AHC - QHC SERIES

Technical Manual
Counting Scale

TSCALE

Contents

1. Precautions

- Read this manual before operating or servicing this equipment.
- Follow these instructions carefully.
- Disconnect this equipment from the power source before cleaning of performing maintenance.
- Keep the manual for your future reference.
- Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.
- Avoid unsuitable tables. The tables or floor must be rigid and not vibrate. Do not place near vibrating machinery.
- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.
- Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the scales in water.
- Avoid air movement such as from fans or opening doors. Do not place near open windows.
- Do not stack material on the scales when they are not in use.
- Keep the scales clean.

2. Installation

Unpacking

Carefully take the balance out of its package, make it sure its not damaged and all accessories are included.

Accessories,

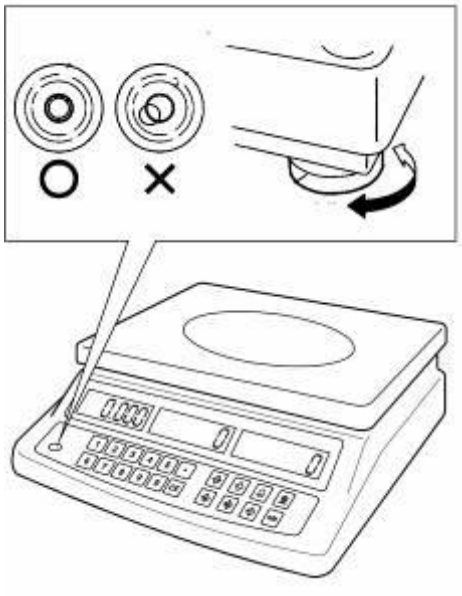
1. Balance
2. Adaptor
3. Stainless steel pan
4. Product manual

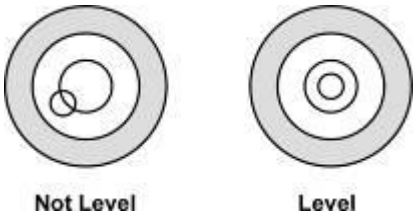
Keep the packaging material for your future use.

Level Adjusting

Place the scale on a table.

Check the water mark. If, bubble is not centre adjust the leveling feet until reach centre. Check the level when you change the location.





Connect Adaptor

- To charge the battery insert the adaptor pin to jack. Adaptor simply plug into the mains power. The scale no needs to be turned on.
- The battery should be charged for 12 hours for full capacity.
- Right side of the display there is an LED to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be recharged. If

the LED is green, the battery has a full charge. If it is red, the battery is nearly discharged and if yellow, the battery is being charged.

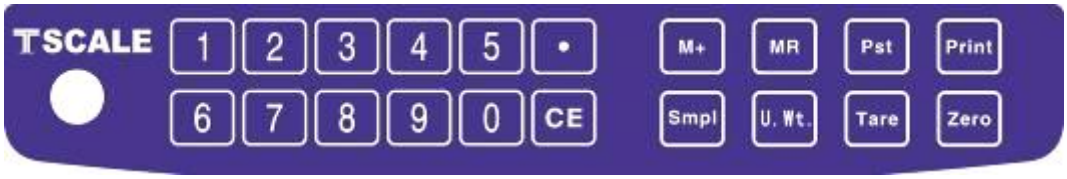
- Do not use any other type of power adaptor than the one supplied with the scale.
- Verify that the AC power socket outlet is properly protected.

Note: Please charge the battery before using the scale for the first time.

3. NAMES AND FUNCTIONS

Overall View

Key Board

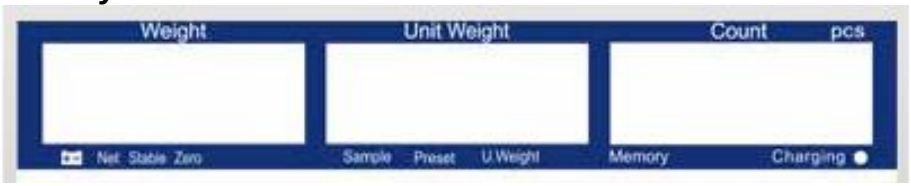


Keys	Press this key to
	Enter individual unit weights and the present tare
	Clear incorrect entries and error conditions
	Returns the display to zero.
	Enter the clear tare weights, Storing the current weight as tare value. Subtracting the tare value from the total weight and displays the result as net weight.
	Add the current count data aggregated. Also evokes the memory if pressed to balance empty. Can add up to 99 values, or until it reaches the maximum displayable digits.
	Recall the accumulator memory.
	Enter the numbers of items, used for the unit weight.
	Manually enter the weight of sample, also changes the unit if they are enabled.
	To set the upper limit of the number of items counted.
	Used to print the results to PC or printer

Display

LCD

Overlay



BATT **:** Battery indicator. When it's illuminated, battery should be recharge.

Net : Net weight indicator. When the scale has been tared and the display is in NET mode

Stable : Stable indicator. When it's illuminated, the scale is stable.

Zero : Zero indicator. When it's illuminated, the scale is in Zero point

Sample : Sample indicator. If the scale that considers the number of samples is insufficient for an accurate count.

