SUMACHAY LIFTS

SELR20-S Weighing Scale Manual

Scale for reference only

X K 3 1 9 0 − A33E

Content

XK3190－A33E

Chapter 1 Main parameters

1. Model：   XK3190－A33E weighing indicator

2. Accuracy：   Third Degree, n=3000

3. Sampling speed：   10 times /second

4. Load cell sensitivity range.：   1.5～3mV / V

5. Division value：   1/2/5/10/20/50 options

6. Display：   Six digits LED，twelve indication light

7. Scoreboard interface: current loop signal, transmission distance≤2000M

8. Communication interface：   RS232C；Baud rate 1200/2400/4800/9600 option

9. Power：   DC 16.8V（(Note: please use the attached charger, do not buy it by yourself)

10. Built in battery：   14．8V2．2Ah   Lithium battery pack

11. Operational temperature：0℃～40℃

12 Storage and transportation temperature.：-25℃～55℃

13. Humidity：   ≤85%RH

Indicator features：

1. High precision A / D conversion, readability up to 1 / 30000;

2. It is convenient to call the internal code to display and replace the tolerance of sensory weight observation and analysis;

3. Weighing and counting function (single piece weight has power-off protection);

4. Standard RS232 communication port, optional baud rate and communication mode;

5. Standard 20mA current loop large screen communication port;

6. Standard USB communication port with optional communication mode;

7. Select 2.0 Bluetooth module;

Chapter 2 Appearance and connection

1. Schematic diagram of indicator display and keyboard function
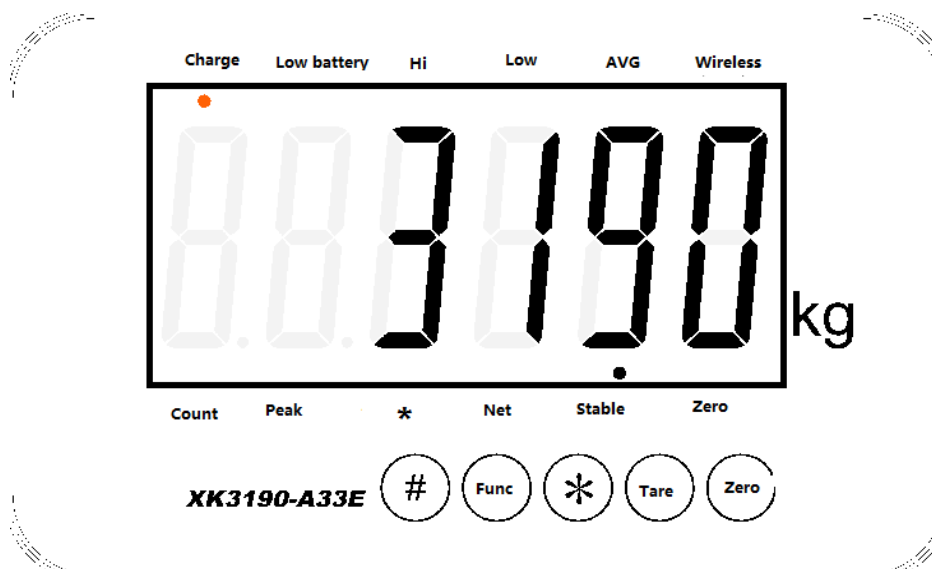
（Fig 2-1） Schematic diagram of display buttons on the front panel of the indicator
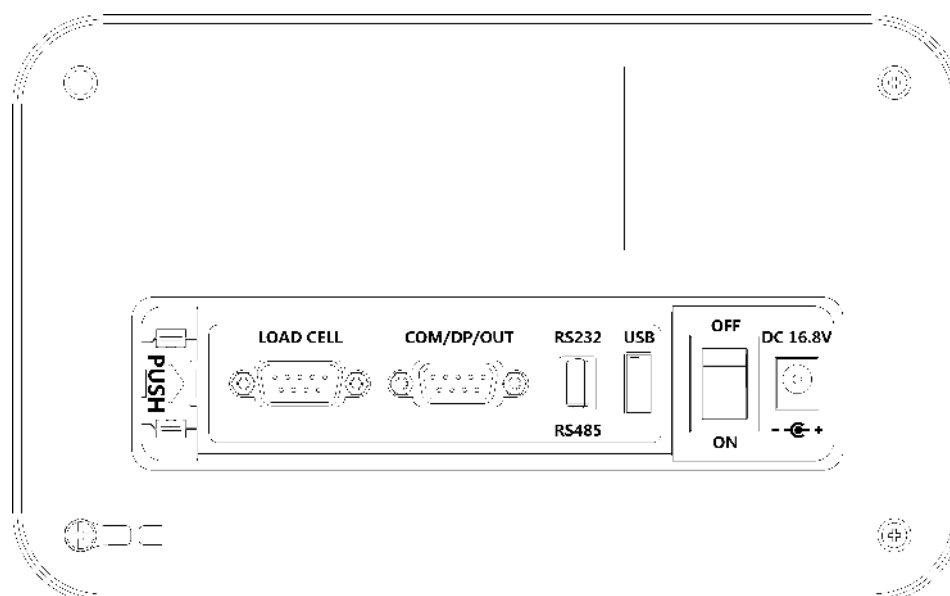
（Fig 2-2）Schematic diagram of rear cover plate interface

