

# User Manual

## Waterproof Weighing Scale

### SUBe AirCharge / SUBe

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



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### Check Firmware Version

Turn off the scale and hold  key, then turn on the scale and hold  key. Display 01 Adc. Press  key twice, then display 03 VEr. Press  key. Display firmware version 02035. Press  key. Display maintenance number 9XX for 2 seconds. Turn off and turn on scale to return to weighing mode.




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EXCELL PRECISION CO., LTD.

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Thank you for purchasing EXCELL waterproof weighing scale. In order to use the scale properly, please read this instruction carefully before use. If you have a problem concerning the scale, please contact your supplier.

## Preparing to Use the Scale

1. Locate the scale on a firm level surface free from vibrations for accurate weight readings. Adjust the four leveling feet to centre the leveling bubble on the scale.
2. Avoid hot sunshine directly on the scale or near the exhaust port of ventilating system.
3. Please use a separate power source plug to avoid the disturbance of other electric appliances.
4. There should be no weight on the scale when power is turned on.
5. Commodity should be placed at the centre of platter when being weighed, and its size should not exceed the dimension of the platter.
6. Please warm the scale 15 ~ 20 minutes before using.
7. Please note that when  symbol appears on the screen, the scale needs to be charged.
8. Any suggestion is warmly welcome.




## Precautions for Use

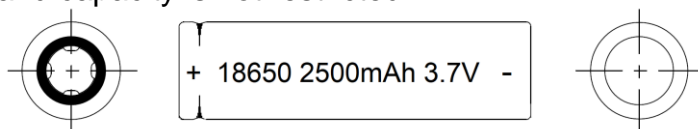
1. Please operate or charge the scale in an open area. Do not squeeze the power cord to avoid wire on fire.
2. Please keep scale in a cool and dry place. Do not store under high temperatures.
3. Please keep the scale clean and free from insect infestation.
4. Avoid impacting with other items or overloaded with excessively heavy weights (The load must not exceed the maximum capacity of the scale).
5. If the scale is not going to be used for some time, please clean it and store it in a plastic bag in dry condition. A desiccant sachet may be included to prevent moisture from building up.
6. Operating temperature: -10°C ~ + 40°C
7. It is recommended to be used indoors and in environments with a height of less than 2000m
8. If the product is used in a manner not specified by the manufacturer, product warranty may be limited.

## Safety Instructions for Lithium Batteries

1. Please pay attention to the storage temperature of the product. Do not place it in a high temperature environment. The ambient temperature should be less than 50°C.
2. After installing the battery, if no display when power is turned on, please check whether the battery polarity is reversed. The polarity must be installed correctly to avoid battery power wasted away.
3. When the "Charging" indicator flashes in the charging state, it means there are the following abnormal states, please check:



- a) Battery is installed but the contact is poor, please check whether the battery is installed properly.
  - b) Please check whether the polarity of the battery is reversed. When the polarity is reversed, the “Charging” indicator will flash after charging for a period of time.
  - c) When battery is removed and the AC power cord is still plugged in, the “Charging” indicator will also flash. When plugged in without the battery installed, there will be a slight frequency conversion sound, which is normal and does not affect the use of the function.
4. When  symbol appears, scale needs to be charged.
- a) When charging, “Charging” indicator will be red
  - b) When the battery is fully charged, “Charging” indicator will be blue.
  - c) If scale is fully charged, after plugging in, the blue light will turn on after about 5~10 minutes of voltage detection. The “Charging” indicator is to indicate the status of the charging process and whether the charging is working properly. To check the battery level, please unplug the AC cable first and turn on scale, and then check the battery symbol  displayed in the lower left corner of the display. The number of bars under the battery symbol indicates battery level. 0 bar means  $\leq 10\%$ . When the low power warning symbol (  ) flashes, that indicate scale needs to be charged.
5. Please operate or charge the scale in an open area. Do not squeeze the power cord to avoid wire on fire. While charging, the temperature of battery should below  $45^{\circ}\text{C}$ .
6. Our product uses a single-cell cylindrical 18650-3.7V lithium-ion battery. Battery's should be 3.6~3.7V and capacity is not restricted.



