EHP

BILANCIAI GROUP

Digital Crane Scale Type KGW

CE

User Manual

No. 900141	May 2006

Contents

Declaration of conformity

Manufacturer **EHP-Wägetechnik GmbH**

Dieselstrasse 8
D-77815 Bühl (Baden), Germany

declares that the weighing instrument

Digital Crane Scale Type KGW

is conform with following harmonized standards:

EN 45501, EN 50081 part1 according to the provisions of the directive 89/336/EEC (electromagnetic compatibility, EMC).

EN 60950 according to the provisions of the directive 73/23/EEC (low voltage directive).

This product is marked with the CE sign.

Bühl, May 2006 Stefan Tisch / Technical Manager

This declaration of conformity is suitable to EN 45014.

1. Safety Instructions

Please read this instruction manual carefully before you set digital crane scale into operation to prevent injuries and protect your digital crane scale against damages.
More satefy instructions and warnings could be found directly in the corresponding chapter.

...before setting into operation

- Use the EC type -approved version of this digital crane scale only in weather protected (roof protected) environment, so do not expose it directly sun, rain and snow etc.
- Do not operate this digital crane scale outside the nominal temperature range, e.g. in frost risk environment (less than -10°C) or high heated areas (over +40°C), in order to perform best accuracy.
- Check if your crane scale is placed absolutely correct and safe into corresponding hook.
- Respect ACCIDENT PREVENTION REGULATIONS.
- Keep this instruction manual.

...in operation

- Pay attention that scale and load are placed correctly.
- Do not use any solvents for cleaning of the crane scale to prevent defects and damages.

...in case of defects

- Repair work is only allowed to be done by qualified personnel.
- See also chapter TROUBLE SHOOTING and ERROR CODES.

IMPORTANT:

Please be careful with seals and marks on EC type-approved crane scales. If these are damaged, please inform your local office of weights and measures.

Your digital crane scale works by the principle of a high precision strain gauge sensor system with subsequent signal processing.

The user/operator is responsible for the safety of this weighing instrument, i.e. perform a visual control of all tension stressed parts (e.g. ring, hook and shackle) at regular intervals.
In case of visual abrasion of these mounting parts, EHP can offer you a complete technical check according to the German accident prevention regulations.

2. Display and Keypad

3. Description of Function keys

Function Key for Scales Power-On

- Switches on the scale.
- Activates the automatic display segment check.
- After testing without error display is automatically set to “0“.

Please always switch on scale minimum 5 minutes (warm-up time) before start of weighing. If preload exceeds 20% of crane scales nominal capacity (initial zero-setting range) then only **+/-** sign is displayed. Normal operating status /weighing mode will be reached again by reducing preload under the 20%-limit and power off-/on-switching.

Function Key for Scales Power-Off

- Switches off the scale.

Power off-/on-switching will reset all crane scale errors (reset function).

Function Key for Test- Routine

Activates during approx. 5 seconds the automatic display segment check and further particulars are displayed.

For approx. 5 seconds display is flashing:

8 8 8 8 8	(Segment Check)
LAH 11.03	(Software version)
- - - 0 1	(Scale No.)
C 0 1	(Frequency Channel No.)
H 0 1	(IR- Transmitter Channel No.)

Function Key to store and to delete Tare Values (TARE- Button)

- (Subtractive) TARE function is activated.
- Current weight value is stored into tare memory.
- Display shows ″0″.
- Net -LED is illuminated.
- Exit by repressing TARE button and GROSS weight is displayed again.

Function Key for Zero-Setting (Zero- Button)

- Sets display to ″0″ (semi-automatic zero-setting device).
- Zero-setting range: -1…+3% of nominal capacity.

Zero-setting outside semi-automatic zero-setting range and also in active tare weighing mode is **not** possible. Outside of scales 1/4d-range (a quarter of verification interval) only +/- sign is illuminated.

