Digital Weighing Indicator
XK3190-A15E

User Manual

Content

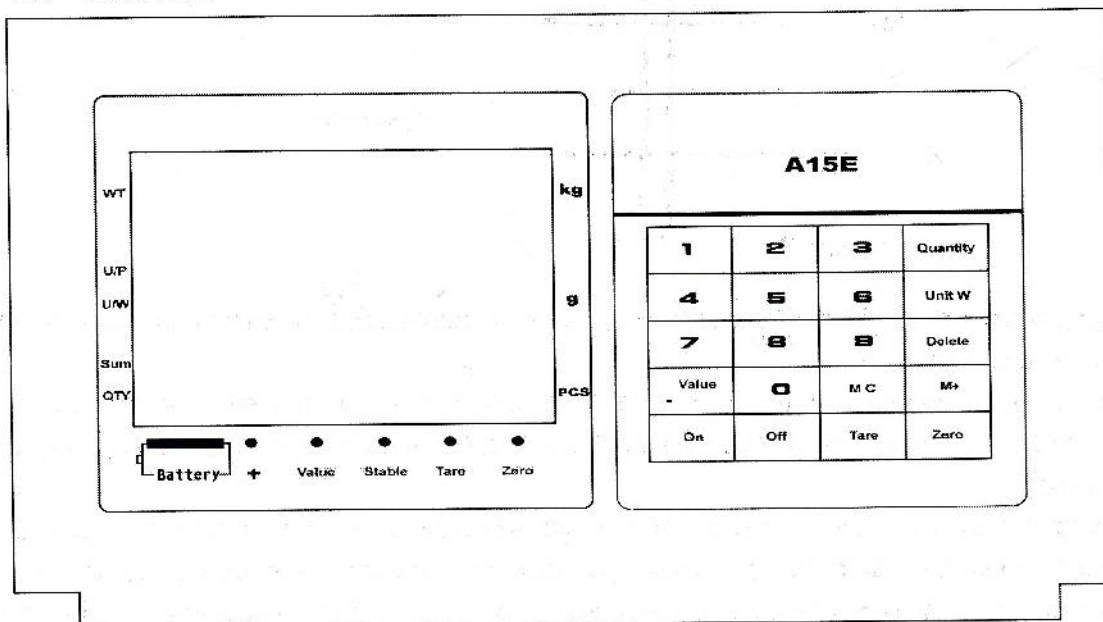# Chapter 1 Specifications

1. Model: XK3190-A15E

2. Accuracy: Class III , N=3000

3. Simulation Part

     3.1   Conversion Principle: $\Sigma-\Delta$ 10-20times/second

     3.2   Input Signal Range: -2mV~13mV

     3.3   Sample Rated: 10~15 times/sec

     3.4   Stimulating Voltage: DC 5V

4. Display

     4.1   Totally 18-bits LED, 0.56 inches character height including 6 bits for weight; 6 bits for unit price/unit weight; 6 bits for sum/quantity

     4.2   10 status indicating

5. Power supply: AC 187~242V;Frequency 49~50HZ

                         Built in rechargeable battery, 6V/4AH

6. Fuse: 500mA

7. Pre-heat time: 15~30 minutes

8. Operation Temp/RH: 0~40℃；≤85%RH

9. Storage/Transportation Tem: -25℃~55℃

10. Dimension: 260×190×170mm; Weight:2.20KG

11. Optional: one output connected to controlling units; RS232 interface, connected to PC or scoreboard.
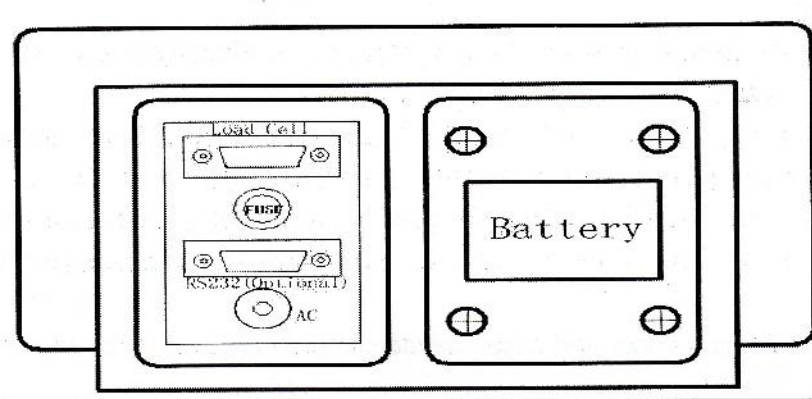
Chapter 2 Installation

