

AgriEID HD Scales Kit

USER MANUAL



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1. Instruction

The weighing indicator is designed for bench scale, floor scale etc. The basic weighing function include: Total, Count, Print, kg/lb conversion. Options: I/O, 4~20mA output.

1.1 Main function

Weighing function:

Zero, Tare, accumulation. printing, animal weighing.

kg/lb convert. Overload remind.

Print format: Date, Time, Net, Tare, Gross

Options:

Printer

RS232/RS485

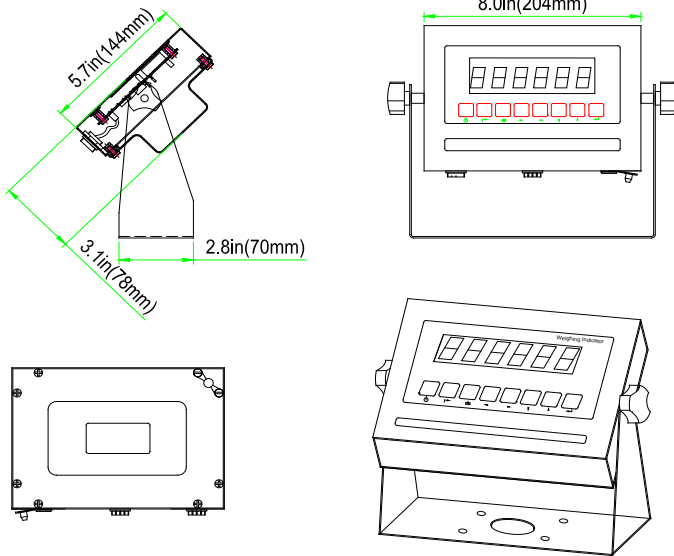
I/O

4~20mA

1.2 Technical parameter

Accuracy class	III
Maximum number of scale intervals	$n \leq 10000$
Minimum input voltage per verification scale interval	1 μ V /e
Input signal voltage	-5~20mV DC
Excitation circuit	5 VDC, 4 wire connection ,option 6 wire connection
Minimal load cell impedance	87 Ω , Maximum connect 6 load cell of 350 Ω
AC power	AC100~240V
Battery enduring life	6V4Ah lead battery
Operation temperature	- 10 $^{\circ}$ C ~ + 40 $^{\circ}$ C
Operation humidity	$\leq 85\%$ RH

1.3 Outline inch(mm)



1.4 Battery instruction

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. The battery voltage could be checked from the light on the right bottom of the display. When low-voltage, "battery symbol" flickering and LOBAT shining on LCD display; Red light flickering on LED display, then please recharge the battery.
3. Charge time: 10-12 hours. And it works 30 hours.
4. When fully charged, the light turns to green on LED display, battery symbol full on LCD display.
5. If battery is not used for long time, take it out to avoid the leakage.
6. In order to keep the battery in best using condition, it is suggested that 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 Power supply connection

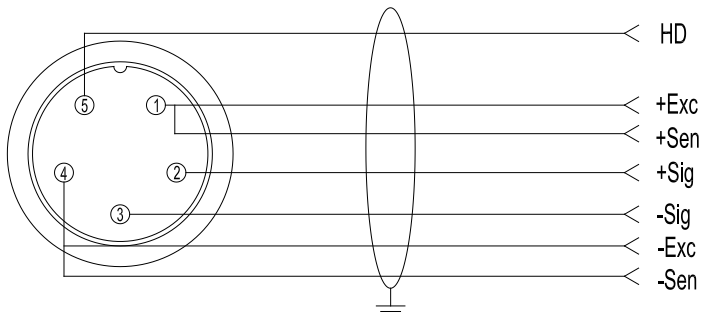
The indicator is powered by adapter, you plug the adapter directly into the “DC” pin at the indicator cover.