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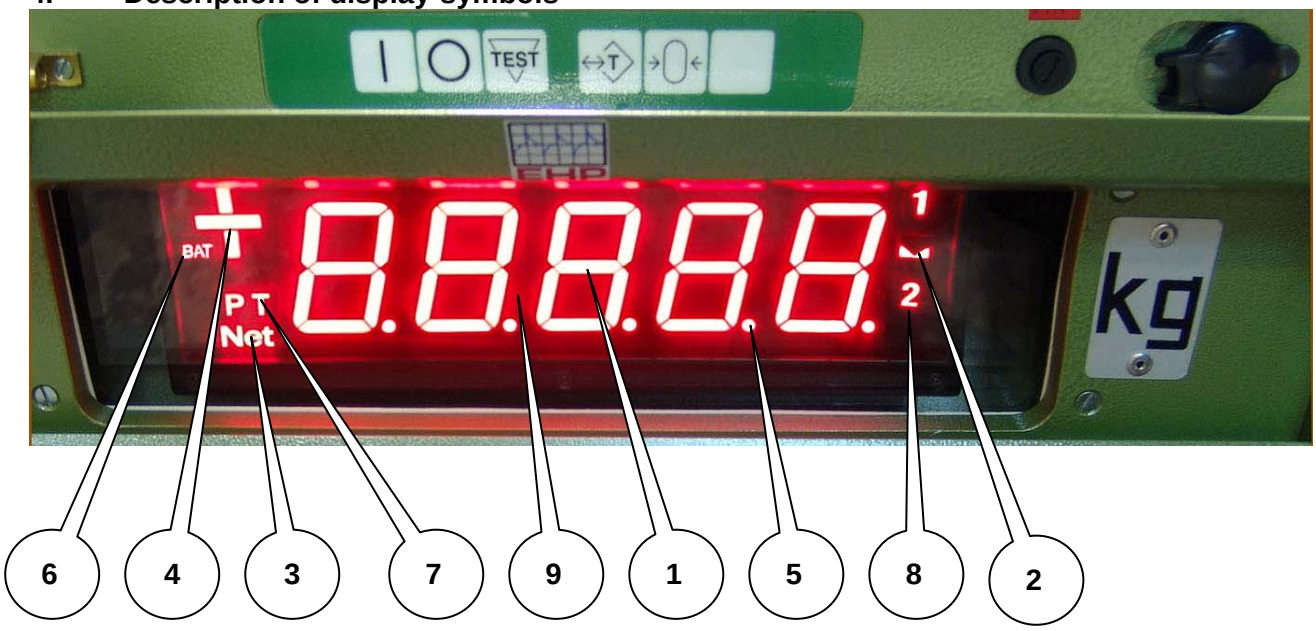
4. Description of display-symbols



1 - 	***Display*** Display consists of 5-digit, 7-segments-LED
2 - 	***Dwell Control Indication*** This sign is illuminated when load on crane scales' hook is motionless AND a correct weighing result is displayed.
3 - 	***Symbol for Net Weight*** This symbol is displayed if a tare value is set. The displayed weight is a net weight.
4 - 	***Sign- Symbol*** Every weight value is displayed combined with its (algebraic) sign. → ***Overload Indication***: If crane scale is loaded with more than 2e (2x scales verification interval) above the nominal capacity range (see model type indication plate), so display will switch 'dark' and only sign-symbol is displayed. Normal weighing status is reached again when crane scale is unloaded (inside permissible weighing range). Example: Capacity 10t: 2x verification interval 5kg = 10kg, i.e. display is switched ‚dark' at a weight of 10010kg. In respect of SATEFY AND HEALTH please do not overload crane scale.
5 - 	***Symbol for Decimal Point*** Is displayed to indicate position of decimal point.
6 - 	***Symbol for Battery Control*** Scales' accumulator is to charge below a battery voltage of 5.4 volts, displayed by a flashing  symbol (empty accumulator). Now you

	can still work with your instrument for the next 30 minutes (e.g. if it is not possible to pause your weighing process). By then the battery needs to be charged. At a battery voltage of 5.3 volts the scale is switched off automatically to avoid a total discharge and consequently accumulator damage.
7 - PT	***Symbol for pre-tare-function*** This symbol comes together with the Net - symbol, when a tare-value was preset by the remote control. The shown weight is a Net- weight
8 - 	***Symbol for Multirange-scale*** Shows if the scale is in range 1 or 2 (only when the scale is adjusted as multi-range system)
9 - 	***Receiver (diode) of IR- Transmitter***

