



XK3118T1-W1

Indicator

Operation Manual

November 2017

- **PLEASE READ THIS MANUAL CAREFULLY BEFORE USE**
- **PLEASE KEEP THIS MANUAL PROPERLY FOR REFERENCE**

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NOTES:



- ▲ Indicator ground wire must be complying with electrical safety regulations, junction box; load cell must be well grounded.
 - ▲ When indicator is power on, do not plug or unplug any connection lines, prevent from static electricity damage.
 - ▲ All load cell & indicator must be well anti-static electricity protection.
 - ▲ Thunderstorm season, system must have reliable lightning protection measures, to protect load cell and indicator.
 - ▲ Limited using for flammable gas, or flammable vapor areas, or tank system with pressure.
 - ▲ Keep indicator and load cell away from strong electric magnetic field, corrosive substances and explosive materials.
 - ▲ Do not use strong solvents(such as: benzene, nitro-class oil) to clean the cover..
 - ▲ Do not inject liquid or other conductive particles into indicator.
 - ▲ That indicator is precision measuring instrument; to ensure accuracy, do not open it without authorization.
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- ★ Batteries are consumables not belongs to guaranteed range.
 - ★ Fully charging before usage, to prolong service life.
 - ★ Charging every 2 months, and 20 hours each time if not use for a long time.
 - ★ be careful during moving or installation, to avoid strong vibration, shock or punch, internal short circuit of electrodes.
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- ◆ Ensuring clear display and service time do not put indicator under sun.
 - ◆ Indicator should be away from dust, vibration, wet environment.
 - ◆ Before plugging/unplugging please cut off indicator or other equipments' power.
 - ◆ Connecting each connector as the manual book.
 - ◆ Without technical supervision department's promise, no one can open the seals, or calibrate.
 - ◆ Exceeding maintenance time, factory should charge for repairing.



1.0 introduction

XK3118T1-W1 series indicator, use strong anti-interference of single chip microprocessor, adopts high precision $\Delta-\Sigma$ A/D conversion technology. With RS232, Bluetooth communication, realizing once weighing and twice weighing through APP and card reader; uploading weighing record and IoT status information to the server; applied in platform scale, weighbridge and other static testing system.

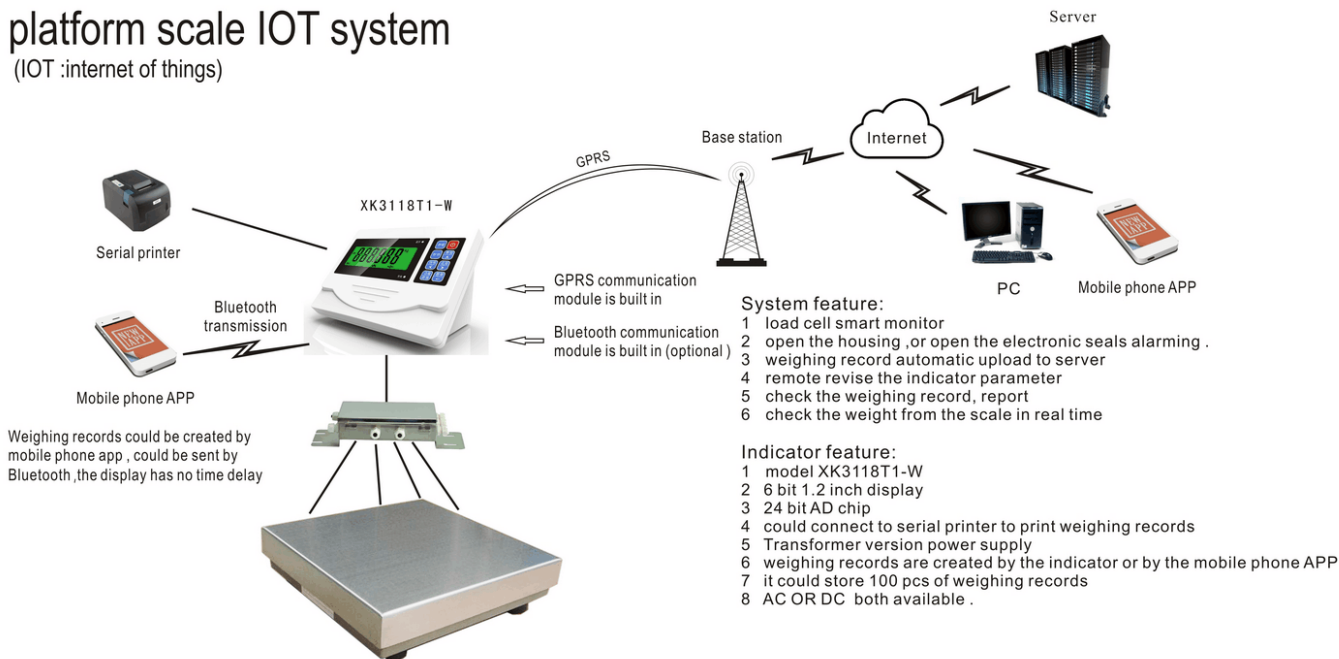
Main functions: Accumulation, upper and lower limit, average, RS232, Bluetooth communication, GPRS communication, large screen, weighing record uploading (once weighing and twice weighing), the IoT status data uploading.

