User Manual

Waterproof Weighing Scale

ELW Plus / ESW Plus

(Dry Battery Model)

Table of Content

> 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.

Instruction for Use

1. Please keep the scale in a cool dry place. Do not store it at high temperature.

2. Avoid objects impacting with the scale. Do not drop loads onto the scale or subject the weigh pan to any strong shock loads.

3. The load placed on the weigh pan must not exceed the maximum weighing 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 conditions. A desiccant sachet may be included to prevent any moisture build up.

Preparing To Use the Scale

1. Adjust the four levelling feet (if fitted) to set the scale pan level using the spirit level bubble located at the front of the scale.

2. Avoid operating the scale in direct sunlight or drafts of any kind.

3. If possible avoid connecting the scale to ac power outlet sockets which are adjacent to other appliances to minimise the possibility of interference affecting the performance of the scale.

4. Remove any weight that might be on the weigh pan before the scale is switched on and avoid leaving weight on the pan for long periods of time

5. All goods weighed should be placed in the centre of the weigh pan for accurate weighing. The overall dimensions of the goods being weighed should not exceed the dimension of the weigh pan.

6. We suggest to warm up the scale for 15~20 minutes before operation to ensure best accuracy.

7. Please note when the 🔋 symbol keeps flashing on the screen, the batteries need to be replaced. Please ensure batteries are facing to the front before placing them back.

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.

◆ ESW Plus adopts stainless steel housing while ELW Plus and plastic ABS housing.

◆ 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.

◆ Well-designed protection point for transportation.

◆ Low power indication and auto power off.

Specifications:

Model	Capacity	Division	Resolution
ELW Plus-3 ESW Plus-3	3kg	0.5g 1g	1/6,000 1/3,000
ELW Plus-6 ESW Plus-6	6kg	1g 2g	1/6,000 1/3,000
ELW Plus-15 ESW Plus-15	15kg	2g 5g	1/7,500 1/3,000
ELW Plus-30 ESW Plus-30	30Kg	5g 10g	1/6,000 1/3,000
Operating Temperature： -10°C ~ 40°C (14°F ~ 104°F)			
Dimensions : ELW Plus:270 x 124 x 310mm (W x H x D) 　　　　　　　ESW Plus: 240 x 120 x 280mm (W x H x D)			
Weight of the scale:　ELW Plus: 3.3 kg approximately; 　　　　　　　　　　　ESW Plus: 3.5 kg approximately;			

▣ Resolutions above 1/3,000 are only available for non-approval models.

1-2 Power Supply

Power Supply and Power Consumption

4 D size dry batteries (Alkaline)

30 mA (system no backlight；single display)　　　　　　　　about 400 hours

36 mA (system backlight；single display)　　　　　　　　about 200 hours

Low Battery Warning

When [icon] shows up, it will have approximately 10 hours of operation left. Then [icon] symbol will flash on the display; please replace the dry batteries soon when one of those two symbols appears.

When the battery voltage is less than 3.8 V, the scale would power off automatically.

1-3 Panel and Keyboard Introduction
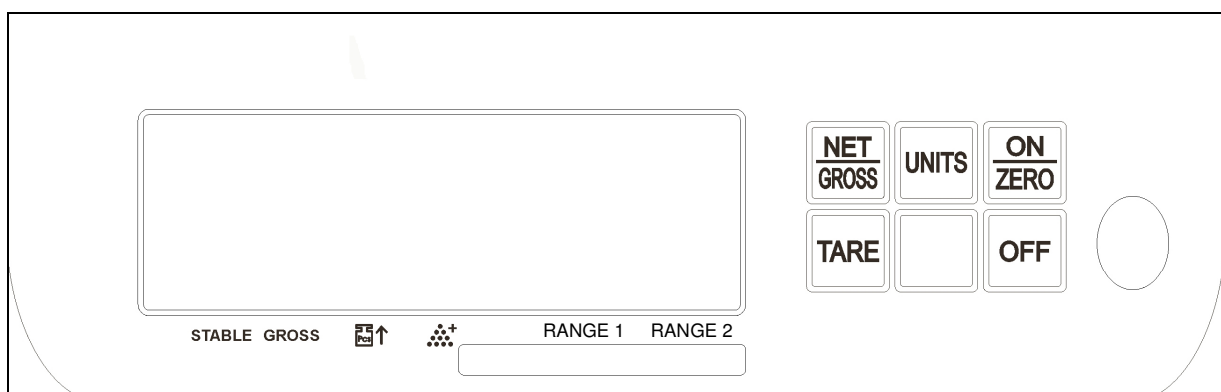
Icon Introduction

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.
[Pcs icon]   : The unit weight is not sufficient. When the icon is on, the counting
                  function is operational but the count may contain errors.
[+ icon]   : The sampling size is not sufficient When the icon is on, the counting
                  function is operational but the count may contain errors.
RANGE 1   : Only available for multi-range models
RANGE 2   : Only available 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 ± 2% of Full Scale. The Sri Lanka model has a zero range of ± 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 `C 10`,`C 20`,`C 50`,`C 100`,`C 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 then 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 ⬚ᴘᶜˢ icon will be on.