7. If the appearance of the battery is deformed, damaged, etc., please do not install it for the safety of use.



# Chapter 1 Introduction

## 1-1 Features and Specifications


### Features:




- ◆ Up to 1/7,500 display resolution available.
- ◆ IP68 and IP 69 waterproof and dustproof design
- ◆ Food grade SUS304 stainless steel housing and weighing pan.
- ◆ Futuristic streamlined design, lightweight and portable, integrated
- ◆ Sturdy waterproof mechanical switches buttons
- ◆ Powered by 18650 lithium battery, aligning with environmental and social trends.
- ◆ Exclusive power protection design, eliminating concerns of overcharging and over-discharging risks
- ◆ Exclusive energy-saving patent, maximizing performance with single-cell 18650 battery
- ◆ UL 94 V0 flammability rating standard plastic bottom ensuring user safety
- ◆ Maximum capacity up to 15kg
- ◆ Selectable units: Kilogram (kg), gram (g), and pound (lb) weighing units available.
- ◆ Low power indication and auto power off.
- ◆ Well-designed protection point for transportation.

## 1-2 Power Supply


Model		SUBe	SUBe AirCharge
Battery		18650 Li-ion rechargeable battery DC 3.7V	
Input power: AC 100~240V ( $\pm 10\%$ )		Output: DC12V/1.5A	Output: DC12V/1.5A Output > 15W (15W QI TX module)
Power Consumption and Operation Time	2500mA	Average 60mA, 25~30 hours	
	3200mA	Average 60mA, 35~45 hours	
	6100mA	Average 60mA, 70~80 hours	

### Low Power Alarm

When low power warning symbol  flashes, scale needs to be charged at once to keep the weight accuracy. If it is not charged immediately, scale auto shuts down within 5~10 hours if it is used without backlight or 1~2 hours with backlight. The cut off voltage is about 3.6V. Once it auto shuts down and enters the battery protection mode, it must be charged before it can be used again.

For newer scales have  symbol, it can check the battery level. Please unplug the AC cable first, and turns on the scale and check the battery symbol  displayed in the lower right corner of the display. The number of bars under the battery symbol indicates battery level. 4 bars mean 100%, 3 bars mean 75%, 2 bars mean 50%, 1 bar means 25%, and 0 bar means  $\leq 10\%$ . When  flashes, that indicates scale needs to be charged.



- ☞ Please recharge at once when the symbol  shows in order to keep the weight accuracy.
- ☞ Charging indicator a) When charging, “Charging” indicator will be red.  
b) When the battery is fully charged, “Charging” indicator will be blue.  
c) If scale is fully charged, after plugging in, the blue light will turn on after about 5~10 minutes of voltage detection. The “Charging” indicator is to indicate the status of the charging process and whether the charging is working properly. To check the battery level, please unplug the AC cable first and turn on scale, and then check the number of bars under battery symbol for battery level.

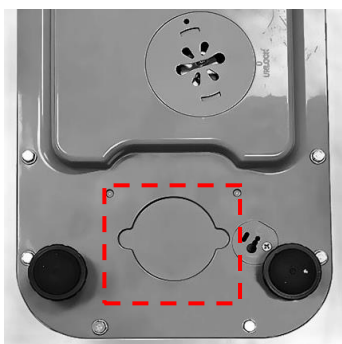
### Notice for SUBe AirCharge for Wireless Charging

- a. While the scale is charging, the spacing between charging plate and scale shall be within 2mm. Metal objects are prohibited between the spacing; otherwise, it might cause overheating or burning.
- b. After the charging pad is attached in position on the bottom of the scale, charging indicator will light up in about 5 seconds.
- c. Charging without battery will cause charging indicator to flash red and blue. Please avoid that.

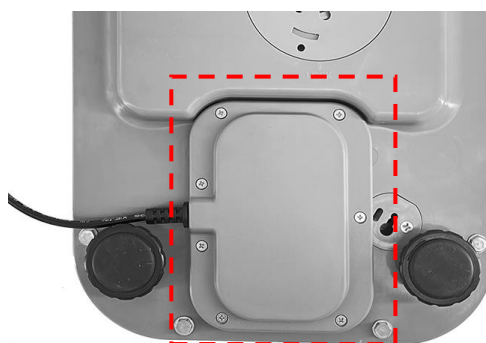
Plug in wireless adapter from left or from right



Position hole is located the bottom of the scale



Raise the scale and aim the point near the center. Slide the charging pad and attach to the position hole



Try to move around the charging pad and ensure it is well attached.