Applicable model: XK3118T1-W1;

System Application diagram:

platform scale IOT system

(IOT :internet of things)

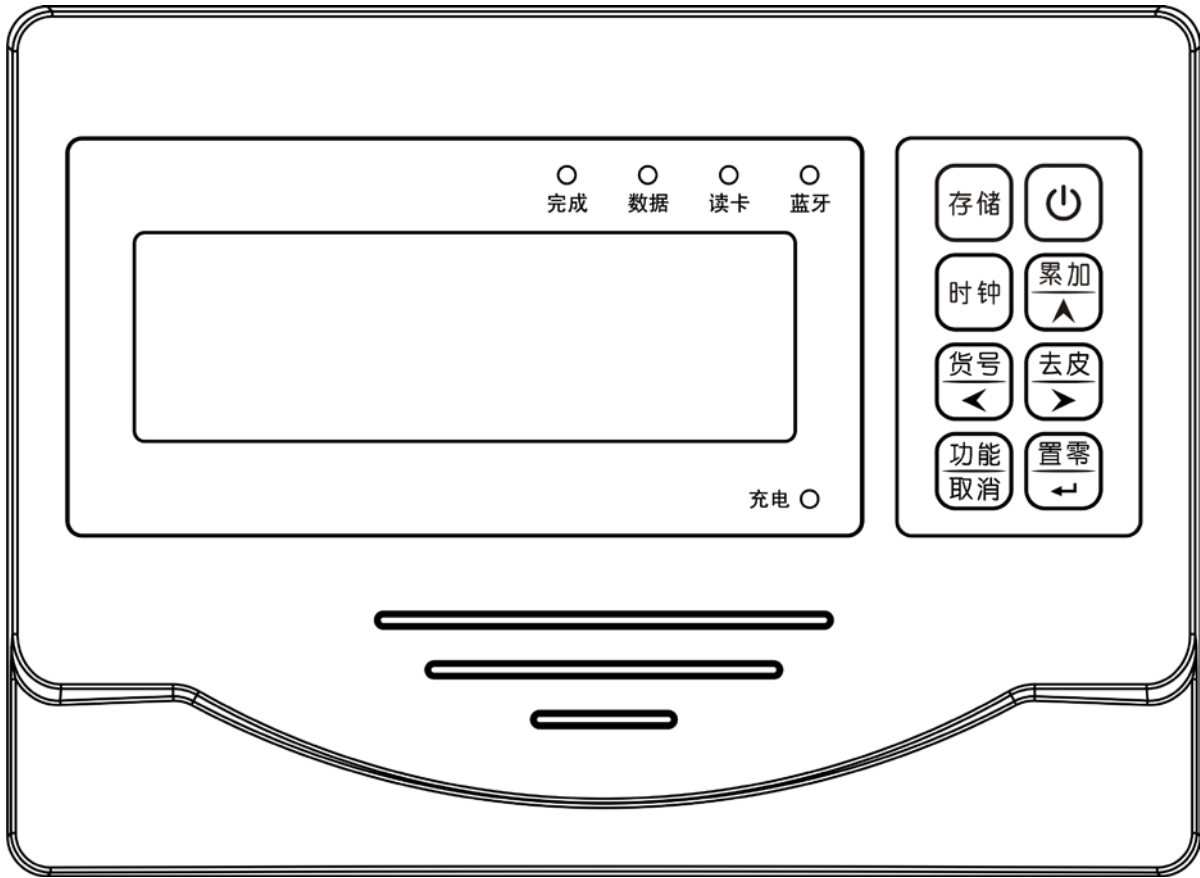


Technical parameters

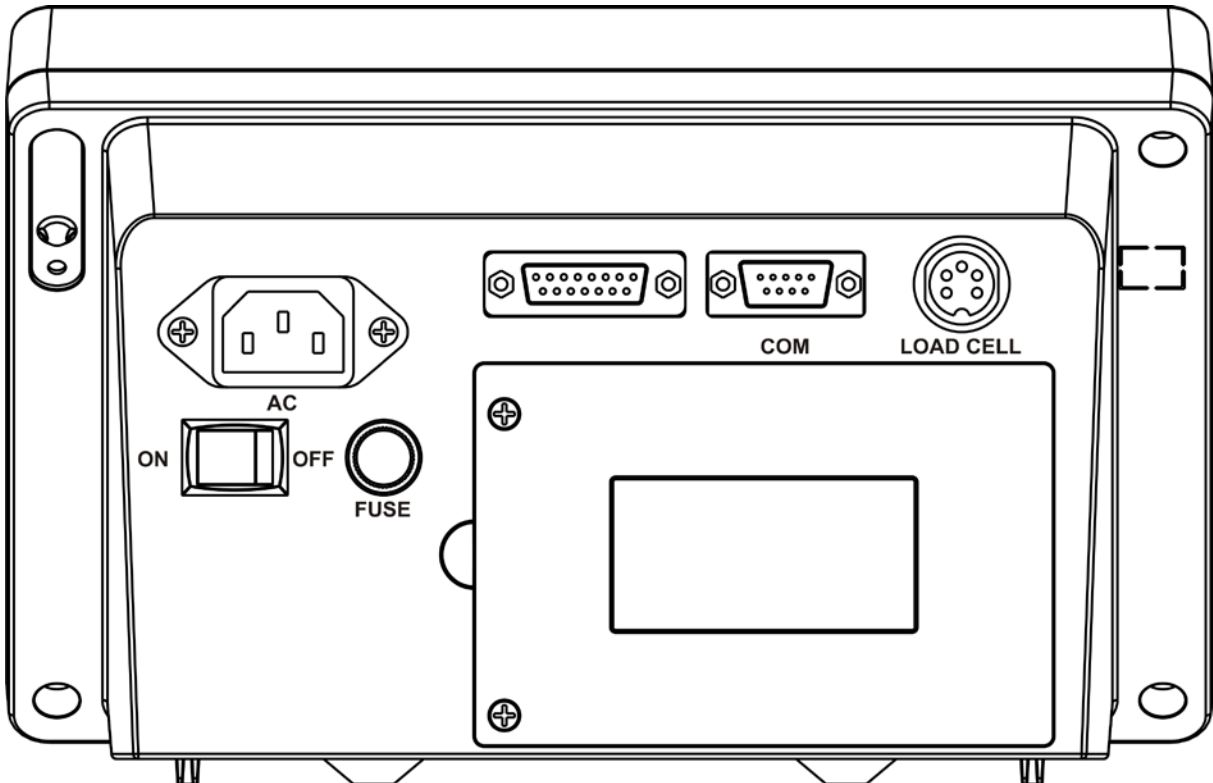
- ◆ A/D conversion model: $\Delta-\Sigma$ technology, 24bitAD code, maximum 100times/second
- ◆ Value of each test sub mini input signal: $\approx 1.5\mu\text{V}/\text{e}$;
- ◆ Load cell excitation: DC 5V, connect 1~6 pcs 350 Ω resistance strain gage load cell;
- ◆ Input single range: -16mV~18mV;
- ◆ Load cell connection model: 4 wire
- ◆ Individual value: 1/2/5/10/20/50 optional
- ◆ Display: 6 bit LCD, Bluetooth indicator, AC indicator
- ◆ Remote interface: current loop/RS232 output mode, baud rate: 600bps
- ◆ IC card reader: Deca D3 (serial interface)
- ◆ Serial Communication Interface: RS232 ;
- ◆ Communication mode: 1200/2400/4800/9600 optional;
- ◆ Baud rate: communicate with APP via Bluetooth
- ◆ Bluetooth communication: AC 220V,50Hz/60Hz
- ◆ Indicator power: Built-in 6V/4AH maintenance-free lead-acid battery
- ◆ Auxiliary power supply: 0 $^{\circ}\text{C}$ ~40 $^{\circ}\text{C}$, humidity 10%~85%(RH),no condensation
- ◆ Operation temp: -10 $^{\circ}\text{C}$ ~40 $^{\circ}\text{C}$, humidity 10%~95%(RH),no condensation
- ◆ Storage temp: 2kg
- ◆ Weights: 236*150*150mm.
- ◆ Dimension(L*W*H)

