



**AMC501-D**

**Double scale packing  
controller instruction  
manual**



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**Company web site:** <http://www.szamp.com.cn/>

This product carries out the standard:

GB/T 7724-2008 National standard of <electronic weighing instrument>

JJF1624-2017 Type evaluation outline of <digital weighing indicator (weighing indicator) >

JJG649-2016 Verification regulation of digital weighing indicator (weighing indicator)



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# I. Basic Information

## 1.1. Features and Specifications

AMC501-D is a dual-channel quantitative packaging control instrument based on Chinese touch screen. Support bucket packaging, no bucket packaging, valve scale, bulk material accumulation and other working modes. AMC501-D TFT touch screen display with bright color, support Chinese/English display, beautiful graphical interface, reasonable function classification and layout. All these features make the AMC501-D very easy to use.

packaging controller has the following basic features:

- Terminal TFT high color touch screen, input and display in Chinese and English.

- Weighing channel: double channel

- Working voltage: DC24V

- Sensor: DC5V/4-wire and 6-wire system compatible

- Switch quantity: 10 input /16 output

- Analog output: two analog output channels are optional

- Installation method: cubicle outfit (Panel mounting)

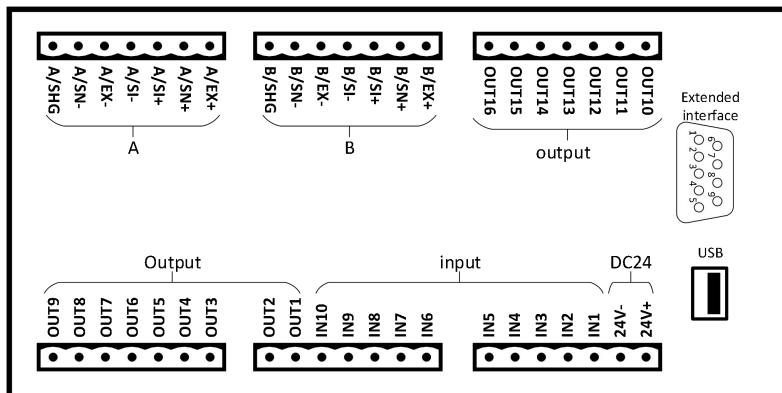
- Volume: 203×149×50 (Length \* width \* height, mm)

The detailed technical specifications are as follows:

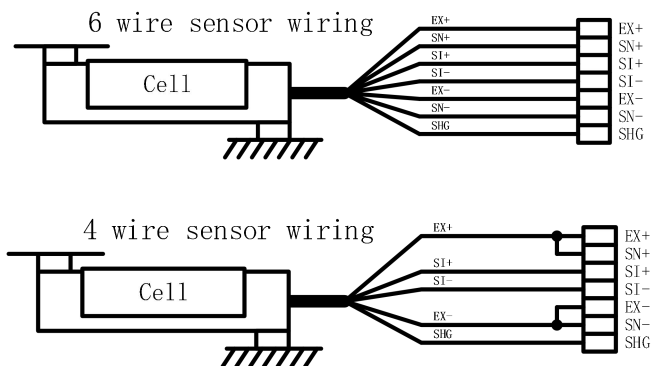
|                                    |                                                                                                |
|------------------------------------|------------------------------------------------------------------------------------------------|
| Transducer Excitation              | DC5V $\pm$ 10%/120mA Drive current/can receive eight $\Omega$ 350 specifications of the sensor |
| Adaptive Sensor Sensitivity        | 2mV/V or 3mV/V                                                                                 |
| Input Signal Range                 | 0 $\sim$ 15mV                                                                                  |
| Minimum Input Sensitivity          | 0.5uV/d                                                                                        |
| Nonlinearity                       | 0.02%FS (3mV/V hour)                                                                           |
| Zero Drift                         | <0.5 $\mu$ V/ $^{\circ}$ C                                                                     |
| Gain Drifting                      | <10PPM/ $^{\circ}$ C                                                                           |
| AD Rate                            | 960Times/Seconds                                                                               |
| Maximum Accuracy of Display        | 1/100000                                                                                       |
| Product Accuracy Grade             | III                                                                                            |
| Working Voltage                    | DC24V (18V $\sim$ 30V compatibility)                                                           |
| Product Power Consumption          | <5W                                                                                            |
| <u>Operating Temperature Range</u> | -10 $^{\circ}$ C $\sim$ 45 $^{\circ}$ C                                                        |
| Storage Temperature                | -20 $^{\circ}$ C $\sim$ 60 $^{\circ}$ C                                                        |
| Humidity                           | Within 90%RH (No Condensation)                                                                 |

## 1.2. Connection Port

The connection Port is shown:

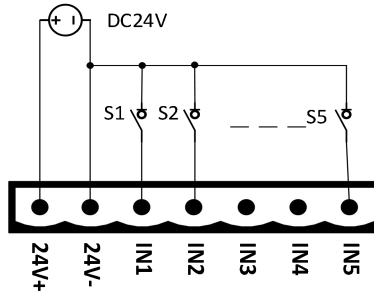


## 1.3. Sensor wiring method



## 1.4. IO wiring method

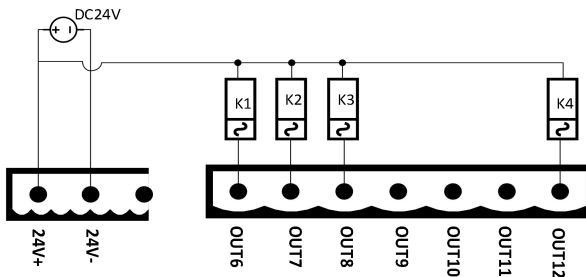
For example, IN1, IN2, and IN5 are shown as follows:



The external circuit drive input switching quantity should meet two points, as follows:

1. The external circuit must be co-located with the controller;
2. When the input power of the external circuit is low, the input is valid; otherwise, the input is invalid.

The wiring diagram of the output switch quantity is as follows (OUT6, OUT7, OUT8, and OUT12 are used as examples) :



The external circuit driven by output switching quantity should meet two main points:

1. The external circuit should be co-located with the controller;

2.Low level when switching quantity output is active.

**Note:** the maximum driving capacity of each switch output is 500mA. Please pay attention to the power of the load when connecting the load. If the power exceeds the driving capacity of the output, the switch output may be damaged.

## 1.5. Interface definition

| interfa                  | instructions          | interfa                  | instructions          |
|--------------------------|-----------------------|--------------------------|-----------------------|
| power supply             |                       |                          |                       |
| 24V+                     | DC24V+                | 24V-                     | DC24V-                |
| IO Input                 |                       |                          |                       |
| IN1                      | I1.start              | IN2                      | I2.stop               |
| IN3                      | I20.A zeroing         | IN4                      | I21.B zeroing         |
| IN5                      | I4.A manual-disc      | IN6                      | I6.B manual-disc      |
| IN7                      | I8.A clip/release bag | IN8                      | I9.B clip/release bag |
| IN9                      | I10. clear alarm      | IN10                     | I0. No definition     |
| IO Output                |                       |                          |                       |
| OUT1                     | Q1. running           | OUT2                     | Q3.A large            |
| OUT3                     | Q4.A med              | OUT4                     | Q5.A slow             |
| OUT5                     | Q6.A Fixed value      | OUT6                     | Q7.A disc             |
| OUT7                     | Q14.B large           | OUT8                     | Q15.B med             |
| OUT9                     | Q16.B slow            | OUT10                    | Q17.B fixed           |
| OUT11                    | Q18.Bdisc             | OUT12                    | Q8.A clap             |
| OUT13                    | Q25. Ove/und          | OUT14                    | Q9.A pat              |
| OUT15                    | Q26.warning           | OUT16                    | Q2.stop               |
| A scale sensor interface |                       | B scale sensor interface |                       |
| A/EX+                    | Load Cell Excitation+ | B/EX+                    | Load Cell Excitation+ |
| A/SN+                    | Load Cell Sense+      | B/SN+                    | Load Cell Sense+      |
| A/SI+                    | Load Cell Sense+      | B/SI+                    | Load Cell Sense+      |

|       |                         |       |                       |
|-------|-------------------------|-------|-----------------------|
| A/SI- | Load Cell Signal-       | B/SI- | Load Cell Signal-     |
| A/EX- | Load Cell Excitation-   | B/EX- | Load Cell Excitation- |
| A/SN- | Load Cell Sense-        | B/SN- | Load Cell Sense-      |
| A/SHG | Load Cell Shielded Wire | B/SHG | Load Cell Shielded    |

## 1.6. Extended interfaces

The controller can be configured with two expansion boards:

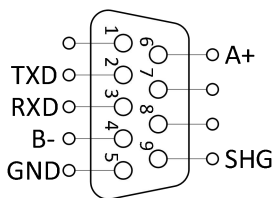
- ①Dual serial port (RS232+RS485)
- ②Dual analog + serial port (RS485)

The expansion interface is DB9 plug, and the controller can automatically identify the expansion board.

