Weighing Indicator

User manual

safety instruction

For safety operation pls. follow the safety instruction.

WARNING
set. Calibrate, inspect and fix the weighing indicator is prohibited by Non professional staff

WARNING
Pls. make sure the weighing display well earthing

	**WARNING** The indicator is electrostatic sensitive device, pls. power off during electrical connections, internal components touched by hand is prohibited, and please take the anti-static measure

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1. Summary

This indicator is specially designed for platform scale with friendly interface, simple operation, steady feature. The Basic function includes Weigh, Peak hold, Print. Communicate, Options are accumulate, Count and animal weighing.

1.1 Main function

》basic weighing function: zero tare

》peak hold

》hold

》low battery remind　charge controlled

》PC communication

》Automatically power off

1.2 Optional function

》unit function

》animal weighing

》printing function(with time)

1.3 Technical parameter

》Stimulating voltage：+5VDC

》A/D converting speed：　10 times/sec

》load capacity：　it can connect 4 pcs 350Ω load cell at most

》Resolution：　3000e

》Interval：　1/2/5/10/20/50

》Display：　6-digits LED，word height: 20.3mm

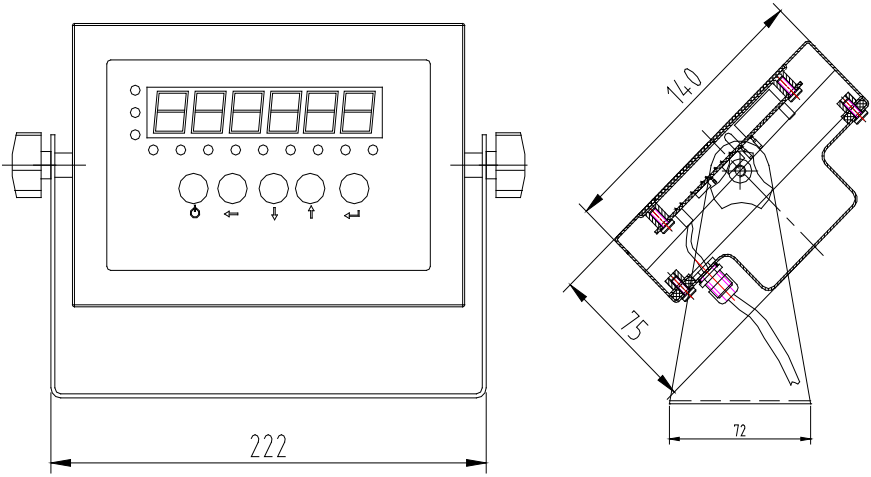
》key：　ON/OFF UNIT HOLD ZERO SET

》Interface：RS232C　Baud rate optional 1200/2400/4800/9600

》Ambient temperature：　-10～40℃

》optional power：　6V/4Ah rechargeable battery；9VDC adapter

1.4 Outline and installation picture



1.5 Battery

1. when you use the internal battery first time，you should charge the battery 10-12 hours, to prevent low voltage resulted from self leakage of battery.

2. when the red battery light is on and flashes，it means low battery You should charge battery in time.

3. Charge time: 10-12 hours And it works 45 hours

4. When the battery light turns green, it means fully charged

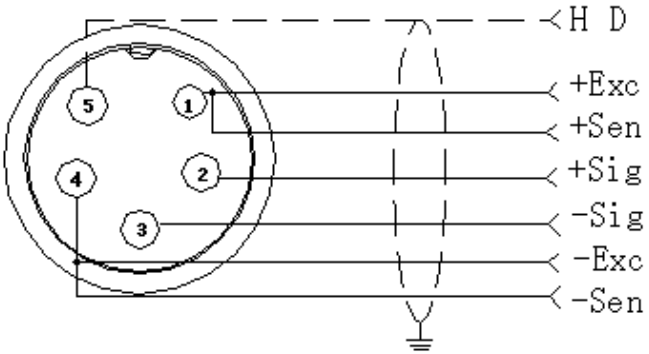
5. If you don't use the battery long time, take out the battery to protect t the indicator from battery leakage

6. In order to keep the battery in best using condition, it is suggest that you fully discharge the battery every month, the method is that using the indicator till it is automatically power off.

