MF FA-C FA Series Electronic Balance Analytical Scale User Manual

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Contents

Preface

Thank you for purchasing the FA series electronic balance scale.In order to get a better experience,please read this manual carefully and follow the safety operation regulations!
Please keep this instruction manual for reference when needed!

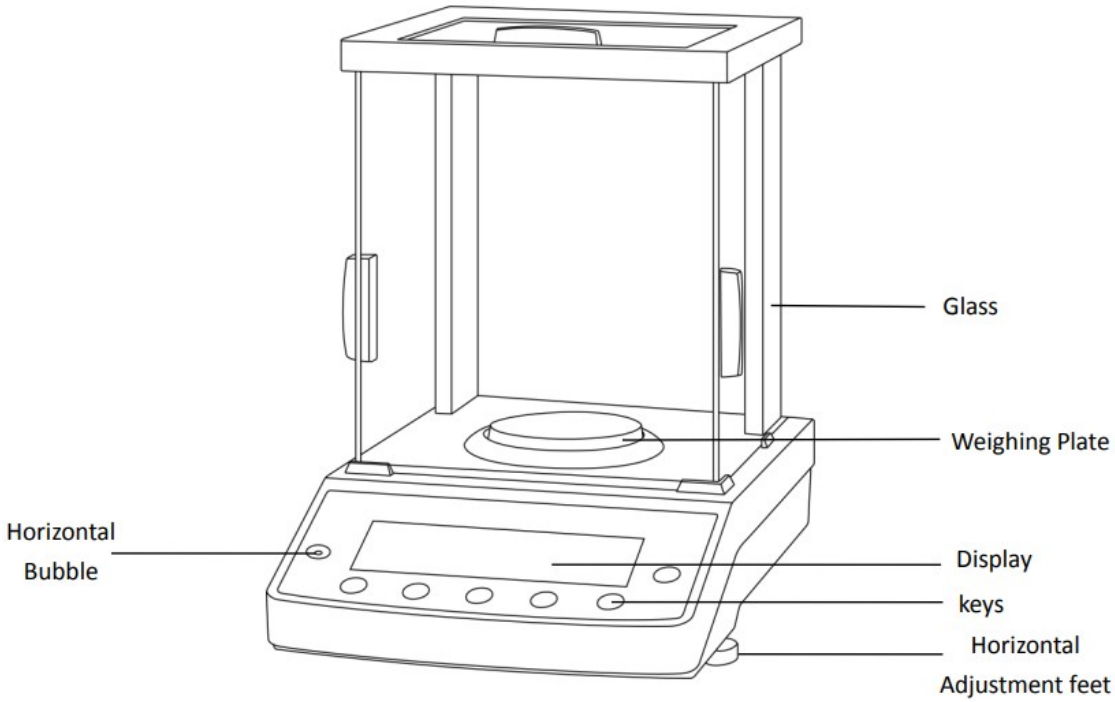
NOTES:

- Please ensure that only personnel with relevant training can operate and use this instrument.
- Please comply with relevant regulations such as safety regulations, personal safety and accident prevention.
- Please fully insert the power plug of the balance into the power socket, please do not use a power source other than the specified one.
- Do not plug or unplug the power plug with wet hands.
- Do not damage, modify, pull, excessively bend or twist the power cord, and do not place heavy objects on the power cord.
- Please place the instrument on a stable, clean, non-slip, dry and fireproof surface, and avoid direct sunlight, severe temperature fluctuations and air convection.
- Please do not place anything on the balance.
- Please check the instrument and accessories before each use to ensure that they are not damaged.
- Attention! Before operating the instrument, please warm up for at least 120 minutes to ensure the accuracy of the balance!
- The balance is powered on when it is plugged in. The balance has been energized for a long time without preheating.
- Please select the appropriate protective device according to the type of weighing medium.
- For continuous use every day without turning off the power, just turn off the display.
- If the balance is not used for more than 5 consecutive days, the power cord plug should be disconnected.
- When handling toxic and volatile media, please do it in a suitable fume hood.
- Do not disassemble and adjust the parts of the instrument at will. When the spare parts are damaged, please only use the original spare parts for replacement.
- When the equipment fails, the power supply should be cut off in time and contact our company for maintenance guidance or return to the factory for maintenance as soon as possible.
- If you find abnormal readings of the balance, peculiar smell or abnormal noise during use, you should cut off the power immediately, and then contact our after-sales service department as soon as possible.
- The weighing pan and the shell should be gently scrubbed with a soft cloth and toothpaste frequently, and must not be scrubbed with a strong solvent.
- When cleaning the instrument, please turn off the instrument, and only after cutting off the power supply!

