



User manual

Electronic analytical scale
BL 224



Index

1. Knowing the scale	3
2. Packaging opening	3
3. Setting	3
4. Preparation and installation.....	4
5. Keypad	4
6. Switching on.....	4
7. User Menu	4
8. Weighing Features Overview	5
9. Classic Weighing and Tare / Zero.....	6
10. Piece Counting Feature (PCS)	6
11. Percent Weighing Feature	7
12. Custom Unit Feature	8
13. Animal Weighing Feature.....	8
14. Check Weighing Feature	9
15. Formulation Feature	9
16. Totalization Feature	10
17. Density Determination Feature	10
18. Pipette Calibration Feature.....	11
19. Statistics Feature.....	12
20. Unit of Measurement	13
21. Stability filter	13
22. Calibration.....	13
23. Auto Zero Tracking.....	14
24. Data Transmission.....	14

1. Knowing the scale

Thank you for choosing the BL 224 Scale. This manual will be helpful for installation, accessory using, troubleshooting, general maintenance, etc. It will also guide you through the different applications. Please read the manual carefully before proceeding to use the scale. For any clarification, please do not hesitate to contact us. The BL 224 is ideal for laboratory and general-purpose weighing.

Data sheet:

Model	BL 224
Capacity	220 g
Resolution	0,0001 g
Repeatability	± 0,0001 g
Linearity	± 0,0002 g
Minimum weight	0,0100 g
Calibration	Internal + External
Unit of measurement	<i>g – mg – lb – oz – ozt – GN – dwt – ct – mo – m – H t l – S t l – T t l – b</i>
Stabilization time	≈ 3 Seconds
Working temperature	18°C ... 30°C
Sensitivity Drift	± 2ppm (2x10 ⁻⁶ /°C)
Data transmission	RS232
Display	Backlit LCD
Pan size	Φ 90 mm stainless steel
Total size	342,5 * 212 * 341 mm
Net weight	8 kg
Power supply	Output 13 V – 1,5 A (Input 100/240 V – 50/60 Hz)
Applications	Classic weighing, net weight/tare, Piece counting, Percent Weighing, Custom Unit, Animal Weighing, Check Weighing, Formulation / Totalization, Density Determination (only with Density Kit), Pipette Calibration, Pipette Calibration, Statistics
Accessories	Power supply, glass protection case, adjustable feet, leveling bubble

2. Packaging opening

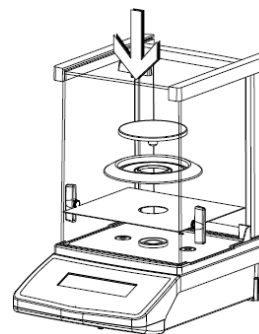
Remove the scale from the packaging carefully by lifting it out of the box.
Inside the box will be everything you need to use the scale.

3. Setting

The scale must not be set up in places where its accuracy could be reduced.
Avoid extreme temperatures.
Do not place the scale near air conditioning and in direct sunlight.
Avoid unsuitable tables: the table and floor should be rigid and stabilized (no shaking of any kind).
Avoid unstable power sources.
Avoid using the scale near large energy users such as welding equipment and large motors.
Do not place the scale near vibrating equipment.
Avoid very humid places that could cause condensation.
Avoid direct contact with water: do not spray or immerse the scale in water.
Avoid air movement such as fans or door openings.
Do not place the scale near open windows or air conditioners.
Keep the scale clean.
Do not add load on the scale when it is not in use.

4. Preparation and installation

Place the scale on a rigid, stable and vibration-free table.
 Open the windproof door and gently mount the stainless-steel plate.
 Level the scale by acting on the height-adjustable feet while looking at the bubble.
 Connect the scale's power supply to the mains.
 For best performance, leave the scale on for 30-60 minutes, after which perform a calibration.



5. Keypad



	On/Off
	"TARE" key on the left to perform Zero
	"TARE" key on the right for tare and confirmation in the menu
	Exit key to exit from a menu and/or interrupt the action being performed
	Key for changing units and increasing values in menu
	Calibration key (3-second press) If pressed and held for a longer time, it enters the menu
	Key for sending data to Printer/PC

6. Switching on

Connect the scale to the mains using the power supply provided (use original power supplies only) and press the **<ON/OFF>** key. The following will be displayed in order:

- Software version
- Countdown
- Initialisation procedure (1 → 100%)
- Standby mode (clock display).