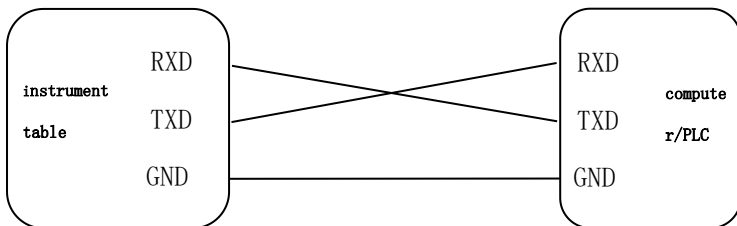
### 1.6.1. Double serial port(RS232+RS485)

Expansion board (1) For dual serial ports (RS232+RS485), the definitions of the ports are as follows:

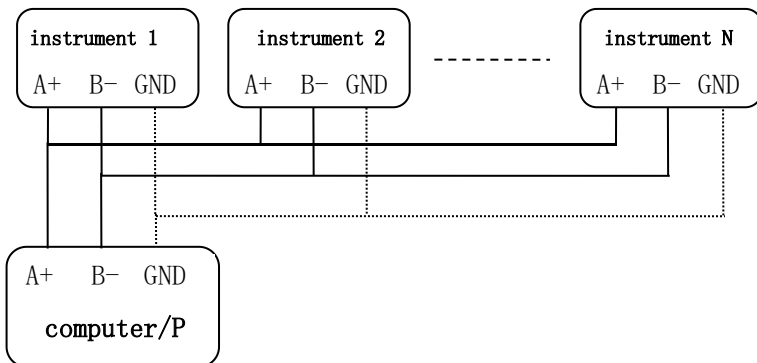
| DB9 lead foot  | Interface specification |
|----------------|-------------------------|
| NO.1 lead foot | Empty                   |
| NO.2 lead foot | RS232(TXD)              |
| NO.3 lead foot | RS232(RXD)              |
| NO.4 lead foot | RS485(B-)               |
| NO.5 lead foot | RS232(GND)              |
| NO.6 lead foot | RS485(A+)               |
| NO.7 lead foot | Empty                   |
| NO.8 lead foot | Empty                   |
| NO.9 lead foot | Shielding               |



### RS232 Wiring schematic:

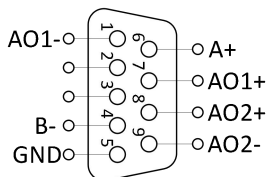


### RS485 Wiring diagram:



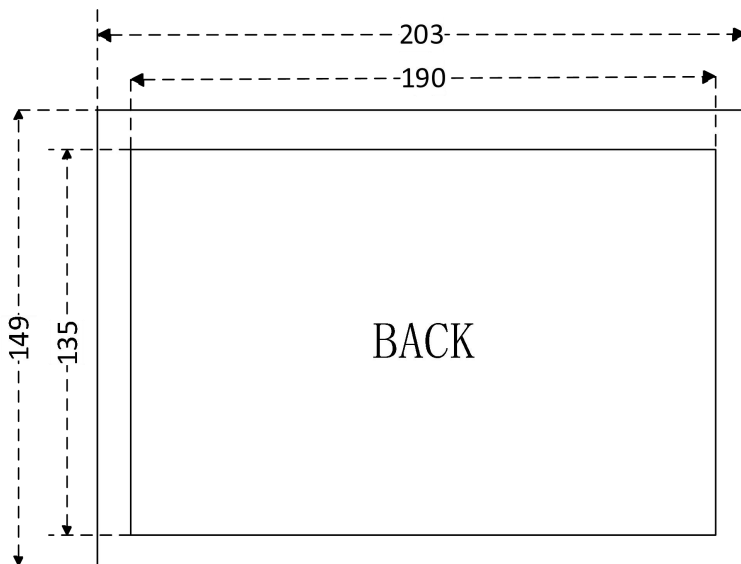
## 1.6.2. Dual analog + serial port(RS485)

If expansion board (2) dual-analog + serial port (RS485) is selected, the definitions of the interfaces are as follows:



| DB9 lead foot |           | Interface specification |
|---------------|-----------|-------------------------|
| N0.1          | lead foot | Analog quantity 1 -     |
| N0.2          | lead foot | empty                   |
| N0.3          | lead foot | empty                   |
| N0.4          | lead foot | RS485(B-)               |
| N0.5          | lead foot | GND                     |
| N0.6          | lead foot | RS485(A+)               |
| N0.7          | lead foot | Analog quantity 1 +     |
| N0.8          | lead foot | Analog quantity 2 +     |
| N0.9          | lead foot | Analog quantity 2-      |

## 1.7. Mounting Dimension

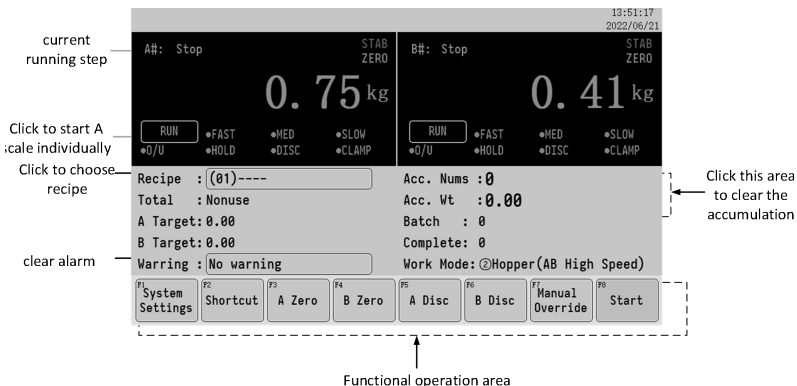


The image above is the bottom view of the product, data unit: mm

**Recommended installation hole size: 192mm×138mm**

## II. Main Interface

After the power start is completed, the main interface is entered, as shown in the figure below:



The top column shows the status indicators such as current weight value、weight stability、zero、net and slow stop, and the detailed running steps of the controller.

The middle two columns show the following:

**【 recipe 】** The current Recipe number and Recipe name are displayed. Click to select the formula.

**【 target 】** That is the target packaging weight of the current Recipe used.

**【 A target 】** Current formula set A scale target packaging weight.

**【 B target 】** Current formula set B scale target packaging weight.

**【 A alarm information 】** Display current alarm information, click to clear the alarm operation.

**【 Acc Nums 】** Total number of packages completed by packaging.

**【 Acc-wt 】** Total weight of packing completed.

**Note:** Click the accumulated data display location to clear the accumulated data.

【 Batch setting 】 The number of packages to be packed, the controller will stop automatically after the batch setting is completed.

【 Completed batch 】 The number of batches that have been completed.

【 Working mode 】 Current working mode.

At the bottom of the column is the function key.

**F1 System maintenance**: The system maintenance page is displayed.

**F2 Shortcut**: The shortcut Settings screen is displayed.

**F3 A zero**: Clear the current weight of scale A. If the key is gray, it is unavailable. For example, it is gray in the running state.

**F4 B zero**: Clear the current weight of scale B. If the key is gray, it is unavailable. For example, it is gray in the running state.

**F5 A Discharging**: Click to open and close unloading signal of A scale.

**F6 B Discharging**: Click to open and close the unloading signal of B scale.

**Note:** When the working mode is set to non-bucket scale related mode, the above two keys will automatically change to **F1 A clap** and **F1 B clap**.

**F7 Manual operation**: It can manually control large, med, slow, clamp, tap, etc., and it has real-time status display of switch port.

**Note:** When entering the running state, the F7 button will automatically change to the **F7 slow stop** button. After clicking the slow stop button, the controller will automatically change to the stop state after completing the packaging process.

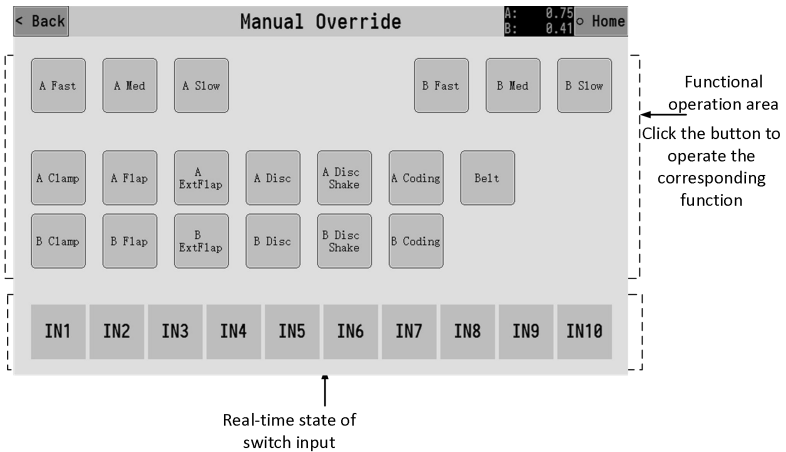
**F8running**: Gray indicates stop state. Click **F8 running**. If no errors are reported, the system starts the packaging workflow.

## 2.1. Quick Settings

| < Back    |                            | Shortcut |    | A: 0.75<br>B: 0.41 ○ Home |                 |
|-----------|----------------------------|----------|----|---------------------------|-----------------|
| Shortcut1 | 4.2.1 A Target             | 0.00     | kg | 4.2.9 B Target            | 0.00 kg         |
|           | 4.2.2 A Fast Feed          | 0.00     | kg | 4.2.10 B Fast Feed        | 0.00 kg         |
|           | 4.2.3 A Med Feed           | 0.00     | kg | 4.2.11 B Med Feed         | 0.00 kg         |
|           | 4.2.4 A Slow Feed          | 0.00     | kg | 4.2.12 B Slow Feed        | 0.00 kg         |
|           | 4.2.8 Total Target         | 0.00     | kg | 5.1.1 AI Pack             | OFF             |
|           | 4.2.16 Discharge Zero Area | 0.50     | kg | 4.2.17 Feed Speed         | ③ Three Speed > |

You can customize the parameters displayed on this screen by using the Shortcut Screen Settings function. You can configure the parameters to be displayed on this screen as required. For details, see 3.11 Chapter.

