Load Cell connection (Male)

Pin setup:　　1 (EXC+)　　2 (EXC-)　　3 (SIG+)　　4 (SIG-)

RS232C Connection: DB-09 (Male)

Pin setup:　　2 (TXD)　　3 (RXD)　　5 (GND)　　others (NC)

Bi-directional RS232C Setting

Baud Rate

The ADC Series scale supports RS 232 configuration is 9600-8-N-1.

Print out format (weight string)

STA	SIGN	W_5	W_4	W_3	W_2	W_1	W_0	U_1	U_0	CR	LF

STA: 'U' (55h) indicates it's an unstable weight.

　　　'S' (53h) indicates it's a stable weight.

SIGN: '-'(2Dh) means it's a negative weight.

　　　' ' (20h) space char indicates it's a positive or zero weight.

$W_5…W_0$: Weight data, decimal point included.

U_1, U_0 : 'K' (4Bh) 'g' (67h) indicates that the Unit is kilo-gram.

CR: 0Dh

LF: 0Ah

Command print out

COMMAND	Actions	Response
\<ENQ\> (05h)		**the weight string**
CS\<CR\>\<LF\>	**Clear Sample.**	
W\<CR\>\<LF\>		**the weight string**
PW\<CR\>\<LF\>		**Piece weight(xxxx.xxxuu\<CR\>\<LF\>)**
PCS\<CR\>\<LF\>		**Pieces (xxxxxxx\<CR\>\<LF\>)**
T\<CR\>\<LF\>	**Tare operation.**	
Txxx\<CR\>\<LF\>	**Preset tare given weigh=xxx (g)**	

Precise Counting Scale – ADC

User Manual

SNOWREX INTERNATIONAL CO., LTD.
SRADC20080729

Table of Contents

2. Calibration by 1/3 of the maximum capacity

Display	Explanation
XXXXX 2000 Pnt 1	The first row shows AD Value, the second row shows the weight of 1/3 of the maximum (Unit: gram), and the third row shows "Pnt 1."

Put on poise of the 1/3 weight by the maximum capacity. Wait until the AD value becomes stable,

press ⬚ key to go to the next step.

3. Calibration by 2/3 of the maximum capacity

Display	Explanation
XXXXX 4000 Pnt 2	The first row shows AD Value, the second row shows the weight of 2/3 of the maximum (Unit: gram), and the third row shows "Pnt 2."

Put on poise of the 2/3 weight by the maximum capacity. Wait until the AD value becomes stable,

press ⬚ key to go to the next step.

4. Calibration by the maximum capacity

Display	Explanation
XXXXX 6000 Pnt 3	The first row shows AD Value, the second row shows the maximum weight (Unit: gram), and the third row shows "Pnt 3."

Put on poise of full capacity of the scale. Wait until the AD value becomes stable, press ⬚ key to

enter next step. Take off poise from pan, and the instrument will restart automatically.

3. Setup A scale stable control level

Display	Explanation
StAbLE XXX 1 - 10	Setup the stable control level. X: stable control level 1~10 Default is 5

4. Zero Point Calibration

Display	Explanation
XXXXX 0 Pnt. 0	The first row shows AD Value, the second row shows "0", and the third row shows "Pnt. 0"

Make sure the weighing pan is empty. Wait until the AD value becomes stable, press ⊕ key to go to the next step.

5. Setup calibration weight

Display	Explanation
XXXXX XXXX Pnt.CAL	The first row shows AD Value, the second row is the calibration weight (Unit: gram), and the third row shows "Pnt.CAL" The default calibration weight is 1/3 of scale capacity. Use the number keys to change the desired calibration weight.

Put on poise of the calibration weight. Use the number keys to input the calibration weight in gram.

Wait until the AD value becomes stable, press ⊕ key and the calibration is done.

Linearity Calibration Procedure (CAL 4)

Note: This section can only be operated by engineers.

Please have the jumper JP3 switch OFF before you start the calibration process.

In Calibration menu, press **C** to toggle among the menu options, and ⊕ to confirm.

1. Zero Point Calibration

Display	Explanation
XXXXX 0 Pnt 0	The first row shows AD Value, the second row shows "0", and the third row shows "Pnt 0."