2.2 Connection of load cell and indicator

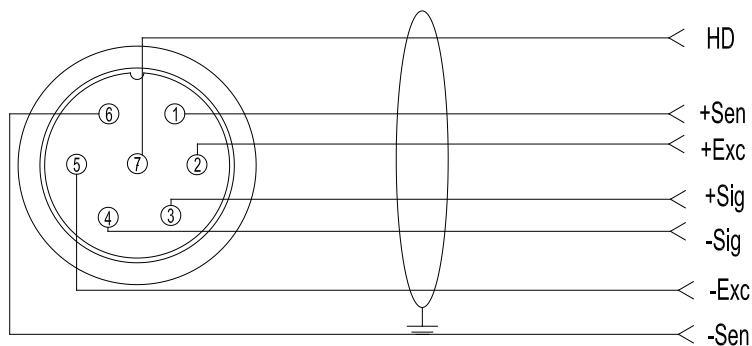
The indicator can connect with 6 pcs load cells of 350Ω at most, 4 wire or 6 wire (option) load cell both OK.

There are two methods connection between load cell and indicator

A. quick disconnect, as below:



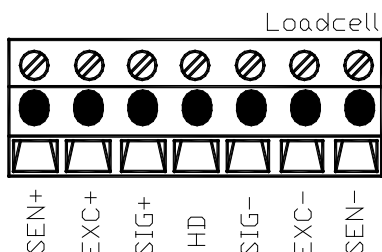
4 wire load cell connector



6 wire (option) load cell connector

B. Terminal trip connection (inner connection)

The signal cable for load cell (or the junction box) is connected with Load cell terminal trip on the printed circuit board of weighing indicator. Open Weighing indicator back cover, insert signal cable to Load cell terminal trip, and make sure the screw is fixed tightly.



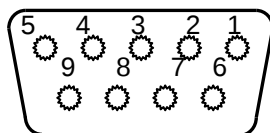
For 4 wire load cell, connect EXC+ SIG+ HD SIG- EXC-.

For 6 wire load cell, take away RJ4 and RJ7 above the terminal trip, then connect SEN+ EXC+ SIG+ HD SIG- EXC- SEN-.

2.3 Communication interface

RS232 : DB9 Pin or 3 Pin

DB9 definition

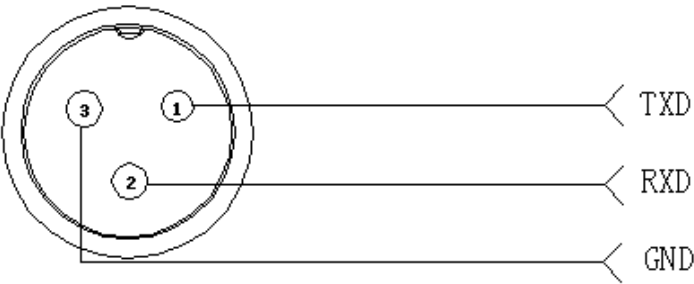


Pin function and definition as bellows:

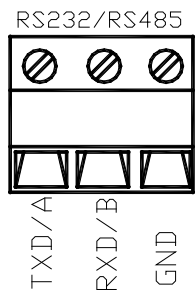
DB9 joint	Definition	Function
2	TXD	Sending data
3	RXD	Receiving data
5	GND	Ground interface

Note: if RS485, The connection pin is 2 and 5 pin.

3 Pin definition



Inner connection



Pin definitions:

Pins	Definitions	Function
RS232	TXD	Sending data
	RXD	Receiving data
	GND	Ground
RS485	A	RS485 output "A" port
	B	RS485 output "B" port

2.4 4-20mA output (option)

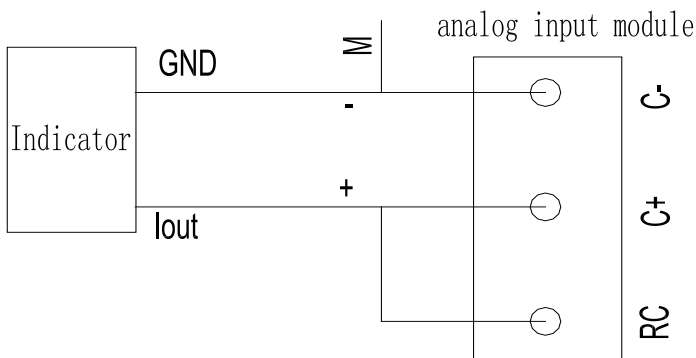
Technical parameters:

Resolutions: 1/1000

Outside Load: 0~500Ω

Connection:

Outside connection: 4~20mA, analog input + port connect with “1” pin of DB9, analog input - port connect with “6” pin of DB9.