Stand-by mode

Press the **<ON/OFF>** key to switch from stand-by mode to measurement mode.
 Press the **<ON/OFF>** key to switch from measurement mode to stand-by mode.

7. User Menu

In measurement mode, to enter the User Menu, press and hold the **<CAL>** key until "MENU" appears. The first item displayed is "F none". A quick press of the **<CAL>** key scrolls through all menu items (F none → Unit 1 → Unit 2 → Unit 3 → Stability Filter → ecc). To set a different parameter, press the **<UNIT>** key until the wanted one is displayed. Once the correct option is displayed, press the **<TARE>** key to confirm. The "O" symbol will appear on the left side of the

User Menu Overview



Piece Counting

၇၇၆၈၆

F Count^{POS}

F PEr

* F CUST

F AnL

F AnL

E. G. H. ...

F For 11

F For Γ

 F_{tot}

F tot

$$F dE_n$$

• F P P

- F STATE

F nonE

It shows the statistical data of each weighing performed.

No Function (F none)

No application activated (factory setting).

9. Classic Weighing and Tare / Zero

Classic Weighing is always accessible and can be used in combination with other functions.

Classic Weighing:

- Calibrate the scale.
- Place the sample on the weighing pan.
- Wait for the stability symbol.
- Read the result.

Tara / Zero:

- Place an empty container on the weighing pan.
- Wait for stability and press the left **<TARE>** key for Zero, the right one for Tare.
- The display shows "0.0000 g".
- Place the weight inside the container.
- Read the net weight of the sample on the display.

Removing the container from the plate will show a negative value on the display.

If the **<TARE>** key is pressed before stability is reached, the display shows "-----" until the measurement stabilises.

10. Piece Counting Feature (PCS)

- Make sure you have activated the "F count" function in the user menu.
- Place an empty container on the pan.
- Calibrate the balance by pressing the **<TARE>** key.
- Press the **<UNIT>** key until "pcs" appears on the display.
- You are now prompted by a reference quantity.
- Press and hold the **▲** key to enter the reference quantity selection.
- Again, with the **▲** key the number can be changed, selectable from 5, 10, 20, 50, 100 pcs, Free, wref, Update.
- Once the exact quantity of pieces corresponding to the selected reference number has been placed inside the container, press the **<TARE>** key.
- As soon as the measurement is stable, the average weight of each piece will be calculated and the quantity entered will be displayed.
- You can now proceed to add the remaining pieces to be counted.

FREE (reference setting)

This option allows you to use a reference number for the piece-counting function other than the preset ones (**maximum possible value = 999**).

- Select the "Free" item and press the **<TARE>** key.
- The last set value flashes. Use the **▲** and **►** keys to set the desired number.
- Place the correct number of pieces inside the container and press **<TARE>**.

wRef (reference setting)

If you know the weight of the sample to be counted, you can enter it directly.

- Select the "wRef" item and press the **<TARE>** key.
- The value of the last set sample weight flashes on display. Use the **▲** and **►** keys to set the reference sample weight.
- Press **<TARE>** to confirm.

Update

It improves the result of Piece Counting. By increasing the amount of reference samples within the pan, and having the average weight recalculated by the balance, counting results will be more accurate.

- Select the “Update” value, place more samples inside the container, and press <CAL>.
- “Update” appears on the display.

11. Percent Weighing Feature

The Percentage Weighing feature allows you to weigh a predefined value (1, 10, 20, 50, 100%, free, 100R, 100L, AtroM, AtroD) and to determine the differences from the reference value.

- Make sure you have selected the “F for” function in the user menu.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “PER (%)” appears on the display.
- A reference quantity is now requested. Press and hold the ▲ key to access the reference selection. Again, with the ▲ key the reference can be changed, selectable from 1, 10, 20, 50, 100 %, Free, 100r, 100L, OtherM, OtherD.
- Place the reference sample inside the container and press the <TARE> key. As soon as the measurement is stable, the reference percentage will be determined.
- You can now proceed with the percentage weighing.

