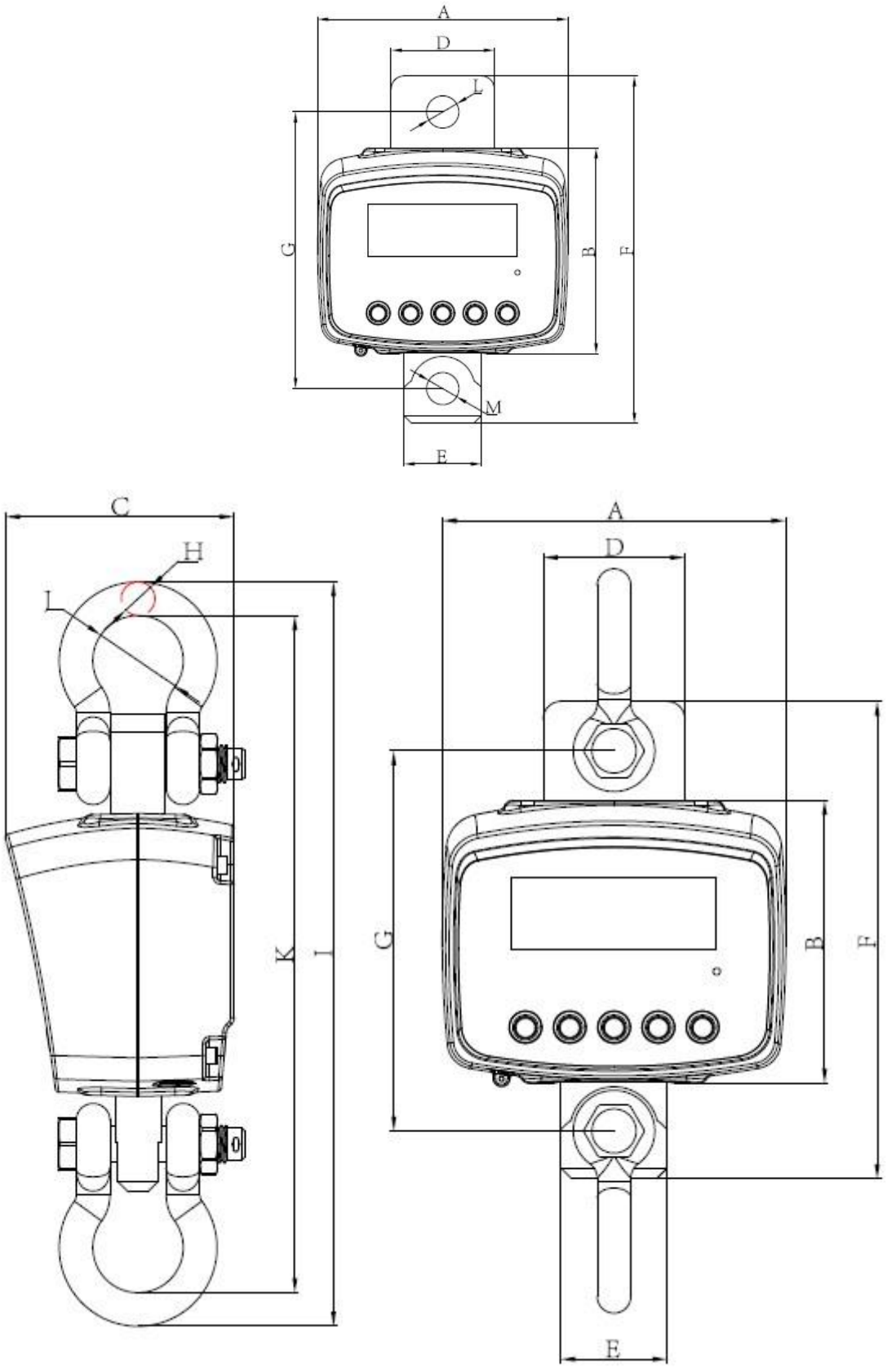
2.4 Type plate

Example (actual type plate may differ):



Pos.	Designation
1	KERN logo
2	Model
3	Power supply data
4	Type / article number
5	Serial number
6	Weighing range [Max]
7	Company address
8	Readability ("e" for calibratable devices, otherwise "d")
9	Disposal symbol
10	Date of manufacture
11	UKCA mark
12	Importer address UK

2.5 Dimensions



Dimensions [mm] / Capacity / Model	**600 kg HFD 600K-1**	**1,5 T HFD 1T-4**	**3 T HFD 3T-3**	**6 T HFD 6T-3**	**12 T HFD 10T-3**
A	194	194	194	194	194
B	160	160	160	160	160
C	129	129	129	129	129
D	80	80	80	95	95
E	60	60	60	80	80
F	270	270	275	320	330
G	219	219	219,5	248	247,5
H	Ø19	Ø19	Ø22	Ø25,4	Ø31,75
I	422	422	457	518	584
J	Ø50,8	Ø50,8	Ø58	Ø68,3	Ø82,5
K	384	384	413	467,2	520,5
L	Ø23	Ø23	Ø26,5	Ø30	Ø36
M	Ø23	Ø23	Ø26,5	Ø30	Ø36

3 General safety information

INFORMATION

Read the operating instructions completely before using the appliance. Only use the appliance in accordance with the specifications described in these operating instructions. This serves to protect against personal injury and damage to property.

3.1 Control on takeover

Please check the packaging immediately upon receipt and check the appliance for any visible external damage when unpacking.

3.2 Observe and keep the operating instructions

The operating instructions contain important information for the safe use of the appliance. They must be observed by all persons using the appliance.

The operating instructions must always be available when the appliance is in use and must be kept for the entire service life of the appliance.

3.3 General information on warning notices

Warnings are used in these operating instructions to warn you of possible personal injury or damage to property in certain situations.

Signal word	Description of the
DANGER	Failure to observe the instructions will lead directly to serious injury, permanent impairment (e.g. loss of a limb) or death of the user or third parties
WARNING	Failure to observe the instructions may result in serious injury, permanent impairment (e.g. loss of a limb) or death of the user or third parties
CAUTION	Failure to observe the instructions may result in minor injuries or temporary damage to the user or third parties (e.g. minor cuts)
NOTE	Failure to observe the instructions may result in damage to property

Warning of personal injury:

⚠ SIGNAL WORD

Symbol

Type and source(s) of the hazard

Possible consequence(s) of the hazard

⇨ Measures to avoid the hazard

Warning of material damage:

NOTE

⇨ Measures to prevent damage to property

Symbols in warning notices:

Symbol	Meaning
Warning signs	Warning signs warn you of dangers that may lead to personal injury. The symbol indicates the type of hazard.
	Indicates general hazards or a danger point
	Warning of electrical voltage
	Warning of flammable substances
	Warning of explosive substances
	Warning of suspended load
	Warning of falling loads

Symbol	Meaning
Command sign	Mandatory signs prescribe measures that you must take to avoid personal injury or damage to property. The symbol indicates the necessary actions or objects to prevent damage.
	Indicates a prescribed action

3.4 Improper use

- Our scales are non-automatic scales and are not intended for use in dynamic weighing processes. However, the scales can also be used for dynamic weighing processes after checking the individual area of application and, in particular, the accuracy requirements of the application.
- Do not leave a permanent load on the hook. This can damage the measuring mechanism and safety-relevant parts.
- Avoid jerky pulling and overloading of the scales, the crane or any type of load attachment equipment above the specified maximum load (max.), minus any existing tare load. This could damage the scales, the crane or the load attachment equipment.
- The scale, the crane or any type of load lifting equipment must not be modified in any way. This can lead to incorrect weighing results, safety-related defects and the destruction of the scale, crane or load attachment equipment.
- The scales must never be used to transport people.
- The scales must never be used to pull loads at an angle.
- The scales must never be used for tearing, pulling or dragging loads.
- Never place persons or objects under the load, as they could be injured or damaged.
- Never operate the scales in potentially explosive atmospheres.
- The scale may only be used in accordance with the specifications described. Deviating areas of use/application must be approved in writing by KERN.
- The scales must not be used to weigh people.
- This scale does not comply with the Medical Devices Act (MPG) and is not intended for medical use.

3.5 Obligations of the operator

The operator undertakes:

- to observe the national accident prevention regulations as well as the work, operating and safety regulations.
- all safety regulations of the crane manufacturer must be observed.
- to use the appliance only in accordance with the specifications described in these operating instructions and to observe all safety information and instructions described in these operating instructions. Any type of use that is not described in these operating instructions is considered improper use. The operator is responsible for any damage to property or personal injury resulting from such improper use. KERN & SOHN cannot be held liable if the appliance is used improperly and this results in damage.
- The crane scale, crane and load handling attachments must be serviced and maintained regularly (for more information, see chapter "Cleaning, maintenance and servicing").
- to record all examination results and keep them in the logbook.
- to ensure that the operating instructions are available at the place of use of the device at all times.
- only allow sufficiently qualified persons to use the device.

3.6 User qualification

The operator must ensure that the appliance is only used by sufficiently qualified persons.

- Installation, commissioning, maintenance and servicing may only be carried out by trained specialist personnel.
- Only trained and instructed persons may be authorised to operate the appliance.
- Repairs may only be carried out by trained specialist personnel.

3.7 Organisational measures

- All maintenance must be documented (see "Regular maintenance" checklist).
- All extended maintenance must be documented (see "Extended maintenance" checklist).
- Spare parts must be documented. (see "Spare parts and repairs").
- Only use original spare parts.

3.8 Ambient conditions

- The ambient conditions described in the operating instructions must be observed. Please refer to the technical data in the device overview.
- Do not use the scale in a corrosive environment.
- Protect the scales from high humidity, vapours, liquids and dust.
- Avoid extreme heat and temperature fluctuations, e.g. due to direct sunlight
- Large display deviations (incorrect weighing results) are possible if electromagnetic fields (e.g. from mobile phones or radios), static charges or an unstable power supply occur. The location must then be changed or the source of interference removed.
- Do not expose the scale to high humidity. Unauthorised condensation (condensation of humidity on the device) can occur if a cold device is brought into a much warmer environment. In this case, acclimatise the appliance disconnected from the mains for approx. 2 hours at room temperature.