## 2.2. Manual operation



The interface is divided into two parts:

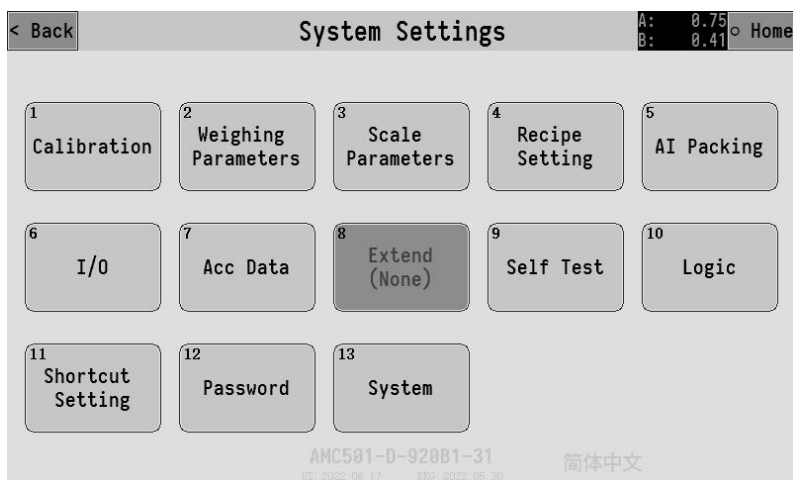
Some keys on the interface are function operation areas. You can click the corresponding keys to enable or disable the corresponding functions and manually test whether the corresponding functions are normal.

The lower part of the interface is divided into real-time status display of switch input, which displays the status of the corresponding switch input in real time. When it is effective, it is green, and when it is invalid, it is gray. You can quickly check whether the switch input port signal is effective, which is convenient to observe and test whether the external button input signal is normal.

### III. System maintenance

Click **system maintenance** on the main screen to enter the main menu of system maintenance, as shown below:

**(Initial password for system maintenance: 000000)**



All controller parameters are listed on this screen.

The controller model and software date are displayed at the bottom of the screen. Click the **English** and **简体中文** buttons displayed in the lower right corner to switch between Chinese and English display.

The following is a detailed description of each major item in system maintenance.

## 3.1. Weight Calibration

New equipment needs to be calibrated for weight before use, And set up the system unit, accuracy, division value and capacity.

|              |                |                                                                                                                    |
|--------------|----------------|--------------------------------------------------------------------------------------------------------------------|
| <b>1.1.1</b> | system unit    | g/kg/t/lb<br>Select the units for the system weight display.                                                       |
| <b>1.1.2</b> | accuracy       | 0/0. 0/0. 00/0. 000/0. 0000<br>Select the number of decimal points for the system weight display.                  |
| <b>1.1.3</b> | division value | Sets the minimum metric value that the system weight can display.                                                  |
| <b>1.1.4</b> | capacity       | Set the maximum weighing range.<br>Weight overflow "OFL" is displayed if the weight exceeds the set maximum range. |

There are three calibration methods of weight, choose one of them according to the actual situation:

- (1) Wt Clb: Calibrate using weights or objects of known weight on scale table.
- (2) Material Clb: Add the material directly to the weighing bag or weighing bucket, weigh the actual weight of the material after it is released to calibrate.
- (3) No Wt Clb: Direct input zero voltage value, gain voltage value and the corresponding weight for calibration.

### 3. 1. 1. Weight Calibration

| < Back |              | 1.Calibration          |                 | Home                   |                       |
|--------|--------------|------------------------|-----------------|------------------------|-----------------------|
| 1.1    | Wt Clb       | 1.1.1                  | Unit kg >       | 1.1.3                  | Division Value 0.01 > |
| 1.2    | Material Clb | 1.1.2                  | Accuracy 0.00 > | 1.1.4                  | Capacity 100.00 kg    |
| 1.3    | No Wt Clb    |                        |                 |                        |                       |
|        |              | Scale A                |                 | Scale B                |                       |
|        |              | 0.75 kg                |                 | 0.41 kg                |                       |
|        |              | A Sensor Vol: 0.121 mV |                 | B Sensor Vol: 0.068 mV |                       |
|        |              | A Gain Vol: 0.118 mV   |                 | B Gain Vol: 0.065 mV   |                       |
|        |              | Zero Clb Gain Clb      |                 | Zero Clb Gain Clb      |                       |

The sensor voltage displayed on the screen is the absolute voltage of the current sensor signal. The normal range of this value is 0 to 15mV. If the value exceeds this range, it indicates that the signal of the weight sensor is abnormal. Check whether the sensor is damaged or whether the cable connection is normal and reliable.

Relative voltage refers to the difference between the current absolute voltage minus the voltage value at zero calibration, which is equivalent to the voltage value generated by the gain weight.

The calibration process only requires two steps of empty scale calibration and weight calibration. Taking the calibration of A scale as an example, the operation is as follows:

- (1) Empty the weighing platform and click **Empty scale calibration** button after the signal is stable (the sensor voltage value does not jump), the current weight will be 0 after successful calibration.

- (2) Put the weight or the object with known weight on the weighing platform, and wait until the signal is stable (the sensor voltage value does not jump), Click **Farmer calibration** then the input box will pop up. Input the exact weight of the object and click confirm.

After the completion of the above two steps, the weight calibration process is completed. The controller will display the accurate weight value on the weighing platform.

### 3. 1. 2. Material calibration

| 1.Calibration                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                          | Home |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| <div> <div>&lt; Back</div> <div>1.1 Wt Clb</div> <div>1.2 Material Clb</div> <div>1.3 No Wt Clb</div> </div> <div> <div>A</div> <div>STAB</div> <div>0.75 kg</div> <div>Zero Clb</div> <div>Record Wt</div> <div>Clb Wt 0.00</div> <div>Wt Clb</div> <div>Target 0.00</div> <div>Feed Once</div> <div>Fast 0.00</div> <div>Slow</div> <div>Med 0.00</div> <div>Disc</div> <div>Slow 0.00</div> <div>Stop</div> </div> | <div> <div>B</div> <div>STAB</div> <div>0.41 kg</div> <div>Zero Clb</div> <div>Record Wt</div> <div>Clb Wt 0.00</div> <div>Wt Clb</div> <div>Target 0.00</div> <div>Feed Once</div> <div>Fast 0.00</div> <div>Slow</div> <div>Med 0.00</div> <div>Disc</div> <div>Slow 0.00</div> <div>Stop</div> </div> |      |

Material calibration can be directly added to the weighing bag or weighing bucket, weighing the actual weight of the material after release for calibration. The operation is as follows:

- (1) Empty scale calibration

Clear the weighing platform and click **Empty scale calibration** after the signal is stable, the current weight will be zero after successful calibration.

## (2) Record the weight

### Bucket scale:

Click  button to manually open and close the small feeding device to add a certain amount of material to the weighing bucket, Or click  button automatically adds the set target weight material. Click the  button to record the weight signal when the signal is stable.

### No hopper scale:

Clip the bag and click  button to manually open and close feeding device, add a certain amount of material to the bag, Or click  Button to automatically add the set target weight of the material. Click after the signal stabilizes  Button records the weight signal at this time.

## (3) Input the actual weight

### Bucket scale

Clip the bag and click  button put the material in the weighing bucket into the packaging bag, take off the packaging bag, and put it on the accurate scale to weigh the weight of the packaging bag to get the accurate weight value(Note that bag weight is not included), click **【Wt Clb】** Input box, input the actual weight of the material obtained by weighing, click  complete the material calibration process.

### No hopper scale:

Take off the packaging bag, put it on an accurate scale to weigh the packaging bag, and click **【Wt Clb】** Input box, input the weight of the actual bag weight, click  complete

the material calibration process.

### 3.1.3. Calibration Without Weights

| < Back |              | 1.Calibration |                         | Home               |  |
|--------|--------------|---------------|-------------------------|--------------------|--|
| 1.1    | Wt Clb       | 1.3.1         | A Zero Voltage 0.003 mV | A 0.75 kg<br>Calib |  |
| 1.2    | Material Clb | 1.3.2         | A Gain Voltage 3.125 mV |                    |  |
| 1.3    | No Wt Clb    | 1.3.3         | A Gain Weight 20.00 kg  |                    |  |
|        |              | 1.3.4         | B Zero Voltage 0.003 mV | B 0.41 kg<br>Calib |  |
|        |              | 1.3.5         | B Gain Voltage 3.125 mV |                    |  |
|        |              | 1.3.6         | B Gain Weight 20.00 kg  |                    |  |

On this interface, you can enter separately Zero Voltage、Gain Voltage and Gain Weight, click **Calib** can complete the calibration process without weight.

