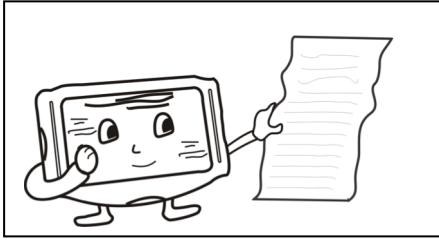*WEIGHT INDICATOR*

Model: X2-BMI

Please read this manual carefully before operation
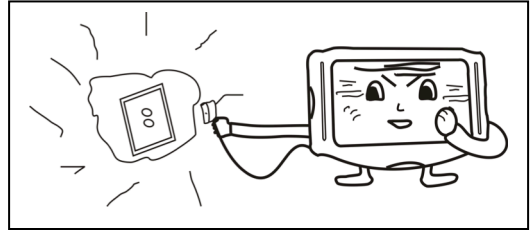----Important safety info
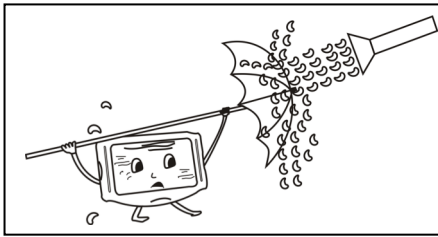----Operating condition and other attentions
----Guarantee info

USER'S MANUAL

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
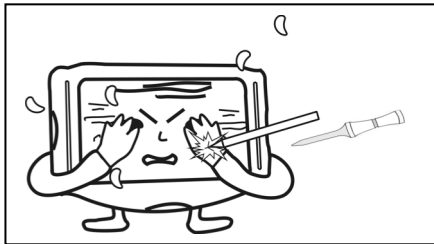
Don't touch the keypad with the Items with sharp end
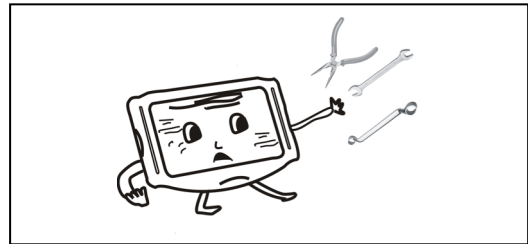
Don't open the indicator by yourself and please call the service people or our distributor When you get the problem with it

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.

