

**WEIGHING INDICATOR *user manual***

# Model: TI-02

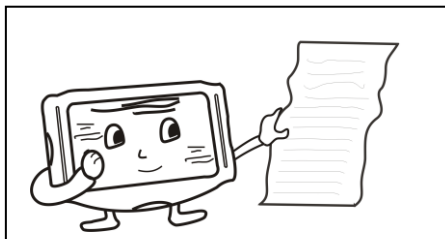
Please read this manual carefully before operation

----Important safety info

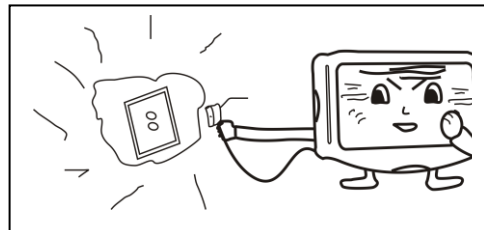
----Operating condition and other attentions

----Guarantee info

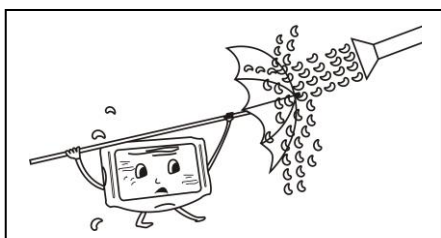
## Important Safety And Operation Info



Please read the manual in details before operation.



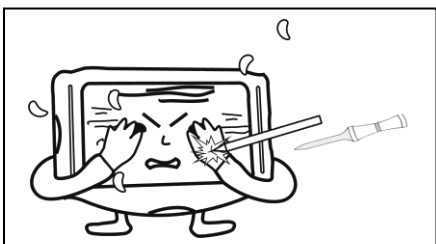
Please use the right plug and right voltage  
Be much attention of 110V or 220V!!!



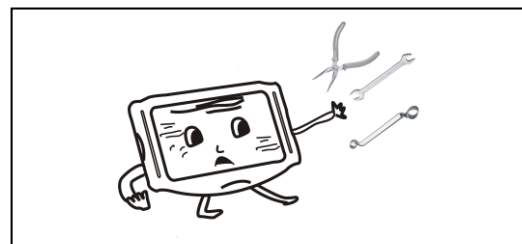
Don't clean the indicator with the flush water.



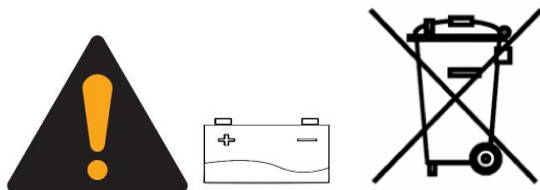
Keep it away from the corruptive gas or liquid.



Don't touch the keypad with the items with sharp end.



Don't open the indicator by yourself and please call the service people or our distributor when you get the problem with it.



Please recharge the scale on time to assure the health of the battery, and replace the battery if it runs out of life. The replaced battery must be handled correctly.

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## **SPECIFICATIONS**

Accuracy: Class III

Nonlinear:  $\leq 0.01\%F.S$

Excitation voltage: DC 5V, up to 4 load cells 350  $\Omega$

Large display connector: Sampling serial output way

Sample rate: 20 times per second (can select)

## **POWER**

Input: 120~240V

Output: 9V/500mA

Rechargeable battery: 6V/1.3AH

## **BEFORE USING**

- 1) Place this product on a firm and smooth place, don't place it in vibration or shaking, use bench for use on four only adjust foot, adjust the balance using the bubble level.
- 2) Use independent source, avoid other electrical disturbance.
- 3) Don't put any object on the platter when turn on the balance.
- 4) Please, turn on 2-3 minutes before using.
- 5) Avoid temperature change too large and air flow strenuous sites.
- 6) Don't overload the balance, don't exceed the maximal capacity.

## **SYSTEM POWER CONSUMPTION**

Main system power consumption: about 12mA

Main system power consumption (with backlight): about 36mA

Main system power consumption (with backlight and RS-232): about 48mA

Battery life: none backlight, about 320 hours.

## **DISPLAY DESCRIPTION**

TI-02 Model:

## BASIC FUNCTION OPERATION



Press and hold this key for 2 seconds to turn off the balance.



**Function 1.** Press this key to turn on the balance

**Function 2.** To reset the weight to "0", but the display value has to be lesser than  $\pm 2\%$  of maximum capacity.

**Function 3.** To subtract the container's weight.

**Function 4.** To move one space to the right or upward in setup mode.



**Function 1.** To select the desired weight unit.

**Function 2.** To exit from setup mode.



**Function 1.** To view gross or net weight when the balance is on tare status.

All other keys will be disabled when gross weight is activated.

