



# OPF-P Counting Scale USER'S MANUAL



# TABLE OF CONTENTS

<b>Features.....</b>	<b>1</b>
<b>Contact Us.....</b>	<b>1</b>
<b>Safety Precautions.....</b>	<b>2</b>
<b>Preparations and Set Up.....</b>	<b>2</b>
<b>Display and Key Description.....</b>	<b>3</b>
<b>Operating Instructions.....</b>	<b>4-6</b>
<b>Battery.....</b>	<b>7</b>
<b>Alarms.....</b>	<b>7</b>
<b>User Settings.....</b>	<b>8-10</b>
<b>Communication Protocols.....</b>	<b>11</b>
<b>Troubleshooting.....</b>	<b>12</b>
<b>Specifications.....</b>	<b>12</b>
<b>Scale Settings.....</b>	<b>13-14</b>
<b>Calibration.....</b>	<b>14</b>

# FEATURES

- Provides the highest level of counting accuracy
- Up to 21 PLU's for storing sample weights so they can easily be retrieved
- 30,000 displayed resolutions
- 3 displays - Weight - Unit Weight - Count
- Truly portable - with both AAC adapter and rechargeable battery that lasts 100 hours
- Large removable anti-static stainless steel weighing pan
- Durable ABS housing
- Warning for insufficient unit piece weight and sample size
- Large high contrast back-lit liquid crystal display (LCD)
- Splash proof keyboard and display
- Calibration with reference weights
- Optional RS-232c for bi-directional communication with a PC or Printer
- Multiple weighing units: g, kg, lb, oz
- 1 year limited warranty

# CONTACT US

Please e-mail [sales@optimascale.com](mailto:sales@optimascale.com) for any sales related question

Please e-mail [support@optimascale.com](mailto:support@optimascale.com) for any support related questions

Don't forget to visit our website at:

[optimascale.com](http://optimascale.com)

# **SAFETY PRECAUTIONS**

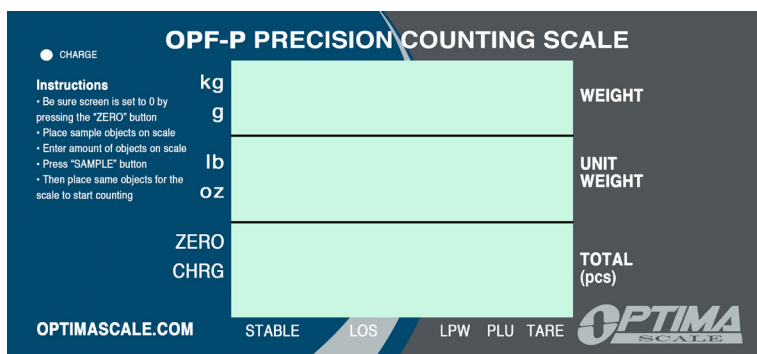
- To avoid damaging the battery do not keep charger plugged in once battery is fully charged.
- Only use the provided adapter to charge this unit.
- The provided battery should be replaced when it no longer holds a charge of over 12 hours.
- Avoid installing the balance in direct sunlight. This may cause poor performance or malfunctions.
- If the balance will not be used for a long period of time, remove all batteries from the battery compartment to avoid leakage, which may cause damage to the instrument.
- Avoid overloading or dropping material onto the platform as that may damage the balance.
- Please clean the display and operation panel with a wet cloth.
- Place the weight on the center of the pan for accurate weighing. Make sure the weight is not over the Max capacity as it could damage the load cell inside.
- Do not spill liquids on the balance as it is not water-resistant. Liquids may damage the case and any liquid inside may cause damage to the electronics.
- Material that has a static electric charge could influence the weighing. Discharge the static electricity of the samples, if possible. Another solution to the problem is to wipe both sides of the pan and the top of the case with an anti-static agent.