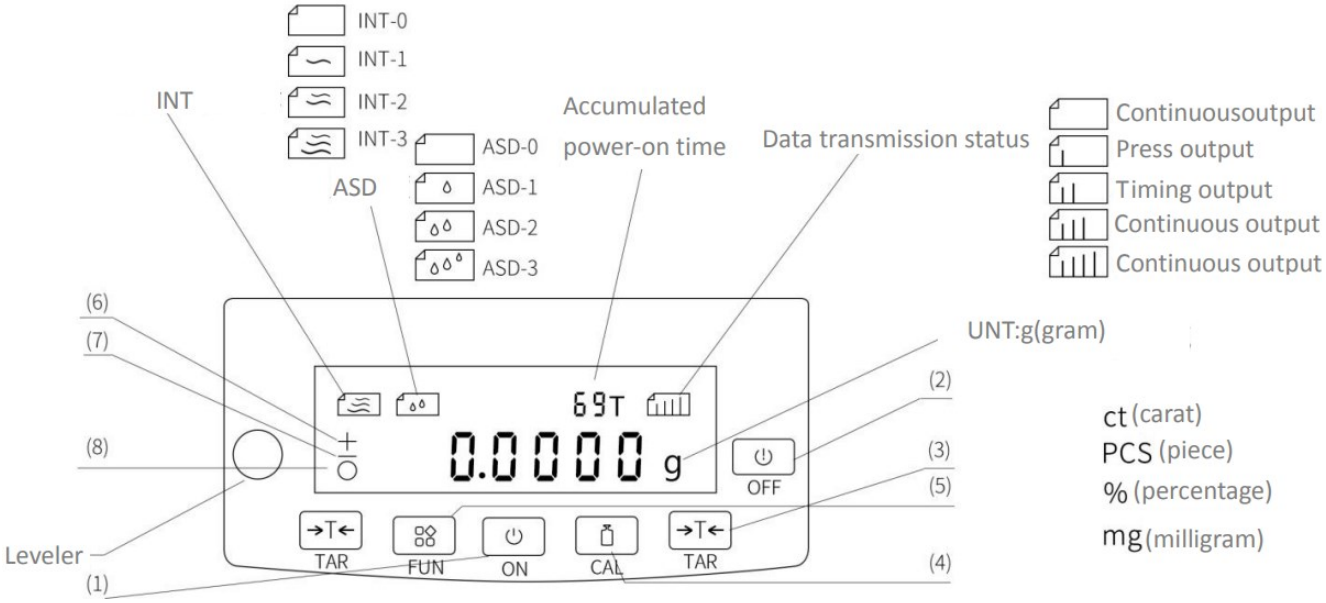
Overview

The FA series high-performance electronic balance scales are the new generation of products developed by our company. It uses a high-precision electromagnetic force balance sensor, improving the reliability of the balances even further.Use tactile feedback buttons to ensure accurate and effective operation.The balance is designed and manufactured with a fully transparent sealed cover, which is beautiful in appearance and easy to use.It can be widely used in industry, agriculture, commerce, schools, scientific research and other units as a rapid determination of the quality and quantity of objects.

Structure



Display and keys as icon:



1. (ON)Turn on key/Function key
2. (OFF)Turn off key
3. (TAR)Tare key(Zero Out)
4. (CAL)Calibration key
5. (FUNC) Confirmation key/Function Selection
6. Positive symbol
7. Negative symbol
8. Stability symbol

Festures

The FA series electronic balance scale has the following characteristics:

- Weighing fast.The weighing speed is faster than the average mechanical balance, and it has adjustable speed.
- It’s easy to learn the operation,and has mass unit conversion. The software system of the FA series electronic balance scale provides users with the ability to select ant unit,users can choose from a wide range of internationally used mass units provided by the software.
- Highly intelligent.It can display tare,zero,overload and underload in full range.
- It has a variety of functions such as counting.
- The built-in RS232C interface can be connected to computers, printers and other equipments.