3.9 Power supply unit and mains connection

General:

Improper use of power supply units can result in them catching fire or the user suffering an electric shock. The following therefore applies to power supply units and their connection:

- The scale may only be connected to the mains if the information on the scale (sticker) and the local mains voltage are identical.
- Only use the country-specific mains plug for the country in which you are using the appliance.
- Only use original KERN power supply units. The use of other makes requires the approval of KERN.
- Ensure that the power supply unit is accessible at all times.
- Protect the power supply unit from contact with liquids.
- Ensure that the mains cable is never pinched or kinked.
- Ensure that the mains cable does not pose a tripping hazard.
- Check the mains cable and power supply unit for damage before each use.

3.10 Rechargeable batteries and batteries

General:

Improper use of rechargeable or non-rechargeable batteries can cause them to catch fire, explode, emit toxic vapours or release corrosive liquids. The following therefore applies to rechargeable and non-rechargeable batteries:

- Protect from fire and heat.
- Never expose to high pressure or microwaves.
- Do not bring into contact with liquids or chemicals.
- Never bring the electrical contacts of rechargeable batteries and batteries into contact with metal objects or short-circuit them.
- Never modify rechargeable batteries, batteries and chargers.
- Batteries must never be recharged.
- Never use or charge a defective, damaged or deformed battery.

Insertion, replacement and storage:

When inserting rechargeable batteries and batteries, ensure that the polarity is correct (see "+/-" in the rechargeable battery or battery compartment).

Replace rechargeable batteries and batteries only with types recommended by the manufacturer.

If possible, remove the rechargeable batteries and batteries and store them separately (protected against short circuits) if the scale is not to be used for a longer period of time. Leaking battery fluid could damage the scale.

Mains operation with rechargeable battery:

If possible, remove the battery if you want to operate the scale with the mains adapter, otherwise the battery may overheat. If this is not possible, do not operate the scale with the mains adapter for longer than 48 hours.

Charging:

- Batteries must never be charged.
- Only use the mains adapter supplied to charge batteries, as the battery and charger are designed to work together.
- Disconnect the battery immediately from the power supply and, if possible, from the scales if it develops odours, becomes hot, discoloured or deformed.
- Do not use the scales while the battery is charging.

If battery fluid escapes:

Liquid can escape from damaged rechargeable batteries and batteries. Please note the following:

- Avoid contact between leaking liquid and your skin, eyes or clothing.
- Wear protective clothing/equipment if you want to touch and remove a defective battery.
- Thoroughly clean any areas of skin or clothing that have come into contact with battery fluid with soapy water and then rinse the affected areas thoroughly with clean water.
- If you get battery fluid in your eyes, rinse your eyes immediately with clean water. Then consult a doctor immediately.

3.11 Safety-conscious working

The following applies in principle to work with crane and suspension scales and with a crane:

- Always work with great care in accordance with the general rules for operating a crane.
- Check all parts (hooks, eyelets, rings, ropes, slings, cables, chains, etc.) for excessive wear and damage.
- If the safety catch on the hook is defective or even missing, the scales must not be used.
- Only work at an appropriate speed.
- Never use the scales to transport loads.
- Do not stand or walk under suspended loads.
- Always monitor the suspended load.
- Do not use on construction sites.
- Never exceed the rated load of the crane, crane scale or any type of load slinging equipment on the crane scale.
- Only position the crane so that the load is lifted vertically.
- Avoid vibrations and horizontal forces at all costs.
- Prevent shocks, twisting (torsion) and swinging (e.g. due to sloping suspension) of any kind.
- Only lift the load as far as necessary.
- Wear personal protective equipment (helmet, safety shoes, etc.) when working with the crane and crane scales.
- When weighing dangerous goods (e.g. molten masses, radioactive material), the national regulations for handling dangerous goods must be observed.

4 Overview of the device

4.1 Components

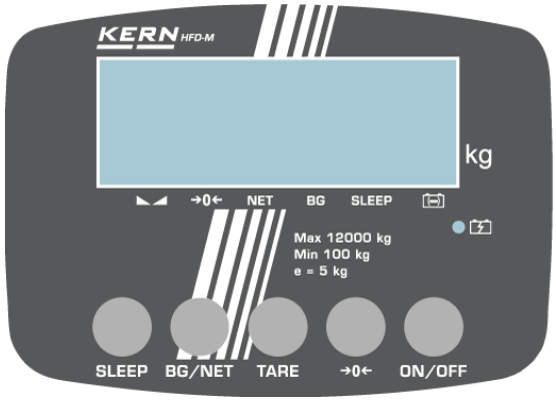
Scales (front view)

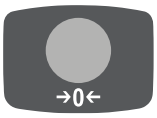
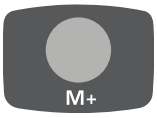
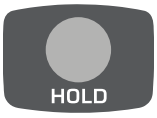
Remote control

Pos.	Designation
1	Upper shackle
2	Display
3	Keyboard
4	Lower shackle

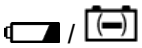
Pos.	Designation
5	Antenna
6	Keyboard

4.2 Keyboard

HFD	HFD-M
	

Button	Designation	Function
	**ON/OFF**	➢ Switch on ➢ Switch off (long press)
	**ZERO**	➢ Zeros
	**TARE**	➢ Taring
	**M+**	➢ Totalise ➢ Digit dialling to the right ➢ Exit menu
	**HOLD**	➢ Hold weight value (freeze) ➢ Move decimal point (adjustment mode)
	**BG/NET**	➢ Retrieve gross/net weight
	**SLEEP**	➢ Standby mode

4.3 Display

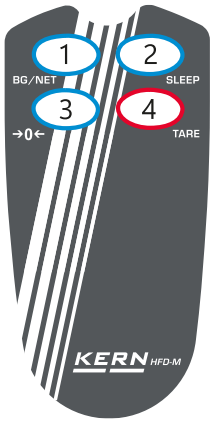
The [▼] above the symbol is displayed when	
	the battery is charged
	the capacity of the battery is exhausted
HOLD	the data hold function is active
NET	the scales have been tared
	the weight display is stable
→0←	the weight is in the range around the zero point
BG	the gross weight is displayed
SLEEP	the scale is in standby mode

4.4 Radio remote control

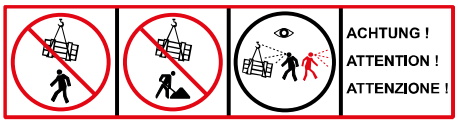
The scales can be operated with the wireless remote control in the same way as with the keypad. All functions (except **ON/OFF**) can be selected.

The red LED must light up each time a button is pressed. If it does not light up, the batteries in the remote control must be replaced.

Range in open areas (undeveloped) approx. 20 m.

	Button	Function
	**BG/NET**	➢ Retrieve gross/net weight
	SLEEP	➢ Standby mode
	→0←	➢ Zeros
	TARE	➢ Taring

4.5 Symbols on the device

Symbol	Description of the
	
	Do not stand or walk under suspended loads.
	Do not use on construction sites.
	Always monitor the suspended load.
 *(Illustration example)*	Do not exceed the maximum load (max.) of the scale (In this example 1000 kg) **Note the information on the actual sticker**
	The product complies with the requirements of the German Product Safety Act.

5 Transport, handling and storage

⚠ WARNING

High weight of the scales

Lifting heavy loads can lead to injuries and permanent impairments (e.g. damage to the spine)

- ⇨ Only remove the scales from the packaging with the help of another person.
- ⇨ Use a lifting device, such as a crane or forklift, to remove the scale from its packaging or to transport it.
- ⇨ Secure the scales to prevent them from falling when lifting and transporting.

NOTE

- ⇨ Remove any suspended loads before transporting the scales.
- ⇨ Never hold the scales by the hook during transport, as this can damage the scales.
- ⇨ Hold the scales by the housing, shackle or, if necessary, the handle during transport.
- ⇨ Use a suitable lifting device to transport heavy scales.

5.1 Return transport / Returns

INFORMATION

A return is only possible within the limits of the general terms and conditions.

The original packaging must be used for returns.

Crane scales with signs of use cannot be returned.

Crane scales that have been used and therefore show signs of wear can no longer be returned.

Crane scales are sealed by KERN & SOHN.

- Shackles and hooks are sealed with adhesive tape
- Removal from the packaging is sealed with adhesive tape

Breaking the seal is considered a sign of use and obliges you to make a purchase. Returns are then only possible if you discover defects and assert a claim for defects in accordance with the General Terms and Conditions.

Illustration example for seals

Procedure for return transport:

- Ensure that all parts included in the scope of delivery are complete
- Pack all parts in the original packaging

5.2 Decommissioning and storage

- Remove the crane scale from the crane and remove all load slinging equipment from the crane scale.
- Store the crane scale in its original packaging.
- Do not store the scales outdoors.

6 Assembly, installation and commissioning

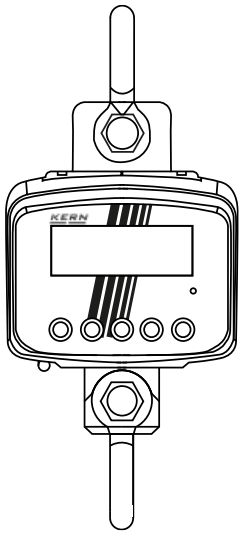
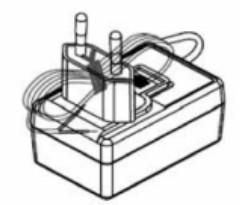
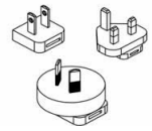
6.1 Unpacking and checking

INFORMATION

! In the event of a return, please follow the instructions in the chapter "Return transport / Returns"

Remove all parts of the scope of delivery from the packaging and remove the packaging materials. Then check that all parts of the scope of delivery are present and undamaged.

6.2 Scope of delivery

 Scales 1 x	 Power supply unit 1 x
 Mains plug set 1 x	 Operating instructions / logbook 1 x

6.3 Original dimensions

Before first use, check the dimensions according to the "Maintenance drawings" listed in the appendix. Enter the measured values in the "Regular maintenance" checklist in the appendix. Always use the same measuring principle and suitable test equipment to check the dimensions.

6.4 Rechargeable battery / battery operation

⚠ WARNING

Risk of fire and explosion due to incorrect handling of rechargeable batteries and batteries

Fire or explosion can lead to serious injuries

- ⇨ Please be sure to observe the notes on rechargeable batteries and batteries in the "General safety information"
- ⇨ Never recharge batteries. Only rechargeable batteries are suitable for recharging.

The battery should be charged for at least 24 hours before first use. Use the mains adapter supplied for this purpose. The battery has an operating time of approx. 60 hours.

