

AW/AHW Professional Weighing Scale

User Manual

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Specifications

Basic specification

Digital Display	LCD, height 40 mm x 125 mm 6 digitals
Platter Size (mm)	245 x 355 (W x H)
Dimensions (mm)	387 x 365 x 117(W x L x H)
Net Weight (kg)	3.7kg
Operating Temperature	0 °C to +40°C
Relative Humidity	Less than 85%
Power	9V / 500mA, AC adapter; Built in 6V Rechargeable Battery
Interface	RS-232C

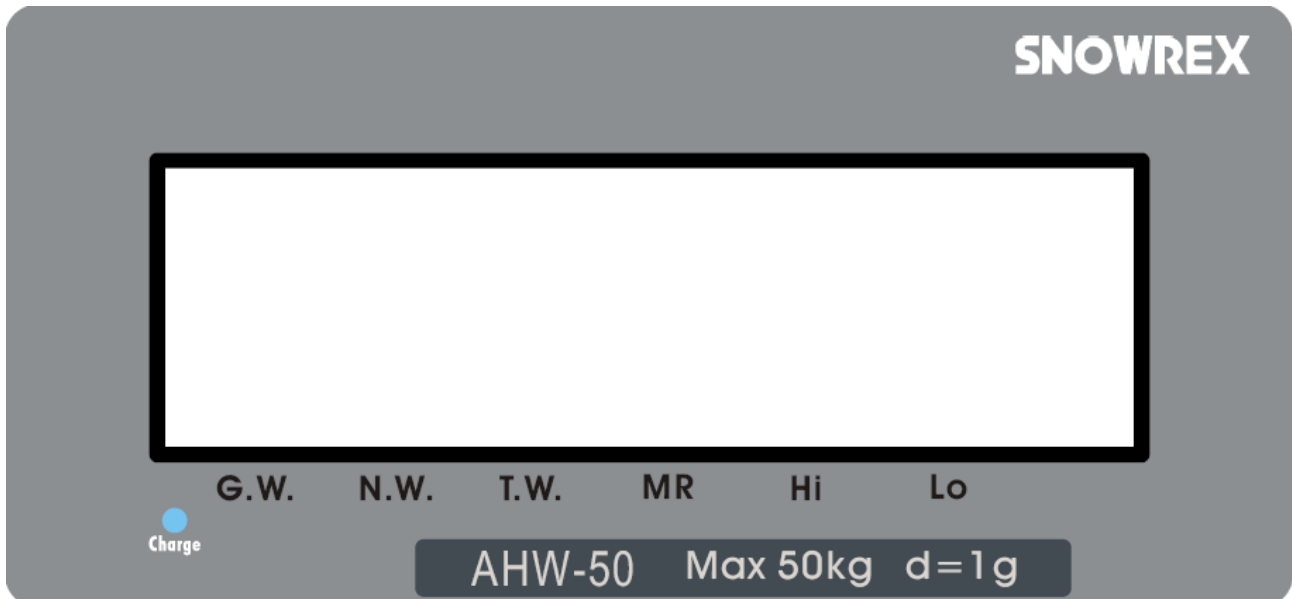
Series specification

Model	AW					
Max. Capacity	1.5kg/3lb	3kg/6lb	7.5kg/15lb	15kg/30lb	30kg/60lb	50kg/100lb
d =	0.1g	0.2g	0.5g	1g	2g	2g
Accuracy	1/15000	1/15000	1/15000	1/15000	1/15000	1/25000

Model	AHW				
Max. Capacity	3kg/6lb	6kg/12lb	15kg/30lb	30kg/60lb	50kg/100lb
d =	0.1g	0.2g	0.5g	1g	1g
Accuracy	1/30000	1/30000	1/30000	1/30000	1/50000

Display and keypad





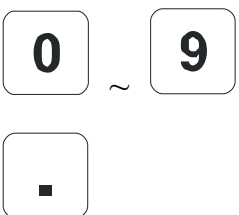





LCD Display











	Numerical display to display weight, date & time, ID number
	Indicates the weight is stable.
	Indicates the weight is at zero.
Hi-Lo	
M+	Indicates the accumulation weight in memory.
G.W	When ▼ is shown above the G.W. indicator, the Gross Weight is displayed.
N.W.	When ▼ is shown above the N.W. indicator, the Net Weight is displayed.
T.W	When ▼ is shown above the T.W. indicator, the Tare Weight is displayed.
Hi	When you are setting the weight upper bound, ▲ is flashing above the Hi indicator.
Lo	When you are setting the weight lower bound, ▲ is flashing above the Lo indicator.

