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# 1. Safety Guide

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*For good performance and precise measurement, be careful with daily operation and maintenance. Note the following instructions:*

- Do **NOT** overload the scale. This will damage the loadcell and void the warranty.
- Do **NOT** leave load hung on the scale for long. This will decrease the scale's accuracy and shorten the loadcell's life.
- Inspect shackle and hook before using. Check the clips, pins and screws regularly.
- Check the battery power frequently. When the scale runs out of power, charge the battery with its dedicated charger or replace it with a full one.
- Rotate the load rather than the scale itself if needed.
- Do **NOT** use the scale under thunder or rain.
- Hang scale on shelf in dry and well-ventilated room. Do **NOT** place scale on the ground directly.
- Do **NOT** attempt to repair the scale yourself. Contact your local representative.

# 2. Features

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*This scale is a combination of the sound and proven mechanical design, with today's most advanced electronics to provide a superb feature set. 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 loadcell 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 Operation:**

Ultra-red remote controlling design. Easy to operate on the scale or in distance.

- **Complete Function:**

Division switching, measurement unit conversion, automatic power save, automatic battery inspection, idle mode for battery save, presetable tare, 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.
Reading Stable Time	≤10 seconds
Overload Warning	100% F.S. + 9e
Max. 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
Operating Temp.	- 10°C ~ + 40°C
Operating Humidity	≤90% at 20°C
Display	1.5 inch (38.1mm) ultra-luminance LED 1.2 inch (30mm) ultra-luminance LED

## 4. Quick Start

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

### POWER ON

#### Action

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

#### Function

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

#### Condition

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



Scale's maximum capacity will be displayed on the screen. For example, the scale shows its full capacity, 5000kg.



Battery Check is then performed. If battery works well, the screen flashes battery charge twice.

*Please flip to Battery section for more information about battery recharging.*

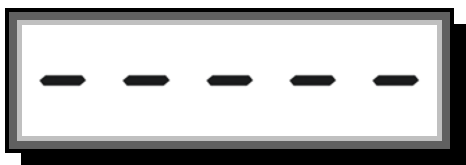


#### **WARNING:**

*Scale must work at the battery voltage ranging from 6.80V to 5.80V.  
Recharge the battery when needed.*

- ☑ Finally, the screen shows detection message while scale detects its load and AUTO-ZERO itself to ZERO status, when the AUTO-ZERO function is enabled.


*To learn more about Auto-Zero function, refer to Auto-Zero Range in Scale Configuration function for details.*



After scale is completely powered up, it is ready to weigh loads.

## ZERO

### Action

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

### Function


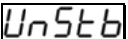

Scale sets current load to be **ZERO**, as if it has no load.

The ZERO indicator  **ZERO** lights on.

The weight reading turns “0”, (or “0.0” or “0.00”, depending on the resolution).




### Condition

- The scale must not be in **HOLD** mode. Otherwise, error message  will keep flashing.
- The scale must be stable. Otherwise, error message  will flash.
- Current weight reading is in **MANUAL-ZERO RANGE**. Otherwise, error message  will flash.

*To learn more about Manual-Zero Range, please refer to Scale Configuration function.*

## TARE IN

### Action

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

### Function


The scale stores a tare weight, and shifts to **NET MODE**. All subsequent readings are deviations from the tare value.

The TARE indicator  **TARE** lights on.

The weight reading turns to “0” (or “0.0” or “0.00”, depending on the resolution).



### Condition

- The scale must not be in **HOLD** mode. Otherwise, error message  will keep flashing.


- ✓ The scale must be stable. Otherwise, error message **UnStb** will flash.
- ✓ Current weight reading must be greater than 0 (or 0.0 or 0.00, depending on the resolution). Otherwise, error message **-----** will flash.
- ✓ Current weight reading must be fewer than 100% scale's **MAXIMUM CAPACITY**. Otherwise, error message **-----** will flash.
- ✓ The scale must be in gross mode. Otherwise, this action will be recognized as **TARE OUT**.

**NOTICE:**  
Setting or changing TARE has no effect on the ZERO setting.

**NOTICE:**  
Taring will reduce the apparent overloading range of the scale.  
For example, if a 1000kg container is tared and the scale maximum capacity is 5000kg, the scale will overload at a new weight of 4018kg (5000 – 1000 + additional 9 divisions).

**TARE OUT**

**Action**

To **TARE OUT** the tare weight out of scale, press TARE button on scale or  on remote controller (when the scale is in **NET MODE**).

