



User manual



Waterproof bench scale (IP68)

PTS6K-IP 6kg d=1g

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To guide you to use our product correctly, please read this User Manual carefully to extend the life of scale and to avoid error.

Instructions for Use

1. Please keep scale in a cool and dry place. Do not store under high temperatures.
2. Please keep the scale clean and free from insect infestation.
3. Avoid impacting with other items or overloaded with excessively heavy weights (The load must not exceed the maximum capacity of the scale).
4. 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.
5. Do not mix different types of dry battery or mix used dry batteries with new dry batteries.
6. Please operate or charge the scale in an open area. Do not squeeze the power cord to avoid wire on fire.
7. Operating temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
8. Any suggestion is warmly welcome.

Preparing to use the Scale

9. 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.
10. Avoid hot sunshine directly on the scale or near the exhaust port of ventilating system.
11. Please use a separate power source plug, to avoid the disturbance of other electric appliance.
12. There should be no weight on the scale when power is turned on.
13. Commodity should be placed at the centre of platter when being weighed, and its size should not exceed the dimension of the platter.
14. Please warm the scale 15 ~ 20 minutes before using.
15. Note that when  symbol appears on the screen, the scale needs to be charged.

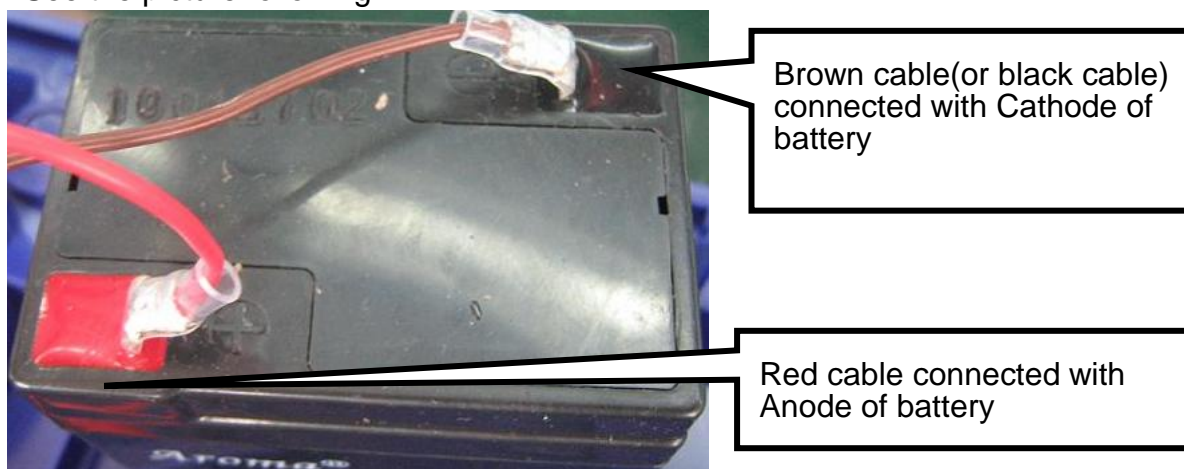
Due to the storage battery adopt the advanced free-maintaining technique, customers need not to replenish electrolyte.

The scale should be recharged every 3 months to prevent failure of the internal rechargeable battery.

1. The battery should be charged for 8~10 hours.
2. The temperature of battery should below 45°C.

Maintaining

1. Please do not discharge with over-current when using the battery. Please charge the battery after discharging current.
2. Please take down the battery when the scale is not used for a long time or break the connection of cathode.
3. Do not short the battery terminals to check whether there is current. Please check whether the connection point is firm to guarantee good connection.
4. The battery should be replaced by specialized person. **No reverse-battery or the product will be damaged.**
 - a) Anode of battery should be connected with Anode of product battery (usually red cable)
 - b) Cathode of battery should be connected with Cathode of product battery (usually brown cable or black cable)
 - c) See the picture following:



Safety warnings

1. The electrolyte of battery is caustic which causes metal, cotton, etc to corrode.
2. The hydrogen will be resolved when using or charging the battery and it will cause explosion when approaches fire.



No burning



Caution Corrosion



Warning explosion



Children faraway

Chapter 1 Introduction

1-1 Features and Specifications

Features:

- ◆ Sealed waterproof silica gel strip blocks water from infiltrating into the scale.
- ◆ Surrounded by waterproof grade sheeting to ensure the water free.
- ◆ 1/3,000~1/6,000 display resolution available.
- ◆ High speed of 24bits AD fast reacts and shortens the weighing operation duration.
- ◆ Selectable units: Kilogram (kg), gram (g), ounce (oz), and pound (lb) weighing units available.
- ◆ Built-in rechargeable battery can be easily replaced.
- ◆ Well-designed protection point for transportation.
- ◆ Low power indication and auto power off.

Specifications:

Model	Capacity	Division	Resolution
PTS6K-IP	6kg	1g	1/6,000
Operating Temperature : -10°C ~ 40°C (14°F ~ 104°F)			
Dimensions ::270 x 124 x 310mm (W x H x D)			
Weight of the scale: 3.3 kg approximately;			

1-2 Power Supply

Power Supply and Power Consumption

- ❶ DC 6V / 4Ah rechargeable battery
- ❷ AC 100V~240V (±10%) adapter
- ❸ 29 mA (system no backlight) about 153 hours
80 mA (system backlight) about 50 hours

- ❹ Wireless Charging (ELW Plus Wipower only)
Power Supply adapter 100V~240V(50~60Hz)

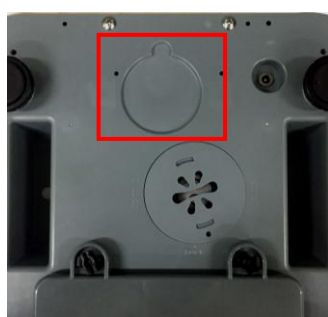
Output : > 5W (meets WPC1.12_Qi Wireless Power Supply's)

- 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. Charging without battery will cause charging indicator to flash red and green. Please avoid that.
- c. How to use Wireless charging

Plug in wireless adapter



Position hole is located the bottom of the scale




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



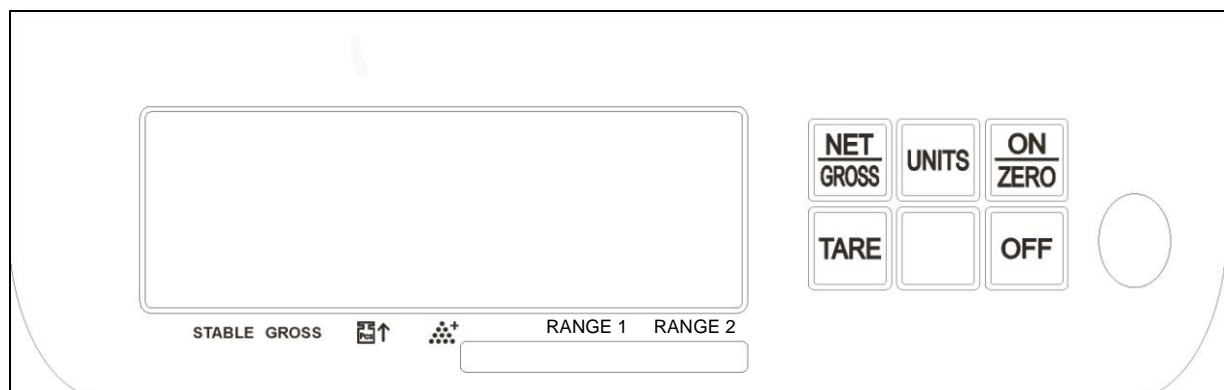
Try to move around the charging plate and ensure it is unmovable





Low Battery Warning

When  symbol keep flashing on the display, please recharge the batteries soon.