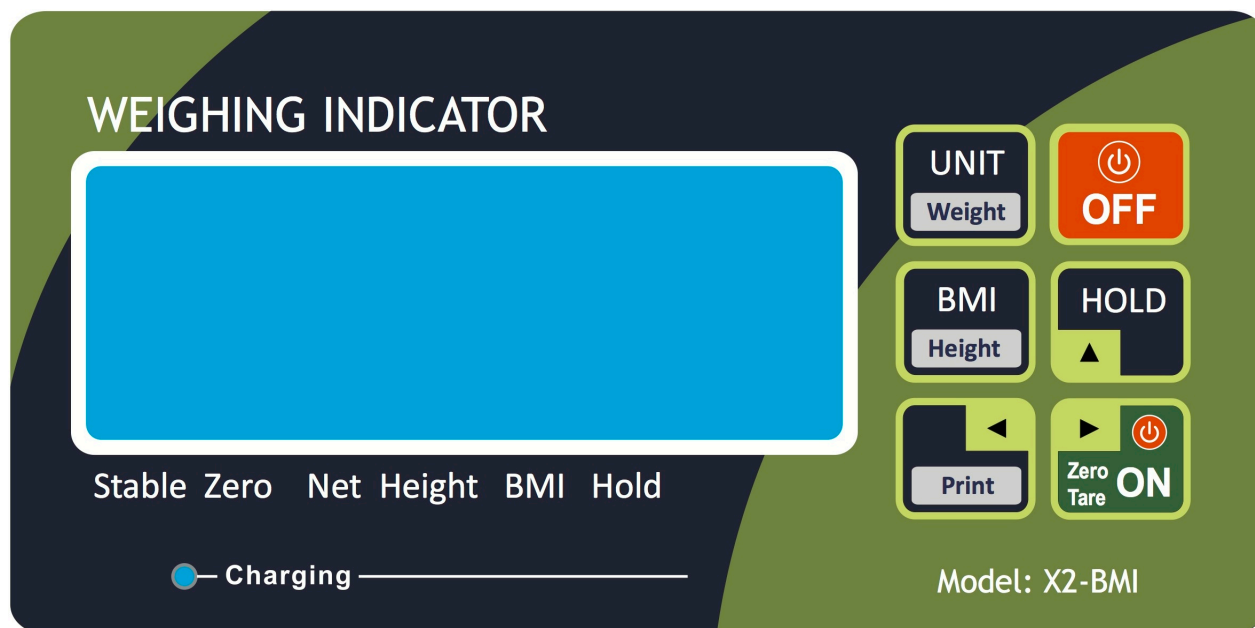## 1. INTRODUCTION

- Max. A/D sampling speed: 120 times / second.
- Display resolution: from 1/3000 up to 1/15000
- Maximum A/D converting: 24bit
- Sensitivity: 0.6mv/V – 3mV/V
- Excitation voltage: DC 5V; up to 4 load cells 350 Ω, 8 load cells 700 Ω.
- Weight unit: Kg/Lb/Oz/Gr/Ton
- Communication interface: Optional RS232
- Rate continuous ASCII data output: 1200 / 2400 / 4800 / 9600 Baud.
- External power supply: 100-240V AC – 9V500mA
- Operating temperature: -10°C-40°C
- Storage temperature: -25°C-55°C.Introduction
- Relative humidity: ≤ 80 % non-condensing.
- Display: 23mm digits with backlight
- Rechargeable battery and operating life
  6V1.2Ah   40hrs
- Housing material: ABS
- Dimensions: 220mm(L) x 130mm(H) x 55 mm(W)
- Approximated weight: 1.8Kg

2. KEYBOARD FUNCTIONS

WEIGHING INDICATOR

UNIT Weight

OFF

BMI Height

HOLD ▲

Print ◄

► Zero Tare ON

Stable Zero Net Height BMI Hold

Charging

Model: X2-BMI

|		
► Zero Tare ON	Switch on / Zero/Tare / Move right (parameter setting)	【ON/T】 in the manual
Print ◄	Print/ Move left	【PRINT】 in the manual
HOLD ▲	Hold / Increasing digits	【HOLD】 in the manual
BMI Height	Height input/BMI calculation	【BMI】 in the manual
UNIT Weight	Unit Exchange / Return to weighing mode	【UNIT】 in the manual
OFF	Switch off	【OFF】 in the manual

3. TECHNICAL DESCRIPTION

3.1 Connection of the load cell to indicator
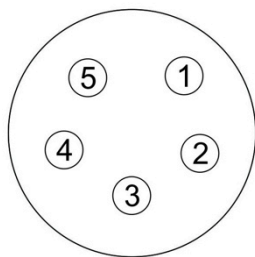
INDICATOR		LOAD CELL
+E (1)	------------	+Excitation
-E (2)	------------	-Excitation
+S (3)	------------	+Signal
-S (4)	------------	-Signal
GND (5)	------------	(GND) shield

3.2 Connection of RS232 to PC or Printer *(optional)*
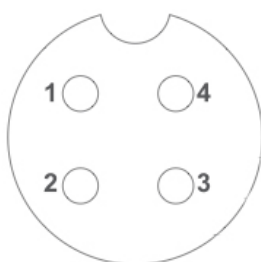
INDICATOR		PC/PRINTER
1	----------------	TX
2	----------------	SC
3	----------------	GND
4	----------------	SC

4. STANDARD OPERATIONS

Make sure the equipment connected correctly and parameters set well, and also the scale has already been calibrated correctly.
Configuration and Calibration - Refer to TECHNICAL MANUAL
!Do not modify it by yourself; consult our distributor or your local authorized metrology worker, wrong operation may cause the problem or wrong performance of the scale.

4.1 Switch on and switch off

Press 【ON/T】to turn on the indicator
Press 【OFF】for 2 seconds to turn off the indicator

4.2 Zero/Tare

4.2.1 If the display is not 0 after power on, press【ON/T】to zero the scale (<2%F.S.)

4.2.2 Weighing with the container, put the container on the scale (>2%F.S.) and press【ON/T】to make a tare and get subtract of the weight of the container.
4.2.3 Remove the tare: remove the container and press 【ON/T】to clear the tare value and zero the scale.

4.3 BMI Check

When the weight is stable, press 【BMI】key to input the height value *(on kg unit, it's in the unit of cm, on lb unit display, the height unit is feet and inch)*, after the height input, press 【BMI】key again to get the BMI index.
* When it display the BMI value, if you want to back to the weight display, please press 【UNIT】key

4.5 Manual Hold

When the weight is stable, press 【HOLD】key to lock the weight and press it again to unlock.

4.6 Print

If the printer connected or PC connected, press 【PRINT】to print the receipt or send data to computer, and the format as below:

TICKET NO.:   00005
G.W: 78.5kg
T.W: 2.0kg
N.W: 76.5kg
H: 180cm
BMI: 23.6

4.7 Units Exchange

Press 【UNIT】to exchange the weight units
*Units set (kg/lb as default) - Refer to **TECHNICAL MANUAL***

5. FURTHER OPERATIONS

Press 【BMI】key and 【ON/T】at the same time, it will display UF - 1 , press 【ON/T】or 【PRINT】to shift it from UF - 1 to UF - 9 , press 【BMI】to enter and configure it.