2. Keyboard function

1) 【 # 】**:** Press this key to enter the calibration mode during the self-test

2) 【**Fun**】： In the weighing status, press this key for more than 3 seconds to enter the user setting mode.

3) 【 * 】： In the weighing status, press this key to accumulate the current weight

4) 【**Tare** 】： In the weighing status, press this key to remove tare.

5) 【 **Zero** 】： In the weighing state, press this key to display the weight as zero.

3. Connection between the load cell and indicator

1) The load cell is connected with a 9-core plug socket. The definition of each pin is shown in Figure 2-3.

2.) Please use six core shielded cable to ensure good metering performance.

If there are only four core shielded cables on site, short circuit 1 pin and 2 pin, short 6 pin and 7 pin at the 9-core load cell connector.

▲！ **The connection between the load cell and the indicator must be reliable, and the shielding wire of the load cell must be reliably grounded. The connecting line is not allowed to be plugged in and out when the indicator is powered on to prevent the indicator or load cell from being damaged by static electricity.**

▲！ **Sensors and instruments are electrostatic sensitive equipment. In use, anti-static measures must be taken. It is strictly forbidden to carry out welding operation or other strong current operation on the scale platform. In thunderstorm season, reliable lightning protection measures must be implemented to prevent the damage of sensors and instruments caused by lightning strike, so as to ensure the personal safety of operators and the safe operation of weighing equipment and related**
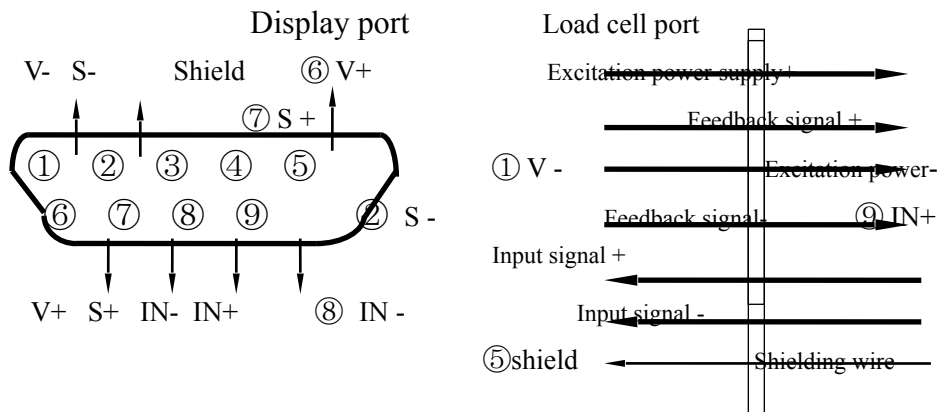
(Figure 2-3) Load cell connection diagram

If four core shielded cable is used, short connect V-and s-, v+ and s+. If s- and s+ are not connected, the indicator indication may drift.

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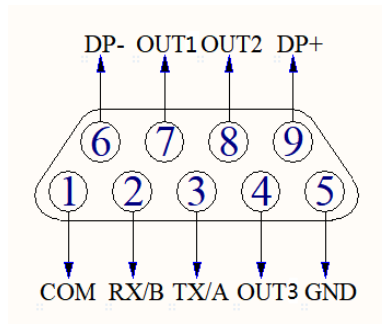
GND: communication ground   Rx / B: indicator 232 / 485
communication receiving end TX / A: indicator 232 / 485 communication sending end
DP +: scoreboard positive; DP -: scoreboard negative; OUT1: output port 1, lower than the lower limit value, there is a signal when it is greater than 0
OUT2: output port 2, there is a signal when it is qualified, OUT3: output port 3, there is a signal when it is greater than the upper limit value
 COM: output common terminal
            (Figure 2-4) schematic diagram of indicator communication, scoreboard and output

4. Connection between large screen and indicator (optional function)

The scoreboard signal is 20mA constant current loop signal, which is serial output with binary code and baud rate is 600. Please refer to figure 2-4 for the connection method between indicator and scoreboard.

