W e i g h i n g I n d i c a t o r

User Manual

(OC version)

V 0.02

www.macbroindustries.com.au

Table of Contents

Dear users:

Please read the manual carefully before using this indicator.

Chapter I. Technical Parameter

1. Model （OC version）

2. Class of Accuracy: Class III 、n=3000

3. Analog
   - Input signal range -19mV～19mV
   - Minimum input voltage of every inspect divisionUmin：1μ V
   - Conversion speed 10 times/s
   - Gain drift 0.03%
   - Excitation voltage DC 5V

4. Display
   - Display range -99999～999999 (decimal point is not considered)
   - Division 1/2/5/10/20/50 optional

5. Operating environment

   Power supply
   (1) AC adaptor
   Input voltage range AC 110V~220V
   Output voltage range DC 6V
   (2)Build-in dry battery power supply interface
   (Battery is optional)

   4pcs number5 1.2V rechargeable battery or 4pcs number5 1.5V dry battery （Please choose the property charger according to the rechargeable battery type）

   Operating temperature 0℃~40℃
   Storage and transport temperature -25℃~ 55℃
   Relative humidity ≤85%RH

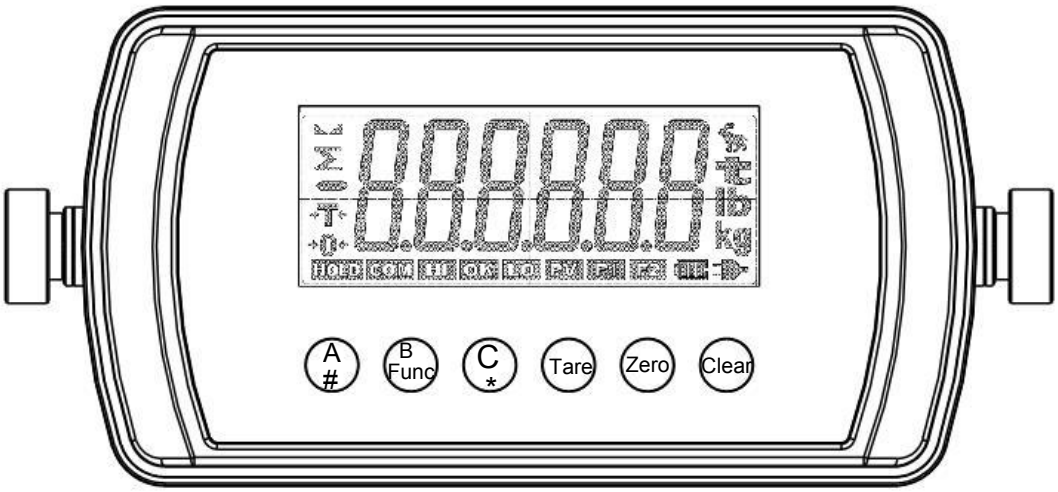
6. Weight Approx 1.2 kg

7. Maximum tolerance

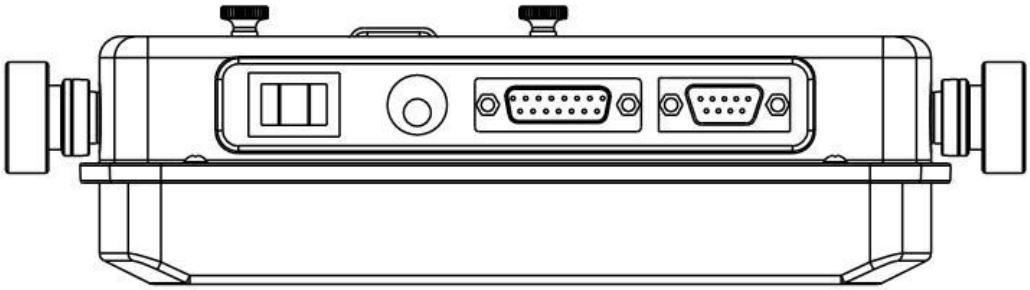
Maximum tolerance	Inspect division e stand for signal m
±0.25e	0≤m≤500
±0.5e	500＜m≤2000
±0.75e	2000＜m≤10000

