



Weltech International Limited

# PW-2050 Manual



## INTRODUCTION

The PW-2050 weighs potatoes to measure their specific gravity and percentage dry matter. It works by comparing the weight in air with the weight in water of 1.5kgs of potatoes and converts this to specific gravity and dry matter. The PW-2050 is battery operated and will weigh for up to 15 hours between re-charging and will retain all weights even when the batteries are flat.

All information is stored until the **CLEAR** sequence has been completed.

The maximum weight the unit can weigh is 5kgs (11lbs).

**NOTE:** If the weight exceeds 5kgs the loadcell will be damaged.

PW-2050 Control Panel



Printer, Computer and USB (optional) ports are on the side

## GETTING STARTED

A wire basket or plastic mesh bag large enough to hold 1.5Kg of washed potatoes will be required. The container must be lowered into the container of water until the basket and potatoes are fully submerged.

### CALIBRATING THE BASKET

With nothing on the hook check that the display reads zero, and if it does not then press the **TARE** key. Place the empty basket onto the hook and press the **CAL** key, **CALIBRATING BASKET** will be displayed and then **BASKET**. Press the **WEIGHT IN AIR** button, when the weight has been accepted the display will show **DRY WEIGHT** and the red triangle light will come on. Place the empty basket into the water and press **WEIGHT IN WATER**, when the weight has been accepted the display will show **SAVING NEW SETTINGS**, the display will then show **READY**.

### HOW TO WEIGH

A weight of 1KG to 4KG of potatoes must be used. They must be washed before weighing. Turn the weigher **ON** with the basket already on the hook. Place the potatoes into the basket and press the **WEIGHT IN AIR** key. When the weight has been accepted lower the basket into the water and press the **WEIGHT IN WATER** key. The display will show **ACCEPTED**.

### CLEARING THE MEMORY

To clear the memory press the **CLEAR** key and the display will show **CLEAR MEMORY [ENTER]=YES**. Press the **ENTER** key and the display will say **ARE YOU SURE? [SETUP]=YES**. Press the **SETUP** key and the display will show **CLEARING MEMORY FOR NEW DATA**

## SETUP OPTIONS

Turn the weigher on by pressing the **ON/OFF** key. The display will show **READY**. Press the **SETUP** key and the display will show:

HOUR  
00:00 (DAY MONTH YEAR)

The hour part will be flashing press the **INC** or **dec** keys to change the setting to the correct hour. When done press **ENTER** and the display will move on to minutes. You can then continue through the date settings. After the date settings the display will show the **DRY BASKET** calibration value and then the **WET BASKET** value. After this the display will show the **TUBER TEMP** and then the **WATER TEMP**. If you are not going to use the tuber and water temperatures then these must be left at 10°C to give a zero correction.

All these values can be changed by using the **INC** and **dec** keys and the menus are stepped through using the **ENTER** key.

## OPERATING INSTRUCTIONS

### SHOW DATA

1. Press the **SHOW DATA** key and the display will show **STORE** with the time and date.
2. Press **ENTER** and the display will show **DRY MATTER** and **SPEC GRAVITY**.
3. Press **ENTER** and the display will show **DRY WEIGHT** and **WET WEIGHT**.
4. Press **ENTER** and the display will show **DRY BASKET** and **WET BASKET**.
5. Press **ENTER** and the display will show **TUBER TEMP** and **WATER TEMP**. (The standard setting 10°C for both gives 0 correction).
6. Press **ENTER** and the display will show the next stored weight.

## PRINT OPTIONS

1. **PRINT EACH BATCH** This can be switched **ON** and **OFF** using the **INC** and **dec** buttons. When **ON** the weigher will print via the serial port as each weight is done.
2. **REPORT STYLE** This can be selected between **SUMMARY** and **DETAILED** using the **INC** and **dec** buttons. **SUMMARY** just prints the results. **DETAILED** prints all the dry and wet weights.
3. **DISPLAY STYLE** This can be selected between **SPEC GRAV** and **DRY MATTER** to be displayed using the **INC** and **dec** buttons. The selected display setting will be the one that gets printed on a **SUMMARY** print.
4. **WRITE TO USB** This can be switched **ON** and **OFF** using the **INC** and **dec** keys. **WRITE TO USB** is an option and can only be used if the weigher has a USB socket.