2.0 installation

XK3118T1-W1 front panel

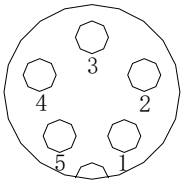



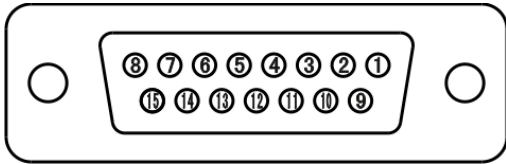
XK3118T1-W1 back



2.2 connection between LC & indicator(left)series port communication lines(right)

Indicator side	Description	Indicator side	Description
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5 pin aviation connector 			DB9 pin 	Remote current loop output		PC RS232 communication	
	①	LC excitation E+		⑧	Remote current loop output(+)	②	indicator sending(TXD)
	②	LC excitation E-		⑨	Remote current loop output(-)	③	indicator receive(RXD)
	③	Shield cable				⑤	GND
	④	LC signal S+				②、⑤脚可接大屏幕 (RS232 方式)	
⑤	LC signal S-						









Indicator side DB15 pin 	Description	
	12	indicator receive(RX D)
	13	indicator sending(TXD)
	15	GND

▲ must connect LC well with indicator. Shield cable of LC and metal cover must be well grounded, don't plug or unplug any cable when indicator is power on, to avoid any static electricity damage.

▲ LC & indicator are sensitive static equipment, anti-static measures must be used, do not welding or other strong electricity operation on the platform. In lighting & raining season, anti-lighting measures must be used, to guarantee indicator working well, and operators' safety.

3.0 Operation Instruction

3.1 Key Instruction

Key	Name	Function 1: Press lightly	Function 2: Hold down	Function 3: After entering parameter setting
	Shutdown key	indicator on/ off button	/	/
	Storage key	Data storage function	/	/
	Clock key	Clock setting and viewing function	/	Exit parameter settings
	Accumulative key	Accumulation, Reference 3.2	Checking accumulative total, Reference 3.2	Change parameter settings
	Cargo number key	Setting the cargo number function	/	Move left
	Tare key	Tare operation, Reference 3.2	/	Move right
	Function Key	Realizing the function according to parameter settings, Reference 3.2	Enter parameter settings, Reference 3.3	Exit parameter settings
	Zero key	Zero operation, Reference 3.2	/	Confirm current parameter settings



Note: below us “↙” represent.