Chapter II Installation and Connection

I. Indicator Diagram



(Figure 2-1) Front cover



(Figure 2-2) Interface

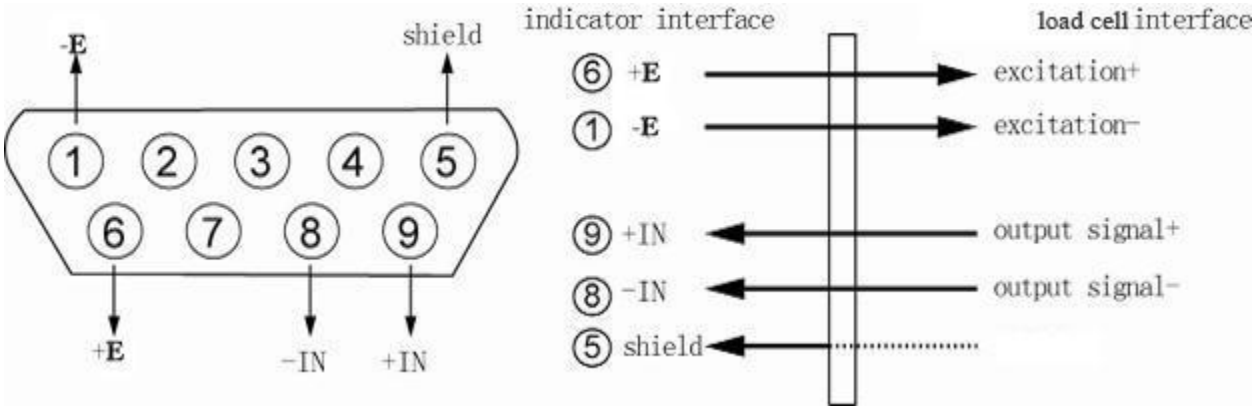
II. Load cell Connection

1. The Load cell is connected through 9-pin plug socket (hole). Figure 2-3 shows the meaning of each pin.

2. Please use 4-core shielded cable

▲ ！ The connections of Loadcell and indicator must be reliable, and the shielded cable of Loadcell must be reliably grounded. Connections wires shall not be plugged and pulled when the indicator is in a Power-up State in order to prevent static electricity damaging to the indicator or load cell.

▲ ！Since both Load cell and indicator are static-sensitive device, anti-static measures must be practically taken in the use, and welding or other strong-electric operations on weighing platform are strictly prohibited. In the thunderstorm season, reliable lightning protection measures must be taken to prevent lightning damaging the senor and instrument and to ensure the operator safety and the safe operation of weighing equipment and related equipment.



Chapter III Operation Instruction

I. Startup

Touch the on/off button and the indicator display【 ON 】and turned on.Now all the symbol are on and 2 seconds later the indicator display the version number.And then indicator gets into self-check process “000000～999999”. If the weight on platform is within the startup zero setting range, it will enter automatic zero, and then the weighing status. If the weight on platform exceeds the zero setting range, the indicator will give tips and display weight. If press [Function]button when the indicator display software version number,and the indicator will display the times of the calibration, for example: n1,and then display calibration data inspection sum total and indicator software sum total(for measurement office control); and then self-checking;if do not press [Function]button ,the indicator will directly self-checking ; and the indicator will come into the weighing status after the initialization.

II. Key Operation

In the calibration and parameter setting status, some keys will perform the following functions:

1． ZERO key performs the "plus 1" function. After the ZERO key is pressed, the indicate light corresponding position will be "plus 1", automatic zero will be made after it is added to 9.

2. TARE key performs the "shift" function. After the TARE key is pressed, the indicate position of indicate light will move to the right for one bit, and will move to the effective highest bit automatically when move to the ...bit .

3. "# " key performs “input” function, after press "# " key the da te will be input to indicator which was set.

4. CLEAR key performs "exit" function, after Clear key is pressed the indicator will exit the calibration state or setting state.

5. "*" key performs" switching parameter" function, after the * key is pressed the indicator will come into the next parameter setting state .

BI. Weighing Operation

1. ZERO:

Press ZERO key to enable the data within zero setting range of indicator to return to zero. Zero setting can be performed only after the STABLE light is on.

2. TARE:

When the displayed weight in weighing status is positive and the STABLE light is on, press the TARE key to deduct the indicated weight as tare weight . In this case, the indicator will show a net weight of "0" and the NET WEIGHT light is on. Press the TARE key again when gross weight is 0, the indicator will clear the tare weight value.

【Note】Tare is not workable when gross weight is negative number.

3. Inner code checking:

Press[#] and [*] key together in the normal weighing status , the indicator will display the inner code. And this inner code value is for test use.

4. Upper & lower limits alarm:

Press the [#] keys for long in normal weighing status in the following steps:

Step	Operation	Display	Description
1		[******]	Weighing display status
2	Press [#] for long time	[H00000]	Guide the user to enter upper & lower limits alarm value
3	Upper limits alarm value, e.g. “3000”	[H03000]	Press the [#] key to make confirmation and move to Step 4.
4	Lower limit alarm value, e.g. “50”	[L 00050]	Press the [#] key to make confirmation and move to Step 5
5		[******]	Go back to weighing mode., displaying net weight after tare.

【Note】The upper and lower limit alarm is not workable when both the upper and the lower limit is 0;

Chapter IV Calibration Description

Properly connect the signal source and power supply to preheat the indicator for 15-30 minutes when there is no load on weighing platform.

