XK3190- A7

Weighing indicator

USER MANUAL

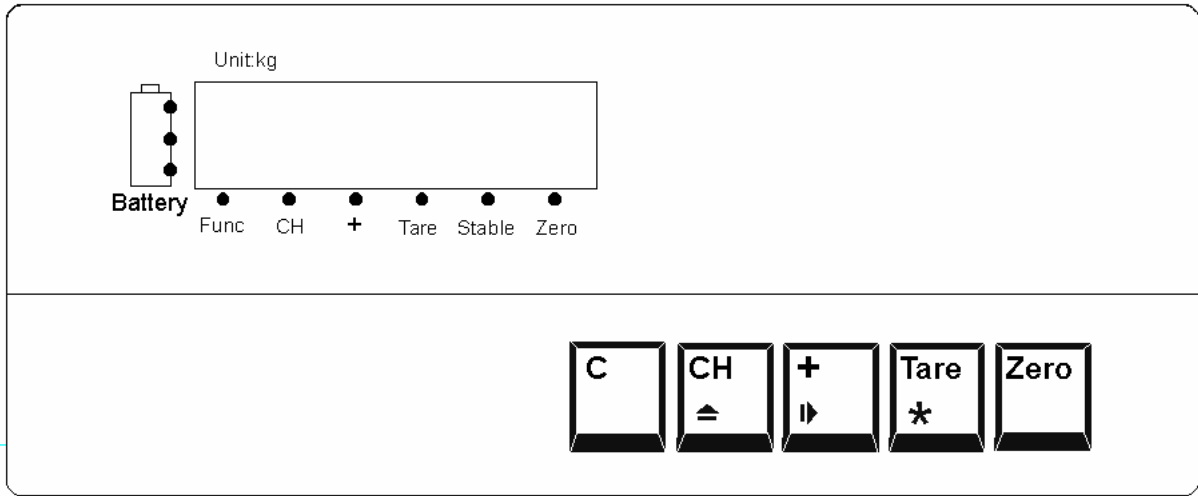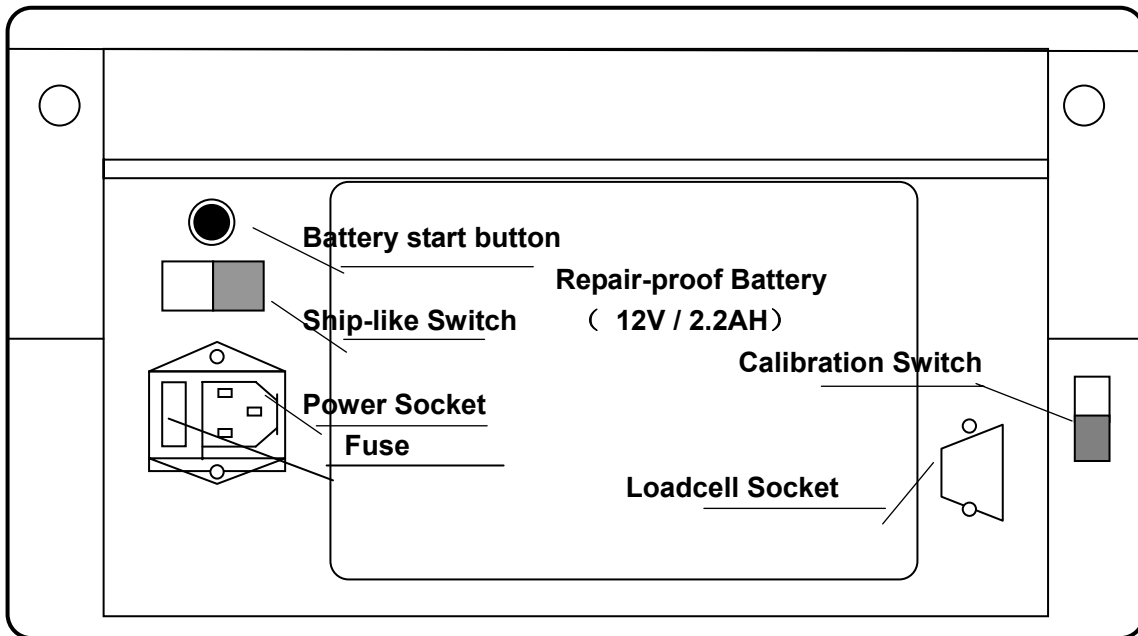# Directory