Testing :

Connect the 4~20mA to analog input module, then you can read the value of 4~20mA by CPU at analog input channel.

If you do not have analog input module, adjust the multimeter to the current stalls, series connection with the 4~20mA.

Calibration:

1. Press[←] and [→] go to C32, show[out-4], the output current should be 4mA.
2. If Press [↑]show[out-5], Pres[↓]show[out-20], the output current should be 20mA.
3. Adjust the current, for example, adjust to [out-20], Press [←] or [→] to adjust the current.

Function instruction:

4~20mA correspond to Zero ~Max. capacity. After press" TARE", the weight will start from 4mA. Set C31=0, 0~20mA output mode; C31=1 4~20mA output mode.

If you need 0~5V output, Set C31=0, then connect 250Ω at the two ends of current output, that will get 5 voltage at resistance two ends.

2.5 Relay output function (option)

The indicator can option 4 relays output, connect with the outside equipment the indicator can perform automatic control function and upper limit and lower limit alarm function. Perform function through setting C33.

As below:

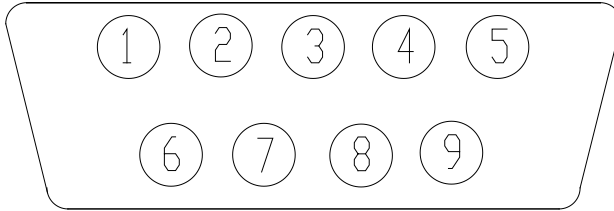
	Function	definition
C33=0	No output	none
C33=1	Weight comparison	Hi OK Low Zero
C33=2	Stable weight comparison	Hi OK Low Zero
C33=3	Set point output	Set point 1 Set point 2

	Output port	output condition	definition
C33=1 C33=2	OUT1	weight>=C13	Hi (over)
	OUT2	C13> weight >=C14	OK (accept)
	OUT3	weight<C14	Low (under)
	OUT4	weight <20d	Zero

	Output port	output condition	definition
C33=3	OUT1	weight >=C14	Set point 1
	OUT2	weight >=C13	Set point 2

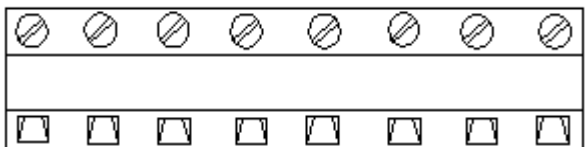
For example:

Check weight application. Connect indicator with yellow, green, red 3 lights. Yellow light on when overload, if OK the green light on. If under load red light on. And it can connect with buzzer. There would be alarm remind when overload.



DB9 pin	definition	port
1 pin	1 st output signal pin	Out1
6 pin	1 st output signal pin	Out1
2 pin	2 nd output signal pin	Out2
7pin	2 nd output signal pin	Out2
3 pin	3 rd output signal pin	Out3
8 pin	3 rd output signal pin	Out3
4 pin	4 th output signal pin	Out4
9 pin	4 th output signal pin	Out4

Inner connection pin definitions



01 01 02 02 03 03 04 04

Relay Specifications: 3A, 220VAC/24VDC

3. Basic operation

3.1 Keypad



LED	instruction
	Weighing data
	Zero indicating
	weight is stable
Gross	Gross weight
Net	Net weight
Tare	Tare status
Total	Go to accumulation mode
Hold	Data hold
PCS	Show the counting status
lb	lb
kg	kg

.	Decimal
Hi	Over load
OK	accept
Lo	Under load

Keys function

Keys	Key name	Key function
	Print	Print
	Zero	Zero the weight within zero range
	Tare	At G.W mode, get the tare weight. At N.W mode, clear the tare, get the G.W
	Gross weight	At N.W mode, check the G.W, after 3 seconds back to N.W automatically
	kg/lb convert	Covert between kg and lb, Covert between kg/lb/oz or kg/g (for LCD)
	Accumulation	1. Accumulation 2. work together with “ Print” to perform The accumulation function and check the total result
	Hold	Holding the data
	Power on/off	Press 2 seconds to power on or power off

3.2 Power on & off



Press  2 seconds to power on or power off, after power on the indicator show "000000-999999". After self inspection, it goes to the weighing mode. Pls. check it whether 6 bits LED/LCD display and the status light is good or not.

