

# EK-*j* Series

NTEP / USA Class II

## INSTRUCTION MANUAL

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### Compact Balances

EK-610*j*  
EK-6100*j*

1WMPD4001387

**A&D**  
A&D Company, Limited

## This manual and Marks

All safety messages are identified by the following, "WARNING" or "CAUTION", of ANSI Z535.4 (American National Standard Institute: Product Safety Signs and Labels). The meanings are as follows:

 WARNING	A potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	A potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



This is a hazard alert mark.

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Product specifications are subject to change without any obligation on the part of the manufacture.

## Compliance with FCC rules

Please note that this equipment generates, uses and can radiate radio frequency energy. This equipment has been tested and has been found to comply with the limits of a Class A computing device pursuant to Subpart J of Part 15 of FCC rules. These rules are designed to provide reasonable protection against interference when this equipment is operated in a commercial environment. If this unit is operated in a residential area it might cause some interference and under these circumstances the user would be required to take, at his own expense, whatever measures are necessary to eliminate the interference. (FCC = Federal Communications Commission in the U.S.A.)

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# 1. INTRODUCTION

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This manual describes how this balance works and how to get the most out of it in terms of performance.

EK-*j* series balances have the following features:

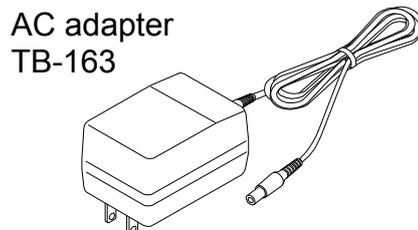
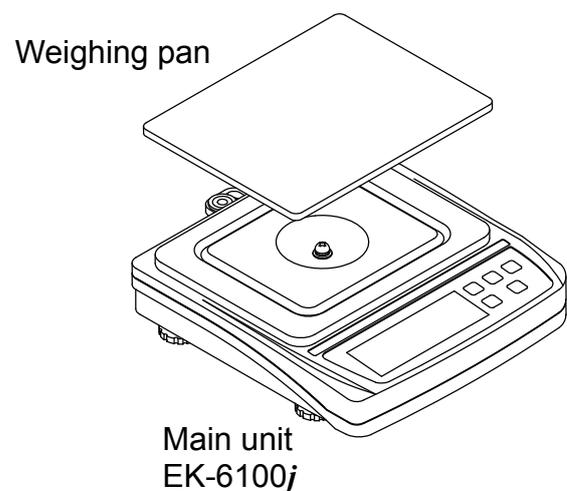
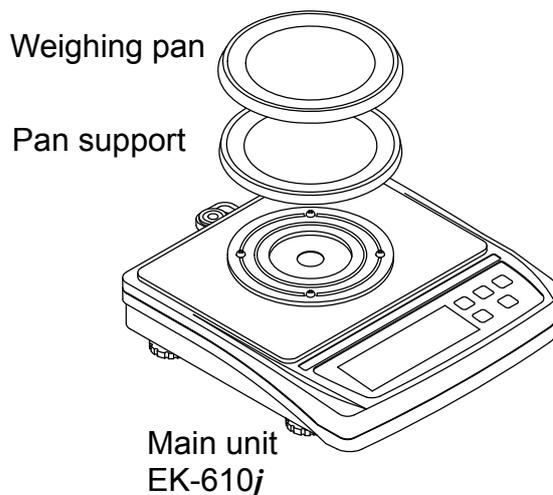
- ❑ The EK-*j* series are high-resolution type electronic balances having a display resolution of 1/60,000.
  - ❑ The balance has a counting function, % function and a comparator function.
  - ❑ The backlight LCD will help with use in a dimly lighted place.
  - ❑ With the optional rechargeable battery pack (OP-09), the balance can be used for cordless operation.
- ❑ ***The RS-232C interface is not functional for the EK-*j* series.***

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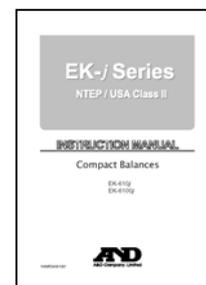
# 2. UNPACKING

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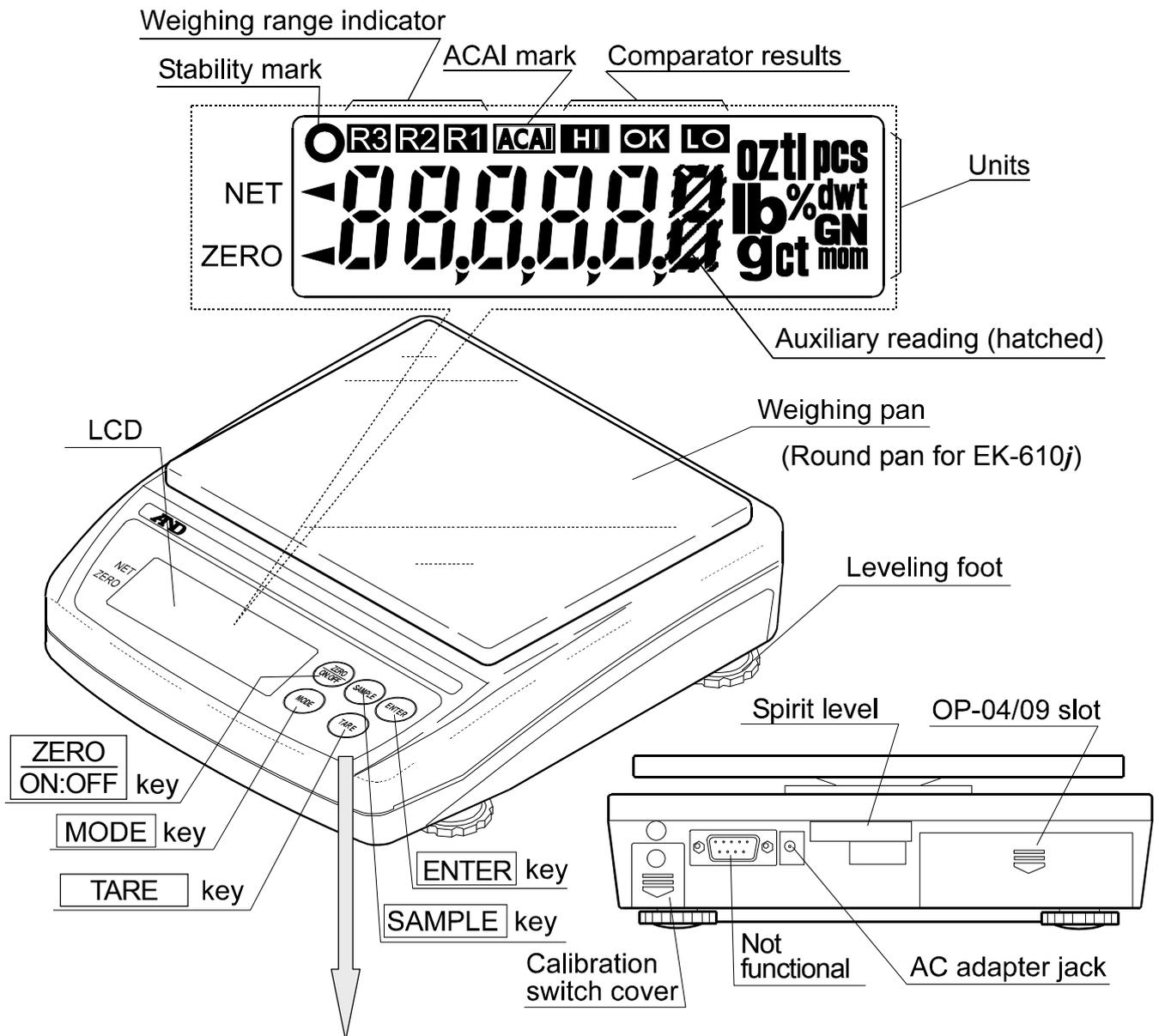
When unpacking, check whether all of the following items are included:



Instruction Manual



### 3. PART NAMES AND FUNCTIONS



<p> Turns the power on and zero the balance in weighing mode. Continue to press to turn the power off.</p>	<p> Enter unit weight, 100% weight or other setting value to the balance.</p>
<p> Held down to enter the function setting mode.                  pcs mode:                  Enters the sample unit weight storing mode.                  % mode:                  Enters the 100% weight storing mode.</p>	<p> Switches the weighing unit (the weighing mode).</p> <p> Subtracts tare (container) weight on the weighing pan.</p>

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## 4. SETTING UP

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### 4-1. Setting up your balance

1. Place the weighing pan on the main unit as shown on the previous page.
2. Adjust the level of the balance using the leveling feet. Use the spirit level to confirm. The bubble should be in the center of the circle.
3. Calibrate your balance before use. (See “7. CALIBRATION”)

#### Balance location

To measure correctly, to keep the balance in good condition, and to prevent hazards, observe the following:

- Do not install the balance in locations that are subject to excessive dust, breezes, vibration, large temperature fluctuations, condensation, or that may have magnetic fields.
- Do not install the balance on a surface that is soft or that may cause the balance level to shift.
- Do not install the balance in direct sunshine.
- Do not install the balance near heaters or air conditioners.
- Do not use an unstable AC power source.
- Do not install the balance in a place where combustible or corrosive gases may exist.
- Allow the balance to reach equilibrium with the ambient temperature before use.
- Switch the power ON at least half an hour before use so that the balance can warm up.
- When the balance is installed for the first time, or the balance has been moved, carry out calibration as described in “7. CALIBRATION”

### 4-2. Power source

For the power source, the AC adapter or the rechargeable battery pack (OP-09: Optional item) is available.

#### When using the AC adapter

Use a stable power source. To use the AC adapter, insert the AC adapter plug into the AC adapter jack on the EK-*j*.

#### When using the rechargeable battery pack (OP-09)

Insert the rechargeable battery pack into the main unit.

The balance can be used continuously for about 9 hours using the battery pack.

- If “Lb0” is displayed when using the battery pack, immediately stop using it, and recharge the battery pack or use the AC adapter.*
- See “9-3 OP-09 Rechargeable battery pack”, for instructions to install and charge the battery pack.*
- Be sure to charge the battery pack before using it for the first time.*

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## 5. OPERATION

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### 5-1. Turn the power ON and OFF

1. Press the  key to turn the power ON.



All of the symbols are displayed as shown above.  
(About units: Only the units available will be displayed.)

The display turns off except for a weighing unit and the decimal point.  
The balance waits for the weighing data to become stable, and zero will be displayed with the ZERO mark (power-on zero).

The range for power-on zero is within  $\pm 3\%$  of the weighing capacity around the calibrated zero point.

If the power is switched ON while there is a load beyond this range, the balance will show “- - - - -”. Remove the load on the weighing pan or check if anything touches the pan.

2. Press and hold the  key for about 3 seconds, and the power will be switched OFF.

#### **Auto-power off function**

***It is possible to have the power automatically switched OFF, if zero is displayed for approximately 5 minutes. See “8-5. Function list” and set the function “POFF”.***

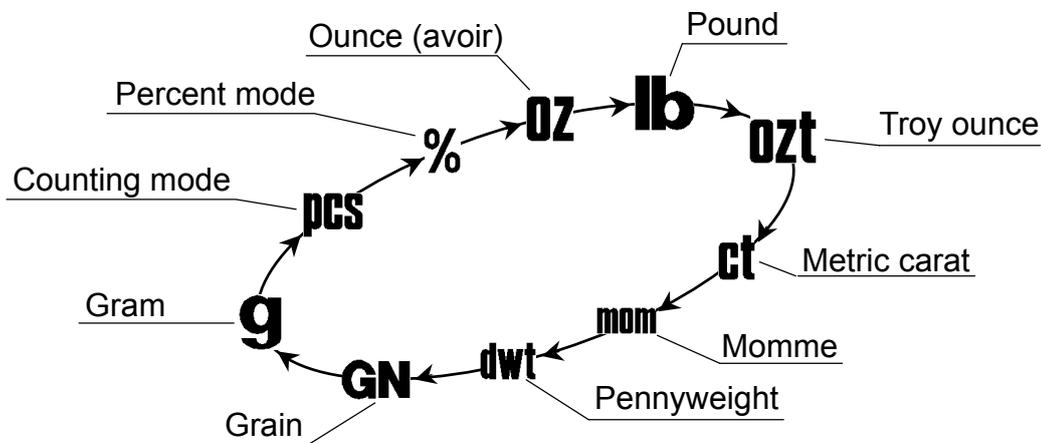
### 5-2. LCD backlight

The LCD backlight will turn on when the weight value changes more than 4 display digits or any key operation is done. When the weight data becomes and stays stable for some moment, the backlight will automatically turn off. There is also a setting that the backlight is always on or off. For details, see the function setting “LEUP” of “Function list”.