2. Installation and Calibration

2.1 connection indicator with loadcell

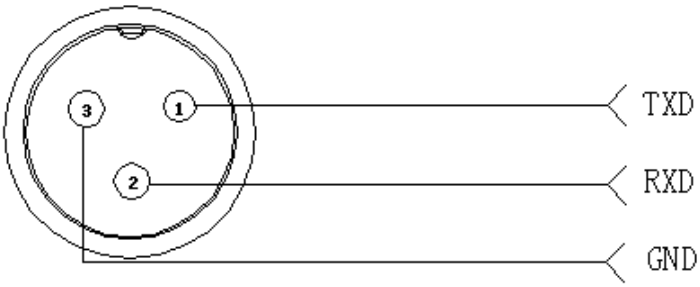
Indicator can connect four pcs 350Ωload cell at most, both four and six wire load cell are ok. To make it simple, we use quick disconnect Or standard plug. As belows



Quick disconnect connection

2.2 Connection of interface

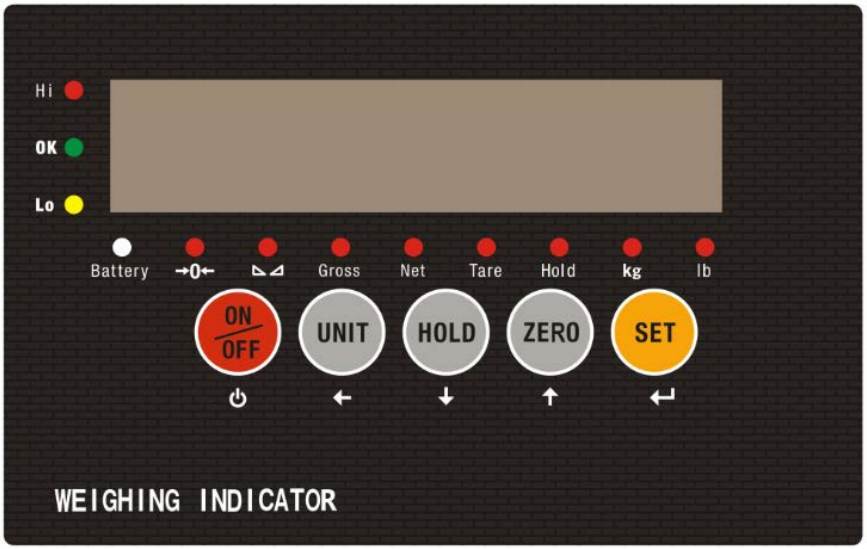
RS232 communication interface use 3 cores quick connector



RS232 communication interface connection

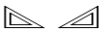
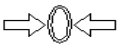
3. Basic operation

3.1 Key and display



Weighing indicator display instruction

LED display	instruction
	Weighing data display
Hold	Hold weighing data
Tare	Display tare weight

Net	Display net weight
Gross	Display gross weight
	Display data keep still
	zero, indicating zero weight
Battery	Using battery
Hi	Over setting weight
OK	Within setting weight
Lo	Below setting weight
₀	Decimal point

Key's function

Key symbol	Key name	Key function
	SET	Work together with zero, tare, on/off to perform all operations.
	ZERO	1.Clear weight within zero range 2. Work together with SET tare function.
	HOLD	Hold function
	UNIT	kg/lb conversion

	ON/OFF	1.Press it for 2 seconds to power on or power off 2.Work together with “SET” to enter calibration and function setting.

3.2 Power on

Power on and indicator perform self-checking and go to weighing mode.

3.3 Zero function

Within zero range, press “ZERO”, indicator weighing is cleared. When Indicator is not stable, zero is unworkable.

3.4 TARE function

Press “SET” and “ZERO” , take the loaded weight as tare, display net weight, Net weight is zero. “tare” “ net” status light is on.

At the Tare mode, Press “SET” and “ZERO”, clear the tare, display gross weight.

Note: unstable and display negative , the tare operation is invalid

3.5 Hold

C11=0 “hold” function unworkable

C11=1 Peak-hold

Press “HOLD” key, the “Hold” light is on, and show the maximum data on the weighing indicator. Press “HOLD” key again to exit the hold function.

C11=2 Data-hold

If set C12=0, Press “HOLD” key, the “Hold” light is on, and show the data on the weighing indicator.