The charge indicator informs you about the charge status of the battery (see table).

Charging indicator:

Charging indicator	Description of the
red	Battery is empty
green	Battery is fully charged

The battery should be recharged if the following message appears on the display during operation: lo_bat

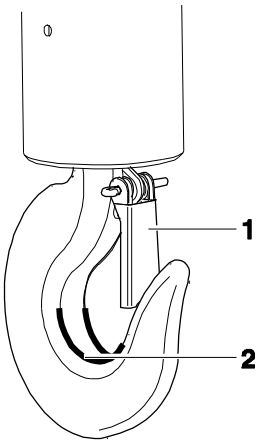
6.5 Hanging up the scales

Prerequisite:

The crane requires a safety lock **(1)** to prevent the scales from falling.

If the safety catch is missing or damaged, please contact the crane manufacturer to obtain a hook with this safety feature.

The scale may only be used with a crane with a swivel joint.



Hang up the scales:

1. Hang the scale on the lower hook of a crane and close the safety catch.
2. The upper eyelet of the scale must rest in the saddle **(2).**

6.6 Initial commissioning

Check the original dimensions before initial commissioning.

In order to obtain accurate weighing results with electronic scales, the scale must reach its operating temperature (see warm-up time in the "Technical data" chapter). The scale must be connected to the power supply (mains connection, rechargeable battery or battery) for this warm-up time.

The accuracy of the scale depends on the local gravitational acceleration. It is essential to follow the instructions in the chapter "Adjustment" chapter.

7 Calibration

INFORMATION

According to EU Directive 2014/31EU, scales must be calibrated if they are used as follows (legally regulated area):

- In commercial transactions, when the price of goods is determined by weighing.
- In the manufacture of medicines in pharmacies and in analyses in medical and pharmaceutical laboratories.
- For official purposes.
- In the production of pre-packaging.

If in doubt, please contact your local weights and measures office.

Scales in the legally regulated area (→ calibrated scales) must comply with the market error limits during the calibration validity period - these are generally twice the calibration error limits.

If this calibration validity period expires, a recalibration must be carried out. If it is necessary to adjust the scales to comply with the calibration error limits in order to pass this recalibration, this does not constitute a warranty claim.

Calibration instructions:

The scales labelled as legal for trade in the technical data have EU type approval. If the scales are used in the legal-for-trade area as described above, they must be calibrated and regularly recalibrated.

The recalibration of a scale is carried out in accordance with the respective legal regulations of the countries. The verification validity period in Germany, for example, is usually 2 years for scales.

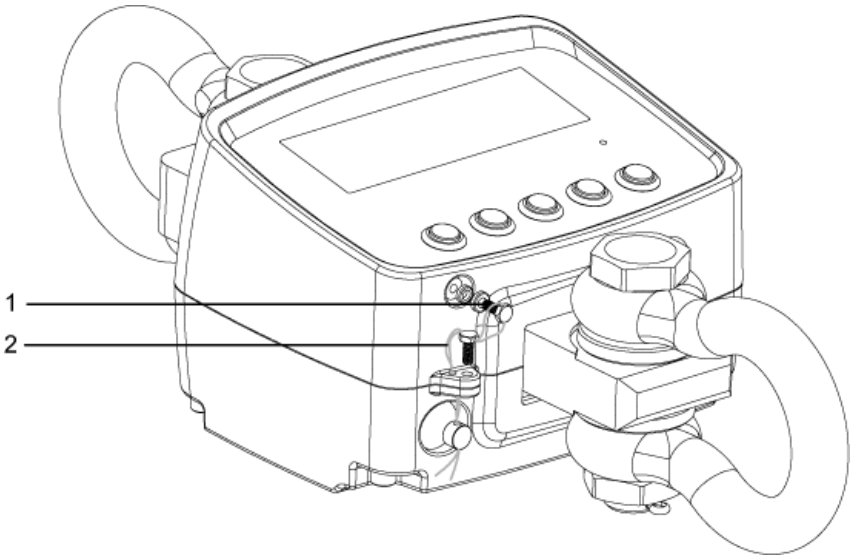
The legal regulations of the country of use must be observed!

Seal stamps:

INFORMATION

The verification of the scales is invalid without the seal marks.

On scales with type approval, the attached seal marks indicate that the scales may only be opened and serviced by trained and authorised specialists. Destroyed seal marks invalidate the verification validity. The national laws and regulations must be observed. Recalibration is required in Germany.



1	Adjustment switch fuse
2	Gauge wire

8 Adjustment

As the value of the acceleration due to gravity is not the same at every location on earth, each scale must be adjusted to the prevailing acceleration due to gravity at the installation site in accordance with the underlying physical weighing principle (only if the scale has not already been adjusted to the installation site at the factory). This adjustment process must be carried out when the scale is first put into operation, after each change of location and in the event of fluctuations in the ambient temperature. In order to obtain accurate measured values, it is also advisable to periodically adjust the scale during weighing operations.

INFORMATION

- In the technical data you will find information on the adjustment weights recommended by KERN & SOHN.
- Calibration weights of other tolerance classes are possible, but not optimal. The accuracy of the calibration weight must be at least equal to or better than the readability [d] of the scale.
- The maximum load of the scale must not be exceeded during adjustment.
- Information on test weights can be found on the Internet at: **http://www.kern-sohn.com**
- If the value of the calibration weight can be freely selected in the menu of your scale, select a calibration weight as close as possible to the maximum load of the scale.

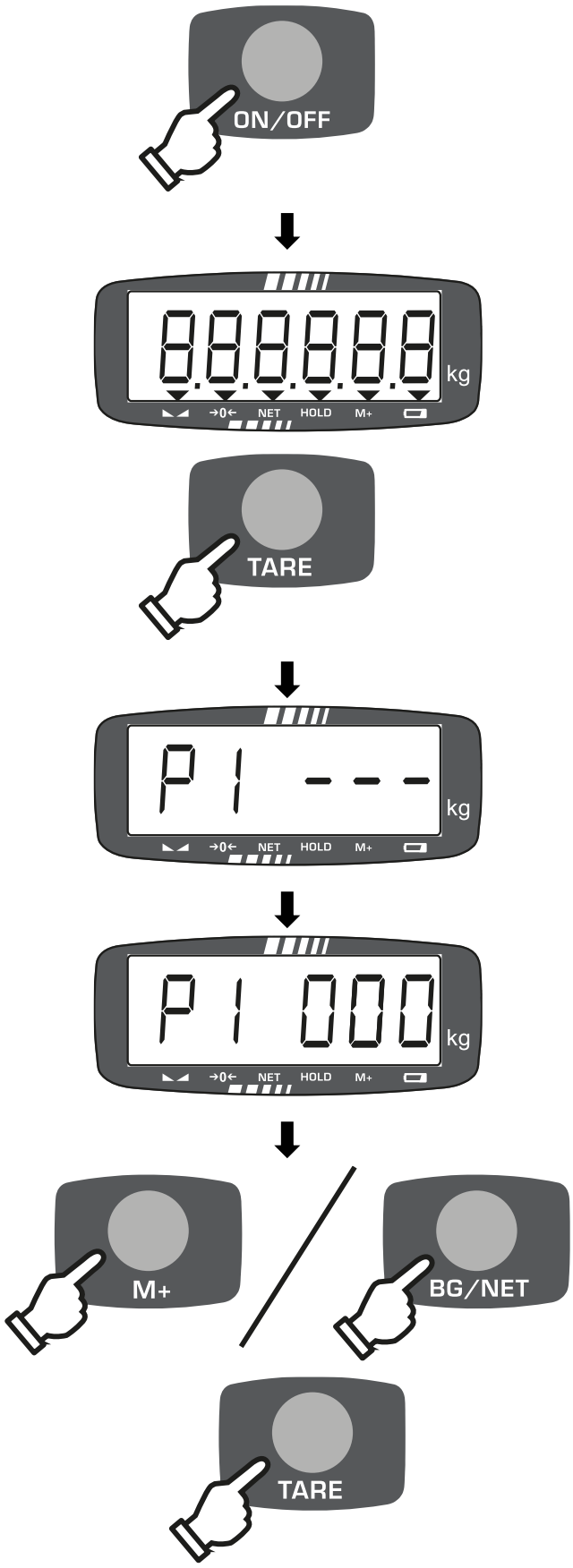
For legal-for-trade scales:

- External adjustment is disabled for calibrated scales.
    - To cancel the access lock, the seal mark must be destroyed and the adjustment switch actuated.
    - If the seal is destroyed, the scale must be recalibrated by an authorised body and a new seal affixed before it can be used again in legal-for-trade applications.

NOTE

- ⇨ For adjustment, ensure that the ambient conditions are stable (e.g. avoid vibrations or air currents).
- ⇨ Please note that a warm-up time is required for adjustment so that the scale itself is stabilised. The warm-up time can be found in the technical data.
- ⇨ Make sure that only the adjustment weight is suspended from the hook during adjustment and no other load.
- ⇨ An error message is displayed in the event of a calibration error or incorrect calibration weight. In this case, repeat the adjustment process.

