@weigh

KW serial

Bench Scales

User's guide

UGKW-E0302

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SECTION 1 INTRODUCTION

The KW series of bench scale provides an accurate, fast and versatile series of general purpose weighing scale with counting and check-weighing functions.

There are 3 series scales within the range, the platform size from 350mm x 450mm to 600mm x 800mm, the capacity range from 30kg to 1000kg

All the keypads are sealed, color coded membrane switches and the displays are large easy to read liquid crystal type displays (LCD). The LCD's are supplied with a backlight.

All units include automatic zero tracking, audible alarm for pre-set weights, automatic tare, and an accumulation facility that allows the individual weights to be stored and recalled as an accumulated total.

SECTION 2 SPECIFICATIONS

Model	SKW	MKW	LKW
Platform size	350mm x 450mm	420mm x 520mm	600mm x 800mm
Capacity	30kg/60kg/150kg	60kg/150kg/300kg	300kg/600kg/1000kg
Resolution	1:15.000		
Interface	RS-232 Output Optional		
Stabilisation Time	1 Seconds typical		
Operating Temperature	0°C - 40°C / 32°F - 104°F		
Power supply	External AC adapter, 9V 800mA		
Calibration	Automatic External		
Display	6 digits LCD digital display with 24mm high digits		
Balance Housing	Indicator ABS Plastic		
Load cell drive voltage	Max 5V/150mA		
Load cells	Up to four 350 ohms cells		

SECTION 3 INSTALLATION

GENERAL INSTALLATION

The scales should be sited in a location that will not degrade the accuracy.

Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.

Avoid unsuitable tables. The tables or floor must be rigid and not vibrate. Do not place near vibrating machinery.

Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.

Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the scales in water.

Avoid air movement such as from fans or opening doors. Do not place near open windows.

Keep the scales clean.

Do not stack material on the scales when they are not in use.

INSTALLATION OF KW SERIES

The pillar is attached to the base using a bracket that must first be attached to the base frame using the 4 bolts supplied. The Pillar is secured to the bracket using 2 set screws. The cable from the base to the indicator module is run through the tube, out through the plastic support at the top. Excess cable can be stored within the tube.

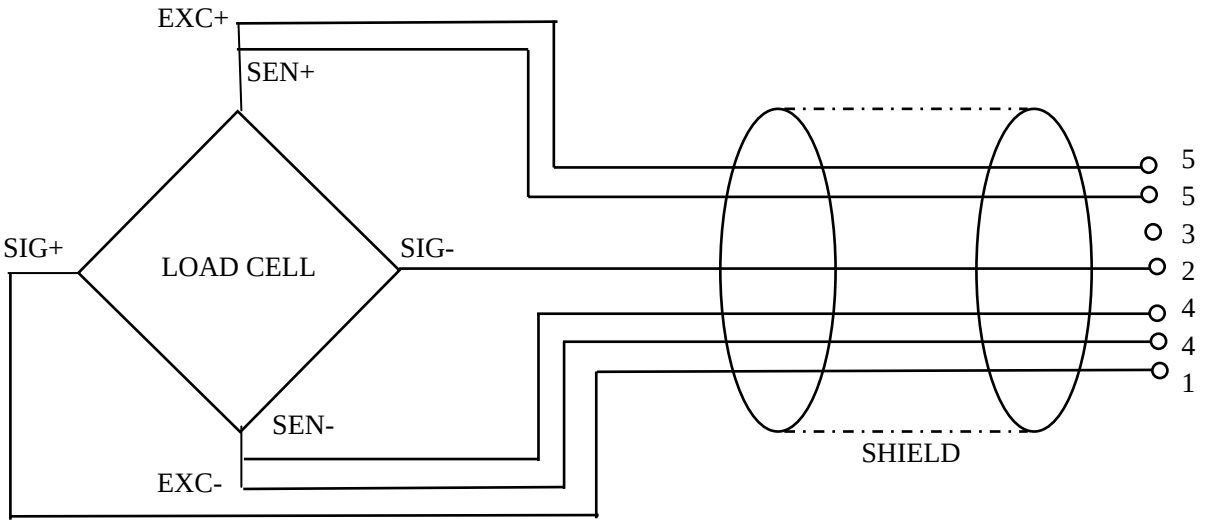
The KW Series comes with a stainless steel platform packed separately. Place the platform in the base.