1-3 Panel and Keyboard Introduction



Icon Introduction

- STABLE** : The weight is stable.
- GROSS** : The scale is in the gross mode. The display shows the goods and any container weight. This Gross status indication is on when the TARE function is used.
-  : The unit weight is not sufficient. When the icon is on, the counting function is operational but the count may contain errors.
-  : The sampling size is not sufficient. When the icon is on, the counting function is operational but the count may contain errors.
- RANGE 1** : Use only for multi-range models
- RANGE 2** : Use only for multi-range models

Keyboard Function

ON/ZERO KEY

This key possesses two functions: Power On and Zero function.

OFF KEY

When the scale is switched on, press the **OFF** key, the scale will switch off.

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.

UNITS KEY

Press the **UNITS** key to switch weight units; the icons will indicate the active units.

NET/GROSS KEY

In the Tare mode, the screen displays the “TARE” icon; press the **NET/GROSS** key to switch between the “Net value” and the “Gross value”.

1-4 Operating the Scale

POWER ON

When the scale is off, press the **ON/ZERO** key, the scale will switch on.

POWER OFF

When the scale is on, press the **OFF** key, the scale will switch off.

ZERO

When the weigh pan is empty (free of load) and the display is not showing zero, press the **ON/ZERO** key to zero the scale. At zero, the “→0←” indication is on.

- ☰ When the weight value is within the zero range, the zero function operates to zero the scale or cancel the tare function.
- ☰ Zero range: The OIML & NTEP models have a zero range of $\pm 2\%$ of Full Scale. The Sri Lanka model has a zero range of $\pm 4\%$ of Full Scale.

SWITCHING UNITS

Press the **UNITS** key to switch weight units, the icons or arrows will indicate the active units as appropriate. The units available are dependent on the exact scale model.

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

TARE FUNCTION

- (1) Put a container on the weigh pan and after the weight is stable, press the **TARE** key to zero the weight of the container. The screen displays the “Net” icon.
- (2) Put the goods in the container, the screen displays the net weight value of the goods.
- (3) Remove the full container; the screen displays the negative weight value of the container. At this time pressing the **TARE** 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 **TARE** key each time.

NET/GROSS FUNCTION

In the Tare mode, the screen displays the “Net” icon, press the **NET/GROSS** key to switch between the “Net value” and the “Gross value”.

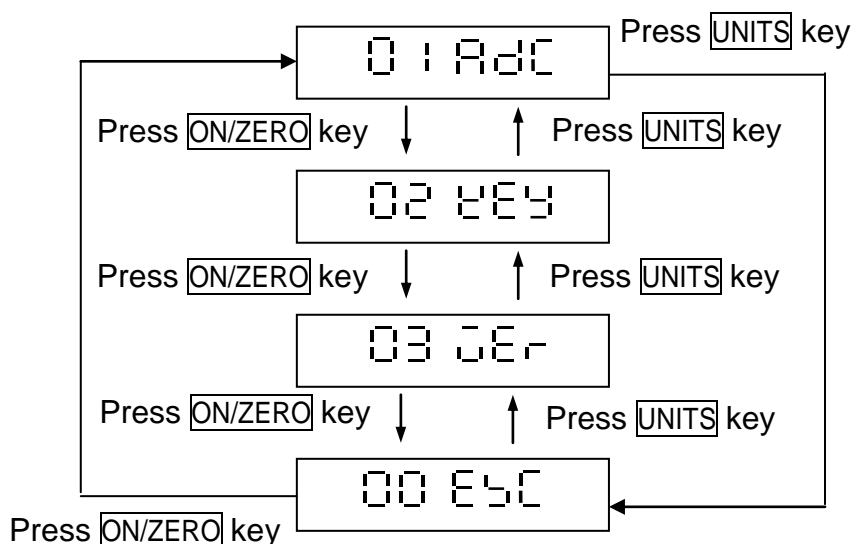
- ☰ When the ▼ GROSS icon is on, the weight value on the display is the total amount of the tare value and net value.
- ☰ At the Gross status, only **OFF** and **NET/GROSS** keys are functional.
- ☰ **NET/GROSS** key is only used in Tare mode.

SIMPLE COUNTING FUNCTION

- (1) Use the **UNITS** key to enter into the “PCS” mode
 - (2) Press the **NET/GROSS** key to select the counting sample size (S = 10, S = 20, S = 50, S = 100, S=200).
The LCD shows **10**, **20**, **50**, **100**, **200** in order.
 - (3) Put the samples on the weigh pan and press the **UNITS** key, the screen displays “-----”. After the sampling process is complete, put the goods on the weigh pan and the screen shows the quantity of the items.
- ☞ The sample weight should be heavier than the minimum capacity of the scale (20d), If not the arrow pointing to the  icon will be activated.
 - ☞ The weight of a sample should be heavier than the 0.2d (d=division), or the arrow pointing to the  icon will be on.
 - ☞ When the  or  are indicated, the scale is still operational but the count may contain errors.
 - ☞ To power off in this mode, the scale will memorize the “Pcs” unit. When the scale is powered on again, it directly enters the simple counting mode.
 - ☞ While the “Auto unit weight average” function is available in the Advanced Function, the goods on the weigh pan are 5pcs greater than the sample size and less than double the sample size, the scale will automatically re-sample the unit weight.

1-5 Self-Test Mode

- ☞ Set the switch SWA1 on the bottom of machine to the LOCK position. When power is off, hold **NET/GROSS**, and press **ON/ZERO** key, Wait till display shows **01 AdC** to enter “Self-Test Mode”.



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

- ① Press **TARE** 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 **ON/ZERO** key to back to the last screen , the display shows 0 I AdC

02 KEY KEYPAD TEST MODE

- ① Press **TARE** to enter, display shows KEY 07
Keypad's internal code: **TARE** key= 04, **NET/GROSS** key=03, **UNITS** key= 02
- ② Press **ON/ZERO** key to back to the last screen , the display shows 02 KEY

03 Ver FIRMWARE VERSION DISPLAY MODE

- ① Press **TARE** to enter , display shows the firmware version 02026
- ② Press **TARE** key again, the display shows maintenance number 103 for 2 secs
- ③ Press **ON/ZERO** key to back to the last screen, display shows 03 Ver

00 ESC BACK TO THE LAST SCREEN

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

1-6 Error Messages

- E 1 ⇒ Initial zero is higher than the zero range when switching the indicator on.
(Approval models)
- E 2 ⇒ Initial zero is lower than the zero range when switching the indicator on.
(Approval models)
- E 4 ⇒ Internal value is below Zero.
- OL ⇒ The weight of the object is over 9 divisions of the maximum capacity.
- ⇒ If the negative weight is over 20 divisions and there is no tare or preset-tare, eg. -21 divisions.

1-7 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

2-1 Advanced Function Setting Table

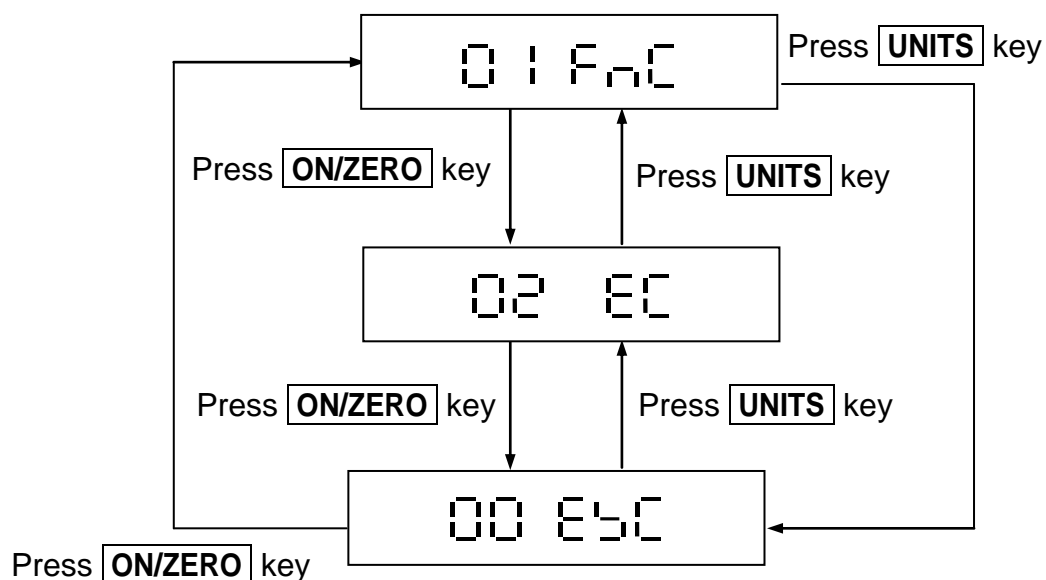
Below is an overview of the advanced functions. For detailed settings refer to the following sections:

DISPLAY	LEVEL 1 FUNCTION	DISPLAY	LEVEL 2 FUNCTIONS
00 ESC	Exit the ADVANCED FUNCTION setting mode	---	---
01 F _n C	General Function setting mode	F _n C 00	Return to the ADVANCED FUNCTION setting menu
		F _n C 01	Automatic backlight function setting
		F _n C 02	Automatic power-off timer setting
		F _n C 03	Hi/Lo/OK function setting
		F _n C 04	Restore the default settings
		F _n C 05	Noise filter setting
		F _n C 06	Hold function setting
		F _n C 07	Auto unit weight averaging setting
		F _n C 08	Two Weighing Units Setting
		F _n C 09	Unstable Tare
02 EC	External Weight Calibration	---	---

2-2 Advanced Function Setting Workflow

In the weighing mode, press the **NET/GROSS** and **ON/ZERO** keys at the same time to enter the **Advanced Function** setting mode. The LCD shows **01 Fnc**.

Overall workflow of the Advanced Function setting mode:

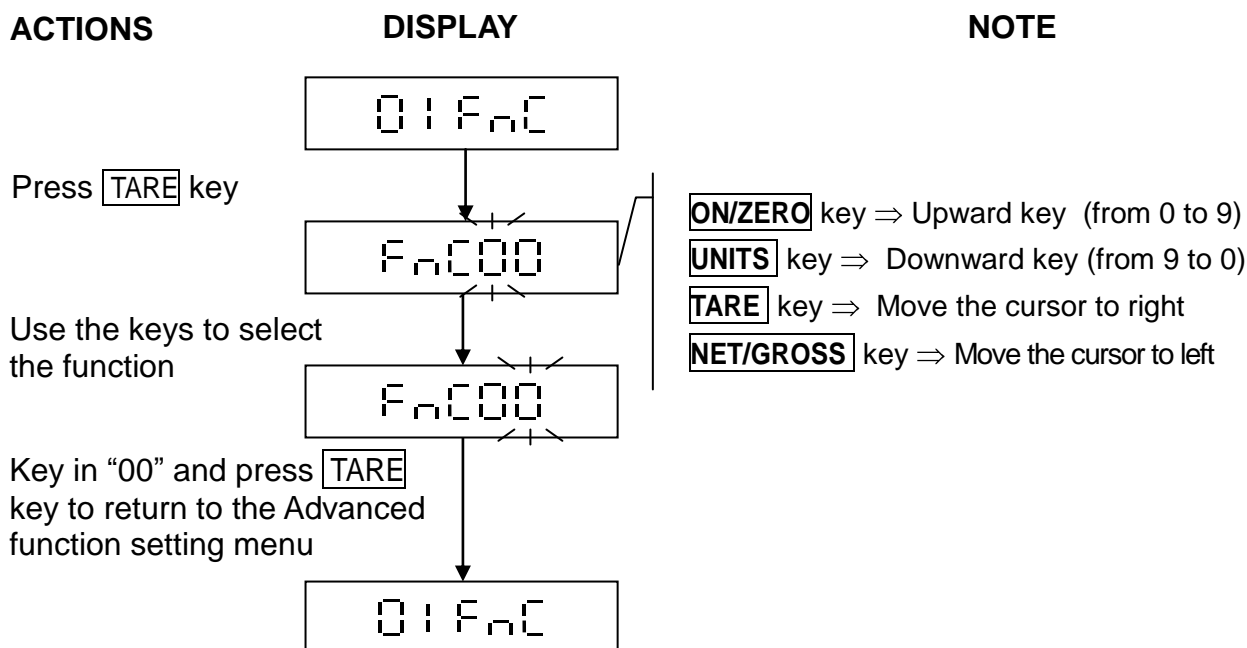


01 Fnc	⇒ General Function setting mode
02 EC	⇒ External Weight Calibration
00 ESC	⇒ Exit the Advanced Function setting mode

Refer to the following sections for the detailed operation procedures of each function setting.

2-3 General Function Setting 01 Fnc

Workflow of the General Function setting:

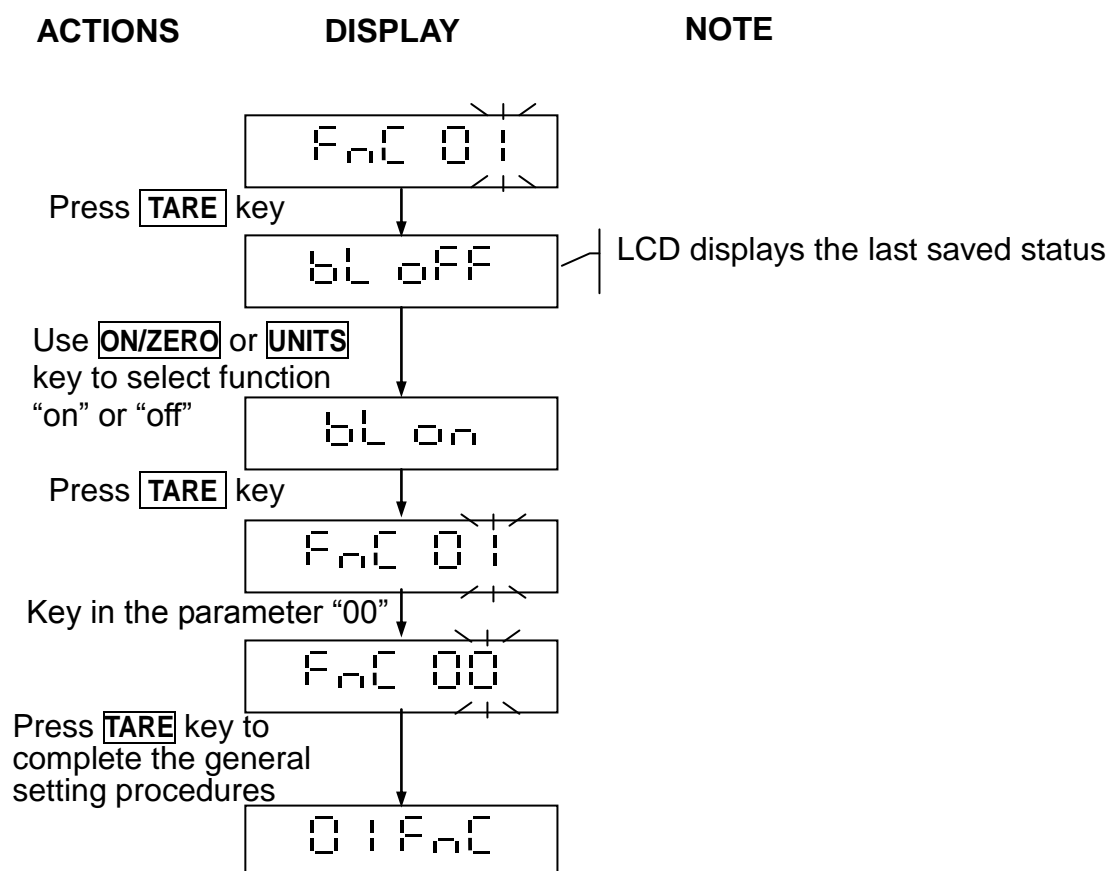


Fnc 00	⇒ Return to the Advanced Function Setting Mode Menu
Fnc 01	⇒ Automatic Backlight Function Settings
Fnc 02	⇒ Automatic Power-off Timer Settings
Fnc 03	⇒ Hi/Lo/OK Settings
Fnc 04	⇒ Restore the Default Settings
Fnc 05	⇒ Noise Filter Settings
Fnc 06	⇒ Hold Function Settings
Fnc 07	⇒ Auto Unit Weight Averaging Setting
Fnc 08	⇒ Two Weighing Units Setting
Fnc 09	⇒ Unstable Tare

Refer to the following sections for detailed operation procedures of each setting.