Chapter 1 Main Specification

◆**Model: A7**

◆**Accuracy Grade: Ⅲ Class**

◆**A/D converting theory and sampling rate: double integration, 10-15 times/time**

◆**Maximum inner codes: 500000 codes/time**

◆**Non-linearity: ≤0.01% F.S.**

◆**Stimulating voltage for the loadcell: DC +8V, the maximum input signal is about 16 mV**

◆**Loadcell quantity: 1 load cell, 4 pins, (no long distance compensation)**

◆**Temperature coefficient on F.S: ≤8 PPM/C**

◆**Display: 6-bit LED, 0.56 inches in height, 6 status indicating lights, 3 battery charges indicating lights**

◆**Keyboard: 5 slight-touch keys**

◆**Power supply: (1) AC 187-242 V, 50 HZ**

          (2) Built-in chargable battery 6V, 2.8 AH (2 pcs in serial connection)

◆**Operating temperature and humidity: 0-40C, ≤90% RH**

◆**Storage temperature: -20--+50C**

◆**Fuse: 500mA**

◆**External dimension: 265× 190× 170mm**

◆**weight: 1.53kg (not including the battery)**

Chapter 2 Installation

2.1 Front and back view of the indicator

Unit:kg

Battery
Func CH + Tare Stable Zero

C   CH ▲   + ‖▶   Tare *   Zero

Front View of the Indicator

Battery start button

Repair-proof Battery
（ 12V / 2.2AH）

Ship-like Switch

Calibration Switch

Power Socket

Fuse

Loadcell Socket

Back View of the Ibdicator

2.2 Connecting loadcell to indicator
Please connects the line as following graphs

Connection of the load cell
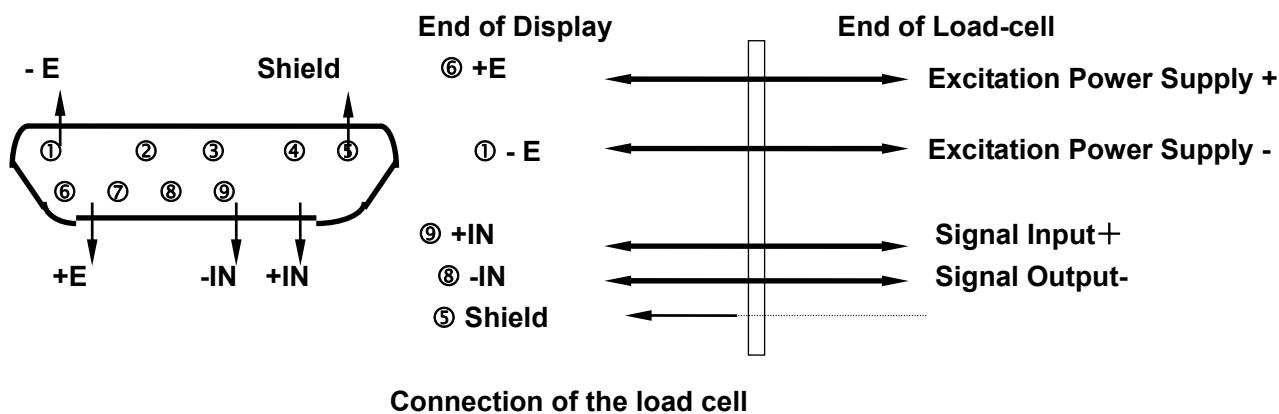
◆You must cut off the power when connecting the loadcell, and the connection must be reliable.
◆After connecting the loadcell, you should fasten the plug with screw-driver.
◆Loadcell and indicator are static sensitive devices, you must adopt anti-static measures during operation. You must mount the lightening rod in thunderstormm frequently happening area.

2.3. Keyboard Functions:

[Zero]:
Pushing this key, you can perform zero-setting, and the "Zero" light is on, otherwise it does not work.

[Tare]:
Pushing this key, you can take the currently displayed weight as tare, "Tare" light is on.

[+] ：
Pushing this key will add the presently loaded weight into accumulation memory, '+' light is on, it will display the total accumulated weight for 2 seconds, then displays total accumulated times for 2 seconds. '+' light is off, it returns to weighing mode.