Charging indicator on the display will show:  
Red indicates it is charging  
Blue indicates it is fully charged



### ***Federal Communication Commission Interference Statement***

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- . Reorient or relocate the receiving antenna.
- . Increase the separation between the equipment and receiver.
- . Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- . Consult the dealer or an experienced radio/TV technician for help.

***FCC Caution:*** To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

### ***FCC Radiation Exposure Statement***

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

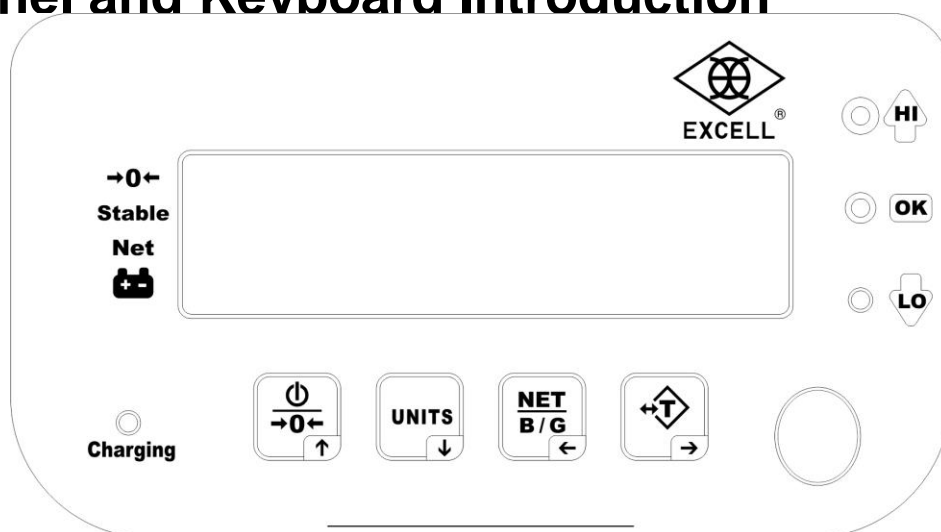
The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

**FCC Statement:** This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

**FCC ID for charging pad: 2BFJV000001**



## 1-3 Panel and Keyboard Introduction



<b>→0←</b>	: Zero point indication	<b>HI</b>	: Upper limit
<b>Stable</b>	: The weight is stable	<b>OK</b>	: Value between HI and LO
<b>Net</b>	: Net weight indication	<b>LO</b>	: Lower limit
	: Low power indication		: Battery level indication (only for newer scale)
<b>Charging</b>	: Charging indication. Red indicates charging. Blue indicates fully charged.		
<b>kg</b>	: Unit “kilogram”	<b>lb</b>	: Unit “pound” or
<b>g</b>	: Unit “gram”		: Unit “lb + oz” with “.” separates lb and oz

## Keyboard Function



### POWER/ZERO KEY

This key possesses three functions: ❶ Power On: press the key when scale is off.

❷ Power Off: while scale is on, hold the key until the scale is switched off.

❸ Zero function: when the weigh pan is empty (free of load) and the display is not showing zero, press the key to zero the scale. At zero, the “→0←” indication is on.



### UNITS KEY

Press the key to switch between the 1<sup>st</sup> and 2<sup>nd</sup> weight units; the icons will indicate the active units. The 2<sup>nd</sup> weight unit is set in FnC 08. When FnC 08 = 0, 2<sup>nd</sup> weight unit is disabled.

📄 After power off, the scale will memorize the active units. When the scale is powered on again, it displays the previously active units.




### TARE KEY

The tare function will not operate during the following conditions:


1. When the scale powers on if the weight is negative and after a container is placed on the weigh pan if the weight is still below zero.
2. The tare value is over the full scale capacity.








❶ Put a container on the weigh pan and after the weight is stable, press the  key to zero the weight of the container. The screen displays the “Net” icon.

❷ Put the goods in the container, the screen displays the net weight value of the goods.

❸ Remove the full container; the screen displays the negative weight value of the container. At this time pressing the  key again will cancel the tare and the scale reverts back to zero. The “Net” icon is switched off.




 The tare function can be operated continually to the full weighing capacity of the scale.

 Continual tare operation is adding or removing tare objects on weigh pan and pressing the  key each time.





### NET/GROSS KEY



In the Tare mode, the screen displays “Net weight” with the “Net” icon and displays “Gross weight” without “Net” icon. Press the  key to switch between the “Net weight” and the “Gross weight”.