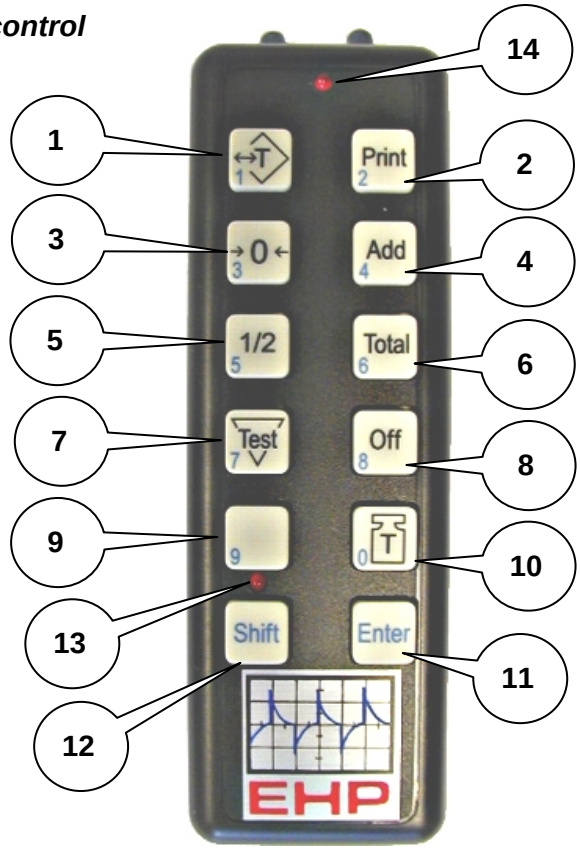
5. Auto Power-Off

This instrument is equipped with an automatic power-off setting device, which is set default = deactivated. In scales setup mode you can choose a power-off setting time between 1…99 minutes. To activate this device or changing of setting time, please contact after sales service.

6. IR-remote control

By means of IR-transmitter you can activate further additional functions beside scale keypad functions.
Change transmitters' batteries (4pcs. a 1.5V Type AAA, Micro, LR03, AM4, MN2400) when operating distance is getting insufficient (less than approx. 20m).

Picture 3.1: IR-remote control



1 - 	***Press button to input and delete tare values (TARE- Button)*** This key has same function as on scales' keypad.
2 - 	***Press button to activate the PRINT- Function (PRINT- Button)*** Through this scales display value (plus additional data) will be transmitted via UHF radio to receiver units (see accessories), e.g. a single print out will be activated on the integrated printer of TELEDATA receiver unit.
3 - 	***Press button for zero-setting (Zero- Button)*** This key has same function as on scales' keypad.
4 - 	***Press button to activate the ADD- Function (Add- Button)*** Press this button if several different single weights within one charge should be collected resp. added. Scales display value (plus additional data) will be transmitted via radio to receiver units, e.g. a single weight registration within a total print out will be activated on TELEDATAs integrated printer.

5 - 	***Non-active***, only possible in combination with dual-range scales.
6 - 	***Press button to activate Print Total- Function*** Through this scales display value (plus additional data) will transmitted be via UHF radio to receiver units (see accessories), e.g. a total print out (total of all single weight values will be activated on the integrated printer of TELEDATA receiver unit (additon of all single weight registrations transmitted by ADD- Function).
7 - 	***Press button to activate Test Routine (Test- Button)*** This key has same function as on scales' keypad.
8 - 	***Press button for scales' (remote) power- off*** Press this button to switch off the scale by remote control. A re-power-on is possible by pressing any button of IR- transmitter or by pressing function key  on scales' keypad. This function could be set deactivated by factory or in scale setup.
9 - 	***Non-active***
10 - 	***Non-active***
11 - 	***Enter- Button*** This press button transfers a code (max. 5 digits) which is entered by numeric keys together with actual weight value via radio / RS232 (see accessories) to receiver devices.
12 - 	***Shift- Button*** Press this button to activate numeric keys. Now you can input any numbers (max. 5 digit code) between 0…9 (blue numbers).
13- 	***Symbol for active numeric keys*** If this LED is illuminated then you can select the (blue) numbers of IR- transmitter numeric block (see also ***Shift- Button***).
14- 	***Transmission- Symbol*** Transmitting remote control is displayed by flashing LED.

Note:
If functions: **Print**, **Add** and **Total** are activated by IR-transmitter, their characters are also displayed on scale. Activating of function keys is now locked during the next approx. 5 seconds in order to prevent transmitting several commands by mistake.

6.1 Adjusting the limit values / honk / relay control (optional accessories)

limit values (will be stored non volatilely)

Remote control	**Display**	**comment**
Enter (ENTER)	AL	Menu for entering the limt values, with next Enter back to weighing mode
↔T 1 (button 1)	L1	Limit value 1
Enter (ENTER)	00000	Entering the limit value 1
example 1/2 5 T 0 T 0	00500	Example for value 1 (= 500kg) (after 5 seconds without any input, display jumps back to menu „AL“!)
Enter (ENTER)	00500	Storing the input (→ display is flashing!)
	AL	display goes back to „limit-menu“. Input for the values 2, 3 and 4 with the buttons Print 2, →0← 3 und Add 4 or go back with Enter to the weighing mode.