[CH]:
This key is used during calibration.

[C]:
Pushing this key, the indicator will display [C-Add] for 2 seconds, and will delete the accumulated weights, then returns to Weighing Mode.

[C] [+]:
Pushing both keys at the same time, the indicator will display the inner codes, the maximum inner code is 20 times of the selected division counts. Pushing both keys once more, the indicator will return to Weighing Mode.

Chapter 3   Calibration and Adjustment

3.1 Turning on the power, and connecting the loadcell correctly, the indicator will perform self-checking, then turns into working mode (After turning on the indicator for more than 10 minutes, you can make the calibration).

3.2 Turning on the calibration switch on the back of the indicator, the indicator will go into the calibration mode, and display [n,****](**** is the previously set number), then you can set the calibration coefficients.

Step 1: choose the counts: displaying [n, **]**

Pushing [CH] key,   **** will be 2000, 2500, 3000, 4000, 5000, 6000, 7500 optional, choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change the counts, you can push [C] key to go to the next step.

Step 2: choose the intervals: displaying [E, *]

Pushing [CH] key, * will be 1, 2, 5, 10, 20, 50, choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 3: choose decimal position: displaying [d, 0.0]

Pushing [CH] key, the display after the letter d will be 0, 0.0, 0.00, 0.000. 0.0000, choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 4: F.S. display: [*.**]**

F.S. =counts × interval, for example: 3000 × 5 =15000, setting the decimal position, 150.00: you will get the Full Scale.

 Pushing [C] key to go to the next step.

Step 5: confirm the zero-tracking range: displaying [02 *.*]

Pushing [CH] key, *.* will be 0.5, 1.0, 2.0: representing respectively the range: 0.5e, 1.0e, 2.0e, choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 6: zero range at turning on: displaying [02, *]**

Pushing [CH] key, *** will be 0.10, 0.20, 1.00. It means that the loaded weight at turning on is within 10%FS, 20%FS, 100%FS, the indicator can set zero respectively. Otherwise it will take the previously stored zero position as the zero position at turning on. choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 7: Select zero adjusting rate: displaying [03 *.*]

Push [CH] key,   *.* will be 0.1, 0.2, 0.3: representing respectively the zero adjusting rate 0.1e, 0.2e, 0.3e. Choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 8: Keeping the zero position or not: displaying [04   *]

Push [CH] key, * will be 0 or 1:   0 means not storing zero position, 1 means storing the zero position. If the difference between the loaded weight at turning on and the stored zero position is within 10e, the indicator will set zero at turning on, otherwise it will take the stored zero position as the turning on zero position. Choosing one of them, confirming by [Tare] key, then it

will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 9: Selecting manual zero-setting range: displaying [05 .]**

Push [CH] key, .** will be 0.02, 0.04, 0.08, 1.00: representing respectively 2%, 4%, 8%, 100% F.S. Choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 10: Selecting the filter constant, displaying [Lb *]

Push [CH] key, * will be 1 or 2, representing respectively the filter constant is 8 or 16. The bigger this number is, the slower the renewing speed is. Choosing one of them, confirming by [Tare] key, then it will go to the next step. If you need not to change it, you can push [C] key to go to the next step.

Step 11: Set the zero position

Displaying [CAL] for 2 seconds, then displaying [no Load], checking if the scale is empty, waiting for about 10 seconds till the scale returning to zero stably, pushing [Tare] to confirm, then you can go to the next step.

Step 12: Set the Full Scale (It is better that the loaded weight is near the F.S.):

The indicator will display [000.000], the first bit from the left will twinkle, pushing [+] will move the twinkled bit from left to right, pushing [CH] will increase 1 on the twinkled bit, inputing the actual loaded weight by hand. It is important to wait for 10-20 seconds till the displayed digits are stable (If the loaded weight is too small, the indicator will display [Err 08] for 3 seconds). The bigger the filter constant is, the longer you should wait. Pushing [Tare] to confirm, [END] appears finally. If you do not need this step, you can push [C].

Step 13: Turning off the calibration switch (move to down position), the calibration process will be finished.