### 5-3. Units

The most common unit of weight used around the world is the gram, but there is often a need to shift to alternative units specific to the country where the balance is used or to select modes such as counting or percent.

The units and the order they appear in the display are as follows:



Among the units, those available for the user have been set at the factory before shipping.

The unit can be selected in the function setting mode. The order of the units available is the same as above, while skipping the units not available.

**Note**

*It is possible to store only the units that will be actually used from the units available. It is also possible to specify the display unit that will be shown first when the power is switched ON. For details, see "8-4. Storing weighing units".*

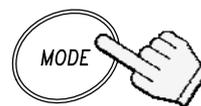
#### Conversion table

Units	Name	Conversion to gram
oz	Ounce (avoir)	28.349523125 g
lb	Pound (UK)	453.59237 g
ozt	Troy ounce	31.1034768 g
ct	Metric carat	0.2 g
mom	momme	3.75 g
dwt	Pennyweight	1.55517384 g
GN	Grain (UK)	0.06479891 g

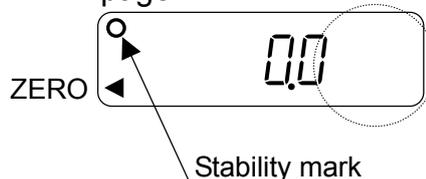
## 5-4. Selecting a weighing unit

Press the **MODE** key to select a unit.

The following sections are a description of the three common units: g (gram mode), pcs (counting mode), and % (percent mode).

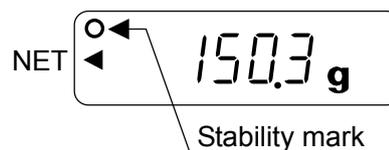
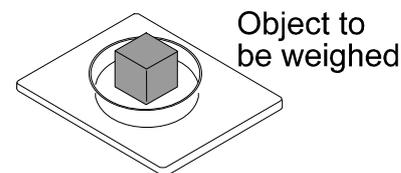
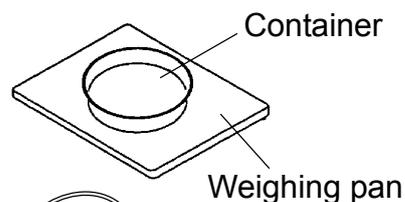


Each pressing switches the units available in the order described on the previous page.



## 5-5. Basic operation

1. Select a weighing unit.
2. When the display does not show zero, press the **ZERO/ON:OFF** key to set the display to zero.
3. When using a tare (container), place the container on the weighing pan, and press the **TARE** key to subtract the tare weight.
4. Place the object to be weighed on the pan or in the container.  
Wait for the stability mark ( ◯ ) to be displayed and read the value.
5. Remove the object from the pan.



☐ The **ZERO/ON:OFF** key will zero the balance if the weight is within  $\pm 3\%$  of the weighing capacity around the calibrated zero point. The ZERO mark ◀ turns on.

☐ The **TARE** key will switch the balance to net weight mode and zero the weight display when the weight is plus and less than 50% of the capacity. The ZERO and NET marks ◀ turn on.

☐ When the weight is below the zero point set by the **ZERO/ON:OFF** key, the **TARE** key does not work.

## Precautions during operation

- ☐ Make sure that the stability mark is on whenever reading or storing a value.
- ☐ Do not press the keys with a sharp object such as a pencil.
- ☐ Do not apply a shock or a load to the pan that is beyond the weighing capacity.
- ☐ Keep the balance free from foreign objects such as dust or liquid.
- ☐ Calibrate the balance periodically to keep weighing accuracy. (See “7. CALIBRATION”.)

## 5-6. Counting mode (pcs)

Determines the number of objects in a sample. Calculates the reading, using the basic sample unit weight, and determines how many pieces are contained.

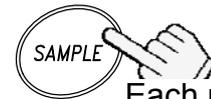
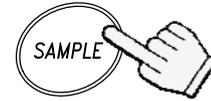
### Selecting the counting mode

1. Press the **MODE** key to select **PCS**.  
(PCS :pieces)

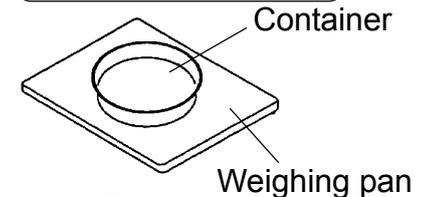


### Storing the sample unit

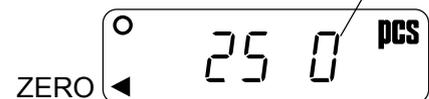
2. Press the **SAMPLE** key to enter the sample unit weight storing mode.
3. To select the number of samples, press the **SAMPLE** key. It may be set to 5, 10, 25, 50, or 100.
4. Place a tare container on the weighing pan, and press the **TARE** key. Confirm that the right side of the number of samples shows zero.
5. Place the number of samples specified on the pan. In this example, 25 pieces.
6. Press the **ENTER** key to calculate and store the unit weight. Remove the sample. The balance is set to count objects with this unit weight.



Each pressing switches the number of samples.



Confirm the display



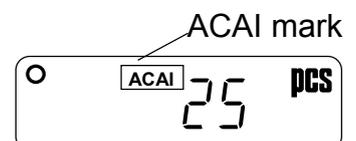
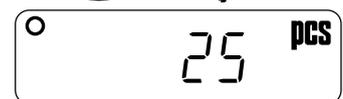
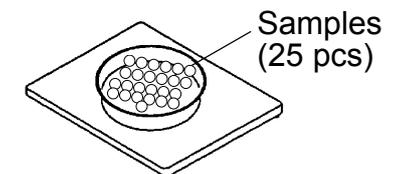
### Counting the objects

7. Place the objects to be counted on the pan.

### Counting mode using the ACAI function

ACAI™ (Automatic Counting Accuracy Improvement) is a function that improves the accuracy of the unit weight by increasing the number of samples as the counting process proceeds.

8. If a few more samples are added, the ACAI mark is displayed. (To prevent an error, add three or more. The ACAI mark will not be displayed if overloaded.)