▤ When the ⬚⁺ or ⬚ᴘᶜˢ 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".

```
                              ┌──────────┐     Press UNITS key
                              │  01 AdC  │
                              └──────────┘
       Press ON/ZERO key  ↓        ↑  Press UNITS key
                              ┌──────────┐
                              │  02 bEY  │
                              └──────────┘
       Press ON/ZERO key  ↓        ↑  Press UNITS key
                              ┌──────────┐
                              │  03 oEr  │
                              └──────────┘
       Press ON/ZERO key  ↓        ↑  Press UNITS key
                              ┌──────────┐
                              │  00 ESC  │
                              └──────────┘
       Press ON/ZERO key
```
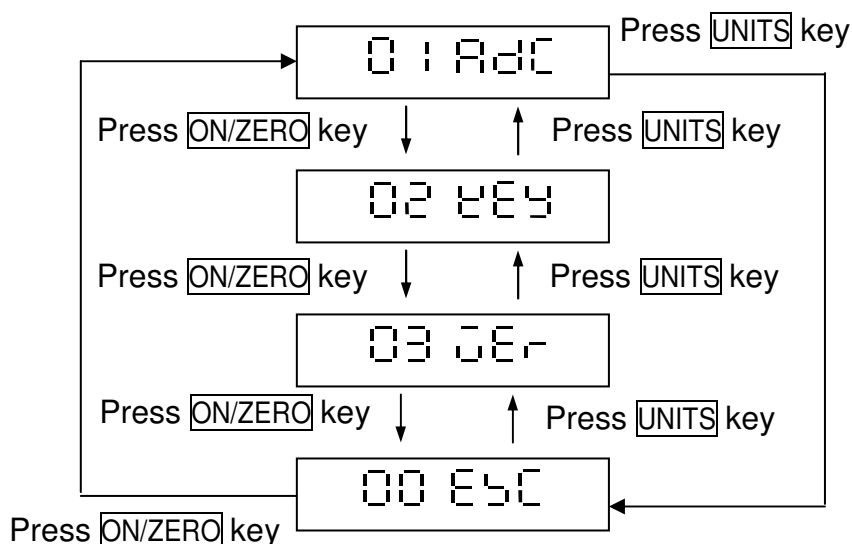
`0 1 AdC` **INTERNAL VALUE MODE** (must hook up Load Cell to test)

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 1 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 UEr` **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 `402` for 2 secs

③ Press ON/ZERO key to back to the last screen, display shows `03 UEr`

`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)

`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.

1-7 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 FnC	General Function setting mode	FnC 00	Return to **ADVANCED FUNCTION** setting menu
		FnC 01	Automatic backlight function setting
		FnC 02	Automatic power-off timer setting
		FnC 03	Hi/Lo/OK function setting
		FnC 04	Restore the default settings
		FnC 05	Noise filter setting
		FnC 06	Hold function setting
		FnC 07	Auto unit weight averaging setting
		FnC 08	Two Weighing Units Setting
		FnC 09	Unstable Tare
02 EC	External Weight Calibration	---	---

📋 FnC 04, FnC 05, FnC 06, and FnC 09 are only available for non-approval models.

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 ⦿⦿ F⦿C.