Realisation:



⇨ Switch on the scales with the carrying aid attached if necessary

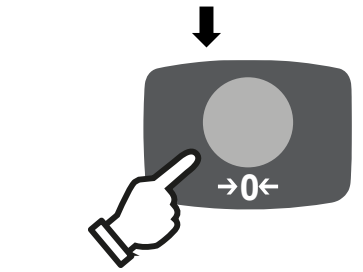
⇨ Press **[TARE]** during the self-test

⇨ <P 1- - -> is displayed

⇨ Enter password "000" (for navigation in the menu, see chapter 10.1)

⇨ Select digit with **[M+] / [BG/NET].**

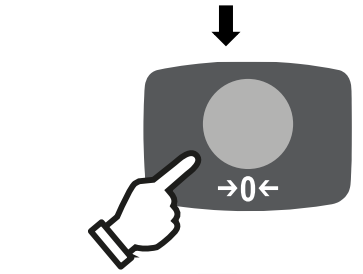
⇨ Increase the value of the digit with **[TARE]**



⇨ Confirm with **[ZERO].**

⇨ The first function

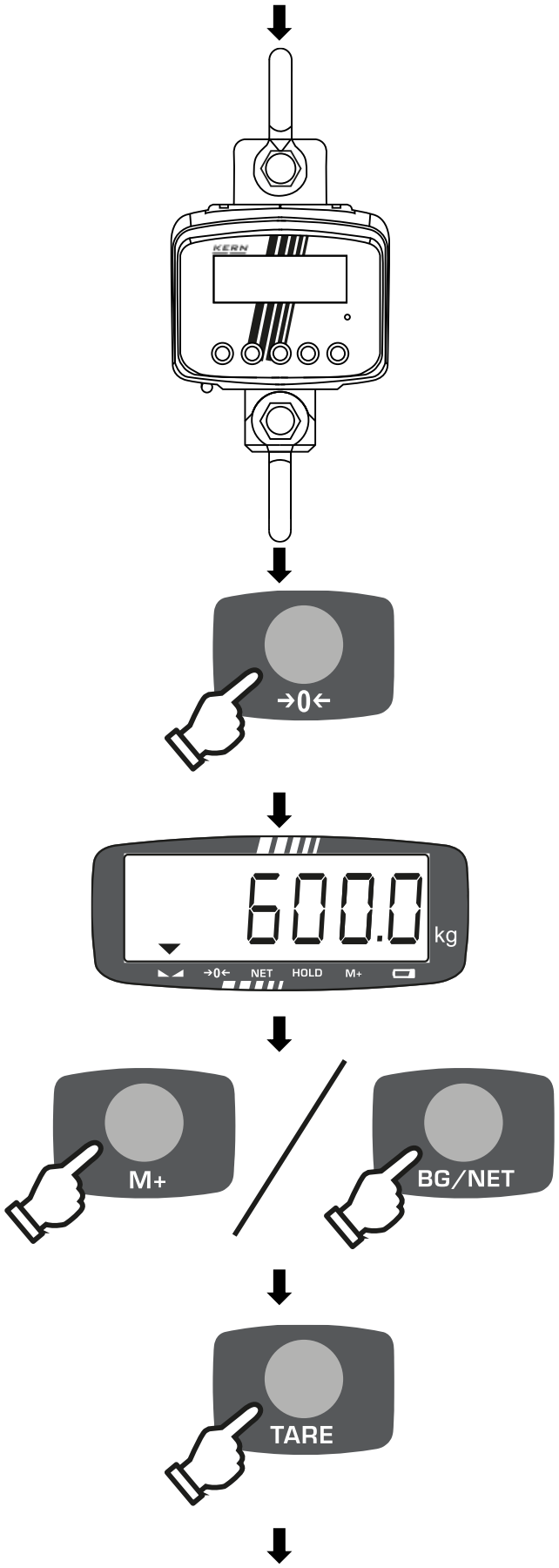
⇨ <F0 CAL> is displayed



⇨ Press **[ZERO]**

⇨ <unLoAd> is displayed

For calibrated appliances, press the adjustment switch on the underside of the scales.



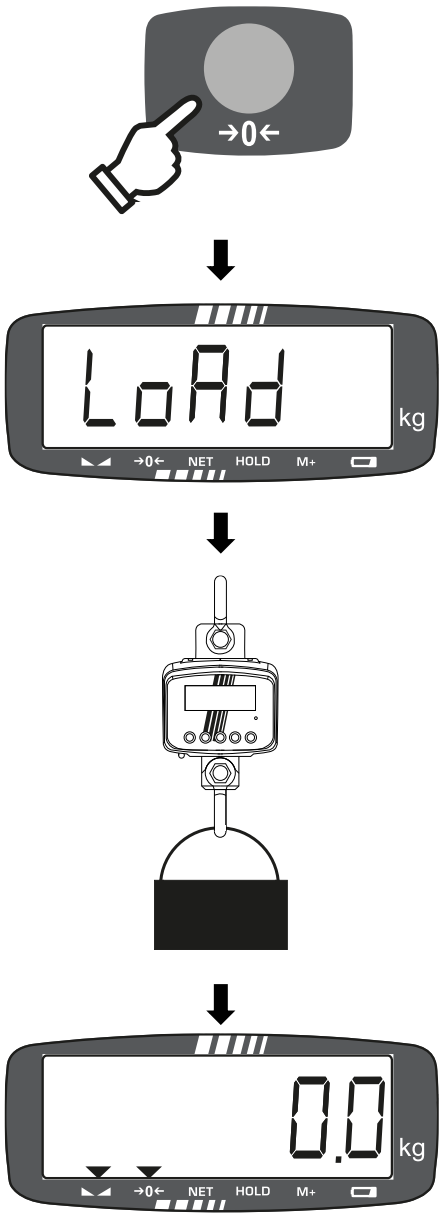
Unload the scales, wait for the stability display

⇨ Press the **[ZERO]** button,

⇨ The currently set calibration weight is displayed.

⇨ Select digit with **[M+] / [BG/NET].**

⇨ Increase the value of the digit with **[TARE]**. The active digit flashes.



⇨ Confirm with **[ZERO]**

⇨ <LoAd> is displayed.

⇨ Attach the calibration weight and wait for the stability display

⇨ Press **[ZERO].**

⇨ After calibration, the scale performs a self-test and returns to weighing mode

9 Operation

9.1 Safety instructions for operation

⚠ WARNING

Falling loads due to breakage of the load handling attachment or misuse

Serious injuries or death possible if people are hit by falling loads

- ⇨ Please be sure to observe the instructions in the chapter "General safety information"
- ⇨ During operation, pay particular attention to the instructions listed in the safety information under "Safety-conscious working"
- ⇨ Check that the scales are free of damage and in perfect working order before each use.
- ⇨ Never exceed the specified maximum load (max.) of the scale.

⚠ WARNING

Hazards due to lifting heavy loads

Lifting heavy loads can lead to injuries and permanent impairments (e.g. damage to the spine)

- ⇨ When lifting heavy loads, make sure your posture is correct (back straight, lifting from the knees)
- ⇨ Squat down when you want to put the load down again.
- ⇨ Ask another person for help if the load is too heavy for you.

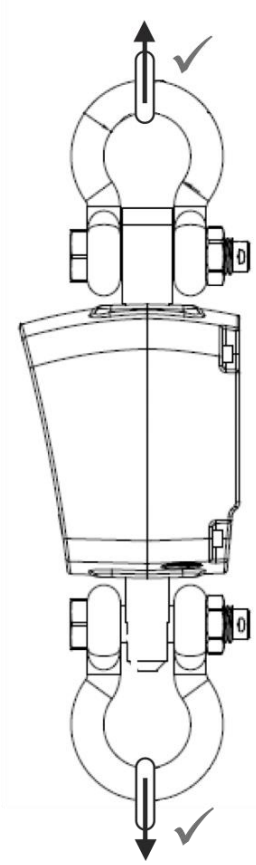
9.2 Load scales

Observe the following for good weighing results, see illustrations on next page:

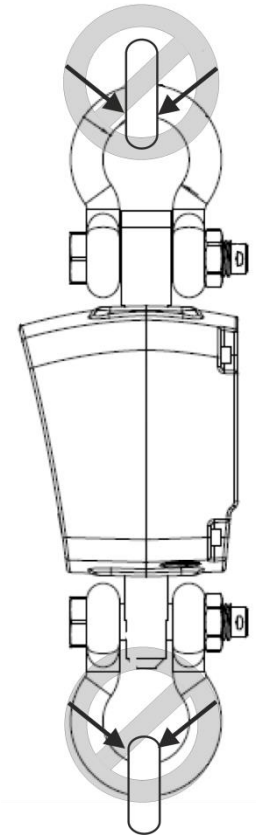
- Only use load slings that guarantee a single-point attachment and on which the scales can hang freely.
- Do not use load slings that are too large and do not ensure single-point suspension.
- Do not use multiple suspensions.
- Do not pull or push the load or the loaded scales.
- Do not pull horizontally on the hook.

Load the scales:

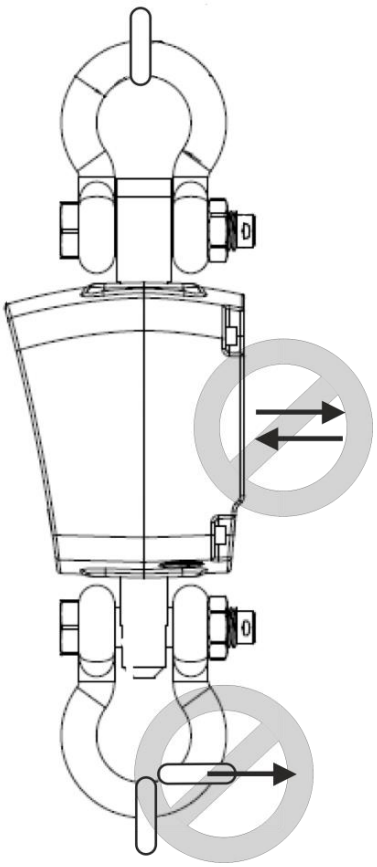
1. Position the hook of the scale above the load.
2. Lower the scales until the load can be attached to the hook of the scales. Reduce speed when the appropriate height is reached.
3. Attach the load to the hook. Ensure that the safety lug is closed. If the load is attached with slings, ensure that the slings are fully seated in the saddle of the scale hook.
4. Slowly lift the scales with the load.
5. If the load is attached with slings, ensure that the load is well balanced and that the slings are positioned correctly.



Only use load slings that guarantee single-point attachment and on which the scales can hang freely.