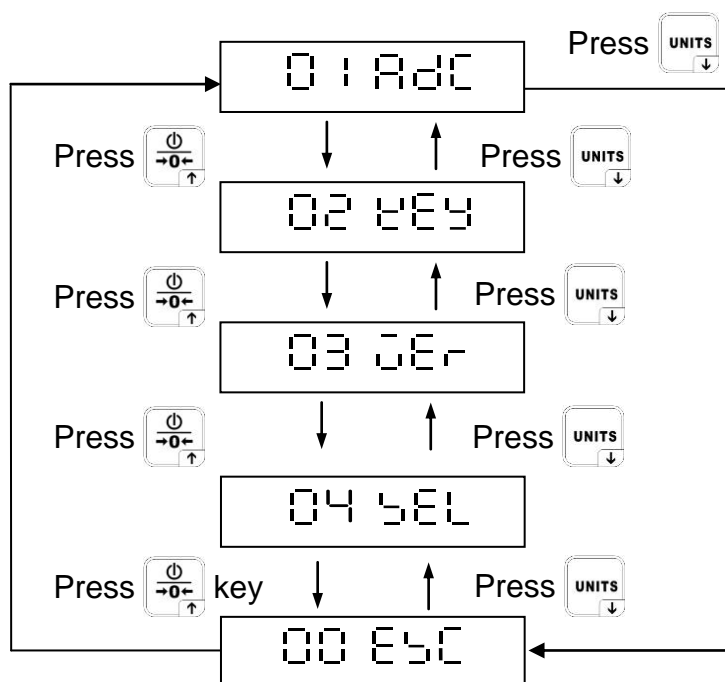
  key only works in Tare mode and when it displays “Gross weight”, only  key will work.

## Patented Power Saving Management Function

In weighing mode, hold  and  at the same time for 10 seconds, it will display “IE\_ON” or “IE\_OFF” and then scale will restart. If it is “IE\_ON”, which means power saving management function is on.

## 1-4 Operating the Scale

When power is off, hold , and press  key, Wait till display shows 01 AdC to enter “Self-Test Mode”.





## 01 INTERNAL VALUE MODE (must hook up Load Cell to test)

- ① Press to enter, and the display shows internal value
- ② Please check whether the internal value has changed obviously with weight changing.
- ③ Please check the backlight.
- ④ Press key to back to the last screen , the display shows

## 02 KEYPAD TEST MODE

- ① Press to enter, display shows 07  
Keypad's internal code: key= 07, key=06, key= 05
- ② Press key to back to the last screen , the display shows

## 03 FIRMWARE VERSION DISPLAY MODE

- ① Press to enter , display shows the firmware version 02035
- ② Press key again, the display shows maintenance number 9XX for 2 seconds
- ③ Press key to back to the last screen, display shows

## 04 CURRENT EVENT COUNTER NUMBER

Only available when software seal is enabled (CFn 06 = 1).

- ① Press to enter, display shows the current event counter number, which has to be the same number as in the event counter sticker.
- ② Press key, back to the last screen, the display shows
- ③ When the event counter number is "999", it can no longer enter service mode without opening housing. Break the seal and open the scale and adjust SWA1 to ADJ, reset the number back to 1

## 00 BACK TO THE LAST SCREEN

Press key to exit self-test mode, the scale will restart automatically.

## 1-5 Error Messages



- E1 ⇒ Initial zero is higher than the zero range when switching the indicator on. (Approval models)
- E2 ⇒ Initial zero is lower than the zero range when switching the indicator on. (Approval models)
- E4 ⇒ Internal value is below Zero.
- oL ⇒ The weight of the object is over 9 divisions of the maximum capacity.
- ⇒ For weight < -20d without tare or pretare device in operation.