U. Wt : Unit weight Indicator. If the Unit Weight is not sufficient for an Accurate count it will illuminate.

LED **:** Battery charging status, when the scale is plugged into the mains power the internal battery will be recharged. If the LED is green, the battery has a full charge. If it is red, the battery is nearly discharged and if yellow, the battery is being charged.

4. OPERATION

Initial Start-Up

Warm-up time of 15 minutes stabilizes the measured values after switching on.

1. **Power ON/OFF**
   Power switch is located below the right side of the scale. Switch on the scale by pressing on/off. The display is switched on and the self test is started. If you want to switch off press again the key.

2. **Zero**
   Environmental conditions can lead to the balance exactly zero in spite of the pan not taking any strain. However, you can set the display of your balance to zero any time by pressing zero key and therefore ensure that the weighing starts at zero.

3. **Tare**
   The weight of any container can be tared by pressing tare button so that with subsequent weighing the net weight of the object being weighed is always displayed.

- Load weight on the pan.
- Press tare key. Zero is displayed, and tare is subtracted.
- Remove weight from the platform. Tared weight is displayed. It can set only one tare value. It can display with a minus value.
- Press tare key. Zero is displayed, tare weight is cleared.

5. PARTS COUNTING

1. Setting Unit Weight

- For this function you need to know the average weight of objects to count. This value can be obtained by weighing a known number of pieces so that the balance calculation, the average unit weight or manually entered through the keyword.
- Both scales can be used to calculate the unit weight or the manual input that can be used to count on both scales. It can increase the precision of the unit weight at any time during the process of counting by the count displayed and pressing **Smpl.** Make sure that the amount shown is the amount on the scale before pressing the button.
- The weighing may be amended on the basis of greater numbers of samples improves the accuracy of counting large quantities.

2. Entering a Known Unit Weight.

If the unit weight is known can be entered from the keyboard.

- Enter the value of unit weight using the numeric keys then press **U.Wt**. While the display flashes. If nothing is done within seconds, the display "UNIT WEIGHT" back to the previous value, otherwise it shows the new value entered.
- The sample is then stored in the balance and the net weight is displayed together with the calculated amount based on the weight per unit.

3. Parts Counting.

Weigh a sample to calculate the unit weight to determine the average weight of items to count, put a known number of pieces on the scale and insert their content. The balance of the total weight divided by the number of samples and displays the unit weight.

- Zero the scale by pressing the zero if necessary. If you use a container, put it on the scale and the tare weight gain by following the steps above.
- Place a known amount of pieces on the scale. When the viewer "Weight" is stable enter the quantity of pieces using the numeric keys and press the **Smpl**. The number of units is shown by the viewer "Count" and the average weight shown is calculated from the viewer "Unit Weight".
- Adding pieces on the scale, increase the weight and count.
- If the scale is not stable, the calculation is completed.
- If the weight is less than zero, the viewer "Count" shows a negative count.

4. Automatic Part Weight Updates

After entering into parts counting, the display shows number of parts corresponding to previous reference weight. So that continuity will be maintained with previous parts counting this was interrupted due to power failure.

5. Setting High / Low limits.

Pressing **Pst** the user can select count or weigh and set limits. For example: Press **Pst** will display "Hi Cnt" pass counting by weighing Press **Tare** “Hi cnt” “1.999” appears at the upper limit current count, press the **CE** to cancel and change if necessary. Press **Tare** “Lo cnt” “0.999” appears lower limit of the current count, press the CE to cancel and change if necessary. Back to Press **Tare** weighing limits. ie, possible to delete one or both of the limits. The cancellation of both the limits also disables the function. If weight control is selected on the first display shows “Hi net” and “Lo Net”.

5.1 Checking Alarm

Press and hold **CE** will display “Check net” (for weight checking), “Check PCS” (for Count Checking) and “Check off” (for not use) .

6. Accumulation

- The values (weight and counting) displayed may be added to the values aggregated by pressing the **M +.** The "weight" display will show the total weight, the display "Count" will show the total counts aggregated and the display "Unit Weight" shows the number of times Articles are saved in memory. These values will appear for 2 seconds.
- The balance must return to zero or a negative value before another sample can be stored.
- Other products may be added by pressing the **M +** key. It may take up to 99 entries or up to the capacity of the display "Weight".
- To view the total value stored, press the **MR** when the balance is zero. The total will be displayed for 2 seconds,
- To free memory, press **MR** to call the stored value then press the **CE** to clear all values.

7. Automatic Accumulated Totals

After entering into accumulation (by pressing M+), it will store values into memory. The “weight” display will shows total weight and number of accumulation.