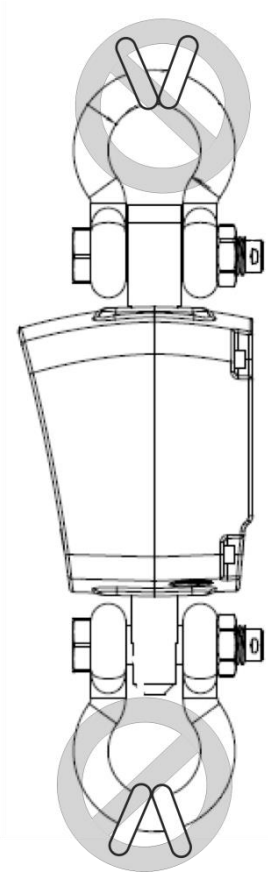


Do not use load slings that are too large and do not ensure single-point suspension



Do not pull or push

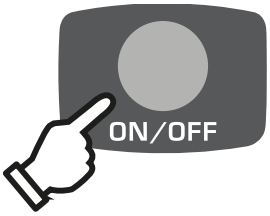
Do not pull sideways on the hook



Do not use multiple suspensions

9.3 Switch on / Switch off

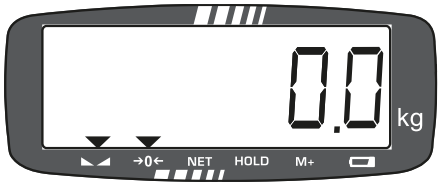
Switch on:



⇨ Press **[ON/OFF].**

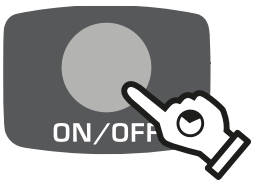
⇨ The display lights up and the scales carry out a self-test

⇨ Wait until the weight display appears

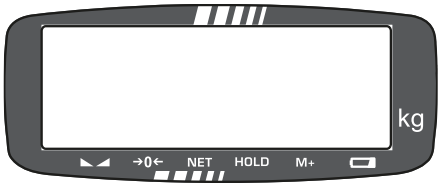


⇨ The scales are now ready for weighing

Switch off:



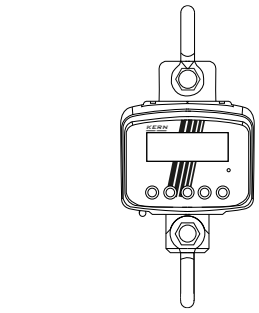
⇨ Keep **[ON/OFF]** pressed



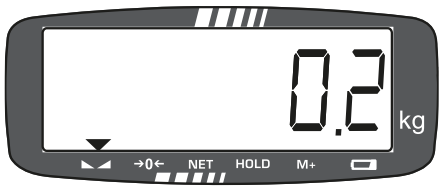
⇨ The display switches off

9.4 Zeros

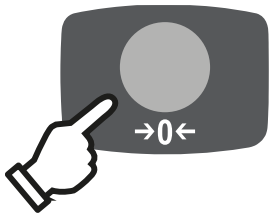
Realisation:



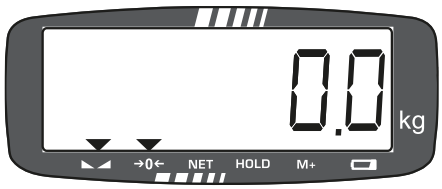
⇨ Unload the scales



⇨ Wait until the arrow **<▾>** appears above the stability display (for calibrated devices also above BG)



⇨ Press **[ZERO]**

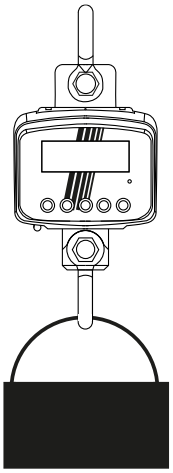


⇨ The zero display appears on the display and above the stability display, →0← and above BG the arrow **<▾>** is displayed

9.5 Simple weighing

NOTE

- ⇨ Avoid overloading the scale above the specified maximum load (max.), minus any existing tare load. This could damage the scales.
- ⇨ If the maximum load is exceeded, **<E>** is displayed. In this case, unload the scales or reduce the preload.

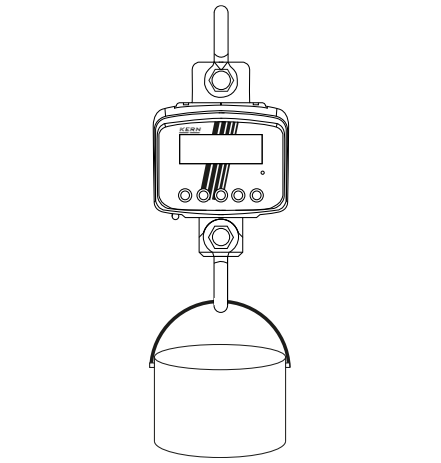


- ⇨ Hang the load on the hook

- ⇨ Wait until the arrow **<▼>** appears above the stability display (for calibrated devices also above BG)
- ⇨ The weighing result can be read off

9.6 Taring

Realisation:

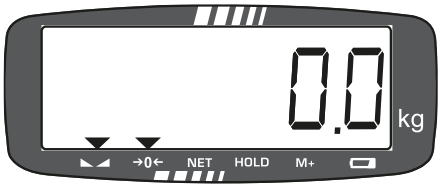


⇨ Hang the container on the hook

⇨ The weight of the container is displayed

⇨ Wait until the arrow **<▾>** appears above the stability display

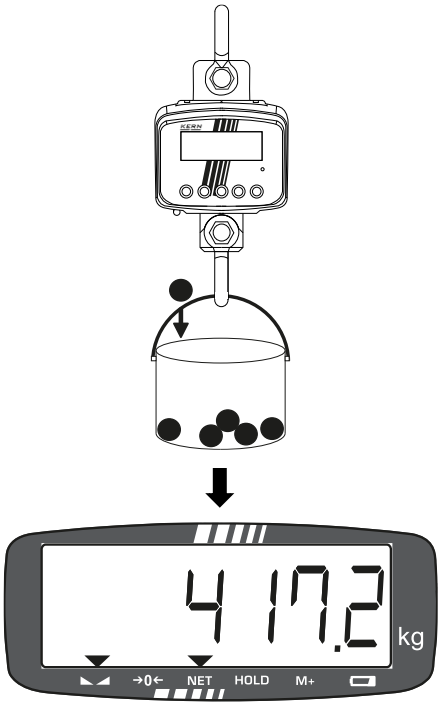
⇨ Press **[TARE]**



⇨ The weight of the weighing container is now stored internally

⇨ The zero display appears on the display and the arrow **<▾>** is displayed above NET

Weighing with Tara:



⇨ Weighing goods

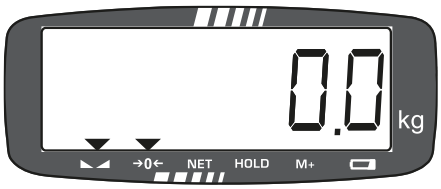
⇨ Wait until the arrow **<▼>** appears above the stability display and above NET

⇨ The net weight can be read off

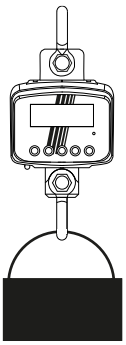
- After removing the container, the weight of the container appears as a negative value (minus)
- To delete the tare value, unload the crane scale and press **[ZERO]** or **[TARE]**

9.7 Hold function (only non-calibratable devices)

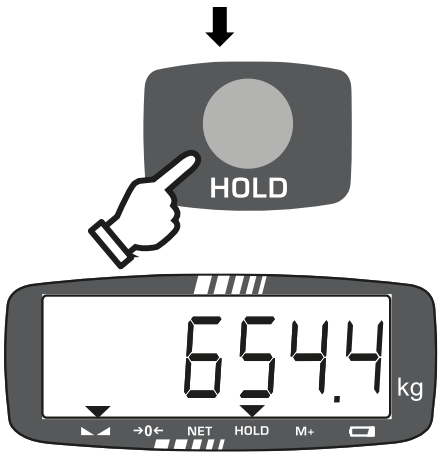
Realisation:



⇨ The scale is in weighing mode

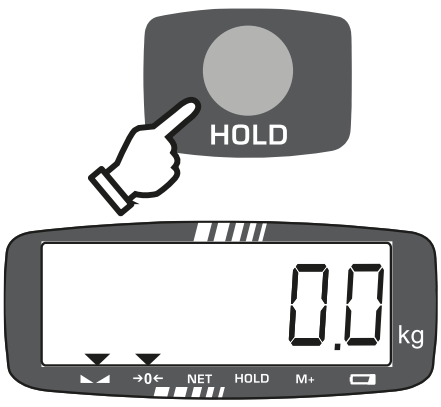


⇨ Hang the load on the hook



⇨ Press **[HOLD**] to hold the value

⇨ <▼> above HOLD signals that the value is held.



⇨ Press **[HOLD]** again to delete the held value

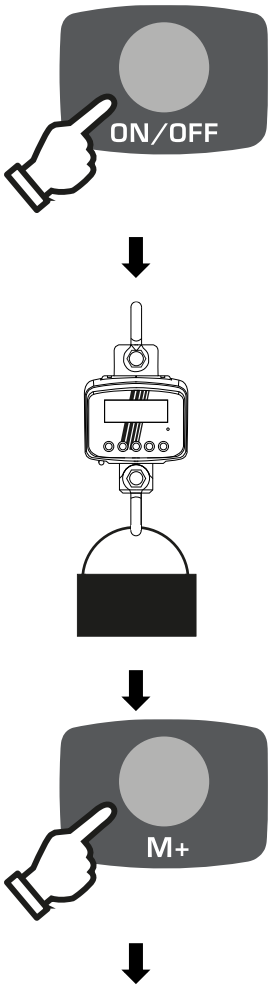
9.8 Further functions

9.8.1 Totalling (only non-calibratable devices)

With this function, the individual weight values are added to the totalling memory by pressing the **[M+]** button and output when an optional printer is connected.

- When the totalising function is active, [▼] appears above the **"M+"** symbol.
- The totalising function is not active if the weight is less than 20d.
- Only stable weight values can be totalised.

Realisation:



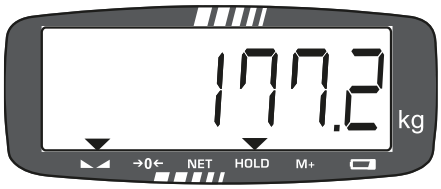
⇨ Switch on the scales

⇨ Hang load A on the hook

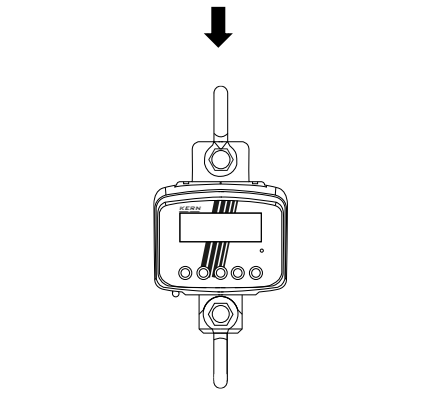
⇨ Wait for stability display

⇨ Press **[M+]**

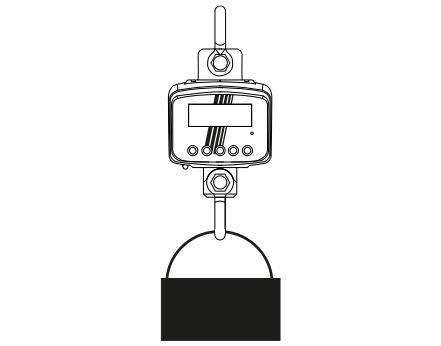
⇨ <ACC 01> is displayed



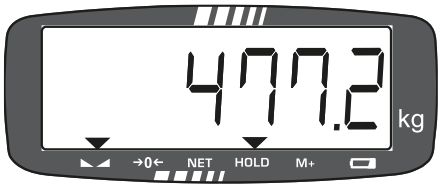
⇨ Weight value is displayed



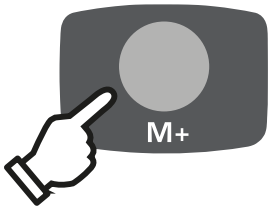
⇨ Remove the sample and wait for the zero display.