## **PREPARATIONS & SET UP**

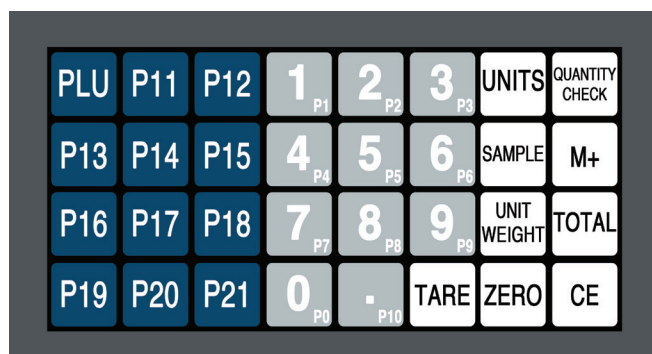
- Place your balance on a stable and level table. Then level your balance by adjusting the feet to center the bubble in the spirit level (located under the plate)
- Plug into a wall outlet to avoid interference with other wirings
- Turn on the balance while there is no load on the pan
- We suggest to warm-up the balance by turning the power on 5 minutes before use for accurate weighing
- Calibration may be required before weighing when the balance is initially installed or moved from a location

# DISPLAY AND KEY DESCRIPTION

LCD DISPLAY



KEYBOARD



## UNITS

In the weighing mode there are 4 units available (kg, g, lb, oz)

## QUANTITY CHECK

This is for setting an upper and lower limitation alarm

## SAMPLE

Setting the counted sample numbers on the platform into the scales memory

## M+

In accounting mode: Accumulate counting

In setting mode: save settings and shift to the next function selection

## UNIT WEIGHT

In weighing mode: setting the unit weight data

In setting status: exit key

## TOTAL

Is used for recalling the counts data, which restored each time and total weight, which is accumulated

## TARE

In weighing mode: Tare

In setting mode: increase value

## ZERO

In weighing mode: Zero

In setting mode: decrease value

## CE

In weighing mode: Cancel the set numerical data and input new data

In setting mode: Deleting PLU value

## PLU

Used to enter PLU mode or setting PLU unit weighing mode

In PLU mode: exit key

## P0

## P21

PLU unit keys, used to memorize unit weight

# OPERATING INSTRUCTIONS

## Power On

- Turn on the power by flipping the switch located on the underside of the scale to the right. Once on, the scale will show the voltage and auto-check by counting down from 0-9 sequentially

## Zeroing

- If the screen reads any number other than 0 before weighing, press the ZERO key to set to 0 (be sure ◀ points to ZERO)

Note: The zero range is 4% max capacity

## Unit Selection

- To switch between measuring units (kg, g, lb, oz) press the [UNITS/PRINT] key

## Tare Function

- Put a container you wish to use on the pan, then press the [TARE] key and the display will show ▼ pointing to TARE and reset back to 0
- Add your sample to the container to weigh without the weight of the container
- To exit Tare mode simply press [ZERO] key

**Note:** If you remove your container the scale will show the minus weight of the container

## Sample Setting (Setting the sample weight)

There are two ways of setting a sample weight

**Number Setting:** for when you don't know the weight of the object

- Press [CE] for canceling the previous unit weight and sample setting
- Place objects on the scale
- On the keypad enter how many objects you placed on the scale
- Then press [SAMPLE] key
- The scale will calculate and then show the number of your sample on the third line
- You can now add objects to the scale and it will count them

**Unit Weight Setting:** for when the weight of the unit is already known

- Press [CE] for canceling the previous unit weight and sample setting
- On the keypad enter the weight of your object then press the [UNIT WEIGHT] key. Add objects for scale to count

## Accumulation

- Accumulation mode keeps track and adds your totals together for you
- Press [M+] to accumulate the current quantity to the total quantity
- Then press [UNIT WEIGHT] key to go back to the normal counting mode
- From there you can use the scale again and when you want to add your total to the accumulation press [M+] (up to 99 totals can be accumulated)
- Press [CE] to clear the times of counts

