

P2000B+ Indicator

Technical Manual

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1. Main Data

- 1.1. Zero-load signal input range: 0mV ~ 16mV
- 1.2. Zero point temperature drift $\leq 0.15\mu$ V/°C
- 1.3. Sensitivity temperature drift ≤ 12 ppm/°C
- 1.4. A/D conversion resolution ration: 280000
- 1.5. Display resolution ration: 20000
- 1.6. A/D conversion rate: 5 ~ 20T/S
- 1.7. Accuracy class: **III**
- 1.8. Non-linearity: $\leq 0.01\%$ F•S
- 1.9. Load cell exciting power: DC8V, driving 4 load cells of 350 Ω
- 1.10. Operation temperature: 0 ~ 40 °C
- 1.11. Storage environment temperature: -25 °C ~ 55 °C
- 1.12. Relative humidity: $\leq 90\%$ RH(no condensation)
- 1.13. Min. display value: 1 / 2 / 5 available
- 1.14. Display style: 6-digit 0.8-inch 7-segment LED
- 1.15. Thirteen Max. capacities optional: 6kg (12lb) ~ 10000kg (20000lb)
- 1.16. Baud rate for data output available: 600, 1200, 2400, 4800 and 9600
- 1.17. Power supply: AC220V(+10%~ -15%) 50Hz \pm 1HZ
- 1.18. Dimensions (L x H x W): 24 x 14 x 16(cm)
- 1.19. Dead weight :2.26kg

2. Main Features

- 2.1. External graduation number up to 20000e
- 2.2. Complete keyboard calibration
- 2.3. Auto zero tracking
- 2.4. Full range tare
- 2.5. Overload indicating
- 2.6. Weight and times accumulating
- 2.7. Display converting between gross weight and net weight

- 2.8. Unit switch
- 2.9. Two calibration methods: Fixed point and arbitrary point calibrating
- 2.10. Extended display (i.e. minor counts display function)
- 2.11. RS-232C output (option)
- 2.12. Holding and printing function

3. Structure

3.1. Structure diagram

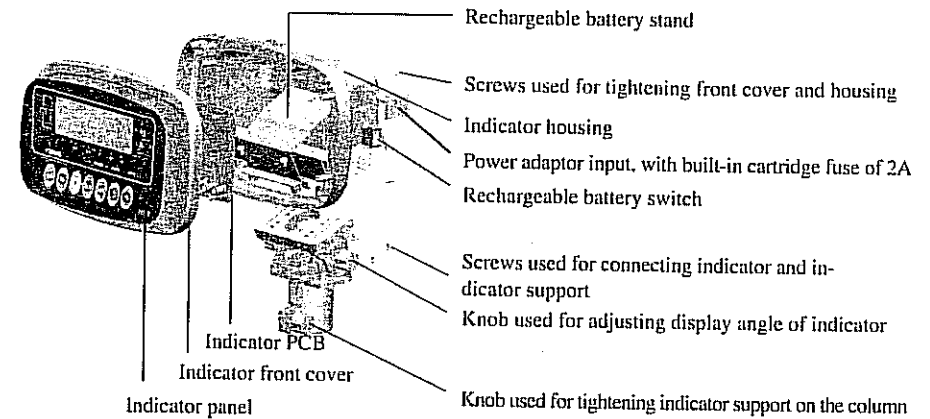


Figure 1: Structure of P2000B* (when equipped with column stand)

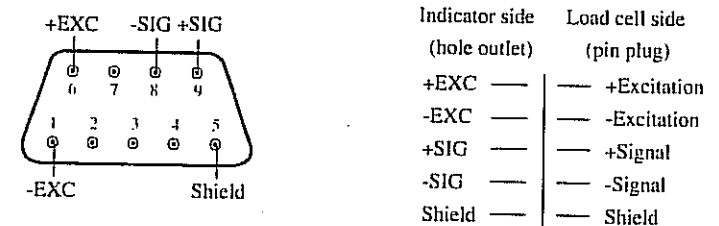


Figure 2: Input outlet for load cell signal (4-wire system)

*Note: If using 6-wire-system input mode, you must short-connect positive excitation and positive feedback and short-connect negative excitation and negative feedback, and then start working.