⇨ Hang load B on the hook

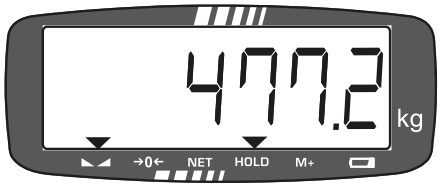


⇨ Wait for stability display

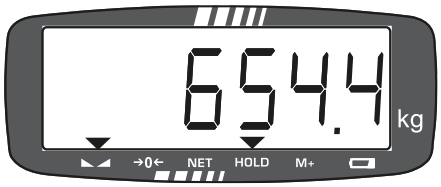


⇨ Press **[M+].**

⇨ <ACC02> is displayed



⇨ Weight value is displayed



⇨ The total weight value is then displayed

Confirm setting

⇨ Further weighings can be totalled as described above. Make sure to unload the scales between the individual weighings.
⇨ The process can be repeated until the capacity of the crane scale is exhausted.

Show total amount:

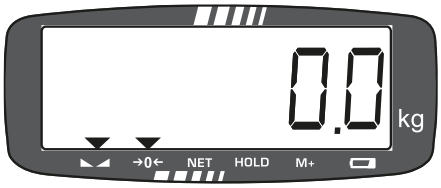
Press the **[M+]** button when zero is displayed, the number of weighings followed by the total weight is displayed for 2 seconds.

Delete totalling memory:

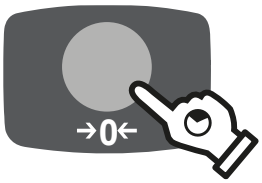
Press the **[M+]** button when zero is displayed, the number of weighings followed by the total weight is displayed for 2 seconds. Press the **[ZERO]** button again during this display.
The data in the totaliser memory is deleted, the [▼] above "M+" goes out.

9.8.2 Switching the backlighting on/off

Realisation:



⇨ The scale is in weighing mode



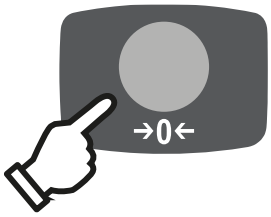
⇨ Press and hold **[ZERO]** until the current setting is displayed.

⇨ Press **[TARE]** to select the desired setting.

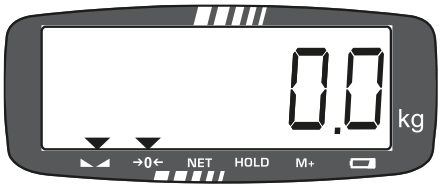
<bL on> Backlighting permanently switched on

<bL oF> Backlighting switched off

<bL Au> Automatic backlighting only under load or when a button is pressed.



⇨ Confirm with **[ZERO].**



⇨ Scale returns to weighing mode.

10 Menu

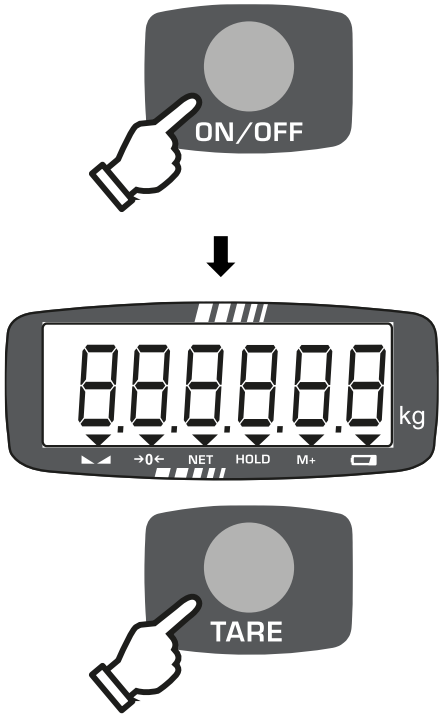
If no key is pressed in the menus, the scale automatically switches to weighing mode after a while.

10.1 Navigation in the menu

Select function	⇨ The individual functions can be selected in sequence using **[TARE].**
Select setting	⇨ Confirm the selected function with **[ZERO].** ⇨ The current setting is displayed.
Change settings	⇨ Use [**TARE]** to switch between the available settings.
Confirm setting	⇨ Press **[ZERO]** ⇨ The scale returns to the menu.
Exit menu / return to weighing mode	⇨ Press **[M+].** ⇨ Press the **[BG/NET]** button. (For calibrated devices)
Activate menu item / confirm selection	⇨ Press the **[HOLD]** button ⇨ The selection is confirmed

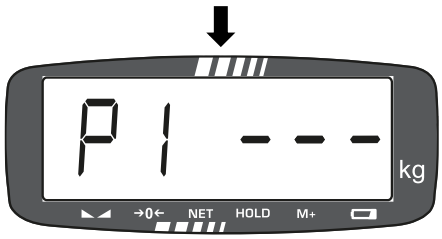
10.1.1 Call up the setup menu

Realisation:

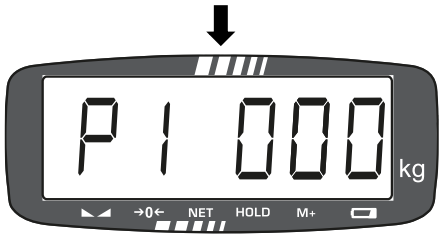


⇨ Switch on the scales with the carrying aid attached if necessary

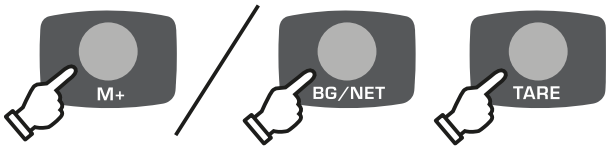
⇨ Press **[TARE]** during the self-test



⇨ **<P 1- - ->** is displayed

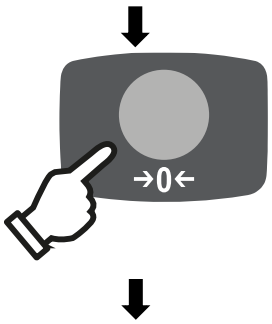


⇨ Enter password "000“



⇨ Press **[M+]** / **[BG/NET]** to increase the value of the digit

⇨ Press **[TARE]** to select the next digit



⇨ Press **[ZERO]** to confirm password

⇨ Select the desired setting (for navigation in the menu, see chap. 10.1)

10.1.2 Set and select parameters

10.2 Overview of the setup menu

Default settings are marked with a ∗.

Function	Description of the			
F0 CAL	Adjustment			
F1 CAP Set scale capacity (max) / scale type Only for uncalibrated devices	threEEr	600	Triple range scales	**Modifications may only be carried out by a specialist with in-depth knowledge.**
		1500		
		3000		
		6000		
		12000		
	SinGLE	600	Single range scale	
		1500		
		3000		
		6000		
		12000		
	duALr	600	Multi-range scale	
		1500		
		3000		
		6000		
		12000		
	duAL i	600	Multi-interval scale	
		1500		
		3000		
		6000		
		12000		

Function	Description of the		
F2 SP Only for uncalibrated devices	Slow	Reaction speed selectable slow, medium, fast	
	mid		
	fast		
F3 inP	Display Internal resolution		
F4 GrA	Gravitational constant of the installation site		
F5 Con	FAsh ion	oFF	Interfaces switched off
	W iF i		Not documented
	bLuE		Not documented
	bAud	600	Baud rate
		1200	
		2400	
		4800	
		9600	
F6 t i	00:00	Set the time	
F7 dA	00.00.00	Set date	
F8 St	on	Multitara switched on	
	oFF	Multitara switched off	

Function	Description of the	
F9 oF	0	Automatic switch-off function deactivated
	5	Scales are switched off after 3 minutes
	10	Scales are switched off after 5 minutes
	20	Scales are switched off after 15 minutes
	30	Scales are switched off after 30 minutes
F 10 oUE	XXXXXXX	Overload memory
F 11 = 10 (for calibratable appliances)	Locked.	
F 11A2n (for non-calibratable appliances)	oFF	Auto Zero deactivated
	0.5d	Auto Zero up to 0.5 d
	1d	Auto Zero up to 1 d
	2d	Auto Zero up to 2 d
	4d	Auto Zero up to 4 d

11 Cleaning, maintenance and servicing

11.1 Cleaning

⚠ WARNING

Short circuit due to liquids penetrating the inside of the appliance

Short circuit can lead to fire and serious injuries

- ⇨ Do not open the appliance. There are no parts to be cleaned inside the appliance.
- ⇨ Ensure that rechargeable batteries or batteries do not come into contact with liquids.

NOTE

- ⇨ Do not use any aggressive cleaning agents (e.g. solvents), as this will cause reactions with the materials and damage them.
- ⇨ Do not use metal brushes or cleaning sponges made of steel wool, as this will damage the surface.
- ⇨ Ensure that no liquid enters the appliance.

Recommended cleaning:

To clean the appliance, use a mild cleaning agent such as a commercially available window cleaner and a soft cloth.

11.2 Maintenance and servicing

INFORMATION

Maintenance and servicing may only be carried out by trained specialist personnel.

⚠ WARNING

Poor maintenance can lead to breakage of the load handling attachment and falling loads

Falling loads can lead to serious injury or death

- ⇨ Have the scales serviced regularly by trained specialists with in-depth knowledge of crane scales.
- ⇨ Observe the maintenance work according to chapter "Maintenance table".
- ⇨ Observe the maintenance intervals according to chapter "Inspection intervals".
- ⇨ Observe the national accident prevention regulations as well as the operator's work, operating and safety regulations.
- ⇨ Take the scales out of operation immediately if you notice any safety faults or discrepancies with the checklists.
- ⇨ Have parts replaced by trained specialists only. Do not repair the scales yourself.