> The connection between the output lead of the indicator and the scoreboard display must be accurate and correct. If the connection is incorrect, it will damage the output port of the indictor or the input port of the scoreboard display, or even seriously damage the indicator and the scoreboard display. It is required to use the special connecting wire.

5. Connection between serial communication interface and indicator

> The connection between the output lead of communication interface and computer must be accurate. If the connection is incorrect, the output port of indicator or computer will be damaged.

Xk3190-A33E indicator has RS232 serial communication interface, which can communicate with computer. Please refer to figure 2-4 for the connection method between indicator and computer.

RS232C is used as communication interface, and all data are ASCII. The data format is 1 start bit, 8 data bits, 1 stop bit, and no check. The communication modes are as follows:

Mode 1: P6= 2: continuous transmission

The data transmitted is the weight (gross weight, net weight or tare weight, determined by P5 parameter).
 G.W format： ww000.000kg or ww000.000lb

 N.W format： wn000.000kg or wn000.000lb

  T.W format(Tare weight)： wt000.000kg or wt000.000lb

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Model 2 P6=3： Continuous transmission after stabilization
The database sent is the same as mode one.

Model 3 P6=7： Continuous transmission (A7 format)

Data format: = < weight data (including decimal point) >: six digit signed weight data including decimal point, ASCII code.

Weight data are the lowest in the front, high and symbol bit in the last. The negative sign bit is sent as "-" and the positive sign bit is sent as 0.

For example: if the weight of the current meter is 500.00kg, the serial output data is: = 00.0050.

6. Connection between USB interface and indicator

The communication mode and protocol are as follows:

(A1 +, C8 continuous communication mode) example: (- 10.0)

First byte	Start byte	02
Second byte	Sign bit	2D
Third byte	Weight data first	30
Fourth byte	Weight data second place	30
Fifth byte	Weight data third place	31
Sixth byte	Weight data fourth place	30
Seventh byte	Weight data fifth place	30
Eighth byte	Weight data sixth place	30
Ninth byte	Decimal places	31
The cross	XOR check height 4 bits	31
Eleventh byte	XOR check low 4 bits	45
Twelfth byte	End bytes	03

XOR check ： All data XOR starting from the second byte, the 10th byte is the high four bit ASCII code, and the 11th byte is the low four bit ASCII code. If the data is negative, the second byte is (2D [hex])

Note: USB connected computer needs to install relevant drivers. Please download the driver and installation instructions from Yaohua official website

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Chapter 3 Operating instructions

1. Power on and automatic zero setting

1) After the power is turned on, the indicator carries out self-test of "000000 ~ 9999", and enters the weighing state after initialization.

2) When starting up, if the weight of the scale platform deviates from the zero point, but is still within the set range of zero setting, the indicator will automatically set to zero; if it is within the set range of zero setting, the indicator will automatically set to zero.

If it is beyond the zero range, the indicator will alarm "err 3", indicating that it is beyond the zero range. At this time, it is necessary to remove the weight on the scale platform or adjust the zero position of the scale body, or recalibrate and set it.

2. Manual zero setting (semi-automatic zero setting)

1) In weighing status, if there is deviation when empty scale, press [zero] key to return the indicator to zero.

2) When the display value deviates from zero but is still within the zero setting range, press the [zero] key that can work out, Otherwise, press the [zero] key that can't work out. (At that time, the calibration must be re-set up or the zero parameter must be re-set up).

3) Only when the stability light is on, the zero setting operation can be carried out.

3. Tare function

In the weighing status, when the displayed weight is positive and stable, press the [Tare] key to deduct the current weight as tare weight. At this time, the indicator shows that the net weight is 0 and the net weight light is on.