3.2. Panel

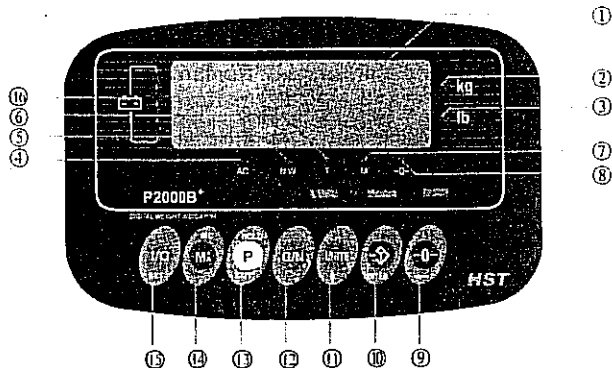



Figure 3: Panel

- ① 6-digit LED digital tube
- ② Indicating light for "kg" weight unit and steady weighing
- ③ Indicating light for "lb" weight unit and steady weighing
- ④ AC power indicating light
- ⑤ Indicating light for net weight
- ⑥ Indicating light for tare storing
- ⑦ Indicating light for accumulating
- ⑧ Indicating light for zero position
- ⑨ Zero-setting and place shifting key
- ⑩ Tare and confirming key
- ⑪ Unit switch and digit increment key
- ⑫ Gross weight /net weight converting key
- ⑬ Printing and holding key
- ⑭ Storage calling and clearing key
- ⑮ Power on and off key
- ⑯ Rechargeable battery indicating light

3.3. Lights and their meanings

11 LED indicating lights are set for the indicator (4 lights are the rechargeable battery indicating lights). See the following for their names and meanings.

Table 1

Cursor Symbol	Meaning
→ 0 ←	It is on when the weight is within $\pm 1/4 d$ (zero position)
T	It is on when the deducting-tare operation is effective (there is tare to be stored)
M*	It is on when there is accumulating value in memory
N.W.	It is on when the displayed value is net weight
kg	It is on when the weight unit selected is "kilogram" and after the weighing is stable
lb	It is on when the weight unit selected is "pound" and after the weighing is stable
AC	It is on when the AC power is used
	They flash when charging the battery and they indicate the voltage of the battery when using DC power

4. Operation Keys Instruction

4.1. Zero and place-shifting key

- a. Under weighing state, when the weight displayed is not more than 2% of Max. weighing capacity, you can press this key to make the display return to zero. While pressing this key repeatedly, you can make the display of not more than 5% Max. capacity return to zero. At the same time, "→ 0 ←" light on the LED screen is on.
- b. Under calibrating state, this key is used for selecting digit place. When this key is used, the selected digit will move to the left and the digit at this place will flash.

4.2. Tare and confirmation key

- a. Under weighing state, when the weight loaded on the scale platform is not more than Max. Capacity plus 9e ("e" refers to division value), you can make the display return to zero by pressing this key, and the light "T" on the screen will be on. At this time if you remove the article from the scale platform, the screen displays a negative value. If you press this key again, the display returns to zero and the light "T" is off.
- b. Under calibrating and setting state, this key is used for confirming the present state (result) and reminding you to proceed the next step.

4.3. Unit converting and digit increment key

- If you press this key once according to the setup content of F1.1, the weight unit will convert between "kg" and "lb".
- When calibrating or setting, if you press this key, you can make the selected digit change in 0 → 1 → 2 ... 9 → 0 sequence.

4.4. Gross / Net weight converting key

This key is used for converting the display value between gross weight and net weight.

4.5. Printing key

- According to the different data of F1.4, this key is used for printing or holding function
- You can use it to exit when calibrating.

4.6. Storing and display calling and clearing key

- You can accumulate the displaying value by pressing this key. While accumulating, the indicator will first display the accumulated times and then display the accumulated weight value in 2 times.
- You can also press this key to call the accumulated value for display.
- Press and hold [M] key for 5 seconds, you can clear accumulation record. When the accumulation value is cleared, the "M" indicating light will be off.

