High Precision Balances

iBalance 601

iBalance M01

(LCD Display)

Operation Manual

KD-TBCD-myweigh-en, V5.1-2006

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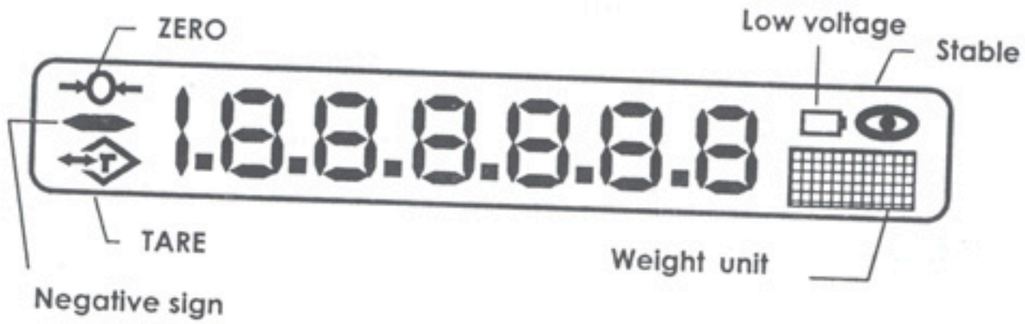
1. The balance must be in an exactly horizontal position in order to achieve accurate measurement results.
2. Please use an independent power outlet to avoid interference by other electrical appliances.
3. In order to bring the balance into a horizontal position, the adjustable feet are turned either 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 Power-LOW indicator " ▭ " is shown on the top right corner of the screen means, the rechargeable sealed lead-acid battery need to be recharged.
8. Operating temperature range : 0℃ ~ 40℃.
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



VI. Keypad functions

: ON/OFF power switch.

: For weight unit 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).

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

VII. Operations

- **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 (less than 0.8d) for the counting resolution, " Err PCS "will be shown. And then return to normal counting mode after 2s.
5. In counting mode, press [⁂] key will turn to weighing mode.

- **Weight units**

Press [⟲] key choose the needed unit, and the unit indicator will be shown. There are thirteen units—g, ct, oz, ozt, lb, dr, GN, dwt, MM, tl.J, tl.T, 1/8 ounce and 1/4 ounce.

- **Tare function**

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

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

- **Zero function**

Press [→0←] key to return the display to the center of zero if

the zero Shifts during operation.

※ Zero range : ± 5% of max. capacity

VIII. 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.

****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 scale. 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.

IX. Data transmission – series RS-232 interface

(only for communication)

1. 0232C's UART signal
2. Format
   - (1) Baud rate : 1200 bps 2400 bps 4800bps 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)

OL - overload

ST – stable

HEAD2 (2BYTES)

NT – net weight mode

US - unstable

DATA(8BYTE)

2D (HEX) = "- "(negative sign) 20 (HEX) =" "(blank)

2E (HEX) =". "(decimal point)

UNIT (4 byte)

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

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

oz= 20 (HEX) ; 20 (HEX) ; 6F (HEX) ; 7A (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

X. 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.

Consume Current

①In use (backlight off): About 40mA

②In use (backlight on): 90~100mA

Low voltage indication

When the Power-LOW indicator " ▭ " is shown on the top right corner of the screen, the lead-acid battery should 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.

XI. Settings of parameters

- **Calibration**

Press and hold →0← to power on till the end of self-test. The display will show "CA 0 g", then show the weight(unit: g) to be calibrated. Place the weight on the pan according to the display when a "di ...." is heard. The calibration is finished when "di..." is heard again.

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

- **Weight response speed and Division**

Press and hold →T← to power on till the end of self-test. The display shows "**nb0**" or "**nb1**" or "**nb2**" or "**nb3**" or"**nb4**" or "**nb5**" or "**nb6**" or "**nb7**", then press the key →T← to select (**nb0**: the slowest , **nb7**: the fastest), press the key →0← to confirm, and the display shows the current division value, such

as "d 0.01", press [T] to select division value and press [O] to confirm.

- **Single-double range and unit setting**

Press and hold [↻] to power on till the end of self-test. The display shows "**SIn**" or "**dbL**" (SIn: single range, dbL: double Range), press [T] to change/revolve and choose "**SIn**" or "**dbL**" and press [O] for confirmation.

Then display shows "**On** x" or "**OFF** x"("x" is unit); "On" means "enable", "OFF" means "disable". There are fifteen units preset, press [↻] to change/revolve and choose unit; press [O] for confirmation.

The display shows "**init X**" ("X" is unit), press [↻] to change/revolve and choose initial unit; press [O] for confirmation.

The display shows "**A.OFF X**" ("x" is the auto power-off time; Time unit: minute; "0" means auto power-off disabled); In stable weighing status, the scale will auto power-off when the time achieved. press [↻] to change/revolve and choose auto power-off time; press [O] for confirmation.

- **The range of zero track and zero display**

Press and hold [⁂] to power on till the end of self-test. The display shows "**0.5d**" or "**1.0d**" or "**1.5d**" or "**2.0d**" or "**3.0d**", press [T] to select the range of zero tracking, press [O] to

confirm. Then it will display "**ZEr-S**" or" **ZEr-L**" , press [T] to select the zero display range (**ZEr-S** mean 0d, **ZEr-L** mean ±3.0 d),

press [O] to confirm, then choose the baud. Press [T] to change/revolve and choose "bAUd12" or "bAUd24" or "bAUd48" or "bAUd96", press the [O] key for confirmation.

then start to select the Communication method by pressing the [T] Key (Co: send in succession; St: send steadily) , press the [O] key for confirmation, then The scale will return to the normal weighing state.

XII. Table of unit conversions

1 ct	[MET.CARAT]	=	0.2 g
1 lb	[AVOIRDUPOIS POUND]	=	453.59237 g
1 oz	[AVOIRDUPOIS OUNCE]	=	28.349523125 g
1 dr	[AVOIRDUPOIS DRAM]	=	1.7718451 g
1 GN	[GRAIN](U.K)	=	0.06479891 g
1 ozt	[TROY OUNTCE]	=	31.1034768 g
1 dwt	[PENNY WEIGHT]	=	1.55517384 g
1 MM	[MOMME] (JPN)	=	3.749996 g
1 tl.J	[HONG KONG JEWELRY TAEL]	=	37.4290018 g
1 tl.T	[TAEL](TWN)	=	37.49995 g
1 1/8	1/8 OUNCE	=	3.543690390625 g
1 1/4	1/4 OUNCE	=	7.08738078125 g