

OCS Series

Electronic Crane Scale

- OCSA3 & OCSA4 General Purpose Crane Scales
- OCSB3 & OCSB4 Compact Crane Scales
- OCSC3 & OCSC4 Enhanced Crane Scales
- OCSG1 & OCSG2 Heat Resistant Crane Scales
- OCSZ Heavy Duty Crane Scale



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1. Safety Guides

For good performance and precise measurement on daily operation, observe the following safety guides and maintenance recommendations:

- Do NOT overload the scale. This may damage the load cell and will void the warranty.
- Do NOT leave the load hanged on the scale for too long. This will decrease scale's accuracy and shorten the load cell's life span.
- Inspect the shackle and hook before using. Check clips, pins and screws properly fitted and installed.
- Check battery frequently. When scale drained its battery, charge the battery with its dedicated charger or replace it with a new one
- Avoid rotating the scale, this may damage the load cell
- Do NOT use scale under thunder or rain.
- Hang the scale on shelf or in dry and well-ventilated room. Do NOT put the scale on the ground directly.
- Do NOT attempt to repair the scale by yourself. Contact your local dealer or to the Technical Support.

2. Features

This scale is a combination of sound and proven mechanical design, with nowadays' most advanced electronics to provide a superb feature sets. It is versatile, reliable, accurate and easy to operate.

- **Superb Quality.** Strictly in accordance with OIML R76, Chinese GB/T11883-2002 National Standards, and European CE directives.
- **Great Safety.** Aluminum-casting case, high firm hook and ring, dedicated weighing load cell for safety installation.
- **Strong Reliability.** Cutting-edge technology, quality integrated circuit for high performance and long time stability.
- **Broad Applicability.** Popular and applicable in storage, textile, metallurgy industry, and so forth.
- **Easy to Use.** Ultra-red remote controlling design. Easy to operate on the scale or in distance.
- **Complete Function.** Division switch, unit conversion, automatic power saver, battery inspection, idle mode, tare set, etc.

3. Specifications

Accuracy Class	Chinese GB/T 11883-2002 Class III Equivalent to OIML R76
Tare Range	100% F.S.
Zero Range	4% F.S.
Stable Time	≤10sec
Overload	100% F.S. + 9e
Safety Load	125% F.S.
Ultimate Load	400% F.S.
Battery Life	80 hours ~ 200 hours with 6V/10Ah battery 60 hours ~ 100 hours with 6V/5Ah battery
Scale Battery	6V/10Ah or 6V/5Ah rechargeable battery
Op. Temp.	-10°C ~ +40°C
Op. Humidity	20°C ≤90%
Display	1.5 inch (38.1mm) ultra-luminance LED 1.2 inch (30mm) ultra-luminance LED

4. Quick Start

This Quick Start will guide the user through these basic operations on the crane scale. To make full use of this versatile scale, refer to Advanced Operation section of this guide.

POWER ON

Action

- To **POWER ON** the scale, press ON/OFF button on the scale for 1 second.

Function

- Scale will go through power-on test, battery check and initialization.

Condition

- Power-on test is progressing when display flashes the following characters twice. If scale doesn't pass the test, error message will display.



- Scale's maximum capacity will display on the screen. For example, the scale will show 5000kg if its full capacity was set to 5000kg



- Battery Check will also be performed. If battery is working fine, the screen flashes battery charge twice.



Refer to Battery section of this guide for more information about battery recharging.

NOTE:

*Scale must be working at the battery voltage ranging from 6.8V to 5.8V.
Recharge the battery if needed.*

- Finally, the screen will show detection message while scale is detecting its load and **AUTO-ZERO** will function to **ZERO** status when the **AUTO-ZERO** function is enabled.


To learn more about Auto-Zero function refer to Auto-Zero Range in Scale's Configuration function.




After the scale is completely powered up and initialized, it is ready for weighing operations.

ZERO

Action


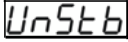

- To **ZERO** the scale, press ZERO key on the scale or  on remote controller.

Function

- The scale will set the current load to **ZERO** as if it has no load on it.
- The ZERO indicator  **ZERO** will light on (*some models do not have this zero indicator*).
- The weight reading becomes “0”, (or “0.0” or “0.00”, depending on the resolution).




Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.
- The scale must be stabled otherwise an error message  will display.
- Current weight reading shall be in **MANUAL-ZERO RANGE** otherwise an error message  will display.

To learn more about Manual-Zero Range refer to Scale's Configuration function.


TARE IN

Action

- To **TARE IN** a tare weight into the scale, press the TARE key on scale or  on remote controller (when the scale is in **GROSS MODE**).


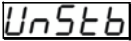


Function

- The scale will store the tare weight and will shift to **NET MODE**. All subsequent readings are deviated from the tare value.

- The TARE indicator  **TARE** will light on.
- The weight reading shall turn to “0” (or “0.0” or “0.00”, depending on the resolution).



Condition

- The scale must not be in **HOLD** mode otherwise an error message  will display.
- The scale must be stable otherwise an error message  will display.
- Current weight reading must be greater than 0 (or 0.0 or 0.00, depending on the resolution). Otherwise an error message  will display.
- Current weight reading must be less than 100% scale's **MAXIMUM CAPACITY** otherwise an error message  will display.
- The scale must be in gross mode otherwise the action will treat as **TARE OUT**.

NOTE:


Setting or changing TARE will not affect the ZERO setting.

NOTE:


*Taring will reduce the overloading range of the scale.
For example if a 1000kg container is tared on a 5000kg maximum capacity scale, the new overload limit will become at 4018kg [(5000 – 1000) + 9 divisions].*

TARE OUT


Action

- To **TARE OUT** the tared weight from the scale, press TARE key on scale or  on remote controller (the scale shall be in **NET MODE**).

Function



- The scale shall clear the tare weight and shall return to gross mode. It will display all subsequent readings in **GROSS MODE**.
- The TARE indicator  will light off.
- The weight reading is added with the tare weight.

Condition



- The scale must not be in **HOLD** mode otherwise an error message  will display.
- The scale must be in **NET MODE** otherwise the action will treat as **TARE IN**.

HOLD


Action

- To **HOLD** the weight reading, press HOLD key on scale or  on remote controller. *Some models are not equipped with this feature.*
- To unlock current reading, press HOLD key on scale or  on remote controller again.

Function

- The HOLD indicator  will light on.
- The display will freeze at the held weight value even removing or adding weights on the scale.
- Pressing the HOLD key at HOLD mode, the indicator  will light off and the scale is unlocked. The scale will show the current weight reading.


Condition

- To **HOLD** the scale, it must be stabled otherwise an error message  will display

NOTE:
Scale can be unlocked anytime in HOLD mode.

POWER OFF

Action

- To **POWER OFF** the scale, press ON/OFF key on scale or  on remote controller for 2 seconds.

Function

- Scale will perform **BATTERY CHECK** and turn off.
- The screen flashes battery charge twice



The screen will display **OFF** message.



Condition

- The scale must be in **WEIGHING MODE** otherwise this action will return the scale to **WEIGHING MODE** and then perform the **POWER OFF**.

5. User Input







In this section, the user will learn how to operate the scale in a convenient and proper way either on scale or by its remote controller.




Detailed operations are described in Quick Start section and Advanced Operation section.

KEYS ON SCALE

	ON/OFF	ZERO	TARE	HOLD	2ND
Power Off	Power On				
Weighing Mode	Power Off	Zero	Tare In	Hold	2nd
			Tare Out		
2nd Mode	Exit	Display Unit Switch	Tare Set	System Setup	Password
Password	Exit	↑	→	Confirm	
Tare Set	Exit	↑	→	Confirm	
System Setup	Exit	↑	→	Confirm	Save
Idle Mode	Wake Up	Wake Up	Wake Up	Wake Up	Wake Up

KEYS ON REMOTE CONTROLLER






	Weighing Mode	2nd Mode	Idle Mode	Password	Tare Set	System Setup
	Zero	Display Unit Switch	Wake Up	↑	↑	↑
	Tare In	Tare Set	Wake Up	→	→	→
	Tare Out					
	Hold	System Setup	Wake Up	Confirm	Confirm	Confirm
	Total	Resolution Switch	Wake Up	↓	↓	↓
	Clear Last	Clear Total	Wake Up	←	←	←
	View Total	Battery Check	Wake Up			

	Data Send	RS-232 Setup	Wake Up			
	Power Off	Exit	Wake Up	Exit	Exit	Exit
	2nd Mode	Password	Wake Up			Save

INPUT NUMERALS

- User’s input of numerals are required in **PASSWORD MODE**, System Setup Mode, Scale’s Configuration Mode, Calibration Mode, and Tare Set function.