2.1 FRONT AND BACK VIEW OF THE INDICATOR

1. Front and Back View of the indicator

1.1. Front View

	A15E			
1	2	3	Quantity
4	5	6	Unit W
7	8	9	Delete
Value -	0	M C	M+
On	Off	Tare	Zero

WT   kg
U/P
U/W   g
Sum
QTY   PCS
Battery + Value Stable Tare Zero

1.2. Back View

Load Cell
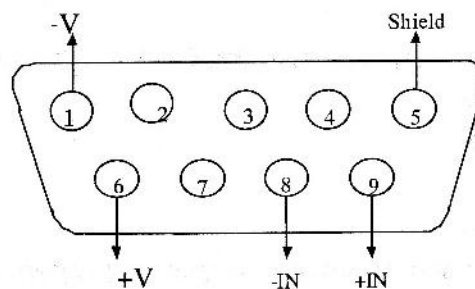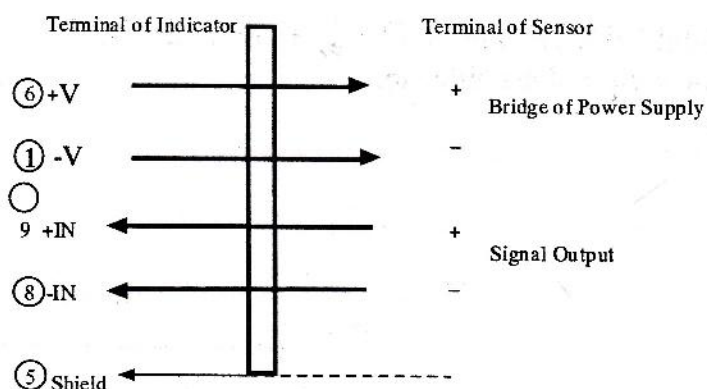Fuse
RS232 (Optional)   AC
Battery

2. Connecting the Load Cell to the Indicator

2.1. The 9-pin socket is used for the connection of the load cell, as shown below:

-V   Shield

(1) (2) (3) (4) (5)

(6) (7) (8) (9)

+V   -IN   +IN

2.2. The below graph clearly shows the connection of the load cell and the indicator

Terminal of Indicator   Terminal of Sensor

⑥ +V   +   Bridge of Power Supply

① -V   −

○
9 +IN   +   Signal Output

⑧ -IN   −

⑤ Shield

2.3. **Warning:** Connection of indicator and load cell must be reliable and the operation should be in power off statement.

2.4. **Warning:** After connection, the 9-pin socket must be fixed to ensure the security. No plugging or pulling the connection freely. And be sure the connection must be operated under power off statement.

2.5. **Warning:** As both the load cell and indicator are sensitive to the static electricity, anti-static measures must be taken. No soldering operation or other strong electricity operation is permitted. And anti-thunder measurements also should be taken to avoid any injury to the devices or the operators.

3. **Keypad(all valid in weighing status)**

3.1. Function of single key

A   [Zero]:Indicator will come to zero, the "Zero" light will be on; Press [Zero] again, it will come to the gross weight status, the "Zero" light will be off

B   [Tare]:The current weight value will be regarded as tare weight, the "Tare" light will be on.

C   [M+]:The current sum(quantity) will be added to the accumulated value. The u.p (u.w) display will show the accumulated number, the sum(quantity)display will show the accumulated value, the "M+" light will be on. When the value is over 999999,the sum(quantity) display will show "Over".

D   [MC]:The accumulated number and accumulated sum(quantity) will be cleared out. The "M+" light will be off.