Technical parameters

Model	FA124FA124C	FA224FA224C	FA324FA324C
Accuracy Class			
Max Capacity	120G	220G	320G
Division	0.0001g		
Repeatability	±0.0002g		
Max allowable error	Losd mVarification Scale value e		
±0.5e	0≤m≤5000	±0.5e	
±1.0e	5000 m≤20000	±1.0e	
±1.5e	20000 m	±1.5e	
Stabilizationtime	≤4s		
OperationTemp.	15℃ 30℃,fluctuation range 2℃/h		
Relativehumidity	40%~80%		
Plate size	Φ80mm		
Weight	7.2kg		
Power Supply	AC Adapter 110V 50Hz Output DC9V-2.2A		

Device Installation

The choice of working environment

The FA series electronic balance scale can speed up the weighing speedand improve the weighing accuracy when weighing under the conditions of a conventional laboratory or an industrial measuring room. If conditions do not permit, the working environment should be selected according to the following requirements:

1. The working room should be clean and dry.
2. The balance scale should be placed on the steady,fixed table.

3. Better to place the table far away from the door and window to avoid the influence of airflow.
4. The workbench should be set up in a place that is less disturbed by vibration. The surrounding area of the room is less affected by vibration and is an ideal location for placing the workbench.
5. The balance should be placed in a place that is easy to cause temperature changes, such as avoiding direct sunlight and away from heaters.
6. Keep the balance away from objects and equipment with magnetism or capable of generating magnetic fields.
7. The balance shall not be used in areas with explosive hazards.
8. Do not use the balance in a high humidity or high dust environment for a long time.
9. The best ambient temperature is 20 degrees Celsius ± 5 degrees Celsius, and the best humidity is 50-60%RH.
10. When moved from a colder place to a warmer place, the accuracy and reliability of the scale will be influenced by the moisture condensation inside the balance. To eliminate this influence, it's best to put the scale in the working place without power supply for 2 hours.

Installation

Install the wind-proof ring and the weighing pan in turn, (the white film is a protective film, which can be removed when installing), plug the external power cord plug into the balance, and then plug the output plug into the power supply (input voltage 110V) and wait for it to turn on.

Using instrument

Please place the balance horizontally before using the balance.Correcting the adjustable feet to make the bubble in the center,and then tap the 'ON'key to turn on the display quickly.The internal calibration balance will automatically warm-up for 30 minutes after power on.You can skip this procedure by pressing the 'TAR'key and go to the working state directly

Calibration
The FA series electronic balance is designed and manufactured based on the 'electronic magnetic balance principle'.The gravity is the most prominent among the many factors that may have an impact on its accuracy.Different geographic regions and different gravitational forces will inevitably result in different values of the scales.For example,the South and the North reflect different weighing.So we can calibrating the balance to eliminate it.
In addition,when the balance works for a long time,due to the influence of temperature,humidity and other environmental factors,the balance may produce small error.We can also use the calibration method to eliminate these errors.
Therefore,when using a newly purchased balance for the first time,or moving from one place to another to use the balance,the balance must be more accurate.

Calibration weights
A standard weight for calibration (accuracy 0IMLF2 or above) should be prepared as required:

Model	Calibration weights
FA124 FA124C	100g
FA224 FA224C FA324 FA324C	200g

Calibration Steps
Preheat the FA series balance scale for 2 hours before calibration.

Take FA2004 as an example,Weighing no-load,press ‘TAR’key,the balance display 0.000g,Then press ‘CAL’key,The’CAL-100’ flash on the display,place the 100g calibration weight on the plate and wait for seconds until the weight value display changes to ‘100.0000g’.The calibration is over,and you can weigh up.