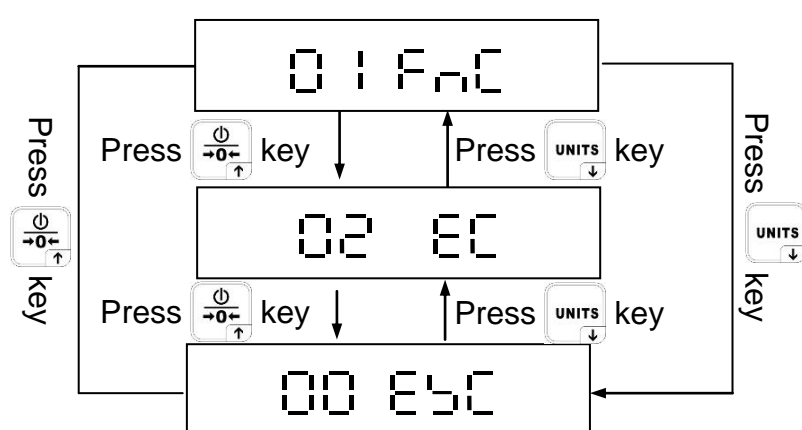


## 1-6 Weight Unit

kg	1 g = 0.001 kg
g	1 g = 1 g
lb	1 g = 0.002204623 lb
oz	1 g = 0.03527396 oz

## Chapter 2 Advanced Functions

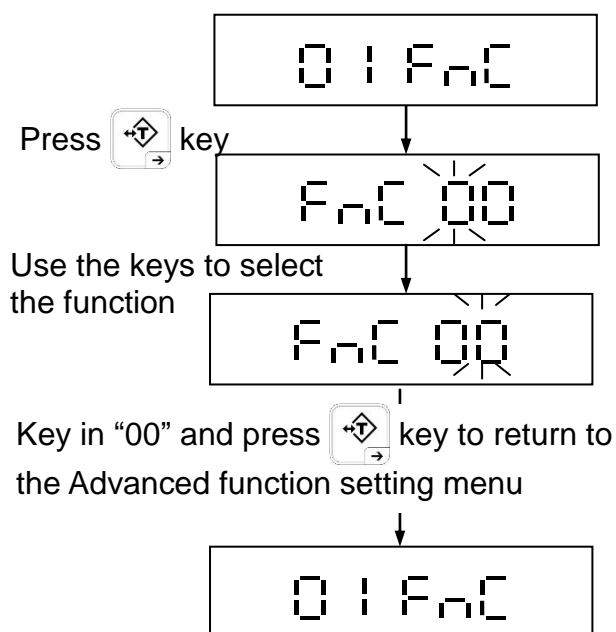
In the weighing mode, press the  and  keys at the same time to enter the Advanced Function setting mode. The display shows 01 FnC.



01 FnC ⇒ General Function setting mode  
02 EC ⇒ External Weight Calibration  
00 ESC ⇒ Exit the Advanced Function setting mode

For Brazil approval models, only when the unit weight is 0 can we enter the advanced function setting mode. Returning to the weighing mode by 00 ESC, It would display E1 if the unit weight exceeds 2% of the high limitation. It will reset automatically until the unit weight is lower than 2% of the high restriction.

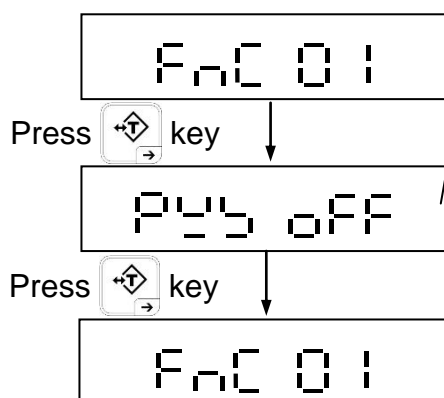
### 2-1 01 FnC General Function



FnC 00 ⇒ Return to the Advanced Function Setting Mode Menu  
FnC 01 ⇒ Power Saving Function Setting  
FnC 02 ⇒ Automatic Power-off Timer Settings  
FnC 03 ⇒ Hi/Lo/OK Settings  
FnC 04 ⇒ Restore the Default Settings  
FnC 05 ⇒ Noise Filter Settings  
FnC 08 ⇒ Two Weighing Units Setting  
FnC 09 ⇒ Unstable Tare  
FnC 10 ⇒ LED Brightness Setting



## 2-1-1 FnC 01 Power Saving Function Setting



### Power Saving Function Setting

Displays the setting last time. Default setting = oFF

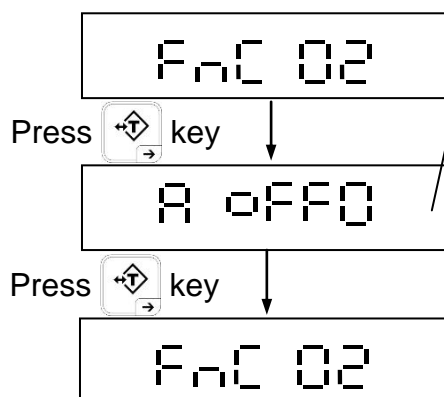
Use or key to switch

On = power saving on

Off = power saving off

When the weight is over 10d, the display shows normal. If you press the key, the display still shows normal. When the scale returns to zero or you do not pressing any key, it will enter into power saving mode after 10 seconds.