2-3-1 Automatic Backlight Function Setting $F_nC \ 0 \ 1$

Select $F_nC \ 0 \ 1$ in the General Function setting mode $0 \ 1 \ F_nC$ to change the backlight function setting.

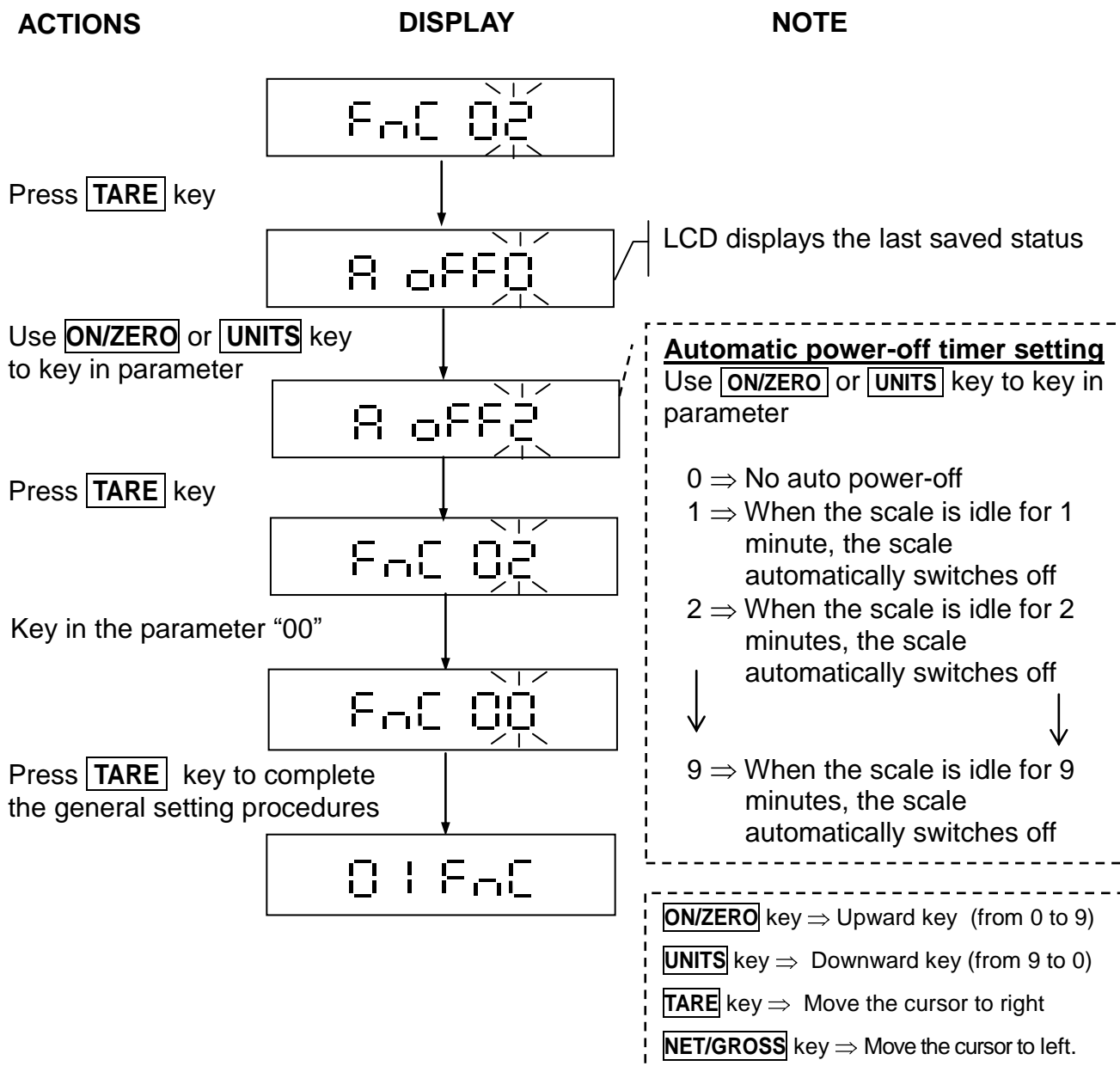


Automatic backlight function

When the weight is over 10d, the display backlight will be on. After the weight is stable for 10 seconds or when the scale returns to zero, the display backlight switches off.

2-3-2 Automatic Power-off Timer Setting F_nC 02

Select F_nC 02 in the General Function setting mode 0 | F_nC to change the automatic power-off timer setting.



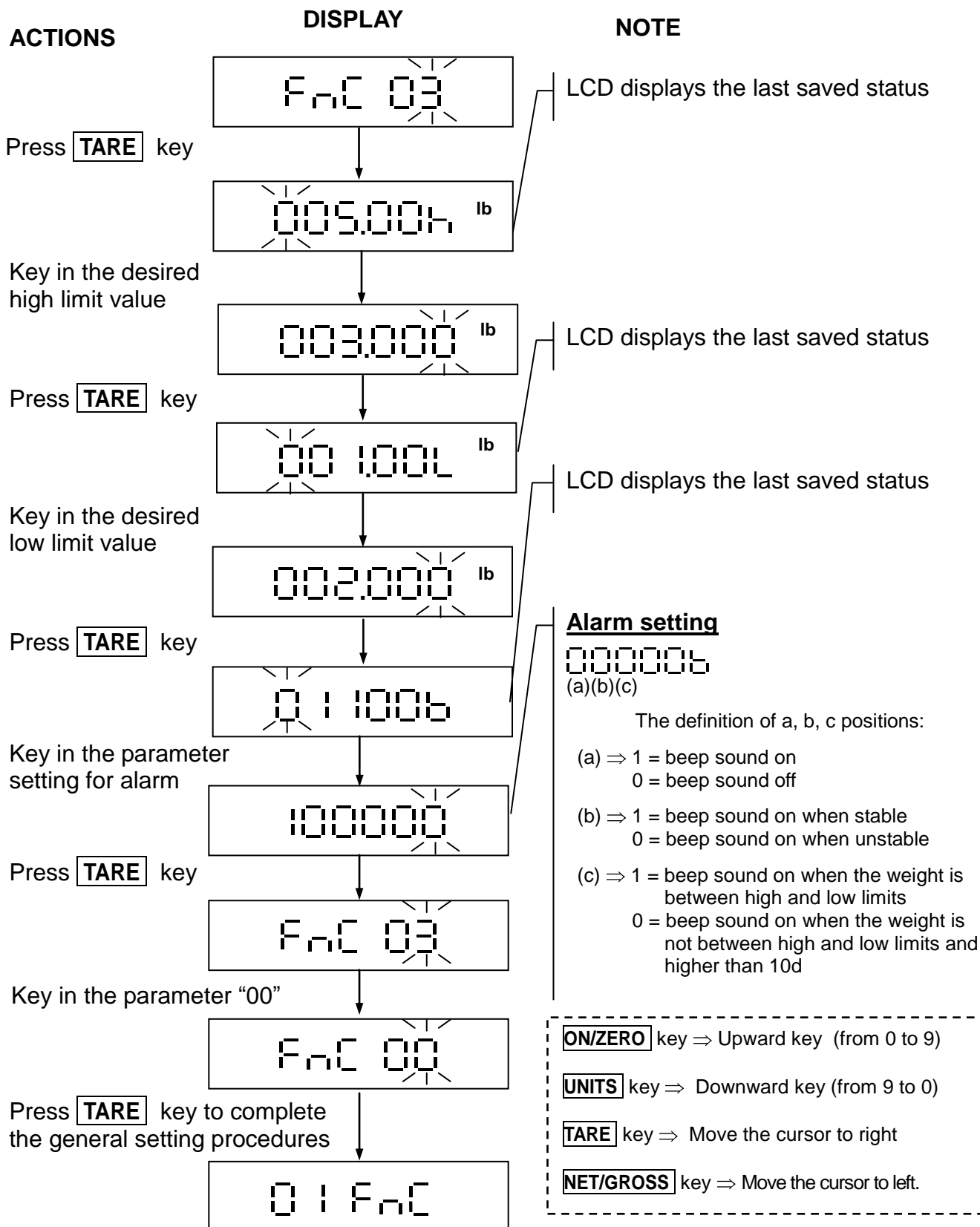
Automatic power-off function

When the weight on weigh pan is less than 10d or keeps idle for the set time, the scale will automatically switch off.

