# BEFORE USING THE SCALE

To enable you to use this scale correctly, we suggest you read this manual carefully.

1. Do not use scale in areas with excessive water and don't spray the scale or indicator with water when cleaning. Erase all water from the scale and indicator with a clean dry duster cloth.
2. Load placed on platter must not exceed the maximum weighing capacity of the scale.
3. Keep the scale away from high temperature and damp conditions.
4. If the scale is not going to be used for some time, please clean and store it in a plastic bag under dry condition. A desiccant sachet is suggested to be included to prevent moisture build up. In addition, the internal rechargeable battery should be recharged very three months.
5. Before using the scale after a long period of storage, please ensure that the internal battery is fully charged.   *Note :* Care should be taken not to leave the internal battery on charge for too long, as this may decrease life of battery.

# PREPARING TO USE THE SCALE

1. Put the scale on a firm level surface from vibrations for accurate weight readings.
2. Adjust the four leveling feet to set the level of scale platform.
3. Avoid operating the scale in direct sunlight or drafts of any kind.
4. Take away any weight that might be on the platform before the scale is switched on.
5. Once the scale has been switched on, it will go through a LCD display test and then re-zero to be ready for use.
6. Please note when " ⬚ " display on window, the internal battery needs to be charged.
7. All goods weighed should be placed in the centre of platform for accurate weighing. The footprint of the goods being weighed should not overstep the edges of platform.

# INTRODUCTION

## A. FEATURES

1. Multiple weighing units:   kg / lb / oz / HL.

2. Working temperature: -10℃~40℃.

3. User-friendly design:
   ✧ Auto calibration
   ✧ AC / DC power supply
   ✧ LCD display with auto backlight function
   ✧ Auto power-off design to ensure the performance stability
   ✧ Date & time displays when scale is free.
   ✧ Check-weighing function, HI / LO / OK annunciate & alert buzz.

4. Variable calibration settings depending on the different calibration division.
   ✧ Standard division (under 10,000 internal resolution): Capacity and weight calibrations are available for accurate weighing.
   ✧ High precision division (over 10,000 to 40,000 internal resolution): Linearity, capacity and weight

calibrations are available for accurate weighing.

5.  Options
    ✧  RS-232 interface
    ✧  Rechargeable battery package ( Option part when ordered )

6.  High performance in A/D converter
    ✧  Conversion speed: up to 10 times / second
    ✧  Internal resolution: 400,000
    ✧  External resolution: 1/1000 ~ 1/15000
    ✧  Non-linearity: < 0.016% of full scale
    ✧  Input range of load cell: 1.0 ~ 20 mv
    ✧  Load cell excitation: + DC5V
    ✧  Load cell drive capacity: up to 4 350Ω or 1000Ω load cell

## B. POWER SUPPLY

1.  Rechargeable battery: DC 6V / 1.2Ah (Selectable when ordered).
2.  Adapter power:   AC 100~220V, 50Hz   /   DC 12V, 500mA.

## C. LOW BATTERY WARNING

Please note when ⊡ symbol is displayed on the window, the internal battery needs to be recharged.

☆  The scale will power off automatically without recharging after the low battery symbol shows upon for

20 to 30 hours on the display. As a recommendation, the scale should be fully recharged before using the scale again.

## LCD DISPLAY SYMBOLS

→O←   : 'Zero' indication.

