

# WATERPROOF WEIGHING SCALE

## USER'S MANUAL



Ver: 8.80 (2015-06)

# Instruction Manual

<b>NOTICE</b> .....	<b>3</b>
<b>Preparing Issues before Use</b> .....	<b>3</b>
<b>1. Product Instruction</b> .....	<b>4</b>
1.1 Product Features.....	4
1.2 Product Model and Parameter.....	4
1.3 Component diagram.....	4
<b>2. Functions and Operations</b> .....	<b>5</b>
2.1 Turning on Scale / Zero Operation.....	5
2.2 Turning off Scale.....	5
2.3 Tare Operation .....	5
2.4 Power Immediate Indication .....	6
2.5 Power Charge Operation.....	6
2.6 Power Saving Operation.....	6
2.7 Power Charge Operation.....	6
<b>3. Environment Parameter Setting</b> .....	<b>6</b>
3.1 Display Precision.....	6
3.2 Unit of Measurement.....	7
3.3 Display Brightness .....	7
3.4 Zero Tracking.....	7
3.5 Reverse Display.....	7
3.6 Shockproof Stability.....	7
3.7 Energy Saving Function.....	7
3.8 Display Updating Speed .....	8
3.9 Creep Tracking Range.....	8
3.10 Printing &Data Output Mode.....	8
3.11 Data Transmission Format.....	8
<b>4. Weighing Alarm and Counting</b> .....	<b>8</b>
4.1 Weighing Alarm Function Setting.....	9
4.2 Counting Function Setting.....	9
<b>5. Data Transmission Function</b> .....	<b>10</b>
<b>6. Signs Meaning</b> .....	<b>11</b>
<b>7. Fault and solution</b> .....	<b>11</b>

## **NOTICE**

1. Do not use the scale in extreme temperature areas.
2. Do not strike and stress. (Not over the Maximum Capacity)
3. The scale should be put on an air flowing and dry place with a clean surface, and be charged every three months when it can not be used for a long time. When it needs to be used again please charge it before use.
4. As a counting meter for force check, scale should be checked termly to ensure the accuracy.
5. Do not open the lead sealing bottom of scale yourself. You should contact with the dealer or company.

## **Prepare Issues before Use**

1. Please place the scale on the stable and flat table, no vibration. Adjust the four feet of the scale to make the scale balanced, till the air bladder of the gradient is in the center of the circle.
2. Do not place the scale in the environment which is near to temperature extremes or ail-flowing extremes, direct sunshine or the wind alleyway of air conditioning.
3. Before opening the scale, the scale plate can not be touched with anything.
4. After opening the scale, the barycenter of scale should be located in the center of the scale plate, which will ensure the precision.
5. Scale should be charged when the power voltage is not enough after opening scale.

## 1. Product Instruction

### 1.1 Product Features

HACCP international food safety standard and CE, RoHS approval certificates are all available.

Designed by professional institutions and up to the IP68 Waterproof level

More suitable for product line with anti-vibration design

Dual display LED or LCD

Protection by Automatic overload alarming

Functions of auto calibration and auto zero tracking

Functions of weighing alarm

Counting

Parameters changeable

Voltage indication and low voltage alarm

Auto-off power function

Printing & Data output function

Long work time with sealed lead-acid battery (6V4Ah)

### 1.2 Product Model and Parameters









Model	1.5	3	7.5	15	30
Max. capacity	1.5 kg/3.3lb	3kg/6.6lb	7.5kg/16.5lb	15kg/33.0lb	30kg/66.1lb
Mini. Capacity	10g/0.35oz	20/0.70oz	40/1.41oz	100/3.52oz	200/7.05oz
Verification interval	0.5g/0.015oz	0.5g/0.015oz	1g/0.03oz	2g/0.07oz	5g/0.17oz
Actual interval	0.5g/0.015oz	0.5g/0.015oz	1g/0.03oz	2g/0.07oz	5g/0.17oz
Max. tare	1.5 kg/3.3lb	3kg/6.6lb	7.5kg/16.5lb	15kg/33.0lb	30kg/66.1lb
Accuracy	III				
Working temperature	-10°C ~ + 40°C/14° F ~ +104° F				
Power supply	6V4Ah sealed lead-acid battery (With Special-purpose charger )				
Plate size	18.6 × 22.3 cm ( 7.3x8.7inch )				



### 1.3 Component Diagram





## 2. Functions and Operations


### 2.1 Turning on Scale/ Zero Operation

Press . The whole display illuminates with a serial of steps that Scale Edition number , Customer code & Production date  ( is Customer code,  means Production date is 2013-3), and Maximum capacity  ( means Maximum capacity is 3kg/6.6lb), then the screen display . After the **ZERO** indicator is lighting, the scale is ready for weighing.