2-3-3 Hi/Lo/OK Function Setting F_nC 03

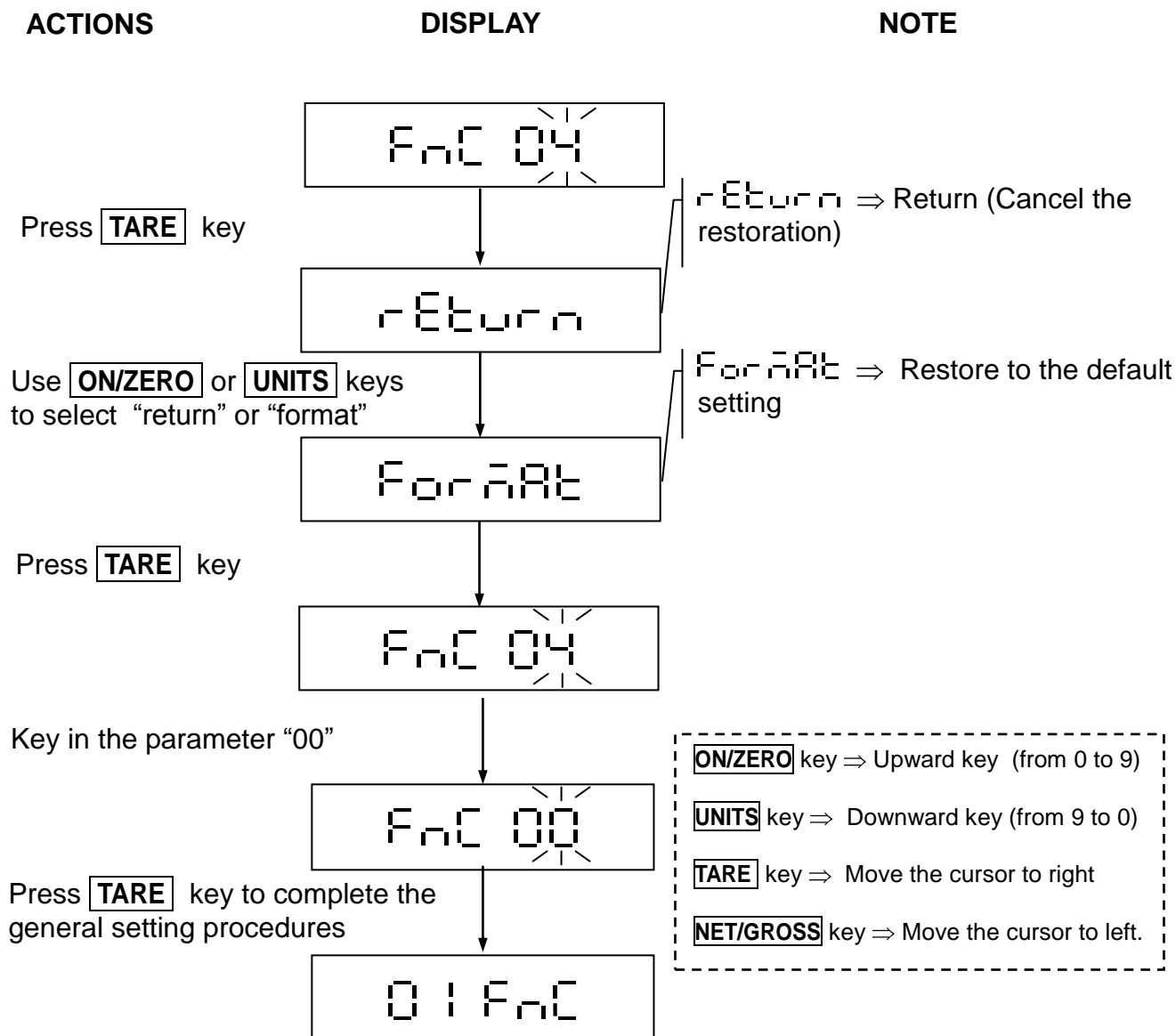
Select F_nC 03 in the General Function setting mode 0 | F_nC to set the Hi/Lo/OK function. This function is available in all unit modes. In one specific unit mode, enter F_nC 03 to set the Hi/Lo/OK values.

☞ When the high limit and low limit are both set as “0”, the Hi/Lo/OK function is disabled.



2-3-4 Restore to the Default Setting F_nC 04

Select F_nC 04 in the General Function setting mode 01 F_nC to restore to the default setting.



☰ The default setting includes the following:

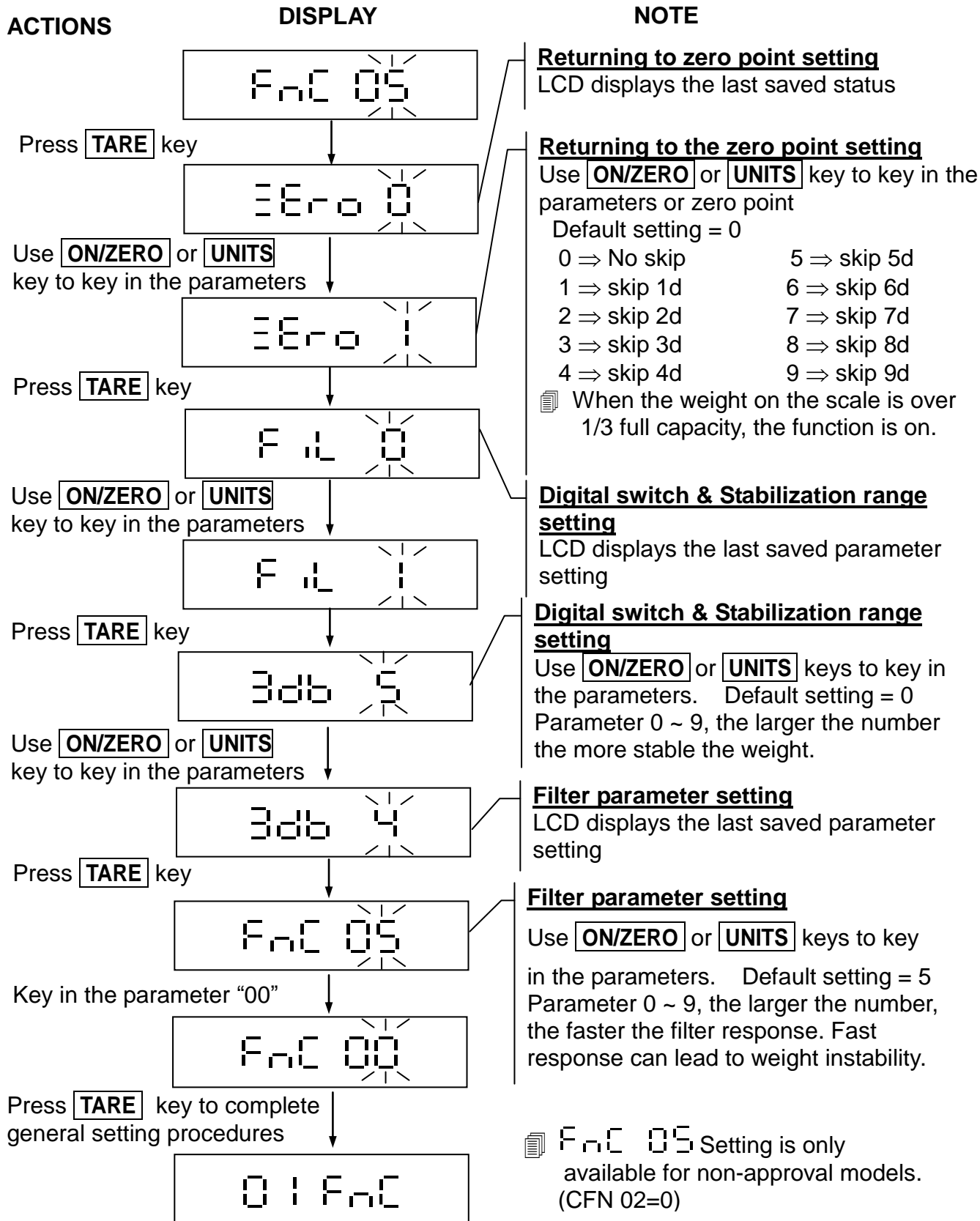
- 1) External weight calibration
- 2) HI/LO/OK setting value
- 3) Noise filter setting (External)
- 4) Sampling setting for the counting function