Keypad





Key Icons	Keypad	Descriptions
	Off key	Press to switch the scale OFF.
	On key	Press to turn the scale ON.
	Zero key	Press to absorb trivial weight on the pan and set the scale to zero.
	Tare key	Press to perform tare operation.
	Numeric and decimal keys	Press the numeric and decimal keys to input data such as piece weight, quantity... etc.
	Clear key	Press to clear the input data.
	M+ key	Press to accumulate piece counting and weighing results.
	MR key	Press to recall total number of accumulation and total weighing.
	Hi key	Press to set alarm for weight upper bound.
	Lo key	Press to set alarm for the weight low bound.


	Function key	Press to toggle among, Hi/Lo, %, sampling.
	Sampling key	Press to set up sample quantity. (Sample key: multiple sampling methods are available. See <i>Sampling</i> section.)
	Percentage key	Press to set up percentage of the given sample.
	Print key	Press to print the weight data.
	Unit key	Press to switch between kg and lb.
	Date &time key	Press to display the current date and time. <i>Note: The date and time setting can be changed in CAL 1 menu.</i>
	ID key	Press to enter the ID mode. Use the numeric keypad to enter the user's ID number.
	Gross/Net/Tare key	Press to toggle among Gross Weight, Net Weight, and Tare Weight on the display.

Using the weighing scale



Counting function


1. Put certain pieces of objects on to the scale pan.
2. In weighing mode, press the numeric key to set the piece count and press .
3. Now you are ready to perform parts counting for the specific samples. The input data will be cleared in 4 seconds if  is not pressed.

Percentage function


1. Put certain pieces of objects on to the scale pan.
2. Press  and use the numeric key to enter the percentage of the sample. .
3. Place objects of desired piece counts on the weighing pan. The percentage of the objects will be calculated automatically.


Operation of M+

1. When there is a load on the weighing pan, press  and after a beep sound, the **M+** indicator will light up on the LCD, indicating a data has been recorded.
2. Clear the load and put another load on the weighing pan. When the scale become stable, press . After a beep sound, the **M+** indicator will light up on the LCD, indicating second data has been recorded.





- *After each recording, if the load on the weighing pan is not cleared, pressing  will result in the long beep and the scale won't be able to record the next weighing result.*
- *The stored memory can memorize up to 180 weighing results.*

Operation of MR

1. In weighing mode, press  to display the accumulated weighing result. The LCD display will flash the total number of accumulation and the total weight alternatively. For instance, if you added two weighing results and the total weight add up to 2.0 kg. The scale will flash ACC.002, and then 2.000kg

2. Press  to exit the MR mode without clearing the data in memory.



Alarm function

1. Press  key to set the upper bound of the weight. The ▲ is flashing above the **Hi** indicator.
2. Set up the weight upper bound with the numeric keys Press  key again to save your setting and return to normal weighing mode.
3. Press  key to set the lower bound of the weight. The ▲ is flashing above the **Lo** indicator.
4. Set up the lower bound with the numeric keys.
5. Press  key again to save your setting and return to weighing mode.

Note:

- *While the weight exceeds the upper bound of Weight Upper Bound, or lower than the Weight Lower Bound, or between the lower and upper bound and is not zero, the scale will beep for warning.*
- *You may change the beep settings in CAL 1 menu.*

Input tare weight by keypad

1. In weighing mode, press the numeric keys to input the tare weight. (The unit is in gram.)
2. Then, press , and the tare weight has been changed. (The input data will be cleared in 4 seconds if  is not pressed.)