Action

- To increase the numeric value (the flashing digit), press ZERO key on scale or  on remote controller.
- To decrease the numeric value (the flashing digit), press  on remote controller.
- To move the cursor to the right (the selected digit will flashing), press TARE key on scale or  on remote controller.
- To move the cursor to the left, press  on remote controller.
- To confirm the numeric value you inputted, press HOLD key on scale or  on remote controller.

6. Advanced Operations

Operations in this section feature the versatile and powerful functions of crane scale measuring equipment. Most of the operations are accessible and be done via the dedicated remote controller. Some of the settings of the scale require password. Contact your local representatives or technical support for password the information

SCALE'S MODE

WEIGHING MODE

Action

- No buttons or keys are required to enter **WEIGHING MODE**.

Function

- **WEIGHING MODE** is the default mode after the scale is turned on. In **WEIGHING MODE**, the scale detects its load and refreshes the weight reading all the time, if the display is not in HOLD.
- If the scale is overloaded, the display will keep flashing the error message below.



GROSS/NET MODE

Action

- To enter **NET MODE**, press **TARE** or **TARE SET** the scale.
- To enter **GROSS MODE**, Tare Out the scale.



Function

- In **NET MODE**, the TARE indicator  **TARE** will light on.
- In **GROSS MODE**, the TARE indicator  **TARE** will light off. The default weight reading is in **GROSS MODE**.

NOTE:
In Net Mode, Zero function is disabled

VIEW TOTAL MODE

Action

- To enter the **VIEW TOTAL MODE**, press  when scale is in **WEIGHING MODE**.
- To toggle between the low 5 digits format and the high 5 digits format, press HOLD key on scale or  on remote controller.

Function

- In **VIEW TOTAL MODE**, the weight reading keeps flashing to distinguish itself from that in **WEIGHING MODE**.

Apparently, **TOTAL** is the sum of stored weight readings, which can be so great that the 5 digits screen is not able to display correctly. The **TOTAL** is therefore divided into two parts, the low 5 digits format, and the high 5 digits format.



The high 5 digits format of “29235.0” is like below.



To learn more about View Total, refer to View Total in Advanced Operations section.

NOTE:
Other functions are disabled in View Total Mode

IDLE MODE

Action

- No buttons or keys are required to enter the **IDLE MODE**.

Function

- In **IDLE MODE**, the screen dims its brightness to save battery power. Aside from this power-saving feature, all of the operations are the same as in other modes.


To learn how to configure Idle Mode, refer to Idle Timing under System Setup in Advanced Operations section.

NOTE:

Any keys on scale or on remote controller will wake the scale up from its IDLE MODE, screen backlight will light up.

2ND MODE

Action

- To enter the **2ND MODE**, press 2ND key on scale or  on remote controller when the scale is in **WEIGHING MODE**. *Some models do not have 2ND key at the scale, use the remote controller to access this mode.*

Function

- The **2ND MODE** is designed to switch to alternate function of keys in the remote controller.
- To access the functions that are not shown in the remote controller, press this 2ND key.
- In **2ND MODE**, pressing the 2ND key will show the message below and keep flashing until the user's input key is entered.



PASSWORD MODE**Action**

- To enter the **PASSWORD MODE**, press 2ND button on scale or



on remote controller **twice**.


Function

- Password is required to access the Advanced Settings.
- In **PASSWORD MODE**, the screen displays the password message.

**Condition**

- The scale must not in **HOLD** mode otherwise an error message **hold** will display.
- Incorrect password entered will show **Error** message and will return the scale to **WEIGHING MODE**.

TOTAL**Action**

- To accumulate the weight readings, press  on remote controller.

Function

- Current weight reading will be accumulated into scale's **TOTAL** accumulated weights.
- The screen will display the below message indicating that **TOTAL** is successfully calculated, added and saved.