☰ F_nC 04 Setting is only available for non-approval models. (CFN 02=0)

2-3-5 Noise Filter Setting F_nC 05

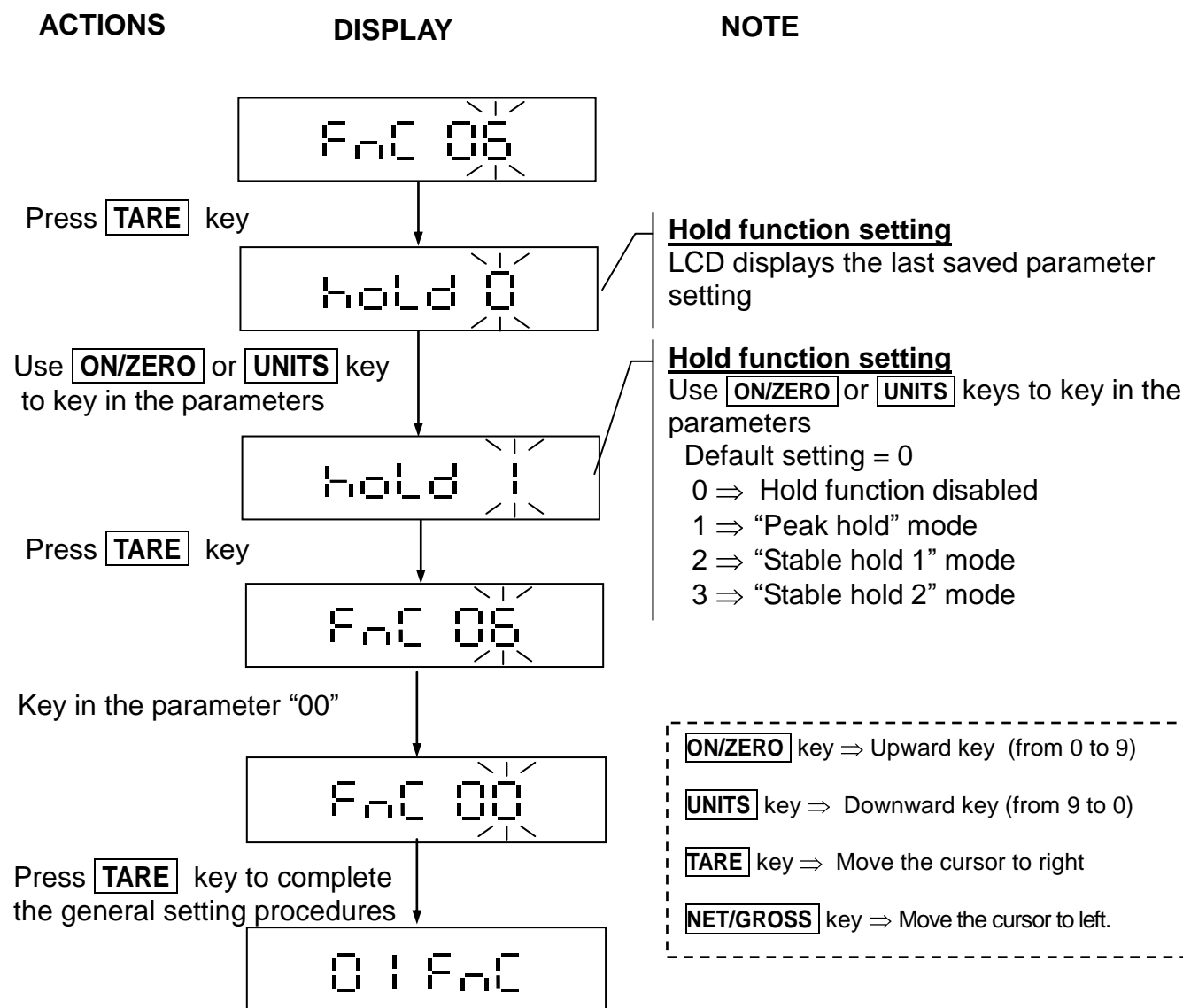
Select F_nC 05 in the General Function setting mode 01 F_nC to set the noise filter setting.

When modifying F_nC 05, the parameters of C F_n 01 remain un-altered.



2-3-6 Hold Function Setting F_nC 06

Select F_nC 06 in the General Function setting mode 0 | F_nC to set the Hold function.



hold 0 = Hold function disabled

hold 1 = “Peak hold” mode

Keep displaying the maximum weight when the weight is continually changing
To exit this mode, press any key.

hold 2 = “Stable hold 1” mode

When the weight is stable, the LCD shows the current weight value. To exit this mode, press any key.

hold 3 = “Stable hold 2” mode

When the weight is stable, the LCD shows the current weight value. When the weight returns to zero (<10d), the hold mode is cancelled automatically.

