US-731S WEIGHING INDICATOR

Operating Manual - Version 1.00

Contents

Chapter 1 Introduction

US-731S weighing indicator comes standard with weighing functions to total the weight, change from lb or kg, and our animal weighing mode. The US-731S will include our RS232 port for connecting to the computer or printer. The low power model will cut off the power when the battery is too low in order to protect the indicator. US-731S can power up to four 350 ohm load cells to be used with a variety of different scales. Finally, the US-731S indicator includes our sleep function to help save power on the battery when the indicator is not in use.

Chapter 2 Specifications

Parameter Settings:

1 Model: US-731S

2 Accuracy: Grade III, n=3000

3 Display: 6 button bright led, one inch digita

4 A/D conversion parameters: sigma delta, 24bit, 10 times / sec

5 Input span: -16mV ~ 18mV

6 Keyboard: 6 thin film button

7 Supply: DC12V, 1A
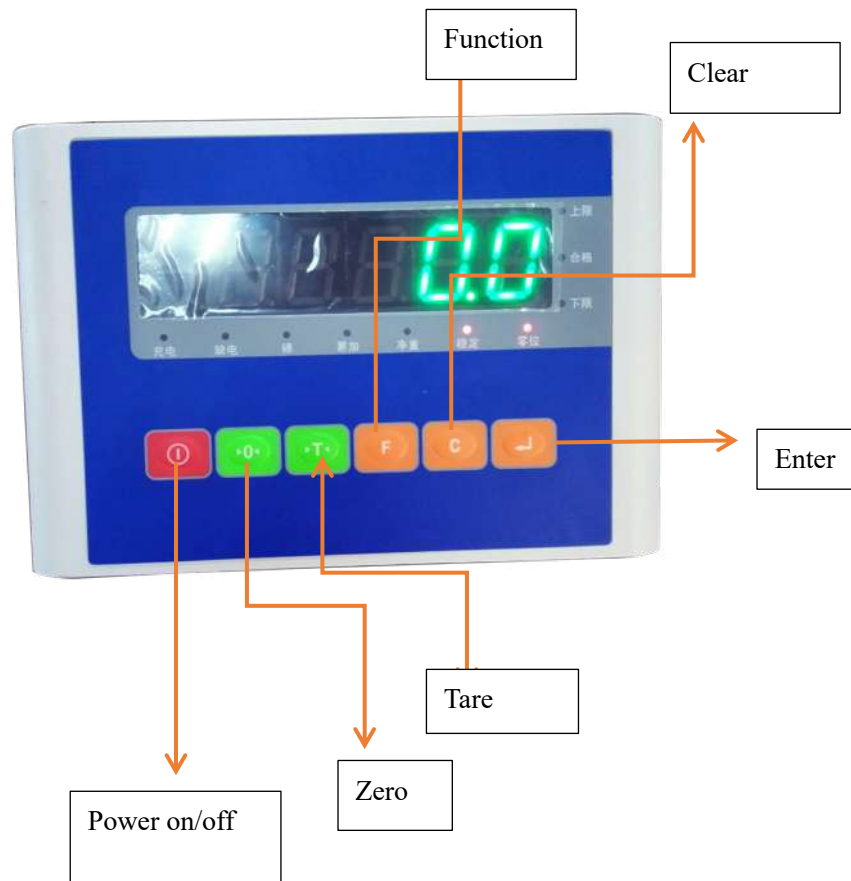
8 Battery: 7.4V/4AH lithium battery

9 Battery working time: 40 hours (continuous use)
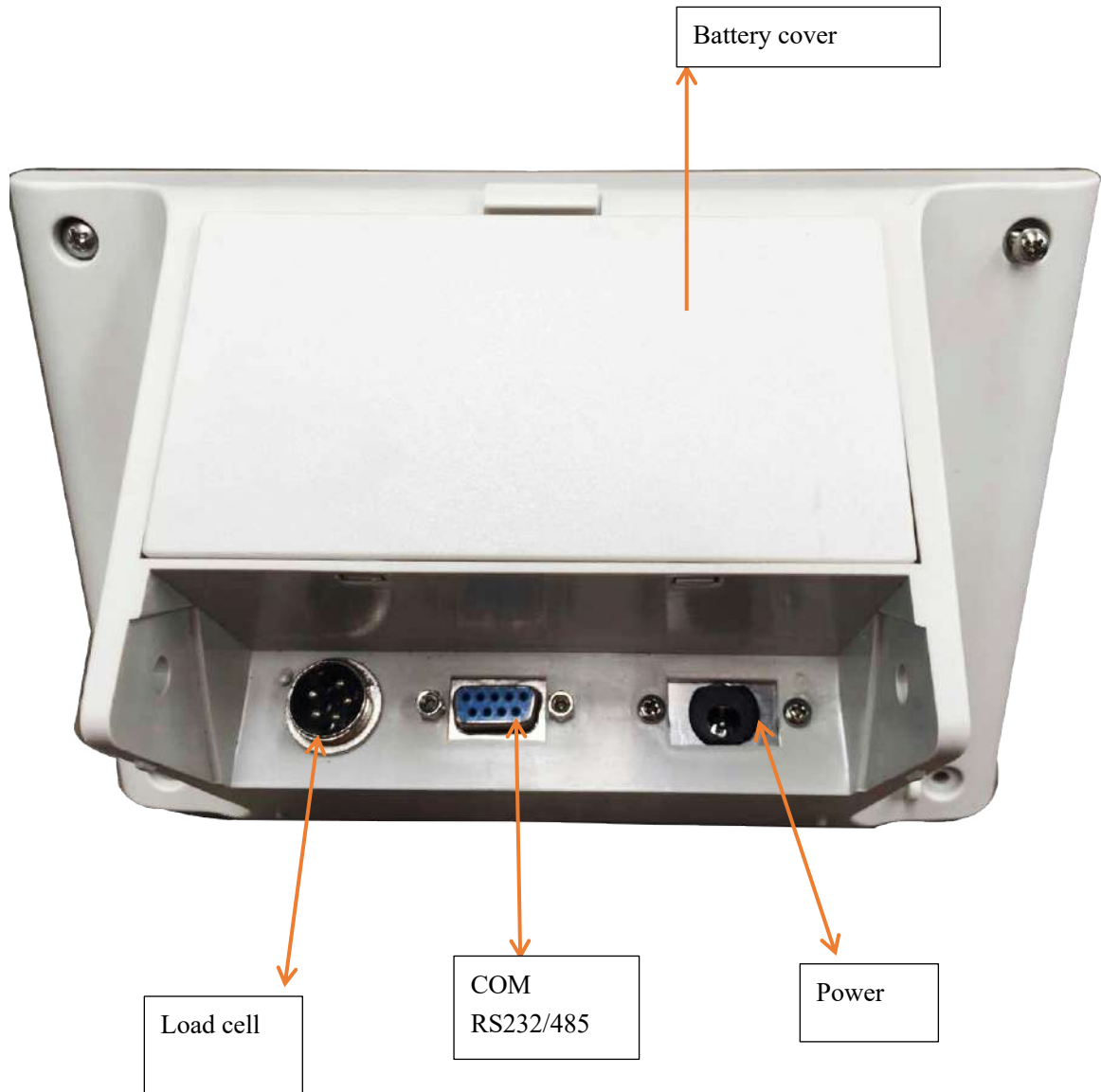
10 Communication interface: RS232 output

11 Working / storage temperature: 0 ~ 40℃ / -25℃ ~ 55℃

12 Weight: Can be used in lb or kg

Chapter 3 Function diagram

Function

Clear

Enter

Tare

Zero

Power on/off

(figure 3-1-1) Function diagram of front view

Battery cover

Load cell

COM
RS232/485

Power

(figure 3-1-2) Function diagram of back view

Chapter 4 Operation

4.1 keys

key	function	Second function	Set function
F	Long press enter function	increase, move right	Short press increase
C	Clear	quit	quit
↵	Enter		
►T◄	Tare	increase	increase
►0◄	Zero		
⏻	Power on/off		

4.2 Battery using

The battery supply the indicator , and can work continuously for about 50 hours.

When low power, the light indicating low power will turn on, it is time to charge, if not, the indicator will be powered off in 30 minutes. This time you must charge it, or it can not work.

When charging, no need to power on the indicator.

When working using battery, please charge it when the low power indicating light on, or the indicator will power off after warning once low power to protect the battery. If need to work continually, must charge it.

First time to use , please charge it to be full.

The light is red when charging, turn green when the battery is full, no

need to charge continually to use.

If not use the indicator for a long time, please charge it every three months.

If the battery is found to be full of dissatisfaction or can only be used for a short time even if full of power after being used for a long time, please replace the new battery according to the specification of the battery.

4.3 Basic operation

4.3.1 Power on/off

Press the power on/off key to power on.

The indicator will self-checking after power on, and enter the state of weighing.it can zero auto, and the zero light will be lighten.

If the indicator power off auto after flashing display "Lo bat",please charge it or plug in the supply to use continually.

Press the power on/off key to power off.