Condition


- The scale must not in **HOLD** mode otherwise an error message **hold** will display.
- The scale must be stabled otherwise an error message **UnStb** will display.
- Current weight reading must be greater than 0 (or 0.0 or 0.00, depending on the resolution) otherwise an error message **-----** will display.
- The weight reading on scale must return to 0 (or 0.0 or 0.00, depending on the resolution) before the next weight reading can be added. This assures that a load on the scale is only added to the **TOTAL** once otherwise an error message **!nuLd** will display.

NOTE:

The accumulator always uses the displayed weight, so GROSS and NET readings can be added into the same TOTAL.

VIEW TOTAL

Action

- To view the **TOTAL** in scale, press  on remote controller.

Function

- The scale will switch into **VIEW TOTAL MODE**.
- The screen flashes current **TOTAL**, for example 3205kg.




Condition

- The scale must not in **HOLD** mode otherwise an error message **hold** will display.
- The **TOTAL** must be greater than 0 (or 0.0 or 0.00, depending on the resolution) otherwise an error message **noRCL** will display.

To learn how to operate in View Total Mode, refer to View Total Mode of Scale's Mode in Advanced Operation section.

DELETE LAST TOTAL

Action



- To delete the last accumulated weight reading, press  on remote controller.

Function

- If the latest weight reading added to the accumulator is a mistake or need to be replaced, it can be erased by **DELETE LAST TOTAL**. This will erase only the latest weight value added.
- The screen will display the below message indicating that the last **TOTAL** is successfully deleted.





Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.
- The Last Total must be greater than 0 (or 0.0 or 0.00, depending on the resolution) or has not been deleted otherwise an error message  will display.

CLEAR

Action


- To clear the overall Total, press  and then  on remote controller.

Function

- In order to start a new series of Totals, the old **TOTAL** can be erased completely by **CLEAR TOTAL**.
- The screen will display the below message indicating that the **TOTAL** is successfully erased.





Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.

UNIT SWITCH

Action


- To change the scale's **DISPLAY UNIT**, press 2ND key on scale or  on remote controller and then ZERO key on scale or  on remote controller. *Some models do not have 2ND key at the scale, use the remote controller instead.*


Function

- The scale switches to **2ND MODE**, and then recognizes **ZERO** action as **DISPLAY UNIT SWITCHING** action. **DISPLAY UNIT SWITCHING** toggles between kg (metric system), lb (imperial system) and **USER-DEFINED UNIT**.
- The screen flashes the unit to change and returns to **WEIGHING MODE**







The lb indicator  lb will light on after **DISPLAY UNIT** switches to lb.

The kg indicator  kg will light on after **DISPLAY UNIT** switches to kg.

NOTE:

Some models are equipped with only one indicator either a lb indicator or a kg indicator is available. If lb indicator is only available, this lb indicator will light off when the scale is switch to its alternate unit like kg or User's unit. The same function for scale with kg indicator is only available, the kg indicator will light off when switch to its alternate unit.

Condition






- The scale must not in **HOLD** mode otherwise an error message  will display.
- The scale must be in **GROSS MODE** otherwise an error message  will display.
- *Refer to System Unit under Scale's Configuration in Advanced Operations section of Technical Manual for more information about scale's measurement system.*
- *Refer to User-defined Unit of Scale's Configuration in Advanced Operations section of Technical Manual for more information about user-defined unit.*

NOTE:

DISPLAY UNIT SWITCH functions only to change the unit in the display temporarily. It will return to its default SYSYTEM UNIT set during calibration. In changing the SYSTEM unit, recalibration of the scale is required. Refer more to Technical Manual in changing SYSTEM UNIT and recalibration.

TARE SET

Action

- Press 2ND key on scale or  on remote controller and then TARE key on scale or  on remote controller mode) to enter **TARE SET** function (when the scale is in gross mode).
- Press ZERO and TARE keys on scale or  and  on remote controller to input value.
- Press HOLD key on scale or  on remote controller to confirm the inputted value.




Function


- The scale will store the tare weight that user has inputted and will shift to **NET MODE**. All subsequent readings are deviated from the tare value.
- The screen will display “00000” (or “0000.0” or “000.00”, depending on the resolution) with the first “0” flashing, waiting for user’s inputs.



To learn how to input values, please refer to User Input section.

Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.
- The scale must be in **GROSS MODE** otherwise an error message  will display
- The input tare weight must be greater than 0 (or 0.0 or 0.00, depending on the resolution) otherwise an error message  will display

- The input tare weight must be lesser than scale's maximum capacity otherwise an error message  will display

NOTE:



*Tare setting will reduce the overloading range of the scale.
For example if a 1000kg is set by tare set function on a 5000kg maximum capacity scale, the new overload limit will become at 4009kg $[(5000 - 1000) + 9 \text{ divisions}]$.*

NOTE:

Setting or changing TARE will not effect on the ZERO setting

RESOLUTION SWITCH

Action

- To switch scale's resolution, press  and then  on remote controller. This function can be done using the remote controller.

Function


- The screen will flash the resolutions to change in descending order like 5kg, 2kg, 1kg (available options are ranging from 0.01 kg or lb to 50 kg or lb depending on scale's capacity). After **RESOLUTION SWITCH**, the new resolution will take effect. (Note, for some models this function will work temporarily. It will go back to its default system unit once the scale has restarted. To permanently set your desired measurement unit as the system unit you must recalibrate the scale and set your measurement unit as the system unit. Refer to Technical Manual on setting system unit and recalibration).



- To balance between accuracy and measurement speed in high resolution mode, the **ANTI-MOTION LEVEL** can be changed to fit your measurement application.

To learn how to set Anti-Motion Level, refer to the Anti-Motion Level in Advanced Operations section.

Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.

NOTE:

High resolution offers better accuracy at the cost of longer measuring time and stricter requirement of load's stability. Designed to meet the OIML R76's directive, this scale has the best (default) performance at 2000 to 3000 division

NOTE:



RESOLUTION SWITCHING will change the apparent overloading range of the scale. For example, if the resolution of a 3000kg scale is switched to 0.5kg, it will overload at a new weight of 3004.5kg ($3000 + 9 \times 0.5$), while by default, it overloads at a weight of 3009kg ($3000 + 9 \times 1$)

NOTE:

The default resolution will be restored once the scale is restarted or entering to System Setup Mode (no matter what settings are changed or not). To save the changes in resolution, use SYSTEM SETUP function rather than RESOLUTION SWITCHING

BATTERY CHECK

Action

- To check scale's battery power, press  and then  on remote controller. This can be done using the remote controller.


Function

- System checks the battery and feedbacks with battery's left charge.
- The screen flashes the battery charge in voltage like the image below.










Please refer to Battery section for more information about battery.

Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.

SYSTEM SETUP

Action

- To enter **SYSTEM SETUP MODE**, press 2ND and then HOLD keys on scale or  and then  on remote controller. *Some models do not have HOLD key at the scale, so it is recommended to have the remote controller.*
- To input values, press ZERO and TARE keys on scale or  and  on remote controller.
- To confirm inputted value, press HOLD key on scale or  on remote controller.
- To save and exit **SYSTEM SETUP MODE**, press 2ND key on scale or  on remote controller.
- To exit **SYSTEM SETUP MODE** without saving, press ON/OFF key on scale or  on remote controller.


To learn how to input digits or change the option, please refer to User Input section.

Function

- In **SYSTEM SETUP MODE**, user can change the scale's system function to their desired setting like higher resolution, automatic power-off delay, idle delay, the screen's brightness, display frequency, anti-motion level, etc.
- The screen will display the welcome message shown below:



Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.

RESOLUTION

- Technically, the **RESOLUTION** here and the above-mentioned **RESOLUTION SWITCH** are both refer to the same thing. The only difference is that changes made here will be saved permanently while changes at **RESOLUTION SWITCH** work temporarily and will return to its default measurement unit once the scale is rebooted.



To learn more about Resolution, refer to Resolution Switch in Advanced Operations section.

AUTO POWER-OFF TIMING

- **AUTO POWER-OFF** function extends the battery's charge and turns off the scale if it is not working or has no activity on specified time set.
- **AUTO POWER-OFF** will start the scale's **POWER-OFF** countdown timer when there's no activity or the load is stable. Once the timer's timing reaches the delay set in **SYSTEM SETUP**, it will automatically turn off the scale. Pressing any keys or disturbing the load will reset the countdown timer.
- Scale can be timed to auto power-off from "01" minutes to "99" minutes or "never". When **AUTO POWER-OFF TIMING** is set to "00" the scale is set to "never" meaning auto-off is disabled.
- The default **AUTO POWER-OFF TIMING** is set to "15" minutes.