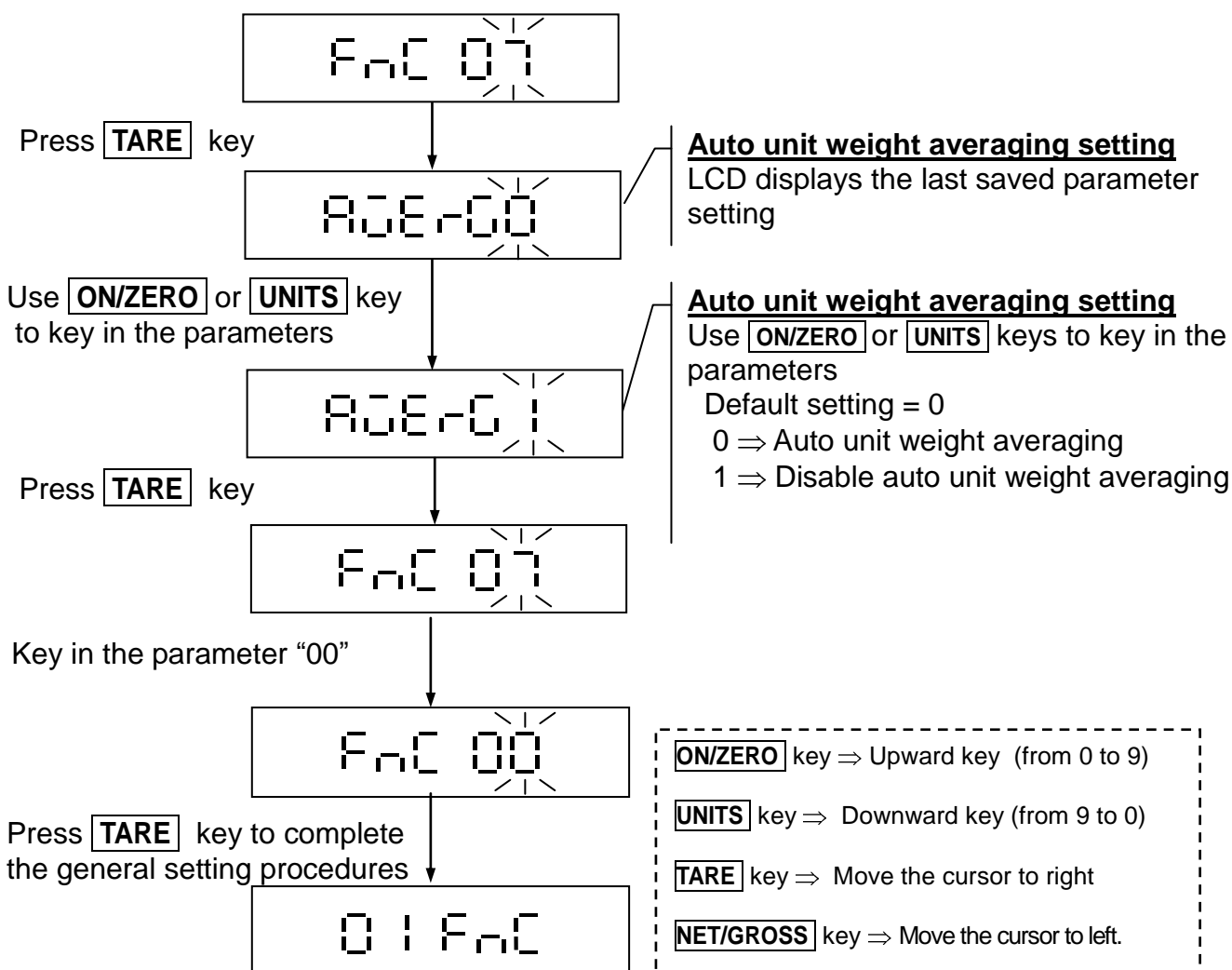
2-3-7 Auto Unit Weight Averaging Setting $F_nC \ 07$

Select $F_nC \ 07$ in the General Function setting mode $0 \mid F_nC$ to set Auto Unit Weight Averaging.

ACTIONS

DISPLAY

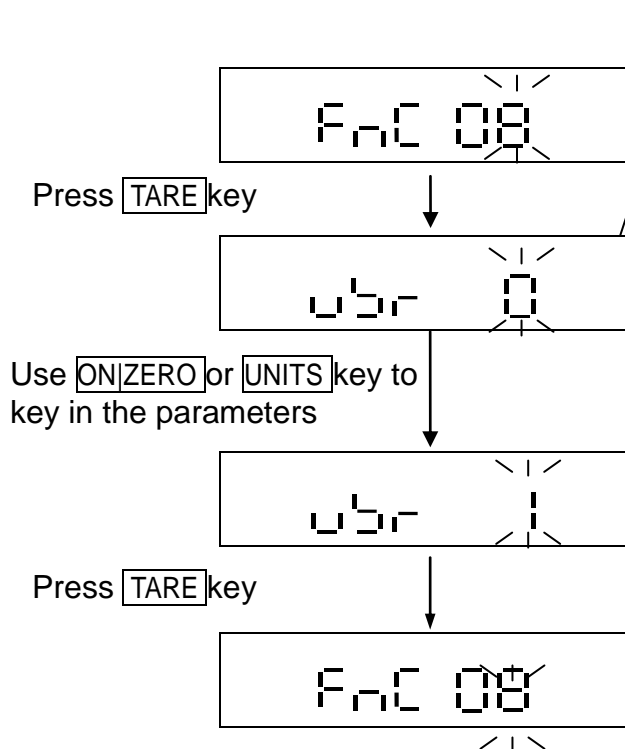
NOTE



☞ When $PC5$ is set as OFF in $04CF_n$, $F_nC \ 07$ setting is unavailable.
(See 3-4-5)

2-3-8 Two Weighing Units Setting F_nC 08

Select F_nC 08 in the General Function setting mode 01 F_nC to set the two weighing units setting.



Two weighing units setting

LCD displays the last saved parameter setting

Two weighing units setting

Use ON|ZERO 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

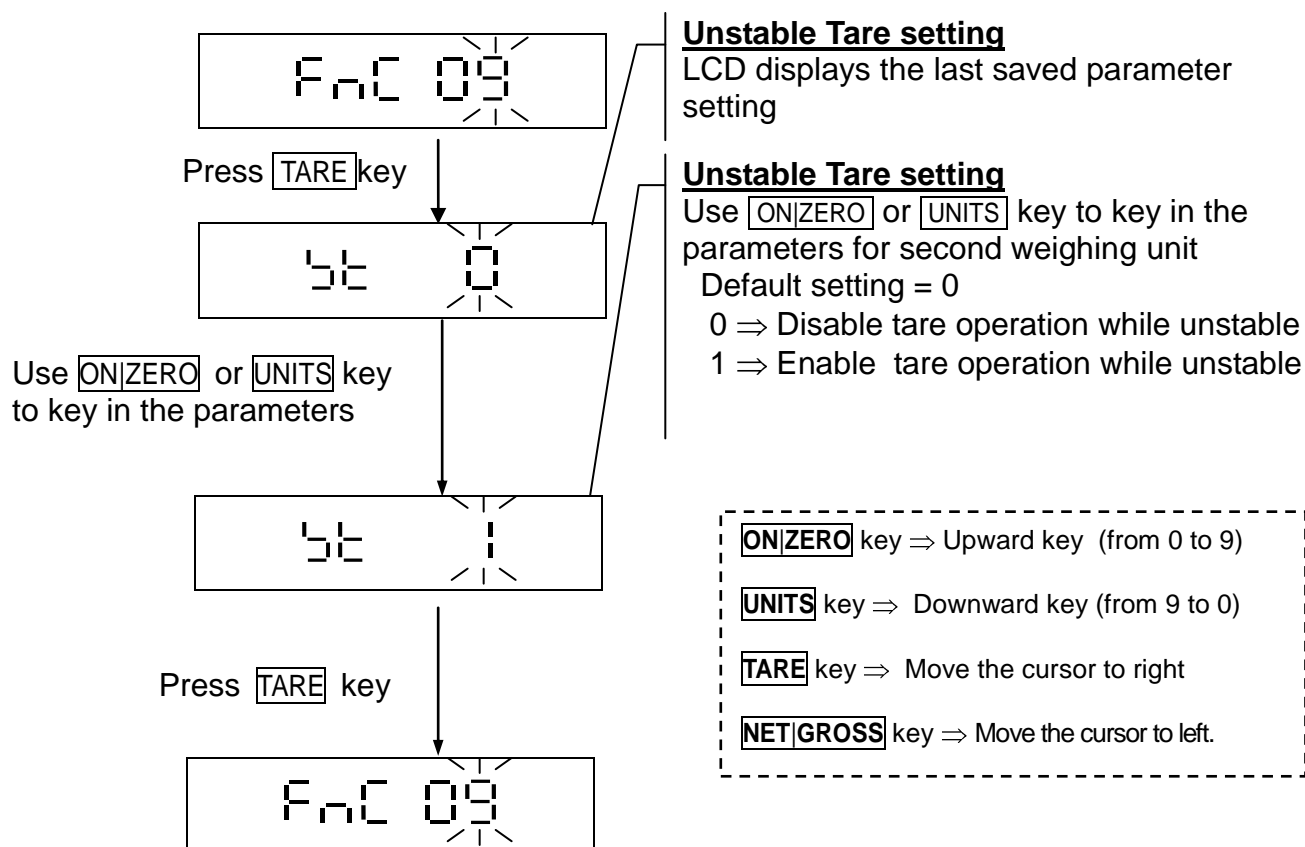
ON|ZERO key ⇒ Upward key (from 0 to 9)

UNITS key ⇒ Downward key (from 9 to 0)

TARE key ⇒ Move the cursor to right

NET|GROSS key ⇒ Move the cursor to left.