3.3 Calibration steps (listing):

Step	Operation	Displaying	Explanation
1			Turning on the calibration switch at the back of indicator (move to upper position)
2	Pushing [CH] Pushing[Tare]	[n ****] [n 3000]	Selecting counts: 2000, 2500, 3000, 4000, 5000, 6000, 7500 optional by pushing [CH] key. (When you choose counts =7500, and E=2, pushing [CH] ,the CH light below the window is on at this time, you will get 15000 counts, ie, n'=15000, E'=1) Choosing one of them, for example: 3000 pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed, pushing [C] Will get into next step.
3	Pushing [CH]	[E **]	Selecting the interval:

	Pushing[Tare]	[E 5]	1, 2, 5, 10, 20, 50 optional by pushing [CH]. For example: 5 pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed, pushing [C] Will get into next step.
4	Pushing [CH] Pushing[Tare]	[d 0.0] [dc 0.00]	Selecting the decimal position: 0, 0.0, 0.00, 0.000, 0.0000 optional by pushing [C]. For example: 2 bits after decimal position (0.00) pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed, pushing [C] Will get into next step.
5	Pushing [C]	[***.**] [150.00]	Full Scale display: After you select n, E, and decimal position, you can get the F.S. If you confirm the F.S. you can go to the next step by pushing [C]. If you do not confirm the F.S, you can turn off the calibration switch and turn on it again, and make the calibration again as above mentioned.
6	Pushing [CH] Pushing[Tare]	[01 **] [01 0.5]	Selecting the zero tracking range: 0.5, 1.0, 2.0 optional by pushing [CH], representing respectively 0.5e, 1e, 2e. Choosing one of them, pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed, pushing [C] Will get into next step.
7	Pushing [CH] Pushing[Tare]	[02 *.**] [02 0.20]	Zero setting range at turning on: 0.10, 0.20, 1.00 optional by pushing [CH]: meaning repectively that when the loaded weight at turning on is within 10%, 20%, 100% F.S, the indicator will set zero. Otherwise it will take the previously stored zero position as the zero position at turning on. Choosing one of them, pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed,

			pushing [C] Will get into next step.
8	Pushing [CH] Pushing[Tare]	[03 *.*] [03 0.3]	Choosing zero setting rate: 0.1, 0.2, 0.3 optional by pushing [CH]: meaning respectively the zero setting rate is 0.1e, 0.2e, 0.3e. Choosing one of them, pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed, pushing [C] Will get into next step.

9	Pushing [CH] Pushing[Tare]	[04 *] [04 0]	Storing zero position: 0 or 1 optional by pushing [CH]. 0 means not storing zero position. 1 means storing zero position. At turning on, if the difference between the loaded weight and the stored zero position is within 10e, the indicator will set zero at turning on. Otherwise it will take the stored zero position as the zero position at turning on. Choosing one of them, pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed, pushing [C] will get into next step.
10	Pushing [CH] Pushing[Tare]	[05 *.**] [05 0.04]	Selecting the manual zero setting range: 0.02, 0.04, 0.08, 1.00 optional by pushing [CH]; meaning respectively 2%, 4%, 8%, 100% of F.S. Choosing one of them, pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed, pushing [C] Will get into next step.
11	Pushing [CH] Pushing[Tare]	[Lb *] [Lb 2]	Selecting the filter constant: 1 or 2 optional by pushing [CH]. 1: means the filter constant is 8. 2: means the filter constant is 16. The bigger the filter constant is, the slower the renewing speed is. Choosing one of them, pushing [Tare] to confirm, then it will return to next step. If this number needs not to be changed,

			pushing [C] Will get into next step.
12	Pushing[Tare]	[CAL] [no Load]	Deciding the zero position: Displaying [CAL] for 2 seconds, then it will display [no load] automatically, checking if the scale is empty,waiting for about 10 seconds till the scale returning to zero stably, pushing [Tare] to confirm, then you can go to the next step. If this number needs not to be changed, pushing [C] will get into next step.

13	Pushing [+]
	T
	Pushing [CH]
	
	Pushing[Tare]
		[000.000]
		
		[***.**]
		[END]
			Setting the F.S:
			It is better that the loaded weight is near the F.S.
			  The indicator will display [000.000], the first bit from the left will twinkle, pushing [+] will move the twinkled bit from left to right, pushing [CH] will increase 1 on the twinkled bit, inputing the actual loaded weight by hand. It is important to wait for 10-20 seconds till the displayed digits are stable (If the loaded weight is too small, the indicator will display [Err 08] for 3 seconds). The bigger the filter constant is, the longer you should wait. Pushing [Tare] to confirm, [END] appears finally.
			    If you do not need this step, you can push [C].