NOTE:

Some models are not equipped by this function. Refer to specific scale's catalogue or its datasheets for the details.

IDLE TIMING

- To extend and maximize battery's charge, the scale may automatically enter to **IDLE MODE** when there is no activity on the scale or the load is stable. In **IDLE MODE**, the scale works in low-power consumption status. "01" seconds to "99" seconds can be set to scale's idle countdown timer. Once the timer's timing reaches the delay set in SYSTEM SETUP, it will automatically lower the brightness of the screen. If **IDLE TIMING** is set to "00", the scale never goes to **IDLE MODE**.
- Pressing any keys or disturbing the load will wake up the scale from **IDLE MODE** (when it is in this mode) and reset the countdown timer.
- The default Idle Timing is set to "30" seconds.



NOTE:

Some models like OCSZ, OCSG1, OCSG2 and other relative models do not equip this function. Refer to specific scale's catalogue or its datasheets for the details.

DISPLAY BRIGHTNESS

- Lowering the brightness of screen can also save scale's battery charge.
- There are 3 levels of brightness, "1" to "3". At level 1, the screen works at lower power while at level 3 it works at higher power.
- The default Display Brightness is set to level "3"



NOTE:

Some models like OCSZ, OCSG1, OCSG2 and other relative models do not equip this function. Refer to specific scale's catalogue or its datasheets for the details.

DISPLAY FREQUENCY

- **DISPLAY FREQUENCY** sets the speed of the screen updates when the weight reading changes.
- There are 5 levels of Display Frequency, “0” to “4”. At level 4, the screen’s update rate changes slower while at level 0 it changes faster.
- The default **DISPLAY FREQUENCY** is set to level “1”.



ANTI-MOTION LEVEL

- **ANTI-MOTION** function intelligently settles the weight reading when the scale is in motion. The weaker **ANTI-MOTION** is the faster weight reading displays, but the longer it takes to settle the weight reading.
- There are 6 levels of **ANTI-MOTION**, “0”, “1”, “2”, “3”, “4”, “5” equivalent to “Off”, “weakest”, “weak”, “normal”, “strong”, and “strongest”, respectively.
- The default **ANTI-MOTION LEVEL** is set to “2” (normal).










NOTE:

Higher resolution offers better accuracy at the cost of longer measuring time and stricter requirement of load’s stability. Designed to meet the OIML R76’s directive, this scale has the best (default) performance at 2000 to 3000 division

COMMUNICATION SETUP

Action

- To enter **COMMUNICATION SETUP MODE**, press  and then  on remote controller. To input values, press ZERO and TARE button on scale or  and  on remote controller. *This function can be done using the remote controller.*
- To confirm inputted value, press HOLD key on scale or  on remote controller.
- To save and exit **COMMUNICATION SETUP MODE**, press 2ND key on scale for  on remote controller.
- To exit **COMMUNICATION SETUP MODE** without saving, press ON/OFF key on scale or  on remote controller.


To learn how to input values or change the option, refer to User Input section.

Function

- In **COMMUNICATION SETUP MODE**, user can change the scale's serial communication settings to meet the receiver's requirement, like communication on/off status, baud rate, scale's communication address, signal output mode, etc.



Condition

- The scale must not in **HOLD** mode otherwise an error message  will display.

COMMUNICATION ON/OFF

- The scale's serial communication port is controlled by the **COMMUNICATION ON/OFF** status.
- When the port is set to on, the scale enables its serial communication otherwise it is disabled.

- By default, the **COMMUNICATION ON/OFF** status is set to off



BAUD RATE

- **BAUD RATE** is the speed that scale outputs signal. There are 4 option baud rates: 1200bps, 2400bps, 4800bps, and 9600bps.
- By default, **BAUD RATE** is set to 1200bps.




SCALE ADDRESS

- For multiple scale's application, address can be assigned to identify the uniqueness. Scale sends out address number in the serial communication protocol.
- **SCALE ADDRESS** can be assigned from 00 to 99
- By default, **SCALE ADDRESS** is set to 00



OUTPUT MODE

- There are three option modes of data output: "0" continuous mode, "1" manual mode, and "2" request mode.
- In "0" continuous mode, the scale sends out data continuously all the time. In "1" manual mode, scale only sends data out when key  is pressed while "2" request mode, the scale waits for incoming

- request from serial communication port and answer the request with specified data.
- The default **OUTPUT MODE** is set to “0” continuous way.