Make sure the weighing pan is empty. Wait until the AD value becomes stable, press ⊕ key to go to the next step.

Specifications

Basic specification

Digital Display	LCD, height 14.5mm 6/7/7(Weight/Piece Weight/ Total Pieces)
Platter Size(mm)	245 x 355 (W x H)
Dimensions(mm)	387x365x117(W x L x H)
Net Weight(kg)	4.5kg(with pillar); 3.7kg(without pillar)
Operating Temperature	0 ℃ to +40℃
Relative Humidity	Less than 85%
Power	9V / 500mA, AC adapter; Built in 6V Rechargeable Battery
Interface	RS-232C 9600-8-N-1

Series specification

Model	ADC-6	ADC-15	ADC-30
Capacity =	6kg	15kg	30kg
Min =	20g	40g	100g
e =	0.2g	0.5g	1g
Accuracy	1/30000	1/30000	1/30000

Display and keypad

LCD Display
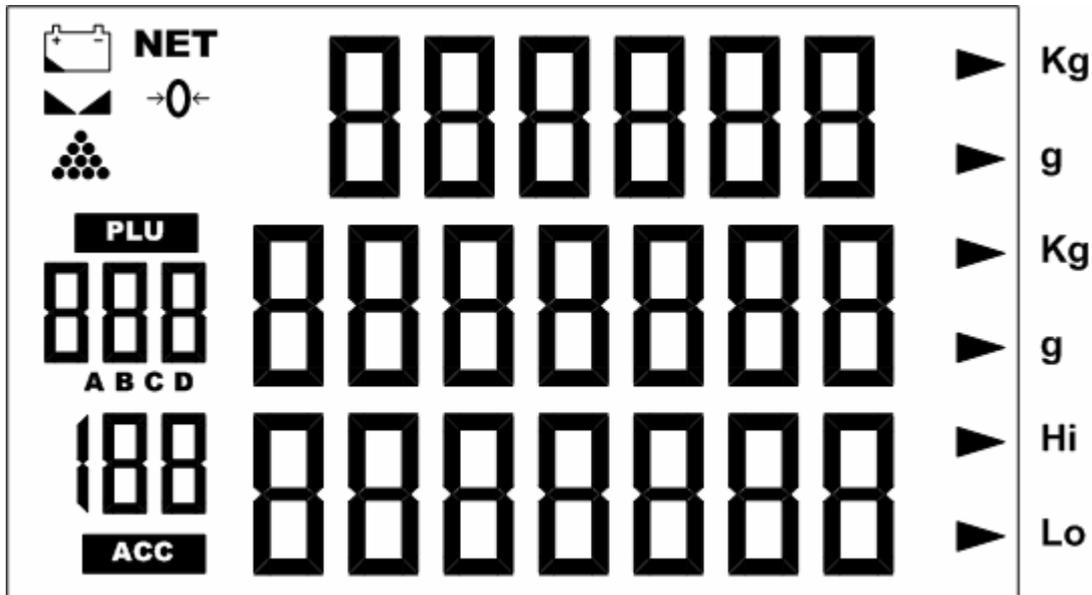
888888 ►Kg ►g   First row displays the Weight.

8888888 ►Kg ►g   Second row of digits displays the Piece Weight. Also used as keypad input indication.

8888888   The third row of digits displays the Piece Counts (shorten as PCS).

🔋   Indicates the battery power is low. A recharge/replace is required for further operation.

NET   Indicates the first row displays the Tare-ed weight.

◣◢   Indicates the weigh is stable.

→0←   Indicates the weight is at zero.

888 PLU   Displays the PLU number.

188 ACC   Displays the accumulated counting in memory.

► **Hi**   Indicates that the upper bound of piece counts or weight is set.

0 b.Pnt. 0	and the third row shows "b.Pnt. 0"

Make sure the weighing pan is empty. Wait until the AD value becomes stable, press ⬦ key to go to the next step.

5. Setup calibration weight

Display	Explanation
XXXXX XXXX b.Pnt.CAL	The first row shows AD Value, the second row is the calibration weight (Unit: gram), and the third row shows "b.Pnt.CAL" The default calibration weight is 1000g. Use the number keys to change the desired calibration weight.