14			Turning off the calibration switch (move to low position), the calibration is over.

Note:

You can turn off the calibration switch and quit the paramater setting process at any time during the calibration process.

In the calibration process above mentioned, for the step1-step 10, pushing [+] will go directly to step 11, ie setting the zero position. If you do not calibrate, pushing   [+] will finish the calibration.

3.4 Selecting the loadcell:

3.4.1 Loadcell sensitivity: 2mV/V.

3.4.2 Actual load should be 60%-80% of the rated load capacity.

3.4.3 Loadcell resistance: 350 Ω

3.4.4 Loadcell zero position: ±1% F.S.

3.4.5 For example:　platform scale 60 kgs: loadcell 100Kgf

platform scale 100 kgs: loadcell 150Kgf

platform scale 150 kgs: loadcell 250Kgf

platform scale 300 kgs: loadcell 500Kgf

TGT-500kg mechanical-electrical platform scale: loadcell 60 Kgf

TGT-1000kg mechanical-electrical platform scale: loadcell 120 Kgf

Chapter 4　Operation

4.1 Turning on

4.1.1 Turning on the AC power, the indicator will check its strokes automatically, then it enters into the weighing mode. If using the chargable battery, you should push the start button first, then the indicator will check its strokes automatically.

◆f the battery has not been used before, you should charge the battery fully before you use the battery.

4.1.2 At starting, if the indicator deviates from zero point, but still within the zero setting range, the indicator will set zero automatically, zero light is on; If it is out of the zero setting range, you should adjust the zero position again, or calibrate it again.

4.2 Manual zero setting:

4.2.1 Pushing [Zero], the indicator will go to zero, and the zero light is on.

4.2.2 If displayed weight deviates from zero point, but within the zero range, you can use [Zero] to set zero, otherwise　[Zero] will not work.

4.2.3 You are allowed to set zero only when the stable light is on.

4.3 Tare:

In the weighing mode , if the displayed weight is positive and stable, you can push [Tare] to reduce the displayed weight as tare, the Tare light is on.

4.4 Accumulating and deleting:

In the weighing mode , pushing [+] , the indicator will display the total accumulated weight (including the decimal position).

4.5 Insufficient voltage indication:

When the battery voltage is low, the low battery light is on, the display at the window will twinkle. In this case you should turn the ship-like switch to 'o' to protect the battery. Continual using will result in the further decrease in battery voltage, the indicator will cut off the battery.

4.6 Turning off

You should cut off the AC power line after you turn off the indicator.

In battery working mode, you can turn off the ship-like switch if you want to stop working.

Chapter 5　Error Indication

| ------------ | loaded weight is over F.S. |

| Err 03 | inputing A/D number exceeds maximum number.Checking the loadcell capacity and connection. |

| Err 05 | inputing A/D number is too small, checking the loadcell connection. |

| Err 08 | loaded weight at calibration process is too small (not near the F.S). |

| Err 11 | accumulated weight > 999999, or accumulated time > 99. reserving the last unexceeded value. |

Chapter 6　Chargable Battery

6.1 Turning on the AC power, the indicator will charge the battery automatically. So if you do not use the battery frequently, you should take the battery out. If you think the automatic charging time from AC power is too slow, you can buy from our company the specially designed charger, which can charge the battery from outside indicator. Note: red end is   +, black end is -. Wrong connection will destroy the indicator.

Note: the built- in battery should be fully charged before it is used for the first time.

6.2 Only when you turn off the AC power, and push start key, the battery works, and the 3 battery lights will be on. The indicator will cut off the battery when only one battery is on., at this time you should charge the battery at once.

6.3 When you use the battery first time, you should charge the battery for 20 hours in order to prevent the low voltage resulted from the self leakage of the battery.

6.4 If you do not use the battery for a long time, you should charge the battery for 10-12 hours for each 2 month to prolong the using life of the battery.

6.5 The battery is the easily exhausted products, and is not granted the free guarantee.

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 the indicator , before you pull out connecting line of the 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.