4.7. Power on and off key

- Used for turning on and off power supply.
- Used when calibrating.

Battery Switch

You should turn on the switch when using DC power or charging the battery. Turn it off when you don't use it for a long time or in transportation.

Operation

1. Preparation

Before power on, you should check whether the wire-connection of load cell signal input is correct (see Figure 2). 4-wire-system input mode is usually used for the indicator. **If using 6-wire-system input mode, you must short-connect positive excitation and positive feedback and short-connect negative excitation and negative feedback, and then start working.** At this time, the indicator will confirm whether the power supply is in accordance with the indicator's requirement.

6.2. Power on

Insert power plug (the adaptor or use the DC power directly) and press [I/O] to switch on the indicator. The indicator first displays an edition number and then carry through self-checking from "9" to "0" successively. If the load cell input connection is correct and zero position is normal, the indicator will display .

6.3. Zero setting

When the weighing is under 2%F•S and if you press [→ 0 ←], the indicator displays . And the repeated zero-setting range is 5%F•S for the indicator. When the indicating light "T" is on, you can not carry through zero-setting operation.

6.4. Deducting tare

6.4.1. If you want to regard the weight of the article loaded on the scale platform as a tare weight to deduct, press [→ T ←], the indicator will display and the indicating light "T" will be on. The tare weight value been deducted repeatedly can't exceed the Max. capacity.

6.4.2. When the indicator display and the indicating light "T" is on, if you press [→ T ←], the light "T" will be off.

6.4.3. See the following table for negative tare appearing and clearing.

Table 2

Steps	Display	Meaning
place the article on the platform	0.10	Which means the article's weight is 0.1 kg (can be regarded as a tare weight).
Press [→ T ←]	0.00	The tare has been deducted, and at this time the indicating light "T" is on.
Remove the article	-0.10	The indicator displays the tare value (a negative value).
Press [→ T ←] again	0.00	The negative tare is cleared and the indicating light "T" is off.

6.5. Accumulation

While carrying through weighing each time, you can accumulate the weighing result by pressing [M*]. And you can also clear the accumulated values in memory by pressing and holding [M*] for 5 seconds.

*Note: when F1.1=2, you can only make accumulation under kg unit.
when F1.1=3, you can only make accumulation under lb unit.

6.5.1. Accumulating

After the weighing is steady (the article is loaded on the scale platform), press [M*] once, the weight value for this weighing is accumulated, and the indicator will first display the total accumulated times and then display the total accumulated weight in 2 seconds. Since the weight value to be accumulated may exceed 6-figure digit (the decimal system), the accumulated value is divided into 2 parts for display, and the indicator first displays $\boxed{H X_7 X_6 X_5 X_4}$ and then displays $\boxed{L X_3 X_2 X_1 X_0}$ in 2 seconds. $X_3 X_2 X_1 X_0$ indicates the low 4-figure digit of the accumulated value and $X_7 X_6 X_5 X_4$ refers to the high 4-figure digit of the accumulated value. The actual accumulated value should be $X_7 X_6 X_5 X_4 X_3 X_2 X_1 X_0$. Of course, the high-figure digit may be with "0" or all "0", and the ineffective "0" at high figure will be concealed. But when the digits at high figure are all "0", "0" at the last place will be displayed, i.e. $\boxed{H 0}$. When there is an accumulated value in memory, the indicating light "M*" will be on. The Max. accumulation times for the scale (indicator) is 100 times every time due to its memory limit. When the times exceeds 100, the accumulation operation will not be responded and the indicator displays \boxed{OF} . At this time the indicator will remain the display for 3 seconds and then return to normal display state. Under this case, you can carry through accumulation operation only after clearing its memory.

6.5.2. Accumulating repeatedly


To compare with the last (or first) accumulation, the next (or second) accumulation must be carried through after unloaded (i.e. after the indicator returns to zero). And you only need to press [M*] once for accumulation every time.