**Function**

The scale clears the tare weight, returns to gross mode, and displays all subsequent readings in **GROSS MODE**.

The TARE indicator  **TARE** lights off.


The weight reading is added with tare weight.

**Condition**

- ✓ The scale must not be in **HOLD** mode. Otherwise, error message **hold** will keep flashing.
- ✓ The scale must be in **NET MODE**. Otherwise, this action will be recognized as **TARE IN**.

**HOLD**

**Action**

To **HOLD** the weight reading, press HOLD button on scale or  on remote controller.

Or

To unlock current reading, press HOLD button on scale or  on remote controller again.

**Function**

The HOLD indicator  **HOLD** lights on.

All subsequent readings are locked to current reading.

Or

The HOLD indicator  **HOLD** lights off.

The weight reading is unlocked.


**Condition**

- ✓ To **HOLD** the scale, it must be stable. Otherwise, error message **UnStb** will flash.

**NOTICE:**  
Scale can be unlocked at anytime in HOLD mode.

**POWER OFF**

**Action**

To **POWER OFF** the scale, press ON/OFF button on scale or  on remote controller for 2 second.

**Function**

Scale performs **BATTERY CHECK** and cut off its power.  
The screen flashes battery charge twice.



The screen displays **POWER OFF** message.



**Condition**

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










## 5. User Input

*In this section, you will learn how to operate this scale in a convenient way either on scale or by 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 Configuration Mode, Calibration Mode, and Tare Set function.

**Action**

To increase the numeral (the flashing digit), press ZERO button on scale or  on remote controller.

To decrease the numeral (the flashing digit), press  on remote controller.

To move right the flashing digit, press TARE button on scale or  on remote controller.

To move left the flashing digit, press  on remote controller.

To confirm the numerals you input, press HOLD button on scale or  on remote controller.



## 6. Advanced Operation

Operations in this section feature versatile and powerful functions for crane scale measurement. Most of the operations are accessible via dedicated remote controller. Some of the settings to the scale require password. Please contact your local representatives for password 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**, scale detects its load, and refreshes the weight reading all the time, if the display is not Hold.

If the scale overloads, the display keeps flashing the below error message.




#### GROSS/NET MODE


##### Action

To enter **NET MODE**, **TARE** or **TARE SET** the scale

To enter **GROSS MODE**, Tare Out the scale.

##### Function

In **NET MODE**, the TARE indicator  **TARE** lights on.

In **GROSS MODE**, the TARE indicator  **TARE** lights off.

The default weight reading is in **GROSS MODE**.


##### **NOTICE:**

*In NET MODE, ZERO are 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** button 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 history 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.

For example, the totalized weight reading “129235.0” will be displayed “9235.0” as its low 5 digits format, like below.



The high 5 digits format of “129235.0” is like below.



*To learn more about View Total, please refer to View Total in Advanced Operation section.*

**NOTICE:**

*All 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. Except for this power-saving feature, all the operations are the same as in other modes.

*To learn how to configure Idle Mode, please refer to Idle Timing of System Setup in Advanced Operation section.*

**NOTICE:**

*Any buttons on scale or keys on remote controller will wake the scale up from its IDLE MODE, light the screen up in result.*

**2ND MODE**

**Action**

To enter the **2ND MODE**, press 2ND button on scale or  on remote controller, when scale is in **WEIGHING MODE**.

**Function**

The **2ND MODE** is designed to make full use of keys on remote controller. Different key pressing combination, results in different function.


To access those functions that are not printed on the remote controller, you must additionally press specified key to access that function.

In **2ND MODE**, the screen keeps flashing the below message, waiting for user's input of key combination.



## PASSWORD MODE

### Action

To enter the **PASSWORD MODE**, press 2ND button on scale or  on remote controller twice.


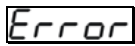
### Function

To access advanced settings, password is required.

In **PASSWORD MODE**, the screen displays the password message, waiting for user's input of correct password.




### Condition

- The scale must not be in **HOLD** mode. Otherwise, error message  will keep flashing.
- The password must be correct. Otherwise, error message  will flash before the scale automatically returns to **WEIGHING MODE**.

## TOTAL

### Action

To accumulate the weight reading, press  on remote controller.


### Function

Current weight reading will be accumulated into scale's **TOTAL** accumulator.

The screen displays the below message, indicating that **TOTAL** is successfully calculated and saved.