3.3 Zero operation

1. Initial zero setting

When power on the indicator, if the weight on the scale is within the initial zero range, indicator show zero.

2. Manual zero setting

When the scales is stable, and not the negative display, you can zero the weight within range by press  keys.

3.4 Tare operation



Press  key, the gross weight is tared, indicator show the Net weight, the "Net" "Tare" status light is on. At tare mode, Press



 key, clear the tare weight, the indicator will show the gross weight.



Press  for 2 seconds and enter the Tare weight to Tare function.

3.5 Accumulation operation



At zero mode, load weight till stable, press  go to accumulation mode, "Total" light on, display "n 001", and then display loaded weight; Unload

the weight , back to zero, load the second weight again till stable. Press  display "n002" then display the second loaded weight. Repeat it again and again, maximum 999 times.

Check the accumulation

Press  and hold it then press  ( and  for Hold version), display "n**", (it is the accumulating times) then show total weight. there are 8 digits totally. It shows the first 4 digits then the last 4 digits. For example, the first 4 digits is "0012", the last 4 digits is "34,56" It means the actual weight is "1234.56"

EXIT the accumulation function

When the indicator show the last 4 digits, Press  hold it, the indicator show "clr n", it means don't clear the total Weight, Press  to exit it; if you want to clear total weight, Press  or  key, "clrn" change to "clry" it means clear total weight ,then Press  to clear the total weight and exit accumulating mode.

3.6 Print

If the weighing is stable, after connect with printer, press  can print the weight. Note: at tare mode, print with tare. If negative weight, can not print. Set C30 for time format.

Total weight print: check the accumulation when display the last 4 digits, press  can print the total weight.

3.7 Hold

There are difference hold function between Normal version and Hold version. Normal version only have Automatic hold function. Hold version have 5 different hold function. And the setting is different accordingly.

C11=0 close hold function, C11=1 peak hold function, C11=2 data hold function, C11=3 automatic hold function, C11=4 manually animal weighing, C11=5 Automatic animal weighing.

Instruction:

1 Peak-hold: it shows the max. data, mainly application for materials testing, such as tension and pulling force.

2 Data-hold: it shows current weight value, mainly application for hold weighing.

3 Auto-hold: When the pet keep stable on the scale, the indicator will automatically “ Hold” for 6 seconds.

4 Manually animal weighing, Press “HOLD”, display “LOC”, calculating few seconds which set in C39, lock the average weight, then press “HOLD” to back normal weighing.

5 Automatic animal weighing. The operation base on the weight changing. Empty scale, after few seconds delay which set in C40, display “LOC”, calculating few seconds which set in C39, lock the average weight, when the animal gets off the scale, unlock the next recycle.

4. Calibration and parameter setting

4.1 Enter setting

There have two methods to enter the setting menu:

1. Put the switch “MARK” to “On” position, enter calibration and when calibration is finish. Put the switch “ MARK” to “off” position. Then add the sealing screw at the back of indicator.

2. when the switch “ MARK” is on position, press the “◀—” hold it and then press “▶—” enter calibration.