6.5.3. Accumulated value displaying

a. While the article is still on the scale platform, see Item 6.5.1 for the display method of the accumulated times and the accumulated weight value. Attention

please: But press [M*] once more, if you don't remove the article from the scale platform, at this time the function of [M*] is the same as [M_R], only for viewing previous accumulated value and not for any accumulation operation.

b. Under empty scale state (i.e. when the indicator displays "0"), you can press [M_R] to call the accumulated times and weight value up to now to display. In the same way, the indicator will first display total times and then total weight value divided into 2 parts in 2 seconds as Item 6.5.1.

The [M*] and the [M_R] is the same key in this indicator, i.e. [M_R]. 

6.5.4. Accumulated value clearing

You can clear all the accumulation values (the times and the weight value) in memory by pressing [M*] for more than 5 seconds. When you press [M*] more than 5 seconds \boxed{CLE} is displayed, it means the operation is responded. At this time the accumulated values up to now is cleared and the indicating light "M*" is off. Then after \boxed{CLE} is displayed for 3 seconds, it returns to normal display state.

6.6. Display converting between gross weight and net weight

Under weighing state, you can press [G/N] to convert the display value between gross weight and net weight. When the indicator displays the net weight, the light "N.W." is on. If the light "N.W." is not on, the displaying value is the gross weight.

6.7. Printing and holding function

6.7.1 When F1.4=1, the display will be locked after pressing [P] and will return to normal after pressing [P] again.

When F1.4=2, the printing command in output data is effective, and the space character on State C will change into "(", i.e. state character is changed from 20H to 28H.

When F1.4=3, it is ticket printing mode

6.8. RS-232C output and printing

① Serial output

The D-type 25-core outlet (Figure 4-a) or 3-core metal outlet (Figure 4-b) is used for RS-232C hardware interface, the outlet is mounted on back housing of the indicator. See the following drawing for details:

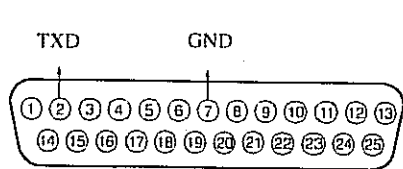


Figure 4-a 25-core outlet

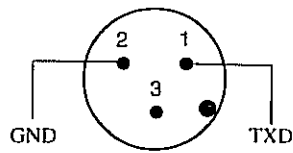


Figure 4-b 3-core metal outlet

Figure 4: Interface of serial signal output

② The serial data (ASCII code) is transmitted in continuous mode by MCS-51 way 1, every group of data has 17 frames including 1 frame of start character (02), 3 frames of state mark, 6 frames of data displaying, 6 frames of tare data and 1 frame of enter, as follows:

STX State A State B State C Display value Tare value Enter

STX: Start character, 02H

State A: Control character for decimal point (D7 refers to verification bit)

D7	D6	D5	D4	D3	D2	D1	D0	Decimal point position
0	1	0	1	0	1	0	0	Without decimal point
0	1	0	1	0	1	1	1	1-digit decimal 0.0
0	1	0	1	1	0	0	0	2-digit decimal 0.00
0	1	0	1	1	0	1	1	3-digit decimal 0.000
0	1	0	1	1	1	0	0	4-digit decimal 0.0000

State B: Comprehensive control character (D7 refers to verification bit)

D7	Verification bit
D6	0
D5	1
D4	1
D3	Dynamic mark bit D3=0, stability; D3=1, non-stability (dynamic)
D2	Overload mark bit D2=0, normality; D2=1, overload
D1	Positive and negative mark bit D1=0, positive number; D1=1, negative number
D0	Gross weight and net weight mark bit D0=0, gross weight; D0=1, net weight

State C: Output control character

D7	D6	D5	D4	D3	D2	D1	D0	Output content (after pressing [P])
0	1	0	0	0	0	0	0	Blank, without printing command
0	1	0	1	0	0	0	0	(

When F1.4=2, and if you press [P] in weighing state, the command bit "C" will appear in the output data.