⊡   : 'Battery' indication

TR   : 'Tare Weight' indication

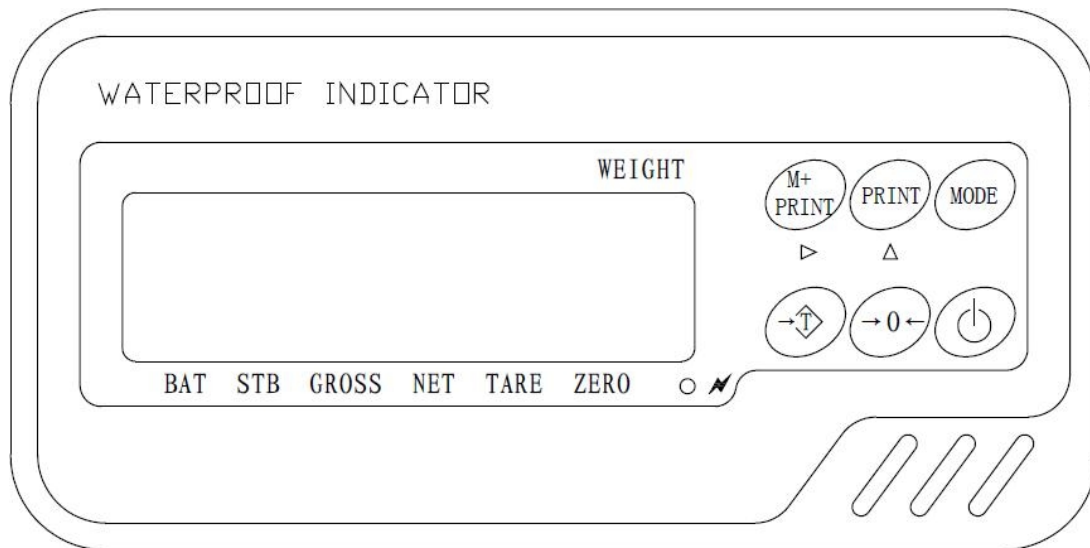**HL** : 'HL' unit

   : 'Net weight' indication

**oz** : 'oz' unit

   : 'Gross Weight' indication

**lb** : 'lb' unit

○ : 'Stable' indication          **kg**: 'kg' unit



## Keyboard

## KEYBOARD FUNCTION

1. [⏻] : Turn on / off. The indicator will be turned on when pressing the key. Press and hold
   The key for 1.5 seconds, the battery charge percentage " bpt - -" will show on the
   screen, then the indictor will power off. When the Indicator is on, press key fast,
   it also shows " bpt - -" about current capacity of battery.

2. [TARE] : Deduct the container weight. Press this key to deduct container weight and net
   weight will display.

3. [ZERO] : To re-zero the scale. Range of re-zero is ±2% of full scale.

4. [MODE] : For weighing Unit convert in normal weighing mode. Press and hold it for 1.5 second to turn
   on/off backlight.

5. [PRINT] : Press this key to print out the current weight. Press [ZERO] to clear the current weight

6. [M + PRINT] : For printing out the accumulative weight. All the printed weight will be added up and print out
   accumulatively by pressing this key. Accumulative time and weight will display on the screen

   for 1.5 second respectively. Press [ZERO] to clear accumulative weight and time.

## SETTING OF AUTOMATIC POWER OFF

Plug the circuit breaker JP1 into 'off', and the following operation can be performed:

Press and hold TARE for 1.5 second, the screen displays 'OFF - -', '- -' refers to preset automatic shut

down time. Preset time is from 0~60min. Press PRINT to set time and press MODE to confirm.

Default time is 0 minute.

## BUZZER

After setting the function of automatic power off, the indicator will display 'bp On' or 'bp off'.

Press PRINT to select 'On' or 'Off' to turn on/off the buzzer. Press MODE to confirm.

## SETTING OF CHECK WEIGHING MODE

After setting the function of Buzzer, the indicator will display "XXXX　HI".
The indicator has a check weighing function which allows scale to check weigh, making the set point weight quick and accurate.

● When display "XXXX　HI", "XXXX" means the Highest weight, if scale is over this weight, screen

   will shows " **HI** " and alert buzzing. Set the point weight through pressing PRINT & M + PRINT then press MODE

   to confirm and next to set " XXXX　LO".

● When display "XXXX　LO", "XXXX" means the Lowest weight, if scale is under this weight,

   screen will shows " **LO** " and alert buzzing. Same operation as above to set the point. Then press MODE

   to confirm the setting and next step.

*For example:*　For one 150kg scale, desired weight is 100kg, deviation value is ±0.1kg.

1.　Pressing PRINT & M + PRINT to set 100.10kg, screen will display " 100.10　HI", then press MODE to

conform and next to set lowest value.