## 3.2. Weighing Parameters

Click the **2.Weighing parameters** button in the system maintenance interface to enter the setting interface of basic weighing parameters,the interface is as follows:

| 2.Weighing Parameters |                         | A: 1.44<br>B: 0.41 | Home |
|-----------------------|-------------------------|--------------------|------|
| 2.1 Weighing          | 2.1.1 Zero Tracking     | 0                  | d    |
|                       | 2.1.2 Zero Range        | 10                 | %    |
|                       | 2.1.3 Stab. Range       | 3                  | d    |
|                       | 2.1.4 Stab. Time        | 0.8                | s    |
|                       | 2.1.5 Weighing Filter A | 5                  |      |
|                       | 2.1.6 Weighing Filter B | 5                  |      |
|                       | 2.1.7 Discharge Filter  | 2                  |      |
|                       | 2.1.8 Zero On Startup   | OFF                |      |

|       |               |          |                                                                                                                                                                                |
|-------|---------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1.1 | Zero Tracking | 0~9d     | d said <b>【1.1.3 minimum degree】</b> .<br>Only in the stopped state, the weight value is stable at this set value $\times$ d automatic zeroing in positive and negative range. |
| 2.1.2 | Zero Range    | 0~99%    | The weight must be less than or equal to “ <b>【 1.1.4 Maximum range 】</b> $\times$ Reset the scope” clearance is allowed.                                                      |
| 2.1.3 | Stab. Range   | 1~9d     | d said <b>【1.1.3 minimum degree】</b> .<br>These two parameters work                                                                                                            |
| 2.1.4 | Stab. Time    | 0.1~9.9s | together to determine whether                                                                                                                                                  |

|              |                         |     |                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                         |     | <p>the weight is stable.</p> <p>Take all the weight values within the "stabilization time", and the difference between the maximum value and the minimum value is <math>\leq</math>"Stable range", the weight value is considered stable at this time.</p>                                                                                                                                                |
| <b>2.1.5</b> | A scale Weighing Filter | 0~9 | <p>The intensity level of software digital filter, according to the actual debugging effect of equipment to set the appropriate filter level parameter value.</p> <p>0: the filtering effect is the weakest, the weight response is fast, and the anti-vibration effect is poor;</p> <p>9: The filtering effect is the strongest, the weight response is slow, and the anti-vibration effect is good.</p> |
| <b>2.1.6</b> | B scale Weighing Filter |     |                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>2.1.7</b> | Discharge Filter        | 0~9 | <p>Software digital filter intensity level in unloading state, generally, the filter level is set to a smaller level to speed up the weight response during unloading.</p>                                                                                                                                                                                                                                |
| <b>2.1.8</b> | Zero On Startup         |     | <p>After it is turned on, the controller will automatically perform a zeroing operation every time it is powered on and powered on.</p>                                                                                                                                                                                                                                                                   |

## 3.3. Scale Parameters

Click the button **3.Scale Parameters** in the system maintenance interface to enter the setting interface of packaging scale parameters, parameters are divided into several categories according to function and control flow.

### 3.3.1. Work Mode

Function parameters related to working mode of packing scale can be set.

| < Back |                   | 3.Scale Parameters |                                       | A: 1.44<br>B: 0.41 Home |                                    |
|--------|-------------------|--------------------|---------------------------------------|-------------------------|------------------------------------|
| 3.1    | Work Mode         | 3.1.1              | Work Mode ②Hopper<br>AB High Speed >  | 3.1.6                   | Non-Hopper Mode ②Net >             |
| 3.2    | Sew/Cut           | 3.1.2              | Feed Signal Mode ②Combination >       | 3.1.7                   | Non-Hopper<br>Clr Zero Delay 0.5 s |
| 3.3    | Slow Pulse        | 3.1.3              | Zero Interval 0                       | 3.1.8                   | Carry Bag ①Closed >                |
| 3.4    | Disc Shake        | 3.1.4              | Disc Interlock Time 0.0 s             | 3.1.9                   | Allow Unclass<br>When Running OFF  |
| 3.5    | Belt/Coding       | 3.1.5              | Clamp Movement<br>When Stop ①Ignore > | 3.1.10                  | Tare Wt Max 2.00 kg                |
| 3.6    | Tractor           |                    |                                       | 3.1.11                  | Tare Wt Min 0.00 kg                |
| 3.7    | Material<br>Level |                    |                                       | 3.1.12                  | AB Force Wait OFF                  |

|       |           |                                                                                                                                                                                                                                                                            |
|-------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.1.1 | Work Mode | ①[Bucket packing (AB combination)]<br>②[Bucket packing (AB high speed)]<br>③[Bucket packing (A scale separate)]<br>④[Bucket packing (B scale separate)]<br>⑤[No bucket packaging (At the same time loose bag high speed)]<br>⑥[No bucket packaging (At the same time loose |
|-------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|              |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                          | <p>bag A priority) ]</p> <p>⑦[No bucket packaging (AB Wait for each other) ]</p> <p>⑧[No bucket packaging (AB independent) ]</p> <p>⑨[Bulk cumulative (AB mutual exclusion) ]</p> <p>⑩[Bulk cumulative (AB at the same time) ]</p> <p>⑪[Bulk cumulative (Only A scale) ]</p> <p>⑫[Bulk cumulative (Only B scale) ]</p> <p>⑬[AB valve port scale]</p> <p>⑭[Bucket packing (B complementary pattern ) ]</p> <p>⑮[Bucket packing (AB independent) ]</p> <p>⑯[AB ingredients]</p> <p>The corresponding workflow of different working modes is described in Chapter 4.</p> |
| <b>3.1.2</b> | Feed Signal Mode         | <p>[independent feeding]:</p> <p>Fast: effective output of large input signal.</p> <p>Med speed: med signal output is valid.</p> <p>Slow speed: the output of slow signal is effective.</p> <p>②[combined feeding]:</p> <p>Fast: fast, med and slow signal output is effective.</p> <p>Med speed: med and slow signal output is effective.</p> <p>Slow speed: the output of smlow signal is effective</p>                                                                                                                                                             |
| <b>3.1.3</b> | Zero Interval            | <p>0~99</p> <p>After each several packaging processes, before the start of the feeding process to zero.</p> <p>Note: the first scale after starting will not be cleared.</p>                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>3.1.4</b> | Unloading interlock time | <p>0.0~99.9s</p> <p>It only works in [bucket packing (AB combination)]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|              |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | in bucket combination mode | mode. When one scale starts unloading, the unloading interlock time is started, and the other scale is not allowed to discharge before the end of unloading interlock time, so as to prevent the unloading from blocking the discharge port at the same time.                                                                                                                                                                                                                                                                                                            |
| <b>3.1.5</b> | 停止输入后夹袋机构处理                | <p>Used to set the processing mode of bagging mechanism after the equipment is turned to stop state:</p> <ul style="list-style-type: none"> <li>a) [ignore]: Do not control the action of bag clamping mechanism after stopping, and keep the state before stopping.</li> <li>b) [unclamp]: After stopping, make the bag clamping mechanism in loose bag state.</li> <li>c) [clamp] : After stopping, the clamping bag mechanism is in the clamping bag state.</li> </ul> <p><b>Note: This function does not work in bulk accumulation mode and port scale mode.</b></p> |
| <b>3.1.6</b> | Non-Hopper Mode            | <p>This function is available in the relative working mode of the bucket scale.</p> <p>①[gross weight packaging] : do not peel before adding.</p> <p>②[net weight packaging] : pre-packaging.</p>                                                                                                                                                                                                                                                                                                                                                                        |
| <b>3.1.7</b> | No bucket clear delay      | <p>0.0~9.9s</p> <p>When the zeroing interval is not set to 0, zeroing</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|               |                               |                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | time                          | will be carried out after the delay time after the bag-loosening process is completed in the relevant working mode of the bucketless scale.                                                                                                                                                                                                                                                             |
| <b>3.1.8</b>  | No bucket bag holding machine | <p>①[closed]</p> <p>② [Standard mode] : After the packaging is completed, the "bag-hugging permit" signal will be output, and the bag will be loosened after the "bag-hugging completion" signal is detected.</p> <p>③[Lift mode]: See section 3.3.1.1 for details.</p> <p>Note: this parameter only works in bucket packing (AB independent) mode.</p>                                                 |
| <b>3.1.9</b>  | Allow Unclamp When Running    | <p>Sets whether bagging is allowed at run time.</p> <p>①[opened]: When running, input bagging signal controller will perform bagging action and return to waiting bagging state.</p> <p>[closed]: Does not respond to loose bag signal at run time.</p> <p>Note: This feature only works in bucket scale mode.</p>                                                                                      |
| <b>3.1.10</b> | Tare Weight Max               | <p>Tare weight detection function.</p> <p>No bucket scale mode, and set to net weight packaging, after running the bag, the controller before peeling detection "lower tare weight <math>\leq</math> current weight <math>\leq</math> upper tare weight", the tare weight is considered normal, peeling can start feeding ,Otherwise, "Abnormal tare weight" will be displayed for manual handling.</p> |
| <b>3.1.11</b> | Tare Weight Min               | <p>The tare detection function is disabled when the upper and lower tare weights are</p>                                                                                                                                                                                                                                                                                                                |

|               |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                              | <p>set to 0.</p> <p><b>Note: This feature only works in bucket scale mode.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>3.1.12</b> | AB forces each other to wait | <p>①[opened]: During operation, one of the scales after the bag is packaged first, no matter whether the other scale is bagged or not, it is necessary to wait for the other scale to complete the bag packaging before starting the belt conveyor.</p> <p>②[closed]: If the other scale has been bagged, wait for the other scale to complete the bagging before starting the belt conveyor; If the other scale does not bag, do not wait for another scale, directly start the belt conveyor.</p> <p>Note: this parameter only works in bucket less packing (AB waiting on each other) mode.</p> |

### 3.3.1.1. Description of bucket - less bag holding machine with [lifting mode]

1. Schematic diagram of lifting and pushing bags
2. Running process

Take scale A for example

- (1) After the packing of A scale is completed, the delay time before the bag loosening is started to prepare the bag loosening, and the switch quantity "Q46 bag holding permit" signal is output at the same time to control the pallet rising.
- (2) After **【4.3.8 A Lift time】** to turn off the output signal.
- (3) If the input signal of "I30 A bag holding completion" is defined, the tray returns to the position after the signal of "I30 A bag holding

completion" is effective, and the signal of "Q9 A bag beating" is output for pushing out the bag.