## 2-1-2 FnC 02 Automatic Power-off Timer Setting



### Automatic power-off timer setting

Use or key to key in parameter

0 ⇒ No auto power-off

1 ⇒ When the scale is idle for 1 minute, the scale automatically switches off

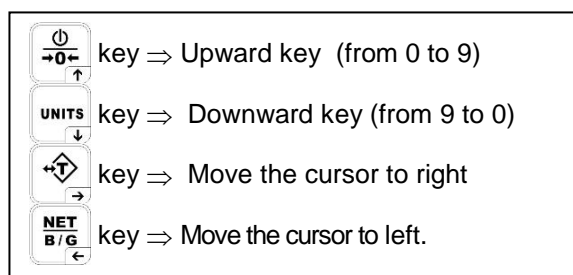
2 ⇒ When the scale is idle for 2 minutes, the scale automatically switches off

⋮

9 ⇒ When the scale is idle for 9 minutes, the scale automatically switches off

### Automatic power-off function

When the scale is idle near zero (< 10d) without any key being pressed, the scale will automatically switch off once it reaches the set time (1~9 minutes).





## 2-1-3 FnC 03 Hi/Lo/OK Function Setting

When the high limit and low limit are both set as "0", the Hi/Lo/OK function is disabled. This function is available in all unit modes. In one specific unit mode, enter FnC 03 to set the Hi/Lo/OK values.

Press		Displays the last saved status. Key in the desired high limit value, then press
		Displays the last saved status. Key in the desired low limit value, then press
Press		Displays the last saved status.
Press		<b>Alarm setting</b>
Press		00000b (a) (b) (c)

(a) ⇒ 1 = beep sound on 0 = beep sound off  
(b) ⇒ 1 = beep sound on when stable  
0 = beep sound on when unstable  
(c) ⇒ 1 = beep sound on when the weight is between high and low limits  
0 = beep sound on when the weight is not between high and low limits and higher than 10d

## 2-1-4 FnC 04 Restore to the Default Setting

FnC 04 Setting is only available for non-approval models. (CFN02=0)

		Use  or  key to select "return" or "format"
Press		rEturN ⇒ Return (Cancel the restoration)
Press		FORmAt ⇒ Restore to the default setting

The default setting includes the following:

- 1) External weight calibration
- 2) HI/LO/OK setting value
- 3) Noise filter setting (External)
- 4) Sampling setting for the counting function

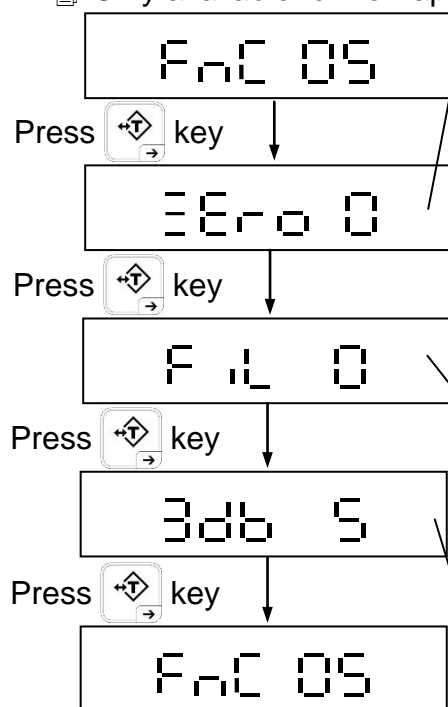
If FnC 04 is set to Format, and the scale has not been restarted automatically. Please ensure to restart the scale manually

	key ⇒ Upward key (from 0 to 9)
	key ⇒ Downward key (from 9 to 0)
	key ⇒ Move the cursor to right
	key ⇒ Move the cursor to left.



## 2-1-5 FnC 05 Noise Filter Setting

Only available for non-approval models. (CFn 02 = 0)



### Returning to the zero point setting

Use **↕0↕** or **UNITS** key to key in the parameters or zero point.