③ Every frame consists of 10 digits. The first is start bit, 0. The ninth is stop bit, 1. One of the other eight is correction bit and the other seven are all data bits (from low to high), the format is as following:

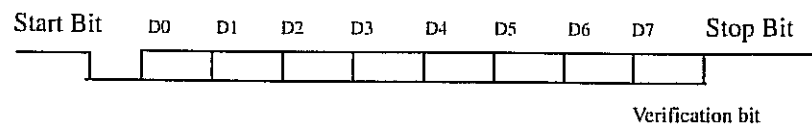


Figure 5: Frame format

6.8.2 Ticket printing output

① Option of the indicator data

This indicator can be matched to EPSON TM-U295 micro-printer. In order to be matched to the printer, we should set the data of the indicator F1.4=3 and F1.3 is chosen the baud rate consistent to the printer. At this moment, if you press [P] key, the printer will print the ticket in the ticket mode as following:

No.03 G=1.576 lb T=0.948 lb N=0.628 lb	No.04 G=0.714 kg T=0.429 kg N=0.285 kg
when the weight unit is lb	when the weight unit is kg

Figure 6: Ticket Printing Mode

② Connection between the indicator and the printer

If there is one cable provided together with printer, connect one end of the cable to D-type 25-core pin plug of the printer and the other end to the D-type 25-core hole or 5-core metal plug of the indicator as following:

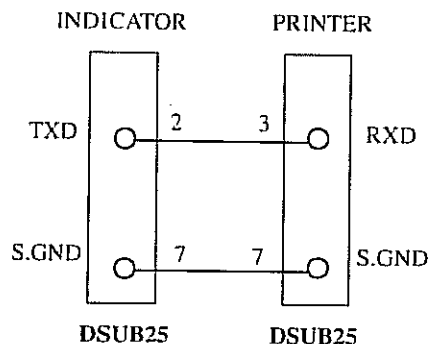


Figure 7: Connection Map(the cable should be prepared by the user)

③ Explanation about the printing format

- The printer will not print if the net weight is a negative value
- The number varies from 0~99. When it exceeds 99, it will back to 0 automatically.

6.9. Unit converting

Under weighing state, you can press [UNITS] to convert the display unit between "kg" and "lb". At the same time, the relevant light will be on. Since the unit indicating light also indicates as weighing stability, the unit indicating light will be on only when the weighing is steady.

6.10. Digit input

While carrying through calibration, you may need to input the digit.

The digit input is all fulfilled via [←] and [↑] in cooperating. [←] refers to place shifting key, it is used for selecting digit place, and the selected digit will flash. At this time if you press [↑], the flashing digit will be changed in "0 → 1 → 2 ... 9 → 0" sequence.

For instance: How to input digit "001500"!

If the previous display content on the indicator is "030000", the digit input steps are as follows:

Step 1: Press [←] once to make the indicator zero clearing, at this time the digit at the most right flashes and the indicator displays .

Step 2: Press [←] once, the second digit at the last right flashes and is

displayed.

Step 3: Press [←] once, the third digit at the last right flashes and is displayed.

Step 4: Press [↑] five times, the indicator displays and "5" flashes.

Step 5: Press [←] once, the fourth digit at the last right flashes and is displayed.

Step 6: Press [↑] once, the indicator displays and "1" flashes.

Step 7: Press [TARE] to confirm.

Thus the input operation for a group of digit is completed. It is possible that the "X" refers to a letter U or E.

6.11 Rechargeable battery maintaining

6.11.1 The voltage of the rechargeable battery is indicated through the battery symbol on the panel. The battery symbol has 4 lights and if all the 4 lights are full, it means the voltage of the battery is $\geq 6.4V$. If there is only 1 light left, it means the voltage is $\leq 5.5V$. When there is no light left, it means the voltage is $\leq 5.3V$.

6.11.2 When there is only 1 light left on the symbol, maybe the output of the rechargeable battery is too weak for the indicator to work normally, at this time please insert the power adaptor to charge the rechargeable battery. The indicator can be operated while being charged. If battery is not charged and the indicator continues to be operated, when its voltage is less than 5.3V, the scale it will automatically stop working in 1 minute.