5.1 Internal A/D Value and Battery Volume

UF - 1

Press 【BMI】to view the internal A/D value of the scale
Press 【BMI】again to display the voltage of the battery.
Press 【BMI】again to change for next set or press 【UNIT】to quit and back to normal weighing mode

5.2 Hi/Lo/Ok Checkweigh Function
* You can set a ideal weight as you want to achieve and the indicator will beeps if the weight above or low than the weight you want.

UF – 2 Press 【ON/T】【PRINT】【HOLD】to move and change the digits.

Press 【BMI】to set the Lo value (the lower limitation) – 000.00L
Press 【BMI】to set the Hi value (the top limitation) – 000.00h
Press 【BMI】to change the working mode of buzzer of Hi/Lo/Ok – o   000
Remark

o		0	0	0
o		A	B	C

A=0 Stable but no need to buzz

A=1 Stable to buzz

B   no function, keep it as default and no change

C=0 Buzzer off

C=1 It beeps when the weight is ok (Lo<weight<Hi)

C=1 It beeps when the weight is out of limitation (Lo>weight or weight>Hi)

5.3 Auto Power Off

| UF – 3 | Press 【ON/T】【PRINT】【HOLD】 to move and change the digits.

Press 【BMI】 to enter the set of automatic off function– AoFF 00

00 Auto off deactivated

01-99 Auto off activated in 01-99 minutes, you can change it from 01 minute to 99 minutes

5.4 Backlight

UF – 4 Press 【HOLD】 to change the digits.

Press 【BMI】 to enter the set of backlight function– Lit   A

A Automatic

ON Backlight On

OFF Backlight Off

5.5 Auto Hold Function

UF – 5 Press 【HOLD】 to change the digits.

Press 【BMI】 to enter the set of backlight function– hoLd   0

0 Deactivated

1 Animal weighing (refer to below remark)

2 Peak hold (press any key to exit except for 【BMI】 key)

3 Stable hold (press any key to exit except for 【BMI】 key)

4 Stable hold (exit automatically when the weight is removed)

Remark
When choose hold = 1, it need to set the following two parameters
1. *PCt xxx the number is from 001-100, the bigger number means the more accurate weight, but the weighing time is longer, the smaller number means fast weighing (shorter stabilizing time) but not so accurate result, it can be chosen depends on the weighing condition of the scale.*
2. *TinE x the number it can repeat during the range of hold, it can choose 1/2/4/8/16/32/64*

5.6 RS232 Interface *(Optional)*

UF – 6 Press 【HOLD】 to change the digits.
Press 【BMI】 to enter the set of RS232 format– 232   0

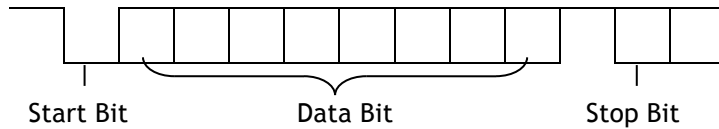| Format 1		Format 2	
232 1	Stable Output	232 4	Stable Output
232 2	Stream Output	232 5	Stream Output
232 3	Keyboard (BMI Key) Output	232 6	Keyboard (BMI Key) Output
Format 3		Format 4	
232 7	Accumulated Output	232 9	Accumulated Output
232 8	Auto-Accumulation Output	232 10	Auto-Accumulation Output

Format 1 2 3 4

Communication Protocol

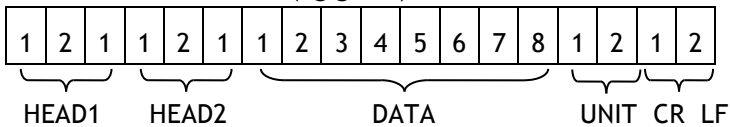UART signal of EIA-RS232 C

Data Format：

1. Baud Rate : 2400 / 4800 / 9600/19200/38400 BPS

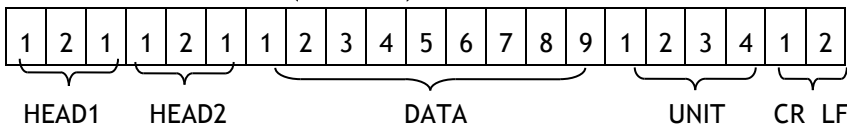2. Data Bit : 8 BITS

3. Parity Bit : None

4. Stop Bit : 1 BIT

Start Bit   Data Bit   Stop 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)

1	2	1	1	2	1	1	2	3	4	5	6	7	8	1	2	1	2

HEAD1   HEAD2   DATA   UNIT CR LF

Fixed 21 BYTES ASCII (tl.T lboz)

1	2	1	1	2	1	1	2	3	4	5	6	7	8	9	1	2	3	4	1	2

HEAD1   HEAD2   DATA   UNIT   CR LF

Fixed 19 BYTES ASCII (pcs)