Duration of honk / duration of relay switching (will be stored non volatile)

Enter (ENTER)	AL	Menu for entering the limt values, with next Enter back to weighing mode
1/2 5 (button 5)	Hrn 4	Honk/relay sounds/switches when the limit is reached for 4 seconds (default)
example: Print 2 (button 2)	example: Hrn 2	Changes the duration to 2 seconds (button no. = duration of sound/switching in seconds 1…9 possible) **important for relay control : Hrn 0 is switching the relay as long as the limit is reached**
Enter (ENTER)	Hrn 2	input will be stored (→ display is flashing!)
	AL	display goes back to limit menu for entering the next instruction or to go back with Enter to weighing mode

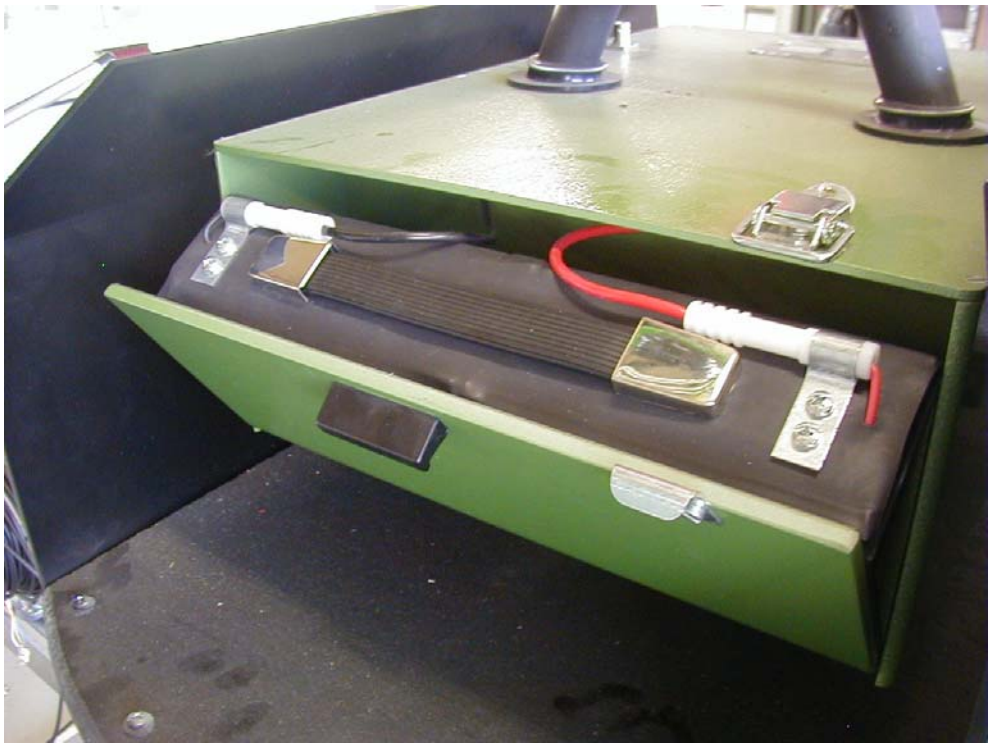
Autotare at limit (will be stored volatile!)

Enter (ENTER)	AL	Menu for entering the limt values, with next Enter back to weighing mode
Total 6 (button	tAr 0	Autotareis is not active (button 1 to activate the function button 0 to de-activate
↔T 1 (button	tAr 1	Autotare when reaching the limit value is activated
Enter (ENTER)	tAr 1	Storing the input (→ display is flashing)
	AL	display goes back to limit menu for entering the next instruction or to go back with Enter to weighing mode

7. Power Supply of Electronic Device

Electronic device is protected by a fast-acting fuse 1A (5 x 20mm DIN 41571).
Crane scale type LDN is powered by a special battery 6 volts.

Picture 7.1: Accumulator with open battery housing



WARNING:

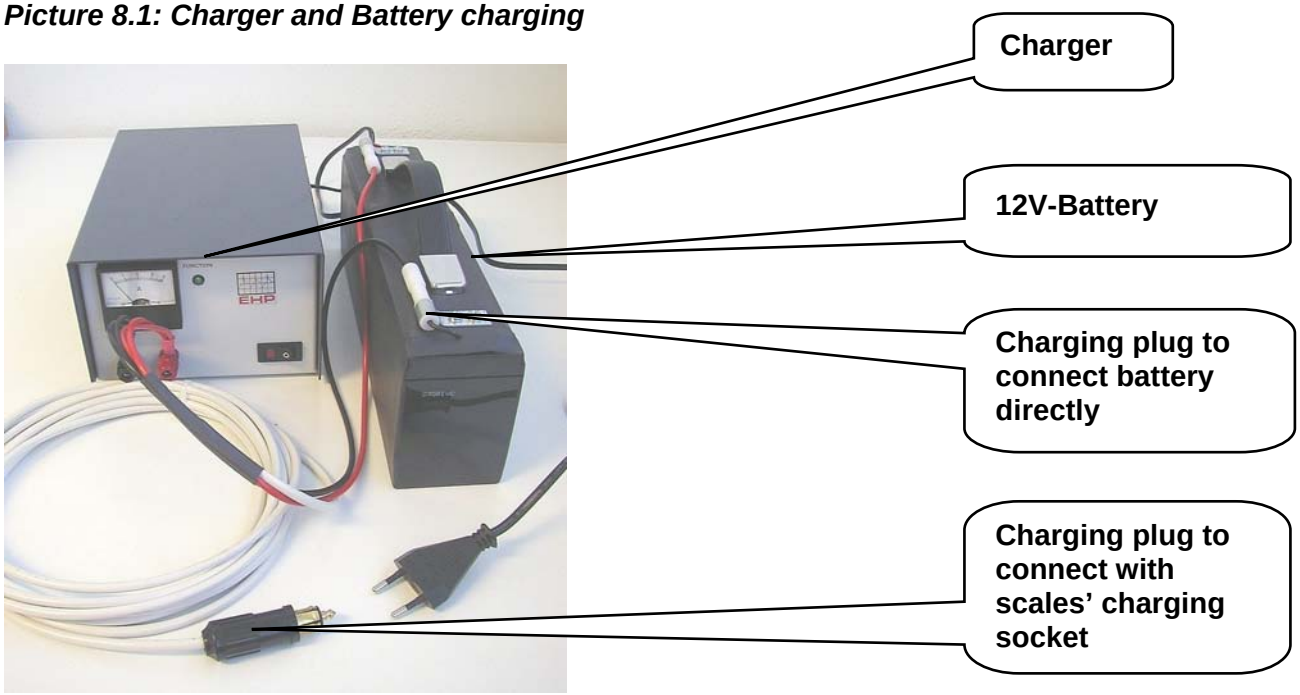
Avoid setting in false connection or inverse-polarity or connecting of another power supply as accumulators supplied by manufacturer.

Colour code of supply leads: **+/ plus = red**, **- / minus = black**

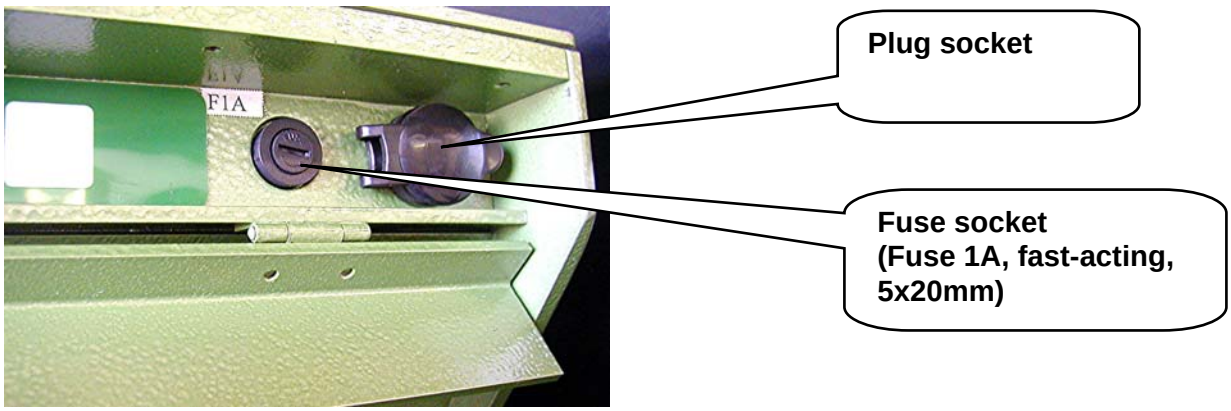
8. Charger / Charging

It is only allowed to charge the accumulator by original provided EHP- charger, either by using scales' charging plug (picture 8.3) or directly (picture 8.1). The charger is equipped with an electronic charging current limiting so that it is not possible to overcharge the accumulator.
Charging current control is indicated on chargers' front panel
(All connectors are protected against inverse-polarity).