8. Auto Off

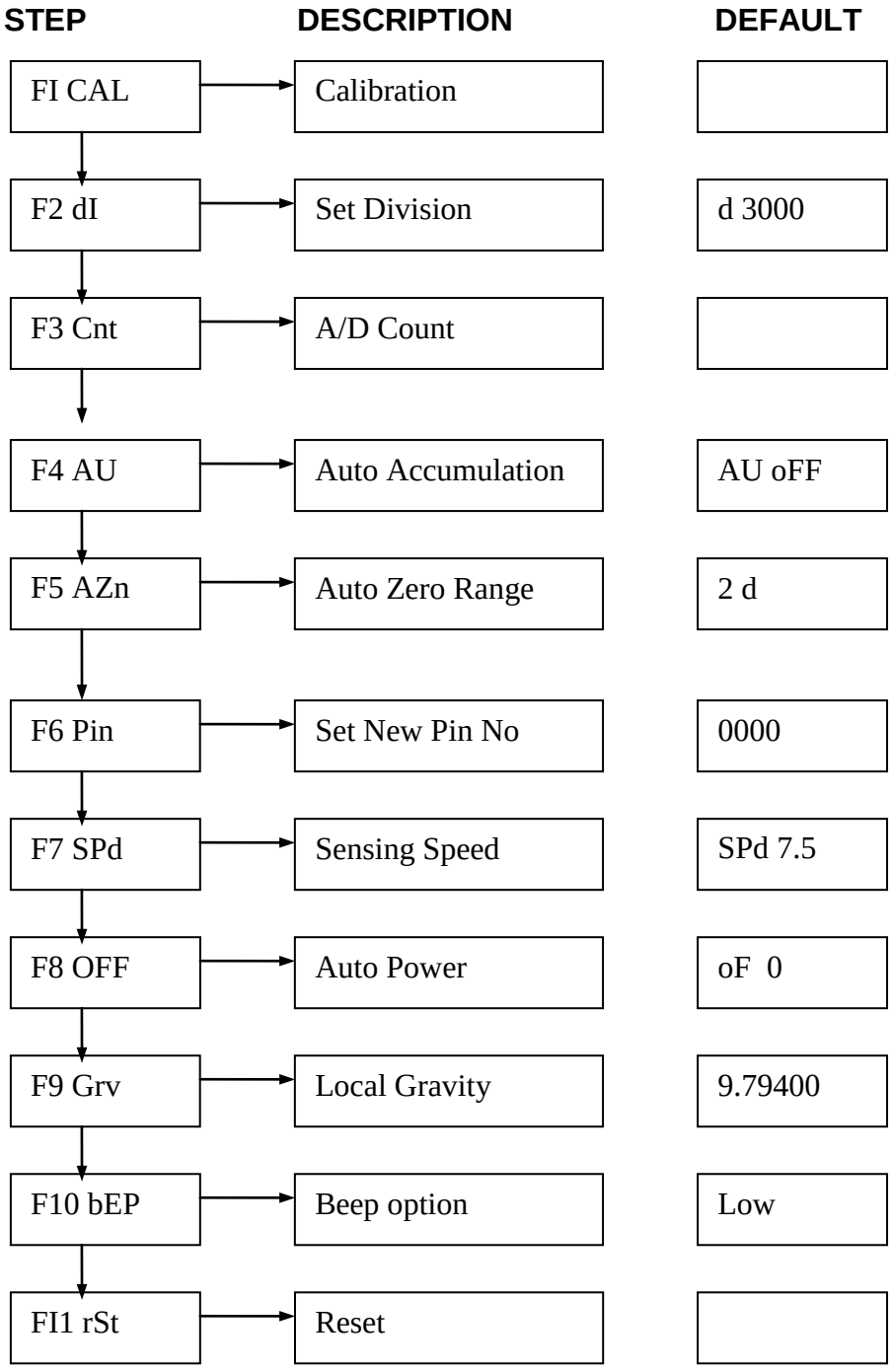
The scale can set Automatic power off. The function makes power down when a scale is not operated by user to save battery power. It can set different time options. For settings see the parameter.

9. Display-Back light

The scale has the option of back light. It can help to see white background and more bright.

6. PARAMETER

PARAMETER BLOCK



SETTING PARAMETERS

Switch on the scale.

Press 

during that start up time.

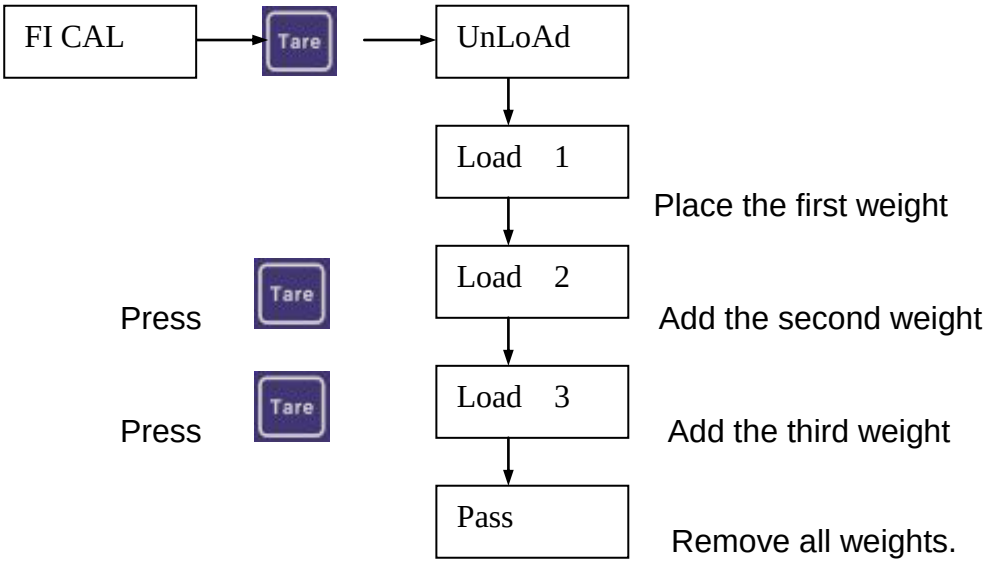
Display will show **'Pin'** briefly if PIN is activated. Press the PIN number to get into the parameter menu.
The default PIN number is "0000".
Press the "**0**" key four times. The display will show **"Pin - - - - ",** then press the Tare key.