After lead sealing is broken, and stir the calibration switch to on position, and allows the indicator to be calibrated. （Factory default that allows calibration, new indicator can omit this step）， then operate as

following steps（after calibration, lead sealing again）：

（1）Press【#】key during startup initialization, the indicator will come into calibration state.

1、Division setting：

Display 【d X 】press【tare】key to choose 1、2、5、10、20、50，press【#】key for confirmation, and will enter into next parameter setting, press【tare】key for automatic step-by -step cycle display.

Display 【d X 】
Display 【d 1 】
Display 【d 2 】
Display 【d 5 】
Display 【d 10 】
Display 【d 20 】
Display 【d 50 】
Display 【d 1 】

For example, press【#】key when it shows【d 5】,now the division is setting to 5, and will come into decimal point setting state automatically.

2、decimal point setting ：

Display 【P X】press【tare】key to choose0、1、2、3，press【#】for confirmation, and will come into next parameter setting automatically. press【tare】key for automatic step-by-step cycle display.

Display 【P 0】
Display 【P 0.0】
Display【P 0.00】
Display 【P 0.000】
Display 【P 0】

For example, press【#】key when it shows【P 0.000】,now the decimal point setting is 0.000，and will come into full capacity setting state automatically.

3、Full capacity setting：

Display 【FULL 】 press【tare】key to come into the number input state.

Display 【0 0 0 0 0 0】 press【tare】key，indicate symbol▼will move to right one step by step to which input position you want, and press【zero】to add value to adjust the number you need, press【tare】key indicate symbol▼will move to right one step by step to which input position you want,press【zero】to add value to adjust the number you need until the full capacity is appeared ,press【#】for confirmation and indicator will come into next parameter setting automatically .

For example, when it displays【0 2 5 0 0 0】press【#】key for confirmation and will come into zero point setting calibration state.

4、Zero calibration：

Display 【nOLOAD】 Insure there's no loads on the platform and wait until the stable indicate symbol▼display, then press【#】key，zero calibration finished, and indicator come into full capacity calibration state.

5、Full capacity calibration：

Display【AdLOAD】Put weights on the platform and press【tare】key to come into input state after stabilization.

Display【0 0 0 0 0 0 】Press【tare】key，the indicate symbol▼move to right and to the position which can select number input, press【zero】key to add number and until input the number you need and then press【tare】key , the indicate symbol▼move to

right and to the position which you can select number input ,press【zero】key to add number until get the number as same as the weight value of the weight. press【 # 】key for confirmation and finish the full capacity calibration state.

Display t End】

6、Press【clear】key and back to weighing state and new parameters take effects. At this time you can also keep pressing【#】key to set other parameters.

(2) Press【#】key during startup initialization, the indicator will come into calibration state.

Fast Zero calibration:

Press【Function】key in any time before display【nOLOAD】,the indicator will save the parameter of division, decimal point, full capacity， and come into the zero calibration state directly. Press【zero】key when the stabilization symbol ▼ appear, it displays【 End】， it means that the indicator save the full capacity calibration parameter before and press【clear】key, the indicator save the parameters and back to weighing state.

Come into full capacity calibration state directly：

Press【*】key in any time before display【AdLOAd】,the indicator will save the parameters setting of division, decimal point, full capacity ， and save the zero point parameter also and come into the full capacity calibration state directly.

Note： Push the calibration switch to off after the calibration, and lead sealing again.

Chapter V User's function setting

Press【Function】key over 3 seconds in weighing state, the indicator will come into user setting mode, there are P1~P7(user can revise anytime),F1~F11 （ protected by calibration allowed switch) parameter setting, press【 tare 】key to adjust the number and press【 * 】key to come into next parameter. The parameters description are as follows:

1、P1 x extend parameter
- x=1: 9600
- x=2: 4800
- x=3: 2400
- x=4: 1200

2、P2 x extend parameter
- x=1: output net weight
- x=2: output gross weight
- x=3: output tare weight

3、P3 x extend parameter
- x=1: no transmission（RS232 stop）
- x=2: Communication method 1
- x=3: Communication method 2
- x=4: Communication method 3 (command method)
- x=5: Communication method 4
- x=6: for extend function use

4、P4 x back light
- x=1: brightness1
- x=2: brightness2
- x=3: brightness3
- x=4: brightness4

x=5: brightness5

5、P5 x power-saving mode
x=1: power-saving method 1,about 30 seconds
x=2: power-saving method 2,about 30 seconds,only button press exit power-saving mode
x=3: power-saving method 3,about 60 seconds
x=4: power-saving method 4,about 60 seconds, only button press exit power-saving mode
x=5: power-saving off , and back light always on

6、P6 x extend parameter
7、P7 x extend parameter

The below revise of the parameter maybe will effect accuracy of the weight, so if need revise need plug the allowed calibration circuit ring on the main board and then can check the parameter and revise the parameters.