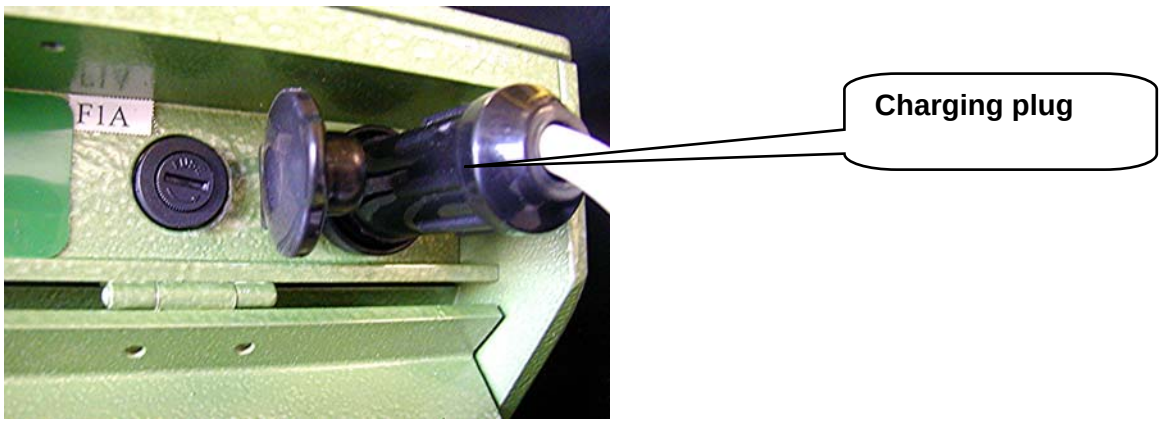
Picture 8.1: Charger and Battery charging



Picture 8.2: Scales' Plug Socket *(Bottom side of scales' battery housing)*



Picture 8.3: Scales' plug socket with charging plug



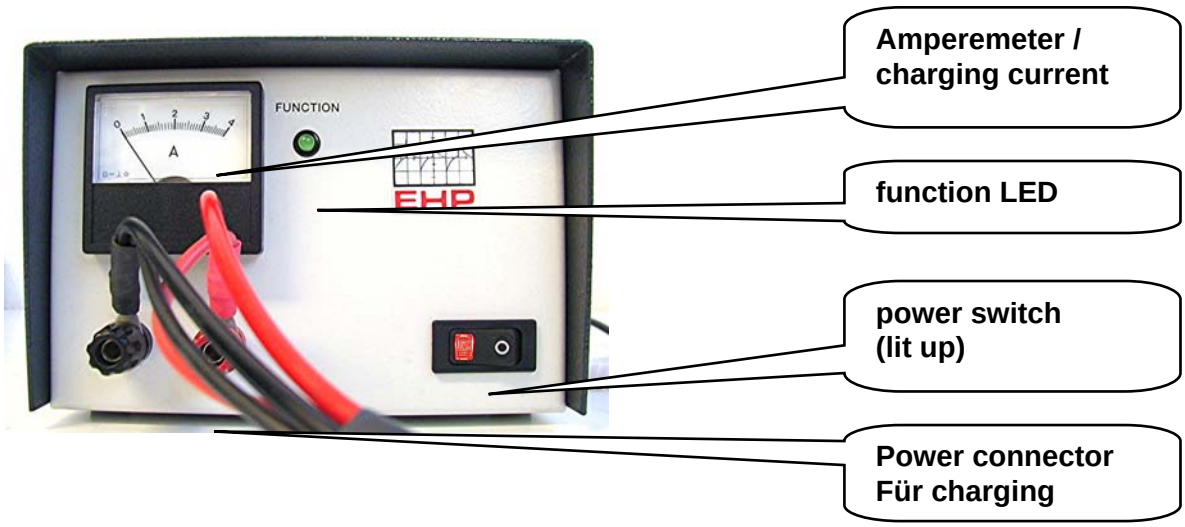
8.1 General

The charger is designed in primary switch mode technology. This provides a constant DC voltage which guarantees a long lifetime of maintenance free sealed lead acid batteries. A holding device for wall mounting will be found on the back side of the charger.

8.2 Safety Instructions

The charger is especially designed to charge maintenance free lead acid batteries. The charger housing can only be opened and maintained by authorized personnel. Unqualified opening may cause damages to charger and will cancel guarantee. Operation with an opened housing is strictly prohibited. Only a qualified technician is allowed to replace the fuse. The charger can only be operated if sufficient cooling is assured. The charger can only be operated in closed rooms and must be protected against moisture.