This function can be accessed by using the U. Wt. The weight display will show the name of the function, to enter the function by pressing the Tare key. At any time you can return to weighing b pressing the Zero**.**

F1 CALIBRATION

1. Linear Calibrate.

Enter the parameter menu using by password **9999.**



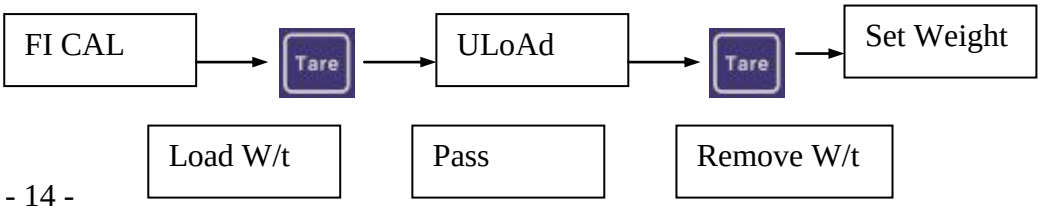
Remove the weights; The Linear Calibration procedure is finished.
When the calibration is finished, the display will enter into weighing mode.

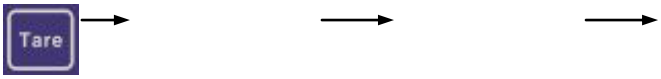
Calibration Weights for linear Calibration.

AHC/QHC SERIES				
Model #	**AHC/QHC 3000**	**AHC/QHC 6000**	**AHC/QHC 15K**	**AHC/QHC 30K**
Weight 1	1000g	2kg	5kg	10kg
Weight 2	2000g	4kg	10kg	20kg
Weight 3	3000g	6kg	15kg	30kg

2. Normal Calibration

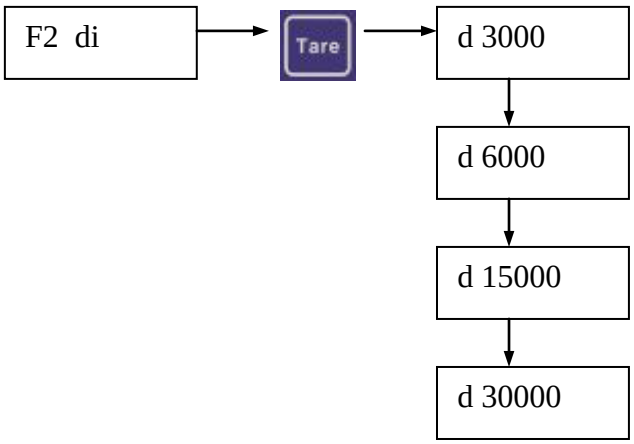
Enter the parameter menu using by password. (Default password **"0000"**)
When the parameter menu show **F1 CAL**





F2 SET DIVISION

Set the scale increment

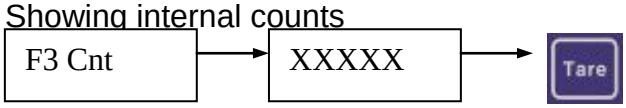


Press 

to select.

F3 A/D COUNT

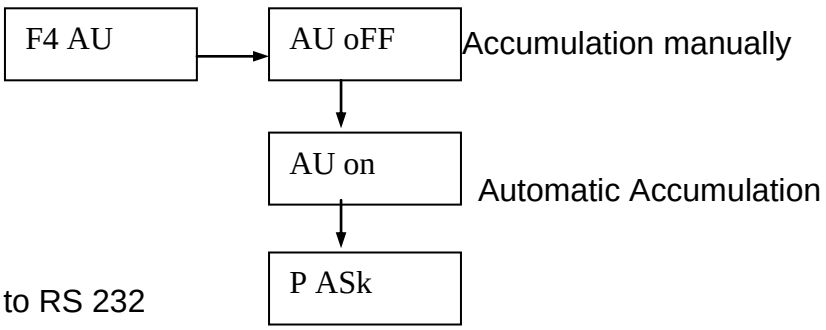
Showing internal counts



Return to menu.

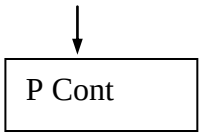
F4 AU ACCUMULATION

Set the Accumulation



Manually send data to RS 232

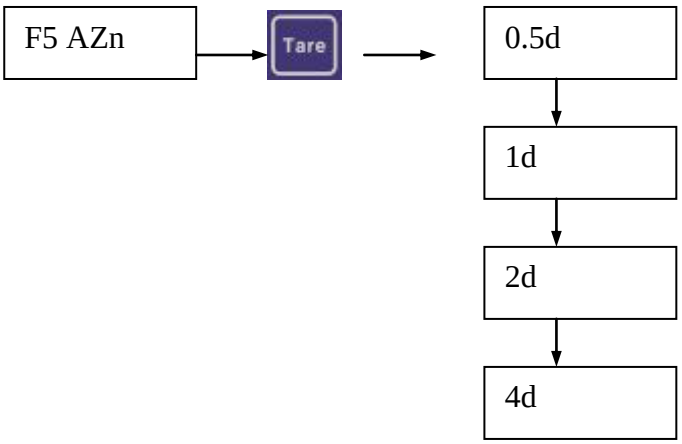
Data Send to RS232 continues



Press Tare to select.