FREE (reference setting)

The Free option allows you to use a reference percentage other than the preset ones.

- Select the “Free” item and press the <TARE> key.
- The last set value flashes. Use the ▲ and ► keys to set the desired value.
- Place the reference sample inside the container and press <TARE>.

Differential Weighing

It is used to determine the weight change of one or more samples. The first step is to determine the initial weight of the sample. Following operations such as drying, centrifuging, filtering, steaming, etc., the sample is weighed again and the difference from the initial value is determined.

100L (Loss)

The moisture content is displayed as a percentage of the initial sample. The moisture value is shown with a negative sign and in units of 100L % *example: -11.35 100.00L %*.

100R (residue)

The dry residue content as a percentage of the initial sample is displayed. The dry residue value is shown with a positive sign, and with units 100R % *example: +8.25 100.00R %*.

AtroM (Moisture content)

The moisture content “Atro” is the value as a percentage of moisture in relation to the dry residue. The “Atro” moisture value is shown with a negative sign and the unit of measurement AtroM % *example: -255.33AtroM %*.

AtroD (Dry Content)

It expresses the initial weight of the sample as a percentage of the dry residue. The “Atro” dry content value is shown with units AtroM % *example: 312.56 AtroD %*.

Percentage Weighing (100R / 100L / AtroM / AtroD)

- Select one of “100R / 100L / AtroM / AtroD”.
- Place the reference sample (initial weight) on the plate.
- Press the <TARE> key. The display shows “-----” while calculating the reference. When “-----” disappears, the scale is ready for weighing.
- Analysis processes can now be performed on the sample, drying, centrifuging, filtering, steaming, etc. Once the analysis processes are finished, weigh the sample again (residual weight).
- The scale determines the difference between the initial weight and the residual weight and returns the required percentage.

12. Custom Unit Feature

It is possible to set up a custom, user-defined unit of measurement.

- Make sure you have activated the “*F Cust*” function in the menu.
- Calibrate the scale.
- Press the <UNIT> key until “Cst” appears in the display.
- The scale now requires a conversion factor, accuracy and LSD.
- Press and hold the ▲ key to enter the Custom unit menu. The last saved value for factor, accuracy and LSD will be displayed.
- Press the <TARE> key to access the desired setting.

Setting Conversion Factor

- Access the setting of the conversion factor.
- Using the ▲ and ► keys, set the desired number.
- Once the factor has been set, press the <TARE> key.

Note: The conversion factor can take any value except 0.

Setting accuracy

The accuracy does not affect the calculation and conversion to the Custom unit, but it determines the visualization on the display.

- Press <TARE> to access the “*Acc*” section.
- Use the ▲ key to scroll through the available accuracy standards.
- Select the desired accuracy standard by pressing the <TARE> key.

The standards that can be used are: 0,000001 / 0,00001 / 0,0001 / 0,001 / 0,01 / 0,1 / 1 / 10 / 100 / 1000.

The stability indicator on the left-hand side of the display indicates which accuracy is selected.

LSD Setting (Least significant Digit)

- Press <TARE> to access the “*LSD*” section.
- Use the ▲ key to scroll through the available accuracy standards.
- Select the desired LSD standard by pressing <TARE>.

The standards that can be used are: 1 / 2 / 5 / 10 / 20 / 50 / 100.

The stability indicator on the left side of the display indicates which LSD standard is selected.

Once all three parameters have been set, press and hold the <TARE> button to save the data and return to measurement mode.

The factory settings are:

Factor: 1,0000

Accuracy: 0,01

LSD: 1

13. Animal Weighing Feature

It allows weighing a moving sample (example: living animal). The weight is calculated as the average of a defined number of weighings of the same sample.

Manual Animal Weighing

- Make sure you have selected the “*F Ani*” function in the user menu.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until the symbol “” appears on the display.
- It is now necessary to set a countdown value (no. of measurements). Press and hold the ▲ key to access the countdown value selection. Press the ▲ key until the desired countdown value is found and press <TARE> to confirm. The stability indicator on the left side shows the currently selected value.
- Place the animal on the plate and press the <CAL> key to start the measurement process.