- (4) If the input signal of "I30A bag holding completion" is not defined, wait for **【4.3.8A lifting time】** and output the signal of "Q9A bag tapping" to push the bag out.
- (5) **【4.4.9 Extra patting time】** Turn off the patting signal and restart the packaging.

### 3. Anti-bag time

The role of **【4.3.6 A anti-bag time】**, **【4.3.7 B anti-bag time】** and **【4.3.10 B push bag safety time】**.

In A scale push bag, will first check the current B scale push bag state. If B has already pushed the bag, and the time exceeds "B scale anti-bag touching time", but does not exceed "B scale anti-bag touching time" + "B scale anti-bag touching time", A will not push the bag, and push the bag after the time is up.

When B scales push bags, will first check the current A scale push bag state. If A scale has already pushed the bag, and the time exceeds the "anti-bag time of A scale", B will not push the bag, and then push the bag after the time is up.

For example: Assume that **【4.3.6 A anti-bagging time】** is set to 2 seconds, **【4.3.7 B anti-bagging time】** is set to 1 second, and **【4.3.10 B safety bagging time】** is set to 3 seconds. Then A scale push bag has the following situation:

1. If B scale is pushing the bag, but not more than 1 second, then A is pushing the bag.
2. If B is pushing the bag for more than 1 second, but not more than  $1+3=4$  seconds, A does not push the bag, wait for more than 4 seconds before pushing the bag
3. If B is pushing the bag and the time has exceeded  $1+3=4$

seconds, A is pushing the bag.

B scale push bag has the following situation:

1. If A is pushing the bag, but not more than 2 seconds, then B will not push the bag.
2. If A is pushing the bag, the time has been more than 2 seconds, B is pushing the bag.

### 3.3.2. Sew/Cut

The controller has the function of sewing bag and cutting line control, which can control the sewing bag and cutting line action of the sewing machine, and has the function of broken line detection, which can be connected to the broken line detector signal to detect the broken line, and alarm when the broken line occurs. Related parameters are as follows:

| < Back |                | 3.Scale Parameters |                          | A: 1.44<br>B: 0.41 Home |                                  |
|--------|----------------|--------------------|--------------------------|-------------------------|----------------------------------|
| 3.1    | Work Mode      | 3.2.1              | Sew Mode ②Timing Sew Off | 3.2.6                   | Thread Break Check OFF           |
| 3.2    | Sew/Cut        | 3.2.2              | Sew Debounce Time 0.1 s  | 3.2.7                   | Check Delay On Time 0.50 s       |
| 3.3    | Slow Pulse     | 3.2.3              | Sew Time 4.0 s           | 3.2.8                   | Check Type ①Pulse Check >        |
| 3.4    | Disc Shake     | 3.2.4              | Cut Delay Time 0.2 s     | 3.2.9                   | Pulse Check Period Time 0.10 s   |
| 3.5    | Belt/Coding    | 3.2.5              | Cut Run Time 1.5 s       | 3.2.10                  | Level Check Debounce Time 0.10 s |
| 3.6    | Tractor        |                    |                          |                         |                                  |
| 3.7    | Material Level |                    |                          |                         |                                  |

|       |          |                                                                                                                           |
|-------|----------|---------------------------------------------------------------------------------------------------------------------------|
| 3.2.1 | Sew Mode | [Start time] : When the input of "I22 sewing bag detection" signal is valid, "Q23 Sewing bag output" signal is output and |
|-------|----------|---------------------------------------------------------------------------------------------------------------------------|

|              |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                        | <p>started <b>【3.2.2 Sewing bag End delay】</b> . When the delay time reaches, "Q23 Sewing bag output" signal is closed.</p> <p>[Timing Sew Off] : When "I22 Stitch Detection" signal is valid, "Q23 Stitch Output" signal will be output. When "I22 Stitch Detection" signal is invalid, it will be started <b>【3.2.2 Stich End delay】</b> , and the "Q23 Stich Output" signal will be closed when the delay time expires.</p> <p><b>For details, see section3.3.2.1.</b></p> |
| <b>3.2.2</b> | Check the time to shake off sewing bag | <p>0.0~9.9s</p> <p>"I23 sewing bag detection" signal input shake time.</p> <p>Continuous validity the signal is considered valid after the duration of this time;</p> <p>Continuous invalid The signal is considered invalid after this duration.</p> <p>Prevent the wrong action of sewing bag caused by occasional signal interruption or conduction.</p>                                                                                                                   |
| <b>3.2.3</b> | Sew Time                               | <p>0.0~99.9s</p> <p>After this delay, the sewing signal output is invalid.</p>                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>3.2.4</b> | Cut Delay                              | 0.0~99.9s                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

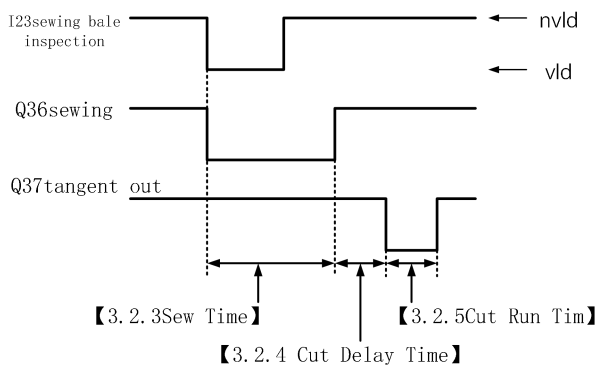
|       |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | Time                                   | Start the delay when the sewing ends, and output "Q24 tangential output" signal after the delay.                                                                                                                                                                                                                                                                                                                                                        |
| 3.2.5 | Cut Run Time                           | Output time of "Q37 Tangential Output" signal.<br>If there is a defined "I22 tangent in place" signal, the tangent will be terminated immediately if the "I22 tangent in place" signal is detected when the tangent output is valid.                                                                                                                                                                                                                    |
| 3.2.6 | Disconnection detection switch         | Main switch of disconnection detection function.                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3.2.7 | Start delay of disconnection detection | 0.00~9.99s<br>After the output of "Q36 sewing bag output" signal is effective, the broken-line detection function will be started after this delay time.                                                                                                                                                                                                                                                                                                |
| 3.2.8 | Type of disconnection detection        | Set the input signal type of Broken Detector. The following two types of broken detector signals are supported.<br>①[Pulse detection]: The input signal of "disconnection detection" is pulse signal. When the thread passes through the wire breaking detector, the wire breaking detector will continuously output pulse signals to the controller. Disconnection occurs when there is no pulse signal input.<br>② [Level detection] : "Disconnection |

|               |                                |                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                | <p>detection" input signal is level signal. When the thread passes through the break detector normally, the break detector will output a level signal to the controller. Disconnection occurs when there is no level signal input.</p> <p>The controller supports two disconnection detection inputs at the same time: "I37 disconnection detection 1" and "I38 disconnection detection 2."</p> |
| <b>3.2.9</b>  | Pulse detection cycle time     | <p>0.00~9.99s</p> <p><b>【 3.2.8 Disconnection detection Type 】</b></p> <p>This parameter is valid when pulse detection is set to [pulse detection]. Set the period time of disconnection detection pulse input. When there is no pulse signal input to the controller after the set cycle time is exceeded, it will be considered as a disconnection and give an alarm.</p>                     |
| <b>3.2.10</b> | Level detection shake off time | <p>0.00~9.99s</p> <p><b>【 3.2.8 Disconnection Detection Type 】</b></p> <p>this parameter is valid when level detection is set to [level detection]. Set the processing time of the input signal of disconnection detection to prevent the detection error caused by the short-time jitter change of the input level signal.</p>                                                                 |

|  |  |                                                                                                                                                                                                       |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>“Break line detection” If the input signal lasts longer than this time, the signal input is valid.</p> <p>“Break line detection” The input signal is invalid for a period exceeding this time.</p> |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

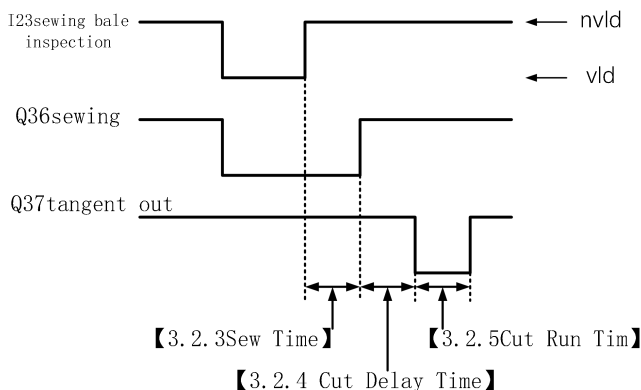
### 3.3.2.1. Sew function description

1. **【3.2.1 Timing mode of sewing bag】** Set to ①[timing at the beginning], and the signal sequence diagram of the sewing bag tangency function is as follows:



**【3.2.1Sew Mod】** ①tim-start

2. **【3.2.1 Timing mode of sewing bag】** Set to ②[timing at the end], and the signal sequence diagram of the sewing bag tangency function is as follows:
- 3.