F5 AZn AUTO ZERO RANGE

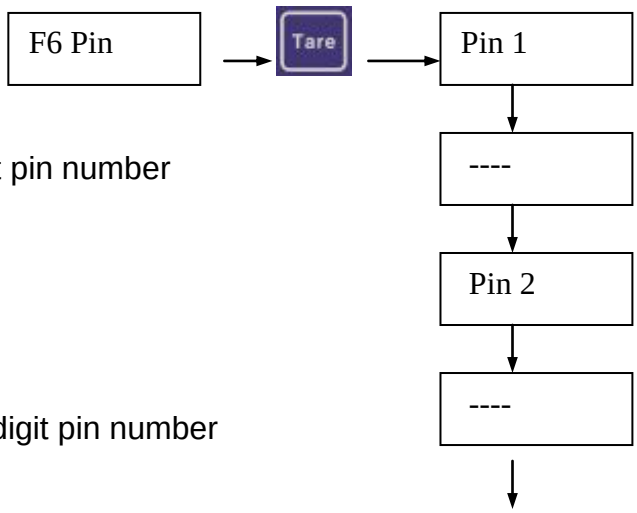
Set the Auto Zero Range.



Press Tare to select.

F6 Pin PASSWORD

Set the new password (pin number).



Enter the new four digit pin number

Press Tare

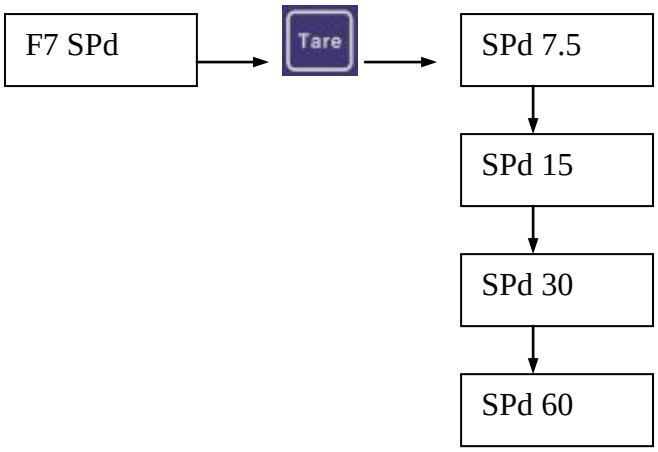
Re-enter the new four digit pin number

Press Tare

P6 Pin

F7 SPd SENSING SPEED

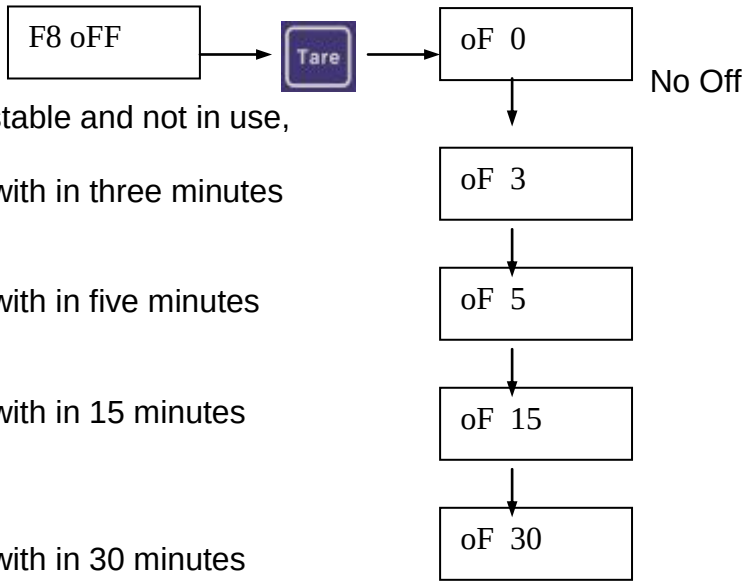
Set the weighing speed



Press Tare to select.

F8 oFF AUTO POWER

Set the Automatic power off



When display is stable and not in use,

Auto off with in three minutes

Auto off with in five minutes

Auto off with in 15 minutes

Auto off with in 30 minutes

Press Tare to select.

F9 Grv GRAVITY

Set the local gravity.

