DY220
WEIGHING AND FORCE MEASURING CONTROLLER

OPERATION
INSTRUCTIONS

WeighController

OUT1
OUT2
OUT3
MOT

Bengbu Daysensor System Engineering Co.,Ltd.

FOREWORD

Thank you very much for choosing our products! This manual contains product performance indicators, packaging appearance, operating instructions, communication instructions, function descriptions, parameter tables, FAQs, warranty instructions, etc. In order to keep this product in the best working condition for a long time, please read the operating manual carefully before use and keep it properly for reference at any time.

The contents of this manual shall not be reproduced or copied without the permission of our company.

SAFETY AND PRECAUTIONS

⚠ CAUTION	Improper operation may result in personal injury or property damage.

- Please do not use it on nuclear power equipment or life-related medical equipment.

- All input and output signal cables of this product. In order to prevent waves from surging, please set the appropriate surge inhibitory circuit.

- In order to prevent instrument damage and machine failure, install safety circuit breaker devices on the power line or input / output line with high current capacity.

- Do not mix metal slices or wire debris into this product, otherwise it may cause electric shock, fire, failure.

- Please tighten the terminal screws. If it is not completely tightened, it may lead to electric shock and fire.

- Please clean it after turning off the power.

- When cleaning, rub the dirt of the product with a dry soft cloth. Please do not use hygroscopic agents. Otherwise, it may cause deformation and discoloration.

- Please do not use hard objects or knock on the display part.

- The installation, debugging and maintenance of this product shall be carried out by qualified engineering and technical personnel.

- The handheld instrument is calibrated before leaving the factory. If it is used improperly, errors may occur. Customers should calibrate it in time according to the situation..

⚠ **WARN**	**Improper operation may result in personal injury or property damage.**

- Exceeding the operating environment conditions will affect the instrument's measurement indicators and lifespan, and in serious cases will cause permanent damage to the instrument!

- The installation, debugging and maintenance of this product shall be carried out by qualified engineering and technical personnel.

- The company does not assume any direct or indirect losses other than the product itself..

- The company reserves the right to change the product manual without notice.

CONTENTS

1. Performance indicators and characteristics

1.1. Technical Indicators

project	specification
Working power supply	AC100～240V，50～60HZ；power consumption ≤ 5W
Enter the signal	0-2.5MV/V，Supply bridge voltage5V/100mA
Measurement accuracy	0.05%
Sampling speed	10Hz-320Hz,it can be set
Transmitter	Output 4-20 mA,0-20 mA，0-5V0-10V，12bit precision，Drive the load ≤ 500Ω
communication	The 485 communication port can execute the ModbusRTU protocol or the active upload protocol
Switching inputs	1-way open, short circuit is valid for 1 second
Switching output	Optional 2-3 relay outputs, relay contacts AC 250V/1A
temperature	relative humidity ≤ 85%RH；Avoid strong corrosive gases
	Operating environment -20℃ to 50℃
display	Single-row red LED display, main display window display range:-9999~99999
structure	Tray/cabinet mounted, high quality plastic enclosure DY-220 Dimensions 96*48 deep 84mm,Cut-out size: 92*45mm DY-220B Dimensions : 160*80*125mm,Cut-out size: 155*75*50mm

1.2. Features:

Power on/on/automatic Zero position tracking

Creep tracking

3-channel output

sampling rate320Hz

Upper and lower limit alarm output or relay output

0-10V 4-20mA
Analog output
Current output（4-20mA）
Voltage output（0-10V）

Peak holding function

RS485 communication
Supports Modbus RTU communication protocol

6-digit digital display, 4-digit LED indicator light
Four buttons

Plastic shell isolated power supply, safe to use

2. Package

2.1. Box Contents

DY220 appearance*1
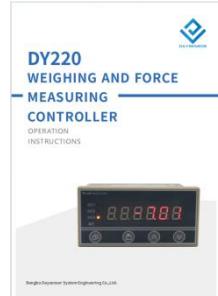
Instructions*1

2.2. DY220 size

Front panel size

48

96

Side panel size

84

Cut-out size

Hole size

45

92
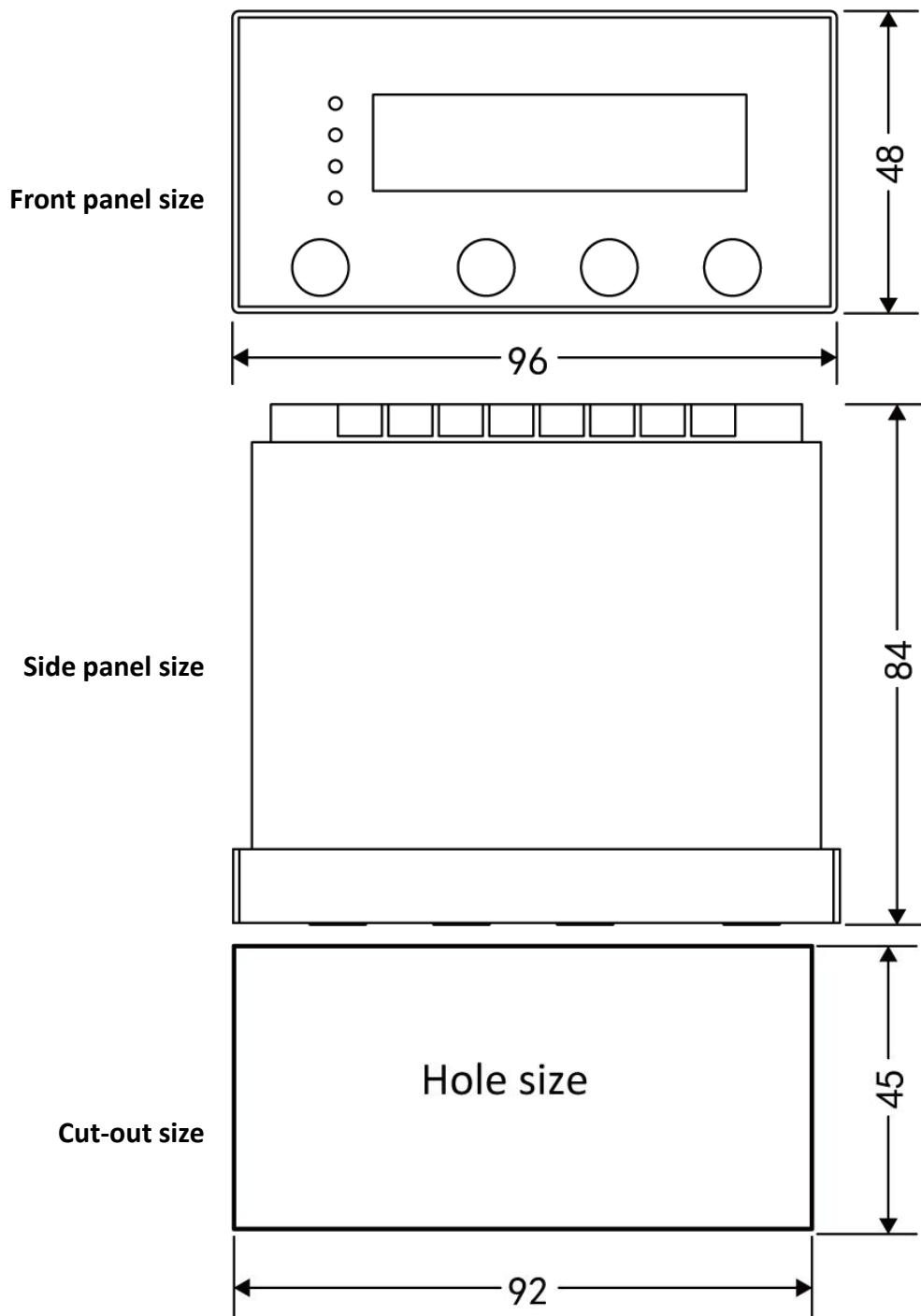
3. Installation and wiring

This section describes the precautions for instrument wiring, which are important contents related to safety.