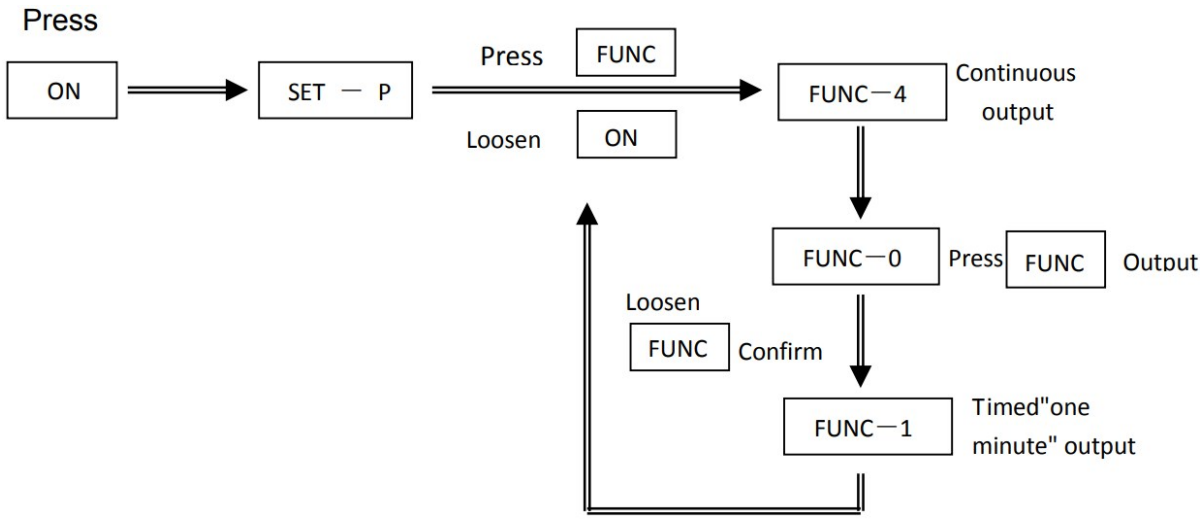
The internal balance scale has internal calibration weight,it will preheat for 30 minutes after power on everytime.User can skip it by pressing the ‘TAR’key,and press the ‘CAL’key to calibrate until value display changes to ‘0.0000’.

If you have another calibration weight,press the ‘CAL’key first,After jumping out of the value and returning to zero,then press the ‘ON’ and ‘CAL’keys at the same time,After jumping out the value, put the corresponding weight, remove the weight to return to zero and press the ‘CAL’key,and you can weigh after returning to zero.