The key functions in setting:

ENTER	
UP	
DOWN	
LEFT	
RIGHT	
BACK	
EXIT Calibration	
POWER	

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 calibration mode, it display [C01]
2	press	[C01 1]	Weight unit option: 1=kg, 2=lb 3=g,4=oz (for LCD)
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	[C04] [0100.00]	Max capacity

	press  or  / 	[0100.00]	example: max weighing 100kg: [0100.00]
6	press  press  press  press 	[C05] [C05 0] [C05 1] [CAL 9] [0000.00]	Zero calibration Option 0=no need zero calibration 1=need zero calibration calibration zero please choose 1 and ensure scale is empty . 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] [CAL End]	calibration option: 0=no need calibration 1= need calibration Load weights on scales according to max. capacity. Suggest close to the max capacity, at least 10% of max. capacity. For example: the weights is 80kg As bellows: Input the 0080.00, count down , then indicator shows 0080.00 , calibration is over. If you want to set application function parameter, Press  . if you want to exit press  .
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 to avoid the original setting parameters is lost.
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note:

[C05 2] System zero calibration

[C06 2] Linearization calibration

[C06 3] Sensitivity calibration

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= power off automatically if no change within 10 minute. 30= power off automatically if no change within 30 minute. 60= power off automatically if no change within 60 minute.
Power saving setting	C10 Power saving setting	LED Version: option: 0= close power saving setting 3= close display if no change within 3min. 5= close display if no change within 5 min. LCD Version: 0=Close the backlight 1= backlight when the weight change or press the keyboard 2=constant backlight
Hold	C11	option: 0=close hold function

function	Hold mode	1=Peak hold 2=Data Hold 3=Auto hold 4=Animal function 5=Trails of animal function
unit conversion	C12 kg/lb conversion	Option: C12=0 stop kg/lb conversion C12=1 kg/lb conversion C12=2 kg/lb/oz conversion (for LCD) C12=3 kg/lb/lb:oz/oz conversion (for LCD) C12=4 kg/g conversion (for LCD)
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	enter C15 to check the inner code

Date and time	C16 Date	Enter C16, you can set the date, from left to right: year/month/day
	C17 Time	Enter C17, you can set the time from left to right: hour/min./sec.
Communication setting	C18 Serial interface data output method	option: 0= Close serial interface data output 1=Continuous sending, connect second display 2=Print method, connect printer. 3=Command request method , connect computer. 4=PC continues sending format, connect computer.

		5=PC/ second display continuous sending format. 6=label printer LP7362R1 7=label printer LP7362R6 8=stable auto print
	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= $\pm 1\%$ max capacity 2= $\pm 2\%$ max capacity
	C21 Initial zero range	option: 0= no initial zero setting 1= $\pm 1\%$ max capacity 2= $\pm 2\%$ max capacity 5= $\pm 5\%$ max capacity 10= $\pm 10\%$ max capacity
Zero tracking	C22 Automatically zero tracking range	Options: 0= close zero tracking 0.5= $\pm 0.5d$ 1.0= $\pm 1.0d$ 2.0= $\pm 2.0d$ 3.0= $\pm 3.0d$ 4.0= $\pm 4.0d$ 5.0= $\pm 5.0d$ Note: 1. d = division 2. the zero tracking range can not bigger than manual zero range.
	C23 Automatically zero tracking time	Options: 0= close 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 =division
Negative display	C25 Negative display range	Option: 0=20d 10=10% max. capacity 20=20% max. capacity 50=50% max. capacity 100=100% max. capacity
Standstill time	C26 Standstill time	Option: 0= quick 1= medium 2= slow
	C27 Standstill range	Option: 1= 1d 2=2d 5=5d 10=10d 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: please 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

Noise filter	C29 Noise filter	option: 0=close noise filter 1=1 digital filter strength 2=2 digital filter strength 3=3 digital filter strength
Date format	C30 Date format	Option: C30=0 yy.mm.dd C30=1 mm.dd.yy C30=2 dd.mm.yy C30=3 yy.mm.dd
Analog output setting	C31 output type	Option: C31=0 0~20mA output C31=1 4~20mA output
4~20mA current calibrate	C32 calibrate current	Refer to 2.5
Relay output setting	C33 Relay output	Option: C33=0 close relay output C33=1 Open relay output function 1 C33=2 Open relay output function2 C33=3 Preserved menu
Preserved menu	C34	
second COM communication setting	C35 Serial interface data output method	option: 0= Close serial interface data output 1=Continuous sending, connect second display 2=Print method, connect printer. 3=Command request method , connect computer. 4=PC continues sending format, connect computer. 5=PC/ second display continuous sending format.