3.2 Indicator function introduction

3.2.1 Boot and boot auto zero

When the indicator shutdown, press the shutdown key lightly. Indicator will do self-checking after booting. If deviate from calibrated zero and platform is stable, indicator will zero automatically among auto-zero range and display zero while the “zero” indicator lighting. If deviate from calibrated zero and platform is unstable, indicator will display the current weight.

When the indicator booting, hold down the shutdown key (around 2 seconds) , indicator will shutdown.

The switch of the rear view of the indicator is the switch of AC power.

3.2.2 manually zero

When indicator G.W is within manual zero range, and stable, press “ZERO” . under N.W. condition, can not work.

3.2.3 Tare

When G.W. & N.W. bigger than zero, and stable, can operate TARE,, press “TARE”, indicator display “0”,tare weights G.W, then enter into “N.W. model, “N.W. light on;

When G.W. is “0” and under “N.W.” model, press “TARE” to quite “N.W” model.

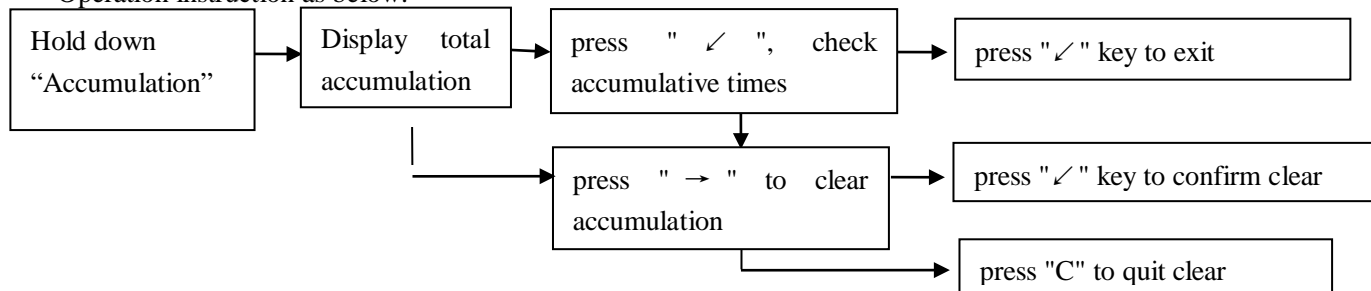
3.2.4 Accumulative, display and clear operation:

- When the net weight is large than the minimum weighing value (5 individual value) and stable, press “accumulation” and accumulate current net weight. " accumulation " indicator light and display total accumulative value. After 1 seconds, display again the accumulative number of **【n ***】** , 1 seconds later exit display accumulative status automatically; next operation must be done after the net weight is less than the minimum weighing value;

- Hold down the " accumulation" key until the buzzer rings under the regular weighing status, "function" and " accumulation " light, you can view the total accumulation; press the "↙" button to see the accumulative number of times, and then press the "↙" key to exit;

- Hold down the " accumulation" key into accumulation display, press "→" Key and show **【CLRAr-】** . That is tell whether clear accumulation, press "↙" key to clear and press "C" key to exit, quit clear.

Operation instruction as below:



Note: When switch between kg and lb, indicator will clear accumulative values and times automatically.

When indicator shutdown, it will clear accumulative values and times automatically.

3.3 other parameter settings and function description

Hold down “function” key until the buzzer rings under the regular weighing status,enter into parameter settings, details as below.

Steps	Operation	Display	Description
1	Hold down "function", enter "↙" and confirm	【PA****】	Parameter settings option: 【0000】 :setting functional parameters
2	"function" key choose "↙" and confirm	【Fn **】	Set “function” key function (Function): 【 Lb】 :Fn key function is switching; reference P3.3 【 ANL1】 :automatic live scale function; reference P3.3 【 ANL2】 :manual live scale function; reference P3.3 【 COT】 :counting function; reference P3.3
3	Power Save mode option “↑” to switch “↙” to confirm	【PS **】	Power Save Setting (Power Save): 【oFF】 :Power save mode off; 【oN】 :Open power save mode. The power save mode will be entered 3 minutes after weight stable. The indicator will only display date circularly in last digit; 【onP】 :Enhanced power save mode which will automatically turn off the indicator after 2 minutes power save mode.