Else set C12=3, Press “HOLD” key, the indicator will show” LOC” for 3 seconds, then “Hold” light is on, During the 3 seconds, the indicator

will catch the average weight and show it.

Press “HOLD” key again to exit the hold function.

C11=3 Auto-hold

If the weight on the scales above 20d and keep stable, the indicator will show the data for 6 seconds and the “ hold” light is on , after 6 seconds the indicator back to general weighing, and the “ hold” light is off.

3.6 Print function

When the data is stable, connection with printer, it will be printed after press“set”1 second.

Note： print the gross weight when at tare mode , if the net weight is zero. Can not print.

4. Calibration and parameter setting

4.1 Enter setting

There have two methods to enter the setting menu:

1. when the “span” is not pressed down,

Press SET still and then press ON/OFF enter C08-C39 setting.

2. Take out the sealing screw on the back of indicator, then press SET down the “span” Press ON/OFF still and then press enter C01-C39 setting.

The key functions in setting：

Enter

Up

Down

Left

Power switch. exit setting

4.2. Step of calibration operation:

According to the second method which can enter setting menu, C01-C39

step	Method of operation	display	Remark
1		[C01]	After you enter to calibration mode, it display [C01]
2	press◄┘	[C1 1]	Weight unit option：1=kg 2=lb
3	press◄┘ press◄┘ press↑ or↓	[C02] [C02 0] [C02 2]	Set decimal digits option：0/1/2/3/4 Select decimal digit example：two decimal point：[C02 2]
4	press◄┘ press◄┘ press↑ or↓	[C03] [C03 1] [C03 5]	Set graduation option：1/2/5/10/20/50 Select required graduation example：graduation 5：[C03 5]
5	press◄┘ press◄┘ press↑ or↓/←	[C04] [0100.00] [0100.00]	Max capacity example：max weighing 100kg: [0100.00]
6	press◄┘ press◄┘ press↑ press◄┘	[C05] [C05 0] [C05 1] [CAL 9] 。。。。。。 [0000.00]	Zero calibration option ： 0=non-calibration zero 1=need calibration zero calibration zero please choose 1 and ensure scale is empty and “stable” light is on Ensure zero calibration, countdown. Till show[0.00](example for two decimal point)。

7	press◄┘ press◄┘ press ↑ or ↓ press◄┘ press ↑ or ↓ press◄┘	[C06] [C06 0] [C06 1] [SPAN] [0100.00] [0080.00] [CAL 9] …… [0080.00] [CALEnd]	Loading calibration option: 0=Non-load calibration 1= load calibration Basic on max capacity setting, add suitable weight on scale. close to the max capacity, heavier than 10% max at least. For example: the weight is 80kg As bellows: enter loading calibration, count down over, indicator shows loaded weight , loading calibration finish. If you want to set application Function parameter. Press “PRINT” if you want to exit press “TOTAL”
8	press◄┘ press◄┘ press ↑ or ↓	[C07] [07 0] [07 1]	Default parameters setting option:0=non-restore default parameters 1=restore default parameters Note: after the above parameters setting finish, please do not set default parameters often, avoid the original setting parameters lost.

4.3 Application function parameters setting chart

Function	Setting Item	parameters setting and instruction
warning tone	**C08** warning tone	Options: 0 = close warning tone 1 = open warning tone
Automatic power off	**C09** Automatic power off	option：0=close auto power off 10= keep still within 10 min. power off automatically 30= keep still within 30 min. power off automatically 60= keep still within 60 min. power off automatically
Power saving setting	**C10** Power saving setting	option：0= close power saving setting 3= keep still within 3 min. stop display 5= keep still within 5 min. stop display
Hold function	**C11** Hold mode	option：0=close hold function 1=Peak hold /2=Data Hold instruction： Peak：it shows the max. data, mainly application for materials testing, such as tension and pulling force. Hold：it shows current weight value. Mainly application for animal weighing.

