

LC220 Weight Indicator

1. Specifications:

Input signal	0-2.5MV/V Excitation Voltage 5V/100mA
Measurement accuracy	0.1%
Sampling rate	10 times or 80 times/second can be set
Display mode	Single row red LED display. Main display window display range: -9999~29500
On-off input	1 way input, short circuit is effective. (selective assembly)
On-off output	Can choose 3-way relay or OC output, relay contact AC 250V/1A, OC output driving 100mA/48V
Transmitting	Output 4-20mA, 0-20mA, 0-5V, 0-10V, 12bit accuracy, driving load $\leq 500 \Omega$.
Communication	485com port can execute Modbus RTU protocol or Active upload protocol (Transmission or communication just can be chosen one)
Working Environment	environment temperature: -20~50℃; relative humidity $\leq 85\%RH$; Avoid strong caustic gas.
Working power supply	AC 100~240V, 50~60HZ; power consumption $\leq 5W$
Structure	Panel mounting / cabinets mounting, high quality plastic shell, dimension 96*48*84mm, Cut size: 92×45mm

★Simple comparison output method (this is the standard way)

Function description: The 3 outputs of the meter can be set to be more than comparison or less than comparison. The output is valid when the measured value is more than the upper limit minus hysteresis, and the output is invalid when the measured value is less than the upper limit. When the output is set to be less than the comparison, the output is valid when the measured value is less than the lower limit, and is invalid when the measured value is more than the lower limit plus hysteresis.

★Input start working mode (optional)

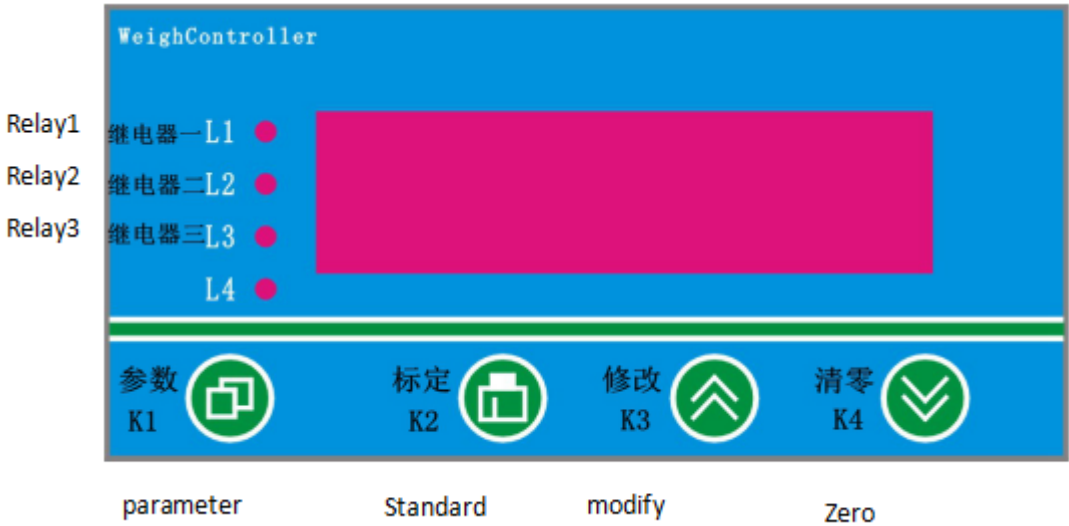
Function description: In this working mode, short-connect the 3 and 4 terminals of the instrument within one second, can start the first and second group of relay closure and output effectively. When the measured value is more than the set value, the relay disconnect output is invalid until the next time, short connect the 3 and 4 terminals to output a valid bit for one cycle. This working mode is often used for single material loading stop, liquid filling and other batching occasions, which can make the supporting electronic control simpler and more convenient and efficient.

★Peak holding mode (optional)

Function description: This mode of operation, by pressing the K3 key, can be switched to AXXXX (the peak measurement interface), which can maintain the last peak value, when the next measurement value is more than the ED-03 parameter (this is the peak threshold parameter) The last peak can be automatically overwritten to maintain this peak.