1	2	1	1	2	1	1	2	3	4	5	6	7	8	1	2	3	1	2

HEAD1   HEAD2   DATA   UNIT   CR LF
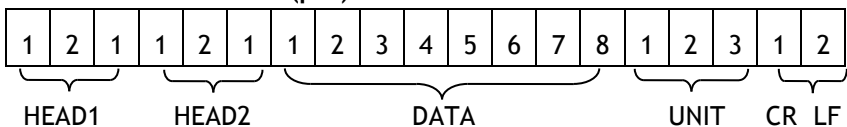
Output examples :

1. Example +0.876 kg Stable net weight :

S	T	,	N	T	,	+	0	0	0	.	8	7	6	k	g	0D	0A

2. Example -1.568 lb unstable gross weight :

U	S	,	G	S	,	-	0	0	1	.	5	6	8	l	b	0D	0A

3. Example + 1.15.40 Taiwan Jin Stable net weight :

S	T	,	N	T	,	+	0	1	.	1	5	.	4	0	t	l	.	T	0D	0A

4. Example -20. 5.40 lb oz unstable gross weight :

S	T	,	G	S	,	-	1	0	.	0	5	.	4	0	l	b	o	z	0D	0A

5. Example +1000 pcs stable net weight :

S	T	,	N	T	,	+	0	0	0	1	0	0	0	p	c	s	0D	0A

Format 2 (232 4 ~ 6) **:**

Fixed 12 BYTES ASCII (kg g t lb)

1	2	3	4	5	6	7	8	1	2	1	2

DATA   UNIT   CR LF

Fixed 15 BYTES ASCII (tl.T lboz)

1	2	3	4	5	6	7	8	9	1	2	3	4	1	2

DATA   UNIT   CR LF

Fixed 13 BYTES ASCII (pcs)

1	2	3	4	5	6	7	8	1	2	3	1	2

DATA   UNIT   CR LF

Output examples :

1. Example +0.876 kg stable net weight :

+	0	0	0	.	8	7	6	k	g	0D	0A

2. Example -1.568 lb unstable gross weight :

-	0	0	1	.	5	6	8	l	b	0D	0A

3. Example + 1.15.40 Taiwan Jin Stable net weight :

+	0	1	.	1	5	.	4	0	t	l	.	T	0D	0A

4. Example -20. 5.40 lb oz unstable gross weight :

-	1	0	.	0	5	.	4	0	l	b	o	z	0D	0A

5. Example +1000 pcs stable net weight :

+	0	0	0	1	0	0	0	p	c	s	0D	0A

※ *Factory default : 232 0 - RS232 OFF*

Format 3 (232 7-8) :

Printing Output

S/N   WT/Kg

0001   85.5

0002   75.2

0002   160.7

Format 4 (232 9-10) :

Printing Output
TICKET NO.:   00005
G.W: 78.5kg
T.W: 2.0kg
N.W: 76.5kg
H: 180cm
BMI: 23.6

5.7 Weighing Speed

UF – 7 Press【HOLD】to change the digits.

Press 【BMI】to enter the set of weighing speed - SPEEd   3

1 Standard speed (normal speed)
2 Fast response
3 Slow response
the faster response, the more time for stability, the more slow speed, the shorter time for stability

5.8 Zero Track

UF – 8 Press【HOLD】to change the digits.

Press 【BMI】to enter the set of weighing speed - ZP   1

1 = 1e
2 = 2e
3 = 3e
4 = 4e
5 = 5e

Example: for 1e zero track (if e=20g), the scale will show 0 until it's more than 20g (1e).

5.9 Gravity Adjusting

UF – 9 Press 【ON/T】【PRINT】【HOLD】to move and change the digits

Press 【BMI】to enter the set of local gravity and change it accordingly- 9.79414

7. GUARANTEE

This scale has a warranty against all manufacture and material defects, for a period of a year starting with the delivery date. During this period, we will be in charge of the repairing of the scale. This warranty does not include the damages done by overload or wrong use. The warranty does not cover the delivery expenses necessary for the repair of the scale.
The rechargeable battery is not within the range of guarantee period

20. PRECAUTION

- Indicator should be far away from heat resource while using.
- Do not place the indicator in the dusty surroundings or the site vibrant.
- Cannot use full capacity. Over load stops hitting platform support is not permitted.
- To ensure to keep out of chemical erosion, Operating temperature range will be -10...40ºC (LCD with 0...40ºC), relative humidity is no less than 85%, without any corrupt gas in air.
- Never pour the water into the indicator.
- Housing, head pallet, wire connector should be sealed entirely. Users do not open sealed device or connect with wire without any expert advice. In case any malfunction of indicator occurs, please sent the indicator for maintenance.
- The indicator will charge the internal battery at all times when it is connected to the main power.

X2-BMI WEIGHT INDICATORS