- At the end of the countdown the weight of the animal will be displayed.

The selectable countdown options are:

- t-5
- t-10 (default)
- t-20
- t-50
- t-100

Automatic Animal Weighing

- Make sure that “F Anl AUTO” is selected.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “” and “AUTO” appear on the display.
- You must now set a countdown value (see previous procedure).
- Place the animal on the pan. The scale automatically starts the measuring process.
- At the end of the countdown, the weight of the animal is shown.

When the measurement is complete, press the <ESC> key to return to simple measurement mode.

It is possible to switch from the animal weight display to measurement units 2 and 3 at any time by pressing the <UNIT> key.

14. Check Weighing Feature

It allows you to check whether the weight of a given sample falls within a certain range or reaches a set value (target).

Check Weighing

- Make sure you have selected the “F CHW” function in the user menu.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “CW” appears on the display.
- The scale now needs to know the tolerance range and target value.

Tolerance Range and Target Value Setting

- Press and hold the ▲ key to access the setting menu.
- Use the ▲ key to scroll through the “TARGET”, “HI” and “LOW” items.
- Press the <TARE> key on the parameter you want to change.
- Using the ▲ and ► keys, set the desired number.
- Press the <TARE> key to confirm.
- Press and hold <TARE> to save settings and return to measurement.
- Place the sample on the pan, the display will show the result in accordance with the interval and target settings entered.
- If “LL” appears, it means that the sample weight is below the minimum limit of the range setting.
- If “HH” appears, the sample weight is above the maximum limit of the set range.
- In addition to “LL” or “HH”, if the sample weight is outside the set range, the scale emits an audible alarm.
- To display the sample weight when the scale shows “LL” or “HH”, press the <CAL> key.

15. Formulation Feature

It allows you to have the sum of many individual measurements as a result. The maximum limit is 99 individual measurements.

Manual Formulation

- Make sure you have selected the “F Form” function in the user menu.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.

- Press the <UNIT> key until “*Fol*” appears on the display.
- Place the sample on the plate. When “ $\downarrow$ ” appears, the measurement is ready to be added to the total.
- Press the <CAL> key to save the data.
- The display shows “*n-1*”, indicating that the first datum has been stored.
- Repeat the operation for each sample you wish to sum.
- To display the total, press the <UNIT> and <CAL> keys simultaneously.

Automatic Formulation

- Make sure that “*F Form AUTO*” is selected in the user menu.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “*Fol Auto*” appears on the display.
- Place the sample on the pan. When “ $\downarrow$ ” appears, the measurement is ready to be added to the total.
- When stability is reached, the data will be stored. The display shows “*n-1*” indicating that the first datum has been saved.
- Repeat the operation for each sample you wish to sum.
- To display the total, press the <UNIT> and <CAL> keys simultaneously.

With this mode there is no need to give any storage command, the data is stored automatically when stability is reached.

Note: An item can only be added if it is 20 digits higher than the previous one.

16. Totalization Feature

It allows the summation of several independent piece counts. The result is expressed in “*PCS*” (quantity of items). A maximum of 99 separate quantities can be added up.

Manual Totalization

- Make sure you have selected the “*F CHW*” function in the user menu.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “*tot*” appears on the display. A reference quantity must now be set.
- Press and hold the ▲ key to enter the reference quantity menu. The last value used will be shown, which can be changed using the ▲ key (5, 10, 20, 50, 100 pieces).
- Place the corresponding number of items on the pan and press the <TARE> key.
- When stability is reached, the scale will have calculated the average reference weight.
- Add the items to be counted on the pan, when the “ $\downarrow$ ” symbol appears the scale is ready to sum the values.
- Press the <CAL> key to store the data. The display shows “*n-1*”, indicating that the first data item has been saved.
- Proceed by adding further items and pressing <CAL> to sum and save the data.
- Press the <UNIT> and <CAL> keys simultaneously to display the total.

Automatic Totalization

- Make sure that “*F CHW AUTO*” is selected in the user menu.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “*tot Auto*” appears on the display.
- Repeat steps 5, 6 and 7 as in the manual procedure.
- When stability is reached, the data is stored and “*n-1*” appears on the display.
- Proceed by adding new samples to count and wait for stability.
- Press the <UNIT> and <CAL> keys simultaneously to display the total.