⚠ **Attention**
Please connect according to the operation mode on the content;
Start-up and maintenance of the instrument
Please use the DC220V power supply;
Please press the normal connection terminal wire of the instrument back cover screen;
Before turning on the power supply, please carefully confirm whether the terminal cable is correct;
Wiring of instrument
Please note that red to the power positive, black to the power negative;
Safety warning
Please connect the signal output input terminal when the power supply is not connected to avoid electric shock;

3.1. Wiring definition

3.1.1. Sensor wiring
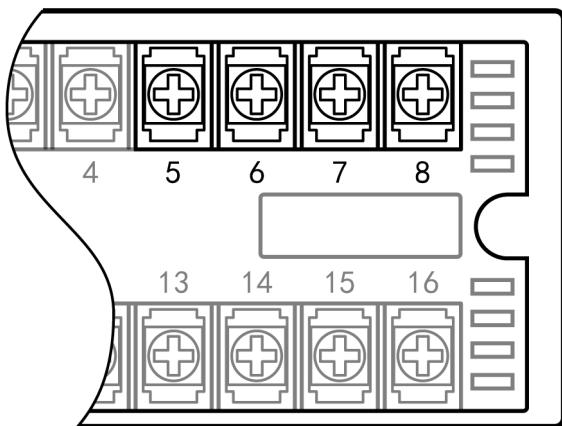
Figure 3-1 Drawing of sensor wiring terminals
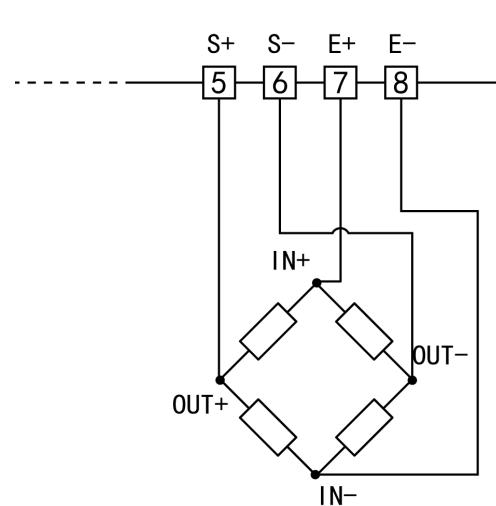
Figure 3-2 shows the sensor wiring diagram

The distribution of each port of the sensor connection terminal is shown in the following table (the color of the sensor cable is the default color of the company's supporting sensor, and the cable color is determined according to the sensor documentation):

Type	signal name	Cable color	use
Load input	EX+	Red	Sensor voltage supply terminal. Connect the IN+ of the strain gauge sensor.
	SIG+	Green	Sensor signal input terminal. Connect the OUT+ of the strain gauge sensor.
	EX-	Black	Sensor voltage supply terminal. Connect the IN- of the strain gauge sensor.
	SIG-	White	Sensor signal input terminal. Connect the OUT- of the strain gauge sensor.

3.1.2. Digital communication wiring
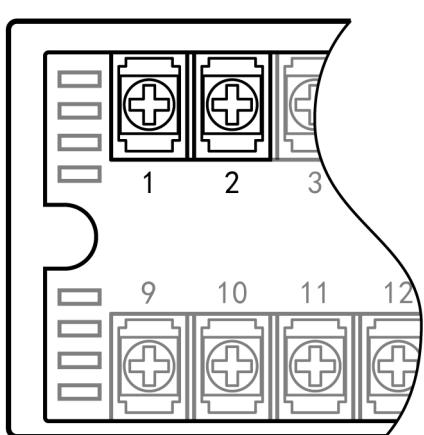
Figure 3-3 Diagram of digital communication terminals
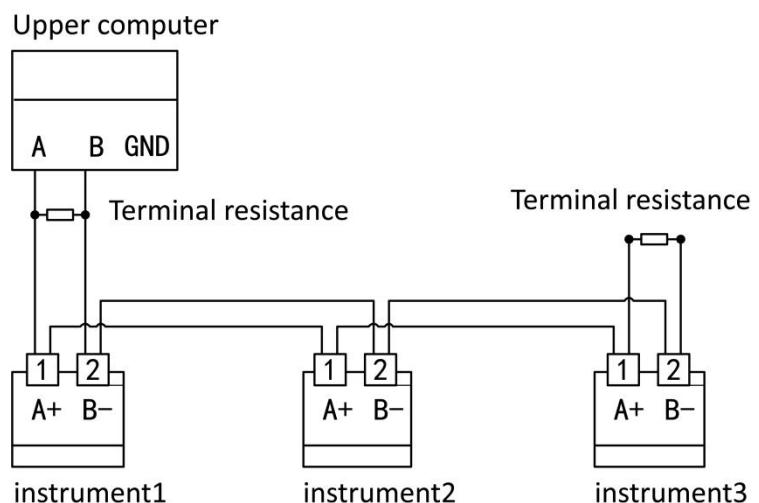
Figure 3-4 RS485 communication wiring diagram

4. Instructions

4.1. Main screen description
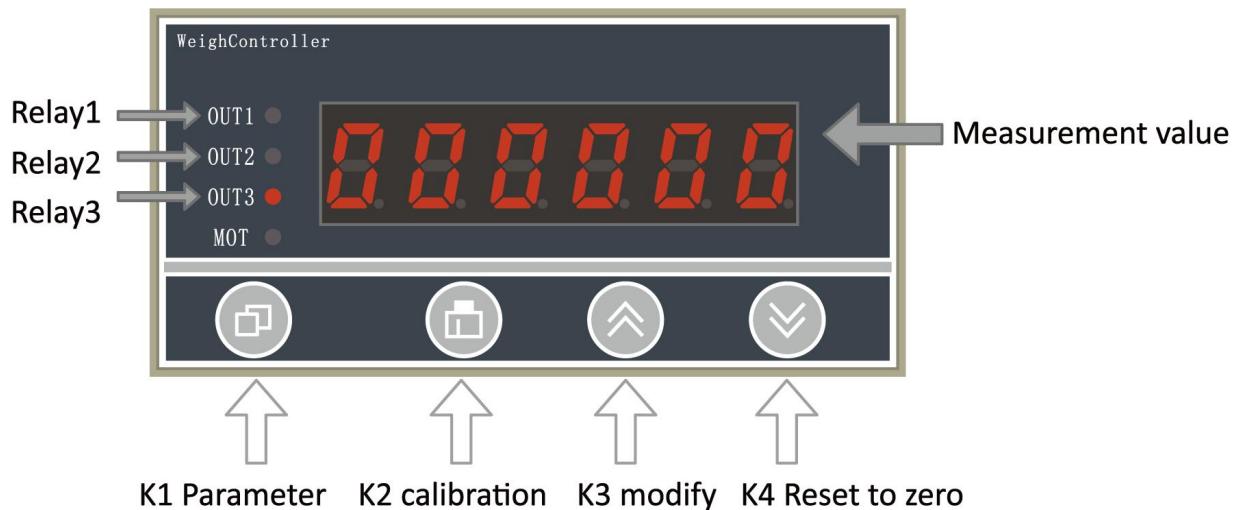
4.2. Parameter modification

1) Press and hold [k1] for three seconds on the running interface to release, and after entering the parameter interface, Ed-01 will be displayed;

2) Short press [k1] to switch to the next one (long press to quickly switch), switch to display Ed-02;

3) Press [k4] to enter the Ed-02 parameter, and the value of the highest digit will flash;

4) After entering, press [K4] to move the blink bit, and after moving to the blink bit to be modified, press [K3] to increase the blink bit value; The value is changed to 200;

5) After the modification, press [K1] to confirm to return to the parameter interface, and press [K2] to exit to the operation interface;

4.3. Calibration

The 220 meter can be calibrated in the following three ways: 1. weight calibration, 2. hardware calibration, 3. digital calibration.