E   [Delete]:Delete the current input u.p (u.w) value

F   [.Value]:In counting status, press this key, decimal point for the u.w can be entered into.

G   [Quantity]:Confirm key while setting parameter; Confirm key while setting quantity number in counting operation

H   [Unit W]:Confirm key while setting unit weight; Quit key while setting parameter

I   [On]:Turn on the indicator

J   [Off]:Turn off the indicator

K   [0~9]:Numeric key

3.2. Function of combined keys

A   [Quantity]+[.Value]:When the calibration jumper is plugged on, first press[Quantity],then press[.Value],it will enter into calibration status

B   [Quantity]+[0]:While in the weighing status, first press[Quantity],then press[0],it will enter into the inner code display statement. The "Code" light is on. Repeat the operation again, the "Code" light will be off.

C   [Quantity]+[MC]:While in the weighing status, first press[Quantity],then press[MC],it will enter into the parameter-setting statement.

D   [Quantity]+[Tare]:While in the counting status, first press[Quantity],then press[Tare],it will enter into the pre-tare statement.

4.   Communication(Optional)

4.1.   Definition of the communication interface

XK3190-A15E has the optional part of the RS232 interface and alarm signal output. The interface is shown below:
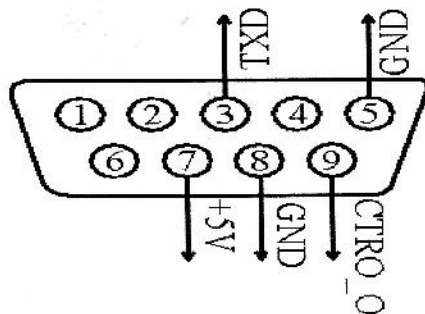
Pin 3 TXD is used for the output of RS232

Pin 5 GND is used for the ground connected

Pin 9 CTRO_O is used for the output of the alarm signal

4.2.   The communication method is continuous sending, the data format is:7 bits for weight value(low data in front of high data),1 bit for sign. For example:

The weight value is 200.0KG,the communication data will be:=0.002000

The weight value is -200.0KG,the communication data will be:=0.00200-

4.3.   The fixed value alarm output graph:

The output can be connected to the voice/light alarming system or other controlling unit, for details, please refer below:
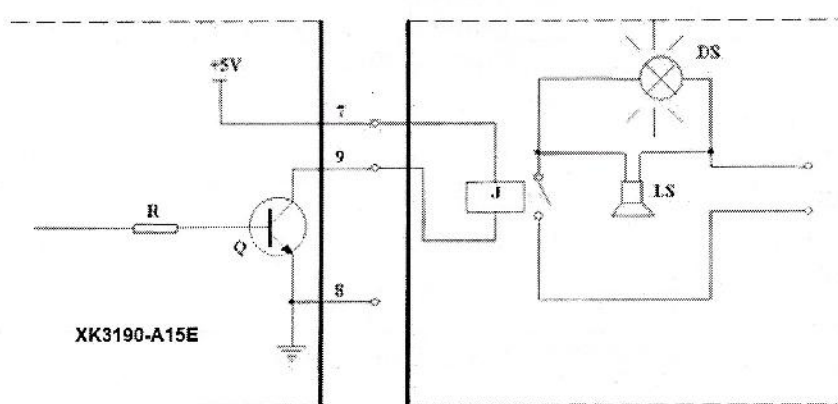
Attention: Assure the current from Pin 7 no more than 100mA

Chapter 3 Calibration

1. Connect load cell properly, then turn on the indicator, It will perform self-checking, then enter into the weighing statement. (15~30 minutes pre-heat is necessary to assure excellent performance)
2. Put the jumper inside the indicator at "On" location(the default location is just "On"),then calibrate as shown table:

Step	Operation	Display	Notes
1	[Quantity] + [.Value]	[PASS] [000000] [ ]	Enter the calibration, notes for inputting the password
2	Input the password by keypad Press[Quantity]for confirm	[PASS] [319015] [ ]	Password: 319015
3	Press[2],Press[Quantity]for confirm	[E] [002] [ ]	Enter division optional: 1/2/5/10/20/50/100/200,if the original division is accepted, press[Quantity]for confirm Example: 2
4	Press[2] press[Quantity]for confirm	[POS] [2] [ ]	Enter decimal number (0~4) Example: 2
5		[2Ero] [WXYZ] [.]	Set the Zero parameter（Detail in Note 2-1） W：Zero track speed X：Zero track range Y：manual zero setting range Z：auto zero setting range
6	Press[1][2][4] Press[Quantity]for confirm	[2Ero] [0124] [ ]	Example:0124
7		Display: [FLT] [XYZ] [ ]	Set the digital filter intensity（Detail in Note 2-2） X anti-vibration select Y stable range Z filter intensity，the high value it is, the more filter intensity and the lower response it is. The parameter 012 is strongly recommended
8	Press[0][1][2] Press[Quantity]for confirm	Display [FLT] [012] [ ]	Example:012
9	Press[6][0][0][0] press[Quantity]for confirm	Display [FULL] [006000] [******]	Input full range: 6000
10	After stability press[Quantity]for confirm	[noLoAd] [SurE] [******]	Zero- point calibration

11	After 5~10 seconds stability press[6][0][0][0] press[Quantity]for confirm	[AdLoAd1] [006000] [*****]	Linearity calibration ： Put certain load, the more close to the full range, the better it is. After 5~10 seconds stability, input the actual value of the loaded weight Example： 6000
12	Calibration over return to the weighing status	[******] [******] [******]	Note 2-3

Note 2-1,Pn parameter setting:

W	0	1	2	3
Zero track speed	0.4second	0.3second	0.2second	0.1second

X	0	1	2	3	4	5	6	7	8	9
Zero track range	No track	0.5e	1.0e	1.5e	2.0e	2.5e	3.0e	3.5e	4.0e	4.5e

Y	1	2	3	4	5
manual zero setting range	2%F.S	4%F.S	10%F.S	20%F.S	100%F.S

Z	1	2	3	4	5
auto zero setting range	2%F.S	4%F.S	10%F.S	20%F.S	100%F.S

Note 2-2:

X   anti-vibration select:0 stands for turn off;1 stands for turn on

Y   stable range: the parameter 0~3 corresponds to the range 0.5d、1.0d、1.5d、2.0d respectively

Z   filter intensity: the high value it is, the more filter intensity and the lower response it is.

Note 2-3

From step 1 to step 8,press[Unit W] will quit calibration

Chapter 4 Operating Instructions

1. Switching on(15~30 minutes pre-heat will assure excellent performance)

1.1   ress[ON],the indicator will perform self-checking.

1.2   After self-checking, the indicator will come into the status of price computing or counting.

Attention: For the first time the rechargeable battery is used, it must be fully charged.

2.   Manual zero-setting

When the gross weight in within the zero setting range, press [zero], indicator will perform zero. When tare is applied, pressing [zero] won't effect.

3.   Tare

When the value is stable, not negative, and without the zero range, press [Tare],indicator will perform tare, the "Tare" light will be on. Repress [Tare],the "Tare" light will be off.

4.   Parameter Setting

4.1.The parameter includes working method setting、background light setting、fixed value alarm setting、Baud rate setting. The operation step is shown below：

4.2.

Step	Operation	Display	Notes
1	In weighing status press[Quantity] + [MC] then come into parameter setting	[FUnC] [*] [ ]	Enter into the first step of parameter setting
2	Working method setting Press[0] press[Quantity]for confirm	[FunC] [*] [ ]	Working method set: 0 stands for counting 1 stands for price computing Example：0
3	Background light setting press[1] press[Quantity]for confirm	[bL] [*] [ ]	Economy of energy style setting:0~3 0 Disuse economy of energy style 1 While gross weight is zero, economy of energy style will be off after 15 seconds 2 While net weight is zero, economy of energy style will be off after 15 seconds 3 Disuse economy of energy style Example：1
4	Fixed value alarm setting press[0][1][1] press[Quantity]for confirm	[Lt] [XYZ] [ ]	Fixed value alarm setting： X while alarming, the buzzer speak or not Y Check the fixed value while stable or not Z Alarm method（Note 4-1） Example：011

5	Baud rate setting press[0] press[Quantity]for confirm	[bAUd] [*] [ ]	Baud rate: 0 600; 1 1200; 2 2400; 3 4800 4 9600; 5 19200
6	Return the weighing status	[******] [*****] [*****]	Then indicator will work according to the above set parameter.