17. Density Determination Feature

The scale can determine the density of an element, using the **Density Kit** accessory (sold separately).

Density Determination

To calculate the density, it is necessary to know the type and temperature of the liquid in which the sample will be immersed.

- Make sure you have selected the “*F Den*” function in the user menu.
- Press the <UNIT> key until “*Den*” appears in the display.
- Press and hold the <UNIT> key to open the “*Temperature-Liquid*” setting menu.

Temperature Setting

- Using the ▲ key go to “*Temp*” and press <TARE> to confirm.
- Using the ▲ and ► keys set the liquid temperature value and press <TARE> to confirm.

Liquid Selection

- Scroll to “*Liquid*” with the ▲ key and press <TARE> to confirm.
- Scroll through the various options with the ▲ key (“*H2O*”, “*Ethanol*” and “*Other*”) and select the correct one with the <TARE> key.

Mode Selection

- Go to “*Mode*” with the ▲ key and press <TARE> to confirm.
- Scroll through the various options with the ▲ key: (“*Compensated*”, “*Uncompensated*” and “*Purity of Gold*”) and select the desired one with the <TARE> key.
- Press and hold <TARE> to save the settings and return to measurement.

Notes: Factory settings: T= 25 °C - H2O - Compensated. Gold purity is expressed in carats.

The temperature setting is only activated if the set liquid is H2O or ethanol. For other types of liquids, no temperature setting is possible. The appropriate optional accessory is required for density determination.

- Mount the density determination kit on the scale.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “*Den*” appears on the display.
- Press the <CAL> key to start the density determination procedure.
- The scale asks for the weight of the sample in air (“*Wt.Air*”). Place the sample on the plate of the density determination kit and when the measurement is stable press <CAL> to confirm.
- You are now asked for the weight of the sample in liquid (“*Wt.Liqd*”). Immerse the sample in the liquid, and when the measurement is stable confirm with the <CAL> key.
- The scale shows the result according to the selected mode (compensated, uncompensated and gold purity).

18. Pipette Calibration Feature

Parameter Setting

- Make sure you have selected the “*F Pip*” function in the user menu.
- Calibrate the scale by pressing the <TARE> key.
- Press and hold the <UNIT> key for two seconds to enter the “*F Pip*” function menu.

Cycles Counting

- Use the ▲ key to go to “*COunt*” and press <TARE> to enter.
- The display shows “*n-5*”, where “*n*” is the number of cycles you want to perform for pipette calibration (can be set from 5 to 15).
- Use the ▲ key to change the value and <TARE> to confirm.

Temperature Setting

- Use the ▲ key to go to “*tEMP*” and press <TARE> to enter.
- Using the ▲ key, select the desired temperature between 15°C and 30°C, in 0,5°C steps.
- Press <TARE> to confirm.

Pressure Setting

- Use the ▲ key to go to “*PrES*” and press <TARE> to enter.
- Using the ▲ key, select the desired pressure between 800 hPa and 1050 hPa, in steps of 50 hPa.
- Press <TARE> to confirm.

Setting Initial Volume

- Using the ▲ key go to “V 0” and press <TARE> to enter.
- Using the ▲ and ► keys set the value for the initial pipette volume and press <TARE> to confirm.

Setting Central Volume

- Using the ▲ key go to “V Half” and press <TARE> to enter.
- Using the ▲ and ► keys set the value for the pipette centre volume and press <TARE> to confirm.

Final Volume Setting

- Using the ▲ key go to “V Full” and press <TARE> to enter.
- Using the ▲ and ► keys set the value for the pipette full volume and press <TARE> to confirm.

Pipette Calibration Procedure

- The procedure will be repeated “n” times, where “n” is the number of cycles set in the “COunt” parameter.
- Press the <CAL> key to start the procedure.
- The scale will prompt for “Vo” first: place the liquid quantity corresponding to the initial volume set in the parameters on the pan and press <CAL> to proceed. The data will be stored as “Place 1”.
- Repeat the procedure from “Place 1” to “Place n”.
- You will then be prompted successively “n” times for the centre volume and the maximum final volume.
- Repeat the procedure until “PiP done” appears. At this point the calibration is finished.