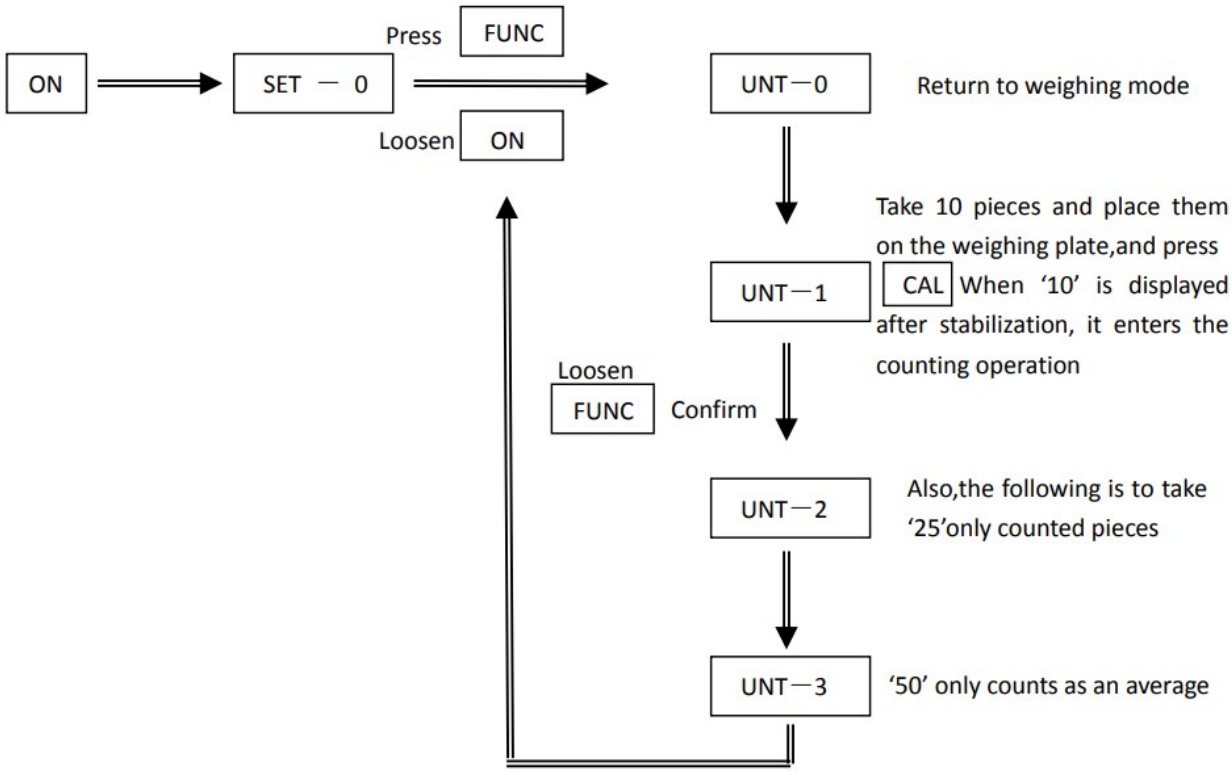
Mass unit conversion

User presses and hold the ‘FUNC’key in the power-on state,the UNIT-1 displayed is the unit ‘g’;UNIT-2 is the unit ‘CT’;UNIT-3 is the unit ‘OZ’;UNIT-4 is the unit ‘mg’,selected unit release is the required unit.