Animal hold sample time	**C12** Animal hold sample time	option： 0~9 second
Upper/lower limit alarm	**C13** Upper limit alarm value	You can set it within the max. capacity limit

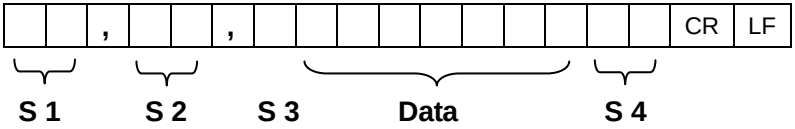
	C14 Lower limit alarm value	
Inner Code display	**C15** Check inner code	At setting function mode, after directly enter C15,indicator will show inner code
Date and time	**C16** Date	Enter C16, you can direct to set the current date, from left to right: year/month/day
	C17 Time	Enter C16, you can direct to set the current date, from left to right: year/month/day
Communication setting	**C18** Serial interface data output method	option：0= Close serial interface data output 1= Continuous sending, connect big display 2=print method, connect printer. 3= Command request method ， connect computer. 4=PC continues to sending format, connect computer.
	C19 Baud rate	option： 0=1200/1=2400/2=4800/3=9600
Zero range	**C20** Manually zero range	option：0= close manually zero setting 1=±1% max capacity 2=±2% max capacity 4=±4% max capacity
	C21 Initical zero range	option：0= no initial zero 1=±1% max capacity

		5=±5% max capacity 10=±10% max capacity 20=±20% max capacity
Automatic zero tracking	**C22** Automatic zero tracking range	option：0.0= close automatic zero tracking 0.5=±0.5d 1.0=±1.0d 2.0=±2.0d 3.0=±3.0d 4.0=±4.0d 5.0=±5.0d remark：1.d is the set graduation 2、Automatic zero tracking range can not exceed manual zero setting range
	C23 Automatic zero tracking time	option：0= close automatic zero tracking time 1=1 second 2=2 seconds 3=3 seconds
Overload range	**C24** Overload range	option：00= close overload range 01d～99d remark：d is the setting graduation (division)
Negative display	**C25** Negative display	Option：0=-9d 10=10% max. capacity 20=20% max. capacity
Standstill setting	**C26** Standstill time	option：0= quick 1= medium 2= slow

	C27 Standstill range	option：1=1d 2=2d 5=5d 10=10d Note: d=division
Digital filter	**C28** Dynamic filter Instruction ： Dynamic filter is collecting the data filter before loaded weight stable. When loaded weight easily shaking (for example animal) , you can set this filter to make weight display more stable	option：0= close dynamic filter 1=1 digital filter strength 2=2 digital filter strength 3=3 digital filter strength 4=4 digital filter strength 5=5 digital filter strength 6=6 digital filter strength Note：Pls setting dynamic filter strength carefully, the No. is bigger, more stable. if the loaded weight shake not too much. The setting is less than 3
	C29 Noise filter	option：0=close noise filter 1=1 digital filter strength 2=2 digital filter strength 3=3 digital filter strength
	C30 Print time and date	C30=0 yy.mm.dd C30=1 mm.dd.yy C30=2 dd.mm.yy C30=3 yy.mm.dd

5.Output data format

5.1Computer continuous sending format



S1: weight status, ST= standstill, US= not standstill, OL= overload

S2: weight mode, GS=gross mode, NT=net mode

S3: weight of positive and negative, “+” or ” –“

S4: measurement unit, “kg” or “lb”

Data: weight value, including decimal point

CR: carriage return

LF: line feed

5.2 Big display continuous sending format

Output continuous format																	
STX	SWA	SWB	SWC	X	X	X	X	X	X	X	X	X	X	X	X	CR	CKS
1	2			3						4						5	6

State A			
Bits0,1,2			
0	1	2	Decimal point position
1	0	0	XXXXXX0
0	1	0	XXXXXXX
1	1	0	XXXXX. X
0	0	1	XXXX. XX

1	0	1	XXX．XXX
Bits3,4			Division
0	1		X1
1	0		X2

State B	
BitsS	function
Bits0	gross=0， net=1
Bits1	symbol：positive =0，negative =1
Bits2	overload（or lower zero）=1
Bits3	dynamic=1
Bits4	unit：lb=0, kg=1
Bits5	Constant 1
Bits6	Constant 0

State C			
Bit2	Bit1	Bit0	unit
0	0	0	Kg or lb
0	0	1	g
0	1	0	t
Bit 3			printing=1
Bit 4			Extend display=1
Bit 5			Constant 1
Bit 6			Constant 0