Put on poise of the calibration weight.

Use the number keys to input the calibration weight in gram.

Wait until the AD value becomes stable, press ⬦ key to go to the next step.

Calibration Procedure (CAL 3)

Please remove the JP3 jumper before you start the calibration process.

In Calibration menu, press **C** to toggle among the menu options, and ⬦ to confirm.

1. SEL maximum capacity

Display	Maximum Capacity
LoAd 06	6 kg
LoAd 15	15 kg
LoAd 30	30 kg

2. Zero tracking

Display	Explanation
trACE oFF	Zero tracking disable
trACE on	Zero tracking enable

6. LO BEEP setting

Display	Explanation
Lo.bEEP **ALArn** **oFF**	Disable LO alarm sound.
Lo.bEEP **ALArn** **Short**	Set LO alarm sound as chain short beep sounds.
Lo.bEEP **ALArn** **LoNG**	Set LO alarm sound as chain long beep sounds.

External Load Cell setting (CAL 2)

During the exchange rate setting procedure, press [**c**] to switch selection, and press [⟳] to accept setting.

1. Setup B scale capacity

Display	Explanation
b.LoAd **xxxxxxxx** **GrAN**	Setup the capacity of B scale by gram. If input 0 here, B scale will be disabled.

2. Setup B scale interval

Display	Explanation
b.d= **xxxxxxxx** **GrAN**	Setup the scale interval (d) of B scale by gram. Min. d is 1 gram. Max. d is 65535 gram.

3. Setup B scale stable control level

Display	Explanation
b.StAbL **x**	Setup the stable control level. X: stable control level 1~10

Minimal level is 1. Level 1 allows the fastest stabilize time, but resulted in lowest noise filter.
Max level is 9, allows best noise filter, but resulted in slowest stabilize time.
Default stable level is 3.

4. Zero Point Calibration

Display	Explanation
XXXXX	The first row shows AD Value, the second row shows "0",

▶ Lo Indicates that the lower bound of piece counts or weight is set.

A B Indicates the weighing is at A scale (main scale) or B scale (external Load Cell).

Both ▲ and C D indicators

Keypad

Off Switch scale OFF.

On Switch scale ON.

→0← Zero operation

T Tare operation

. 0 ~ 9 numerical keypad

C Clear.

Alarm For alarm control function.

ADD Accumulate piece counting.

MR Recall total piece counting accumulated.

PLU For saving/loading/modifying preset piece weights.

 Piece weight direct input. (see piece weight setup chapter for more detail)

 Sample key: multiple sample methods are available. See the sampling chapter for more details.

 Switch between A scale (main scale) and B scale(external scale).

 Display net weight, tare weight, and gross weight all together.

 … Press to load preset piece weights.

Display	Explanation
Aut.oFF **20**	If no operation, shut down the scale in 20 minutes.
Aut.oFF **30**	If no operation, shut down the scale in 30 minutes.

2. BL Backlight setting

Display	Explanation
b.LigHt **oFF**	Disable the backlight function.
b.LigHt **on**	Enable the backlight function.
b.LigHt **AUto**	Automatic backlight

3. Repeat Tare operation ON/OFF

Display	Explanation
rE.tArE **oFF**	Disable repeat Tare operation
rE.tArE **on**	Enable repeat Tare operation

4. Auto re-sample ON/OFF

Display	Explanation
rE.SANP **oFF**	Disable auto re-sample operation
rE.SANP **on**	Enable auto re-sample operation

5. HI BEEP setting

Display	Explanation
Hi.bEEP **ALArn** **oFF**	Disable HI alarm sound.
Hi.bEEP **ALArn** **Short**	Set HI alarm sound as chain short beep sounds.
Hi.bEEP **ALArn** **LoNG**	Set HI alarm sound as chain long beep sounds.

Notes on B scale(external load cell)

1. **A/B** button is used to switch A(main) scale and B(external) load cell.

2. The initial zero is the zero setup in calibration procedure. It means any loads on the weighing pan will exactly displayed after the scale start.