9. The balance re-calculates the unit weight while the ACAI mark is blinking. Do not touch the balance or samples on the pan until the ACAI mark turns off.
10. Counting accuracy is improved when the ACAI mark turns off. Each time the above operation is performed, a more accurate unit weight will be obtained. There is no definite upper limit of ACAI range for the number of samples exceeding 100. Try to add the similar number of samples as displayed.

## 5-7. Percent mode (%)

Displays the weighing value in percentage compared to the reference (100%) weight.

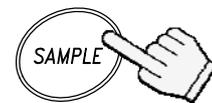
### Selecting the percent mode

1. Press the **MODE** key to select **%**. (%:percent)



### Storing the reference (100%) weight

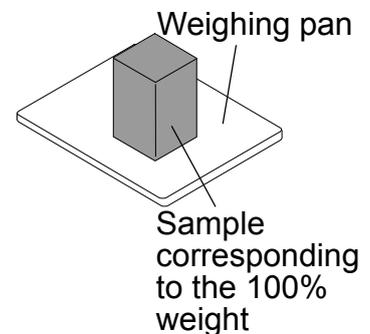
2. Press the **SAMPLE** key to enter the reference weight storing mode.



3. Press the **TARE** key to display **100 0%**.



4. Place the sample to be set as the reference weight on the pan.

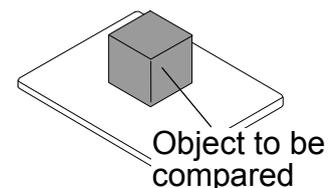


5. Press the **ENTER** key to store the reference weight. Remove the sample.



### Reading the percentage

6. Place the object to be compared to the reference weight on the pan. The displayed percentage is based on 100% of the reference weight.



## 6. COMPARATOR

The results of the comparison are indicated by HI, OK or LO on the display.  
The comparison is as follows:

$$LO < \text{Lower limit value} \leq OK \leq \text{Upper limit value} < HI$$

Operating conditions (see the function setting "[P]"):

- No comparison (comparator function disabled).
- Compares all data.
- Compares all stable data.
- Compares plus data except those near zero (plus data greater than +4d).
- Compares stable plus data except those near zero (stable plus data greater than +4d).
- Compares all data except those near zero (all data greater than +4d or less than -4d).
- Compares stable data except those near zero (stable data greater than +4d or less than -4d).

d = the smallest display division  
e.g.: 4d=four display divisions

The upper limit and lower limit numerical values are common to each of the weighing, counting and percent mode. The example for EK-610j is as follows.

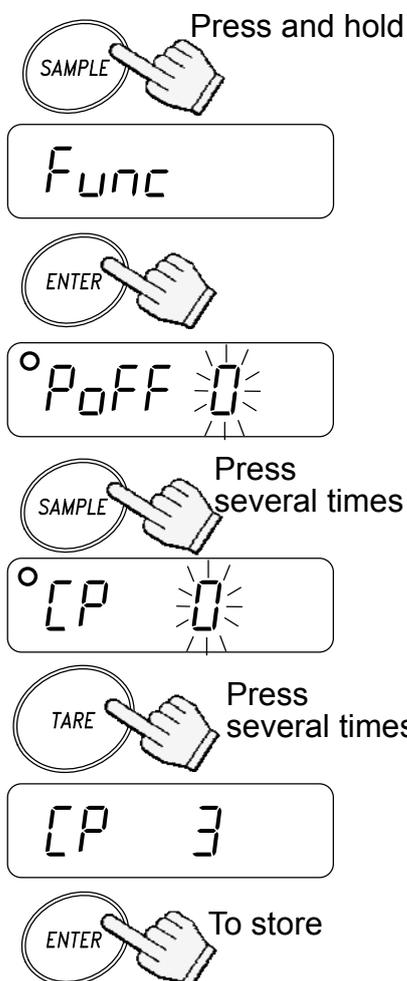
Upper limit value "001010": "10.10g" "1010pcs" "101.0%"  
Lower limit value "000990": "9.90g" "990pcs" "99.0%"

### 6-1. Setting example

This example will be "Compares plus data except those near zero".

#### Selecting a comparison mode

1. Press and hold the **SAMPLE** key to display **Func**.  
(If the comparison mode is already set, press the **SAMPLE** key to go to "Entering the upper and lower limit values".)
2. Press the **ENTER** key, then the balance displays **PoFF X**.
3. Press the **SAMPLE** key several times to display **[P X]**.
4. Press the **TARE** key several times to display **[P 3]**.
5. Press the **ENTER** key to store the settings.  
**[P HI]** appears after **End**.



**Entering the upper and lower limit values**

6. With **[CP Hi]** displayed, press the **[ENTER]** key. Enter the upper limit value using the following keys.



**[SAMPLE]** key To select the digit blinking to change.



**[TARE]** key To set the value of the digit selected. Hold down the key to switch the sign “+” and “-”. (“**N**” designates a negative value.)



Set using the relevant keys

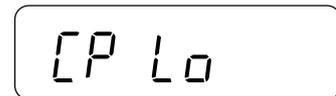
**[ENTER]** key To store the value and proceed to the next step.



**[MODE]** key To cancel the value and proceed to the next step.



7. With **[CP Lo]** displayed, press the **[ENTER]** key. Enter the lower limit value using the following keys.



**[SAMPLE]** key To select the digit blinking to change.

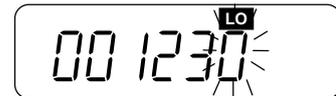


**[TARE]** key To set the value of the digit selected. Hold down the key to switch the sign “+” and “-” (see step 6).



Set using the relevant keys

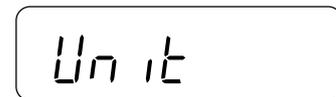
**[ENTER]** key To store the value and proceed to the next step.



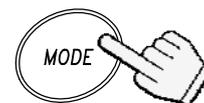
**[MODE]** key To cancel the value and proceed to the next step.



8. Press the **[ENTER]** key. **[Unit]** appears after **[End]**.



9. Press the **[MODE]** key to return to the weighing mode.



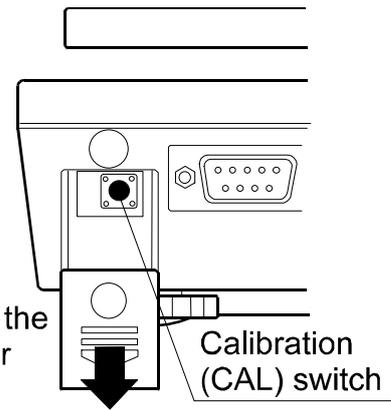
Returns to the weighing mode

## 7. CALIBRATION

This function adjusts the balance for accurate weighing. Perform a calibration in the following cases.