Level the scale by adjusting the four feet. The scale should be adjusted such that the bubble in the spirit level is in the centre of the level and the scale is supported by all four feet. If the scale rocks readjust the feet.

Attach the indicator module to the pillar by sliding it over the bracket with the flanges engaged in the groves on the base. Attach the cable from the base to the connector on the rear of the indicator.

Attach the AC power adapter to the connector on the back of the indicator.

Load cell connect as below(5pin air connecter)



SECTION 4 KEY DESCRIPTIONS

Zero or 

Set the zero point for all subsequent weighing. The display shows zero.

A secondary function ↵, of "Enter" key when setting parameters or other functions.

Tare or 

Tares the scale. Stores the current weight in memory as a tare value, subtracts the tare value from the weight and shows the results. This is the net weight. Entering a value using the keypad will store that value as the tare value.

A secondary function **+**, of incrementing the active digit when setting a value for parameters or other functions.

Smpl or 

Enter counting mode from weighing mode. Shift unit weight, counts and total weight when counting mode. Move the active digit right when setting values for other functions.

Func or **F**

Used to select the function of the scale. If the scale is weighing it will select parts counting. Of it is not in weighing mode it will return the user to weighing.

Secondary function (C) , is to act as a clear key when setting values for parameters or other functions.

Print/M+ or 

To print the results to a PC or printer using the optional RS-232 interface. It also adds the value to the accumulation memory if the accumulation function is not automatic.

Secondary function (ESC) , is to return to normal operation when the scale is in a parameter setting mode.

ON

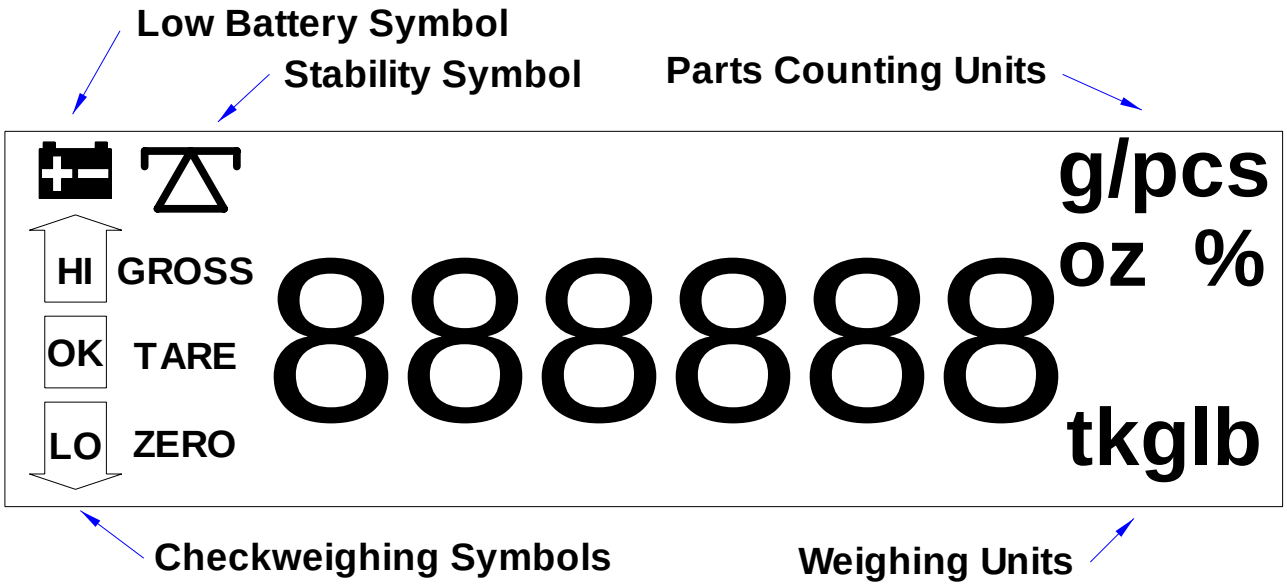
Turn on the power.

OFF

Turn off the power.

SECTION 5 DISPLAYS

The LCD display will show a value and a unit to the right of the digits.
In addition there are labels for TARE, GROSS weight, Zero and for Low battery



SECTION 6 OPERATION

6.1 Zeroing The Display

You can press the ZERO/ENTER key at any time to set the zero point from which all other weighing and counting is measured, within 4% of power up zero. This will usually only be necessary when the platform is empty. When the zero point is obtained the display will show the indicator for zero.