- Maintenance must be carried out in accordance with the "Maintenance table" chapter.
- Maintenance must be carried out in accordance with the intervals in chapter "Inspection intervals" chapter.
- Maintenance may only be carried out by trained specialist personnel with in-depth knowledge of crane scales. The national accident prevention regulations and the operator's work, operating and safety regulations must be observed.
- Only use suitable test equipment / feeler gauges to check the dimensions.
- The results of regular maintenance are entered in the "Regular maintenance" checklist.
- The results of the extended maintenance are included in the "Extended maintenance" checklist".
- The load handling attachments must be cleaned before the test.

11.2.1 Test equipment monitoring

As part of quality assurance, the metrological properties of the scales and any test weights must be checked at regular intervals. The responsible user must define a suitable interval as well as the type and scope of this check. Information regarding the monitoring of test equipment for balances and the test weights required for this is available on the KERN homepage (www.kern-sohn.com). In its accredited calibration laboratory, KERN can calibrate test weights and scales quickly and cost-effectively (traceability to the national standard).

11.2.2 Maintenance table

Regular maintenance:

Interval	Maintenance
Before each use	• Check that the lifting gear is functioning correctly
Initial commissioning, then every **3 months**	• Check all dimensions and enter them in the "Regular maintenance" checklist • Check the scale and lifting gear (e.g. hook, eyelet) for wear, such as plastic deformation, mechanical damage (unevenness), notches, grooves, cracks, corrosion, thread damage and twisting. • Visual and functional check of the swivel joint. • Check that the safety lug is attached to the hook and also check for defects and proper function • Check that the cotter pin and nut on the shackle are not loose • If a measurement exceeds the permissible deviation from the original measurement (see "Regular maintenance" checklist) or other discrepancies are detected, the scale must be taken out of service immediately. • The scale may only be repaired by trained specialists. Never repair it yourself. • All repairs and spare parts must be documented by trained specialist personnel in the "Spare parts and repairs" list.
Every 12 months	• All load-bearing parts must be checked by trained specialists and documented in the "Extended maintenance" checklist

Note:
The "Maintenance drawings" listed in the appendix must be observed when carrying out maintenance and checking for wear.

Lifting accessories may no longer be used in the following cases:

- If deviations are detected during the checks defined in the maintenance programme.
- If the type plate is missing.
- If the maximum load (Max.) is not recognisable.
- If overloading or other damaging influences are known to have occurred with load handling attachments. In this case, the load handling attachments must be taken out of service and may only be used again after a successful inspection.

11.2.3 Inspection intervals

Examination	Interval			
	Daily	7 Days	3 Months	12 Months
Completeness of the crane scale components	x			
Visual inspection for damage	x			
Visual and functional check of the safety latch of the hook	x			
Checking the cotter pin and the shackle nut	x			
Impurities		x		
Check the labelling (e.g. max. maximum load)		x		
Check all dimensions according to the "Regular maintenance" checklist			x	
Extended maintenance				x

12 Waste disposal

Old appliances and accessories should not be disposed of with household waste.

The operator must dispose of the packaging and appliance in accordance with the applicable national or regional legislation at the place of use.

The device consists of various components and materials, such as

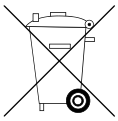
- Electronic components (circuit boards, electrical cables)
- Plastic (housing)
- Metal (hooks, shackles)

Improper disposal of the appliance can have harmful effects on people and the environment.

Proper and environmentally friendly disposal can prevent harmful effects and recover raw materials.

For rechargeable batteries or batteries:

Disposal of rechargeable batteries and batteries:



Rechargeable batteries and batteries do not belong in household waste.

The disposal of rechargeable batteries and batteries must be carried out by the operator in accordance with the applicable national or regional law of the place of use.

13 Guarantee

The warranty claim only applies to defects that already exist at the time of purchase.

The warranty shall lapse in the event of

- Non-compliance with our specifications in the operating instructions
- Use outside the described applications
- Improper use
- Modifying or opening the device
- Mechanical damage and damage caused by media / liquids
- Natural wear and tear
- Improper set-up or electrical installation
- Overload of the measuring unit
- Dropping the scales

14 Errors and faults

14.1 Error messages

Error message	Explanation	Possible causes / elimination
Err 1	Wrong date	Enter the date in the format "yy;mm;dd", see Chap. **Fehler! Verweisquelle konnte nicht gefunden werden.** "F7 da"
Err2	Wrong time	Enter the time in the format "hh;mm;ss", see Chap. **Fehler! Verweisquelle konnte nicht gefunden werden.** "F7 da"
Err4	Zeroing error	• Zero setting range exceeded Check that the scales are not loaded
Err5	Keyboard error	Improper operation of the scale
Err6	Value outside A/D converter range	• Damaged load cell Damaged electronics
Err7	Error "Percentage determination"	Increase value to >0.5 d
Err8	Incorrect calibration weight	Check the value of the calibration weight, see Chap. 1
Err9	The weight display changes continuously	• Draught/air movement • Vibrations of the table/floor The weighing plate is in contact with foreign objects.
Err 10	No WLAN connection	Check menu setting " F5 com➡ mode➡ wifi"
Err 11	Communication protocol" error	Check communication settings
Err 12	Totalise" error	• Number of totalling processes > 99 Capacity of the scales exhausted
Err 15	Error "Gravitational constant"	Value outside range 09.xx -1.0xx
Err 17	Tare" error	Tare range undercut or exceeded
Err 19	Zero point could not be initialised	• Measuring cell defective / overloaded • Objects on the platform / touch • Main board defective Adjustment required

Error message	Explanation	Possible causes / elimination
--oL--	Maximum load exceeded	• Reduce load Check whether the scales have been damaged
--Lo--	Underload	• Negative weight Check platform and restart or adjust.
FA.Lh/FA.LL/FA.L	Adjustment error	• Check the value of the calibration weight, see Chap. 1 Repeat the adjustment process
bALo/LobA	Battery capacity exhausted	Charge battery

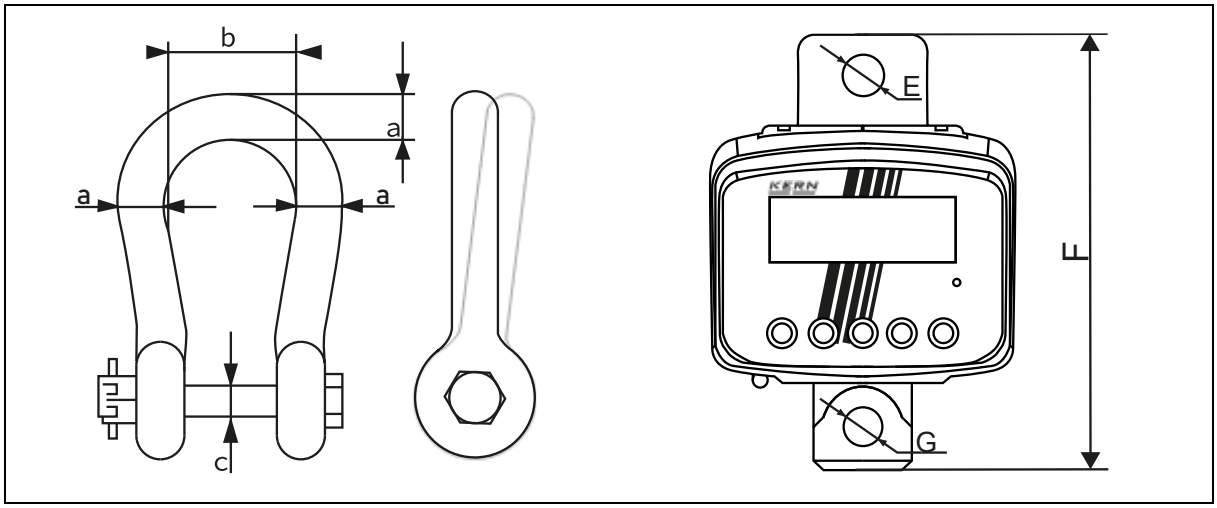
14.2 Malfunctions

In the event of a fault in the programme sequence, the scale should be switched off briefly and disconnected from the operating voltage. The weighing process must then be restarted from the beginning.

Malfunction	Possible cause
The display does not light up	• The scales are not switched on. • The battery has not been plugged in. • The battery is flat.
The scales cannot be switched on	• Battery flat or defective • **[ON/OFF]** defective • **[ON/OFF]** not correctly actuated
The display does not react to load changes	• Load cell defective • Load cell wiring defective
The weight display changes continuously	• Draught/air movement • Vibrations on the hook • Attached load moves • The hook is in contact with foreign objects • Electromagnetic fields/static charging (choose a different installation location/switch off the interfering device if possible) • Load cell defective
The weighing result is obviously incorrect	• The scale display is not set to zero when the scale is unloaded • The adjustment was carried out with an incorrect or inaccurate adjustment weight • Wrong weighing unit selected • There are strong temperature fluctuations. • Electromagnetic fields / static charge (choose another installation location / if possible, switch off the interfering device)
Remote control does not work	• Batteries flat, insert new batteries • Distance between scale and remote control too great • Obstacles block reception

A1 Drawings for maintenance

Model	Total length			Shackle		
	F	E	G	a	b	C
HFD 600K	270	23	23	16	50,8	23
HFD 1T-4	270	23	23	16	50,8	23
HFD 3T-3	275	26,5	26,5	22	58	26,5
HFD 6T-3	320	30	30	25,4	68,3	30
HFD 10T-3	330	36	36	31,75	82,6	36



A2 Regular maintenance" checklist

Crane scale **Model:** **Serial no:**

	Length	**Upper shackle**					**Lower shackle**					**Stop eyes**		
	F	**a**	**b**	**c**	**Wear and tear (see grey fields)**	Split pin & nut	**a**	**b**	**c**	**Wear and tear (see grey fields)**	Split pin & nut	Distance **f**		
	1 %	**1 %**	**1 %**	**5 %**	**No deformations or cracks**	fixed	**1 %**	**1 %**	**5 %**	**No deformations or cracks**	fixed	1%	date	**Examiner**
Before first use														
3 months														
6 months														
9 months														
12 months	**s. Extended maintenance" checklist**													
15 months														
18 months														
21 months														
24 months	**s. Extended maintenance" checklist**													

To the copy

Crane scale **Model:** _____ **Serial no:** _____

	Length	**Upper shackle**					**Lower shackle**					**Stop eyes**		
	F	**a**	**b**	**c**	**Wear and tear (see grey fields)**	Split pin & nut	**a**	**b**	**c**	**Wear and tear (see grey fields)**	Split pin & nut	Distance **f**		
	1 %	**1 %**	**1 %**	**5 %**	**No deformations or cracks**	fixed	**1 %**	**1 %**	**5 %**	**No deformations or cracks**	fixed	1%	date	**Examiner**
Before first use														
3 months														
6 months														
9 months														
12 months	**s. Extended maintenance" checklist**													
15 months														
18 months														
21 months														
24 months	**s. Extended maintenance" checklist**													

A3 Extended maintenance" checklist

Crane scale	Model		Serial no.	