【3.2.1Sew Mod】①tim-stop

### 3.3.3. Slow Pulse

The function of small feeding can control the output signal of small feeding in the form of pulse feeding.

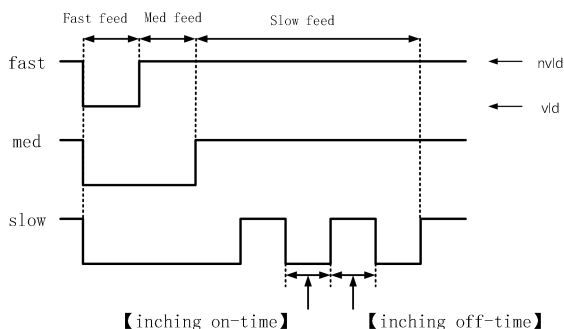
| < Back |                | 3.Scale Parameters |                     | A: 1.44<br>B: 0.41 |   | Home |
|--------|----------------|--------------------|---------------------|--------------------|---|------|
| 3.1    | Work Mode      | 3.3.1              | Slow Pulse Func     | OFF                |   |      |
| 3.2    | Sew/Cut        | 3.3.2              | Slow Pulse On Time  | 0.5                | s |      |
| 3.3    | Slow Pulse     | 3.3.3              | Slow Pulse Off Time | 0.5                | s |      |
| 3.4    | Disc Shake     |                    |                     |                    |   |      |
| 3.5    | Belt/Coding    |                    |                     |                    |   |      |
| 3.6    | Tractor        |                    |                     |                    |   |      |
| 3.7    | Material Level |                    |                     |                    |   |      |

|       |            |                                        |
|-------|------------|----------------------------------------|
| 3.3.1 | Slow Pulse | ① [ON] : The small drop signal will be |
|-------|------------|----------------------------------------|

|       |                     |                                                                                                                                                                                                                                                     |
|-------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | Func                | <p>output in the form of pulse dot.</p> <p>②[OFF]: Small input signal will be output in normal level form.</p> <p><b>Note: the slow feed action function only works in the slow feeding process (only when the slow feed signal is output).</b></p> |
| 3.3.2 | Slow Pulse On Time  | <p>0.0~99.9s</p> <p>The effective time of the output pulse dotting.</p>                                                                                                                                                                             |
| 3.3.3 | Slow Pulse Off Time | <p>0.0~99.9s</p> <p>The invalid time of output pulse dotting.</p>                                                                                                                                                                                   |

### 3.3.3.1. Detailed description of slow drop point function

The function of small point feeding only plays a role in the process of slow feeding. The following figure shows the output sequence of feeding signal when parameter 【3.1.2 Feeding signal output mode】 is set to ②[combined feeding].



### 3.3.4. Disc Shake

The discharging vibration function works in bucket scale and bulk accumulation mode.

When there is a bucket scale packaging fluidity is not very good or a certain viscosity of the material, there may be sticky material in unloading, resulting in some materials can not be released normally weighing hopper.

The unloading vibration function can detect when the unloading timeout situation, output the corresponding vibration signal to control the vibrator or air hammer and other devices, vibration on the weighing bucket, so as to achieve the purpose of falling the material adhesion on the weighing bucket.

Setting **【3.4.5 Unloading Vibration output selection】** as ①[unloading] can also realize the function of vibration falling of materials adhered to the weighing hopper by directly controlling the opening and closing of the unloading door when discharging timeout occurs.

Parameters related to the unloading vibration function are set as follows:

| < Back |                | 3.Scale Parameters |                        | A: 1.43<br>B: 0.41 |   | Home |
|--------|----------------|--------------------|------------------------|--------------------|---|------|
| 3.1    | Work Mode      | 3.4.1              | No. of Shake           | 0                  |   |      |
| 3.2    | Sew/Cut        | 3.4.2              | Disc Timeout Check     | 2.0                | s |      |
| 3.3    | Slow Pulse     | 3.4.3              | Shake On Time          | 0.5                | s |      |
| 3.4    | Disc Shake     | 3.4.4              | Shake Off Time         | 0.5                | s |      |
| 3.5    | Belt/Coding    | 3.4.5              | Disc Shake Output Ctrl | ②Disc Shake        | > |      |
| 3.6    | Tractor        |                    |                        |                    |   |      |
| 3.7    | Material Level |                    |                        |                    |   |      |

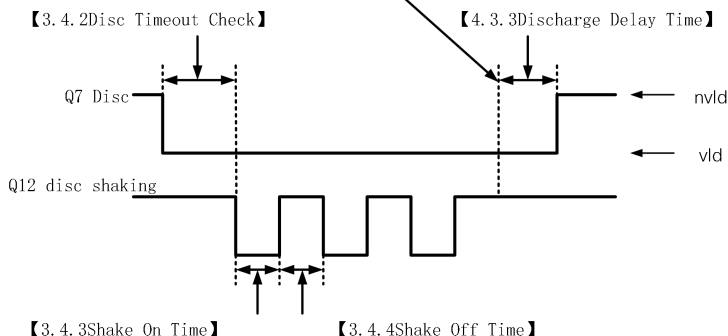
|       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.4.1 | No. of Shake | <p>0~99</p> <p>Number of discharging vibration signal output.</p> <p>If the current weight is lower than 【4.2.16 Discharging Zero zone value】 after the number of discharging vibration is reached, the vibration will be terminated, and the unloading will be terminated after 【4.3.3 discharging delay time】 is started.</p> <p>If the current weight is not lower than 【4.2.16 Discharging zero zone value】 after the number of discharging vibration is reached, the alarm will be "invalid alarm of discharging vibration", and the next vibration cycle will continue to open.</p> <p><b>When the unloading vibration frequency is set to 0, the unloading vibration function is disabled.</b></p> |
|-------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|       |                           |                                                                                                                                                                                                                                                                                                                                                |
|-------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.4.2 | Disc<br>Timeout<br>Check  | 0.0~99.9s<br>Open this time at the beginning of unloading. If the unloading is not completed after this time (the weight is not lower than 【4.2.16 unloading zero zone value】), the unloading is considered timeout and the unloading vibration output is started.                                                                             |
| 3.4.3 | Shake On<br>Time          | 0.0~99.9s<br>Effective output time of discharging vibration signal.                                                                                                                                                                                                                                                                            |
| 3.4.4 | Shake Off<br>Time         | 0.0~99.9s<br>Invalid output time of discharging vibration signal.                                                                                                                                                                                                                                                                              |
| 3.4.5 | Disc Shake<br>Output Ctrl | ①[Unloading] : Direct control of "Q11 unloading" signal when unloading vibration, through the control of unloading door switch to vibrate the material.<br>②[unloading vibration] : output "Q16 unloading vibration" signal when unloading vibration, through the control of vibrator or air hammer and other devices to vibrate the material. |

### 3.3.4.1. Detailed description of discharging vibration function

Taking A scale as an example, the timing diagram of discharging vibration function signal is shown as follows:

When the unloading vibration frequency reaches the area where the weight is lower than zero, start [4.3.3 Discharge Delay Time] to end the unloading and vibration. If the weight is not lower than zero zone, the vibration process will be started again and the alarm will prompt "disc shaking invalid alarm".



### 3.3.5. Belt/coding

**Belt function:** the conveyor belt in the equipment can be controlled to start and stop, used to transport the material bag after packaging.

**Coding function:** used to control the coding machine, after the completion of clamping bag output coding control signal to control the coding machine to print the code on the bag.

Related parameters are as follows:

| <a href="#">&lt; Back</a>                                                                                                                                                           |                                                                  | 3.Scale Parameters                |                                                                                                                                                | A: 1.44<br>B: 0.41                                              | <a href="#">Home</a> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------|
| <div>3.1 Work Mode</div> <div>3.2 Sew/Cut</div> <div>3.3 Slow Pulse</div> <div>3.4 Disc Shake</div> <div>3.5 Belt/Coding</div> <div>3.6 Tractor</div> <div>3.7 Material Level</div> | <div>3.5.1 Belt Start Delay</div> <div>3.5.2 Belt Run Time</div> | <div>0.5 s</div> <div>4.0 s</div> | <div>3.5.3 Coding Func</div> <div>3.5.4 Coding Start Delay</div> <div>3.5.5 Coding Run Time</div> <div>3.5.6 Can't Disc/Feed when Coding</div> | <div>OFF</div> <div>0.5 s</div> <div>0.5 s</div> <div>OFF</div> |                      |

|       |                    |                                                                                                                                                                                                                                 |
|-------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.5.1 | Belt Start Delay   | 0.0~99.9s<br>Start belt conveyor delay time, loose bag after starting this time, time to output "Q35 belt conveyor" signal control conveyor belt rotation.                                                                      |
| 3.5.2 | Belt Run Time      | 0.0~99.9s<br>Duration of "Q35 belt conveyor" signal output.<br><b>Note: when the time is set to 0, the signal of "Q35 belt conveyor" will be output effectively after the controller runs, so that the belt keeps rotating.</b> |
| 3.5.3 | Coding Func        | Switch of coding function.                                                                                                                                                                                                      |
| 3.5.4 | Coding Start Delay | 0.0~99.9s<br>When the bag is clamped, this delay is activated, and when the delay time is up, "coding function" signal is output to                                                                                             |

|       |                                          |                                                                                                                                                      |
|-------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                          | control coding by the coder.                                                                                                                         |
| 3.5.5 | Coding Run Time                          | 0.0~99.9s<br>Duration of "Coding function "signal output                                                                                             |
| 3.5.6 | Not allowed during coding Discharge/feed | Set whether discharging (with bucket scale or bulk accumulation mode) or feeding (without bucket scale mode) is allowed when "coding" signal output. |

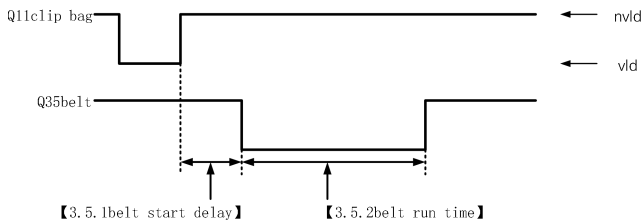
### 3.3.5.1. Detailed description of belt functions

Belt control function can be divided into two modes according to the setting of parameter **【3.5.2 belt running time】**, The following takes A scale as an example:

1. Single conveying mode ( **【3.5.2 belt running time】** is not set to 0)

When running in this mode, when the bag is loose, start **【3.5.1 belt start delay】**, output "Q35 Belt conveyer" signal to control the conveyor belt rotation after the delay time, and close "Q35 Belt conveyer" signal output after **【3.5.2 belt running time】**.