### Accumulation Checking

- In weighing mode press [TOTAL] key to enter the accumulation checking mode and view the accumulation total
- Press [UNIT WEIGHT] key to go back to the normal counting mode
- Press [CE] to clear the times of counts

## Quantity Check Alarm

- This function allows you to set an alarm when there are too many or too few objects on the scale. For example you can set an alarm to go off when you have under 10 units on the scale or an alarm when you have over 100 units, or both at the same time
- Press [QUANTITY CHECK] key to enter the quantity check setting mode
- Turn this function On or Off by pressing the [ZERO] key
- To set a Low alarm press the [M+] Key and enter the amount you want to set on the keypad (entering 0 disables low alarm)
- To set a High alarm press the [M+] Key again and enter the amount you want to set on the keypad (entering 0 disables high alarm)
- Press [M+] key again to set the alarm and exit quantity check setting mode

# PLU Counting Function

**To Use PLU keys:** If you're going to be using the same object repeatedly you can save your sample as a PLU key.

- To use, you must be in weighing mode (make sure the ▼ symbol is not on PLU, if you are, press [PLU] key to exit PLU mode)
- Add weight to the scale
- Press [PLU] key followed by the PLU# key you have your sample weight saved under
- The scale should be counting based on your saved PLU sample
- Press [PLU] key to exit PLU mode



**To Save an Objects Weight as a PLU# Key (P11-P21):**

- In normal weighing mode (when you turn on scale), put the samples on the pan and enter the quantity using the keypad
- Then press [SAMPLE] key
- Press [PLU]
- Press the PLU# key you want it stored on
- Press [M+]
- Press [PLU] to exit
- If you want to cancel current sample count setting, press CE key

**To Clear Saved PLU#**

- In PLU mode: (the ▼ symbol appears above PLU)
- Press [CE] key to enter the deleting mode
- Then press the PLU# key you want to clear
- To confirm and delete the PLU# value press [M+] to delete and exit the PLU deleting mode
- If you don't want to delete it, press [UNIT WEIGHT] key

# BATTERY

- When  appears on the display, you are requested to recharge the scale for 12 hours. When the scale is recharging the  mark will be flashing and will disappear after recharging has finished
- Charging Light Indication: When the scale is charging the charge light will turn Red. When the battery is done charging the charge light will turn Green

# ALARMS

## Overloading alarm

- When the load on the platform is over 9d of the scale's maximum capacity, a beep will sound to alert you to remove the load from the platform immediately

## Unit Weight Alarm

- "Lack of Unit Weight" indicator will appear if the averaged unit weight or set unit weight is not enough for accurate counting operation

## Sample Number Alarm

- If the total weight of your sample is below limit value, it will indicate lack of sample

## Quantity Check Alarm

- When the quantity check function is on and you are over or under the scale's limitation the scale will emit beeps to warn you
  - Short sounding beeps: if the quantity is over the upper limitation
  - Long sounding beeps: If the quantity is less than the lower limitation

# USER SETTINGS

**User Setting Mode:** In weighing mode, press both [CE] and [ZERO] to shift enter the User Setting Mode

## Selection of Anti-Shake

- In order to get faster responding speed or higher weighing stability, the setting can be revised from a range of (1-7) the default set at 2
- The larger the value is, the higher the weighing stability will be and the slower the responding speed will be and vice versa
- Enter the user settings and the display will show "FILT?"
- The flashing number of second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

## Selection of Stable Range

- The stable range is 0-4 with default set at 3. The larger the value is the faster the stable speed
- In User Setting Mode, select "Stab?"
- The flashing number on the second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

## Selection of Zero Tracking Range

- You can change how lenient the scale is at finding the zero point
- The range is 0-6 with default set at 2. The bigger the number the more lenient it is
- In User Setting Mode, select "Ztrc?"
- The flashing number on the second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