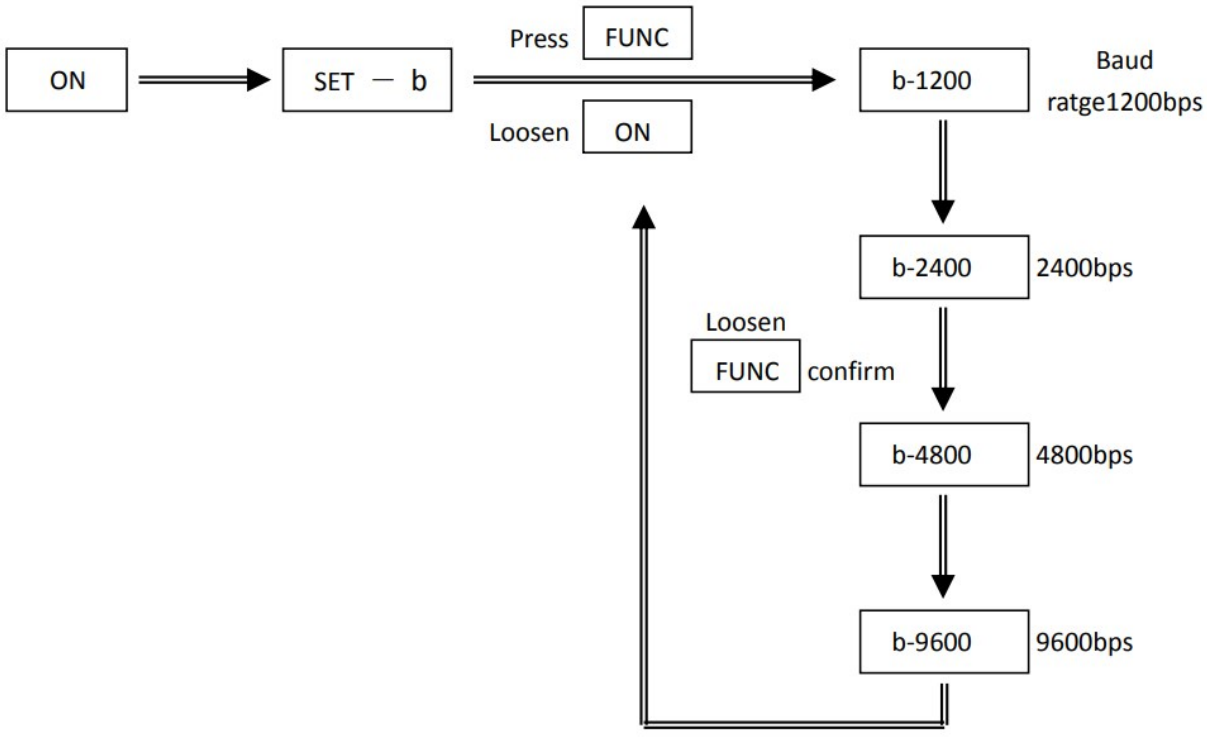
Data output setting



Counting function



printing the baud rate



Output interface

Users sometimes need to print out the weighing data through a printer or input it into a computer or other external devices during using the balance.To meet the user's needs, an RS-232C interface is installed at the rear of the balance.Connection methods:

1	2	3	4	5	6	7	8
MODEL	SPACES	SPACESOR *	SYMBOLS + OR –	DATA	DATA	DATA	DATA OR DECIMALPOINT

9	10	11	12	13	14	15	16
DATA OR DECIMALPOINT	DATA	DATA	DATA	UNIT 1	UNIT 2	ENTER	LINE FEED

Maintenance

The FA series electronic balance is a precision mechatronics intelligent measuring instrument, so it must be treated as seriously and carefully maintained as other precision instruments.

1. Do not use sharp objects (such as pencils, ballpoint pens) to press keys, but only use fingers to press keys.
2. Be careful not to let objects fall from a height on the weighing pan, so as not to damage the weighing mechanism.
3. Do not expose the balance to high humidity or dusty environment for a long time.
4. After the balance is used up, it is best to cover it with a cover to prevent dust from intruding.
5. Keep the balance clean and dry.
6. Matters needing attention when cleaning:
    1. Before cleaning, unplug the power supply;
    2. Do not use corrosive cleaning agents (such as solvents). Use a lint-free soft cloth soaked in water and then some neutral detergent for cleaning.
    3. When cleaning, be careful not to let water drop into the balance;
    4. After cleaning, wipe the balance carefully with a soft, dry, lint-free cloth.

Troubleshooting

Malfunction	**Reason**	**Approach**
NO display	No power supply; Power transformer is broken;	Plug in adapter;Change the fuse power transformer; If it is broken again, please send it to the maintenance department to repair;
Unstable display	Bad working condition; The windshield is open;Something between the scale pan and working table.The power exceeds its permissible value and is unstable;Unstable goods(moisture evaporation)	Improve the working condition, avoid vibration and airflow;Close the windshield; Take out eyewinker;rotate the weighing pan to prevent it from scratching;Connect 110V AC power supply;
Difference between displayed value andactual value	The scale hasn’t been calibrated; Not turn to zero;Not horizontal;	Calibration; Tare;Adjust level;

Unpacking and inspection

Please unpack the instrument carefully and check the parts against the packing list in the appendix of this manual.Please contact our company for any damage that is found in time.

Packing list

NO.	NAME	QTY
1	Main scale	1
2	Scale pan	1
3	Adapter	1
4	Operation instruction	1
5	Wiping cloth	1
6	Glove	1

Appendix

Appendix 1

The scale connecting to the computer:

1. Click ‘Start’
   Procedure
   Appendix
   Communication
   Super terminal
2. Input the name;Select the icon,then click confirmation.
3. Ignore the first two steps,choose ‘‘N’: com 1’, click confirmation.
4. Select:
    1. Baud rate:1200(or 2400 according to the manual)
    2. Data bit:8
    3. Parity Check:NO
    4. Stop bit:1
    5. Control of the data flow:Hardware

Click confirmation and it will show the measuring value on the computer.

*Tips: Please keep the instrument packaging properly, the original packaging is required when returning for repair.

Documents / Resources

	MF FA-C FA Series Electronic Balance Analytical Scale [pdf] User Manual FA-C FA Series Electronic Balance Analytical Scale, FA-C, FA Series Electronic Balance Analytical Scale, Series Electronic Balance Analytical Scale, Electronic Balance Analytical Scale, Balance Analytical Scale, Analytical Scale, Scale

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