6.11.3 If the indicator is not used for a long time, be sure that the storage battery is in power off state.

6.11.4 If you find the working time is rather short for the rechargeable battery that is fully charged, you should consider changing the battery. You may change it by opening the battery box cover, pulling up the positive and negative metal pieces and removing the battery. While changing the battery, be careful to make sure the electrode of the rechargeable battery is correct.

6.12 Power saving function

In order to prolong the working time of the rechargeable battery, the indicator is equipped with power saving function. That means if you keep the indicator stable within about 10 seconds and don't work on the keyboard, the indicator will display . If it is in zero position, the indicator will display .

7. Use Guide

- 7.1. Be sure that the ground terminal of AC power is properly grounded.
- 7.2. Weighing (tare included) can't exceed the scale's Max. capacity plus 9e ("e" refers to the division value). When the weighing is more than the value, the indicator displays **FULL**.
- 7.3. Never disassemble it without authorization.
- 7.4. If the indicator displays nothing or its display doesn't change after power on, please try to turn it off and turn it on again.
- 7.5. When you set "F1" and "F2" data, you may have not enough patience or make a mistake. If you don't intend to be a more professional personnel, you only need to make F1.6=2 and F2.5=2, thus you may not consider to select the other data of "F1" and "F2" because at this time the indicator (scale) will automatically select the defaulted value of the products leaving the factory.
- 7.6. Turn off power supply and pull out its power plug at once if it is out of order. Non-specialized manufacturer or non-professional staff can't fix it without authorization, you can contact our selling agent in your area.
- 7.7. If you need to re-calibrate the indicator, do it after the indicator is on for 30 minutes in order to ensure its circuit in stable working state.

Never change its setup data, unless permitted by the laws.



8. Data Setting and Calibrating

First, you must open the indicator and find the circuit shorter J1 to make it short-connected as indicated in Figure 8.

The indicator (scale) is set 3 main directories on the parameter interface so that the users can conveniently amend the functions and measurement data of the indicator (scale). The following are the name and content of 3 main directories:

- F1: Function management**
- F2: Circumstance factor adjusting**
- F3: Calibration**

You should disconnect the circuit shorter J1 after exiting from setting and calibrating state as indicated in Figure 9:

If it displays **J1 ON**, it means you failed to disconnect the circuit shorter J1 after exiting the setting and calibration state. You should disconnect it.

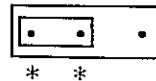


Figure 8 connect the circuit shorter

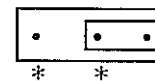


Figure 9 disconnect the circuit shorter

8.1. Entering main directories

Under power on state, press [I/O] key firstly to turn it off and turn it on again. When the indicator is self-checking "7" → "0", press [I/O] once (notice: you must operate the keys before the self-checking is ended), the indicator displays **SET UP**.

At this time if you press [→ 0 ←], the indicator will display **F1**.

If it is in turn-off state, you should proceed the operation mentioned above after it is turned on for 30 minutes.

When you press [↑], the indicator will select the main directories in F1 → F2 → F3 → F1 sequence.

When you press [ENTER], the indicator will enter any subdirectory under the main directories.

When you press [P], the indicator will return to the main directory from the subdirectory or to return self-checking state from the main directory self-check.

8.2. Entering subdirectories and selecting

When the indicator displays "F1" or "F2" or "F3", you can make it enter subdirectories by pressing [ENTER]. And you can make choices in the options of subdirectories by pressing [↑]. While pressing [EXIT], you can make the indicator withdraw from the subdirectories.

8.2.1. Subdirectory F1

F1.1: Unit selecting, with 4 options

F1.1=1 only for choosing "kg" unit

F1.1=2 "kg" and "lb" unit choosing and converting. Its unit is automatically "kg" after turned on and it can be calibrated only under "kg" unit.

F1.1=3 "kg" and "lb" unit choosing and converting. Its unit is automatically "lb" and it can be calibrated only under "lb" unit.

F1.1=4 only for choosing "lb" unit

F1.2: Calibration mode selecting, with 3 options

F1.2=1 fixed point calibrating and only internal pre-set Max. capacity selecting

F1.2=2 arbitrary point calibrating and only internal pre-set Max. capacity selecting

If it displays **J1 ON**, it means you failed to disconnect the circuit shorter J1 after exiting the setting and calibration state. You should disconnect it.