### **Selection of Zero Display Range**

- The range is 0-6 with default set at 2. This selection doesn't affect the zero value but the indication
- In User Setting Mode, select "ZDSP?"
- The flashing number on the second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

### **Selection of Default Unit**

- This setting is for choosing the default unit (kg, g, lb, oz) on startup
- In User Setting Mode, select "UNIT?"
- The flashing number on the second line shows the present unit setting
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

### **Selection of Backlight**

- There are three backlight options: ON, OFF & AUTO, the default is Auto
- In User Setting Mode, select "BLIG?"
- The flashing number on the second line shows the present setting
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

### **Selection of Auto Calibration**

- There are two modes for calibrating the unit weight automatically: ON & OFF. The mode is set to OFF by default
- When the auto calibration is ON, the system can modify the difference of counting automatically and the counting function will be more accurate
- In User Setting Mode, select "ACAL?"
- The flashing number on the second line shows the present unit setting
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

## **Selection of PLU Function**

- There are two modes for PLU setting: ON & OFF
- In User Setting Mode, select "PLU?"
- The flashing number on the second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

## **Selection of Communication Address**

- You can set an address for your scale to better communicate with its PC or printer (especially if multiples scales are in use). Doing so will help the scale know when a command from the PC is meant for it versus another scale
- The range is 1-25 with default set at 1
- In User Setting Mode, select "SCALE?"
- The flashing number on the second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

## **Selection of BPS (Bits Per Second) / Baudrate**

- When the BPS of the scale and the communication equipment is not the same the communication may not function properly.
- There are 3 selections: 2400, 4800 & 9600 with 9600 being default
- In User Setting Mode, select "BAUD?"
- The flashing number on the second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

## **Selection of Transmission**

- This function is for selecting a communication mode that is active when the scale is connected to a printer/computer and the relative equipment. There are three modes selectable
- There are 3 selections: Continuous Transmission, Stable Transmission, Response Transmission
- In User Setting Mode, select "SENT?"
- The flashing number on the second line shows the present setting value
- Press [ZERO] or [TARE] to change the value
- Press [M+] to confirm the revised value or press [UNIT WEIGHT] to cancel the revision and exit the function setting

# RS232 COMMUNICATION PROTOCOLS

The balance uses RS232UART signal, one frame consists of 10 Bit

## Format

Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7	Bit8	Bit9	Bit10
------	------	------	------	------	------	------	------	------	-------

BIT1: Startbit

Bit2~9: Databit

Bit10: Stopbit

All Data is in ASCII Code

## Connection

Standard RS2329 pin interface: 2# -TXD (sending), 3#-RXD (receiving), 5#-GND (ground), can be connected with PC directly.

## Print Label

add:	1	:	Sub-add
n/w:	0.0001	:	Net-weight
u/w:	0.0000	:	Unit weight
Pcs:	1	:	Quantity

**Note:** The above setting related to RS232 is available only when the instrument is with RS232 interface

# TROUBLESHOOTING

“ADL---” - the weight is under the set division

“ADH---” - the weight is over the set capacity, please remove all weight

“AD-OVER” - the weight is over the scale’s capacity, please remove all weight from the scale immediately!

- Please check to see if the plate is in place properly and the scale is level
- If error persists please contact the dealer

When powering on if the display shows “Error Vol 500” before auto-checking, the present voltage is 5.0V and the scale cannot be turned on.