19. Statistics Feature

It is possible to obtain statistical data on the measurements taken. Details are provided, including number of readings, average, minimum and maximum value, standard deviation, etc.

Recording Statistics

- Make sure you have selected the “F Stat” function in the user menu.
- Place an empty container on the pan.
- Calibrate the scale by pressing the <TARE> key.
- Press the <UNIT> key until “FStat” appears on the display.
- Place the sample on the weighing pan. Wait for stability and press <CAL> to store the first data (“n-1”).
- “rmv” appears on the display: remove the sample from the pan.
- It will only be possible to record the next value if the measurement first returns to 0,0000 g.
- After removing sample 1 from the plate, place the second sample (“n-2”) and press <CAL> to record it.
- Repeat for all necessary samples.

Reading Statistics

To view the recorded statistics, press and hold the <UNIT> key for 2 seconds. The symbol “*” appears on the display to indicate that you are in statistics reading mode. The following values will be displayed, in order:

- No. of readings.
- Average.
- Minimum value.
- Maximum value.
- Standard deviation.
- Difference.
- Variance.

Press the ▲ key to switch from one parameter to the next. Press the <ESC> key to return to measurement.

Deleting Statistics

Pressing the <TARE> key for 2 seconds deletes all recorded statistics.

20. Unit of Measurement

The scale can convert the result into 3 different units of measurement. By default, these are set:

- unit 1 = g
- unit 2 = ct
- unit 3 = g

Selection between unit 1, unit 2 and unit 3: pressing the **<UNIT>** key switches between units 1 and 2, 2 and 3 etc. In the menu you can set the 3 units to be used. You can choose from the following preset units:

Unit		Conversion factor
g	gram	1
kg	kilogram	1 kg = 1000g
lb	pound	1 lb = 453.59237g
oz	ounce	1 oz = 28.349523125g
ozt	troy ounce	1 ozt = 31.1034768g
GN	grain	1 GN = 0.06479891 g
dwt	pennyweight	1 dwt = 1.555173843g
ct	carat	1 ct = 0.2g
mg	Milligram	1 mg = 0.001g
mo	momme	1 mo = 3.749999953 g
m	mesghal	1 m = 4.6083162
H tl	Hong Kong tael	1 Htl = 37.42900 g
S tl	Singapore tael	1 S tl = 37.799366256g
† tl	Taiwan tael	1 †tl = 37.499995313g
b	baht	1 b = 15.1999998438g

21. Stability filter

A stability filter can be set to adapt the scale to external conditions for the best possible result.

- **1** = Very stable external conditions. Very fast measurement, but very sensitive to external influences (vibration, etc.).
- **2** = "Normal" condition (factory setting).
- **3** = Unstable external conditions. The scale is slower but less sensitive to external influences.
- **4** = Extremely unstable external conditions. Measurement slow but less sensitive to external influences.

22. Calibration

For greater measurement accuracy, let the scale warm up before calibration.

This should be done at the place of use and at regular intervals.

Two calibration modes can be selected:

- **CAL Int**: internal calibration, using the scale's internal sample mass.
- **CAL Et**: external calibration, using a certified external sample mass.
- **Cal Off**: calibration is switched off.

Internal calibration

- Switch on and wait for the warm-up time.
- Make sure there is no weight on the plate.
- Close the glasses.
- Show "0,0000 g" on the display.
- Press and hold the **<CAL>** key 3 seconds = "Cal Int".

The automatic internal calibration process begins.

When "Int.Done" appears, the process is finished and the scale returns to measuring mode.

External calibration

- Switch on and wait for the warm-up time.
- Make sure there is no weight on the plate.
- Close the glasses.
- Show "0,0000 g" on the display.
- Press and hold the **<CAL>** key for 3 seconds = "Cal Et".

- The display shows the weight to be used for calibration.
- Place the weight for calibration in the centre of the weighing pan (*the weight must be in the appropriate accuracy class*).
- Wait for "CAL donE" to appear.

The scale returns to measurement mode, ready for sample weighing.