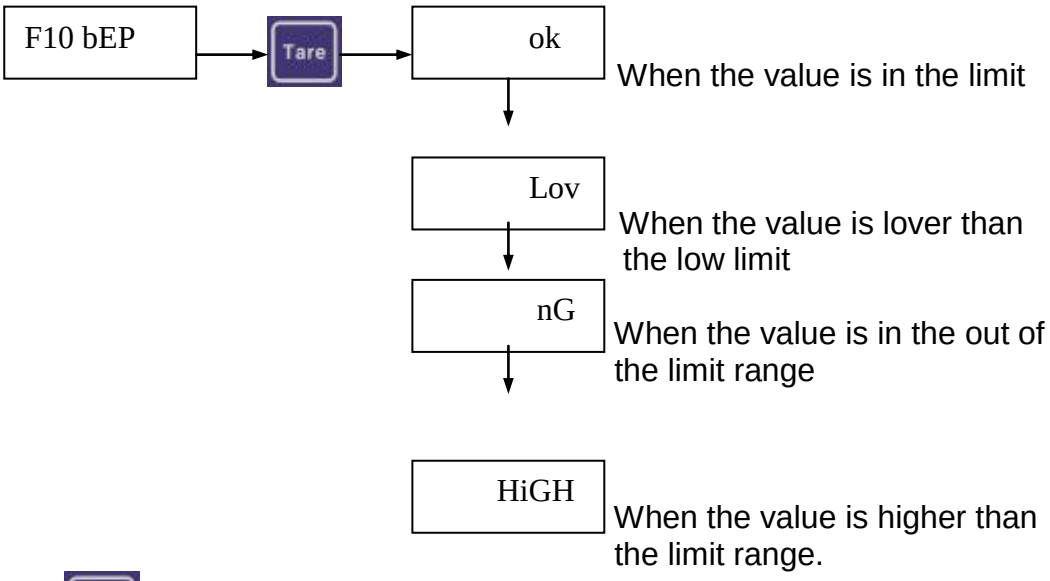
Enter the local gravity by using numeric keys.

Press 

to select.

F10 bEP BEEP

Set the beep sound



Press 

to select.

F11 rSt RESET

Reset the company default settings

Press 

to conform.

7. RS232 PROTOCOL

The AHC/QHC Series of scales can be ordered with an option RS-232 output.

Specifications:

RS-232 output of weighing data
ASCII code
4800 Baud
8 data bits
No Parity

Connector: 9 pin socket

Pin 2 Output
Pin 3 Input
Pin 5 Signal Ground

Commands:

Z<cr><lf> To set the scale to Zero (already works)
T<cr><lf> To Tare the scale (already works)
C<cr><lf> To Clear the value
T5465<cr><lf> To Tare, for example the weight of 5,465kg
U9,608446<cr><lf> To Transmit, for example the unit weight of 9,608446
P10<cr><lf> To Transmit the amount of for example 10 peaces on the platform and start the sampling process
M+<cr><lf> To add the present weight with its number of pieces to the memory
MC<cr><lf> To clear the Memory
S<cr><lf> The scale will only start the continuous transmission after receiving the start command. If the start command is not repeated within 30 Seconds the continuous transmission will stop until the next start command comes.

Communication:

T.NO. N<CR><LF>
Here the scale should always transmit the number of accumulations stored in the memory
T.WGT. N kg<CR><LF>
Here the scale should always transmit the accumulated weight in the memory
T.PCS. N pcs<CR><LF>
Here the scale should always transmit the accumulated amount of pieces in the memory.

The following example shows the protocol under the following conditions:
The 1. package shows the empty scale after the unit weight has been calculated
The 2. package shows the scale after 20 pieces have been loaded
Now the software sends the command M+ for accumulation
The 3. package shows the accumulated values in the memory and the loaded scale
The 4. package shows the accumulated values in the memory and the empty scale
The 5. package shows the accumulated values in the memory and the reloaded scale
Now the software sends the command M+ for accumulation

The 6. package shows the accumulated values in the memory and the loaded scale
The 7. package shows the accumulated values in the memory and the empty scale.
Now the software sends the command MC to clear the memory.
The 8. package shows the empty scale with a clear memory.

1.[RX]

ST,GS, 0.0000,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 0pcs<CR><LF>
T.NO. 0<CR><LF>
T.WGT. 0.0000,kg <CR><LF>
T.PCS. 0pcs <CR><LF>
<CR><LF>
<CR><LF>

2.[RX]

ST,GS, 1.7380,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 20pcs<CR><LF>
T.NO. 0<CR><LF>
T.WGT. 0.0000,kg <CR><LF>
T.PCS. 0pcs <CR><LF>
<CR><LF>
<CR><LF>
[TX]
M+<CR><LF>

3.[RX]

ST,GS, 1.7380,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 20pcs<CR><LF>
T.NO. 1<CR><LF>
T.WGT. 1.7380,kg <CR><LF>
T.PCS. 20pcs <CR><LF>
<CR><LF>
<CR><LF>

4.[RX]

ST,GS, 0.0000,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 0pcs<CR><LF>
T.NO. 1<CR><LF>
T.WGT. 1.7380,kg <CR><LF>
T.PCS. 20pcs <CR><LF>

<CR><LF>
<CR><LF>

5.[RX]

ST,GS, 3.4760,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 40pcs<CR><LF>
T.NO. 1<CR><LF>
T.WGT. 1.7380,kg <CR><LF>
T.PCS. 20pcs <CR><LF>
[TX]
M+<CR><LF>

6.[RX]

ST,GS, 3.4760,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 40pcs<CR><LF>
T.NO. 2<CR><LF>
T.WGT. 5.2140,kg <CR><LF>
T.PCS. 60pcs <CR><LF>
<CR><LF>
<CR><LF>

7.[RX]

ST,GS, 0.0000,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 0pcs<CR><LF>
T.NO. 2<CR><LF>
T.WGT. 5.2140,kg <CR><LF>
T.PCS. 60pcs <CR><LF>
<CR><LF>
<CR><LF>
[TX]
MC<CR><LF>