### Condition

- The scale must not be in **HOLD** mode. Otherwise, error message  will keep flashing.


- ✓ The scale must be stable. Otherwise, error message **UnStb** will flash.
- ✓ Current weight reading must be greater than 0 (or 0.0 or 0.00, depending on the resolution). Otherwise, error message **-----** will flash.
- ✓ The weight reading on scale must return 0 (or 0.0 or 0.00, depending on the resolution) before next weight reading can be added. This assures that a load on the scale is only added to the **TOTAL** once. Otherwise, error message **noLd** will flash.

**NOTICE:**

*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 is switched into **VIEW TOTAL MODE**.  
The screen flashes current **TOTAL**, for example, 3205kg.



**Condition**

- ✓ The scale must not be in **HOLD** mode. Otherwise, error message **hold** will keep flashing.
- ✓ The **TOTAL** must be greater than 0 (or 0.0 or 0.00, depending on the resolution). Otherwise, error message **noRLL** will flash.

*To learn how to operate in View Total Mode, please 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 last totaled weight was a mistake, it can be erased by **DELETE LAST TOTAL**. This erases only the last totaled value.

The screen displays the below message, indicating that the last **TOTAL** is successfully deleted.





**Condition**

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

## CLEAR TOTAL

### Action

To clear the overall Total, press  and  on remote controller in turn .


### Function

In order to start a new series of Totals, the old **TOTAL** can be erased completely by **CLEAR TOTAL**.

The screen displays the below message, indicating that the **TOTAL** is successfully erased.





### Condition

- ✓ The scale must not be in **HOLD** mode. Otherwise, error message  will keep flashing.

## DISPLAY UNIT SWITCH

### Action

To change the scale's **DISPLAY UNIT**, press **2ND** button on scale or  on remote controller, and **ZERO** button on scale or  on remote controller in turn.


### 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 lights on, after DISPLAY UNIT switches to lb.

The kg indicator  kg lights on, after DISPLAY UNIT switches to kg.

**Condition**

✓ The scale must not be in HOLD mode. Otherwise, error message  will keep flashing.

✓ The scale must be in GROSS MODE. Otherwise, error message  will flash.

*Please flip to System Unit of Scale Configuration in Advanced Operation section in Technical Manual for more information about scale's measurement system.*



*Please flip to User-defined Unit of Scale Configuration in Advanced Operation section in Technical Manual for more information about user-defined unit.*

**NOTICE:**


*DISPLAY UNIT SWITCH function only changes the unit in display. Scale does not save this setting unless SYSTEM UNIT is changed.*

**TARE SET**

**Action**

Press 2ND button on scale or  on remote controller, and TARE button on scale or  on remote controller in turn (when the scale is in gross mode), to enter TARE SET function.

Press ZERO and TARE button on scale or  and  on remote controller to input the digits.

Press HOLD button on scale or  on remote controller to confirm the input value.

**Function**

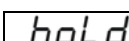
The scale stores the tare weight that user inputs, and shifts to NET MODE. All subsequent readings are deviations from the tare value.

The screen displays "00000" (or "0000.0" or "000.00", depending on the resolution) with the first "0" flashing, waiting for user's input.

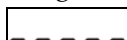



*To learn how to input digits, please refer to User Input section.*

**Condition**

✓ The scale must not be in HOLD mode. Otherwise, error message  will keep flashing.

✓ The scale must be in GROSS MODE. Otherwise, error message  will flash.

✓ The input tare weight must be greater than 0 (or 0.0 or 0.00, depending on the resolution). Otherwise, error message  will flash.

- The input tare weight must be lesser than scale's maximum capacity. Otherwise, error message  will flash.

**NOTICE:**

*Tare setting will reduce the apparent overloading range of the scale. For example, if a 1000kg is set by tare set function, and the scale maximum capacity is 5000kg, the scale will overload at a new weight of 4009kg (5000 – 1000 + additional 9 divisions).*

**NOTICE:**

*Setting or changing TARE has no effect on the ZERO setting.*

**RESOLUTION SWITCH****Action**

To switch scale's resolution, press  and  on remote controller in turn.

**Function**

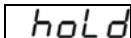
The screen flashes the resolution to change in descending order, like 5kg, 2kg, 1kg (available optional resolution ranges from 0.01 kg or lb to 50 kg or lb, depending on scale's capacity). After **RESOLUTION SWITCH**, new resolution takes effect.