Default setting = 0

When the weight on the scale is over 1/3 full capacity, the function is on.

0 ⇒ 0	4 ⇒ ± 4d	7 ⇒ ± 7d
1 ⇒ ± 1d	5 ⇒ ± 5d	8 ⇒ ± 8d
2 ⇒ ± 2d	6 ⇒ ± 6d	9 ⇒ ± 9d
3 ⇒ ± 3d		

### Digital switch & Stabilization range setting

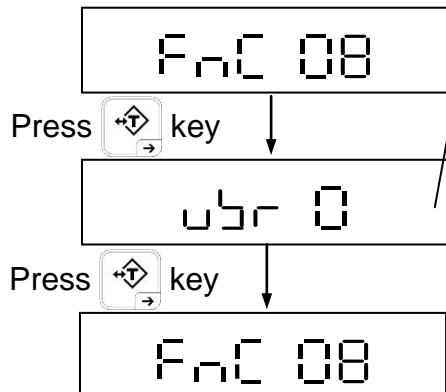
Use **↕0↕** or **UNITS** key to key in the parameters. Default setting = 0

Parameter 0 ~ 9, the larger the number the more stable the weight.

### Filter parameter setting

Use **↕0↕** or **UNITS** key to key in the parameters. Default setting = 5.  
Parameter 0 ~ 9, the larger the number, the faster the filter response.  
Fast response can lead to weight instability.

## 2-1-6 FnC 08 Two Weighing Units Setting



### Two weighing units setting

Displays the last saved parameter setting

Use **↕0↕** or **UNITS** key to key in the parameters for two weighing units

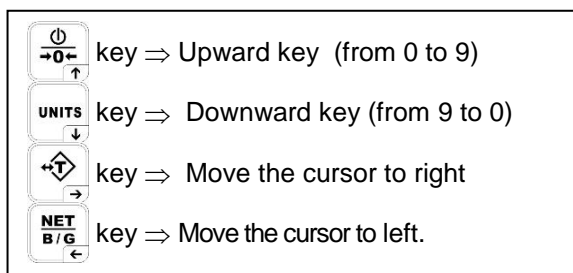
Default setting = 0

0 ⇒ two weighing units function is not activated

To activate two weighing units, please set the 2nd weighing unit to be:

- 1 ⇒ 2nd weighing unit in CSP 01
- 2 ⇒ 3rd weighing unit in CSP 01
- 3 ⇒ 4th weighing unit in CSP 01

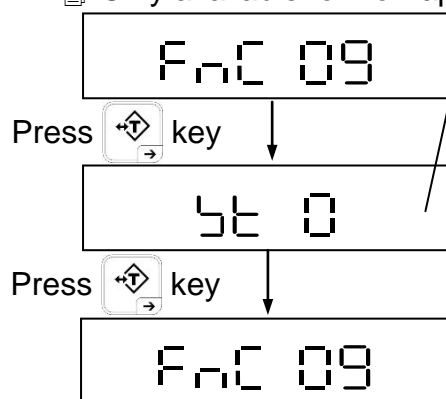
If it set to 1~3, it only displays the 1st weighing unit and the selected 2nd weighing unit







## 2-1-7 FnC 09 Unstable Tare

☰ Only available for non-approval models. (CFn 02 = 0)



### Unstable Tare setting

Displays the last saved parameter setting

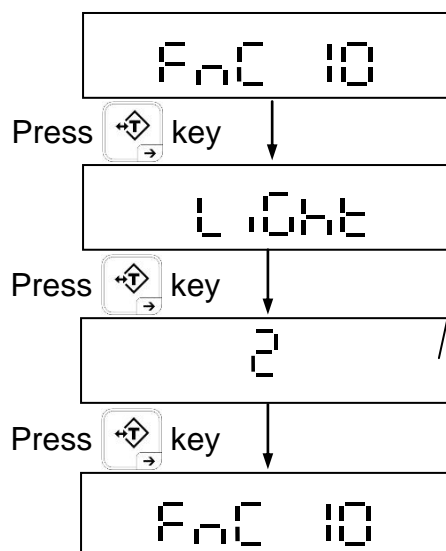
Use  or  key to key in the parameters for second weighing unit

Default setting = 0

0 ⇒ Disable tare operation while unstable



1 ⇒ Enable tare operation while unstable

## 2-1-8 FnC 10 LED Brightness Setting



### LED brightness setting

Displays the last saved parameter setting

Use  or  key to select the LED brightness level.