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

Settings and Calibration


1. Press and hold any key while turning the scale ON. **CAL 1** is shown on the LCD display.

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

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

4. Select **CAL 2**, press  to enter the Print Settings menu



6. Select **CAL 3**, press  to enter Calibration procedure.

7. Select **CAL 4**, press  to enter Linearity Calibration procedure.

Note: To perform CAL 3 and CAL 4 calibration, you must remove the JP3 jumper from the PCB first.

Put the JP3 back after calibration is complete.

General Settings (CAL 1)

In the General Settings menu, press  to toggle among the options, and  to confirm.

1. Aut.oFF– Auto Off Setting

Display	Descriptions
A.oFF 0	Disable auto shutdown function.
A.oFF 1	If there is no operation, the scale will shut down in 5 minutes.
A.oFF 2	If there is no operation, the scale will shut down in 10 minutes.
A.oFF 3	If there is no operation, the scale will shut down in 20 minutes.
A.oFF 4	If there is no operation, the scale will shut down in 30 minutes.

2. B. LiGHt - Backlight Setting

Display	Descriptions
bL 0	Disable the backlight function.
bL 1	Enable the backlight function.
bL 2	Automatic backlight when there is load on the weighing pan.

3. bbH - Hi Beep Setting

Display	Explanation
bbH_ 0	Disable Hi alarm sound.
bbH_ 1	Set Hi alarm sound as continual short beeps.
bbH_ 2	Set Hi alarm sound as continual long beeps.

4. bbS - Go Beep Setting

Display	Explanation
bbS_0	Disable Go alarm sound.
bbS_1	Set Go alarm sound as continual short beeps.
bbS_2	Set Go alarm sound as continual long beeps.

5. bbL – Lo Beep Setting

Display	Explanation
bbL_0	Disable Lo alarm sound.
bbL_1	Set Lo alarm sound as continual short beeps.
bbL_2	Set Lo alarm sound as continual long beeps.


6. dNY-Date Setting (dd/mm/yy)

1. Current date is shown on the display. Press the Date key to select the field for adjustment.
2. The date format is displayed as DD/MM/YY. For example to set the date as April 17, 2009, press the date key to select the date field.
3. Enter the date with numeric keypad and press date key to go to the next field.
4. When the set up is complete, press tare to save your settings.

7. HNS-Time Setting (hh/mm/ss)

1. Current date is shown on the display. Press the Date key to select the field for adjustment.
2. The date format is displayed as H/M/S. For example to set the date as 16: 50: 23, press the date key to select the date field.
3. Enter the date with numeric keypad and press date key to go to the next field.
4. When the set up is complete, press tare to save your settings.

Print Settings (CAL 2)

Press **C** to toggle among the options. Use the numeric keys to input data and press  to save your settings.

1. Print Settings

Display	Descriptions
Pr.dEFA	Set the print format to default settings.
Pr.LP50	Set the print format to LP-50 printer.

2. Printout setting

Display	Descriptions
P. PrESS	Press M+ to print single weighing result. Press C in MR mode to print accumulated weighing result and total accumulation.
P. StAb.1	Print weighing result (Net wt, Pc. wt, Pc. count) when the scale is stable and weight > 0. * Pressing M+ and MR do not print.
P. StAb.2	Print Net wt when the scale is stable and weight > 0. * Pressing M+ and MR do not print.
P. ALL.1	Press M+ to print single weighing result. Press C in MR mode to print accumulated weighing result and total accumulation. Print weighing result (Net wt, Pc. wt, Pc. count) when the scale is stable and weight > 0.
P. ALL.2	Press M+ to print single weighing result. Press C in MR mode to print accumulated weighing result and total accumulation. Print Net wt when the scale is stable and weight > 0.
P.Count	Continuous printing weight data. Usually used for sending weight data to PC.
P. oFF	Print function disabled.

3. Baud Rate



Display	Descriptions
br2400	Set the baud rate to 2400
Br4800	Set the baud rate to 4800
br9600	Set the baud rate to 9600

4. Parity Setting

Display	Descriptions
PA. 7-E-1	Set the parity to 7-E-1
PA. 7-o-1	Set the parity to 7-o-1
PA. 7-n-2	Set the parity to 7-n-2
PA. 8-n-1	Set the parity to 8-n-1

Calibration Procedure (CAL 3)

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

In Calibration menu, press  to toggle among the menu options. Use the numeric keys to input data and press  to confirm.