Interval	Upper shackle	Lower shackle	Stop eyes	date	Name	Signature
12 months						
24 months						
36 months						
48 months						
60 months						

To the copy

Crane scale	Model		Serial no.	

Interval	Upper shackle	Lower shackle	Stop eyes	date	Name	Signature
12 months						
24 months						
36 months						
48 months						
60 months						

A4 Spare parts and repairs

Crane scale	Model		Serial no.	

Part	Measure	date	Name	Signature

To the copy

Crane scale	Model		Serial no.	

Part	Measure	date	Name	Signature

A5 Declaration of Conformity

INFORMATION

- Other languages of the current EC/EU Declaration of Conformity can be found online at: **www.kern-sohn.com/ce**
- For verified scales (= conformity-assessed scales), the conformity assessment is included in the scope of delivery.

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EU-Konformitätserklärung | EU Declaration of Conformity

DE Wir erklären hiermit unter alleiniger Verantwortung, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Richtlinien übereinstimmt. Das Produkt erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union. Das Produkt wurde unter Berücksichtigung untenstehender Normen gefertigt und entspricht den genannten Richtlinien.

EN We hereby declare under our sole responsibility that the product to which this declaration relates complies with the directives listed below. The product complies with the relevant Union harmonization legislation. The product was manufactured by applying the standards below and corresponds to the directives mentioned.

TYPE REF Typ | Type |	SN Seriennr. | Serial no. |
THFD 10T-3M-A **THFD 1T-4M-A** **THFD 3T-3M-A** **THFD 600K-1M-A** **THFD 6T-3M-A**	**XXXXXXXXX**

CE Kennzeichnung CE mark applied	EU-Richtlinie EU directive	Normen Standards	Bauartzulassungen Type approvals
CE	2006/42/EC (MD) *OJ L 157, 9.6.2006, p. 24–86*	EN 13155:2003+A2:2009	
CE	2011/65/EU (RoHS) *OJ L 174, 1.7.2011, p. 88-110*	EN 63000:2018	
CE	2014/30/EU (EMC) *OJ L 96, 29.3.2014, p. 79–106*	EN 301 489-1 V2.1.1 EN 55032:2015+A11:2020 EN 55035:2017 EN 61000-3-3:2013+A1:2019 EN 61326-1:2013 EN IEC 61000-3-2:2019	
CE M23 0122[1)]	2014/31/EU (NAWI) *OJ L 96, 29.3.2014, p. 107-148*	EN 45501:2015	T11902[2)]
CE	2014/35/EU (LVD) *OJ L 96, 29.3.2014, p. 357–374*	EN 61010-1:2010 EN 62368-1:2014+A11:2017	
CE	2014/53/EU (RED) *OJ L 153, 22.5.2014, p. 62–106*	EN 300 220-2 V3.1.1:2017	

1) **DE** Diese CE Kennzeichnung kennzeichnet Konformitätsbewertung durch KERN; Eignung für Anwendungsbereiche nach 2014/31/EU, Kapitel 1. Artikel 1 Pkt. 2 (a bis f). Diese Waagen tragen das Metrologiekennzeichen „M" gefolgt von der Jahreszahl der EU-Konformitätsbewertung auf dem Gerät. Für die Waage liegt eine EU-Baumusterprüfbescheinigung nach 2014/31/EU vor. Die angegebene Gravitationszone legt den Verwendungsort fest. Ein Wechsel des Gebrauchsortes über die Grenzen des angegebenen Verwendungsbereiches hinaus macht eine erneute Prüfung erforderlich. Die benannte Stelle "NMi Certin BV" (0122) führte das Audit für Modul D gemäß Richtlinie 2014/31/EU durch und stellte das Zertifikat CE-240 für KERN aus.

EN This CE mark applied indicates declaration of conformity by KERN; approved for categories of use as listed in 2014/31/EU, chapter 1. article 1 pt. 2 (a to f). These weighing instruments bear the metrology marking "M" followed by the last two digits of the year of the declaration of conformity. Associated there is a type examination certificate according to 2014/31/EU. The specified gravitational zone determines the place of use. A change beyond the limits of the specified area requires a new verification. The notified body "NMi Certin BV" (0122) carries out audits for module D according to directive 2014/31/EU and issued the certificate CE-240 for KERN.

2) **DE** Die benannte Stelle "NMi Certin B.V." (0122) hat die EU-Baumusterprüfung durchgeführt und stellte die EU Baumusterprüfbescheinigung Nr. "T11902" für KERN aus.

EN The notified body "NMi Certin B.V." (0122) performed the EU type examination and issued the EU type examination certificate no. "T11902" for KERN.

g = ...

Ort oder Zone: ...
Location or zone:

Datum | Date |: 16.02.2023

Ort der Ausstellung: 72336 Balingen,
Place of issue: Germany

	John Doe *KERN & SOHN GmbH*	Albert Sauter *KERN & SOHN GmbH*
Signatur: Signature:	Prüfbevollmächtigter Verification officer	Geschäftsführer Managing director

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EU-Konformitätserklärung | EU Declaration of Conformity

DE Wir erklären hiermit unter alleiniger Verantwortung, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Richtlinien übereinstimmt. Das Produkt erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union. Das Produkt wurde unter Berücksichtigung untenstehender Normen gefertigt und entspricht den genannten Richtlinien.

EN We hereby declare under our sole responsibility that the product to which this declaration relates complies with the directives listed below. The product complies with the relevant Union harmonization legislation. The product was manufactured by applying the standards below and corresponds to the directives mentioned.

TYPE REF
Typ | Type |

HFD 10T-3, HFD 1T-4, HFD 3T-3, HFD 600K-1, HFD 6T-3, THFD 10T-3IP-A, THFD 1T-4IP-A, THFD 3T-3IP-A, THFD 600K-1IP-A, THFD 6T-3IP-A

CE Kennzeichnung CE mark applied	EU-Richtlinie EU directive	Normen Standards
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CE	2011/65/EU (RoHS) *OJ L 174, 1.7.2011, p. 88-110*	EN 63000:2018
CE	2014/30/EU (EMC) *OJ L 96, 29.3.2014, p. 79–106*	EN 301 489-1 V2.1.1 EN 55032:2015+A11:2020 EN 55035:2017 EN 61000-3-3:2013+A1:2019 EN 61326-1:2013 EN IEC 61000-3-2:2019
CE	2014/35/EU (LVD) *OJ L 96, 29.3.2014, p. 357–374*	EN 61010-1:2010 EN 62368-1:2014+A11:2017
CE	2014/53/EU (RED) *OJ L 153, 22.5.2014, p. 62–106*	EN 300 220-2 V3.1.1:2017

Datum | Date |: 22.11.2022
Ort der Ausstellung: 72336 Balingen,
Place of issue: Germany

Albert Sauter
KERN & SOHN GmbH

Signatur: Geschäftsführer
Signature: Managing director

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UKCA-Konformitätserklärung | UKCA Declaration of Conformity

DE Wir erklären hiermit unter alleiniger Verantwortung, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Vorschriften übereinstimmt. Das Produkt wurde unter Berücksichtigung untenstehender designierten Normen gefertigt und entspricht den genannten Vorschriften.

EN We hereby declare under our sole responsibility that the product to which this declaration relates complies with the regulations listed below. The product was manufactured by applying the designated standards below and corresponds to the regulations mentioned.

TYPE REF
Typ | Type |

HFD 10T-3, HFD 1T-4, HFD 3T-3, HFD 600K-1, HFD 6T-3, THFD 10T-3IP-A, THFD 1T-4IP-A, THFD 3T-3IP-A, THFD 600K-1IP-A, THFD 6T-3IP-A

SN
Seriennr. | Serial no. |

XXXXXXXXXX

Kennzeichnung Mark applied	UK Vorschriften UK regulations	Designierte Normen Designated standards
UKCA	S.I. 2008 No. 1597 (MD)	EN 13155:2003+A2:2009
UKCA	S.I. 2012 No. 3032 (RoHS)	EN 63000:2018
UKCA	S.I. 2016 No. 1091 (EMC)	EN 301 489-1 V2.1.1 EN 55032:2015+A11:2020 EN 55035:2017 EN 61000-3-3:2013+A1:2019 EN 61326-1:2013 EN IEC 61000-3-2:2019
UKCA	S.I. 2016 No. 1101 (LVD)	EN 62368-1:2014+A11:2017
UKCA	S.I. 2017 No. 1206 (RED)	EN 300 220-2 V3.1.1:2017

Importer: KERN & SOHN Ltd., 15 Westferry Circus, London E14 4HD, United Kingdom

Datum | Date |: 25.11.2022
Ort der Ausstellung: 72336 Balingen,
Place of issue: Germany

Albert Sauter
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Signatur: Geschäftsführer
Signature: Managing director

Archiv: 00297175

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UKCA-Konformitätserklärung | UKCA Declaration of Conformity

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TYPE REF
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THFD 10T-3M-A, THFD 1T-4M-A, THFD 3T-3M-A, THFD 600K-1M-A, THFD 6T-3M-A

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UKCA	S.I. 2017 No. 1206 (RED)	EN 300 220-2 V3.1.1:2017

Importer: KERN & SOHN Ltd., 15 Westferry Circus, London E14 4HD, United Kingdom

Datum | Date |: 30.01.2023
Ort der Ausstellung: 72336 Balingen,
Place of issue: Germany

Albert Sauter
KERN & SOHN GmbH

Signatur: Geschäftsführer
Signature: Managing director