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

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

**Condition**

- The scale must not be in **HOLD** mode. Otherwise, error message  will keep flashing.

**NOTICE:**

*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.*

**NOTICE:**

*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\*0.5), while by default, it overloads at a weight of 3009kg (3000 + 9\*1).*

**NOTICE:**

*The default resolution will be restored next time when the scale is powered on or enter System Setup Mode (no matter the setting is changed or not). To save the changes in resolution for later, use SYSTEM SETUP function, rather than RESOLUTION SWITCHING.*



## BATTERY CHECK

**Action**

To check scale's battery power, press  and  on remote controller in turn.

**Function**

System checks the battery, and feedbacks with battery's left charge.  
The screen flashes the battery charge in voltage, like the below 6.42V.





*Please flip to Battery section for more information about battery.*



**Condition**

- The scale must not be in **HOLD** mode. Otherwise, error message hold will keep flashing.


## SYSTEM SETUP


**Action**

To enter **SYSTEM SETUP MODE**, press 2ND and HOLD button on scale or  and  on remote controller in turn.

To input digits, press ZERO and TARE button on scale or  and  on remote controller.

To confirm input value, press HOLD button on scale or  on remote controller.

To save and exit **SYSTEM SETUP MODE**, press 2ND button on scale for  on remote controller.

To exit **SYSTEM SETUP MODE** without saving, press ON/OFF button 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 state, like higher resolution, automatic power-off delay, idle delay, the screen's brightness, display frequency, and anti-motion level etc.

The screen displays the welcome message as below.

**Condition**

- The scale must not be in **HOLD** mode. Otherwise, error message hold will keep flashing.

## RESOLUTION

Technically, the **RESOLUTION** here and the **RESOLUTION SWITCH** above-mentioned both refer to the same thing. The only difference is that changes made here can be saved for later, while changes at **RESOLUTION SWITCH** only come into effect this time, but not next time when the scale is rebooted.



*To learn more about Resolution, please refer to Resolution Switch in Advanced Operation section.*

## AUTO POWER-OFF TIMING

**AUTO POWER-OFF** function maximizes scale's battery life against people's carelessness not to power off the scale when it's not working.

**AUTO POWER-OFF** starts the scale's **POWER-OFF** countdown timer when there's no action or the load is stable. Once the timer's timing reaches the delay user set in **SYSTEM SETUP**, it automatically power off the scale. Any key pressing or motion in load, will restart the countdown timer.

Scale can be timed to auto power-off itself from "01" minutes to "99" minutes, or "never" when **AUTO POWER-OFF TIMING** is set to "00".

The default **AUTO POWER-OFF TIMING** is set to "15" minutes.



## IDLE TIMING

To maximize its battery life, the scale automatically enters the **IDLE MODE**, when there's no action 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 user set, it automatically lowers the brightness of the screen. If **IDLE TIMING** is set to "00", the scale never goes into **IDLE MODE**.

Any key pressing or motion in load, will wake up the scale from **IDLE MODE** (when it is in this mode), and restart the countdown timer.

The default Idle Timing is set to "30" seconds.



#### DISPLAY BRIGHTNESS

Lowering the brightness of screen can also save scale's battery life.

There are optional 3 levels of brightness, "1" to "3". At level 1, the screen works at low power, while at level 3, it works at high power.

The default Display Brightness is set to level "3".



#### DISPLAY FREQUENCY

**DISPLAY FREQUENCY** decides how frequently the screen updates the weight reading.

There are optional 5 levels of Display Frequency, "0" to "4". At level 4, the screen's weight reading changes slowly, while at level 0, it changes fast.

The default **DISPLAY FREQUENCY** is set to level "1".



#### ANTI-MOTION LEVEL

At the cost of measuring time, **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 optional 6 levels of **ANTI-MOTION**, "0", "1", "2", "3", "4", "5", respectively "Off", "weakest", "weak", "normal", "strong", and "strongest".

The default **ANTI-MOTION LEVEL** is set to "2", namely "normal".





**NOTICE:**

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.

**COMMUNICATION SETUP**


**Action**

To enter **COMMUNICATION SETUP MODE**, press  and  on remote controller in turn.

To input digits, press ZERO and TARE button on scale or  and  on remote controller.

To confirm input value, press HOLD button on scale or  on remote controller.

To save and exit **COMMUNICATION SETUP MODE**, press 2ND button on scale for  on remote controller.