2. When it show " XXXX    LO", same operation for setting a 99.90kg. Final, press MODE to finishing.

3. After back to normal weighing, load the goods in scale, if over or under this two set point weight, the screen will shows " HI " or " LO " and have a alert buzz to annunciate to user.

# SETTING OF TIME BOARD ON / OFF

After setting a check weighing function, it will shows " Pr    X".
X=1, means date and time will display when the scale is free.
X=0, means it will not show the date and time all the time.

Press PRINT to select and press MODE to finish and back to normal weighing mode.

# CONNECTION OF INTERFACE

## A. CONNECTION OF LOAD CELL SIGNAL WIRE

For better performance of the electronic scale, make sure to connect the 5 round pin plug to the 5 pin socket firmly and tighten the screw up. Please see figure 1:
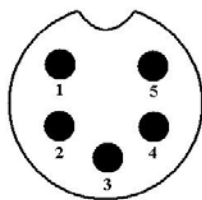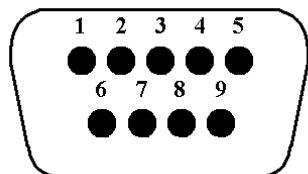
1: Pin +IN              +signal
2: Pin -IN              -signal
3: Pin AGND            shield
4: Pin +E, +S          +excitation, +feed back
5: Pin -E, +S          -excitation, -feed back

**Figure 1: Diagram of 5 round pin plug of the load cell**

NOTE: For 6 pin load cell, please connect +E, +S and –E, -S in short circuit.

## B. CONNECTION OF RS-232 (Please specify in the order if needed)

RS-232 serial interface is a D-SUB-9 needle slot as figure 2 shows:

2: Pin RXD
3: Pin TXD 1        9: Pin TXD 2
5: Pin GND

**Figure 2: Diagram of RS-232 slot**

# MEANS OF POWER SUPPLY

## A. RECHAEGEABLE BATTER

The rechargeable batter is 6V / 1.2Ah. The end of red line is positive pole, while the end of black line is negative pole. Connect the wiring terminals and tighten the screw up to fix battery well. The rechargeable battery should be charged through adapter by plugging the adapter into power supply to achieve automatic

charge.

**B. AC/DC ADAPTER**

Insert DC plug of the adapter, whose specification is 12V/500mA, into a DC socket, insert the other end into relevant AC socket and connect to power supply.

In case there is no AC supply and dry battery is used as substitute, do remember to pull out DC plug of the adapter, otherwise the indicator will fail to work.

# CALIBRATION

1.  Open up the outer case of indicator before calibrate, plug the circuit breaker JP1 into 'on' .

2.  Press and hold [TARE] for 1.5 second, indicator will display 'CAL   SP'.

3.  Press [M + PRINT] to enter calibration mode, 'CAL 0' which denotes that there is nothing being

    weighed on the scale will display on the screen.

4.  Press [MODE] to enter mode of automatic zero correction and '- - - - - -' will display. After few

    seconds, the previous weight will show on the screen.

5.  Load weight on the scale, say weight of 20kg. After stable indication ⬭ displays, press [M + PRINT]

    to select digit position ( the selected digit position will blink). Digit position will carry forward to the

    right side when pressing [M + PRINT] every time. Press [PRINT] to set the digit among 0~9. Repeat the

    above operation till '20.00' is displayed, then press [MODE] to confirm.

6.  '- - - - - -' will display on the screen automatically after finished the operation as Point 4 describe, indicating the scale enter into calibration and weighing mode.
7.  If '20kg' displays on the screen, it denotes the consistency with weigh value; in case of none consistency, please recalibrate again.
8.  Offload the weight, reading '0.00kg' will display and ➝⬭⬅ will show denoting there is nothing being weighted on the scale.
9.  The scale will return to weighing mode after calibration is finished. *Do remember to plug the circuit breaker into 'off' position.*

# CONFIGURATION SETTINGS

Please open up the outer case of indicator before setting, plug the circuit breaker JP1 into 'on'.