4	Backlight option “↑” to switch “↵” to confirm	【BL **】	Backlight option (Power Save): 【oFF】 :switch off backlight; 【 oN】 :switch on backlight; 【AUT】 :automatic backlight mode;
5	Baud Rate option “↑” to switch “↵” to confirm	【br****】	Baud Rate Setting (Baud rate):1200~9600bps optional
6	Communication Mode option “↑” to switch “↵” to confirm	【Co *】	Communication Mode setting(Communication Mode):1~8 optional, Detailed format followed
7	High Setting	【H*****】	High Setting (High): Press”→” move to right; Press”←” move to left;”↑” increase 1; “↵” confirm, and enter next step such as 2000
8	Low Setting	【L*****】	Low Setting:(Low): Press”→” move to right; Press”←” move to left;”↑” increase 1; “↵” confirm, and enter next step such as 1000 If weight is higher than High setting the “HI” light on left side of the indicator will be on If weight is lower than Low setting the “LO” light on left side of the indicator will be on If the weight is between High and Low setting then the “OK” light will be on Note:1, the current limit value is larger than the maximum upper limit value, the checking weighing function will not be normal. 2, when the unit switch, you need to reset the upper and lower limits.
9	Live scale calculation time setting “↑” to switch “↵” to confirm	【T ***】	Set live scale calculation time: press”↑” to choose among”1~9”. The setting value is larger, the locking time of weighing data will be longer.
10	Live scale stability range setting	【R*****】	Set average stability range Press”→” move to right; Press”←” move to left;”↑” increase 1; “↵” confirm, and enter next step such as 50 When the live scale data locked, maximum changing value can’t exceed this value.
11	Weighing mode setting	【type *】	Set weighing mode: press”↑” to choose among”0~2”. Explain:0:once weighing, operate via indicator, details for 3.4.1; 1: once weighing, operate via swipe car, details for 3.4.2; 2: twice weighing, operate via swipe car, details for 3.4.3;

★If finish the parameter settings, press “function” to quickly exit; no operation above 3 minutes during parameter settings, return the weighing status automatically.

3.3.1 kg/lb switch:

When allow kg/lb switch, press “function” to switch kg/lb.

3.3.2 live scale 1 function introduction:

When allow live scale 1 function, press “function” to operate live scale 1 function, and then press again function key, exit live scale 1 function.

When allow live scale function, in some weighing occasions, may need to carry out dynamic weighing, and the scale is not stable then. The indicator will automatically collect the weight of the object on the platform and calculate the average value. If within the stability setting range of live scale, and the display value is larger than the lower limit, the results will be locked; when the weight out of the stability setting range, the indicator will unlock the value automatically.

3.3.3 live scale 2 function introduction:

When allow live scale 2 function, press “function” to operate live scale 2 function, display value is larger than the lower limit, lock display after time calculation.

When the weight smaller than the lower limit, the indicator will unlock the value automatically.

3.3.4 counting function introduction:



When press “function”, indicator “PCS” lighting, unit indicator off, cancel decimal point indicates, means display quantity status entered. And then put the sample of known quantity, hold down “function”, indicator display “30” and flashing, indicating input the sample quantity, “→” move the flashing unit to right, “↑” increase flashing unit number, “←” confirm, and then display the quantity.

3.3.5 weighing checking function introduction:

In some weighing occasions, it’s necessary to check the weighing checking function. When the weighing value is less than or equal to the lower set value, the lower limit indicator "LO" is light; when the weighing value is set between the upper limit and the lower limit, the qualified indicator "OK" is bright; and when the weighing value is larger than or equal to the upper limit, the upper indicator "HI" light.