- When the balance is first used.
- When the balance has been moved.
- For regular calibration.

Press and lower down the calibration switch cover



### 7-1. Calibration using a weight

1. Warm up the balance for at least half an hour with nothing on the pan.
2. Press and hold the calibration (CAL) switch until CAL appears, and release the switch.
3. The balance displays CAL 0.

To change the calibration weight value, proceed to step 4.

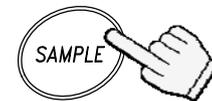
To use the calibration weight value in the balance memory, proceed to step 5.

4. Press the SAMPLE key. The display shows the calibration weight value in "gram" that is stored in the balance. Use the following keys to change the value.

- |        |     |   |
|--------|-----|---|
| SAMPLE | key | To select the digit blinking to change.   |
| TARE   | key | To set the value of the digit selected.   |
| ENTER  | key | To store the value and return to step 3.  |
| MODE   | key | To cancel the value and return to step 3. |



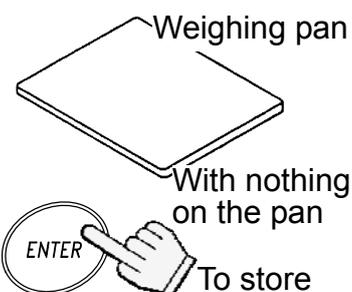
Release the CAL switch.



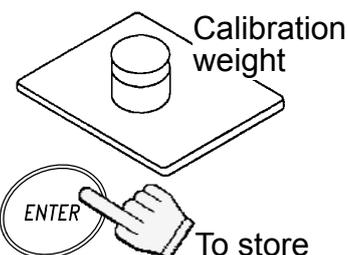
Set the weight using the relevant keys.



5. At step 3, pressing the **ENTER** key to weigh the zero-point value. Do not touch the pan during weighing.



6. Place the calibration weight with the same value as displayed on the pan. Press the **ENTER** key to weigh it. Do not touch the pan during weighing.



7. **End** appears.

Remove the weight from the pan, and press the CAL switch or **MODE** key to return to the weighing mode.



**Note**

*The value set in step 4 is stored in memory even after the power is switched off.*

*If the balance is to be moved to other places, set the gravity acceleration value of the area where the calibration using a weight is to be done, and calibrate the balance according to the procedure above. See the next section to set the value.*

## 7-2. Gravity acceleration correction

When the balance is first used or has been moved to a different place, it should be calibrated using a calibration weight.

But if the calibration weight cannot be prepared, the gravity acceleration correction will compensate the balance. Change the gravity acceleration value of the balance to the value of the area where the balance will be used. See the gravity acceleration map appended to the end of this manual.

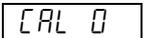
### **Note**

**Gravity acceleration correction is not required when the balance is calibrated using a calibration weight at the place where the balance is to be used.**

1. Press and hold the calibration (CAL) switch until  appears, and release the switch.



Press and hold the CAL switch.

2. The balance displays .



3. Press the  key.

Release the CAL switch.

The display shows the gravity acceleration value stored in the balance.



Use the following keys to change the value.

 key To select the digit blinking to change.



 key To set the value of the digit selected.



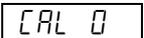
 key To store the value and return to step 2.

Set the value using the relevant keys.

 key To cancel the value and return to step 2.



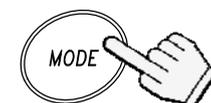
4. After setting the value, press the  key.

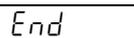
 is displayed again.



5. If it is necessary to calibrate the balance using a calibration weight, go to step 4 of 7-1.

To finish the setting, press  key.

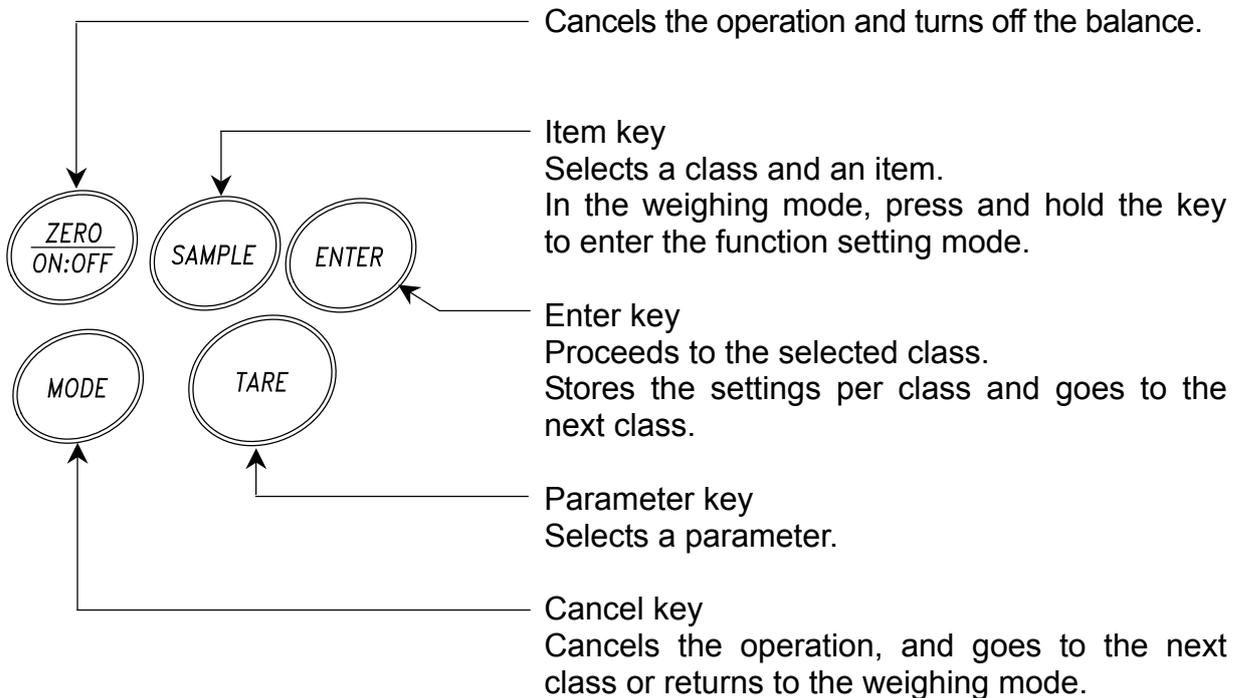


6.  appears and the balance returns to the weighing mode.