4.3.1. Weight calibration

If there is a known weight object can be calibrated by this method, the known weight object must be greater than 10% of the sensor's range, and the displayed value is a positive number before calibration;

1) Press and hold [K2] for three seconds to release, and "Three XXX.xx" appears;

2) When the sensor to be calibrated is unloaded, short press [K4] to clear zero, and the zero calibration of "3000.00" appears;

3) When pressing [k2] appears "C 0", plus the known weight becomes "Cxxxxx";

4) After stabilization, press [K4] to enter, in the parameter modification interface, press [K4] to shift, the number selected by the shift will flash, press [K3] to increase, the number of the flashing bit will be increased by 1, and enter the value of the known heavy object through [K4] and [K3];

5) After the input is completed, press [K2] to confirm, and the calibration is completed;

6) The displayed value should be consistent with the input value, if it is inaccurate, re-operate the fourth and fifth steps, if it is accurate, press [K1] to return to the running interface.

4.3.2. Hardware calibration

Using a known weight, calibration can be performed by calculating the range coefficient.

1) Place a known standard weight;

2) After stabilization, check the actual weight displayed on the meter;

3) Go to the [Range Coefficient] parameter (Ed-36) to view the parameter value;

4) Calculate the new coefficient, the new coefficient = standard weight / display weight * [range factor];

5) By pressing the [k4] key to shift and the [k3] key to increase, the newly calculated coefficient is entered into the Ed-36 parameter;

6) After modifying, press the [K1] key to confirm, and the [K2] key to exit, if it is not accurate, repeat it again according to the above steps.

4.3.3. Digital calibration

The digital calibration method should know the sensitivity and range of the sensor, and the sensitivity of the sensor is generally an approximation, so the calibration is not accurate and there is a certain error.

1) First, enter the range of the Ed-31 parameter input sensor;

2) Then enter the Ed-32 parameter input sensor sensitivity;

3) Then enter 040 in the Ed-42 parameter, press [k1] to confirm, and press [k2] to exit to automatically complete the digital calibration; When using multiple sensors, the input range is the sum of the ranges of all sensors.

4.4. Transmitter output

For example, a sensor with a capacity of 1000 kg can transmit an output of 10 V or 20 mA when weighing at full load.

1) Enter the Ed-18 parameter and enter the range of the sensor 1000;

2) ED-23 is changed to 1 to turn on the transmitter output;

3) The multimeter connects the instrument terminal 1 and the terminal 2; Modify the Ed-24 parameters so that the multimeter measures to 0V or 4mA;

4) Modify the Ed-25 parameter to allow the multimeter to measure 10V or 20mA;

5) When the sensor weighs 500 kg, 5 V or 12 mA can be measured between the transmitter output terminal 1 and terminal 2.

Note: If the meter is a voltage analog output, the multimeter needs to hit the voltage block; The current analog output, the multimeter hits the current block.

5. Working mode

The 220 series has a total of 3 working modes, and the instrument also has analog voltage output 0-10V, current output 4-20mA, and 485 communication functions. When switching to different modes, the boot can be displayed as follows:

Note: Recalibration is required to modify the working mode.

전원ON시 표시	Working mode
210A	Peak mode
220	Regular mode
230	Boot mode

다른 모드 사용하려면
아래 펑션에서 변경해야 함
저장후 다시 전원 off−on

[다기능 코드] 매개변수를 수정하여 작동 모드를 전환하십시오. 작동 모드 설정 부분
Parameter Table:

serial number	parameter name	Parameter range	Parameter function
Ed-42	Multi-function code	[0,99]	011 = Restore factory peak mode 019 = Restore factory regular mode 020 = Restore factory boot mode 040 = Confirm the digital calibration 035 = Restore all parameters 87 = Back up the parameters 88 = Restore backup parameters
Ed-004	Comparison	[0,111]	0 = Lower limit ; 1 = upper limit "110" corresponds from right to left for three comparison values and relay outputs: The single digit = 0 represents the lower limit of the first way Ten digits = 1 represents the upper limit of the second way Hundred = 1 represents the upper limit of the third way
Ed-006	Trigger threshold	[0,99999]	When the machine is turned on, when the force value is less than this parameter, the zero is executed
Ed-005	Hysteresis	[0,1000]	The back-to-back difference that triggers the upper and lower bounds
Ed-008	Threshold opening	[0,9]	0 = The trigger threshold is valid; 2 = The trigger threshold is invalid
Ed-009	Alarm delay	[0,99.999]	In 210A mode, the alarm output duration
Ed-001	First, compare the upper and lower limits	[-9999,99999]	
Ed-002	Second, compare the upper and lower limits	[-9999,99999]	
Ed-003	Third, compare the upper and lower limits	[-9999,99999]	

5.1. Regular mode

전원을 켤 때 "220"이 표시되는 경우 "220" 일반 모드를 복원할 필요가 없습니다. 공장 220 모드: [다기능 코드] 파라미터에 019를 입력하십시오(Ed-42).

기기 부팅 인터페이스에 "220"이 표시되면 기기는 정상 작동 모드로 전환되어 실시간 중량 값을 표시하고 수량 비교 출력을 전환하는 기능을 수행합니다.

5.1.1. Working method description

측정기의 3개 출력값은 비교 대상값보다 크거나 작도록 설정할 수 있습니다.

이 값을 1로 설정하면 현재 비트에 해당하는 비교 값은 상한 비교 값(5.1.2 상한 비교 참조)이 되고, 0으로 설정하면 현재 비트에 해당하는 비교 값은 하한 비교 값(5.1.3 하한 비교 참조)이 됩니다.