### USING THE USB STICK SOCKET

Select the **WRITE TO USB** under the print options as seen above. Turn on the **WRITE TO USB** using the **INC** or **DEC** key and put in the USB stick. Press the **PRINT DATA** key and the display will show **WRITING TO USB**. When the weigher has finished the display will flash up **FILE WRITTEN OK** and the display will go back to the standard weighing display. The USB stick can now be removed and used on a computer.

If there is no USB stick in the weigher when you try to write to the USB the display will show **WRITING TO USB** followed by **NO STICK FOUND**. If the USB stick is faulty or removed before the file is written the display will show **WRITING TO USB** followed by **ERROR WRITING**.

## PRINTER OUTPUT

### PRINT EACH BATCH

If switched **ON** the weigher prints the weights as they are done.

### REPORT STYLE

### SUMMARY

Prints the basic summary report showing the results.

### DETAILED

Prints the detailed report showing the details of the dry and wet weights

WELTECH INTERNATINAL			
PW2050	1.04	*1921	
SUMMARY REPORT			
Ref	Date	Time	Sp Gr
1	08 DEC	14:08	1.112
Printed 08 DEC 08 14:33			

WELTECH INTERNATINAL			
PW2050	1.04	*1921	
SUMMARY REPORT			
Store number 1			
Dry Matter	%	26.92	
Specific gravity		1.112	
Dry weight	GMS	2443	
Wet weight	GMS	485	
Dry Basket	GMS	364	
Wet basket	GMS	276	
Tuber temp	degC	10	
Tuber temp	degC	10	
Date	14 MAR 12	14:08	
Ref	Date	Time	Sp Gr
1	14 MAR	14:08	1.112
Printed 14 MAR 12 14:34			

## CHARGING

The charging socket and Serial RS232 output connector is situated on the side of the weigher.

In the centre of the display is the battery charge indicator.

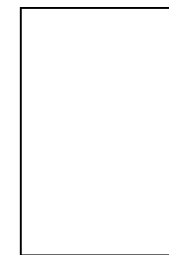
When full the box will go completely black and as power is used the box will start to go clear. This is only a rough guide based on the battery voltage and does not show how much capacity is in the batteries.



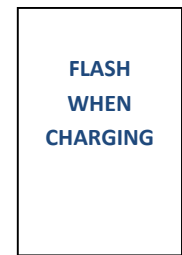
Battery Full



Battery 50%



Battery Empty



Battery indicator will flash when being charged

If the battery should go flat while weighing a **LOW BATTERY** warning will flash in the display and the weigher will eventually turn off. Data already stored in the weigher will remain in memory even if the unit automatically turns off.

**To recharge the batteries fully, leave on charge over night.**

**To check the battery voltage or charging voltage.** Hold the **SET UP** button down and turn **ON**, the display will show **WELTECH SET UP** then **MODEM RATE**, press **CLEAR** and then the **INC** key. If the **INC** or **DEC** key is pushed the display will show the date, time and battery charge. By pushing the **DEC** key while the weigher is on mains charge the display will show the charging rate from the charger.