Returns to the weighing mode

## 8. FUNCTIONS

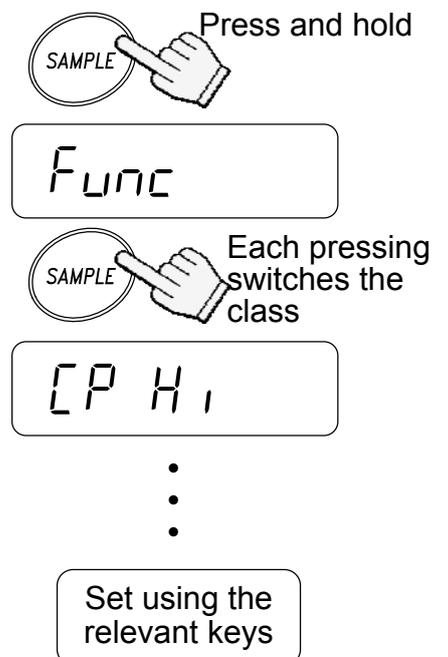
### 8-1. Key operation



### 8-2. Entering the function setting mode

In the weighing mode, press and hold the **SAMPLE** key to enter the function setting mode and display **Func**. Each time the **SAMPLE** key is pressed, the class appears one after another.

Once the class is selected, the set items are available for selection. (See "Function list".)



### 8-3. Setting example

To set auto power-off function to “Enabled”, and the ACAI function to “Disabled”.

1. Press and hold the **SAMPLE** key to display **Func**.



2. Press the **ENTER** key. The balance displays **PoFF 0**.



3. Press the **TARE** key to display **PoFF 1**.



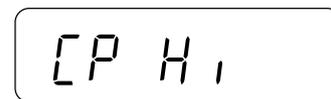
4. Press the **SAMPLE** key several times to display **ACA, 1**.



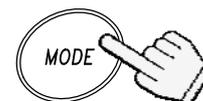
5. Press the **TARE** key to select **ACA, 0**.



6. Press the **ENTER** key to store the parameters. **CPH,** appears after **End**.



7. Press the **MODE** key to return to the weighing mode.



Returns to the weighing mode

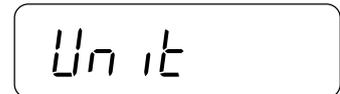
## 8-4. Storing weighing units

It is possible to store the weighing units that will be actually used from the units available. For the units available, see "5-3. Units"  
Select and store the weighing units as described below:

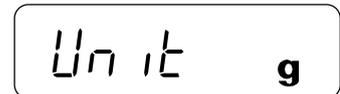
1. Press and hold the **SAMPLE** key to display **Func**.



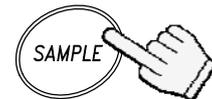
2. Press the **SAMPLE** key several times to display **Un it**.



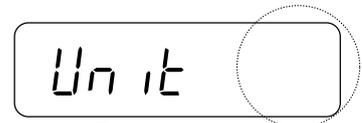
3. Press the **ENTER** key.



4. Press the **SAMPLE** key to select a weighing unit.



Each pressing switches the units available in the order described on 5-3.



5. Press the **TARE** key to store the weighing unit.



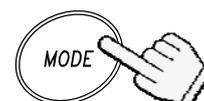
6. Repeat steps 4. and 5. to store all weighing units to be used.



7. Press the **ENTER** key. **id** appears after **End**.



8. Press the **MODE** key to return to the weighing mode.



Returns to the weighing mode

### □ Note

*When the balance is switched on, it starts with the unit that was stored first at step 5.*

### 8-5. Function list

Class	Item	Parameter	Description	
<i>F<sub>unc</sub></i>	<i>P<sub>oFF</sub></i> Auto power-off	♦ 0	Auto power-off disabled	Automatically power off
		1	Auto power-off enabled	
	<i>r<sub>nG</sub></i>	♦ 1	This function is not available.	
	<i>[<sub>ond</sub></i> Response	0	Fast / sensitive  ↕  Slow / stable	Software filtering
		1		
		♦ 2		
		3		
		4		
	<i>St-b</i> Stability band width	0	Stable when within ± 0.5d/0.5s	Conditions to turn on the stability mark
		♦ 1	Stable when within ± 1d/0.5s	
		2	Stable when within ± 2d/0.5s	
	<i>t<sub>rc</sub></i> Zero tracking	0	Disabled	Tracking zero shift
		♦ 1	Enabled	
	<i>P<sub>nt</sub></i> Decimal point	♦ 0	Point (.)	Decimal separator
		1	Comma (,)	
	<i>[<sub>P</sub></i> Comparator mode	♦ 0	Comparator disabled	Conditions to compare. d = the minimum display division
		1	Compares all data	
		2	Compares all stable data	
		3	Compares plus data > +4d	
		4	Compare stable plus data > +4d	
		5	Compares data > +4d or < -4d	
		6	Compares stable data > +4d or < -4d	
	<i>b<sub>EP</sub></i> Buzzer output	♦ 0	Buzzer does not sound.	Buzzer sounds according to the comparator results
1		Buzzer sounds at LO.		
2		Buzzer sounds at OK.		
3		Buzzer sounds at OK and LO.		
4		Buzzer sounds at HI.		
5		Buzzer sounds at HI and LO.		
6		Buzzer sounds at HI and OK.		
7		Buzzer sounds at HI, OK and LO.		
<i>P<sub>rt</sub></i>	♦ 4	This function is not available.		
<i>P<sub>USE</sub></i>	♦ 0	This function is not available.		
<i>i<sub>nF<sub>o</sub></sub></i>	♦ 0	This function is not available.		
<i>b<sub>P<sub>S</sub></sub></i>	♦ 0	This function is not available.		
<i>b<sub>tP<sub>r</sub></sub></i>	♦ 0	This function is not available.		