Default setting = 2

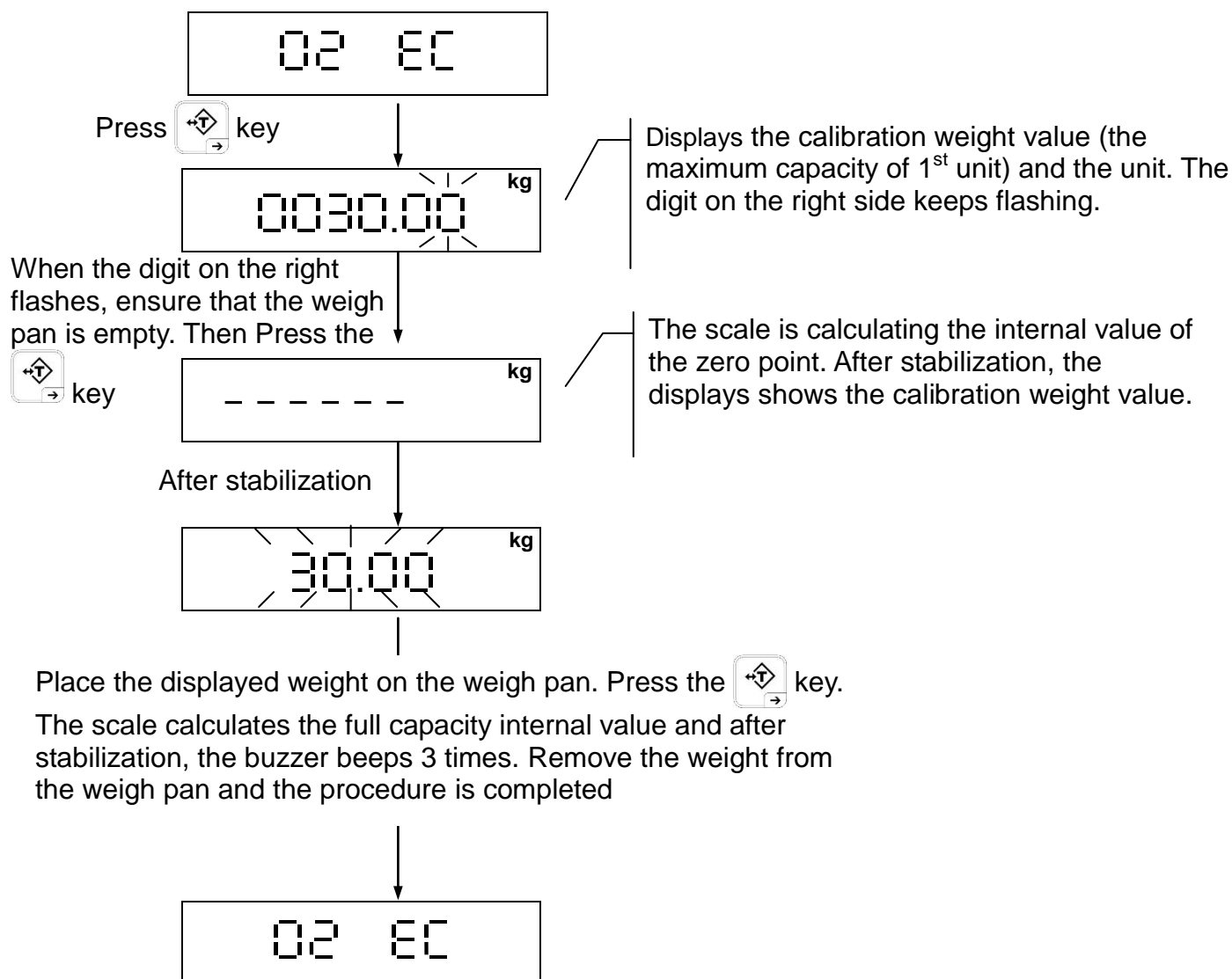
3 ⇒ high brightness

2 ⇒ normal brightness

1 ⇒ low brightness



## 2-2 02 EC Weight Calibration



Unavailable for approval models can't enter weight value mode by 02 EC

### Weight calibration conditions:

The calibration weight value placed on the weight pan must be over 100e, and must be within the 90% and 110% of the full weight





## Appendix 1 7-Segment Display Characters

0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J
K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z				