5.3 Serial interface reception command：

RS232COM serial interface can receive simple ASCII command. Command word and role as follows:

Command	name	role
T	Tare command	tare
Z	Zero command	Zero
P	Print command	Print the weight
R	Read gross/ net weight	Reply gross/net weight

5.4 Print output format

Date: 19.05.17
Time: 10:33:46
Net 23.13kg
Tare 11.08kg
Gross 34.21kg

5.5 Print the accumulated output format

Date: 19.05.17
Time: 10:48:25
n001 23.09kg
n002 32.04kg
n003 27.66kg
Total: 82.79kg

6. Maintenance

6.1 Regular Error and maintain method

Error	Reason instruction	Solution
Display UUUUUU	1. the loaded weight excess overload range of max. capacity 2. wrong connection with load cell or no connection with it.	1.decrease loaded weight 2. check load cell connection 3. checking load cell：check input and output resistance to judge it is

	3. load cell unworkable	good or not.
Display nnnnnn	1. calibration is no good 2、cell signal line is connect a wrong line. 3、the cell is bad.	1. check scale is resisted or not, foot is kept level or not. 2. check load cell connection. 3. checking load cell：check input and output resistance to judge it is good or not.
ERR1	during calibration, no input added weight or input weight exceed max capacity.	Input the correct weight
ERR2	during calibration, the added weights not enough	Added weight at least 10%of Max. capacity, Recommend the weights is 60-80% the Max. capacity
ERR3	during calibration, input signal is negative.	1..Check connection is correct or not. 1. Check load cell is damaged or not. 3. renew calibration, if still wrong. pls replace the PCB

ERR4	During calibration, signal is unstable	Ensure added weight and scale is stable, start calibration
ERR5	EEPROM check error	change PCB.
ERR6	Exceed zero range	1. Remove the load on the scale. 2. Press ZERO go into the weight mode. 3. Do C05 Zero calibration

6.2 Daily maintenance

1. In order to ensure indicator display clearly and prolong use life, the indicator should not be placed directly on sunlight.

2. Load cell and indicator should be well connected , the system should have a good ground, away from strong electric field, magnetic field.

3. Do not use indicator outside in rainy, better keep it power off.

4. Power off firstly while plug and unplug

6.3 Restore default parameters

Enter setting menu, set C07= 1,press SET then press ON/OFF exit saving setting, all parameters will be back to default setting.

Note：Pls. do not restore default parameter easily if you are not professional and have not scale calibration.

Default parameter form

parameter	instruction	Default value
C01	Calibration unit	1
C02	decimal digits	0

C03	Division value	1
C04	Max capacity	10000
C05	Empty scales calibration	0
C06	Capacity calibration	0
C07	restore the default parameters	0
C08	Warning tone	1
C09	Automatic power off	0
C10	Power saving mode	0
C11	Hold function	2
C12	Animal hold sample time	3
C13	Upper limit warning	000000
C14	Lower limit warning	000000
C15	Inner code display	
C16	Date	
C17	Time	
C18	Serial interface data output method	0
C19	Serial interface Baud rate	3=9600
C20	Manual zero setting	2
C21	Initial zero setting	10
C22	Automatic zero tracking range	0.5
C23	Automatic zero tracking time	1
C24	Overload range	9
C25	Negative display range	10
C26	Standstill time	1
C27	Standstill range	2
C28	Dynamic filter	0
C29	Noisy filter	2
C30~C40	Reserved menu	

6.4 Packing list

Packing list

No.	Material name	Specification	unit	Quantity
1	Weighing indicator		set	1
2	Packing bag		PCS	1
3	Accessories bag		PCS	1
4	Power supply	GB/DC9V	PCS	1
		US/DC9V	PCS	1
		UK/DC/9V	PCS	1
		EU/DC9V	PCS	1
		AU/DC9V	PCS	1
		others	PCS	1
5	User's manual		PCS	1
6	RS232	3 core quick connecter	PCS	1
7	Load cell joint	5 core quick connecter	PCS	1
8	AC Power supply	3 coresΦ0.75mm	PCS	1
9	Bracket	Wall mounted bracket	PCS	1
10	Certification		PCS	1
11	Packing list		PCS	1