**Step 1: Enter Setup**

Press and hold [TARE] until 'CAL   SP' display on the screen. Press [MODE] to enter into setup mode and

[M + PRINT]

'SEt' will display. Press ___ to enter menu.

## Step 2: Reading division

"d   XXXX " will display. in screen. It means to choose the reading division.

*Example:* For a 60kg scale, if ' d ' is set to 0.02kg, the scale will show a division of 0.02kg among 0kg~60kg. Please refer to Table 1 for division values.

Press [PRINT] to change the values.

Press [MODE] to confirm and enter into the next step.

## Step 3: Display Resolution

'n   XXX.XX' will display on screen. The value shown is the display resolution.

Display resolution = (division) kg/ (full capacity) kg

For dual range display, please refer to Tale 1 for value of 'n'.

Ignore the decimal point shown and take the value as a whole number.

Example: tale 'n   060.00' as 6000, take 'n   120.00' as 12000.

Press [M + PRINT] to change the value of the selected digit.

Press [MODE] to confirm value and enter in to the next step.

*__Note: Please calibrate the scale again after changing 'Division' and 'Display Resolution' settings.__*

## Step 4: Zero range / Zero tracking / Weigh Unit setup

'Ut ABXY' will display.

    A: Zero range when power on, 1~9 mean 10%~90% FS to zero, 0 mean not to zero

    B: Zero tracking range, 1~9 means 1~9 x 0.3d for tracking range.

    X: Basic unit. It display basic and default unit after indicator is power on.

    Y: Second unit. It means you can change unit between Basic unit to Second unit by pressing [MODE] .

    （Note： 0= kg, 1 = lb,   2 = OZ,   3 = HL( Hong Kong use only.) ）

Press [PRINT] to change basic unit and press [M + PRINT] to change secondary unit.

Press [MODE] to confirm and enter in to the next step..

## Step 5: Baud Rate

'b XXXX' will display on screen. The value shown is the baud rate.

Press [PRINT] to switch between baud rate of 1200, 2400, 4800 and 9600.

Press [MODE] to confirm and enter in to the next step.

## Step 6: Serial Printout Port Configuration

'Ads XX' will display on screen. XX values decide the print mode.

Press [M + PRINT]  to select digit position of X.

Press [PRINT]  to change the value of the selected digit.

Press [MODE]  to confirm and enter in to the next step.

1.  XX=99:      Indicator will not send out weight data unless when [PRINT] or [M + PRINT] is pressed in normal weighing mode.
2.  XX=01~98:   Indicator will send out data after received CPU command.
3.  XX=00:      Indicator will send out continuous date automatically reach to 10 times per second.

## Step 7: Backlight setting

'bAn X' will display in the screen. Press [PRINT]  to change value of 'X'.

There are four kinds of mode:

X=0:   Non-backlight.

X=1:   Manual backlight mode. Press and hold [MODE] for 1.5 second to turn on/off the backlight.

X=2:   Automatic backlight mode-A. The backlight will on automatically when weight load on the scale, and will off after unload the weight.

X=3:   Automatic backlight mode-B. The backlight will on automatically and off after 10 seconds when weight load on the scale. If there the any weighing or back to zero, it will off after 10 seconds.

Press [MODE]  to confirm and enter in to the next step.

## Step 8: Filtering and Animal weighing setting

" FLt   AB" will display in screen. Press [PRINT] and [M + PRINT] to select the setting.

**A：Filtering setting.**

There are 4 degrees of reading weight. A=0 is fastest, but resolution will effect the reading stable; A=3 is slowly but it read with accuracy and stable.

**B: Animal weighing setting.**

There are 4 degrees of weighing mode. B=0 is normal mode without animal lock time. B=1~3 is animal weighing mode, it will reading fast and stable with different time.

Press [MODE]  to confirm and enter in to the next step.

## Step 9: Date setting.

" DATE " will display in screen. Press [PRINT] and [M + PRINT] to set the display then press [MODE] to confirm and enter in to the next step.

## Step 10: Time setting

" TIME " will display in screen. Press [PRINT] and [M + PRINT] to set the display then press [MODE] to confirm

and enter in to the next step.