Overall workflow of the Advanced Function setting mode:

```
                        ┌──────────────┐   Press  UNITS  key
              ┌────────►│   01 FnC     │────────────┐
              │         └──────────────┘            │
              │                                      │
    Press ON/ZERO key          Press  UNITS  key    │
              │                          │           │
              │         ┌──────────────┐ │           │
              │         │   02  EC     │─┘           │
              │         └──────────────┘             │
              │                                       │
    Press ON/ZERO key          Press  UNITS  key     │
              │                          │            │
              │         ┌──────────────┐ │            │
              └─────────│   00 ESC     │─┘            │
                        └──────────────┘◄────────────┘
    Press  ON/ZERO  key
```
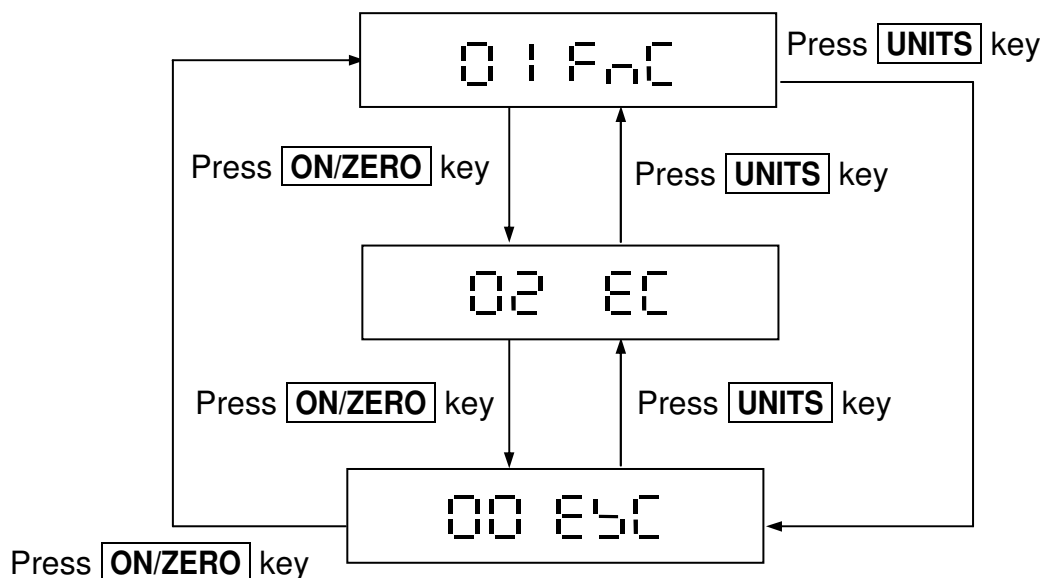
```
01 FnC  ⇒ General Function setting mode
02  EC  ⇒  External Weight Calibration
00 ESC  ⇒ Exit the Advanced Function setting mode

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

2-3 General Function Setting 01 FnC

There are 7 functions in the general function setting mode from FnC 01 to FnC 07.

Workflow of the General Function setting:

ACTIONS	DISPLAY	NOTE

Press TARE key

Use the keys to select the function

Key in "00" and press TARE key to return to the Advanced function setting menu

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

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.

📑 FnC 04, FnC 05, FnC 06, and FnC 09 are only available for non-approval models.

2-3-1 Automatic Backlight Function Setting ⌐⌐⊏ ⬚ ¦

Select ⌐⌐⊏ ⬚¦ in the General Function setting mode ⬚¦ ⌐⌐⊏ to change the backlight function setting.

ACTIONS	DISPLAY	NOTE

	FnC 01	
Press TARE key		
	bL oFF	LCD displays the last saved status
Use ON/ZERO or UNITS key to select function "on" or "off"		
	bL on	
Press TARE key		
	FnC 01	
Key in the parameter "00"		
	FnC 00	
Press TARE key to complete the general setting procedures		
	01 FnC	
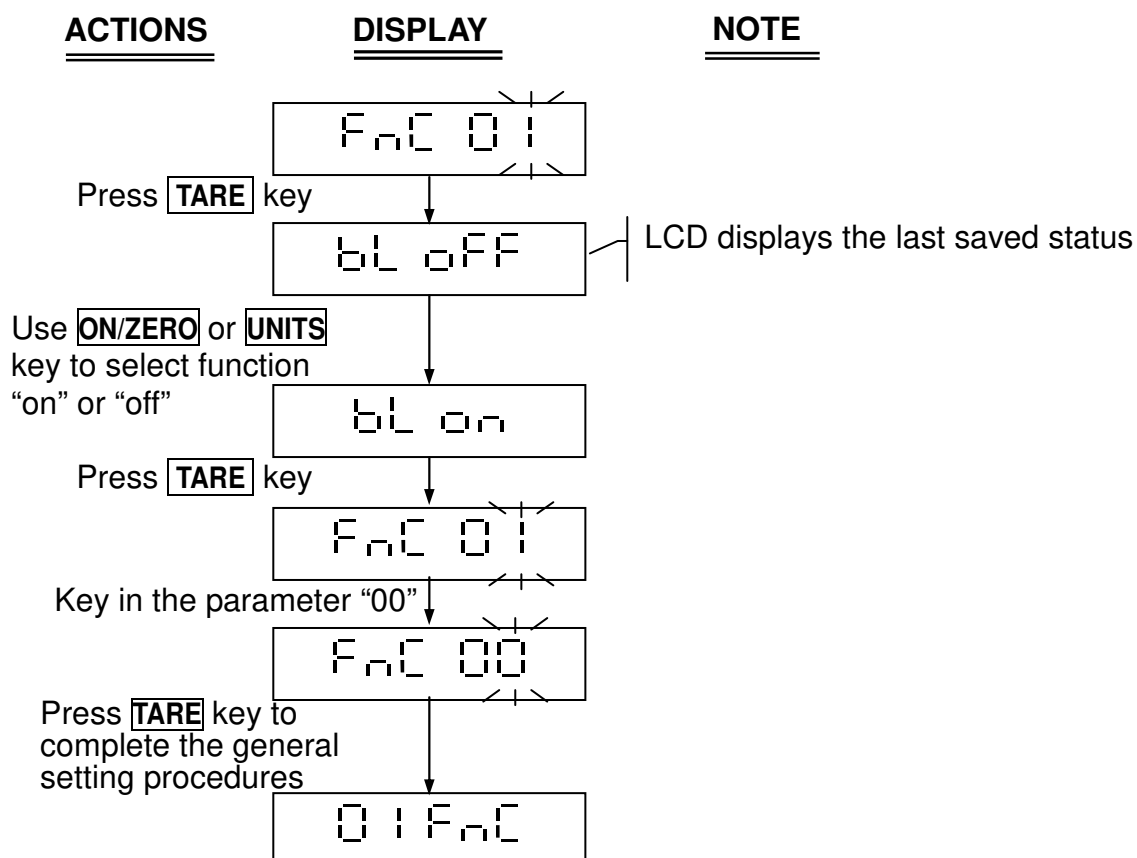