When scale is on,  is the key to zero. It is only available within 2% of the max capacity; otherwise it will display  immediately .




When scale is on, it will display the voltage when pressing  key for 3 seconds. Now if press  again, the scale will return to weighing mode.


### 2.2 Turning Off Scale

Scale can be turned off forcibly by pressing .

### 2.3 Tare/Unit Operation


Place the container on the scale until the display indicates the weight number steadily.


Press , then the display indicates  and the **TARE** indicator is lighting. Place the weighing objects into the container, and then scale shows the Net weight. Move the container and the weighing objects off, and then scale will show the minus weight of the container. Then press  again, the tare weight can be cleared, that the **TARE** indicate out and the scale is set to zero.

When scale is on , press  for more than 3 seconds to change the weight unit.


**It is not available until the weighing number displays steadily.  
It can work successively, but it must under the max capacity.**

## 2.4 Set Operation

 can be used with other keys together. See detailed features below in the related sections.

 can be used to set the Printing & Data output function, When the function of printing or data transmission is on

## 2.5 Power Immediate Indication



Power voltage is indicated under 3 levels. When it is displaying  and the low level indicator flashing (LCD battery graphics frame flashing), you should recharge immediately. Otherwise it will be auto turned off in 15 minutes.

## 2.6 Power Saving Operation






You could choose to open or close the assistant display to save power. After the indicated value steadied for 10 minutes, the scale will be Auto-off.

After the indicated is at zero for 40 seconds, the scale will show .

## 2.7 Power Charge Operation

The power of this scale is provided by sealed lead-acid battery (6V4Ah) inside. When the power voltage indicator shows that the power is low, the LED (or LCD) is displaying  and the low level indicator flashing (LCD battery graphics frame flashing), scale should be charged by the charger in battery storehouse. While charging, the power indicator will coruscate circularly, after electric quantity is full, it will show  and the all level indicator flashing (LCD battery graphics frame flashing), it need about 10 hours. The battery should be charged at least once every 3 months

## 3. Environment Parameter Setting

When scale is on, the same time press on  and , you can enter the display of environment parameter setting. Press  to choose and  to confirm and save, then into next item. If no need to change, press  to return to weighing mode.

### 3.1 Display Precision

**PRE 0** means n=3000(or 3750), it is initialization.

**PRE 1** means n=6000(or 7500)

**PRE 2** means 15000

**PRE 3** means 30000

### 3.2 **UNE** Weighing unit (The default boot unit is pounds)

**UNE 0** means g, it is initialization.

**UNE 1** means kg

**UNE 2** means lb

### 3.3 **brt** Display Brightness (LCD no this item)

**brt 1** The brightness of the brightest

**brt 2** The brightness of the middle

**brt 3** Minimum brightness, it is initialization.

### 3.4 **ZER** Zero tracking

**ZER 0** ~ **ZER 6** can be chosen (0 to 6 divisions).

**ZER 2** Is initialization

**Suggestion:** choose big number if need high **PRE**.

### 3.5 **d15** Reverse display (LCD no this item)

**d15 7** means closed

**d15 4** means keeping, It is initialization

### 3.6 **FILE** Stability


**FILE 0** ~ **FILE 3** can be chosen. (From **0** to **3**, It's more and more stable, but display speed is more and more slow). Initialization is


**FILE 0**.

**Suggestion:** choose big number if need high **PRE**.

### 3.7 SAU Power Saving Mode

SAU 01 is to close this function (but LCD backlight is still on).

SAU 02 is that if the scale is at zero for 40 seconds, the screen will show  and it returns to normal when weighing. (LCD backlight is off until weighing again.)

SAU 03 is that if the scale is at zero for 40 seconds, the screen will show  and it returns to normal when weighing. (LCD backlight is off until weighing again.) And then if it stays steady for 10 minutes, the scale will be Auto-off. Initialization is SAU 03

### 3.8 SPd Display Update Speed

SPd 0 is Slow Speed

SPd 1 is Fast Speed, it is initialization.

### 3.9 drl Creep Tracking Range


drl 0 ~ drl 4 can be chosen (Larger number means larger range). drl 1 is Initialization.

### 3.10 Prt Printing & Data Output Mode (When custom made, it's valid)

Prt 0 is to close this function, it is initialization.

Prt 1 is continuous data output

Prt 2 is steady data output

PrE 3 is manual data output (Use  to control manual output)

### 3.11 FAt Output Data Type

FAt 1 is Weighing data, it is initialization.

FAt 3 is English data.









No this item when Prt 0




When setting is done, the scale will auto restart.


## 4. Weighing Alarm and Counting







### 4.1 Weighing Alarm Function Setting

4.1.1 At , press both  and  together for 3 seconds, it will go to setting mode and display . Press , it will circularly display  →  → .

 is to close this function.

 is to alarm within the range.

 is to alarm out of the range.