3. Zeroing range is 10% of capacity.

Settings and Calibration

1. Press and hold any key while turning the scale ON. It will show **CAL 1** on the LCD display.

2. Press **C** key to toggle among the **CAL 1**, **CAL 2**, **CAL 3**, and **CAL 4** menus.

3. Select **CAL 1**, press key to enter General setting menu.

4. Select **CAL 2**, press key to enter the External Load Cell (B scale) setting menu.

5. Select **CAL 3**, press key to enter Calibration procedure.

6. Select **CAL 4**, press key to enter Linearity Calibration menu.

Note: To perform CAL 3/CAL 4 calibration, you must remove the JP3 jumper from the PCB first. Put the JP3 back after calibration is complete..

General setting (CAL 1)

In the general setting menu, press **C** key to toggle between the options, and key to confirm.

1. Aut.oFF– Auto shutdown setting

Display	Explanation
Aut.oFF **oFF**	Disable shutdown function.
Aut.oFF **5**	If no operation, shut down the scale in 5 minutes.
Aut.oFF **10**	If no operation, shut down the scale in 10 minutes.

Sampling operation

Setup piece weight by direct keypad input

1. In weighing mode, press the white number keys on the right side to input the piece weight. The unit is in gram instead of kilo-gram.

2. Then, press button, and the piece weight has been changed.

3. The number input will be cleared after 4 seconds if is not been pressed.

Setup piece weight by sampling, method 1

1. Put certain pieces of objects on to the scale pan.

2. In weighing mode, press the white number keys on the right side to input the piece count.

3. Press and the piece weight will be calculated accordingly.

4. The number input will be cleared after 4 seconds if is not been pressed.

Setup piece weight by sampling, method 2

1. Make sure the piece weight is empty.

2. Press , the second row of LCD shows **SAMPLE** and the third row of LCD shows 100.

3. If the piece count 100 is not desired, press the white number keys on the right side to change it.

4. Then, put the objects of desired piece counts on to the weighing pan.

5. The sampling will be calculated automatically.

Note: If the weighing is on B scale (external), after *is pressed, the sampling job will be continued on A scale automatically.*

Setup piece weight by sampling, method 3

1. Make sure the piece weight is empty. And there are certain objects on the weighing pan.

2. Press ▲, the second row of LCD shows **SAMPLE** and the third row of LCD shows 100.

3. If the piece count 100 is not desired, press the white number keys on the right side to change it.

4. Then, remove the objects by desired piece counts on to the weighing pan.

5. The sampling will be calculated automatically.

Note:

If the weighing is on B scale (external), after ▲ is pressed, the sampling job will be continued on A scale automatically.

Setup piece weight by sampling, method 4

If the piece weight is not empty, press ▲ and the piece weight will be re-calculated.

Auto re-sample operation

After a successful sampling operation, the scale will automatically sample again on the A scale for any new small weight. Either put on new weight or take off weight from the weighing pan will automatically sample again.

Auto re-sample function can be set off during configuration.

More operations

Alarm function

1. Press [Alarm]. The PCS column displays `PCS. Hi`

2. The piece weight column shows the PCS Upper Bound setting. Use the white keys to change.

3. Press [Alarm] again. Now the PCS column is `PCS. Lo`. This is PCS Lower Bound setup.

4. Press [Alarm] again. Now the PCS column is `LoAd. Hi`. This is Weight Lower Bound setup. The unit is by gram instead of kilo-gram.

5. Press [Alarm] again. Now the PCS column is `LoAd. Lo`. This is Weight Lower Bound setup. The unit is by gram instead of kilo-gram.

6. Press [Alarm] again. And the scale back to normal weighing mode. And the Alarm function is ready to work.

7. While the pieces exceeds the upper bound of PCS Upper Bound, or lower than the PCS Lower Bound and is not zero, the scale will beeps for warning.

8. While the weights exceeds the upper bound of Weight Upper Bound, or lower than the Weight Lower Bound and is not zero, the scale will beeps for warning.

Input Tare weight by keypad

1. In weighing mode, press the white number keys on the right side to input the Tare weight. The unit is by gram instead of kilo-gram.

2. Then, press [⌀] button, and the Tare weight has been changed.

3. The number input will be cleared after 4 seconds if [⌀] is not been pressed.

Note: It's not allowed to set Tare weight greater than scale capacity.