Automatic backlight function

When the scale is idle near zero (< 10d) without any key being pressed for 10 seconds, it will automatically disable the backlight. To activate the backlight, place weight over 10d or press any key.

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

Select FnC 02 in the General Function setting mode 01 FnC to change the automatic power-off timer setting.

ACTIONS	DISPLAY	NOTE
	FnC 02	
Press TARE key		
	A oFF0	LCD displays the last saved status
Use ON/ZERO or UNITS key to key in parameter	A oFF2	
Press TARE key		
	FnC 02	
Key in the parameter "00"		
	FnC 00	
Press TARE key to complete the general setting procedures		
	01 FnC	

Automatic power-off timer setting
Use ON/ZERO or UNITS 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

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.

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).

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

Select FnC 03 in the General Function setting mode 01 FnC to set the Hi/Lo/OK function. This function is available in all unit modes. In one specific unit mode, enter FnC 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.

ACTIONS	DISPLAY	NOTE
	FnC 03	LCD displays the last saved status
Press **TARE** key	005.00h **lb**	
Key in the desired high limit value	003.000 **lb**	LCD displays the last saved status
Press **TARE** key	001.00L **lb**	LCD displays the last saved status
Key in the desired low limit value	002.000 **lb**	
Press **TARE** key	0110b	
Key in the parameter setting for alarm	100000	
Press **TARE** key	FnC 03	
Key in the parameter "00"	FnC 00	
Press **TARE** key to complete the general setting procedures	01 FnC	

Alarm setting

000006
(a) (b) (c)

The definition of a, b, c positions:

(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

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.

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

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

ACTIONS	DISPLAY	NOTE

FnC 04

Press **TARE** key

rEturn

rEturn ⇒ Return (Cancel the restoration)

Use **ON/ZERO** or **UNITS** keys to select "return" or "format"