- Charge the scale with the included charger and do not use until the voltage reads 5.3V when you power on the scale
- If error persists please contact the dealer

## SPECIFICATIONS

<b>Capacity</b>	Eight capacity options: 1.0, 1.2, 1.5, 2.0, 3.0, 5.0, 6.0, 7.5 kg	
<b>Resolution</b>	0.001g - 2000g	
<b>Response</b>	3 -5 seconds	
<b>Display</b>	LCD display with backlight	
<b>Tare</b>	Equal to Max capacity	
<b>Over-load alarm</b>	Auto alarm when load is over capacity	
<b>Over-load capacity</b>	Protect automatically when the load is 125% of capacity	
<b>Source</b>	Rechargeable battery: DC6V4Ah      Adapter: AC220V	
<b>Power</b>	Backlight 90mA    ;    No backlight 70mA	
<b>Temperature</b>	Storage: -10°C ~+50°C (14-120°F)	Work: 0°~+40°C (32-104°F)
<b>Humidity</b>	Storage: 5% ~ 90% R.H.	Work: 10% ~ 80% R.H.
<b>Pan Size</b>	335mm X 220mm	

### Unit Conversion

1 kg	=	1000 g
1 lb	=	453.59237 g
1 Oz	=	28.349523125 g

# SCALE SETTINGS

**Scale Settings Mode:** In weighing mode, press both [CE] and [TARE] at the same time to enter the Scale Settings Mode. In this mode they keys mean:

[M+]: Save and enter the next function

[TARE]: Select value

[ZERO]: Select value

[CE]: Clear value

[UNIT WEIGHT]: Back to the weighing mode

## Password

After entering the dealer setting mode, the screen will read "C-UER3.0" with the second line flashing "-----" and the third line reading "110824"

- Input the password (**The default password is 123456.**)
- If you input the wrong password press [CE] to clear
- The instrument will enter the scale setting mode after the correct password is input
- If you input the wrong password and cant access the setting mode, insert the jump cap JMP1 to the B on the circuit board

## Capacity and Resolution Settings

The capacity and resolution of the scale is adjustable. The weighing capacity range is 1kg-7500kg and the resolution range is 0.001g-2000g. You can select the proper capacity and resolution according to your requirement.

- After entering the password the first line will read "POD" and the capacity setting will flash on the second line
- To change the capacity on the second row, press [ZERO] or [TARE], then press [M+] to confirm and select the resolution setting
- To change the resolution on the third row, press [ZERO] or [TARE], then press [M+] to confirm and continue on to the next setting or [UNIT WEIGHT] to go back to the weighing mode

## Password Amendment

- Press [CE] to enter the password amendment mode
- Key in your new password (6 numbers) and then press [M+] to confirm
- Press [M+] again to continue on to the next setting or [UNIT WEIGHT] to go back to the weighing mode

## **Linearity Correction**

- The display will read "LIN"
- Press [ZERO] or [TARE] to toggle this mode On or OFF (Linearity correction needs to be turned off to continue to calibration mode)
- There is a range of (-6-6) for correcting the linearity error.
- Please choose 1-6 calibration when the scale reads less than what the correct weight is
- Please choose -1--6 calibration when the scale reads more than what the correct weight is
- Or choose 0 when there is no linearity correction needed
- To change the linearity correction press [ZERO] or [TARE], then press [M+] to confirm and continue on to the next setting or [UNIT WEIGHT] to go back to the weighing mode

## **Zero Collection**

- When the scale displays "ZERO" you will see the AD value on the third line
- The AD value should be between 10000-20000
- To change the zero collection press [ZERO] or [TARE]
- Press [M+] to confirm and continue on to the next setting (calibration) or [UNIT WEIGHT] to go back to the weighing mode

# **WEIGHT CALIBRATION**

## **When to calibrate**

- When the scale is initially installed
- When the scale's location has changed
- After the scale has not been used for a long period of time

## **How to calibrate**

- In the Scale Settings Mode enter the calibration mode
- The screen should read "CALI"
- Confirm there is no weight on the pan before entering the weight calibration mode
- Enter the value (in kg) of the weight you will be using to calibrate the scale (2/3rds of the capacity is preferred)
- Then set the weight on the scale and press [M+] to confirm
- Press [M+] again to finish
- The display will flash "PASS" when calibration is done
- Press [UNIT WEIGHT] to go back to the weighing mode