4. **Peak value holding, average value and counting function:** select enable through function setting P2. After selection, you can start or stop the selection function through [#]. For example:

P2 select 2, and the average value light is on. At this time, the indicator will judge automatically. When it is relatively stable, the indicator will start to calculate and display the average value, and the average value will be displayed after flashing. After the current weight returns to zero, the average value will be cancelled, and the next average value can be weighed;

P2 select 3, the peak light is on, the indicator is in the automatic peak keeping working state, and the maximum weighing data can be maintained. After the weight returns to zero, the holding data is released.

P2 select 4, counting scale mode, press [#] key, weighing status press [#] to display "count", press

[#] to display "c00000"; after placing the sample, press [zero] and [Tare] keys to input its quantity, and press [#] to confirm; after the meter automatically calculates the unit weight, the "CN in" counting indicator light will be on, and enter the counting status; if the input sample quantity is 0, The instrument prompts "err 4" and calls the last stored unit weight as the calculation benchmark; In the counting status, press [#] to display "CN end", and the indicator will exit the counting state

5. Accumulative function:

1）Manual accumulation: under the normal weighing status, when the measured data is greater than or equal to 20 divisions and the data is stable, press the [*] key, and the indicator will execute the function of "manual accumulation of measured value". At this time, the indicator will first display the accumulated total data (in two steps): [total =] (prompt that the content displayed below is the accumulated total data) display about 1 second, then display the accumulated data [* *], and then display the total accumulated times (in two steps): [n =] (prompt that the content displayed below is the times) display about 1 second, then display the accumulated times [*], and then the accumulated indicator light [*] is on.

2) In the case of empty scale, press the [*] key to display the cumulative times [n ***], then press the [*] key to display the cumulative weight [A*****], and then press the [*] key to return to weighing.

3) Short press the [function] key to clear the current cumulative value in the cumulative state.

6. Pre-set tare weight and upper and lower limit alarm: under normal weighing state, long press [#] key. The steps are as follows

Step	Operation	Display	Representative
1		[******]	Weighing status
2	Press[#] key	[P00000]	Prompt the user to input the preset tare value. The preset tare weight can only be set to 5-digit tare weight at most.
3	Enter the preset tare value, such as "6000"	[6000]	Press the [#] key to confirm and enter step 4
4	Upper alarm value, e.g. "3000"	[H 00000]	Press the [#] key to confirm and enter step 5
5	Lower alarm value, e.g. "0"	[L 00000]	Press the [#] key to confirm and enter step 6
6		[******]	Return to the weighing status and display the net weight after taring

7. User function setting

In the weighing status, press the [function] key for more than 5 seconds to access to the user setting mode. There are 14 parameter settings from P1 to P14 in the user setting mode. Press the [tare] key to change the value, and press the [*] key to select the next parameter. The parameters are described as follows:

1、 P1 x   kg / Lb. switch
       x=1:   kg display
       x=2:   Lb. display
2、 P2 x   function selection
       x=1:   none function
       x=2:   Start-up animal function
       x=3:   Turn on peak hold function
       x=4:   Start-up counting functions
3、 P3 x   Baud rate setting
       x=1:   9600
       x=2:   4800
       x=3:   2400
       x=4:   1200
4、 P4 xxx   485 communication address setting
       Command response mode x = 1-26; Modbus communication mode x = 1-127;
5、 P5 x   RS232 selection of output net weight, gross weight and tare weight
       x=1:   output net weight
       x=2:   output gross weight
     x=3:   output tare weight
6、 P6 x   RS232 Output mode selection(2-9 is the sending mode and 10-13 is the command mode)
       x=1:   No transmission
       x=2:   Continuous transmission
       x=3:   Continuous transmission under stable status
       x=4:   Send AD code continuously
       x=5:   A1+,C8 Continuous communication mode
     x=6:   Zhimei communication protocol
       x=7:   A7 communication protocol
     x=8:   External bill printer
       x=9:   External label printer
       x=10:   Yaohua command mode
       x=11:   Zhimei command mode
       x=12:   Changlu command mode
       x=13:   MODBUS-RTU communication protocol
7、 P7 x   Range of zero track
     x=1:   1.0e
       x=2:   2.0e
       x=3:   3.0e
       x=4:   4.0e
       x=5:   5.0e
     x=6:   Track prohibited
8、 P8 x   Zero range
       x=1:   2%FS
       x=2:   4%FS
       x=3:   10%FS
       x=4:   20%FS
       x=5:   100%FS
       x=6:   Manual zeroing is prohibited
9、 P9 x   Start-up zero range

    x=1:   2%FS
    x=2:   4%FS
    x=3:   10%FS
    x=4:   20%FS
x=5:   100%FS
    x=6:   start-up zero is prohibited

10、   P10 x   Time intensity of digital filtering
    x=1:   Weak
    x=2:   Medium
    x=3:   Stronger
    x=4:   Strongest

Chapter IV maintenance and precautions

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1. In order to ensure the clear display and service life of the indicator, the indicator should not be used in direct sunlight, and the place should be flat.