Note: Upper and lower set values

3.3.6 Communication Mode Format:

Serial	Number of each frame	Note
1	8	Reversely send the Net Weight date. For example if the net weight is 23.45kg, ASCII code 54.3200 will be sent. And if the net weight is -23.45kg, ASCII code 54.320- will be sent.
2	8	Reversely send Gross Weight date. The format is same as serial 1
3	14	Positively send the Net Weight date with unit. For example if the net weight is 23.45kg, ASCII code =0023.45(kg)will be sent. End with Hex number OD,OA
4	14	Positively send the Net Weight date with unit. The format is same as serial 3
5	不定	Order Response Mode: Order mode 02 “Order” 03(Hex) There are 5 pieces order, ASCII code 'A'~'E'. Take gross weight 23.45kg, netweight13.45kg and tare 10.00kg for example 'A': Read gross weight, indicator back:GW:0023.45(kg) 'B': Read net weight, indicator back:NW:0013.45(kg) 'C': Read tare, indicator back:TW:0010.00(kg) 'D': Manually zero, indicator back: 'D' 'E': Tare operation, indicator back: 'E' All order back add 02 at the beginning and 03 at the end(Hex) Instruction response mode : instruction format is 02 “ instruction ” 03(hex) Total 5 instruction, ASCII code 'A'~'E'; e.g. Gross weight 23.45kg,net weight 13.45kg,tare weight 10.00kg 'A': read gross weight; indicator return:GW:0023.45(kg) 'B': read net weight; indicator return :NW:0013.45(kg) 'C': read tare; indicator return:TW:0010.00(kg) 'D': manual zero; indicator return :'D' 'E': tare operation; indicator return :'E' Bluetooth doesn’t support this mode, RS232 supports this mode.
6		Output net weight and accumulate automatically during accumulative operation, can be connected to the serial printer for printing.
7		KELI remote display RS232 mode, when choose this communication mode, the remote display current loop is not valid. If the current loop is used to connect the remote display, 【Co *】 is set to not the 7 operation mode.
8		Connect serial printer (SP-POSIV serial port), indicator generates weighing record or APP generates weighing record when printing, serial port baud rate needs to set 9600bps.

3.4 indicator weighing record

3.4.1 Weighing record generated by indicator side(weighing mode setting: type=0)

Record data including: cargo name, tare, gross weight, net weight, date time, quantity.

- Cargo name setting: press indicator panel cargo number, set cargo number(1-9);
- Set cargo number according to the cargo name via APP or PC client(up to 5 Chinese characters);
- Indicator weighing stability and larger than 20d, press storage key, indicating "save" means success;
- After generating the weighing record, you must return 0 and then you can regenerate the new record;

3.4.2 Weighing record generated by indicator side(weighing mode setting: type=1)



Record data including: cargo name, cargo model, tare, gross weight, net weight, date time, quantity, price, name, picking place, ID card number, reserve1, reserve2.

- preset relative information in the card (cargo name, cargo model, price, name, picking place, ID card number, reserve1, reserve2);
- put the card on card reader, waiting indicator & card indicator light;
card reader light indication — — — off: don't read the card information; on: read the card information
- Indicator weighing stability and larger than 20d, press storage key, indicating "save" means success;
- After generating the weighing record, you must return 0 and then you can regenerate the new record;

3.4.3 Weighing record generated by indicator side(weighing mode setting: type=2)

Record data including: cargo name, cargo model, tare, gross weight, net weight, date time, quantity, price, name, picking place, ID card number, reserve1, reserve2.

- preset relative information in the card (cargo name, cargo model, price, name, picking place, ID card number, reserve1, reserve2);
- put the card on card reader, waiting indicator & card indicator light;
card reader light indication — — — off: don't read the card information; on: read the card information
data light indication — — — off: this card don't have first time weighing data; on: this card have first time weighing data;
- Indicator weighing stability and larger than 20d, press storage key, indicating "save" means success;
- After generating the weighing record, you must return 0 and then you can regenerate the new record;

If select twice weighing generated records, the first weighing data won't upload to the server, after second weighing the weighing records will generate automatically, and regard small value as the tare value automatically.

3.4.4 APP generate weighing record(once weighing)

Record data including: cargo name, cargo model, tare, gross weight, net weight, date time, quantity, price, name, picking place, reserve1, reserve2.