**Step 11: Save parameter**

" – PRSS –" will display in screen. This step is for saving all above operation. Press ZERO to save

parameter. If you cancel all setting, press TARE to cancel. Press MODE to the next step.

**Step 12: Configuration is done**

Plug the circuit breaker JP1 into 'off'.

## ERROR SIGNAL

There will shows error signal when the scale have some problem.

**Error 1:** means calibration isn't workable, weight is too light or division is too high.

**Error 2:** means wrong zero, check the load cell if it is damaged.

**Error 3:** means displayed value exceed display range after unit change.

**--- H---:** means overload, loaded weight exceed the full range.

## Warranty

We guarantee one-year of free maintenance since the date of purchase for any non-manmade faults in normal working conditions. For maintenance, please send the equipment with the guarantee card to our sales service.

**Attention:** we are always improving the machine, there is not pre-notice if there are something different comparing with the precious ones.

**Table 1**

| No. | Capacity | Division   d1 | Division   d2 |
|-----|----------|---------------|---------------|
| 1 | 1.5000kg | 0.0001, 0.0002, 0.0005 | 0.0001kg( (0~0.6kg),      0.0002kg (0.6~1.5kg), n=1500 |
| 2 | 3.0000kg | 0.0002, 0.0005, 0.001 | 0.0002kg( (0~1.5kg),      0.0005kg (1.5~3kg), n=1500 |
| 3 | 6.0000kg | 0.0005, 0.001, 0.002 | 0.0005kg( (0~3kg),        0.0001kg (3~6kg), n=1200 |
| 4 | 15.000kg | 0.001, 0.002, 0.005 | 0.001kg( (0~6kg),        0.002kg (6~15kg), n=1500 |
| 5 | 30.000kg | 0.002, 0.005, 0.01 | 0.002kg( (0~15kg),        0.005kg (15~30kg), n=1500 |
| 6 | 60.000kg | 0.005, 0.01, 0.02 | 0.005kg( (0~30kg),        0.01kg (30~60kg), n=1200 |
| 7 | 150.00kg | 0.01, 0.02, 0.05 | 0.01kg( (0~60kg),        0.02kg (60~150kg), n=1500 |
| 8 | 300.00kg | 0.02, 0.05, 0.1 | 0.02kg( (0~150kg),        0.05kg (150~300kg), n=1500 |
| 9 | 600.00kg | 0.005, 0.1, 0.2 | 0.05kg( (0~300kg),        0.1kg (300~600kg), n=1200 |
| 10 | 1000.0kg | 0.1, 0.2, 0.5 | 0.1kg( (0~600kg),        0.2kg (600~1000kg), n=10000 |
| 11 | 1500.0kg | 0.1, 0.2, 0.5 | 0. 1kg( (0~600kg),        0.2kg (600~1000kg), n=15000 |
| 12 | 2000.0kg | 0.2, 0.5, 1 | 0.2kg( (0~1t),        0.5kg (1t~2t), n=10000 |
| 13 | 3000.0kg | 0.2, 0.5, 1 | 0.2kg( (0~1.5t),        0.5kg (1.5t~3t, n=15000 |
| 14 | 5000.0kg | 0.5, 1, 2 | 0.5kg( (0~3t),        1kg (3t~5t), n=10000 |

| 15 | 8000.0kg | 1, 2, 5 | 1kg( (0~4t), | 2kg (4t~8t), n=8000 |
| 16 | 10000kg | 1, 2, 5 | 1kg( (0~5t, | 2kg (5t~10t), n=10000 |
| 17 | 15000kg | 1, 2, 5 | 1kg( (0~6t), | 2kg (6t~15t), n=15000 |
| 18 | 20000kg | 2, 5, 10 | 2kg( (0~10t), | 5kg (10t~20t), n=10000 |
| 19 | 30000kg | 2, 5, 10 | 2kg( (0~15t), | 5kg (15t~30t), n=15000 |
| 20 | 40000kg | 5, 10, 20 | 51kg( (0~30t), | 10kg (30t~40t), n=8000 |