5.1.2. Upper limit comparison
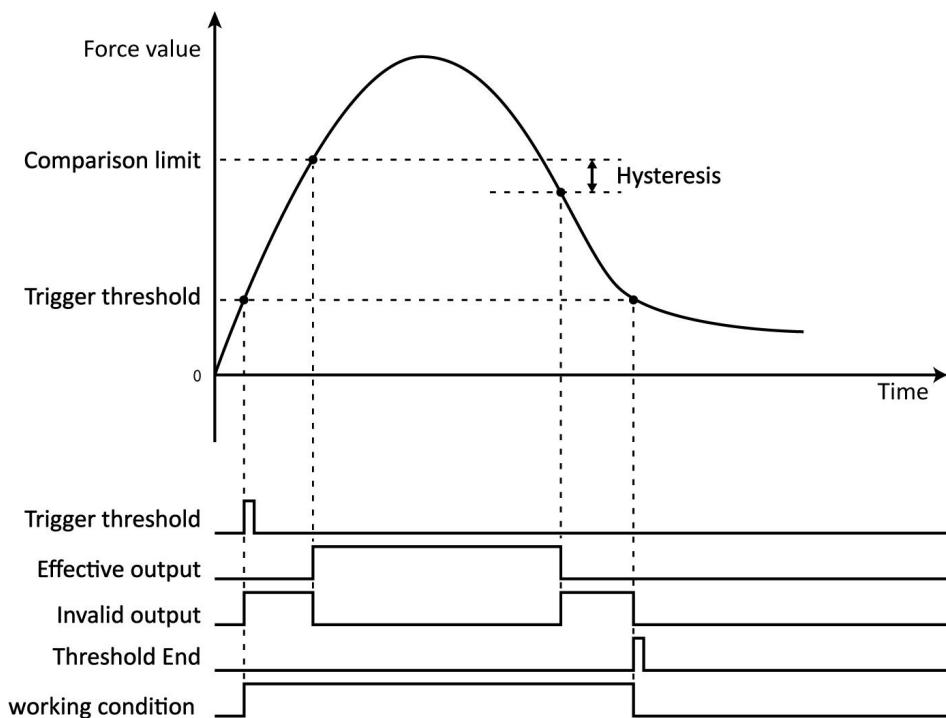
그림 5-1 상한 비교의 개략도

As shown in the image above:

When the measured value is $\geqslant$ relatively limited, the output is valid;

When the measured value $\leqslant$ the relative limit-hysteresis, the output is invalid.

5.1.3. Comparison of lower bounds
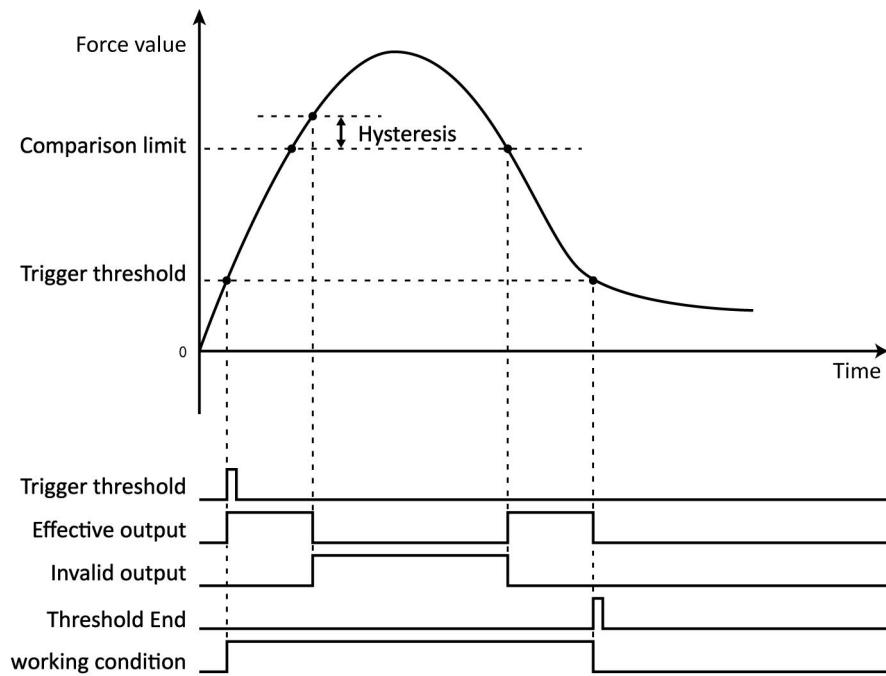
그림 5-2 하한 비교의 개략도

As shown in the image above:

When the measured value $<$ the relative limit + hysteresis, the output is valid;

When the measured value $\geq$ the relative limit + hysteresis, the output is invalid;

5.2. Peak mode

전원을 켤 때 "210A"가 표시되는 경우 "210A" 피크 모드를 복원할 필요가 없습니다. 공장 초기화 210A 모드: [다기능 코드] 매개변수에 011을 입력합니다(Ed-42).

계측기 부팅 인터페이스에 "210A"가 표시되면 미터는 피크 모드로 작동하고, [k3] 버튼을 누르면 피크 모드일 때 표시 인터페이스가 "A XXX"가 됩니다.

5.2.1. Working method description

측정값이 트리거 임계값에 도달하면 피크값 판단이 시작됩니다. 측정값이 트리거 임계값보다 작으면 피크값 판단이 종료됩니다. (아래 이미지를 참조하십시오.)

그림 5-3 피크-투-밸리 모델의 개략도

Web:7sensor.com
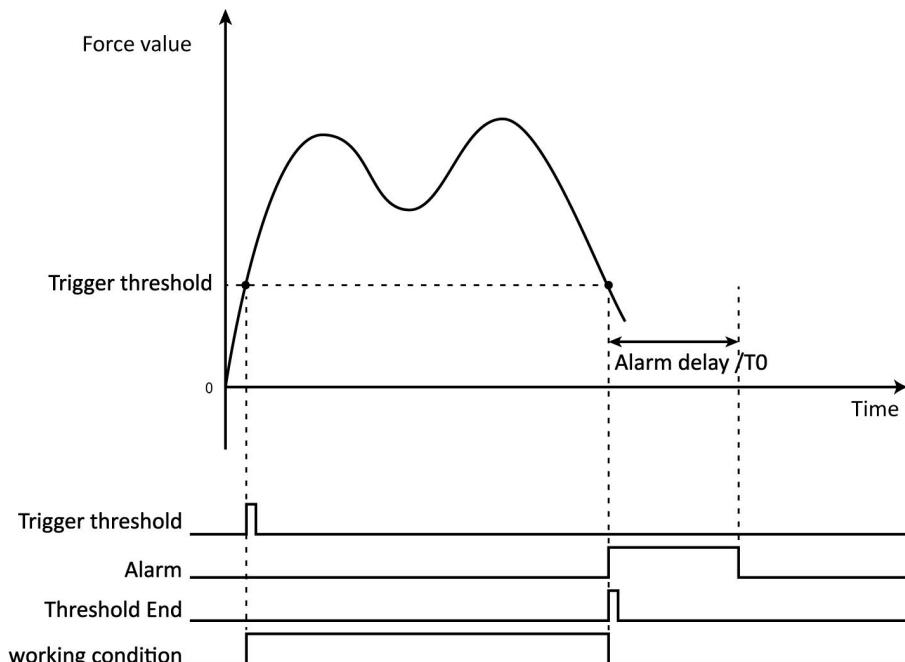
5.3. Quantitatively started mod(Boot mode)

전원을 켤 때 "230"이 표시되는 경우 "230" 정량 모드를 복원할 필요가 없습니다. 공장 초기화 230 모드: [다기능 코드] 매개변수(Ed-42)에 020과 같이 입력합니다.

기기 부팅 인터페이스에 "230"이 표시되면 기기의 작동 모드는 시작 작동 모드이며, 이는 정량 충전 및 시작-정지 제어에 적합합니다.

5.3.1. Working method description

시작 단자를 1초 동안 열면 연결이 끊어지고, 계기의 OUT1 및 OUT2 표시등이 켜지며, 스위치 1과 스위치 2가 닫힙니다.