- APP interface select once weighing;
- cargo name, cargo model, price, name, picking place, reserve1, reserve2, via APP input;
- Weighing stable and larger than 20d, press generation record button to generate a weighing record;
- After generating the weighing record, you must return 0 and then you can regenerate the new record;

3.4.5 APP generate weighing record(twice weighing)

Record data including: cargo name, cargo model, tare, gross weight, net weight, date time, quantity, price, name, picking place, reserve1, reserve2.

- APP interface select twice weighing;;
- cargo name, cargo model, price, name, picking place, reserve1, reserve2, via APP input;
- Weighing stable and larger than 20d, press generation record button to generate a weighing record;
- After generating the weighing record, you must return 0 and then you can regenerate the new record;

If select twice weighing generated records, the first weighing data won't upload to the server, after second weighing the weighing records will generate automatically, and regard small value as the tare value automatically.

3.5 Timing view and setting

Under the normal weighing status, press "clock", enter t

Step	Operation	Display	Description
1	Press "clock" and enter "↵" confirm	【17.04.13】	Display date, press "↑" to modify time mode press "→" to move right; press "←" to move left; "↑" increase 1; press "↵" to save
2	Time selection "↵" confirm	【11:11:11】	Display time, press "↑" to modify time mode press "→" to move right; press "←" to move left; "↑" increase 1; press "↵" to save



3.6 Battery Using, Maintenance and Attention

The indicator has 6V/4Ah maintenance-free lead-acid battery inside, the full charged battery can be used about 30 hours in a row by one load cell without power saving mode. if with the power saving mode, work time can be extended for 1/3 or more. The battery will be charged automatically after plugging in adapter. The “charge” light will prompt according to battery charge status after power off. When the battery power is low, the light is red; when the battery is full charged, the light is green; If the indicator is power off, the charging time is about 24 hours.

The battery is a consumable part that is not within the range of “three guarantees”.

- ★ For prolong using lifetime of battery, the battery should be fully charged before using.
If you don't use battery for a long time, you should charge the battery for 24 hours for each 2 month.
- ★The battery must be handled carefully in carrying and installation, avoid strong vibration, shock or impact, prevent the internal short-circuit of battery electrodes, or the battery will be destroyed.

3.7 Under-Voltage Alarm and Automatic Shutdown

If using the battery only, when the battery power is low (voltage below about 5.5V) will have “low voltage” reminder, "less power" light will blink, and every minute display [Lo BAT] reminds user charge as soon as possible; when a serious shortage of battery power (voltage drops below about 5.3V), the indicator will shutdown automatically.

4.0 Error Notice

Display	Note
Err 01	Exceed the Zero Range
Err 02	Not Meet the Requirement of accumulation
Err 03	Weight Overloaded, or load cell poor connect
Err 04	Weight not stable during Calibration
Err 05	Load Calibration Error. Too low load or Calibration code too small or AD reverse
Err 06	Don't meet the tare requirement, the platform unstable or overloaded
Err 12	Clock parameter setting error
Err20	Unstable when generating weighing records
Err21	Not meet the condition of weighing record creating
Err24	Weighing Record store failed
Err25	The card reader is not connected successfully when weighing record stored
SAVE	Weighing record creating successfully
Err46	Abnormal state protection

Attached packing list

No.	Name	Description	Qty.	Mark
1	Indicator	XK3118T1-W1	1 pc	
2	Operation manual	XK3118T1-W1 operation manual	1 pc	
3	Debug manual	XK3118T1-W1 debug manual	1 pc	
4	Certificate	XK3118T1-W1 Certificate	1 pc	
5	Load cell cable	5 pin 16M aviation connector	1 pc	
6	Indicator Connector	XK3118T1-W1 connector	1 pc	
7	Pan Head Screw 1	M4×8	1 pc	
8	Pan Head Screw 2	M6×25	1 pc	
9	Hexagon Nuts	M6	1 pc	
10	Power supply protective tube	0.5A,Φ5mm×20mm	1 pc	
11	GB AC power line	Double head, with sheath, 3*0.75/1.5m	1 pc	