Calibration Test

It is possible to activate or deactivate the Calibration Test function. If activated, the calibration test will be performed for both Internal and External calibration.

23. Auto Zero Tracking

This menu item allows you to activate or deactivate the Auto Zero tracking function: if the scale detects small variations from the 0 point, due to dust particles for example, it automatically corrects them and returns the reading to 0.

24. Data Transmission

The scale is equipped with a serial port for connection to a PC or external printer.

- Type: RS232 serial interface
- Operational method: Full duplex
- Standard: RS232
- Transmission speed: 300, 600, 1,200, 2,400, 4,800, 9,600, 19,200, 57,600
- Parity: Mark, Space, Odd, Even, none
- Format: 1 start bit, 8-bit ASCII, 1 or 2 stop bits.
- Output format: 26 characters.

Setting Baud Rate (data transmission speed)

This setting determines the data transmission speed. 1 Baud [Bd] = 1 bit/sec.

Setting Parity Bit

The following configurations are available:

- None (factory setting)
- Odd
- Even
- Mark
- Space

Setting Stop Bit

It allows you to select the stop bit for data transmission and you can choose:

- Stop bit 1 (factory setting)
- Stop bit 2

Print Mode Selection

Menu for selecting data transfer mode to a peripheral device (RS 232/PC printer).

- **Prn. Req:** press the <PRINT> key to print the value.
- **Prn. Con:** measurements are printed continuously, independent of stability.
- **Prn. Off:** printing is disabled.
- **Prn. Aut:** the measurement is printed out automatically when a difference of 1 digit in weight is recorded and the measurement is stable.
- **Prn A.Ld:** the measurement is printed automatically when a difference of ± 10 digits in weight is recorded and the measurement is stable.

GLP activation

"GLP Off" (factory setting): data printout is not ISO/GLP/GMP conform.

"GLP On": the printout is ISO/GLP/GMP conform.

GLP ON		GLP OFF	

21-Dec-15	03:46PM		
ABC Co. Ltd.			
Model	BL224	App	: F Per
Ser.no.	9930508	Unit1	: g
Ver.no.	R0.1.04	Unit2	: ct
ID	1234567	Unit3	: g
-----		Stb	: 2
App	: F Per	Cal	: Ext
Unit1	: g	Cal test	: Off
Unit2	: ct	Azt	: On
Unit3	: g	Baudrate	: 9600
Stb	: 2	Parity	: None
Cal	: Ext	Stop bit	: 1
Cal test	: Off	Print	: Request
Azt	: On	GLP	: On
Baudrate	: 9600	Auto Off	: Off
Parity	: None		
Stop bit	: 1		
Print	: Request		
GLP	: On		
Auto Off	: Off		

21-Dec-15	03:46PM		
Name:			

Date and Time

To enter, press the <ON/OFF> key and hold the <PRINT> key for 2 seconds. The following will be requested in order:

- Time - hours, minutes and seconds and AM, PM or 24h format will be requested.
- Date - day, month and year will be requested.

Time

The current time is displayed. The flashing digit is the editable one.

- Press the ▲ key to change the value, press the ► key to move to the next digit. Press the <PRINT> key to select AM, PM or 24h format.
- Once the correct time has been set, press the <TARE> key to confirm and move on to the date.

Date

After confirming the time with the <TARE> key, the current date (dd/mm/yy) is displayed.

- Use the ▲ key to change the value, use the ► key to move to the next digit.
- Once the correct date has been set, press the <TARE> key to confirm.

ID and LID Setting

To enter, press the <ON/OFF> key and quickly press the <PRINT> key. Following will be requested in order:

- ID - identification number.
- LID - production lot identification number.

Use the ▲ key to change the value, use the ► key to move to the next digit.

Once the desired value has been entered, press the <TARE> key to confirm and move on to the next parameter.



Electrical and electronic equipment with this symbol affixed may not be disposed of in public landfills. In accordance with the WEEE Directive 2012/19/EU, European users of electrical and electronic equipment have the option of returning used equipment to the Distributor or Manufacturer when purchasing new equipment. Illegal disposal of electrical and electronic equipment is punishable by administrative fine.