Signal timing is as follows:

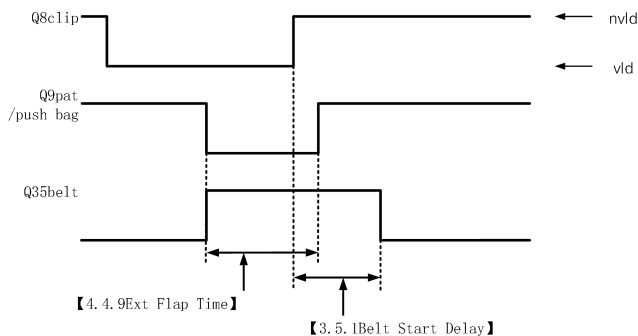


2. Continuous operation mode ( **【3.5.2 belt running time】** is set to 0)

When running in this mode, the "Q35 Belt conveyer" signal

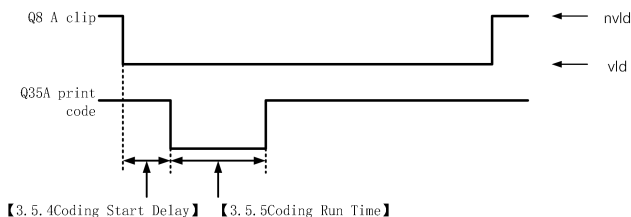
is always valid. Only when the patting bag function is enabled, the “Q9 A 拍袋” signal is output and the 【4.4.9 Extra patting bag time】 is executed, the “Q35 Belt conveyer” signal will be closed, Loose bag after start 【3.5.1 Belt start delay】, after the delay time continues to output "Q18 belt" signal to control conveyor belt rotation.

Signal timing is as follows:



### 3.3.5.2. Coding function details

Each time the bag is clamped, the coding function is started, and the "coding function" signal is output to control the coding of the coding machine. The signal sequence diagram of the coding function is as follows:



### 3.3.6. Tractor setup

| < Back |                | 3.Scale Parameters |                  | A: 1.44<br>B: 0.41 |   | Home  |                   |     |   |
|--------|----------------|--------------------|------------------|--------------------|---|-------|-------------------|-----|---|
| 3.1    | Work Mode      | 3.6.1              | Move Start Delay | 0.0                | s | 3.6.3 | Clamp Start Delay | 1.0 | s |
| 3.2    | Sew/Cut        | 3.6.2              | Move Travel Time | 4.0                | s | 3.6.4 | Clamp Travel Time | 1.5 | s |
| 3.3    | Slow Pulse     |                    |                  |                    |   | 3.6.5 | Clamp Hold Time   | 3.0 | s |
| 3.4    | Disc Shake     |                    |                  |                    |   |       |                   |     |   |
| 3.5    | Belt/Coding    |                    |                  |                    |   |       |                   |     |   |
| 3.6    | Tractor        |                    |                  |                    |   |       |                   |     |   |
| 3.7    | Material Level |                    |                  |                    |   |       |                   |     |   |

|       |                    |                                                                                                                                             |
|-------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 3.6.1 | Slider start delay | 0.0~999.9s<br>After bag clamping, after this time output "Q44 tractor transfer" signal, control slider began to move.                       |
| 3.6.2 | Slider travel time | 0.0~999.9s<br>After this time, the slider is considered to have reached the packaging position.                                             |
| 3.6.3 | Bag start delay    | 0.0~999.9s<br>After the bag is loose, after this time output "Q45 tractor bag clamping" signal, control the tractor bag clamping.           |
| 3.6.4 | Pocket travel time | 0.0~999.9s<br>After this time, the traction machine bag clamping action is considered to have been completed. Turn off the signal output of |

|              |                     |                                                                                                                     |
|--------------|---------------------|---------------------------------------------------------------------------------------------------------------------|
|              |                     | "Q44 tractor transfer" and control the return of the slider.                                                        |
| <b>3.6.5</b> | Pocket holding time | 0.0~999.9s<br>After this time, turn off the "Q45 tractor bag clamping" signal to control the tractor bag loosening. |

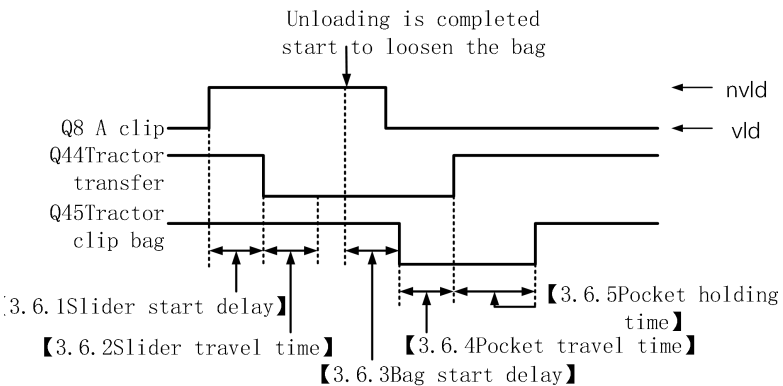
### 3.3.6.1. Detailed description of tractor functions

The working process of the tractor is as follows:

1. "clamp" signal is valid.
2. After the **【3.6.1 Slider Start delay】** time.
3. Output "Q44 tractor transfer" signal to control the tractor slider to move towards the packaging machine.
4. After **【3.6.2 Slider travel time】**, the slider is considered to have reached the position of the packaging machine.
5. Wait for the packing machine to complete unloading and start to loosen the bag.
6. After **【3.6.3 Clamping bag Start delay】**, output "Q45 Tractor clamping bag" signal to control the tractor clamp to clamp the bag mouth.
7. After **【3.6.4 Bag clamping Travel time】**, the tractor is considered to have finished bag clamping.
8. Close the "Q44 tractor transfer" signal and control the tractor slider to return.

9. After **【3.6.5 Clamping Bag Holding Time】**, turn off the signal of "Q45 Tractor clamping bag" and control the tractor clamp to loosen the bag mouth.
10. Since the "Q44 Tractor transfer" signal is turned off, after **【3.6.2 Slider travel time】**, it is considered that the slider has returned to its original position and waits for the next tractor operation process.

Taking the working mode of "bucket packaging (AB high speed)" as an example, the timing diagram of the tractor function is as follows:



### 3.3.7. Material level setting

Set the function parameters of signal input and feed output of feeder.

| <div style="display: inline-block; border: 1px solid black; padding: 2px 5px; background-color: #f0f0f0;">&lt; Back</div> <div style="display: inline-block; margin-left: 10px; font-weight: bold; font-size: 1.2em;">3.Scale Parameters</div> <div style="display: inline-block; float: right; text-align: right;"> <div style="display: inline-block; border: 1px solid black; padding: 2px 5px; background-color: #f0f0f0;">A: 1.43</div> <div style="display: inline-block; border: 1px solid black; padding: 2px 5px; background-color: #f0f0f0;">B: 0.41</div> <div style="display: inline-block; border: 1px solid black; padding: 2px 5px; background-color: #f0f0f0; margin-left: 5px;">Home</div> </div> |                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 3.1<br>Work Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3.7.1 Material Level Type <span style="border: 1px solid black; padding: 2px 10px; background-color: #f0f0f0;">①None</span> >        |
| 3.2<br>Sew/Cut                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.7.2 Supply Trigger <span style="border: 1px solid black; padding: 2px 10px; background-color: #f0f0f0;">①Off</span> >              |
| 3.3<br>Slow Pulse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3.7.3 Supply Delay On Time <span style="border: 1px solid black; padding: 2px 10px; background-color: #f0f0f0;">0.0</span> s         |
| 3.4<br>Disc Shake                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3.7.4 Supply Delay Off Time <span style="border: 1px solid black; padding: 2px 10px; background-color: #f0f0f0;">3.0</span> s        |
| 3.5<br>Belt/Coding                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3.7.5 Supply Work Time <span style="border: 1px solid black; padding: 2px 10px; background-color: #f0f0f0;">①Run &amp; Stop</span> > |
| 3.6<br>Tractor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.7.6 Non-Hopper Lower Delay Time <span style="border: 1px solid black; padding: 2px 10px; background-color: #f0f0f0;">4.0</span> s  |
| 3.7<br>Material Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3.7.7 Signal In Debounce Time <span style="border: 1px solid black; padding: 2px 10px; background-color: #f0f0f0;">0.50</span> s     |

|              |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3.7.1</b> | Material Level Type | <p>① [no material level device] : no material level device.</p> <p>① [single feeding level] : there is 1 feeding level device (feeding level).</p> <p>② [material level] : there are two material level device (feeding level, feeding level).</p> <p>③ [single feeding level] : there is a material level device (feeding level).</p> <p><b>Note: if the mode with blanking level is selected, feeding will not start if the blanking level signal input is invalid.</b></p> |
| <b>3.7.2</b> | Supply Trigger      | <p>d) [OFF]: Turn off the feed output function.</p> <p>e) [blanking level trigger] : "I12 blanking level" signal input invalid trigger feeding function.</p>                                                                                                                                                                                                                                                                                                                  |