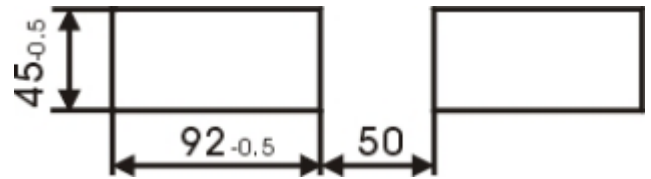
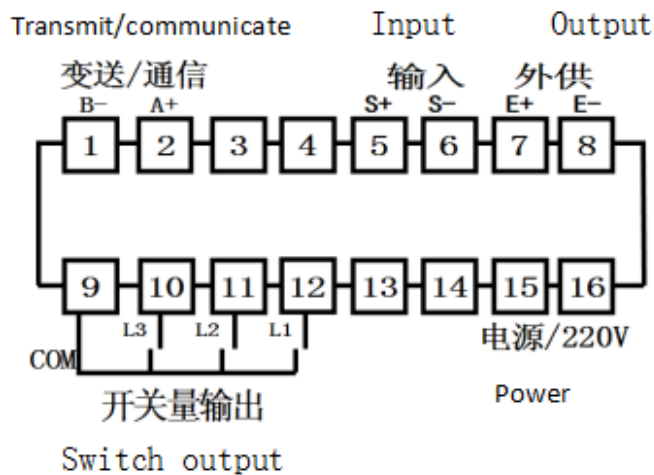
2. Operation instructions

2.1 panel



K1 key	Parameter modification key: In standby mode, long press this key 3 seconds, then Enter the parameter modification interface. Specific parameter setting, Please refer to (3.1)
K2 key	Aligning key: In standby mode, long press this key 3 seconds, then Enter calibration interface, Specific parameter setting, Please refer to (4.1)
K3 key	Additional key: In parameter settings mode, to add value. In standby or measuring mode, to switch to see basic information.
K4 key	Shift key: In parameter settings mode, shift selects the value that needs to be modified. At this time, the data bit selected to be modified is blinking. Reset key: In standby or measuring mode, to reset.

2.2 Terminal connection and hole size



(When the meter is in transmission output, the No.1 is negative and the No.2 is positive)

2.3 Menu structure

2.3.1 Parameter modification

In the standby state, long press [k1] + "enter the password to enter", and the password is set to 100. Enter advanced parameters (parameters after 13) set password 105, higher parameter set password 110.

The specific operation steps are as follows: long press [k1], 00000 will appear. First, press [k4] to move the flashing digit, move to the flashing digit to be modified, press [k3] to modify the flashing digit. After the password is modified correctly, press [k1] will enter the group parameters, then press [k1] to switch the group parameters, when switch to the parameter to be modified, press [k4] to enter the parameter. After completing modification, press [k1] to confirm, Press [k2] to return to the measurement.

2.3.2 Weight calibration

In standby mode, long press [k2]. See the third page for details (3. calibration method)

2.3.3 Reset key

In standby mode, long press [k4] and complete the reset when the measured value is less than the reset range.

2.3.4 Restore factory settings

According to 2.3.1, enter the parameter modification (but need to use special password when entering the password) to switch to the 42nd parameter, input the number between 11-19, input 19 is the most common working mode, then press [k1] to switch to the next parameter, then press [k2] to exit, that is restore the meter parameters to the initial state of Mode 1-9.

2.3.5 Data backup

The operation method is the same as 2.3.4, enter the number 20 (see attached table).

Parameter table

symbol	Mode 1-6	Value range	Remark
01	First comparison limit	-9999~19999	Corresponding OUT1 indicator light
02	Second comparison limit	-9999~19999	Corresponding OUT2 indicator light
03	Third comparison limit	-9999~19999	Corresponding OUT3 indicator light
04	Comparison style	0-111	The number of the three-digit combination "such as: 110" represents the third, second, and first alarm points, the number 0 represents the lower limit alarm, and the 1 represents the upper limit alarm.
05	Hysteresis 1	0-1000	
07	Boot zero range	0-10000	
10	Zero tracing	0-10d	
11	Digital filter	1-100	
12	Sentenced to stabilizing range	0-100	
13	Display refresh rate	1-20(10)	
15	Radix point	0-4	
18	Rated transmitting range	0-19999	Transmitting range
19	power up reset operation	0-1	0-Not zero 1-Zero
20	Working mode	1-9	Invisible Enter the advanced password 110 in bold type
21	Picking rate	0-1	0-10 Times/SEC 1-80 Times/SEC
22	Input reset option	0-Start 1-Zero	
23	Transmitting switch	0- Invalidity 1-Validity	Default 0
24	Transmitting zero	0-4095	Calibrate transmitting zero
25	Transmitting full scale	1-4095	Calibrate transmitting full scale
26	Transmitting negatively skewed		
27	Communication mode	0 Invalidity 1-modbusRTU 2- upload actively	
28	Communication code	1-128	Communication instrument number
29	Communication rate	1-4.8k 2-9.6k3-19.2k 4-39.4k	Baud rate
30	Stop bit	0-2 stop position 1-1 stop	The factory default is 2 digits