ForMAt

ForMAt ⇒ Restore to the default setting

Press **TARE** key

FnC 04

Key in the parameter "00"

FnC 00

Press **TARE** key to complete the general setting procedures

01 FnC

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.

▤ 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

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

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

2-3-5 Noise Filter Setting FnC 05

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

❡ When modifying FnC 05, the parameters of CFn 01 remain un-altered.
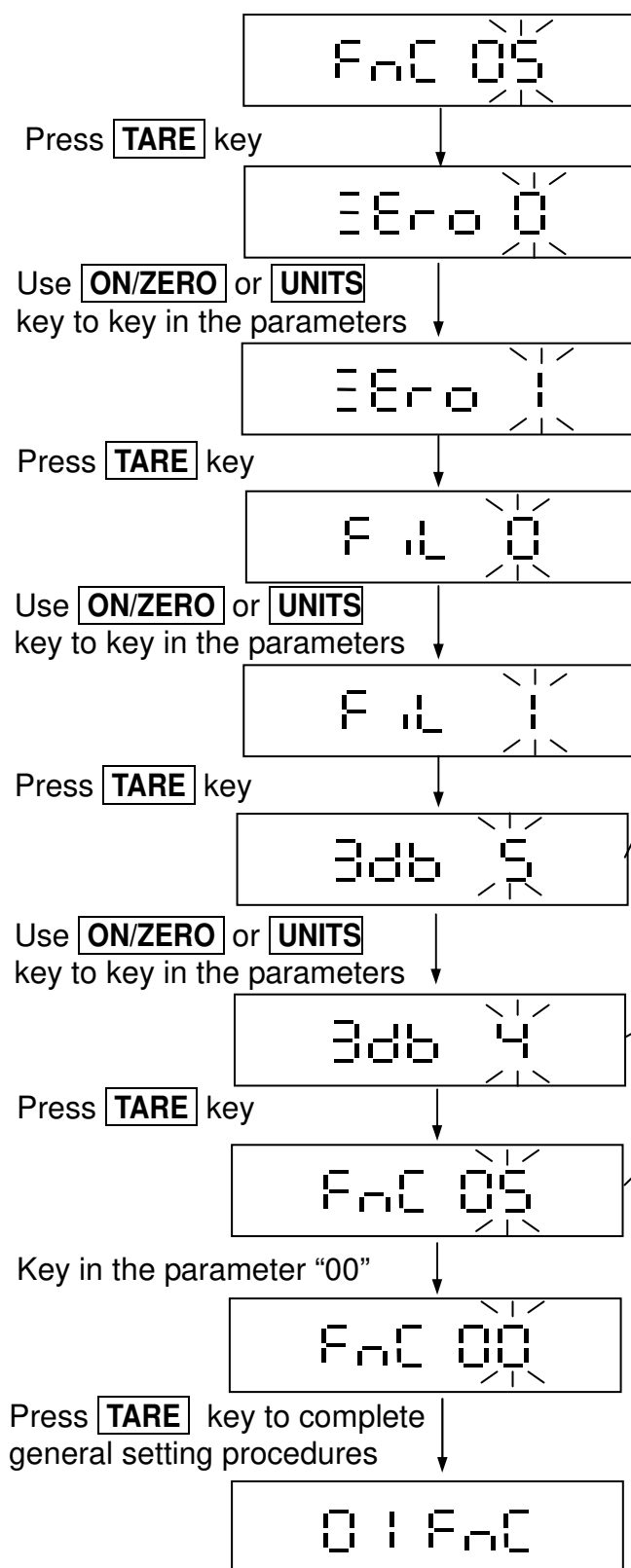
ACTIONS	DISPLAY	NOTE
	FnC 05	**Returning to zero point setting** LCD displays the last saved status
Press **TARE** key	ZEro 0	**Returning to the zero point setting** Use **ON/ZERO** or **UNITS** key to key in the parameters or zero point
Use **ON/ZERO** or **UNITS** key to key in the parameters	ZEro 1	Default setting = 0 0 ⇒ No skip 5 ⇒ skip 5d 1 ⇒ skip 1d 6 ⇒ skip 6d 2 ⇒ skip 2d 7 ⇒ skip 7d 3 ⇒ skip 3d 8 ⇒ skip 8d 4 ⇒ skip 4d 9 ⇒ skip 9d
Press **TARE** key	FiL 0	❡ When the weight on the scale is over 1/3 full capacity, the function is on.
Use **ON/ZERO** or **UNITS** key to key in the parameters	FiL 1	**Digital switch & Stabilization range setting** LCD displays the last saved parameter setting
Press **TARE** key	3db 5	**Digital switch & Stabilization range setting** Use **ON/ZERO** or **UNITS** keys to key in the parameters. Default setting = 0 Parameter 0 ~ 9, the larger the number the more stable the weight.
Use **ON/ZERO** or **UNITS** key to key in the parameters	3db 4	**Filter parameter setting** LCD displays the last saved parameter setting
Press **TARE** key	FnC 05	**Filter parameter setting** Use **ON/ZERO** or **UNITS** keys 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.
Key in the parameter "00"	FnC 00	
Press **TARE** key to complete general setting procedures	01 FnC	❡ FnC 05 Setting is only available for non-approval models. (CFN02=0)

2-3-6 Hold Function Setting FnC 06

Select FnC 06 in the General Function setting mode 01 FnC to set the hold function.

ACTIONS   **DISPLAY**   **NOTE**