PLU & ACC Mode Description

Appearance	Mode Description
Neither **PLU** nor **ACC** light up or flash	**Weighing Mode** ➢ Able to input piece weight or change to any other modes.
PLU light up, not flash.	**PLU preset piece weight indication** ➢ PLU setting is completed.
PLU flashing	**PLU setting mode 1** ➢ During PLU setting, input the PLU number to be saved and press PLU to finish.
1. **PLU** light up, no flash. 2. The number below PLU keep flashing.	**Loading PLU mode** ➢ During PLU reading, input the PLU number, and press PLU to load the desired PLU.
ACC light up, no flash. Numbers in weight column.	**ACC accumulation indication** ➢ Several sets of data have been saved. Press MR to enter Total PCS display mode.
1. **ACC** light up, no flash. 2. The weight column is empty. 3. The piece weight column shows ᴛoᴛᴀL	**Total PCS display mode** ➢ The number above ACC is the set of data. No weighing function at this moment. ➢ Total PCS column is the pieces summation of all the data. ➢ Press C key to clear all data. ➢ Press ADD to return to weighing mode.

PLU operation

PLU Data setting

Steps in setting PLU no. 1~24

1. Setup piece weight according to previous chapter.

2. Press [PLU] key, and you should see the **PLU** flashing.

3. Press the left number keys to select PLU number

4. Press [PLU] key to save your setting. The "PLU" will stop flashing.

Example：

1. Press [·][5][⚖], to enter piece weight as 0.5 gram.

2. Press [PLU] key, now **PLU** is flashing on LCD.

3. Press [15/3] key, PLU digits shows 3, and [PLU 3] now flashing.

4. Press [15/3] key again, PLU digits shows 15 instead, and [PLU 15] flashing.

5. Press [PLU] key, after the beep, the piece weight for PLU 15 is done and set as 0.5 gram.

Steps in setting PLU no.0~999

1. Setup piece weight according to previous chapter.

2. Press [PLU] and you will see "PLU" flash on LCD.

3. Press the white number key to select PLU number.

4. Press [PLU] to save your setting, "PLU" stop flashing on LCD.

● If the input isn't completed in 30 seconds, the setting will be suspended and back to normal weighing mode.

Loading PLU

Steps in loading PLU no.1-32

- In weighing mode, press any key from the left 16 number keys to access the PLU memory of the key's lower-right set at once.

- Press the same key again to access the PLU memory of the key's upper-left set.

> **Example:**
>
> 1. Press one time, the 3th PLU is loaded. The LCD shows 3 below the PLU indicator.
>
> 2. Press again, the 15th PLU memory is loaded. The LCD shows 15 below the PLU indicator.

Steps in loading PLU no.0-999

1. In weighing mode, press and hold [PLU] key until it emits a double beep then release [PLU] key.

2. Use the white number keys to input the desired PLU number.

3. Press [PLU] key again, and the reference PLU is loaded.

Modify PLU

1. When the "PLU" indicator is shown on the display, press [PLU] key and you will see the piece weight flashing.

2. Setup piece weight according to previous chapter.

3. Press [PLU] to save your settings. The piece weight no longer flashing, and the new piece weight is updated.

Operation of ADD

1. When there is a load on the weighing pan and piece weight has been input, press **ADD** key and after a beep sound, ¹ ACC will light up on the LCD, indicating a data has been recorded.

2. Clear the load on the weighing pan and put another load on the weighing pan. Input the piece weight and then press **ADD** key. After a beep sound, ² ACC will light up on the LCD, indicating second data has been recorded.

3. After each recording, if the load on the weighing pan is not cleared, pressing **ADD** will result in the long beep and the scale won't be able to record the next one.

4. The stored memory can memorize up to 199 weighing results.

Operation of MR

1. In weighing mode, press **MR** key and the Weight column will be cleared. The Piece Weight column shows $totAL$. The PCS column shows the total piece number of all memories. The number shown above the "ACC" indicates the number of weighing results stored.

2. Pressing **C** will clear all the data in memory.

3. Pressing **ADD** key will quit this mode without clearing the recorded data.