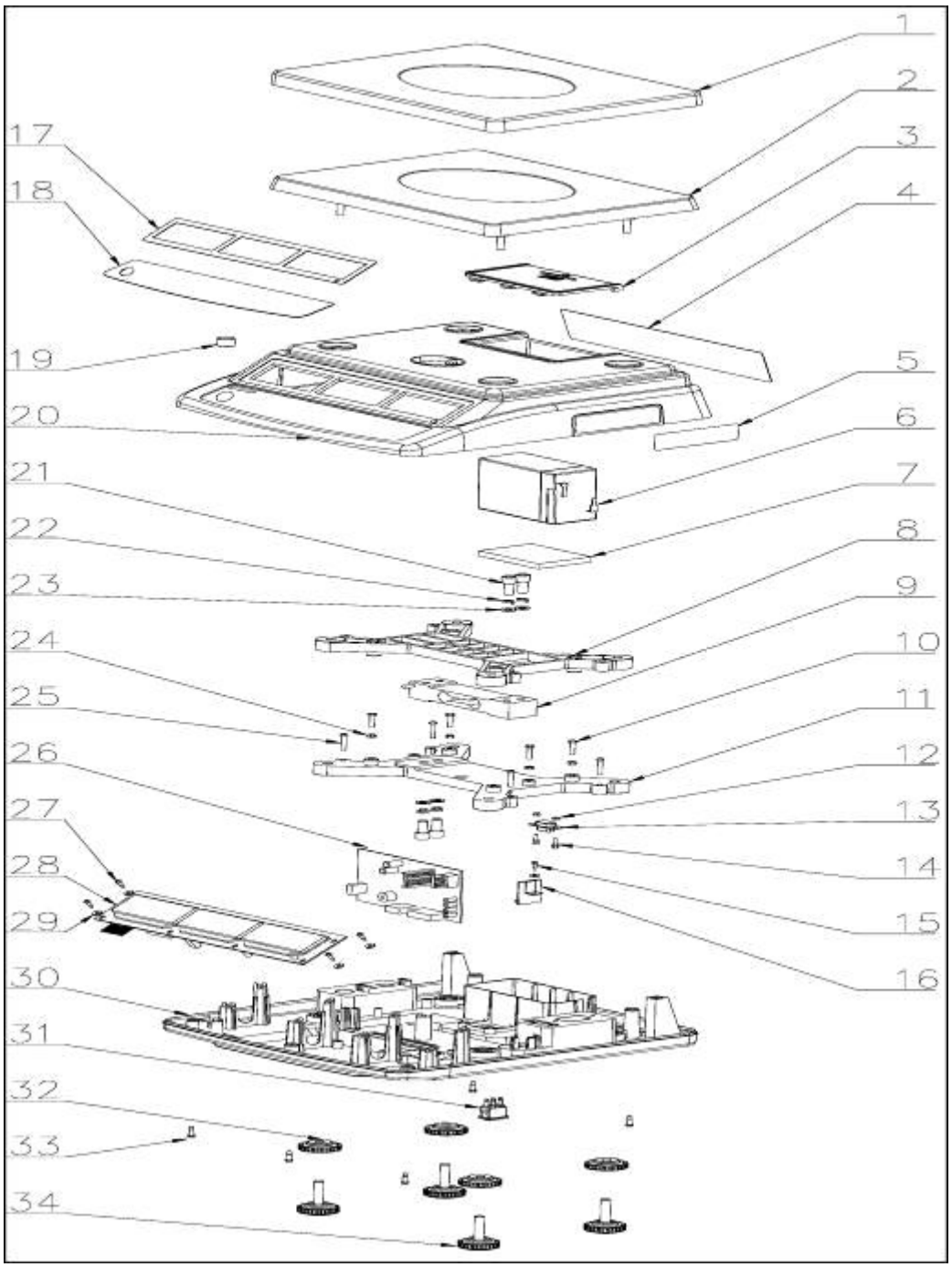
8.[RX]

ST,GS, 0.0000,kg<CR><LF>
TARE 0.0000,kg<CR><LF>
U.W. 86.9018 g<CR><LF>
PCS 0pcs<CR><LF>
T.NO. 0<CR><LF>
T.WGT. 0.0000,kg <CR><LF>
T.PCS. 0pcs <CR><LF>
<CR><LF>
<CR><LF>

8. ERROR CODES

Error Display	Description	Possible Causes
Err 4	Zero setting error	Out of the auto zero setting range. (4% of capacity) check the platform empty and re try again. Do the calibration
Err 5	Key board error	Improper operation. Check the key board cable, connector and any damage.
Err 6	A/D out of range	If overloaded, remove the weight make sure platform is installed proper. Check load cell and PCB
Err 9	Unstable reading	Wait for reading stable. Check the load is touching some where. Check any air variation, vibration and RF noise. Check load cell and voltages