**Function 2.** To increase values upward in setup mode.



**Function 1.** Key of confirmation in setup mode.

**Function 2.** Manually transmitting data through RS232 to computer or printer.

**Function 3.** To accumulate weights, the max of the weight times is 9999



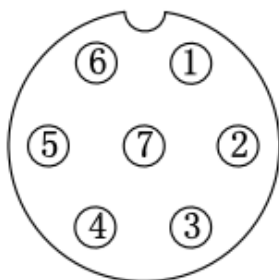
**Function 1.** To recall accumulations

**Function 2.** Long press the key will clear accumulated weight

**Function 3.** To move one space to the left or downward in setup mode.

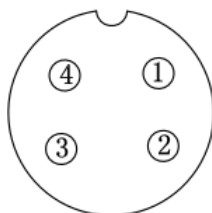
## CONNECTION OF LOAD CELL AND RS232

1) Connection of the load cell to indicator



INDICATOR		LOAD CELL
1	-----	+Excitation
2	-----	+Sense
3	-----	-Excitation
4	-----	-Sense
5	-----	+Signal
6	-----	(GND) shield
7	-----	-Signal

## 2) Connection of RS232 to PC or Printer



INDICATOR		PC/PRINTER
1	-----	RXD
2	-----	TXD
3	-----	GND
4	-----	NC

## **BASIC PARAMETER SETTING**

To access to functions setting, press the and key at the same time in weighing mode. Press the key to select the parameter (UF-1 ~ UF-12)

“\*” This flag indicates that the function is locked when “Approval Version”.

### **UF-1 A/D count**

1. Press the key to view the A/D count.
2. Press the key to view the the battery voltage or press the key to exit  
back to menu UF-1
3. To move to next parameter press the key.
4. To exit and return to normal weighing press the key.

### **UF-2 High / Low limits setting**

1. Press the key to enter.
2. The display will show (set low limit).
3. Use the keys and to move cursor and press the to select number.
4. Press the key to confirm.
5. The display will show (set high limit).
6. Use the keys and to move cursor and press the to select number.
7. Press the key to confirm.
8. The display will show ,look at the remarks below.
9. Use the keys and to move cursor and press the to select

number.

10. Press the  key to confirm.

Remarks:    0     0     0  
                   A     B     C

A --- Buzzer on: 0= Stable not required    1= Stable required

B --- LCD indicator and RELAY on: 0= Stable not required    1= Stable required

C : Buzzer beeps when: 0= Buzzer off    1= OK    2= LO and HI






- Low limit set as 0 will clear all check weigh values.
- This function is locked when UF-5 is set as "HoLD 1"

### UF-3 Auto-power off

Modes: AoFF00 :Auto-turn off disable.

AoFF01 : The balance will automatically turn off after 1 minute of non use.

This time can be set up to 99 minutes.




1. Press the  key to access to auto-power configuration.
2. Use the keys  and  to move cursor and press the  to select number.
3. Press the  key to confirm.

### UF-4 Backlight setting

Modes: lit a : Automatic

lit on : Backlight on

litoFF : Backlight off

1. Press the  key to access to backlight configuration.
2. Use the  key to select the desired mode.
3. Press the  key to confirm.

### UF-5 HOLD function (\*)


Modes: HoLd 0 : Disable


HoLd 1 : Animal (motion) Hold function

**HoLd 2** : Peak value hold (when held can press any key to cancel)

**HoLd 3** : Stable hold (when held can press any key to cancel)

**HoLd 4** : Stable hold (when held can auto cancel at zero)




1. Press the  key to access to hold function configuration.

2. Use the  key to select the desired mode.


3. Press the  key to confirm.

Remarks: **HoLd 1** :

1. Press the  key will show **PCT002**

2. Use the keys  and  to move cursor and press the  to select number, this can set the range from 001 ~ 100 units of the animal hold.

3. Press the  key will show **TIME 8**

4. Use the  key to select 1,2,4,8,16,32 or 64 times within the hold range.


5. Press the  key to confirm.


## UF-6 RS-232 Output

1. Press the  key to enter.

2. The display will show **232 1** .

3. Press the  key to select the modes.

4. Press the  key to confirm, and will show **b 9600** .

5. Use the  key to select the baud rate.

6. Press the  key to confirm.

Modes: **232 0** : RS-232 disable

**232 1** : Stable output – Format 1

**232 2** : Stream output – Format 1

**232 3** : Manual output – Format 1

**232 4** : Stable output – Format 2

**232 5** : Stream output – Format 2

**232 6** : Manual output – Format 2



232 7 : Manual accumulate output – Format 3  
 232 8 : Auto accumulate output – Format 3  
 232 9 : Manual accumulate output – Format 4  
 232 10 : Auto accumulate output – Format 4  
 232 11 ~ 232 13 : LP50 printer is used

Baud rate: B 1200 : Baud rate 1200  
 B 2400 : Baud rate 2400  
 B 4800 : Baud rate 4800  
 B 9600 : Baud rate 9600  
 B19200 : Baud rate 19200  
 B38400 : Baud rate 38400

Remarks:

Format 1 output examples : ST, GS, + 1.0001b


Format 2 output examples : + 1.0001b

Format 3 output examples :

S/N	WT/1b
0001	2.205
0002	2.205
0002	4.410

Format 4 output examples :

TICKET NO.0001	
G	3.0001b
T	1.0001b
N	2.0001b
TOTAL NUMBER OF TICKETS 0001	
TOTAL	
NET	2.000

- Format 3 and format 4 if you want to print the total weight, press the  key twice, and the accumulative weight will be removed.