		position	
31	Sensor capacity	100, 19999,	For digital calibration
32	Sensitivity	1.0000, 3.2000,	For digital calibration
33	Analog input zero ad		For factory hardware calibration
34	Current zero ad		The calibration result can be modified
35	Input full scale ad		2mv/v for AD For factory hardware calibration
36	Current coefficient		The calibration result can be modified
37	Gravity acceleration	9.800	
41	Password	0-9999	
42	Multi-function code	11-19 Restore factory 20 Backup Parameters 30 Restore backup 40 Digital calibration	Write 19 to restore the factory, that is 220 working state

Display information

The upper row of the meter displays the real-time value, and the lower row shows the information as shown in the following table:

Display symbols	Mode	Remark
A	Output 1 alarm value	
b	Output 2 alarm value	
c	Output 3 alarm value	
d	Alarm hysteresis	
AL	Alarm status	
st	Operational state	
E	A/D code value	
dA	Transmitting output code	
U	Software versions	

3. Calibration method

3.1 Hardware calibration method

- 3.1.1 If there is no large weight or standard weight to replace the heavy object, can use calibration coefficient to calibrate. The radix point should be modified to the appropriate position according to the range of the sensor. The maximum display range of the instrument should not exceed 29999. (How to modify the radix point, please see 2.3.1)
- 3.1.2 Press a known weight (set to X). After stabilization, record the meter display value (set to Y), find the No. 36 parameter (how to enter the details to see 2.3.1), press K4 to view the value of the parameter (set to Z). By pressing the K4 key to move and the K3 key to modify the number, modify the number of parameter No. 36 to $(Z \cdot X / Y)$: the actual weight divided by the display weight and multiplied by the number got in 36th parameter. Press K1 to confirm, K2 to return, if it is not accurate, repeat the above steps.

3.2 Weight calibration method

- 3.2.1 Before calibrating the sensor, modify the radix point to the appropriate position according to the range of the sensor. Make sure that the maximum display range of the meter cannot exceed 29999. (How to modify the radix point, please see 2.3.1)
- 3.2.2 In standby state, long press [k2], “ $\equiv$ 0xxxx” appears, press [k4] to zero clearing. If appear “ $\equiv$ 00000”, zero calibration is completed. Press [k2] to display "C0000", plus weight or known standard weight, turns into "C0xxxx" (the weight must be greater than one tenth of the sensor range, otherwise the calibration is unsuccessful), first press [k4], then by pressing [[k3] to increase the value + [k4] to move the flashing digit, modify the weight of the weight. After stabilization, press [k2] to confirm, the calibration is completed, and the displayed value should be consistent with the weight of the weight. If it is not accurate, set again in the same order. After calibration is correct, press [k1] to return to the force measurement interface.

3.3 Digital calibration method

If there is no known weight, you can do it by digital calibration. First enter the sensor's range in parameter No. 31, input the sensor sensitivity in parameter No. 32, then enter 40 in parameter No. 42, then press K2 to exit, then complete digital calibration automatically. When using multiple sensors, the input range is the sum of all sensor ranges

This calibration method must accurately know the sensitivity of the sensor. Generally, the sensitivity of the sensor is divisors, so this method cannot be accurately calibrated. Please use it with caution.

Instrument selection

Content	Code Description	
	DY220-	0.1 class display accuracy; 10-80 times/SEC measuring speed

Contact input (option)	K	1 point external switch input, used to zero or start.	
Alarm (option)		T1 ~3	1-3 group relay output (250V AC/3A, resistive load)
Transmitting (option) (resolution: 1/3000; load capacity : 500 Ω)	A1	(4-20) mA、(0-10) mA、(0-20) mA	
	A2	(1-5) V、(0-5) V、(0-10) V	
Communication	S1	232 Communication	
	S2	485 Communication	
External supply (option)		B1	24V±5% 50mA below (unavailable)
		B2	AC 100~240V, 50~60HZ;