The scale has an automatic rezeroing function to account for minor drifting or accumulation of material on the platform. However you may need to press the ZERO/ENTER key to rezero the scale if small amounts of weight are shown when the platform is empty.

6.2 Taring

Zero the scale by pressing the ZERO/ENTER key if necessary. The zero indicator will be on.

Place a container on the platform, a value for its weight will be displayed.

Press the TARE key to tare the scale. The weight that was displayed is stored as the tare value and that value is subtracted from the display, leaving zero on the display. The "TARE" indicator will be on. As product is added only the weight of the product will be shown. The scale could be tared a second time if another type of product was to be added to the first one. Again only the weight that is added after taring will be displayed.

When the container is removed a negative value will be shown. If the scale was tared just before removing the container this value is the gross weight of the container plus all product that was removed. The zero indicator will also be on because the platform is back to the same condition it was when the ZERO/ENTER key was last pressed.

6.3 Weighing a sample

To determine the weight of a sample first tare the empty container then place the sample in the container. the display will show the weight and the units of weight currently in use.

6.4 Parts Counting

When the scale is showing weight, pressing the SMPL key will start the parts counting function.

Before beginning, tare the weight of any container that will be used, leaving the

empty container on the scale. Place the number of samples on the scale. The number should match the options for parts counting, 10, 20, 50, 100 or 200 pieces.

Press the SMPL key to begin. The scale will show "SP 10" asking for a sample size of 10 parts. Change the sample size by pressing the TARE/↑ key. the display will cycle through the options: 10,20, 50, 100, 200 and back to 10.

Press the SMPL key when the number matches the number of parts used for the sample. As more weight is added the display will show the number of parts (pcs).

Press the FUNC key to return to normal weighing.

6.5 Check-Weighing

6.5.1 About check-weighing

Check-weighing is a procedure to cause an alarm to sound when the weight on the scale meets or exceeds values stored in memory. The memory holds values for a high limit and a low limit.

Check range:
set hi-limit and low-limit as different value, also hi-limit value is larger than low-limit.

Check key point:
set hi-limit and low-limit as same value.

Check mode 2:
When check range, the display will show OK and the beeper will sound when the weight is between the limits.
When check key point, the display will show Ok and the beeper will sound when the weight is under the limits.

Check mode 3:
When check range, the display will show OK and the beeper will sound when the weight is out of the limits.
When check key point, the display will show Ok and the beeper will sound when the weight is over the limits.

6.5.2 Set limits
Press F key, it will display “F0 H-L”, press ZERO key to enter, use TARE key to select “SET HI” or “SET LO”, press ZERO key to enter, use SMPL key to move active digit, use TARE key to change value, use F key to clear value. After you enter the value, press ZERO key to sure, press Print/M+ key to escape.

6.5.3 Set check weighing mode

Press F key to enter setting mode, press TARE until display show "F4 0FF", press ZERO key to enter, press TARE key until display show "BEEP", press ZERO key to enter, press TARE key to select BP 2(check mode 2), BP3 (check mode 3), BP1(not sound), press ZERO key to sure, press Print/M+ key to escape.

6.5.4 NOTE

The weight must be greater than 20 scale divisions for the checkweighing to operate.

To disable the Check-Weighing function enter zero into both limits by pressing the FUNC key when the current limits are shown then pressing ZERO/ENTER to store the zero values.

6.6 Accumulated Total

The scale can be set to accumulate manually by pressing the PRINT key. See the PARAMETERS Section for details of selecting the method using function "F5 P RT". The accumulation function is only available when weighing. It is disabled during parts counting.

The weight displayed will be stored in memory when the PRINT key is pressed and the weight is stable.

The display will show "ACC 1" and then the total in memory for 2 seconds before returning to normal. If the optional RS-232 interface is installed the weight will be output to a printer or PC.

Remove the weight, allowing the scale to return to zero and put a second weight on. Press the PRINT key, the display will show "ACC 2" and then the new total.

Continue until all weights have been added.

To view the totals in memory press enter the PARAMETER SECTION and use function "F1 TOL". See below.

6.7 Animal Scales

KW can set as an animal scale when external resolution less than 1/3000, about how to set it, see the technical manual of KW.

Let the animal on the platform, after some second, if reading data change between the range you have set, you can hear beep sound and reading data will be locked, after you let the animal leave the platform and reading data return to zero, KW will do automatic accumulation operation, if you have connect with mini printer, KW will print automatically.