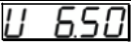
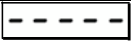

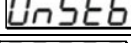
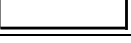






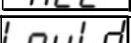
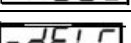
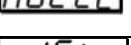


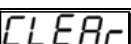
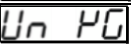

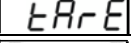
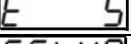

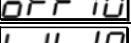
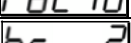
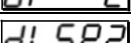

To learn more about serial communication protocol, refer to Technical Manual

7. Battery

To extend and maximize the battery's charge, note the following battery maintenance guide:

- This scale is powered by a 6V rechargeable lead-acid battery.
- The battery is attached to the battery door. To remove the battery pack, remove the two screws on the access door, pull the battery pack straight out, and unplug the battery cable from the scale.
- The battery may work from 80 hours to 200 hours (depending on LED display brightness setting) before it requires recharging.
- In order to conserve battery's charge, the scale is equipped with an **AUTO POWER-OFF** function which senses operational status for no activity after certain minutes then will turn off the scale. Additionally, the auto **IDLE** function helps battery saving feature. The auto **IDLE** will dim the display after specified minutes (if no scale activity).
- Charging time for a completely discharged battery is approximately 6 hours.
- To obtain maximum service from your batteries, it should be stored between -20°C (-4°F) and +50°C (122°F). Stored batteries should be recharged every three months. Battery is fully charged when the charging indicator status turned to red.

8. Message Illustrations

Display	Stands for	Message
		POWER-ON
		Battery charge left
		Weighing detection
	hold	The display is locked.
	unstable	The scale is in motion/unstable.
		The weight reading is too big or out of range.
		The weight reading is too small or out of range.
	2nd	2ND MODE , waiting for key combination.
	overload	The scale overloads.
	password	PASSWORD MODE
	error	The password is incorrect.
	power off	POWER-OFF
	accumulated	The weight reading is accumulated.
	invalid	The weight reading is invalid to be totalled.
	no accumulation	There is no total.
	deleted	The last total is deleted.
	no deletion	There is no total so the last total cannot be deleted.
	clear	The total is cleared.
	unit kg	Unit is set to kg (metric system).
	unit lb	Unit is set to lb (imperial system).
	tare	The scale is tared (in net mode).
		The resolution is 5 kg or lb.
	system setup	SYSTEM SETUP welcome message
	auto power off	AUTO POWER-OFF TIMING
	idle	IDLE TIMING
	brightness	DISPLAY BRIGHTNESS
	display	DISPLAY FREQUENCY

	frequency	
56b 3	stability performance	ANTI-MOTION LEVEL
End	end	Save and exit.

9. Troubleshooting

Symptoms	Possible Causes	Suggested Solutions
Displays blank when pressing ON/OFF key	Discharged battery	Recharge the battery
	Defective battery	Replace the battery
	Corroded battery	Clean connections
	Power key not properly pressed	Press Power On/Off firmly and hold until It turn on.
Display flash at low brightness	Discharged battery	Recharge the battery
No response after Zero / Tare / Hold / 2nd button is pressed	Defective button	Clean button
Display reading is not stable	The scale's load maybe in motion	Wait until the load is stable
	Filter (Anti-Motion) set too low	Change filter (Anti-Motion) setting
	The scale is damped	Dry the scale
	Dust on PCB boards	Clean PCB board
Large tolerance in weight reading	The scale may not zeroed before applying load	Zero the scale before loading
	Require re-calibration	Re-calibrate the scale
	lb/kg unit in wrong selection	Set correct unit
Battery cannot be recharged	Defective battery	Replace the battery
	Defective charging plug	Replace the charging plug
Short remote controlling distance	Remote controller batteries may require replacement	Replace remote controller batteries

10. Notes

ANYLOAD Weigh & Measure Inc.

Website: www.anyload.com

Email: info@anyload.com

Fax: +1 866 612 9088

North America Toll Free: 1-855-ANYLOAD (269 5623)