1、F1 x extend parameter
2、F2 x extend parameter
x=1: no other function
x=2: start the animal function
x=3: start the peak hold function
3、F3 x zero track range
x=1: 0.5e
x=2: tracking forbidden
4、F4 x zero button range
x=1: 2%FS
x=2: manual zero forbidden
5、F5 x startup zero range
x=1: 10%FS
x=2: startup zero forbidden
6、F6 x digital filter time intensity
x=1: fast
x=2: middle
x=3: slow
7、F7 X stable time
x=1: fast
X=2: middle
X=3 slow
8、F8 X stabilization extent
X=1: low
X=2: middle
X=3 high

9、F9 x acceleration of gravity revise
x=0～32: default is 16, no revise
x<16：this value is smaller means the acceleration of gravity is smaller
x>16：this value is bigger means the acceleration of gravity is bigger
Single number revise 0.0375%，maximum revise 0.6%

10、F10x overload alarm
x=1: above±0.9e Max

x=2: above±105% Max

11、F11 x negative value display range

x=1: not less -9e

x=2: not less -20e

x=3: not less -10% %FS

x=4: not less -100% %FS

Chapter VI Error Indication

[Err 1]	Inner code loading is too small or the capacity of load cell is too large
[Err 2]	Out of manual zero setting range
[Err 3]	Zero position is too high or there is heavy goods on platform when startup.
[Err 7]	The calibration short-circuit ring did not connected
[Err 8]	Loadcell signal line connect in reverse，please connect Loadcell line in right way .
[------]	Out of display range , display value should between -99999～999999
[A oL]	Out of the maximum times of accumulation or weigh of accumulation, now the accumulation is not workable , please do the operation after clearance.

Chapter VII Maintenance and attention

1.To guarantee its clarity and service life, the indicator shouldn't be placed directly under sunshine and should be set in the plain space.

2.It is not suitable to place the indicator in the dusty and vibration environment and also avoid using in the moist environment.

3.Signal source and weighing indicator should be reliably connected, and system should be well grounding. It should be far away with strong electric field, strong magnetic field. Load cell and indicator should be far away with strong corrosive, inflammable, explosive object.

▲ Do not use under inflammable gas or inflammable steam; do not use under pressure container canning system.

▲ Lightning frequent areas, it must be installed reliable lightning arrester, to ensure operators safety and prevent damage of instruments and relevant equipment due to lightning.

▲ Signal source and indicator are static sensitive equipments, when using must earnestly adopt anti-static measure. It is prohibited in measuring device for welding operation or other strong electric field operation; in thunderstorms season, we must

implement the reliable lightning-protection measures to prevent signal source and the indicator damage caused by lightning strike, ensure operators safety of weighing equipment and related equipment safety operation.

4. Never use strong solvents (e.g., benzene, nitro class oil) to clean the housing.

5. Liquid or electricity conducting particles should not be poured into the indicator, in case the indicator damage and electric shock.

6. You should cut off power supply of indicator and relevant device before you pull-in and out the connecting cable of indicator and external device.
   You should cut off power supply before pull-in and out connecting cable of signal source.

7. Company advice for customers: start to use our indicator after test. The company is only responsible for the quality of indicator, the biggest compensation is not more than twice of indicator value, the company is not responsible failure of the whole system.

8. Output interfaces of indicator must be strictly in accordance to the user's manual, you should not alter any connection. If there is failure when using the indicator, you should immediately unplug it, and send to manufacturers for repair. Ordinary non-professional manufacturers should not repair it to avoid bigger damage.

9. Since invoice date, the indicator has a one-year free repair period. If any non-artificially failure happens under regular using conditions within this period, the user can send the indicator with its guarantee card (of the correct number) back to our service station or supplier for repair. The indicator shouldn't be open without authorization, otherwise free guarantee will be cancelled

10. Battery

① The battery will be charged after power cord is connected to AC 220V power supply. So please remove the battery if it is not used frequently.

In order to avoid internal over-heat and battery over-charging, the current will be limited. If you feel that charging is too slow, please buy a special charger for external charging. Please note that the wire ends connected to battery shall not be connected inversely (red +, black -), or the indicator may burn out.

Be sure to fully charge the battery before using the built-in battery for the first time!

② Four grade battery voltage display, and battery voltage are :6.19V、5.99V、5.77V、5.55V。The indicator will turn off when the last light is off.

③ Please charge the battery for about 10-16 hours before its first use so as to avoid a too low voltage caused by self-discharging of battery which may be mistakenly taken as failure.

④ The battery shall be charged for about 10-16 hours at a time during the normal operation. If the indicator is not to be used for long, the battery shall be charged for 10-16 hours every two months in order to extend its service life.

The built-in battery of indicator is a consumable part that is not within the range of "three

guarantees".