표시된 무게 값이 첫 번째 비교 한계에 도달하면 스위치 1이 분리되고 OUT1이 꺼지며 표시등이 꺼집니다.

무게 값이 두 번째 비교값에 도달하면 시간 제한 스위칭 수량 2가 차단되고 OUT2가 꺼집니다. 라운드가 종료됩니다.

참고: 시작 단자가 다시 열리면 재작동되며, 해당 기간 동안 시작 단자가 없으면 스위칭 수량이 출력되지 않습니다. (아래 이미지 참조
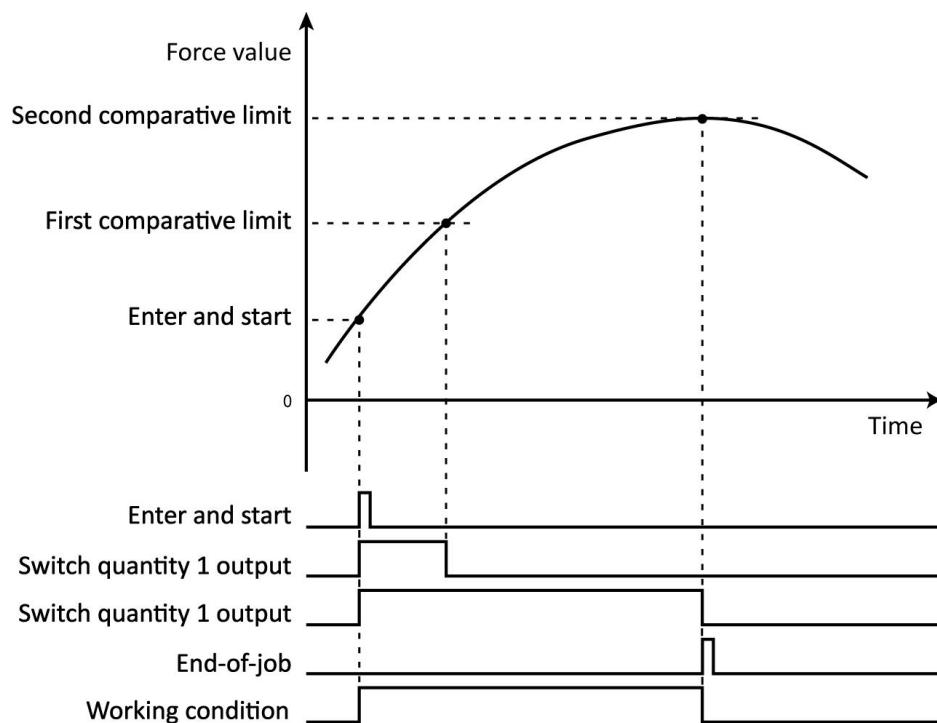
그림 5-1 정량적 개시의 개략도

6. Feature description

6.1. Zeroing function

The instrument has manual clearing, on-in clearing, power-on clearing, automatic clearing and communication clearing (see Chapter 7 communication example for details), power-on clearing and automatic clearing need to set the corresponding parameters to complete the clearing, manual clearing is by long-pressing the K4 key on the meter to clear the zero, please refer to the following for specific application methods.

6.1.1. Drive into zero

The [Open Definition] parameter is set to 01, and the open is cleared after short connecting pin 3 and pin 4.

serial number	Parameter name	Parameter range	Parameter function
Ed-022	Drive into zero	[0,1]	0 = Clear zero； 1 = It clears after 1 second of opening

6.1.2. Power on to zero

Due to force majeure factors such as environment or structure, the zero point of the sensor drifts every time it is powered on. Using the power-on zeroing function, when the power is turned on every time and the channel force value is within the [power-on zeroing range], the zeroing will be automatically completed after power-on.

Power-on zeroing function parameter table:

serial number	Parameter name	Parameter range	Parameter function
Ed-007	Boot clears the range	[0,99999]	When the machine is turned on, when the force value is less than this parameter, the zero is executed

6.1.3. Auto-clearing

After the system is operated once, due to changes in structure or other factors, the zero point of the sensor will drift, which will produce a certain error in the subsequent work, in this case, we can use the automatic zero function to reduce the error.

Note: Auto-zeroing must be performed every time it works.

Parameter table of automatic zeroing function:

serial number	Parameter name	Parameter range	Parameter function
Ed-006	Trigger threshold	[0,99999]	Meters above this threshold start working
ED-044	Automatically clears the range	[0,99999]	The force is automatically zeroed within this range
ED-045	The delay period is automatically cleared	[0,99.999]	After the work is completed once, the automatic clearing will be performed at this time

Workflow for automatic zeroing:

(1)   When the system works once, the timer starts to time, and the timing time is [Auto Zero Delay] time;

(2)   When the timing time is up, the system will judge whether the force value is within the [automatic zero range] at this time, and if it is within the range, it will carry out the zero setting operation;
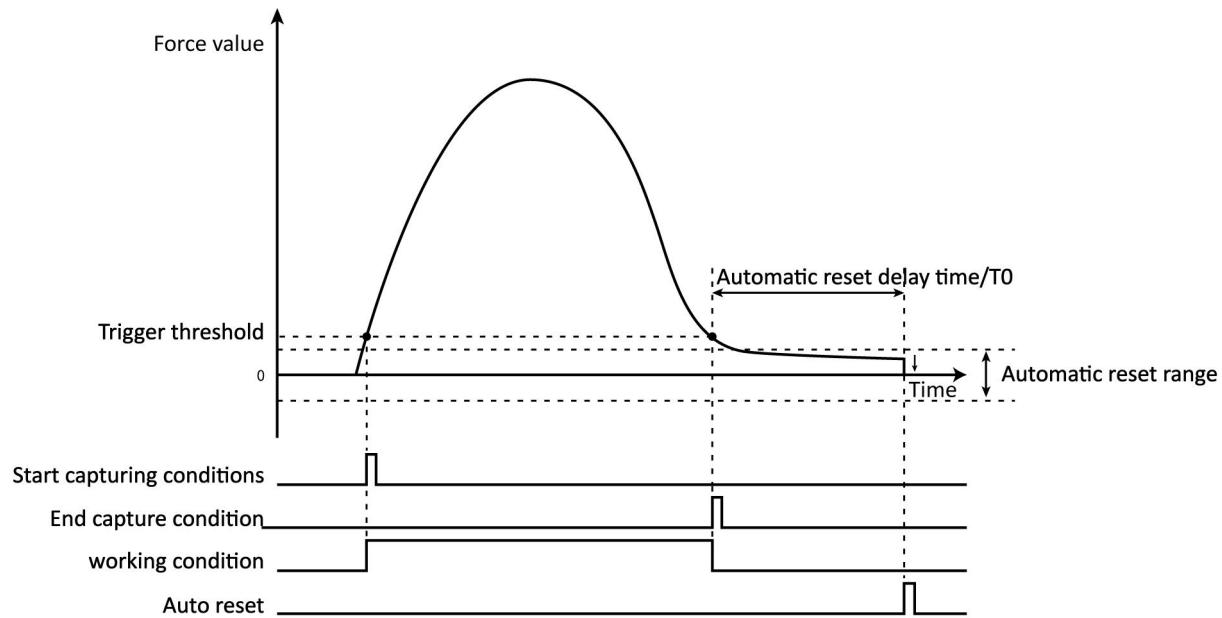
Figure 6-1 Schematic diagram of the auto-zero function

As shown in the figure, when the auto-clear function is enabled, the system performs an auto-clearing:

Start Capture Condition: When the system meets the [Trigger Threshold], the system starts to work;

End Capture Condition: When the system is reduced to the [Trigger Threshold], the system ends working;

Working Status: When the system meets the conditions for starting capture, the system starts working; When the real-time value satisfies the end capture condition, the system ends its work;

Automatic clearing: When the end capture condition is met, the timer starts to time, and the timing time is T0, that is, [automatic clearing delay time], after the time is up, when the real-time force value is within the range of automatic clearing and stable, the system performs an automatic clearing operation;

6.2. Zero tracking

When the system is stable and the range of drift is within the set parameter [zero tracking], the system will automatically set zero to reduce the occasional error.