```
FnC 06
```

Press **TARE** key

```
hold 0
```

Hold function setting
LCD displays the last saved parameter setting

Use **ON/ZERO** or **UNITS** key to key in the parameters

```
hold 1
```

Hold function setting
Use **ON/ZERO** or **UNITS** keys to key in the parameters
  Default setting = 0
  0 ⇒ Hold function disabled
  1 ⇒ "Peak hold" mode
  2 ⇒ "Stable hold 1" mode
  3 ⇒ "Stable hold 2" mode

Press **TARE** key

```
FnC 06
```

Key in the parameter "00"

```
FnC 00
```

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.

Press **TARE** key to complete the general setting procedures

```
01 FnC
```

---

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.

📑 FnC 06 Setting is unavailable for Brazil models and approval models.

2-3-7 Auto Unit Weight Averaging Setting FnC 07

Select FnC 07 in the General Function setting mode 01 FnC to set Auto Unit Weight Averaging.

ACTIONS	**DISPLAY**	**NOTE**

FnC 07

Press **TARE** key

AUEr00

Auto unit weight averaging setting

LCD displays the last saved parameter setting.

Use **ON/ZERO** or **UNITS** key to key in the parameters

AUEr01

Auto unit weight averaging setting
Use **ON/ZERO** or **UNITS** keys to key in the parameters
 Default setting = 0
  0 ⇒ Auto unit weight averaging
  1 ⇒ Non auto unit weight averaging

Press **TARE** key

FnC 07

Key in the parameter "00"

FnC 00

Press **TARE** key to complete the general setting procedures

01 FnC

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.

▤ FnC 07 Setting is unavailable for Brazil models.

▤ When PCS is set as OFF in 04 CFn, FnC 07 setting is unavailable.

2-3-8 Two Weighing Units Setting FnC 08