To clear accumulation memory, press Print key when scale in ZERO point, this function only available in animal scale mode.

SECTION 7 PARAMETERS

The scale has 6 parameters that can be set by the user plus a method of entering the calibration section.

To set parameters press the FUNC key.

The display will show the first function, "F0 H-L".
Pressing the TARE/+ will cycle through the other functions.
Pressing ZERO/ENTER will allow you to set the function. It may be necessary to either use TARE/+ or set a value using the SMPL/➔ key to move the active digit and then using the TARE/↑ key to increment a digit, followed by the ZERO/ENTER key to enter the value. Use the PRINT/ESC key to leave a parameter unchanged.

For example when the display shows "F0 H-L" press the ZERO/ENTER key to begin.

The display will show "Set Lo", press the ZERO/ENTER key to set the low limit, or press the TARE/+ to skip to the next parameter, "Set Hi" for setting the high limit.

After pressing the ZERO/ENTER key to set a limit, use the the SMPL➔ keys to change the flashing digit, then use the TARE/↑ key to increment the flashing digit. Continue to the next digit and set it as needed.

When all digits have been set press the ZERO/ENTER key to store the value. The display will go back to the parameter just set, i.e. "Set Lo". Advance to another parameter if needed or press the PRINT/ESC key to return to weighing.

FUNCTION MENU SETTINGS

FUNCTION	SUB-FUNCTION	DESCRIPTION	DEFAULT VALUE
F0 H-L	SEt Lo	Set a value for the Low limit.	000.000
	SEt HI	Set a value for the High Limit.	000.000
F1 toL	to CLr	Clears the accumulation memory without printing the results.	
	to P-C	Prints the Accumulation memory total and then clears the memory.	
	to Prt	Prints the Accumulation Total, does not clear the memory.	
F2 u nt		Sets the displayed unit of weight. Select kg, g, Lb.	kilogram, kg
F3 tI	SEt dA	Set date, The display will show last date set or 00.01.01. Enter new date, format yy.mm.dd	
	SEt tI	Set time, The display will show current time Enter new time, format hh.mm.ss	
F4 off	C loC K	Set clock off or on, CLK of CLK on: KW will turn to clock display after KW wait for 5 minutes	CLK off
	bL	Set the backlight to be on, automatic or off, EL on EL Au EL off	EL Au
	bEEP	Set the beep mode.(check weighing mode 2, check weighing mode3, no beep)	
F5 Prt		Set the RS-232 to print when the PRINT key is pressed, P Prt. Or to print continuously, P Cont. Sei re: RS-232 connect to RS-232 remote display After set the print(communication) mode, display shows "b xxx", this is setting the baud rate, use TARE key to select 600/1200/2400/4800/ 9600bps, after you select, press ZERO key to sure.	P Prt
Prog	Pin	Enter the programming and calibration menus by entering the correct password. See the section 12.	

When the scales are set to display in other units of weight the accumulation function is still keeping the weight in kilograms.

SECTION 8 BATTERY OPERATION

The weighing indicator can be operated from the battery if desired. The battery life is approximately 100 hours.

When the battery needs charging a symbol on the weight display will turn on. The battery should be charged when the symbol is on. The scale will still operate for about 10 hours after which it will automatically switch off to protect the battery.

To charge the battery simply plug into the mains power. The scale does not need to be turned on.

The battery should be charged for 12 hours for full capacity.

Just under the quantity display is an LED to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be charged. If the LED is green the battery has a full charge. If it is Red the battery is nearly discharged and yellow indicates the battery is being charged.

As the battery is used it may fail to hold a full charge. If the battery life becomes unacceptable then contact your distributor or @weigh.

SECTION 9 RS-232 OUTPUT

The KW Series of scales can be ordered with an optional RS-232 output.

Specifications:

RS-232 output of weighing data
ASCII code
8 data bits
No Parity

Connector: 25 pin d-subminiature socket

Pin 2: Output
Pin 3: Input, not used at this time
Pin 5: Signal Ground

Data Format for normal weighing operations, parts counting or recalling of totals from memory will all be different. Examples follow:

Normal Output

GS	12.340kg	GS for Gross weight, NT for net weight and a unit of weight
No..	1	This number increments every time a new value is stored in memory
Total	12.340kg	The total value stored in memory
<lf>		Includes 2 line feeds
<lf>		

When parts counting the weight, unit weight and count will be printed.