4.3.2 Over capacity warning

Please do not put the weight more than the max capacity on the scale, when display "--O L--" and beep, please take down the weight immediately to avoid the load cell damaged.

4.3.3 Zero Scale

When display non zero but no goods on the scale platform, press the key zero to zero the scale.
This function is not valid when the display weight is outside of the zero range. (default 2%) 。

4.3.4 Tare Scale

Put on the weight, when stable light is lighten, press the key "T" to tare the scale, the net light is lighten, put on the weight continually, display net weight.
Press the key "C" to Clear the tare weight.

4.4 Parameters set

In weighing state , long press F key to turn to function setting state, press T key to page up or page down, press [↵] to confirm, here start to set parameter, displaying first function P0. PWR

Press T key to page up to select other function, and press [↵] to confirm the selected function. Here set the value using the T key, press [↵] to confirm the value, press C key to quit. Such as: when display "P0. PWR" , press [↵], here display "SLEEP" , press [↵] to confirm，and press T to select， press C to quit, the indicator turns to weighing state.

Function menu

P0.PWR（power）	**SLEEP**	**SLP ON**
		SLP OFF
	BEEP	**BP OFF** （OFF Alarm）default
		BP OK （OK Alarm）
		BP NG （Not OK Alarm）
		BP LO （Low Alarm）
		BP HI （High Alarm）
P1.UNIT	**UT KG**	
	UT G	
	UT LB	
P2.CHK (check)	**HI(**High**)**	
	LOW（Low）	
P3.UART(commu nication)	**B 9600(**baud rate**)**	
	FORM 1	
	FORM 2	
	FORM 3	
P4.SDLY(commu nication delay)	**SD05(**delay time**)**	
P5.TEECH(weighi ng parameters) **password**	**P1 REF**	**A2N 0(zero trace range)**
		0-AUTO(auto zero range)
		0-RANG(push button zero range)
		FILTER
	P2.CAL	**SIG RA(**single**)**
		DUA IN(double**)**
		DECI(decimal**)**
		INC (increment)
		CAP(capacity**)**
		CAL(calibration**)**
	P3.PRO	**TRI()**
		COUNT(ADC code**)**
		RESET(Load Factory Default Values)

4.5 Calibration

When the indicator is self-checking state, press [⏎],display PIN, press C, [⏎] ,T one by one, display UNLOAD, here make sure the scale platform is clean, and the stable light is lighten, press [⏎] to confirm, here display the value of testing weight, press F to change current flashing position, press T to increase value, change the value to target testing weight, and then press [⏎] to confirm, here display LOAD, put on the testing weight, when the stable light is lighten, press [⏎] to confirm. Calibration completely, the indicator displays the testing weight.

4.6 Error code

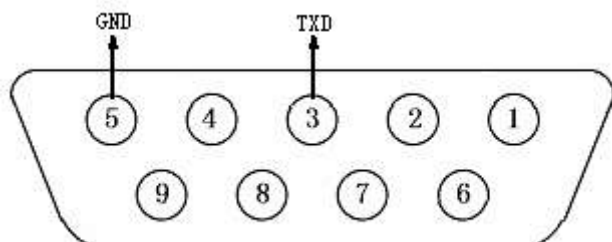| Error code	Description	resolution
– –0 L– –	Over capacity	Take down the weight from scale platform If there is still a problem please contact the dealer or agent.
Err 4	Outside zero range	Auto zero function is open or pushing button zero, the weight is outside the zero range. Take down the weight and try again. Press T to tare scale to display zero.
Err 6	A/D Convert outside	A/D converter value is outside the normal range. If over capacity, please take down the weight. The load cell or circuit board may be damaged.

Chapter 5 Communication Interface

5.1 RS232 serial port communication

Interface definition

DB9 male head interface output RS232 signal

Pin3 is TXD，Pin5 is GND，as follows shown.

Connecting to the computer

AW1 indicator DB9 male	Computer DB9 male	Description
Pin 3（TXD）	Pin 2 （RXD）	Data Line：indicator send ,computer receive
Pin 5（GND）	Pin 5（GND）	Ground
Pin 2（NC）	Pin 3（TXD）	No need to connect

Communication format

Each frame data is 9 bytes, the specific format as the table shown.