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

FnC 08

Press TARE key

ubr 0

Use ON|ZERO or UNITS key to key in the parameters

ubr 1

Press TARE key

FnC 08
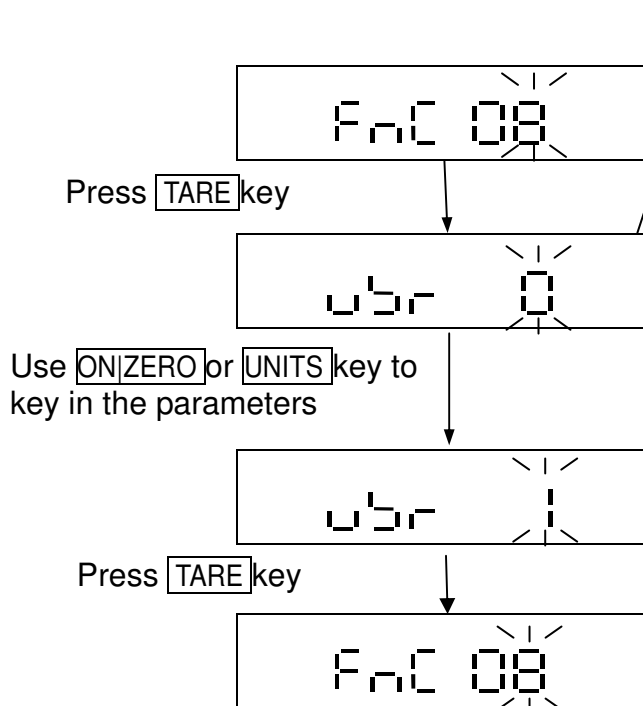
Two weighing units setting
LCD displays the last saved parameter setting

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 FnC 09

Unstable Tare setting
LCD displays the last saved parameter setting

Press TARE key

Unstable Tare setting
Use ON|ZERO or UNITS 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

Use ON|ZERO or UNITS key to key in the parameters

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.

Press TARE key

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

2-4 Weight Calibration 02 EC
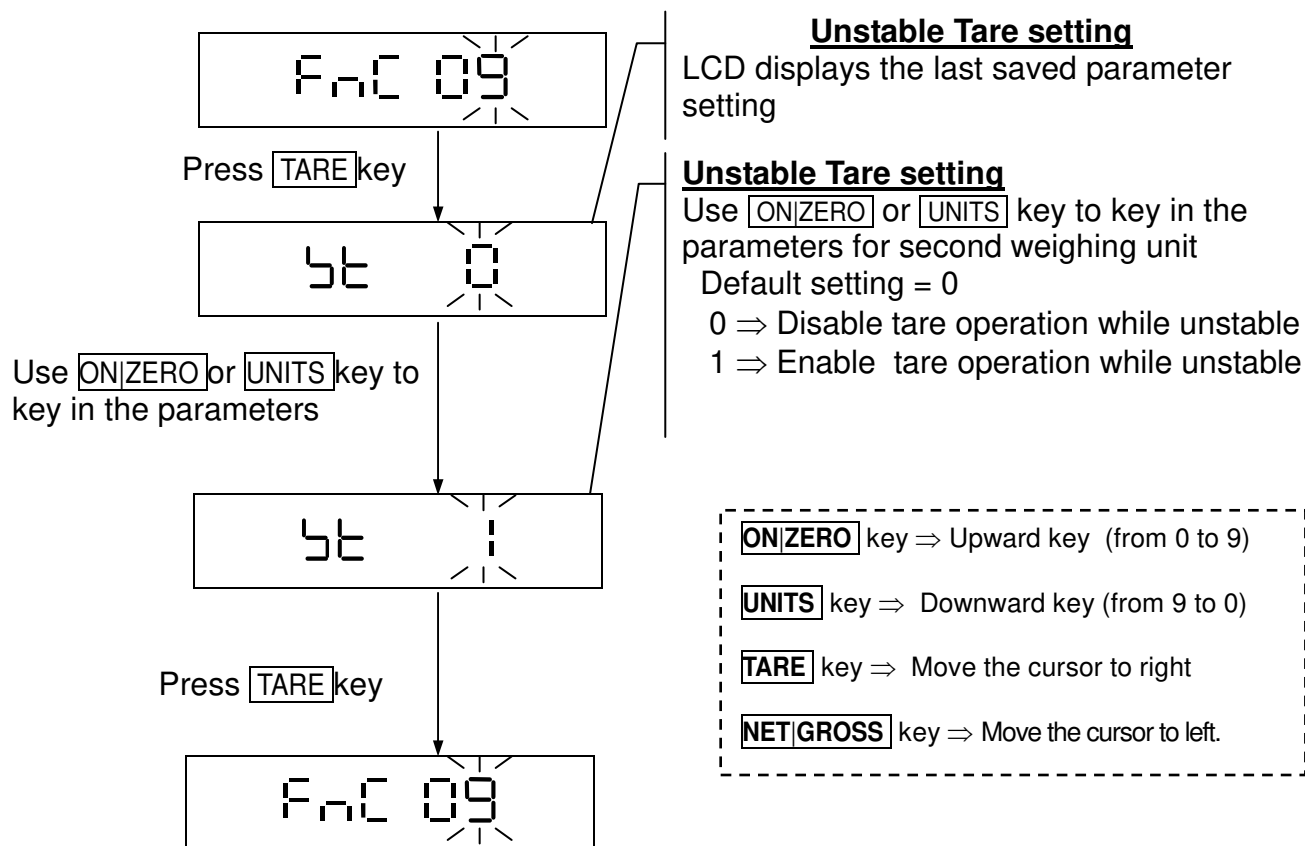
In the weighing mode, press the **NET/GROSS** and **ON/ZERO** keys at the same time to enter the **Advanced Function** setting mode. The LCD shows 01 FnC and use the **NET/GROSS** or **UNITS** key to select 02 EC to enter the weight calibration mode.

ACTIONS	DISPLAY	NOTE

02 EC

Press **TARE** key

↓

0030.00 **kg**

The LCD displays the calibration weight value (the maximum capacity of 1st unit) and the unit. The digit on the right side keeps flashing.

When the digit on the right flashes, ensure that the weigh pan is empty. Then Press the **TARE** key.

↓

− − − − − **kg**

The scale is calculating the internal value of the zero point. After stabilization, the LCD shows the calibration weight value.

After stabilization

↓

30.00 **kg**

Place the displayed weight on the weigh pan. Press the **TARE** key. The scale calculates the full capacity internal value and after stabilization, the buzzer beeps 3 times. Remove the weight from the weigh pan and the procedure is completed.