GS	12.340kg	GS for Gross weight, NT for net weight and a unit of weight
U.W.	123.4g/pcs	The average piece weight computed by the scale
PCS	100pcs	The number of parts counted
<lf>		Includes 2 line feeds
<lf>		

When recalling the Total weight stored in the accumulation memory the output format is:

**********		A line of stars is shown
<lf>		Includes 1 line feed
TOTAL		
No.	5	
Wgt	21.455kg	.
**********		

SECTION 10 CALIBRATION

Turn the power off.

Turn the power back on, during the counting from 9 to 0 press the FUNC/C key.

The display will show "CAL " for a few seconds. While it is showing "CAL " press the U, PRINT and TARE keys in sequence to enter the Calibration section. The display will show "u nLoAd".

Remove any weight from the platform. Press the ZERO/ENTER key.

The display will show "LoAd". Place the calibration weight on the scale. Press the ZERO/ENTER key.

The display will show the last calibration weight used. If this is correct you can continue by pressing the ZERO/ENTER key. If it is not correct use the arrow keys to change the calibration weight value. When it is correct press the ZERO/ENTER key.

If the calibration is acceptable the display will show "P ASS" and then return to normal. If an error message is shown try calibration again as a disturbance may have prevented a successful calibration.

If the problem persist then contact @weigh or your dealer.
After calibration the scale should be checked to verify the calibration and linearity is correct. If necessary repeat calibration, especially be certain the scale is stable before accepting any weight.

SECTION 11 ERROR CODES

ERROR CODES	DESCRIPTION	RESOLUTION
- - - - -	Over range	Remove weight from the scale. If the problem persist contact your dealer or @WEIGH for assistance.
Err 1	Date Setting Error	Enter date using correct format and reasonable values. Format: yy:mm:dd
Err 2	Time Setting Error	Enter time using correct format and reasonable values. Format: hh:mm:ss
Err 4	Zero Setting Error	The scale was outside the normal zero setting range either when it was turned on or when the ZERO key was pressed. Remove weight from the scale and try again. Use the TARE key to set the display to zero value. If the problem persist contact your dealer or @weigh for assistance. (1300 722537)
Err 6	A/D out of range	The values from the A/D converter are outside the normal range. Remove weight from the scale if overloaded, make sure the pan is attached. Indicates the load cell or the electronics may be faulty. If the problem persist contact your dealer or @weigh for assistance.(1300 722537)

SECTION 12 TECHNICAL PARAMETERS

Press F key when normal weighing mode, display shows "F0 H-L", press TARE key until display shows "P ROG", press ZERO key, display shows "PIN", You can press U、PRINT、TARE key to enter setting mode, press Tare key to select parameter, press Zero key to sure, press Print key to escape.

FUNCTION	SUB-FUNCTION	DESCRIPTION
P1 REF	AZN 0	This option is used to select the auto zero maintain Options : 0.5d, 1d, 2d, 4d
	0-AUTO	This option is used to select the auto zero range when turn the indicator. Options : 0%, 2%, 5%, 10%, 20%
	0- RANGE	This option is used to select the manual zero range when press the ZERO key. Options: 2%, 4%, 10%, 20%, 50%, 100%
P 2 CAL	DECI	This option is used to select the decimal Options : 0, 0.0, 0.00, 0.000
	INC	This option is used to select the division Options : 1, 2, 5, 10, 20, 50
	C AP	This display will show xxxxxx for setting the capacity. After you select, KW will show parameter for animal scale if the external resolution you have set less than 1/3000. First set the shake range, you can use TARE key to select 0(disable)/5/10/15/20/25/30/35/40/45/50, reading data shake between the range you set, the reading will be lock. Then set the reading lock option, A 1(lock the min data), A 2(lock the average data), A3 (lock the max data) Then set the increment value, use SMPL/TARE key to enter the data, use ZERO key to sure. After you set these data, when reading have been locked, if you add goods again to the platform or release goods more than this weight, the reading will be update and lock again. Then set the delay time: 50/60/70/80. Then set the lock condition, you can select 3(KW will lock reading data for it detect reading data in shake range for 3 times) ~8(lock for it detect reading data in shake range for 8 times)
	CAL	Calibrate, see detail in section 10.
P3 P RO	TRI	This display will show xxxxxx for trimming the load cells .
	COUNT	This display will show xxxxxx for indicating the internal counts.
	RESET	This display will show SURE for recovering the factory default setting.