Zero Tracking Function Parameter Table:

serial number	Parameter name	Parameter range	Parameter function
Ed-010	Zero tracking	[1,1000]	When the force value is less than this parameter at runtime, it is automatically set to zero
Ed-016	Keep track of time	[0,99.999]	Zero/Creep Tracking Time (seconds)
Ed-012	Stabilize the range	[0,5000]	When the fluctuation is less than this parameter within 1s, it is judged to be stable
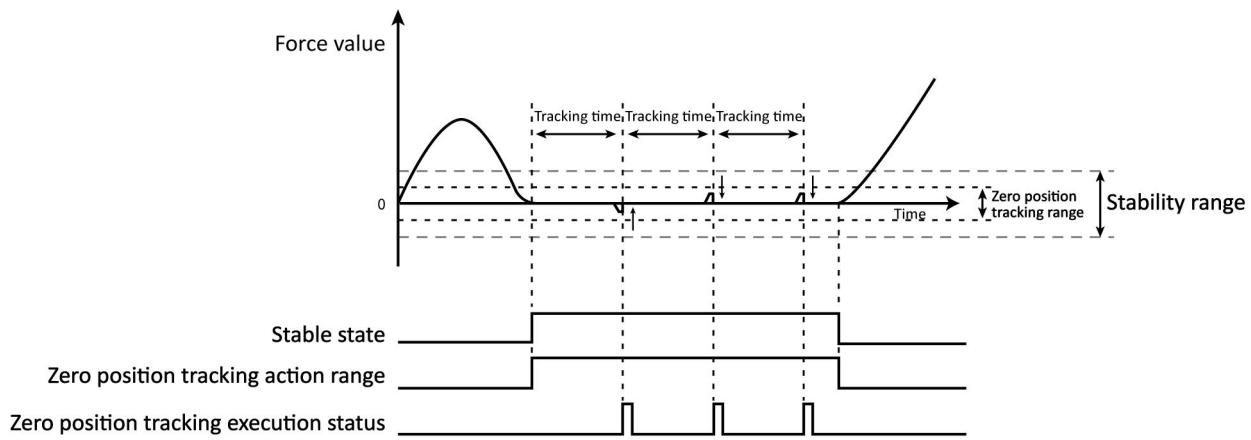
Figure 6-2 Zero Tracking Function

Steady state: When the force value fluctuates within the [stability range] for more than 1s, the system judges it to be stable, and when the force value fluctuates beyond this range, the system judges it to be unstable;

Zero tracking interval: When the system enters a stable state and is within the [zero tracking range], zero tracking starts;

Zero tracking execution state: When the real-time value fluctuates within the [zero tracking range], it enters a stable state, and when the timer starts, the timing time is [tracking time], and when the time is up, the system performs a zero tracking operation, and the value is set to zero.

6.3. Creep tracking

When the sensor is loaded by the influence of the external environment, the sensor force will produce a slow change, and the real-time value indication of the instrument will produce drift error, which will affect our test results, at this time, you can turn on the creep tracking function to reduce such errors.

Creep Tracking Workflow:

When the real-time value drifts within the range of [Creep Tracking], the system performs a creep tracking operation to erase the drift value, and the real-time value is displayed as the initial recorded stability indicator.

Creep tracking function parameter table:

| serial number	Parameter name	Parameter range	Parameter function
Ed-017	Creep tracking	[1,100]	The value of sensor drift is tracked
Ed-016	Keep track of time	[0,99.999]	Zero/Creep Tracking Time (seconds)
Ed-012	Stabilize the range	[0,5000]	When the fluctuation is less than this parameter within 1s, it is judged to be stable
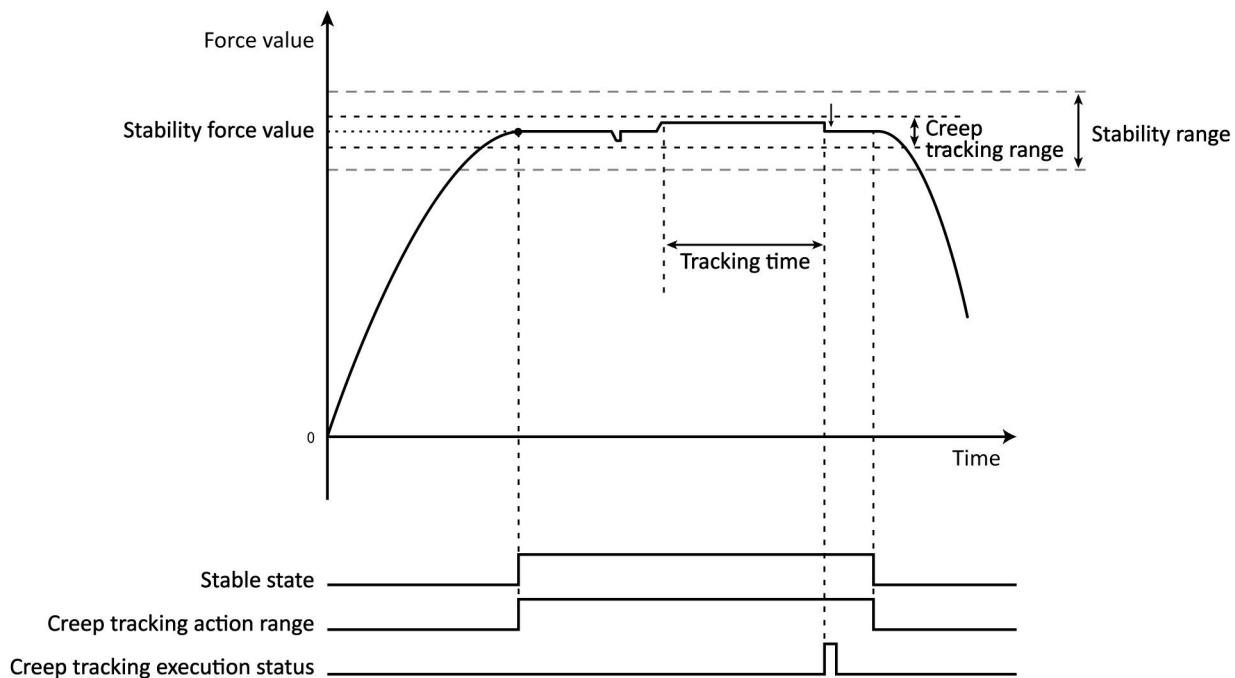
Figure 6-3 Creep Tracking Function

Steady state: When the force value fluctuates within the [stability range**]** for more than 1s, the system judges it to be stable, and when the force value fluctuates beyond this range, the system judges it to be unstable;

Creep tracking interval: When the system enters a steady state and is within the range of [Creep Tracking], creep tracking starts;

Creep tracking execution state: When the real-time value fluctuates within the range of [Creep Tracking], it enters a steady state, and when the timer starts, the timing time is [Tracking Time], and when the time is up, the system performs a creep tracking operation to erase the drift value.