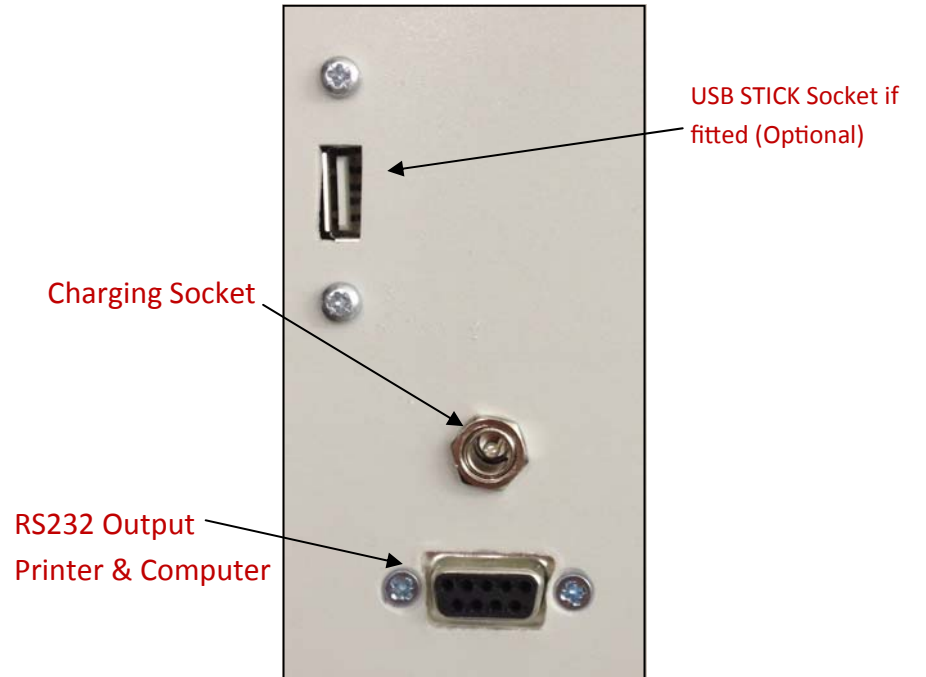
## KEY PAD



<b>ON OFF</b>	Turns unit ON and OFF	<b>CLEAR</b>	Clear data stored
<b>TARE</b>	Tares weight on hook	<b>SET UP</b>	Engineers settings
<b>WEIGHT IN AIR</b>	Stores the weight in air measurement	<b>WEIGHT IN WATER</b>	Stores the weight in water measurement
<b>SHOW DATA</b>	Displays data stored	<b>PRINT OPTIONS</b>	Set type of printout.
<b>PRINT DATA</b>	Prints data stored	<b>ENTER</b>	Enters data into store/ command
<b>INC</b>	Increase settings	<b>CAL</b>	Sets zero, tare and calibration
<b>DEC</b>	Decrease settings		

## PC OPERATION

A PC may be connected to the RS232 connector to output the data. Once the computer is connected and the software is ready to accept data, then press the **PRINT DATA** to output the data.



<b>Communication Settings</b>	
Bits per second	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

## REMOTE COMMANDS

The following commands are accepted at the serial port.

ID?	Sends weigher type and version
SER?	Sends serial number
PAN?	Sends weight being displayed
EACH	Turns on the print each batch print
EAOFF	Turns off the print each batch print
STON	Selects the summary print
STOFF	Selects the detailed print
DATE?	Sends the date ddmmyy
TIME?	Sends the time hhmm
DATE,ddmmyy	To set the date ddmmyy
TIME,hhmm	To set the time hhmm
CLEAR	Clears memory
PRINT	Prints the selected report
SETTS	Prints settings report
RESET	Restarts the processor
OFF	Turns the weigher off

## USING THE USB

Turn weigher on and open **PRINT OPTIONS**, and make sure **WRITE TO USB** is on.

Plug USB stick into port (Shown on page 15) and press **PRINT DATA**. Once the file is written **FILE WRITTEN OK** will appear on the screen, the data is now downloaded. Remove the USB stick from the weigher and plug into your computer.

Go to **MY COMPUTER** and open **USB DISK FILES**. Now select all the files and right click, a small dropdown menu should appear with the option **OPEN WITH..** now select **CHOOSE DEFAULT PROGRAM** and select **MICROSOFT EXCEL**.

Or

Open Microsoft Excel. Select **FILE** in the top left corner and then click **OPEN**. It will now open a small window, click on **MY COMPUTER** and select the **USB DISK** icon. Select all the files you want to see and then click open. (You selected multiple files by holding down **CTRL** and clicking each file)

## SAFETY CONSIDERATIONS

The PW-2050 is a rugged unit designed for outdoor use but it should be handled with care. The unit can be cleaned with a damp cloth but under no circumstances be immersed in water.

**IMPORTANT:** The weigher itself must not get wet as this could cause irreparable damage to the board and loadcell inside the weigher.

This unit is fitted with rechargeable batteries and will last for 3-4 years if charged/discharged correctly.

### **A WEIGHT OF 1KG TO 4KG OF POTATOES MUST BE USED**

The PW2050 is fitted with a 5kg loadcell and under no circumstances should the weight of the potatoes and basket exceed this otherwise the loadcell will be damaged and will not be covered by Warranty.

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Weltech International Limited

**Weltech International Limited  
manufacture the PW-2050 to the highest  
specification and our aim is to continue  
to improve its operation and reliability  
and give our customers a product that  
suits their requirements.**

**SERVICE.**

For service and repairs contact your local agent.

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