Bytes position	Definition
1	= start
2	Weight data(Display weight with decimal point） low char
:	Weight data :
:	Weight data :
8	Weight data high char
9	0 or - symbol

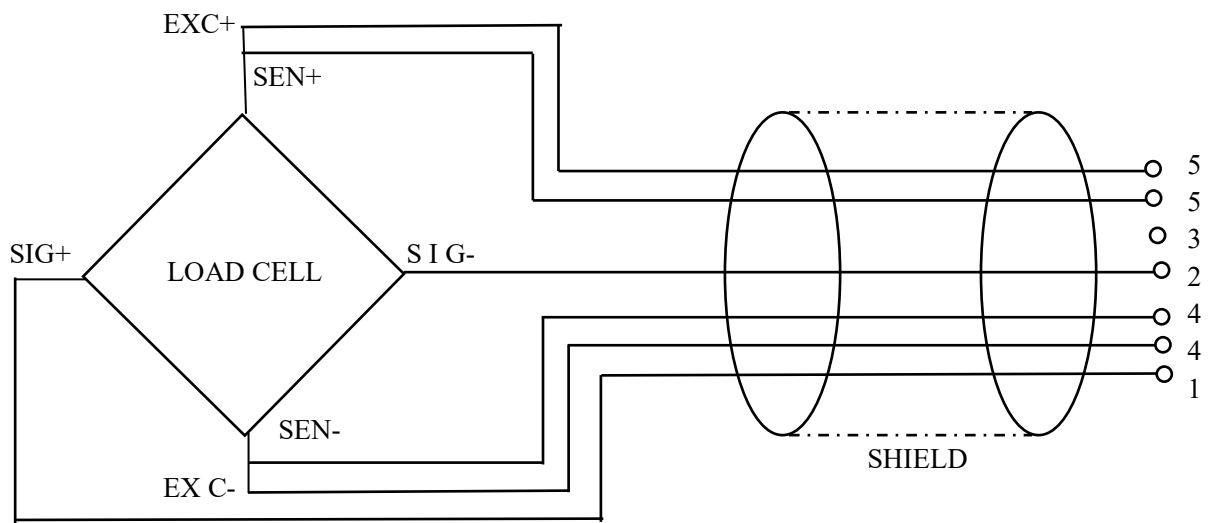**Such as: display weight is 3.000, then send data is ：**

＝000.3000＝000.3000＝000.3000＝000.3000

Such as: display weight is -1.00, then send data is ：
＝00.1000－＝00.1000－＝00.1000－＝00.1000－

5.2 Load cell connection (5pin Air plug)

EXC+

SEN+

SIG+

LOAD CELL

S I G-

SEN-

EX C-

SHIELD

5
5
3
2
4
4
1

Chapter 6 Maintenance and precautions

1 In order to ensure the indicator display clear and using for a long time, it should not be placed in direct sunlight to use, should be placed relatively flat.

2 Should not be placed in the dust and severe vibration to use, to avoid the wet environment, should be far away from strong corrosive objects and flammable and explosive materials.

▲！Do not use in flammable gas or flammable vapor; should not be used in pressure vessel canned system.

▲！In areas with frequent lightning, reliable lightning protection must be installed to ensure the safety of operating personnel.

To prevent the indicator and the corresponding equipment damaged from lightning .

▲！Signal source and indicator are static electricity sensitive equipment, taking effective measures to prevent static electricity is necessary, The operation of electric welding or other strong electric field is strictly prohibited on the measuring device; in the thunderstorm season, must implement the reliable lightning protection measures to protect the signal source and indicator, to ensure the safety of the operator's personal safety and weighing equipment and related equipment safe operation.

3 The indicator and the battery do not have the waterproof ability, so pour water is forbidden.

4 It is strictly prohibited to use strong solvents (such as benzene, nitro oil) washing machine shell.

5 A liquid or other conductive particle is not allowed to be injected into the indicator or the wireless terminal box to prevent instrument damage and shock.

6 Before connecting the indicator and the external equipment, must cut off the power supply of indicator and the corresponding equipment.

7 External interfaces shall be strictly used with the methods in the manual, and shall not be changed without authorization. If there a problem, should immediately cut off the power, and send it to professional maintenance person to prevent greater damage.

8 Advice to customers: should test and acceptance the indicator before using. We are only responsible for the quality of the indicator itself, not responsible for the weighing system problems.

9 The battery is easy to consume, does not belong to the scope of three packs.

▲！In order to prolong the life of battery, it is necessary to charge the battery fully before using.

If the indicator is not used for a long time, the battery must be charged every 3 months, 8-10 hours once.

▲！**Should be careful when handling or installation, avoid strong vibration, shock or impact, to prevent the battery short circuit to damage itself.**

10 The indicator and wireless junction box have one year warranty, under normal conditions, the problem not caused by human is the scope of the warranty, please send the product and the warranty card (accord with number) to the special maintenance point or supplier. the indicator and wireless junction box are done maintenance for lifelong. The indicator is not allowed to open, otherwise no warranty.