7. Communication protocols

The 220 series instruments are equipped with a 485 communication interface, and the communication mode can be selected from ModbusRTU and active transmit mode. The ModbusRTU mode reads the current measured and parameter values, and can modify the parameter values and implement the zeroing function. In active transmit mode, the meter continuously sends packets with a fixed seven-byte ASCII code.

7.1. Modbus-RTU protocol

The Modbus-RTU protocol supports 03 read commands and 0x10 write commands, and the data is 32-bit long integer data. For more information about Modbus-RTU, please refer to the standard text of Modbus.

In this instrument, the read needs to be read with the 0x03 read command, and the write needs to be written with the 0x10 write command, most of the parameters are greater than 16 bits, so the minimum read is 32 bytes, and the number of bytes read at a time must be even.

7.1.1. Read the measured value command

Example 1: 03 reads the measured value

Master sends

01	03	07 D0	00 02	C2 86
Machine code	Read	Address	registers	Checksum

Instrument return

01	03	04	00 00 03 E8	FA 8D
Machine code	Read	Bytes	Measurements (1000)	Checksum
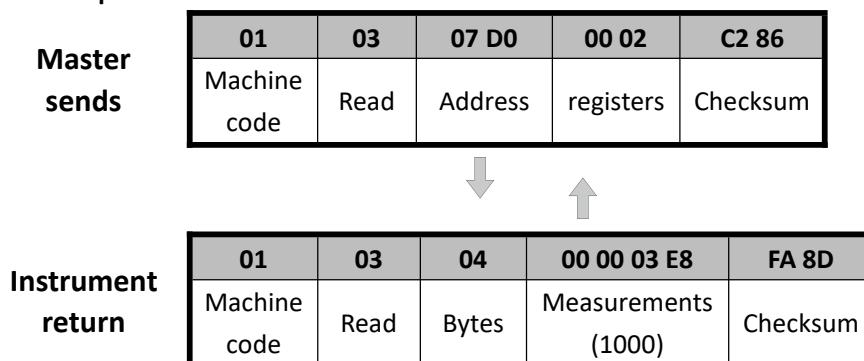
7.1.2. Write a zeroing instruction

Example 2: 0x10 communication is cleared

Master sends

01	10	0B B8	00 02	04	00 00 00 02	0B 8C
Machine code	Write	Address	registers	Bytes	Write 02 to zero	Checksum

Instrument return

01	10	0B B8	00 02	C3 C9
Machine code	Write	Address	registers	Checksum
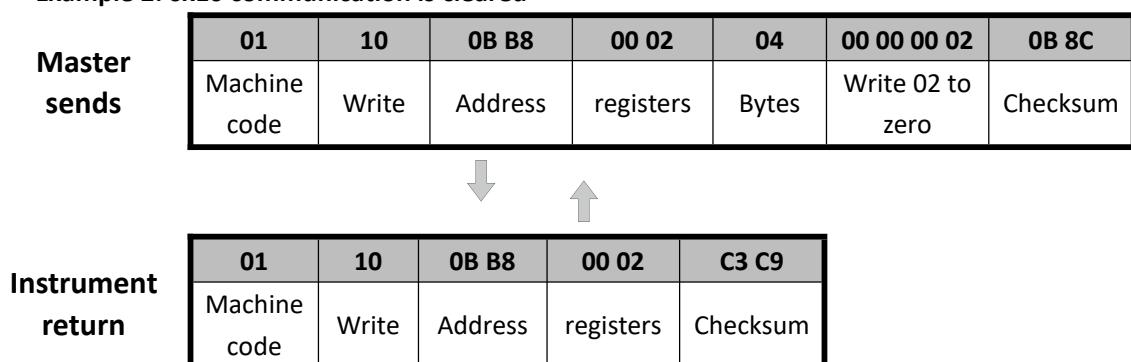
7.1.3. Write a calibration command

Example 3: Communication calibration

Load an object of known weight, write the weight of the object 5000;

Master sends

01	10	0B BA	00 02	04	00 00 13 88	06 C2
Machine code	Write	Address	registers	Bytes	Weight	Checksum

Instrument return

01	10	0B BA	00 02	EE 9E
Machine code	Write	Address	registers	Checksum
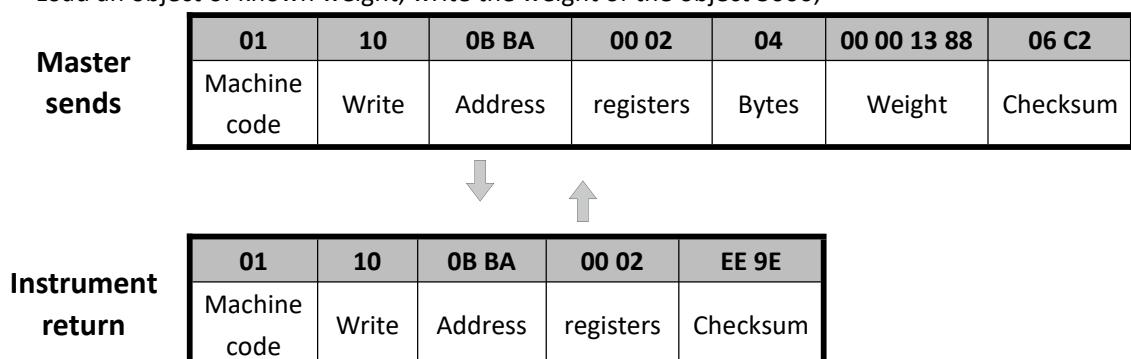
2. Confirm that the weight is valid;

	01	10	0B B8	00 02	04	00 00 00 03	CA 4C
Master sends	Machine code	Write	Address	registers	Bytes	Write data	Checksum

	01	10	0B B8	00 02	C3 C9
Instrument return	Machine code	Write	Address	registers	Checksum
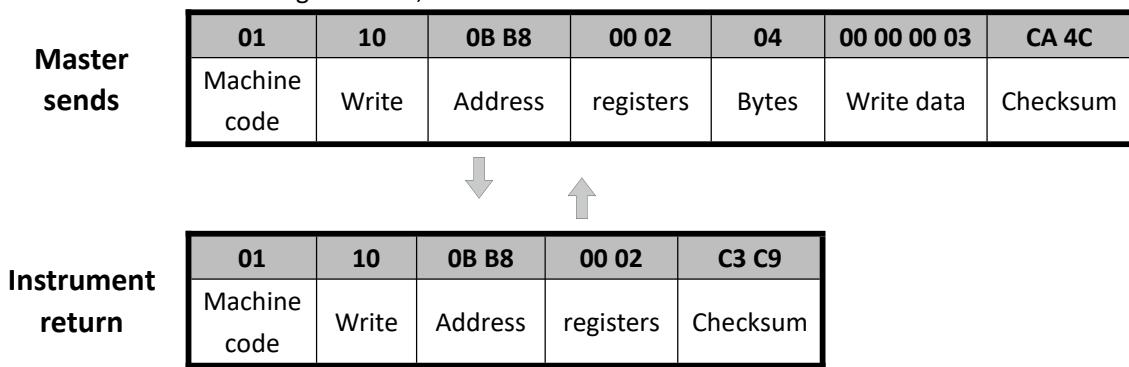
7.2. Correspondence address form

The old version of the meter is powered on to display 220, and only the old version of the address can be used, and the returned data is 1 register (two bytes);

The new version of the instrument shows A220 when it is powered on, adds a new address and is compatible with the old version of the instrument address, the new instrument address can be read continuously, and the returned data is 2 registers (four bytes).