Gravity of calibration location	C36	Option: C36=9.7000~9.9999
Gravity of destination	C37	Option: C37=9.7000~9.9999
Version No.	C38	
Animal sample time	C39	Option: C39=0~9
Animal scale delay	C40	Option: C40=0~9
Print mode	C41	Option: C41=0 auto mode C41=1 gross mode C41=2 tare mode See 5.4 Print format parts in detail
Print carriage return	C42	Option: C42=0~9
Space Print	C43	Option: C43=0~9
Date Print	C44	Option: C44=0 not print date C44=1 print date
Time Print	C45	Option: C45=0 not print time C45=1 print time
ID.No. print	C46	Option: C46=0 not print serial number C46=1 print serial number
label print format	C47	Option: 0~99
second COM	C48	option:

baud rate		0=1200/1=2400/2=4800/3=9600
automatic print valve	C49	Option: 0~9999999

5. Output format

5.1 Second display continuous sending format

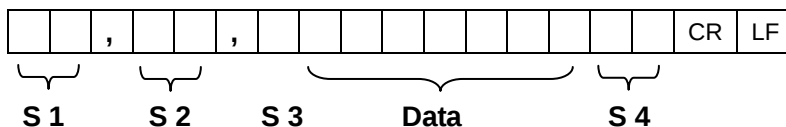
Output continuous format																	
S T X	S W A	S W B	S W C	X	X	X	X	X	X	X	X	X	X	X	X	C R	C K S
1	2			3						4						5	6

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 under 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

5.2 Computer 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: "kg" or "lb"

Data: weight value, including decimal point

CR: carriage return

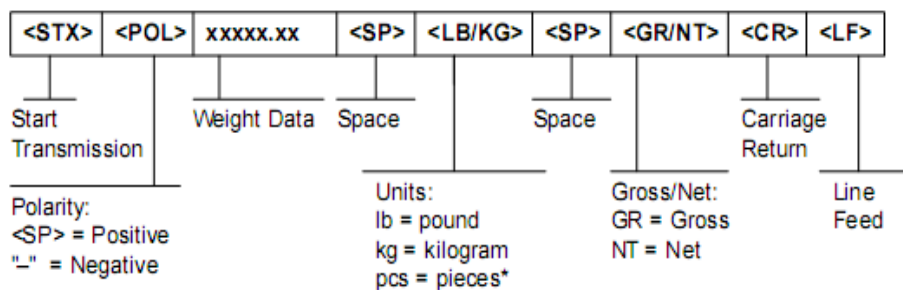
LF: line feed

5.3 Serial interface reception command:

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

Command	NAME	Function
T	TARE	Save and clear tare
Z	ZERO	Zero gross weight
P	PRINT	Print the weight
R	G.W/N.W	Read gross weight or net weight
C	Kg/lb	Kg/lb conversion
G	G.W	Check gross weight at net weight mode
N	Inner code	Read C15 code

R command receive data format



N command receive data format

STX SP SP SP XXXXXX SP IC SP IC CR LF

Print key data format

STX SP XXXXX.XX SP KG SP PT CR LF

5.4 Print format

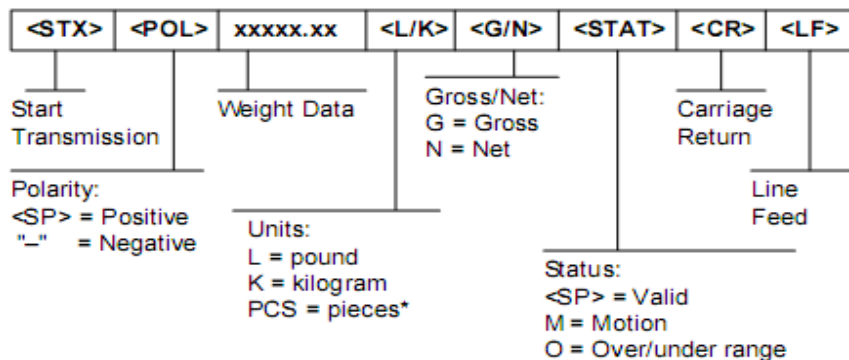
Tare mode:

Date: XX.XX. XX
Time: XX: XXam
Net XX.X kg
Tare XX.X kg
Gross XXX.X kg

Gross mode:

Date: XX.XX. XX
Time: XX: XXam
Gross XXX.X kg

5.5 PC or Second display continuous sending format



Second COM protocol is Second display continuous sending format.