Communication Protocol:

UART signal of EIA-RS232 C

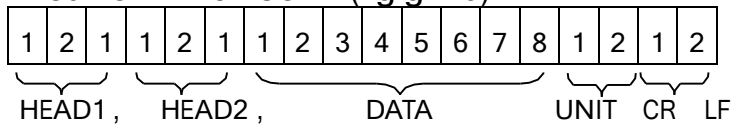
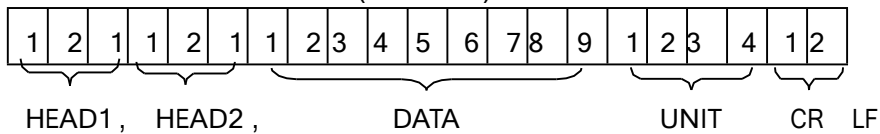
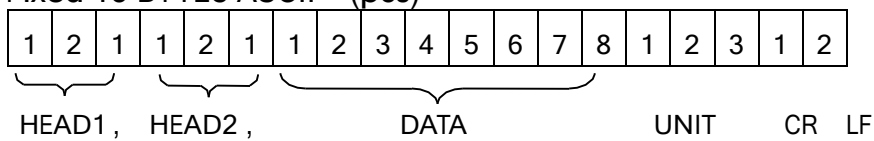
Format:




1. Baud rate: 9600
2. Data bits : 8 bits
3. Parity bits: None
4. Stop bits : 1 bit

Format 1 (232 1 – 3):



HEAD1 (2 BYTES)	HEAD2 (2 BYTES)
-----------------	-----------------

OL – Overload	
ST – Stable	NT – Net weight
US – Unstable	GS – Gross weight

**Fixed 18 BYTES ASCII (kg g t lb)****Fixed 21 BYTES ASCII (tl.T lboz)****Fixed 19 BYTES ASCII (pcs)****UF-7 Speed setting (\*)**Modes:  : Standard speed : High speed : Low speed


1. Press the  key to enter.
2. Press the  key to select the desired mode.
3. Press the  key to confirm.

**UF-8 Zero tracking(\*)**Modes:  : OFF : One division tracking at zero : Two division tracking at zero : Three division tracking at zero : Four division tracking at zero : Five division tracking at zero

1. Press the  key to enter.
2. Press the  key to select the desired mode.

3. Press the  key to confirm.

## UF-9 G Value setting

1. Press the  key to display the G value of manufacture place.

2. If set the G value of local press the  key and then press the  or

 key and  key to input the new G value.

3. Press the  key to confirm.

## UF-10 Filt setting

Modes: 

FiLt 1
--------

 : Low

FiLt 2
--------

 :


FiLt 3
--------

 :

FiLt 4
--------

 : High

1. Press the  key to enter.

2. Press the  key to select the desired mode.

3. Press the  key to confirm.

## UF-12 Beep setting

Modes: 


yS	oN
----	----

 : ON

yS	oFF
----	-----

 : OFF

1. Press the  key to enter.

2. Press the  key to select the desired mode.



3. Press the  key to confirm.

## Weight Calibrations (\*)







1. In weight mode, press the  and  keys, the display will show 

ECF-1
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 .



- Press the  or  key to select ECF-1, ECF-2 or ECF-3 .

### ECF-1 Zero and Span Calibration






- Press the  key to enter, display will show cALZ .
- Press the  key to calibrate zero point.
- The display will show the calibration weight 00.6.000 .
- Use the keys  and  to select the digit, press  key to input the weight value.
- Put the calibration weight on the platter and press the  key to calibrate.

The scale will return back to weighing mode automatically.

### ECF-2 Zero Calibration

- Press the  key to enter, display will show cALZ .
- Press the  key to calibrate zero point.
- The scale will return back to weighing mode automatically.

### ECF-3 Span Calibration

- Press the  key to enter, display will show the calibration weight 00.6.000 .
- Use the keys  and  to select the digit, press  key to input the weight value.
- Put the calibration weight on the platter and press the  key to calibrate.

The scale will return back to weighing mode automatically.

## **GUARANTEE**

This scale is guaranteed for one year from the delivery date. The guarantee covers any fabrication defect of the material.

During this period Gravity covers the labour cost and the spare parts necessary for the reparation of the scale.

This guarantee does not cover the failures caused by an inappropriate use or overcharge.

**The guarantee does not cover the freight cost (transport) necessary to repair the scale.**

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