Note 4-1

X:0 stands for the buzzer speak;1 stands for the buzzer doesn't speak

Y:0 stands for check the fixed value whether stable or not;1 stands for check the fixed value while it is stable

Z:0 stands for alarm while it is less than the low limit;1 stands for alarm while it is between the high limit and low limit;2 stands for alarm while it is more than the high limit;3 stands for alarm while it is less than the low limit or more than the high limit

5.   **Price computing operation (FunC=1)**

In the price computing status, the unit price can be entered by the keypad, then the sum display the value according to the current unit price. while the weight is negative, the sum will always be 0.While the weight is stable, accumulation operation can be valid.

The decimal point of the unit price and sum is fixed as two. The maximum unit price is :9999.99 and maximum sum is:9999.99.If the sum is over 9999.99,it will display "oUer".

6.   **Counting operation(FunC=0)**

Two methods of the counting operation: one is the unit weight is unknown, then get the unit weight by putting some quantities of the samples and putting the number; the other is the unit weight is known, then press[Unit W] to operate counting. Please see the following for detail:

6.1.   Unit weight unknown: Put some quantities of samples, then while the weight is stable, input the actual number of the samples, press[Quantity] for confirm. After the indicator calculate the unit weight, then counting operation can be performed.

6.2.   Unit weight known: Input the unit weight of the to be counted sample, press[Unit W] for confirm, then counting operation can be performed.

Notes:

A   The unit of the unit weight is g. And the decimal point of the unit weight is decided by that of the weight.

B   For 6.1,the advised sample number is over 50.

C   If the weight is negative, the indicator won't count. If the unit weight is less than 0.25 division, the indicator will display "L" to show the unit weight isn't enough. If the unit weight calculated by "Quantity" is less than 0.05 division, the indicator will display "Err 10" to show sample not enough.

3. Accumulation(M+) and Accumulation clear(MC)

The operation is shown as below:

Step	Operation	Display	Notes
1	When there is value of sum/quantity press[M+]	[******] [Add ***] [*****]	Operation When the weight is unchanged, Unit P/Unit W displays the accumulated number, sum/quantity display the accumulated result, the "+" light is on
2	Return to the weighing status by few seconds display, one M+ operation is over	[******] [*****] [*****]	Note 7-1
3	Manually zero the indicator perform another price computing or counting	[******] [*****] [*****]	After weight is zero or below, or perform tare operation, load again for a second price computing/quantity
4	When there is value of sum/quantity, press[M+]	[******] [Add ***] [*****]	A second M+
......	More operation of M+	......	......
5	Manually zero the indicator, perform another price computing or counting, press[M+]	[******] [Add ***] [*****]	Display: The weight is unchanged, Unit P/Unit W displays the accumulated number, sum/quantity display the accumulated result
6	Press[MC]	Data display unchanged	MC: the accumulated number will be zero, the accumulate result will be zero, the "+" light be off

Note 7-1:

The maximum accumulated value is 9999999 while the accumulated number is within limit; The maximum accumulated number is 255 while the accumulated number is within limit. It will display "oF" if the number or value is out of the limit.

4. Alarm for fixed value counting

While in the counting status, the indicator has the function of low/high limit fixed value alarm. First, set the fixed value, please refer below:

Step	Operation	Display	Notes
1	While in counting status press[Value] to set the low limit	[LLLLLLL] [*****] [ ]	Low limit setting
2	Press[1][0][0][0] Then press[Quantity]for confirm, direct to step 4	[LLLLLLL] [*****] [ ]	Input the low limit, press[Value]for confirm, come to step 3,or press[Quantity] directly to step 4. Note 8-1 Example: 1000

3	High limit setting : press[2][0][0][0] press[Quantity] for confirm	[HHHHHHH] [*****] [ ]	High limit setting：input the high limit, then press[Quantity] for confirm Example：2000
4	Return to the weighing status	[*****] [*****] [*****]	

Note 8-1:

If the low limit is 0,any value the high limit it is, the alarm function will be forbidden

1. Pre-tare

Pre-tare operation is valid in the counting status. Please operate as following:
Press[Quantity]+[Tare] to enter into the pre-tare operation, the indicator display"[PrESEt] [*****][   ]",then input the pre-tare value, press[Quantity] for confirm, the indicator will return to the counting status. The weight will display the net value concerned to the pre-tare value, the "Tare" light is on.