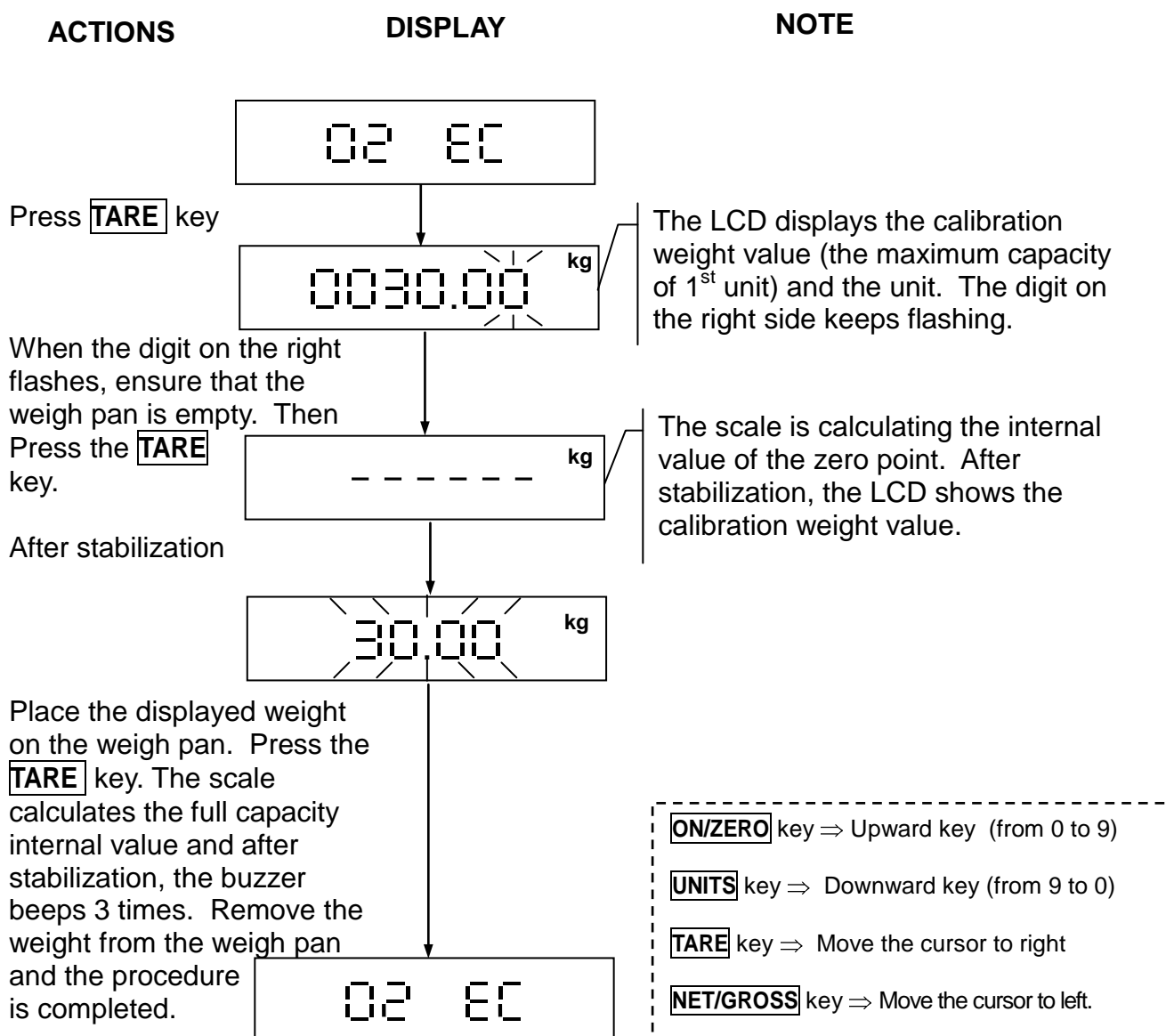
2-3-9 Unstable Tare F_nC 09



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

2-4 Weight Calibration 02 EC

In the weighing mode, press the **NET/GROSS** and **ON/ZERO** keys at the same time to enter the **Advanced Function** setting mode. The LCD shows 01 Fnc. Use the **NET/GROSS** or **UNITS** key to select 02 EC to enter the weight calibration mode.



Unavailable for approval models

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 Command Mode & Output data format

 only work with models have WIFI card or BLE card installed inside

Command Mode

Command Format A

Host
 Slave

MZ	Zero	UA	Switch to the first weighing unit
MT	Tare	UB	Switch to the second weighing unit
MG	Gross weight		
MN	Net weight		
CT	Clear TARE value		

Note: UB depends on the setting in FnC08

Command Format B

Host
 Slave

RW	Read current weight
RG	Read Gross weight
RN	Read Net weight
RT	Read TARE

Note: add % before the command to read continuously

Read HIGH/LOW values in FnC 03 RS○○□□

○○: Weighing unit (00 ~ 09) □□: Setting Items

HI	HIGH value
LO	LOW value

Note: ○○(weighing unit) is various depended on models

00 ⇒ The first weighing unit

EX: RS02LO < CR > < LF >

Read LOW values

ANS: RS02LOXXXXXX < CR > < LF >

Command Format C

Host
 Slave

Write HIGH/LOW values in FnC 03 WS○○□□XXXXXX

○○: Weighing unit (00 ~ 09) □□: Setting Items XXXXXX: Setting Value

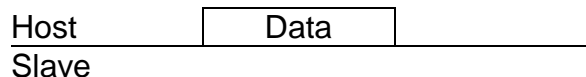
HI	HIGH value
LO	LOW value

Note: ○○ (Weighing unit) is various depended on models
 00 ⇒ The first weighing unit

EX: WS00HI001000 < CR > < LF > Write HIGH values

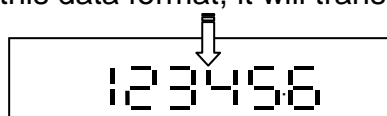
ANS: WS00HI001000 < CR > < LF >

Command Format D



Value (e.g. Price)						Position of decimal point	CR	LF
1	2	3	4	5	6	1		

When the Slave receives this data format, it will transfer the data and display it on its LCD.



- ☐ The function is effective when the weight value is over 0.
- ☐ The above 4 (ABCD) command formats are RS232 bi-directional. There are the following error messages received by Slave terminal (scale).

Error messages:

- E1: Wrong command
- E2: Command format error (Wrong parameters)
- E3: Command not recognised

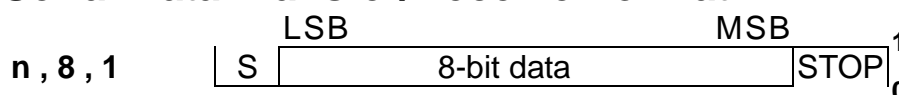
☐ Output Data Format

6 places (first decimal place not included)

Weight format

Gross	S	T	,	G	S	,	+	1	2	3	4	5	6	7	SP	SP	o	z	CR	LF
Net	S	T	,	N	T	,	+	.	2	3	.	4	5	6	t	l	.	g		
Tare	S	T	,	T	R	,	+	1	2	.	3	4	5	6	SP	SP	k	g		
Plus OL	O	L	,	G	S	,	+	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		
Minus OL	O	L	,	G	S	,	-	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		
Unstable	U	S	,	G	S	,	+	1	2	3	4	.	5	6	SP	SP	l	b		





































☐ Serial Data Transfer/Receive Format



Note:

- S : Start bit
- STOP : Stop bit
- P : Parity bit

Appendix 2 7-Segment Display Characters

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

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