F1.2=3 arbitrary point calibrating and arbitrary Max. capacity selecting

You can select only F1.2=3 if the edition number is less than REV 2.0.



F1.3: Baud rate selecting, with total 5 options

- F1.3=1 relevantly B=600
- F1.3=2 relevantly B=1200
- F1.3=3 relevantly B=2400
- F1.3=4 relevantly B=4800
- F1.3=5 relevantly B=9600

F1.4: Output mode, with 2 options

- F1.4=1 without command character in output data, i.e. state mark "C" is 20H (hex) and [P] key has the holding function
- F1.4=2 with command character in output data, i.e. state mark C is 28H (hex)
- F1.4=3 Serial output printing signal

F1.5 Beep selecting, with 2 options

- F1.5=0 beep switch off
- F1.5=1 beep switch on

F1.6: Selecting for setup value from F1.1 to F1.5, with 2 options

- F1.6=1 selection of setup value of the users
- F1.6=2 selection of defaulted value when the products leave the factory, see the following table for the data.

Table 3

F1.1	F1.2	F1.3	F1.4	F1.5
1	3	2	1	1

*Note: After last option F1.6 of F1 is finished, press [ENTER] to confirm, the indicator displays

F2, which means the indicator (scale) enters the next main directory at this time.

When pressing [1], you can re-select main directories. If you need to withdraw main directory, you should press [EXIT].

8.2.2. Subdirectory F2

F2.1: Turn-on zero range selecting, with 4 options

- F2.1=0 cancelling auto turn-on zero function
- F2.1=5 power-on zero range 5% F•S

If it displays Jl on, it means you failed to disconnect the circuit shorter J1 after exiting the setting and calibration state. You should disconnect it.



F2.1=10 power-on zero range 10% F•S

F2.1=20 power-on zero range 20% F•S

F2.2: Auto zero tracking range selecting, with 5 options

- F2.2=0.2 auto zero tracking range 0.2e
- F2.2=0.5 auto zero tracking range 0.5e
- F2.2=1.0 auto zero tracking range 1.0e
- F2.2=2.0 auto zero tracking range 2.0e
- F2.2=3.0 auto zero tracking range 3.0e

F2.3: Digit wave-filtering coefficient, with 3 options

- F2.3=1 low-degree wave-filtering: Suitable for the conditions with weak air flow or little atmospheric pressure change
- F2.3=2 medium-degree wave-filtering: Suitable for general occasion
- F2.3=3 high-degree wave-filtering: Suitable for the situations with strong air flow or large atmospheric pressure change

F2.4: Extended display mode (i.e. minor counts display), with 2 options

- F2.4=0 prohibiting extended display
- F2.4=1 allowing extended display

*Note: "extended display" refers to internal resolution ration display, you can use this method conveniently to adjust and view the error.

F2.5: Selecting for setup value from F2.1 to F2.4, with 2 options

- F2.5=1 selection of setup value of the users
- F2.5=2 selection of defaulted value when the products leave the factory, see the following table for the data.

Table 4

F2.1	F2.2	F2.3	F2.4
20	0.5	2	0

8.2.3.Subdirectory F3

"F3" is used for carrying out calibration function.

8.3. Calibration

8.3.1. When the indicator displays F3, press [ENTER] to make the indicator (scale) enter calibration function. At this time the indicator displays d----|, and the digit at the right place is Min. display value. There are 3 options for the Min. display value, and the value is respectively 1, 2 and 5.

8.3.2. After you select Min display value via [↑], and press [ENTER] to confirm,

If the edition number is less than REV 2.0, you should use the digit-input method to input the Max. capacity, the procedure is as follows:

- After the Min. display value is confirmed, the indicator displays $\boxed{U A_4 A_3 A_2 A_1 A_0}$, and “A₄A₃A₂A₁A₀” refers to the last input value in storage. If you need to change the value, you should press [←] to clear the display, i.e. make the indicator display $\boxed{U0000“0”}$, and at this time the decimal point will disappear.
- Input the Max. capacity you need according to the method in Item 6.10.
- Press [I/O] and [ENTER] successively to make decimal point appear on second place at right, i.e. $\boxed{U B_4 B_3 B_2 B_1 B_0}$, and “B₄B₃B₂B₁B₀” is the new value you input.
- Press [←] to make decimal point move to the needed place.