9. DRAWING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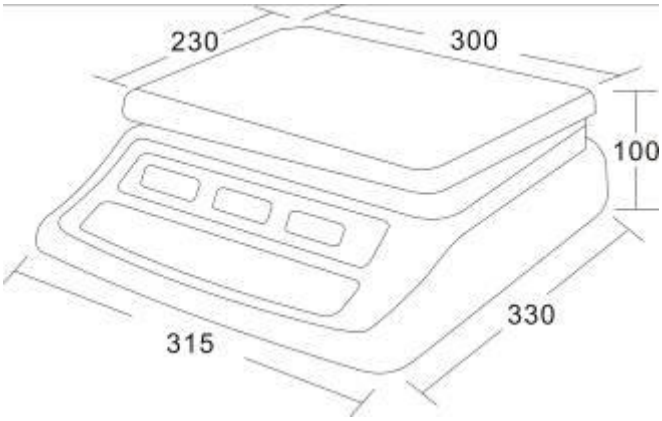
PARTS LIST

NO	Parts Name	Qty	Material	Spec
1	Pan	1	SST	230mmX300mm
2	Pan	1	ABS	230mmX300mm
3	Battery Cover	1	ABS	
4	Rear Overlay	1		
5	Name Plate	1		
6	Battery	1	Lead Acid	6V/4AH
7	Foam	1	CR	
8	Load cell upper bracket	1	Aluminum	
9	Load Cell	1		
10	Hexagon Screw	4	20Mn	M4x16
11	Load cell lower bracket	1	Aluminum	
12	Hexagon Nut	2		M3
13	DB9 Connector	1		Optional
14	Hexagon nut for D connector	2		Optional
15	“+” Self thread Screw	1	20 M	3x8
16	AC adaptor jack PCB	1		
17	Front display overlay	1	PC	
18	Key board	1		
19	Level bubble	1		14.7mm
20	Top Cover	1	ABS	
21	Internal hexagon screw	4		M6x16, 8.8
22	Spring Washer (M6)	4		HRC42-50
23	Washer (M6)	4	656Mn	200-300HV
24	Hexagon nut	4		M4
25	Self thread screw	4	20Mn	4x20
26	Main PCBA	1		
27	Self thread screw	4	20Mn	3x12
28	Front Display PCBA	1		
29	Insulative washer	5	EDPM	8x3.1x1.2t
30	Bottom Cover	1	ABS	
31	Power Switch	1		
32	Foot fixer	4	ABS	
33	‘+” Self thread screw	5	20Mn	M4x12
34	Foot	4	PVC	

10. DIMENSION



11. SPECIFICATIONS

MODEL	AHC/QHC 3000g	AHC/QHC 6000g	AHC/QHC 15kg	AHC/QHC 30kg
Capacity	3kg	6kg	15kg	30kg
Readability	0.05g	0.1g	0.2g	0.5
Tare Range	-3kg	-6kg	-10kg	-30kg
Minimum	1g	2g	4g	10g
Repeatability	0.05g	0.1g	0.2g	0.5g
Resolution	Up to 60000			
Weighing Units	Kg			
Housing	ABC Plastic and Stainless Steel platform			
Interface	RS232 Output optional			
Operation Temperature	0°C - 40°C / 32°F - 104°F			
Power	Power switch 12V/500mA , Battery 6V/4AH			
Display	3x6 digits 20 mm LCD display wit white LED back light			
Dimensions (WxDxH)	320 x 340 x 125mm / 12.6 x 13.4 x 4.9”			
Weight	3.8kg/8.4lb			
Internal Counts	600000			

Load cell specifications

Model No	**NA22**	**C2X1**
Rated Capacity	6~40 (kg)	6~50 (kg)
Rated Out put	2.0mV/V± 0.2 mV/V	2.0 mV/V±0.2 mV/V
Excitation Voltage	15 VDC	20 VDC
IP Level	IP65	IP64
Material	Aluminium Alloy	Aluminium Alloy
Cable	Φ 4x 35 cm	Φ 8.2 four core shield
Input Resistance	390Ω ±15Ω	420Ω ±30Ω
Out put Resistance	350Ω ±5Ω	350 Ω ± 5 Ω
Temperature Range	-20℃ - 60℃	-10℃ - 50℃
Safe overload	150 %RC	150 %R.C
Ultimate overload	200 %RC	200 %R.C
Repeatability	0.03 %R.O	0.02 %R.O
Creep	0.03 %R.O/ 3 min	0.02 %R.O/ 20min
Zero Balance	±0.02 mV/V	± 0.1 mV/V

TSCALE is an international supplier with more than 30 years experience in the production and sales of electronic weighing equipments.
Products are supplied and serviced from our company locations in the CHINA, TAIWAN and distributed through the world wide dealer network, also we make OEM/ODM products for world wide customers.

TSCALE products are predominantly designed for the laboratory, medical, business and industrial markets.

The product range can be summarized as follows:

- Counting scales for general industrial and warehouse applications.
- Digital weighing/check-weighing scales.
- High performance platform scales with extensive software facilities including parts counting, percent weighing etc.
- Digital electronic scales for medical use.
- Retail price computing scales.
- Floor scales.
- Truck scale.
- Crane scales.
- Weighing indicator for platform scales, floor scales and truck scales.
- Hand push and pull gauge.
- Customize auto weighing systems.

TSCALE and their distributors offer a full range of technical services such as on site and workshop repair, preventative maintenance and calibration facilities.
TSCALE operates an approved quality management system and is certified to ISO9001:2000.

Visit our Website at: www.taiwanscale.com

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