

# **High Precision Balances**

**iBalance 601**

**iBalance M01**

**(LED Display)**










**Operation Manual**

KD-TBED-en,V1.2-2005

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### XV. Select the range of zero track and zero display

Press the key  until the display shows "0.5d. 1.0d. 1.5d. 2.0d. 3.0d" to power on, press the key  to select the range of zero tracking, press  to confirm. Then it will display "ZEr-S" or "ZEr-L", press  to select the zero display range (ZEr-S mean 0d, ZEr-L mean  $\pm 3.0$  d), press  to confirm, then choose the Communication method by pressing the  Key to rotate/revolve (Con: send in succession; stable: send steadily) and  key for confirmation, then start to select the baud. Press  key to change/revolve and choose "1200" or "2400" or "9600", then press the  key for confirmation. The scale will return to the normal weighing state.

## XII. Options




RS-232 interface

## XIII. Calibration

Press and hold  to power on , release the key at the end of the self-test, the display will show "CAL 0" . Then it will display the calibration weight needed (e.g. CAL 600g), when "chirp" is heard, place the weight on the pan. The calibration is finished after "chirp" is heard again.

**Note: The weight placed on the pan is not correct if the display shows "err1".**

## XIV. Weight response speed

Press the key  until the display shows "nb0" or "nb1" or "nb2" or "nb3", then press the key  to select (nb0: the slowest , nb3: the fastest), press the key  to confirm, and the scale will return to the normal weighing state.

## I. Attention Notes

To enable you to use this scale precisely, we suggest you to read these instructions carefully before operation.


1. Do not get the scale wet. If it gets wet, please wipe it with a dry cloth. If damage occurs due to water it will void your warranty.
2. Do not drop or shock the scale and do not drop any item onto the scale or tray. It may cause permanent damage. Only operate the scale gently and place items on the tray gently. Overloading the balance will damage the weighing sensor.
3. Extreme temperature/humidity fluctuations, shocks and vibrations should be avoided at all times.
4. If the scale will not be used for a long time, please remove or unplug the battery, clean the scale and store in a non-static polybag. A desiccant is suggested to be included.
5. Matter charged with static electricity can affect accuracy. Discharge all static electricity. For example, one method is to use Static-Guard spray, and spray it on both sides of the weighing platform.

## II. Transport Protection

Before the initial use, please refer to the included drawings to remove the protection screw. Please re-install the protection screw before transport to help avoid possible damage.

## III. Precautions Before Using the Balance

1. The balance must be in an exactly horizontal position in order to achieve accurate measurement results.

2. Please use an independent power outlet to avoid interference by other electrical appliances.
3. In order to bring the balance into a horizontal position, the adjustable feet are turned either clockwise or counter-clockwise until the air bubble is in the center of the marked circle.
4. Don't put any object on scale before powering on.
5. When possible please allow the scale to warm up for several minutes before operation.
6. Items should always be placed on the center of the platform when being weighed.
7. When the "  " LED lights is lighting means , the rechargeable sealed lead-acid battery need to be recharged.
8. Operating temperature range : 0°C ~ 40°C.
9. For optimum accuracy, recalibrate before each use.

#### IV. Specification

model	iBalance601	iBalanceM01
Maximum capacity	600g	1000g
Display scale interval (d)	0.01g	0.01g
Pan size	Ø116mm	Ø116mm
Power source	Rechargeable battery 6v/1.3Ah or 8.5v 0.2A AC/DC adaptor	

#### V. Explanation of display symbols



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2D (HEX) = “-”(negative sign) 20 (HEX) =“ ”(blank)

2E (HEX) =“.”(decimal point)

UNIT (4 byte)

g= 20 (HEX) ; 20 (HEX) ; 20 (HEX) ; 67 (HEX)

kg= 20 (HEX) ; 20 (HEX) ; 6B (HEX) ; 67 (HEX)

ct= 20 (HEX) ; 20 (HEX) ; 63 (HEX) ; 74 (HEX)

ozt= 20 (HEX) ; 6F (HEX) ; 7A (HEX) ; 74 (HEX)