If the edition number equals to or is more than REV 2.0, you can select the preset Max. capacity.

Under this case, the indicator displays $\boxed{5}$ (12 under “1b” state). The value displayed represents Max. weighing capacity, and there are 13 options for Max. capacity, separately :

6kg (12lb), 15kg (30lb), 30kg (60lb), 60kg (120lb), 150kg (300lb), 300kg (600lb), 600kg (1200lb), 1000kg (2000lb), 1500kg (3000lb), 2000kg (4000lb), 3000kg (6000lb), 5000kg (10000lb), 10000kg (20000lb)

You can select Max. weighing capacity you need by pressing [↑].

*Notice: The scale (indicator) is able to comprehend the graduation number automatically through the Min. display value and Max. capacity you select. And the graduation number range to be comprehended is always between 2000~15000.

For instance:

when the Min. display value selected is 1 and the Max. capacity selected is 60kg, the graduation number to be accepted is 6000, neither 600 nor 60000. And when the Min. display value and the Max. capacity you select is respectively 1 and 1000kg, the graduation number to be accepted is 10000, neither 1000 nor 100000.

8.3.3. After you press [ENTER] to confirm the Max. capacity, the indicator displays $\boxed{5CL-09}$ and carry through countdown, at this time it automatically confirm zero position.

8.3.4. After finishing the countdown, the indicator displays $\boxed{5CL-00}$. At this time after you press [ENTER], the display of the indicator has 2 possibilities.

If it displays $\boxed{J1 0n}$, it means you failed to disconnect the circuit shorter J1 after exiting the setting and calibration state. You should disconnect it.



a. When F1.2=1, it means the case you select is fixed point calibration.

At this time the indicator displays a weight data. See the following table for the relation between the weight data and the Max. capacity.

Relation between the weight data and the Max. capacity.

Table 5

Max. Capacity (kg/lb)	6 /12	15 /30	30 /60	60 /120	150 /300	300 /600	600 /1200	1000 /2000	1500 /3000	2000 /4000	3000 /6000	5000 /10000	10000 /20000
Display Value	5 /10	10 /20	20 /50		100 /200		200 /500		600 /1200		1000 /2000		3000 /5000

At this moment you can place the standard weights (or substitute) equal to the displayed weight on the platform and then press [ENTER]. At this time the indicator will display $\boxed{Add-09}$ and then carry through countdown. After the countdown is finished, the whole calibration is finished, the indicator displays $\boxed{F3}$. If pressing [EXIT], you can withdraw from calibration.

b. When F1.2=2 or F1.2=3, it means the case you select is arbitrary point calibration.

At this time the indicator displays $\boxed{Add-5P}$, under this state, you can load the weights on the platform and generally the weights loaded should be more than 30% of Max. capacity so as to greatly increase the linearity degree. Press [←] to make the indicator display $\boxed{E0000“0”}$, and at this time the decimal point is presented at corresponding place and “0” at the most right flashes. Then input the data equal to the known weight by pressing [↑] and [←] in cooperating according to the method in Item 6.10 and press [ENTER] to confirm.

The indicator displays $\boxed{Add-09}$ and carry through countdown, after the countdown is finished, the whole calibration is finished, and at this time the indicator displays $\boxed{F3}$ and then disconnect the circuit shorter J1.

Press [EXIT] (withdraw setup state) to make the indicator return to self-checking. After self-checking, the indicator enters normal display under weighing state.

If the edition number is less than REV 2.0, you can only select arbitrary point calibration.



8.4. Flow chart for setting and calibrating

If it displays $\boxed{J1 0n}$, it means you failed to disconnect the circuit shorter J1 after exiting the setting and calibration state. You should disconnect it.