1. SEL maximum capacity


Display	Descriptions
LoAd 03	Set maximum capacity as 3 kg.
LoAd 06	Set maximum capacity as 6 kg.
LoAd 15	Set maximum capacity as 15 kg.
LoAd 30	Set maximum capacity as 30 kg.
LoAd 50	Set maximum capacity as 50 kg.

2. A0


Display	Descriptions
A0 off	Zero tracking function is disabled.
A0 on	Zero tracking function is activated.


3. Zero Point Calibration

Display	Descriptions
XXXXXX 0	Firstly, it shows AD Value at Zero point. Press  .

Make sure the weighing pan is empty. Wait until the AD value becomes stable, press  to proceed.

4. Setup calibration weight


Display	Descriptions
XXXXXX	And put on the calibration weight either by 1/3, 2/3 of the full capacity or the full load. The corresponding AD value is then displayed. When AD value become stable, press  . The displays will shows 1/3, 2/3 of the full capacity in cycle.

	When the displayed number corresponds to the calibration weight user is using, press  to confirm.
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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 confirm.


1. Zero Point Calibration

Display	Descriptions
Pnt 0	The AD Value is then displayed.

Make sure the weighing pan is empty. Wait until the AD value becomes stable, press  to proceed.


2. Calibration by 1/3 of the maximum capacity

Display	Descriptions
Pnt 1	The AD Value of 1/3 of the full load is then displayed.

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


3. Calibration by 2/3 of the maximum capacity

Display	Descriptions
Pnt 2	The AD Value of 2/3 of the full load is then displayed.

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

4. Calibration by the maximum capacity

Display	Descriptions
Pnt 3	The AD Value of the full load is then displayed.

Put on poise of full capacity of the scale. Wait until the AD value becomes stable, press . The linearity calibration is complete.

Note: For 50 kg instrument, 5 section linearity calibrations are required.

RS232C Connection: DB-09 (Male)


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

Bi-directional RS232C Setting

This section is applicable only for models with RS-232C module.

PRINTOUT FORMAT

1. Key press print

Setting	Press M+	Press 	Press C in MR mode
Print PrESS	ITEM 1 : -----	Date 02-04-2009 Time 07:38:59	TRANSACTION TOTAL -----
Print ALL.1	Date 02-04-2009 Time 07:38:35 ID :888888	ID :888888 Gross Weight: S 10.000 kg Net Weight : S 10.000 kg	TOTAL NET WEIGHT of 1 ITEM(S) : 10.000 kg
Print ALL.2	Gross Weight: S 10.000 kg Net Weight : S 10.000 kg Tare Weight : S 0.000 kg	Net Weight : S 10.000 kg Tare Weight : S 0.000 kg	
Print StAbLE.1	No print out.	No print out.	No print out.
Print StAbLE.2			
Print oFF			

2. Stable auto print

Setting	Print out when the weight is stable.
Print StAbLE.1	Date 02-04-2009 Time 07:40:23 ID :888888
Print ALL.1	Gross Weight: S 10.000 kg Net Weight : S 10.000 kg Tare Weight : S 0.000 kg
Print ALL.2	Net Weight:S 10.000 kg
Print StAbLE.2	
Print PrESS	No print out.
Print oFF	

STA	SIGN	W ₆	W ₅	W ₄	W ₃	W ₂	W ₁	W ₀	SPACE	U ₁	U ₀	CR	LF
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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.

W₆...W₀ Weight data, decimal point included.

SPACE 20h

U₁, U₀ 'k' (6Bh) 'g' (67h) indicates that the unit is kilogram.

'l' (6CH) 'b' (62h) indicates that the unit is lb.

CR 0Dh

LF 0Ah

Command print out

COMMAND	Actions	Response
<ENQ> (05h)		the weight string (not available when the print format is set to OFF or PRESS.)