Legacy address	New address	Parameter name	Data Type	read（R） write（W）
0x00	0x7D0	Real-time measurements	int	R
0x01	0x7D2	peak	int	R
0x02	0x7D4	Valley	int	R
0x03	0x7D6	Operational status	int	R
0x1E	0x3EA	First, compare the upper and lower limits	int	RW
0x1F	0x3EC	Second, compare the upper and lower limits	int	RW
0x20	0x3EE	Third, compare the upper and lower limits	int	RW
0x21	0x3F0	Comparison	int	RW
0x22	0x3F2	Hysteresis	int	RW
0x23	0x3F4	Trigger threshold	int	RW
0x24	0x3F6	Boot clears the range	int	RW
0x25	0x3F8	Threshold opening	int	RW
0x26	0x3FA	Alarm delay	int	RW
0x27	0x3FC	Zero tracking	int	RW
0x28	0x3FE	Digital filtering	int	RW
0x29	0x400	Stabilize the range	int	RW
0x2C	0x406	Number of decimal places	int	RW
0x2D	0x408	Keep track of time	int	RW
0x2E	0x40A	Creep tracking	int	RW
0x2F	0x40C	Rated transmission capacity	int	RW
0x32	0x412	Acquisition speed	int	RW
0x33	0x414	Drive into zero	int	RW

0x34	0x416	Transmitter switches	int	RW
0x35	0x418	Transmitter zero	int	RW
0x36	0x41A	Transmission fullness	int	RW
0x38	0x41E	Communication mode	int	RW
0x39	0x420	Communicator code	int	RW
0x3A	0x422	baud rate	int	RW
0x3B	0x424	Stop bits	int	RW
0x3C	0x426	Sensor range	int	RW
0x3D	0x428	Sensor sensitivity	int	RW
0x41	0x430	Spanning factor	int	RW
0x42	0x432	Gravitational acceleration	int	RW
0x47	0x43C	Multi-function code	int	RW
0x48	0x43E	Communication high and low	int	RW
0x49	0x440	Automatically clears the range	int	RW
0x4A	0x442	The delay period is automatically cleared	int	RW
0x4B	0x444	Graduation value	int	RW
	0xBB8	Write 02 to zero	int	RW
	0xBBA	Write to the weight register	int	RW
	0xBB8	Write 03 to confirm that the weight of the weight is valid and complete the calibration	int	RW
	0xBB8	Write 04 clear peak and valley value	int	RW

8. Parameter table

serial number	parameter name	Parameter range	Default value	illustrate
Ed-001	First, compare the upper and lower limits	[-9999,99999]	5000	
Ed-002	Second, compare the upper and lower limits	[-9999,99999]	500	
Ed-003	Third, compare the upper and lower limits	[-9999,99999]	20	
Ed-004	Comparison	[0,111] Small size	111	0 = Lower Limit; 1 = Upper Limit "111" is represented from right to left Bit = 1 = The first upper limit alarm Ten bits = 1 = The second upper limit alarm Hundred = 0 = The third lower limit alarm
Ed-005	Hysteresis	[0,1000]	2	The back-to-back difference that triggers the upper and lower bounds
Ed-006	Trigger threshold	[0,99999]	50	Meters above this threshold start working

Ed-007	Boot clears the range	[0,99999]	2	When the machine is turned on, when the force value is less than this parameter, the zero is executed
Ed-008	Threshold opening	[0,9]	2	0 = The trigger threshold is valid 2 = The trigger threshold is invalid
Ed-009	Alarm delay	[0,99.999]	3.000	In 210A mode, the alarm output duration
Ed-010	Zero tracking	[0,1000]	0	When the force value is less than this parameter at runtime, it is automatically set to zero
Ed-011	Digital filtering	[1,100]	28	The larger this parameter, the stronger the filtering and the more stable the data
Ed-012	Stabilize the range	[0,5000]	5	When the fluctuation is less than this parameter within 1s, it is judged to be stable
Ed-015	Number of decimal places	[0,4]	2	"2" stands for two decimal places
Ed-016	Keep track of time	[0,99.999]	2.000	Zero/Creep Tracking Time (seconds)
Ed-017	Creep tracking	[1,100]	0	The value of sensor drift is tracked
Ed-018	Rated transmission capacity	[0,99999]	5000	The total range of the input sensor is used for analog output
Ed-021	Acquisition speed	[0,3]	2	0 = 10Hz;1 = 20Hz;2 = 80Hz;3 = 320Hz
Ed-022	Drive into zero	[0,1]	1	0 = Clear zero;1 = It clears after 1 second of opening
Ed-023	Transmitter switches	[0,1]	0	0 = Shut down ; 1 = Turn on the analog output
Ed-024	Transmitter zero	[0,16383]	800	When unloaded I:4mA V:0V
Ed-025	Transmission fullness	[0,16383]	4000	When fully loaded I:20mA V:10V
Ed-027	Communication mode	[0,3]	1	0 = void;1 = ModbusRTU;2 = ASCII upload
Ed-028	Communicator code	1-128	1	Communication station number
Ed-029	baud rate	[0,6]	2	0 = 2400; 1 = 4800; 2 = 9600; 3 = 19200; 4 = 38400; 5 = 57600;6 = 115200;
Ed-030	Stop bits	0-1	1	0=8N1;1=8N2
Ed-031	Sensor range	[0,99999]	10000	For digital calibration
Ed-032	Sensor sensitivity	[0.0001,99.999]	2	For digital calibration
Ed-036	Spanning factor	[-9999,99999]	20000	For hardware calibration
Ed-037	Gravitational acceleration	[9.000,9.900]	9.8	
Ed-042	Multi-function code	[0,100]	0	011 = Restore factory 210A mode; 019 = Restore factory 220 mode; 020 = Restore factory 230 mode; 040 = Confirm the digital calibration; 035 = Factory reset all parameters; 87 = Back up the parameters; 88 = Restore the backup parameters
ED-043	Registers are high and low	[0,1]	0	0 = The high position is in front； 1 = The low is in front
ED-044	Automatically clears the range	[0,99999]	5	The force is automatically zeroed within this range

| ED-045 | The delay period is automatically cleared | [0,99.999] | 2.000 | After the work is completed once, the automatic clearing will be performed at this time |
| ED-046 | Graduation value | [0,5] | 0 | 0=1; 1=2; 2=5; 3=10; 4=20; 5=50; |

9. Warranty instructions

❖Products from the date of sale, the whole machine warranty for one year.

During the warranty period, if the product is faulty, contact our company in time and shall not remove it by itself, otherwise the company has the right to refuse the warranty.

❖Charge for repair under any of the following circumstances:

1.　Product with of warranty.

2.　Damaged due to poor transport or storage or failure to operate as required by the instructions.

3.　Products independently disassembled or not repaired by the company's warranty point.

4.　Products with no product number or no product number on the warranty form that does not match or alter the product number sent for repair.

5.　Damage other than product quality causes during the warranty period.

10. Product selection

Item number	Product name	A brief description of the product function	annex	remark