8.3 Function of the LED



8.4 Set into operation

Compare the rated voltage of identification plate of charger with the rated voltage of the battery. The charger will be connected with the plug socket of crane scale to charge the battery /the scale. To charge the battery outside the scale, an adapting cable is needed (optional) see picture 8.1

8.5 Charge procedure

When the current reaches a value of approx. 400 - 500mA, the functions-LED flashes. The battery is now charged with a minimum of 90% and again ready for use. For a better life span please charge the battery further if it is possible.

8.6 Special Instructions to Avoid Sparks:

1. Connect mains supply without battery connection.
2. Disconnect mains after a short period of time.
3. Connect battery with correct polarity.
4. Connect mains supply.

8.7 Recommendations for charging sealed lead acid batteries

Charge/ Discharge

☑ Before delivery of your crane scale type LK/LKe 6V-battery was already charged for 12 hours and is therefore instantly ready to operate.

☑ Charge after each discharge even after partly discharge.

☑ Never store a discharged battery.

☑ A completly discharged battery must be charged for min. 16 hours.

☑ If charging time is below 16 hours for more than 3 days then charge one time for 24 hours to equalize the poor charging.

☑ Ambient charging temperature should range between 10°C and 30°C.

Before longer storage periods (2 possibilities)

A: Disconnect battery from charger and store it fully charged.

! CAUTION: Charge battery for min. 36 hours before storage period of 3 months or more!

B: You can leave battery on charge for an unlimited time (trickle charge). It is recommended to store battery at a cool place.

High ambient temperatures
Charging at temperatures above 30°C is not recommended. Your charger is adjusted with a charging voltage valid for 20°C.

Low ambient temperatures
Charging below 10°C is not recommended. At low temperatures the available capacity is reduced.

Deep discharge
Try to avoid deep discharges. If a deep discharge occured charge battery as soon as possible for 24 hours.

Maintenance
Wipe battery surface from time to time with a dry and clean cloth.

9. Accessories

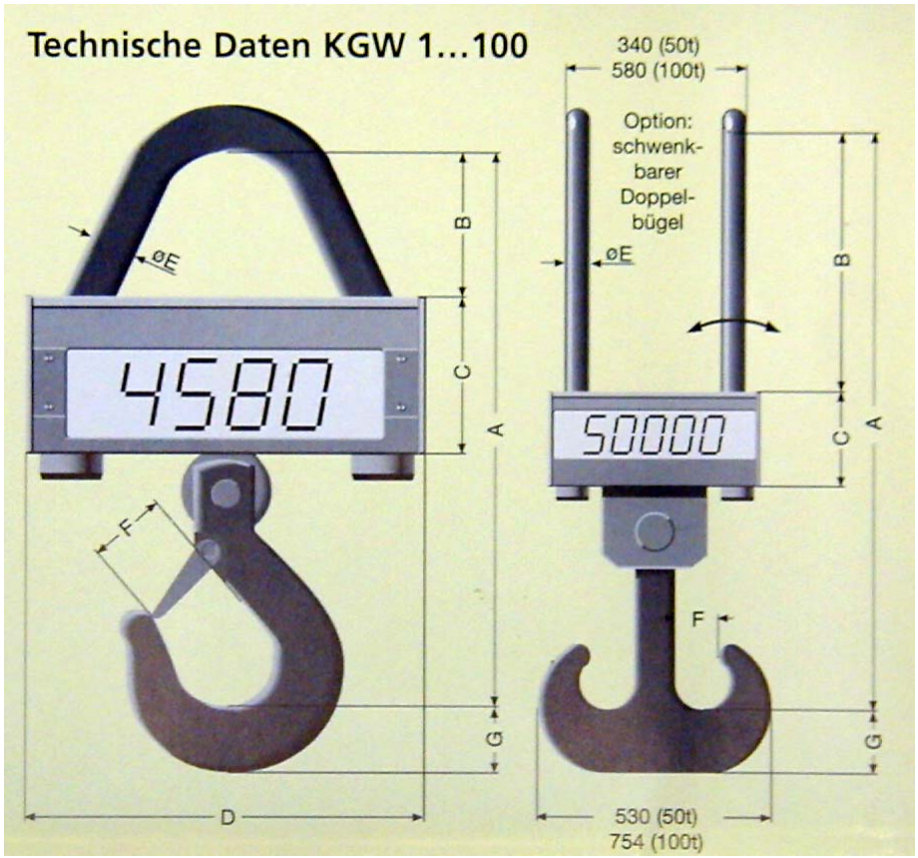
9.1 Additional Equipment for Data Transmission

Crane scale type LK/LKe can be equipped with a radio transmitter for data transmission on receiver units (Teledata, Telebox Plus, Greybox und Large Display) or connection to computer directly:

10. Technical Data

10.1 Dimensions and Weight

Dimensions in Millimeter



Typ KGW	Weighing range in kg	-dead weight in kg	A	B(*)	C	D	E	F	G	number step in kg
KGW 1	0- 1000	69	545	107 (150)	143	317	32	54	45	0,5
KGW 2	0- 2000	69	545	107 (150)	143	317	32	54	45	1
KGW 5	0- 5000	69	545	107 (150)	143	317	32	54	45	2
KGW 10	0- 10000	82	570	150 (300)	143	317	46	65	69	5
KGW 20	0- 20000	240	872	232 (500)	143	472	52	83 / 150	84 / 93	10
KGW 30	0- 30000	240	872	232 (500)	143	472	52	83 / 150	84 / 93	10
KGW 50	0- 50000	580	1310	580	234	480	52	100	132	20
KGW 100	0- 100000	1550	1820	815	310	860	85	140	190	50

10.2 Electrical characteristics

Supply voltage of the electronic	12V DC maintenance free accumulator 13Ah / 20Ah
Min. voltage of the accumulators	10,8V DC
Supply voltage of the IR-remote control	4pcs. à 1,5V Type AAA, Micro, LR03, AM4, MN2400
Range of the IR-remote control	approx. 35m with an angle < 20°
Runtime	Approx. 12Stunden
Supply voltage of the charger	230V AC, 50/60Hz
Reloading time of the accumulator	Less than 12 hours

11. Parts catalog

In case of orders of spare parts please contact directly the nearest service station or the manufacturer.

Parts number	Description
50182	Glas for KGW 1- 10
73326	Glas for KGW 15- 100
61534	IR – remote control
61523	IR – remote control for scales with radio transmission
79849	Maintenance free accumulator 12V / 13Ah for KGW 1- 10
59860	Maintenance free accumulator 12V / 20Ah for KGW 15- 100
59554	Current supply cable (with round plugs)
78353	Complete digital display / electronic
55385	Fuse holder
52525	Fuse 1A fast, 5 x 20mm DIN 41571
55198	Charging plug 2-pin
78188	Keypad
79827	Keypad inscription
59609	Charger 12V / 4A
59114	Heat protection for KGW 1- 10
59136	Heat protection for KGW 15- 30

Accuracy	± 0,03% FS
Nominal temperature range	-10°C...+40°C
Temperature range (without heat protection)	-10°C...+50°C
EEC protection class	IP 54

12. Trouble Shooting

Repair work on digital crane scale LK/LKe is only allowed by qualified technical personnel.

If the advice does not bring any success, please contact the after sales service.

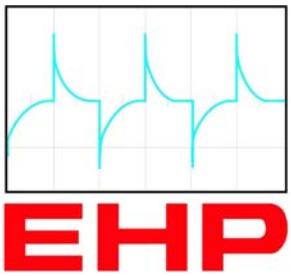
12.1 Device Errors

Error	***Cause***	***Solution***
Dark display	No current	Please check if scale is switched on. Please check if battery is charged. Please control the fuse.
After switching on the display shows for a short time the '+' Sign or '-' Sign and then the crane scale switches off.	The crane scale is out of the zero range while switching on.	Switch the crane scale off and remove the weight from the crane scale. Then switch the crane scale on again.
The display flashes	The crane scale is overloaded	Reduce the weight on the crane scale. The permissible maximum weight is indicated on the identification plate.
Display shows only the '+' Sign	High overload on the crane scale	Reduce **immediately** the weight on the crane scale. The permissible maximum weight is indicated on the identification plate.
	Electronic- Error	Switch the crane scale off, remove the weight, switch the crane scale on again.
Can not switch off the crane scale	Electronic- Error	Remove for a short time the fuse and switch the crane scale on again after you have replaced the fuse.
Can not set zero on the crane scale	Crane scale is out of the permissible zero range	Reduce the weight until you are in the permissible zero range.
	Crane scale is in TARE-Mode, Net- LED is illuminated.	Press the TARE-Button, to leave the TARE-Mode of the crane scale.

13. Error detection

The crane scale is equipped with an automatically error-detection. If the crane scale has an error, this will be shown on the display with an error-code (see table). In this case you can not continue working with the crane scale. After 5 seconds the crane scale will switch off automatically.

Errorcode	*Cause*	*Solution*
02	The input voltage of the amplifier is too small.	Switch the crane scale off and then on. Inform the customer service.
03	The input voltage of the amplifier is too big.	Switch the crane scale off and then on. Inform the customer service.
04	AD- converter- Error	Switch the crane scale off and then on. Inform the customer service.



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