2. Code

For view the inner code, please operate as following: press[Quantity]+[0] while in the weighing status to display the inner code, then the "Code" light is on. Press [Quantity]+[0] again to quit. Then inner code and outer division rate is 20:1,that is to say one division corresponds to 20 inner codes.(Note: The scale enter the status of showing inner code when the last indicator light in weighing windows. Usually inner code is used for observing and analyzing the measuring error and have no unit)

Chapter 5 Errors Information

1. **For details of the error information, please refer to the following table:**

Error	Notes	Solution
[Err 01] [******] [******]	The analog signal is seriously negative	Check the connection of the load cell and indicator
[Err 02] [******] [******]	The analog signal is too high or error from load cell	Check the connection of the load cell and indicator
[Err 03] [******] [******]	The weight is overloaded	1. If the indicator hasn't been calibrated, calibrate it. 2. Decrease the weight so that it is within the full range 3. Re-set the full range
[Err 10] [******] [******]	The unit weight isn't enough	1. Re-select the load cell with high precision 2. Increase the samples.
[Err 13] [******] [******]	Parameter is wrongly set	Re-set the parameter
[Err 11] [******] [******]	The loaded analog signal is too weak while calibration	Decrease the full range or select load cell with more range sensitivity
[Err 15] [******] [******]	The full range too small	Full range should be more than 100
[Err 23] [******] [******]	Memory defective	Check the memory on the main board or the circuit to see whether there is shorted or opened, otherwise, change the memory

Chapter 6 Guide for battery

1. When AC 220 V is on, then the battery will charge automatically.
2. Attention: Red wire stands for positive while black wire stands for negative.
3. The first time charge for the battery. Please take more than 24 hours to assure the security and stability of the battery.

Chapter 7 Maintenance

7.1 To guarantee indicator clarity and using life, the indicator shouldn't be placed directly under sunshine and should be set in the plain space.

7.2 The indicator can't be placed into the place where the dust pollution and vibration are serious.

7.3 Load cell should connect with indicator reliably, and the system should be well connected into ground. The indicator must be protected from high electrical field and high magnetic field.

- In order to protect the operator, indicator and relevant device, you should mount lightning rod in thunderstorm frequently happening area.
- Load cell and indicator are static sensitive device, you must adopt anti static measures.

7.4 It is strictly forbidden to clean the case of indicator with intensive solvents (for example: benzene and nitro oils)

7.5 Liquid and conducting particle should not be poured into the indicator, otherwise the electronic components will be damaged and electric shock is likely to happen.

7.6 You should cut off power supply of indicator and relevant device before you pull-in and out the connecting line of indicator and external device.

- You must cut off power supply of indicator, before pulling out connecting line of load cell.

7.7 During operation, if trouble occurs, operator must pull off the power supply plug immediately, and user should return this indicator to our company for repair. Non-weighing manufacturer should not repair it, or by yourself, otherwise further destruction may happen.

7.8 The storage is not granted the free repair guarantee, because it is easily exhausted products.

- In order to prolong using life, please charge the cell fully before using it. If you don't use the indicator for a long time, you must charge the cell every two month and for eight hours/each charging time.
- Moving or installation must be carefully taken and must avoid strong vibration, impact and bump in order to protect the storage cell from being damaged.

7.9 From invoice date, the indicator has a one-year free repair period. If any non-artificially obstacle about the indicator happens under correct using conditions within this period, the user is allowed to send the product with its guarantee card (of the correct number) back to our corporation for free repair. The indicator shouldn't be taken apart, otherwise free guarantee will be cancelled.