To exit **COMMUNICATION SETUP MODE** without saving, press ON/OFF button on scale or  on remote controller.

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


**Function**

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

The screen displays the welcome message as below.



**Condition**

- The scale must not be in **HOLD** mode. Otherwise, error message  will keep flashing.

**COMMUNICATION ON/OFF**

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

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



**BAUD RATE**

**BAUD RATE** is the speed that scale output signal. There are optional 4 baud rates: 1200bps, 2400bps, 4800bps, and 9600bps.

By default, **BAUD RATE** is set to 1200bps.

**SCALE ADDRESS**


For multiple scales 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 optional three modes of data output: "0" continuous mode, "1" manual mode, and "2" request mode.

In "0" continuous mode, scale sends out data continuously all the time. In "1" manual mode, scale only sends data out when key  is pressed. In "2" request mode, 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, please refer to Technical Manual.*

## 7. Battery

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*To maximize the battery life, please note the following battery maintenance guide.*

- This scale is powered by a 6V rechargeable lead-acid battery.
- The battery is permanently attached to the battery door. To remove the battery pack, turn off the two screws on the access door, pull the battery pack straight out, and unplug the battery cable from the scale.
- The battery works from 80 hours to 200 hours (depending on LED display brightness setting), before requiring recharging.
- In order to conserve battery life, the scale includes an **AUTO POWER-OFF** function which senses operational status for no activity after certain minutes that user sets, and turns the scale off. An additional battery saving feature is the auto **IDLE** function. This feature preserves battery life by dimming the display after specified minute of no scale activity.
- Charging time for a completely discharged battery is approximately 6 hours.
- To obtain maximum service life from your batteries, they 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 status indicator is red.

## 8. Message Illustration

Possible messages the scale displays are listed here.

Display	Stands for	Message
88888		POWER-ON
U 650		Battery left charge
-----		Weighing detection
hoLd	<b>hold</b>	The display is locked.
UnStb	<b>unstable</b>	The scale is in motion.
-----		The weight reading is too great, or out of range.
-----		The weight reading is too little, or out of range.
2nd	<b>2nd</b>	2ND MODE, waiting for key combination.
ouLd	<b>overload</b>	The scale overloads.
P0000	<b>password</b>	PASSWORD MODE
Error	<b>error</b>	The password is incorrect.
oFF	power <b>off</b>	POWER-OFF
ACC	<b>accumulated</b>	The weight reading is totaled.
InuLd	<b>invalid</b>	The weight reading is invalid to be totaled.
noACC	<b>no accumulation</b>	There is no total.
dEL	<b>deleted</b>	The last total is deleted.
nodEL	<b>no deletion</b>	There is no total, so the last total can not be deleted.
CLEAR	<b>clear</b>	The total is cleared.
Un PG	<b>unit kg</b>	Unit is set to kg (metric system).
Un Lb	<b>unit lb</b>	Unit is set to lb (imperial system).
tArE	<b>tare</b>	The scale is tared (in net mode).
E 5		The resolution is 5 kg or lb.
SETUP	system <b>setup</b>	SYSTEM SETUP welcome message
oFF 10	auto power <b>off</b>	AUTO POWER-OFF TIMING
IdL 10	<b>idle</b>	IDLE TIMING
br 2	<b>brightness</b>	DISPLAY BRIGHTNESS
dI SP2	<b>display frequency</b>	DISPLAY FREQUENCY
Stb 3	<b>stability performance</b>	ANTI-MOTION LEVEL
End	<b>end</b>	Save and exit.

## 9. Troubleshooting

Symptom	Possible Cause	Suggested Solution
Blank display when Power On/Off button is depressed	Discharged battery	Recharge the battery
	Defective battery	Replace the battery
	Corroded battery	Clean connections
	Power button not properly depressed	Press Power On/Off firmly and hold until power turns on.
Display flashed at low brightness	Discharged battery	Recharge the battery
No action taken after Zero / Tare / Hold / 2nd button pressed	Defective button	Clean button
Display reading not stable	The scale is in great motion	Wait until the scale 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
Reading not zero without load	System power is not stable	Give the scale longer warm-up time
	The load-cell stressed too much and too long	Hang the scale in storage
Large error in weight reading	The scale is 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 can not be recharged	Defective battery	Replace the battery
	Defective charging plug	Replace the charging plug
Short remote controlling distance	Remote controller batteries are dead	Replace remote controller batteries



## **10. Notes**