2. It is not suitable to use in places with serious dust and vibration, and avoid using in humid environment.

3. The load cell and indicator shall be reliably connected, the system shall be well grounded, away from strong electric field and strong magnetic field, and the sensor and instrument shall be away from strong corrosive objects and inflammable and explosive articles.

> ▲！ **Before plugging in and out the connecting line of the sensor, the power supply of the indicator must be cut off (shut down)!**
>
> ▲！ **Before plugging in and out the connecting line of the large screen, the power supply of the indicator and the scoreboard must be cut off first!**
>
> ▲！ **Before plugging in and out the communication connection, the power supply of the indicator and upper computer must be cut off first!**

4. It is strictly forbidden to use strong solvents (such as benzene, nitro oil) to clean the casing.

5. Liquid or other conductive particles shall not be injected into the instrument to prevent damage and electric shock.

6. Cut off the power supply of the indicator and corresponding equipment before connecting the indicator and external equipment!

> ▲！ **Do not use it in places with combustible gas or steam; do not use it in pressure vessel canning system.**
>
> ▲！ **In areas where lightning frequently occurs, reliable arresters must be installed to ensure the personal safety of operators and prevent the indicator and corresponding equipment from being damaged by lightning**
>
> ▲！ **Sensors and indicators are electrostatic sensitive equipment. In use, anti-static measures must be taken. It is strictly forbidden to carry out welding operation or other strong current operation on the scale platform. In thunderstorm season, reliable lightning protection measures must be implemented to prevent the damage of sensors and instruments caused by lightning strike, so as to ensure the personal safety of operators and the safe operation of weighing equipment and related equipment.**

7. The company advises customers: before using the company's indicator, the indicator should be tested and accepted. The company is only responsible for the quality of the indicator itself, and the maximum amount of compensation is less than 2 times of the value of the faulty indicator itself. It is not responsible for the system problems of the indicators.

8. The external interface of the indicator shall be used in strict accordance with the method indicated in the operation manual, and the connection shall not be changed without authorization. This table is in use
    In case of failure, the plug should be removed immediately and sent to a professional factory for maintenance.

General non weighing professional manufacturers do not repair themselves, so as not to cause more serious problems. This indicator is not allowed to be opened at will, otherwise it will not be guaranteed.

9. Within one year from the date of sale, under normal conditions of use, the non-human fault of this instrument is within the scope of warranty. Please send the product and

    The warranty card (with the same number) shall be sent to the special maintenance point or supplier together. The manufacturer carries out life-long maintenance for the instrument.

10. Indicator charging instructions:

    1）As long as the 220 V AC or USB cable is connected, the charging indicator light will be red, that is, the battery can be charged, and it can be charged in the on-off state. The green charging indicator indicates that the battery is full.

    2）The low voltage alarm under power indicator is on. If it is not charged in time, the instrument will shut down automatically.

Chapter 5 information tips

Error operation information prompt and Countermeasures:

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1. `Err 1`   It means that the AD value is too small in full calibration. (please select the appropriate sensor)

2. `Err 2`   Indicates that manual zero setting is beyond the allowable range. (please check whether there are heavy objects on the platform)

3. `Err 3`   Indicates that the zero position exceeds the setting range when the machine is started. (the weight on the scale platform should be kept at zero when starting up)

4. `Err 4`   Indicates: counting status. When sampling, the number of input samples is zero. (When err 4 is displayed for 1 second, it will enter the counting state. At this time, it will work according to the result of the last sample sampling. When resampling, the sample number input cannot be zero.)

5. `Err 5`   Indicates: calibration status, full calibration time, input weight is zero. (Please input the same weight as that on the platform)

6. `Err 6`   It means: counting status. When sampling, the weight of a single piece is less than 0.25e. (Please re-enter the number of samples)

7. `Err7`   Indicates that the sensor wiring is faulty, and the ad code increases negatively during calibration loading. (Please check whether the signal wire of the sensor is reversely connected)