CR= OA (HEX) ; OD (HEX)

#### Transmission example

1. Ex. : stable net + 0.168 g

HEAD , HEAD , DATA UNIT CR


ST , NT , + 0.168 g OA, OD

#### XI. Power Supply and Recharging the battery

##### Alternative Power Supplies

1. DC 6V/1.3Ah rechargeable sealed lead-acid battery.
2. 8.5V / 0.2A AC/DC power adaptor.

##### Low voltage indication

When the “  ” LED is lighting , the battery needs to be recharged. The balance will automatically shut off when power voltage goes down to 5.2V ± 0.15V. Low voltage may also cause inaccuracy or instability.

**\*\*SPECIAL WARNING\*\***

Cell-Phones, Cordless-Phones, and any radio-frequency device can cause temporary interference and cause the scale to temporarily not work properly. Please do not use any electronic device near the i101. Just like in an Airplane, do not use your cell-phone near the scale when it is in use. While there is NO risk of permanent damage to the scale, interference can cause an incorrect calibration or incorrect weight readings.

**X. Data transmission – series RS-232 interface**

(only for communication )

1. iBalance 0232C's UART signal
2. Format
  - (1) Baud rate : 1200 bps 2400 bps 9600 bps
  - (2) Data bits : 8 bits
  - (3) Parity bit : none
  - (4) Stop bit : 1 bit
  - (5) Code ASCII

DATA FORMAT :

HEAD1	HEAD2	DATA	UNIT	CR
1 2 3 4 5 6	7 8 9 10 11 12	13 14	15 16 17 18	19 20

HEAD1 (2BYTES)

HEAD2 (2BYTES)

**OL** - overload





**NT** – net weight mode

**ST** – stable

**US** - unstable

DATA(8BYTE)

**Explanation Of Display Symbols**

-  : Scale is in ZERO mode.
-  : Scale is in TARE mode.
-  : Scale needs recharging once this battery appear
-  : The display reading is in STABLE condition.
- Pcs : Scale is in COUNT mode .
- Ct : The unit is ct .
- ozt : The unit is ozt .
- g : The unit is g .
- In charge : Scale is in the process of recharge .

**VI. Keypad functions**

: ON/OFF power switch.



: For weight unit (g , ozt & ct ) selection.



: This key is used for sampling & counting.



: This key is used to deduct the weight of an Item or container. Press tare again to exit the tare mode (when empty), then the tare indication will disappear.






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: Zero key, press this key to return the display to zero if a small weight reading is left while unloaded/empty.

## VII. Counting function

### Sampling

1. Press  key, the display will show "Cnr10pcs" (means sample size is 10 pcs)
2. Press the  key again and again, 10, 20, 50, 100 pcs will appear in succession. Stop at the one you want to use.
3. Put the exact quantity of samples as desired on the pan and press , the determined sample size will be shown.
4. Keep adding objects to be counted on the pan, the total number of the objects will be displayed.

※ If the unit weight is **too small for the counting resolution**, "Err PCS" will be shown.




## VIII. Operations

- Weight units

Press  key to choose the preset weight units **g, ct & ozt**.


- Tare function

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Put a container on the pan and press  when the display reading is stable. The tare weight will be stored into memory and display will be brought to zero. "  " indication in the display will appear. The weight will be displayed as net weight. To cancel the tare mode, press  when no load on the weighing pan.


※ Tare range : Up to balance's maximum capacity.

- Zero function

Press  key to return the display to the center of zero if the zero Shifts during operation.

※ Zero range : ± 2% of max. capacity

## IX. Error messages

When the display shows "  " it means that the balance is overloaded. Please remove the object from the pan immediately so as to avoid damage to the load sensor inside the balance.