4.1.2 When display  or , press , and the **Under** indicator is lighting. The light shows the value set last time and the digit which can be adjusted is blinking. Now press  to change the digit, press  to change the digit value, and press  to confirm. Then the setting of lower limits is done and the **Over** indicator is lighting. Use the same way to finish the setting of upper limits.

4.1.3 When finished setting, it returns to weighing mode and the Weighing Alarm function is on. Now if,

Weight  $\leq$  lower limits, the **Under** indicator is lighting.

lower limits < Weight  $\leq$  upper limits, the **Accept** indicator is lighting.

Weight > upper limits, the **Over** indicator is lighting.

4.1.4 At zero, press both  and  together for 3 seconds, it will go to setting mode. Press  to choose  and press  to confirm, then the function will be closed.




**The setting value is the current Weighing unit or the Counting number. If changing the weighing unit, this function will be closed and the current setting value will be auto-cleared.**

**If changing the precision, this function will be closed and the current**


setting value will be cleared.

## 4.2 Counting Function Setting

4.2.1 When scale is on, place the given value sample on the pan, and press

both  and  keys together for 3 seconds, then it displays ,


 is on and  is off. Press  to choose and press

 to confirm.

4.2.2 When choosing , it is back to weighing mode. When

choosing , it displays  and the first digit is blinking.

Now press  to change the blinking digit, press  to change the

blinking digit value, and press  to confirm. After setting it will be auto turn on, enter counting and counting indicate lighting.

4.2.3 If not at zero, press both  and  together for 3 seconds, and

choose  by pressing  key, then the function is off.

## 5. Data Transmission Function

5.1 Data Transmission: RS232, RS485 and Bluetooth for choosing.

5.2 Baud Rate : 9600

5.3 Weighing Data Format: 18 bytes in total

<b>Output Data</b>	ST	*XXXXXXXX	SP	g	CR	LF
<b>Note</b>	A	B	C	D	E	H

A (2 bytes) State Code. ST ; stable US: unstable OL: overload

B (8 bytes) Display the weight [\* is (-) or ( SP ),X is digit or point ]

C (1 byte) SP; spacebar (ASCII 20H)

D (5 bytes) Weight Unit: g or kg or lb.lb; For example: g SP SP SP SP

E (1 bytes) CR : enter (ASCII 0DH)

H (1 bytes) LF : Line Feed (ASC II 0AH)

## 5.4 Print Format

English Print Format

EENO: xxxx

DATA: xxxx/xx/xx (Y/M/D)

TIME: xx:xx:xx (H/M/S)

W.T.: xxx.x

## 6. Signs' Meaning

**SP-830** Version Number

**nnnnnnn** Indicate that the weighing object is overloaded.

**-----** Data is unstable.

**LLLLLL** Output of load cell is lower

**HHHHHH** Output of load cell is higher or Turn on zero is higher



**-Lo-** A reminder that it will shut off in 1 minute, power should be charged since the power voltage is too low.

**FULL** Power has been charged fully.

**INIL** Data is abnormal, press **SET** to turn on and re-calibrate

## 7. Fault and solution

Item	Fault	Reason	Solution
1	Weighing not correct	Loadcell parameter changed	Re-calibration
		Loadcell doesn't function	Change loadcell
2	Display not steady	Have eyewinker around loadcell	Clear
		Loadcell doesn't function	Change loadcell
		PCB damaged	Change PCB
3	Can't weigh	Loadcell doesn't function	Change loadcell
		PCB damaged	Change PCB
4	Display <b>HHHHHH</b>	Over zero of loadcell	Re-calibration or Change loadcell
		PCB damaged	Change PCB
5	Display <b>LLLLLL</b>	Lower zero of loadcell	Change loadcell
		PCB damaged	Change PCB

6	Rear display doesn't show	User parameter error	Read users' manual and re-set
		PCB damaged	Change PCB
7	Display not whole	PCB damaged	Change PCB
8	Can't charge but charge indicate is lighting	Battery damaged	Change battery
9	Can't charge and charge indicate isn't lighting	Charger damaged	Change charger
		PCB damaged	Change PCB
10	Work time is short after charging	Battery ageing	Change battery
11	Have base number after remove weight	Have eyewinker around loadcell	Clear
		Range of zero tracking is small	Read users' manual and re-set
		Loadcell damaged	Change loadcell
12	Can't finish calibration	Have eyewinker around loadcell	Clear
		Loadcell damaged	Change loadcell
		PCB damaged	Change PCB
13	Display 	Data is abnormal	Press  to turn on and re-calibrate

For the same fault, please check and repair orderly.  
After change any parts, please fill glue, install according to technology and calibrate again.