♦ Factory setting

Class	Item	Parameter	Description	
Func	ACAI ACAI function	0	ACAI disabled	If "0" is set, no additional samples required.
		◆ 1	ACAI enabled	
	Min Minimum unit weight	◆ 0	1 d	d = the minimum display division
		1	1/8 d	
		2	total sample weight $\geq 5d^{(*)}$	
	SNPL Sample number	◆ 0	10 pcs	The number of samples shown first when entered into the unit weight storing mode
		1	25 pcs	
		2	50 pcs	
		3	100 pcs	
		4	5 pcs	
	LEUP LCD Backlight control	0	Always off	To control how the LCD backlight turns off. Weight change or key operation will turn the backlight on.
		1	Turns off after 5 seconds	
		2	Turns off after 10 seconds	
		◆ 3	Turns off after 30 seconds	
		4	Turns off after 60 seconds	
5	Always on			
[PH]	Comparator upper limit		Setting the upper limit value	See
[PL]	Comparator lower limit		Setting the lower limit value	"6. COMPARATOR"
Unit	Weighing units to be displayed		Sets to display units	See "8-4. Storing weighing units"
id	This function is not available.			

◆ Factory setting

(\*) Even if the weight display is "5d", there may be a range that it is not accepted. This is because the weight display data is rounded off internally.

## 9. OPTIONS

The following options are available for the EK-*j* series:

- OP-04 Comparator relay output and buzzer
- OP-07 Underhook assembly for EK-6100 *j*
- OP-09 Rechargeable battery pack (Ni-MH)
- OP-12 Carrying case

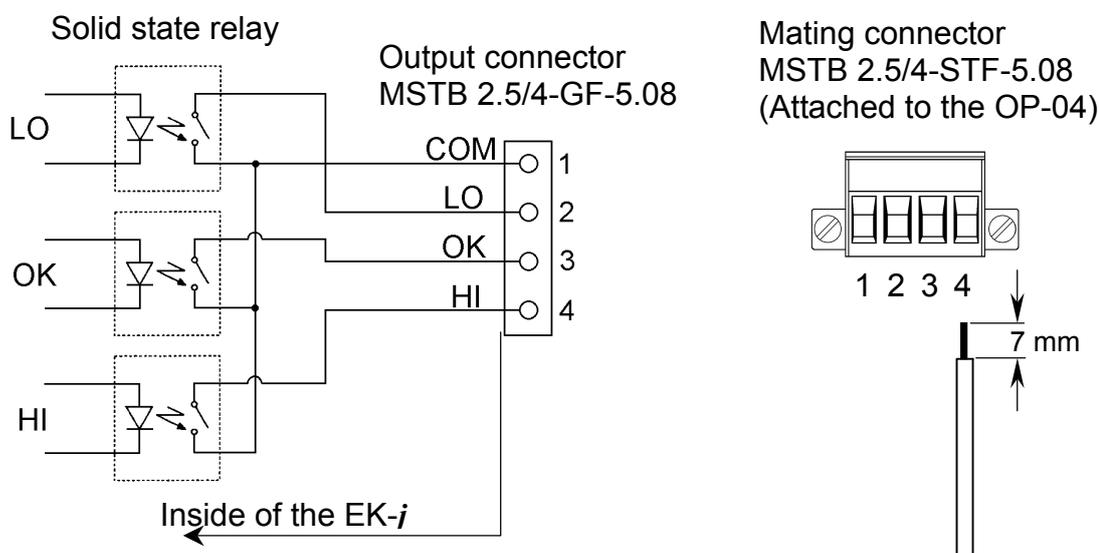
### 9-1. OP-04 Comparator relay output and buzzer

Allows output of the HI, OK or LO signal results to an external device as a solid state relay output.

It is possible to sound a buzzer according to the comparison result. See the function "bEP" to set which result will make a buzzer sound.

- The comparator function on/off, the comparison mode and comparator buzzer output can be selected using the function settings. See the settings "cP" and "bEP".**
- OP-04 cannot be used together with OP-09.**

#### Output circuit



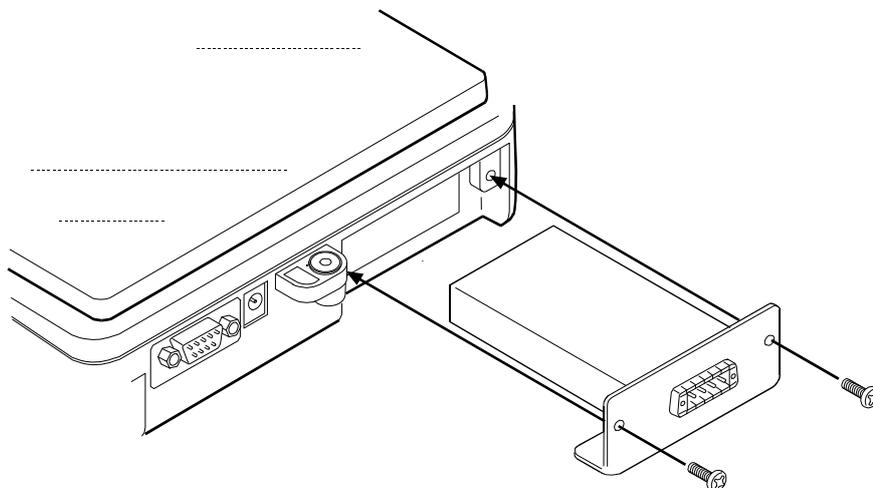
#### Maximum rating

The maximum rating of the relay output is as follows.

- Maximum voltage: 50V DC
- Maximum current: 100mA DC
- Maximum ON resistance: 8Ω

### OP-04 Installation

1. Remove the cover of the option slot on the rear of balance by pressing and lowering it down.
2. Insert the option into the slot and secure it with the screws attached.