↓

02 EC

- -
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.
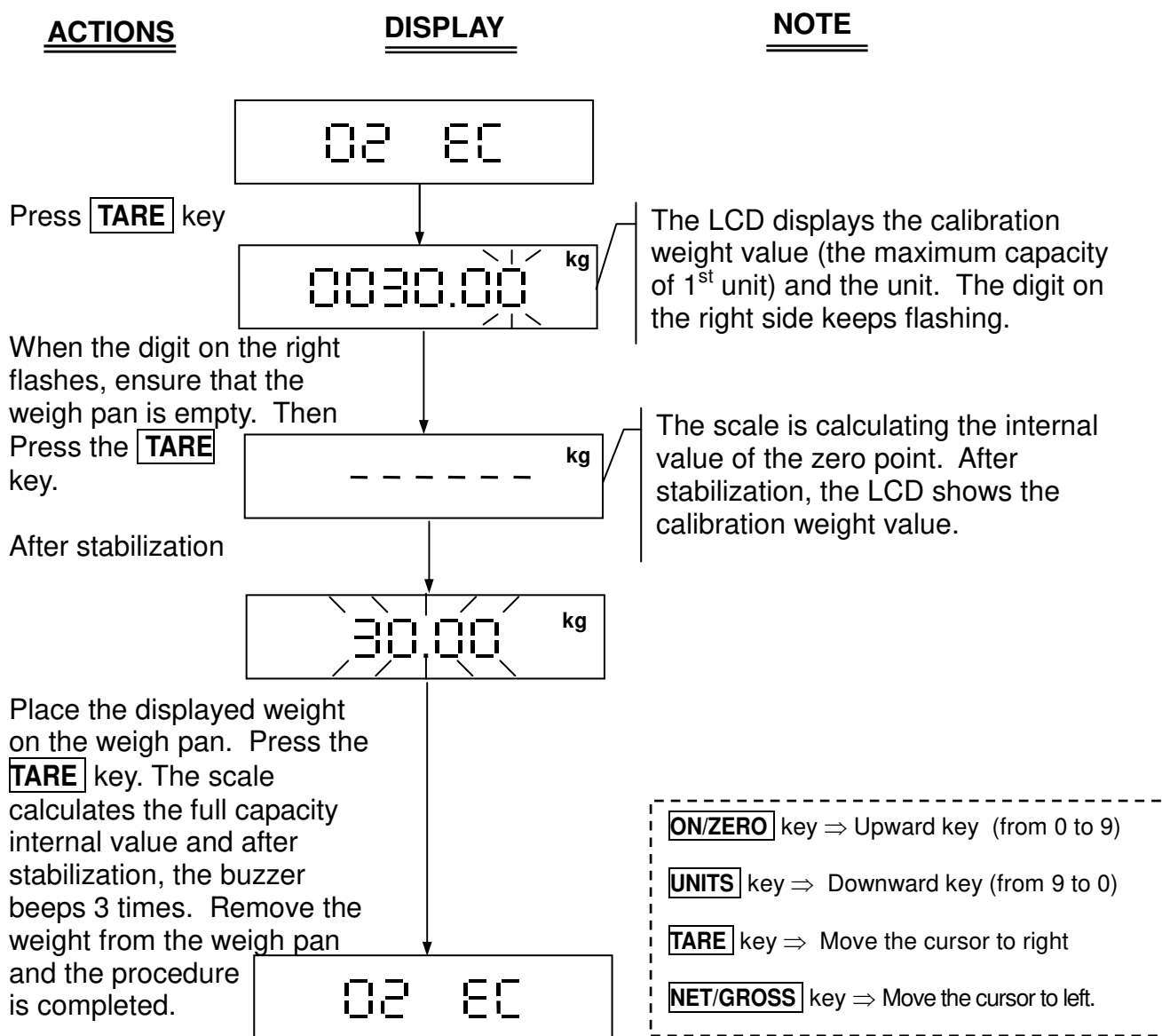- -

🗐 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	Command		
Slave		Command	

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	Command		
Slave		Data	

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	Command+ Data		
Slave		Command+ Data	

Write HIGH/LOW values in FnC 03 WS○○□□XXXXXX
  ○○: Weighing unit (00 ~ 09) □□: Setting Items   XXXXXX: Setting Value

HI	**HIGH value**
LO	**LOW value**

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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

Host	Data	
Slave		

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.

⇩

12345.6

▤ Only effective when the weight value is over 10d.

The above 4 (ABCD) command formats are RS232 bi-directional. The following error messages might be received by Slave terminal (scale).

Error messages:
   E1: Wrong command
   E2: Command format error (Wrong parameters)
   E3: Do not match with the executing conditions for Command

⊟ 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	
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	CR LF
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

         LSB   MSB   **1**
n , 8 , 1 | S | 8-bit data | STOP |
                                          0
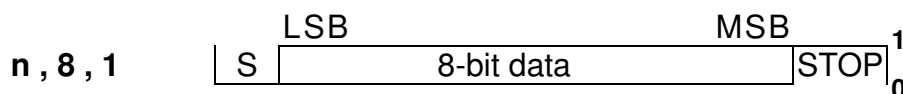
   Note:
   S   : Start bit
   STOP : Stop bit
   P   : Parity bit

Appendix 2 7-Segment Display Characters

Number	Display	Letter	Display	Letter	Display
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	