6. Maintenance

6.1 Regular error and solution

ERROR	REASON	SOLUTION
UUUUUUU	1. overload 2. wrong connection with load cell 3. load cell has quality problem.	1. reduce the weight 2. check load cell connection 3. inspection load cell. Check the input and output
nnnnnnnn	1. calibration is no good 2. wrong connection 3. load cell has quality problem	1. check scale is resisted or not, foot is kept level or not. 2. check load cell connection. 3. checking load cell
ERR1	not input the weights or the weight is overload	Input the correct weights
ERR2	During calibration , the weights is below than Min. required weights	The calibration weights Minimum is 10% of Max. cap. Recommend 60%-80% of Max. Cap.
ERR3	During calibration, the input signal is negative	check the connection is correct check load cell is no problem
ERR4	During calibration, the signal is unstable	After the platform is stable, start calibration
ERR5		Change PCB
ERR6	Exceed zero range	Remove the load

6.2 Daily maintain

1. Protect the indicator from strong sunlight to prolong the using life
2. Good connection between load cell and indicator. Far from away from strong electric field, magnetic field.
3. Power off the indicator when lightning
4. Power off the indicator firstly before plug and unplug

6.3 Restore default parameter

Enter to calibration, Set C07=1. Press"  " then press"  " to exit saving setting. All parameter will back to default

Note: please do not restore default parameter easily if you are not professional staff or not yet calibrate the scales.

Default parameter

Parameter	instruction	Default
C01	Unit	1
C02	Decimal digits	0
C03	Resolution	1
C04	Max. capacity	10000
C05	Empty calibration	0
C06	Capacity calibration	0
C07	Restore default	0
C08	Warning tone	1
C09	Power-off automatically	0
C10	Power saving mode	0(LED)/1(LCD)
C11	Hold function	2

C12	Prohibit kg/lb conversion	1
C13	Upper limit alarm	000000
C14	Under limit alarm	000000
C15	Inner code	
C16	Date setting	
C17	Time setting	
C18	Serial interface data output	0
C19	Serial interface Baud rate	3 (9600)
C20	Zero manually	2
C21	Initial zero	10
C22	Zero tracking range	0. 5
C23	Zero tracking time	1
C24	Overload range	9
C25	Negative range	10
C26	Standstill time	1
C27	Standstill range	2
C28	Dynamic filter	0
C29	Noisy filter	2
C30	Date format	1
C31	Analog signal options	1
C32	4~20mA testing	4
C33	Relay output setting	1
C34		
C35	second COM serial interface	1
C36	Calibration location gravity	9.7936
C37	Destination gravity	9.7936
C38	Version No. check	
C39	Animal sample time	5
C40	Animal scale delay	5

C41	Print mode	0
C42	Print carriage return	1
C43	Space Print	0
C44	Date Print	1
C45	Time Print	1
C46	ID.No. print	0
C47	label print format	0
C48	second COM baud rate	3
C49	automatic print valve	0

6.4 Packing list

Packing list

S/N	ITEM	NAME	UNIT	QTY	PACKING
1	Weighing indicator		PCS	1	
2	Plastic bag		PCS	1	
3	Bag		PCS	1	
4	Adapter	US/DC9V	PCS	1	
		OTHERS	PCS	1	
5	USER MANUAL		PCS	1	
6	RS232	3 PIN OR DB9	PCS	1	
7	Load cell plug	5 PIN Quick connector	PCS	1	
8	Signal cable	Φ5/3 core shield signal cable	PCS	1	
9	Power cable	3 coreΦ0.75mm	PCS	1	
10	Bracket	Wall-mounted	PCS	1	
11	Certificate		PCS	1	
12	Packing list		PCS	1	

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