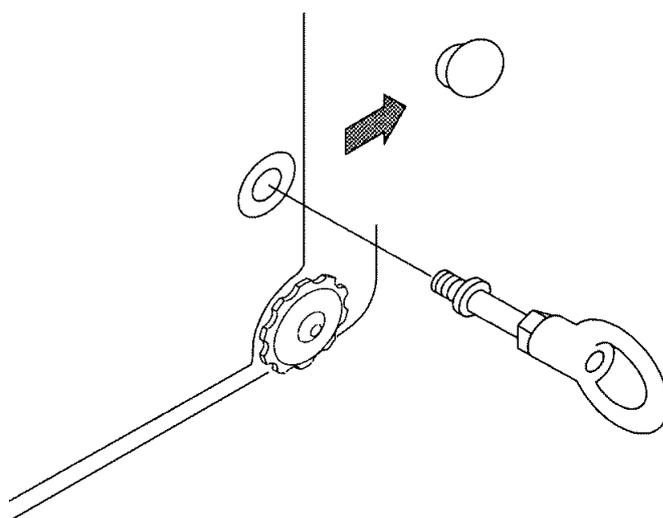
### 9-2. OP-07 Underhook assembly

By attaching the underhook assembly to the bottom of the balance, large objects that are difficult to load on the weighing pan can be weighed in suspension, and the specific gravity of objects may be measured.

- ❑ *OP-07 is available for use with the EK-6100 j only.*
- ❑ *The calibration with a weight being hung on the hook is required for an accurate weighing.*

### OP-07 Installation

Remove the cover on the bottom of the balance, and screw the underhook assembly into the mounting hole.



### 9-3. OP-09 Rechargeable battery pack (Ni-MH)

By installing the rechargeable battery pack (Ni-MH) into the balance, cordless operation can be carried out for approximately 9 hours (used with the LCD backlight off).

- ❑ OP-09 cannot be used together with OP-04.***
- ❑ The battery life will vary depending on how the balance is used, ambient temperature and so on.***

#### Charging the battery pack

Connect the AC adapter to the balance and turn the power off, then charging starts. It will take approximately 15 hours to reach full charge.

- ❑ If “Lb” is displayed when using the battery pack, immediately stop using it, and recharge the battery pack or use the AC adapter.***
- ❑ Charge the battery pack at a temperature between 0°C (32°F) and 40°C (104°F).***
- ❑ Do not charge too long. Overcharging will reduce the life of the batteries.***
- ❑ Be sure to charge the battery pack when using for the first time or if it has not been used for a long time (more than one month). Recharging two or three times may be needed to reach full charge.***
- ❑ Be sure to use only the AC adapter that is provided with the EK-j balance.***

#### OP-09 Installation

See the OP-04 installation.

### 9-4. OP-12 Carrying case

OP-12 is available for the convenience of carrying the balance by hand. However, note that because these balances are precision equipment, they will not be able to withstand excessive shock, such as being dropped.

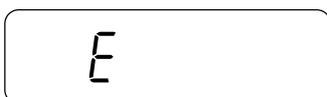
# 10. MAINTENANCE

## 10-1. Notes on maintenance

- Do not disassemble the balance. Contact your local A&D dealer if your balance needs service or repair.
- Please use the original package for transportation.
- Do not use organic solvents to clean the balance. Use a warm lint free cloth dampened with a mild detergent.

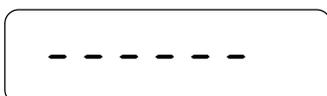
## 10-2. Error codes

### Overload error



Warning to indicate that an object beyond the balance capacity has been placed on the pan. Remove the object from the pan.

### Power-on zero error



Warning to indicate that the power is switched on while there is a load or zero-point shift beyond 3 % of the weighing capacity. Remove the load on the weighing pan. Press the **MODE** key to skip power-on zero function.

### Unit weight error



The sample weight is too light to set the unit weight in the counting mode.

### Sample quantity notice



When sample weight is light and the counting error could become large, the balance will request you to use larger number of samples. Place the displayed number of samples on the pan and press the **ENTER** key to store the unit weight.

**Note:** Pressing the **ENTER** key without adding samples may reduce counting accuracy.

Starting from the 100 samples, **100 -** may be displayed when the sample weight is light. This is for your notice and press the **ENTER** key without adding any samples.

When "ACR, 0" (ACAI disabled) or "Un in 2" is set, this notice is not shown.

### CAL errors



Warning to indicate that calibration has been canceled because the calibration weight is too heavy.



Warning to indicate that calibration has been canceled because the calibration weight is too light.

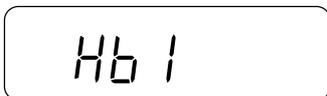
Check the weighing pan and the calibration weight. To return to the weighing mode, press the **MODE** key.

**Low battery**



Warning to show that the battery pack (OP-09) is discharged. Immediately stop using it, and recharge or use the AC adapter.

**AC adapter error**



Warning to show that the output voltage of an AC adapter is too high. Check if the AC adapter is correct.

**Stability error**



Warning to indicate that the weight value is not stable and the balance cannot display it. Prevent vibration and drafts. Press the MODE key to return to the weighing mode.

**If you cannot cancel an error or other errors occurred, request service from the store where you purchased the balance or from your local A&D dealer.**

# 11. SPECIFICATIONS

## 11-1. EK-j series

MODEL	EK-610j	EK-6100j
Accuracy Class	Class II / Temperature range on NTEP: 5°C~35°C ( 41°F~95°F)	
Weight capacity	600 g	6000 g
Verification "e"	0.1 g	1 g
Min. display "d"	0.01 g	0.1 g
Max. tare weight	300 g	3000 g
Zero range	± 18 g	± 180 g
No. of samples	5, 10, 25, 50 or 100 pieces	
Max. count *)	60,000 pcs	
Min. unit weight *)	0.01 g	0.1 g
Min. % display	0.1 %	
Min. 100 % weight	1 g	10 g
Display	7 segment LCD display with backlight (Character height 16 mm)	
Display update	10 time per second	
Operating temp.	-10°C~40°C / 14°F~104°F, less than 85% R.H. (non-condensing)	
Power supply	AC adapter or optional Ni-MH battery pack	
Battery operation	Approximately 9 hours (backlight off)	
Weighing pan size	110 mm ø	133mm x 170mm
Weight (approx.)	1.1 kg	1.5 kg

\*) In case of "Unit in g" (factory setting)

## 11-2. Other weighing units

MODEL		EK-610j	EK-6000j
Capacity x Min. display	oz.	21.164 x 0.001	211.64 x 0.01
	lb	1.3228 x 0.0001	13.228 x 0.001
	ozt	19.290 x 0.001	192.90 x 0.01
	ct	3000.0 x 0.1	30000 x 1
	mom	160.000 x 0.005	1600.00 x 0.05
	dwt	385.81 x 0.01	3858.1 x 0.1
	GN	9259.4 x 0.2	92594 x 2

## 11-3. Dimensions