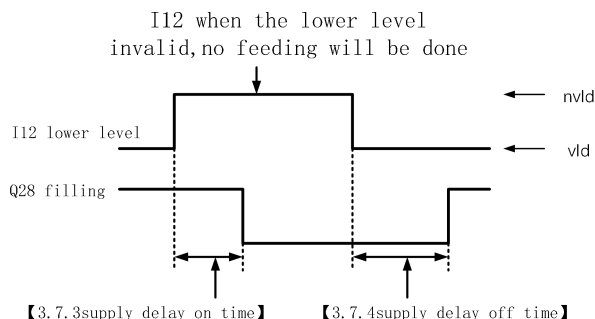
|              |                                                 |                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                                 | <p>f) [feeding level trigger] : "I11 feeding level" input invalid trigger feeding function.</p> <p>Note: when the material level mode is set to [up and down material level], the feed output will continue until the feeding level signal is effective.</p>                                                                                                                                  |
| <b>3.7.3</b> | Supply Delay On Time                            | After the feeding function is triggered, delay this time and output "Q13 feeding" signal.                                                                                                                                                                                                                                                                                                     |
| <b>3.7.4</b> | Supply Delay Off Time                           | After feeding, delay this time and then turn off "Q13 feeding" signal output.                                                                                                                                                                                                                                                                                                                 |
| <b>3.7.5</b> | Supply Work Time                                | <p>①[Run &amp; Stop]。</p> <p>②[Run]。</p>                                                                                                                                                                                                                                                                                                                                                      |
| <b>3.7.6</b> | Effective delay time of hopper feeding position | <p>0.0~99.9s</p> <p>This parameter is valid only in the relative working mode of the bucket scale. When the "I12 feeding level" signal is effective, a scale starts feeding after bag clamping, start this delay time, before the end of the delay, another scale if bag clamping, regardless of whether the "I12 feeding level" signal is effective, the other scale will start feeding.</p> |
| <b>3.7.7</b> | Material level input signal shake time          | <p>0.00~9.99s</p> <p>"I11. Feeding level" and "I12. Feeding level" signal input shake time.</p> <p>Continuous validity the signal is considered valid after the duration of this time;</p> <p>Continuous invalid The signal is considered invalid after this duration.</p>                                                                                                                    |

|  |  |                                                                                            |
|--|--|--------------------------------------------------------------------------------------------|
|  |  | To prevent the occasional signal instantaneous interruption or conduction of interference. |
|--|--|--------------------------------------------------------------------------------------------|

### 3.3.7.1. Detailed Description Of Filling

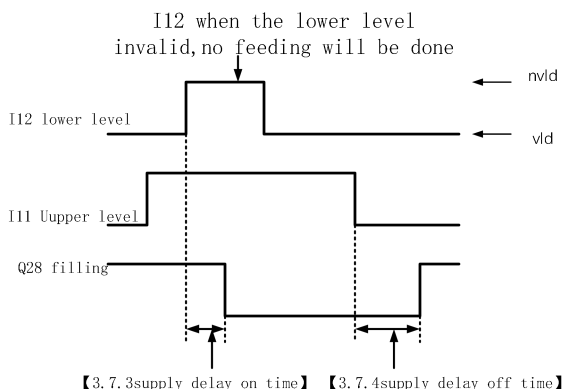
1. Material level mode: single feeding level; Feeding trigger: feeding level trigger.

The sequence diagram is as follows:



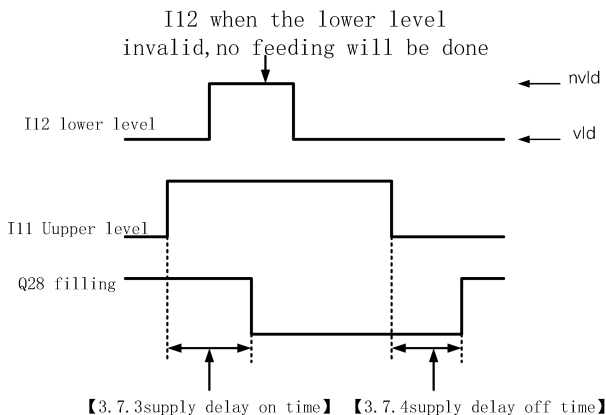
2. Material level mode: up and down material level; Feeding trigger: feeding level trigger.

The sequence diagram is as follows:



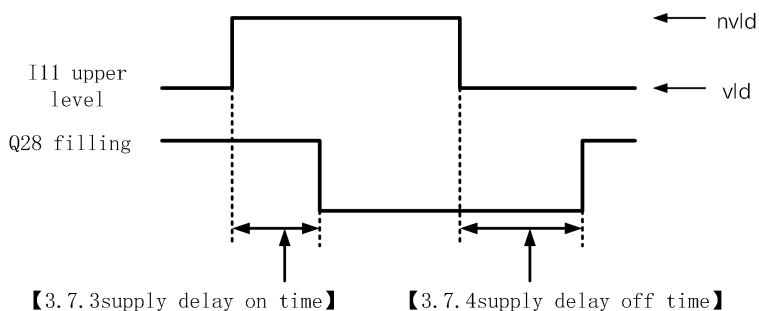
3. Material level mode: up and down material level; Feeding trigger: feeding level trigger.

The sequence diagram is as follows:



4. Material level mode: single feeding level; Feeding trigger: feeding level trigger.

The sequence diagram is as follows:



## 3.4. Recipe parameters

The controller has 20 groups of formula parameters for setting. Users can set common formula parameters in advance and switch to the corresponding formula when using.

### 3.4.1. Recipe

|              |                 |                                                                                                                                                                                 |
|--------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>4.1.1</b> | Selected Recipe | Sets the current recipe number.                                                                                                                                                 |
| <b>4.1.2</b> | Enable Choose   | After this function is enabled, the formula will be in optional state when the formula number is selected by clicking the position of the formula number on the main interface. |
| <b>4.1.3</b> | Recipe Name     | You can enter the formula name for easy memorization. After setting, the corresponding formula name will be                                                                     |

|  |  |                                                                 |
|--|--|-----------------------------------------------------------------|
|  |  | displayed in the formula number position on the main interface. |
|--|--|-----------------------------------------------------------------|

### 3.4.2. Target Value

This interface sets the formula parameters such as the target value of the formula number.

|        |             |                  |                   |      |    |         |                     |              |    |      |  |
|--------|-------------|------------------|-------------------|------|----|---------|---------------------|--------------|----|------|--|
| < Back |             | 4.Recipe Setting |                   |      |    | A: 1.44 |                     | B: 0.41      |    | Home |  |
| 4.1    | Recipe      | 4.2.1            | A Target          | 0.00 | kg | 4.2.9   | B Target            | 0.00         | kg |      |  |
| 4.2    | Target      | 4.2.2            | A Fast Feed       | 0.00 | kg | 4.2.10  | B Fast Feed         | 0.00         | kg |      |  |
| 4.3    | Time Set    | 4.2.3            | A Med Feed        | 0.00 | kg | 4.2.11  | B Med Feed          | 0.00         | kg |      |  |
| 4.4    | Flapping    | 4.2.4            | A Slow Feed       | 0.00 | kg | 4.2.12  | B Slow Feed         | 0.00         | kg |      |  |
| 4.5    | Over/Under  | 4.2.5            | A Fast Delay Time | 0.5  | s  | 4.2.13  | B Fast Delay Time   | 0.5          | s  |      |  |
| 4.6    | Valve Blow  | 4.2.6            | A Med Delay Time  | 0.5  | s  | 4.2.14  | B Med Delay Time    | 0.5          | s  |      |  |
| 4.7    | Feed Analog | 4.2.7            | A Slow Delay Time | 1.4  | s  | 4.2.15  | B Slow Delay Time   | 1.4          | s  |      |  |
|        |             | 4.2.8            | Total Target      | 0.00 | kg | 4.2.16  | Discharge Zero Area | 0.50         | kg |      |  |
|        |             |                  |                   |      |    | 4.2.17  | Feed Speed          | ③Three Speed | >  |      |  |

|       |           |                                                                                                                                              |
|-------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 4.2.1 | Target    | Sets the target weight for packaging to achieve.                                                                                             |
| 4.2.2 | Fast Feed | When the weight value $\geq$ target -fast feed, close the fast feeding;<br>If the value is set to 0, the fast output process is not started. |
| 4.2.3 | Med Feed  | When the weight value $\geq$ target -med feed, close the mod feeding;<br>If the value is set to 0, the med output process is not started.    |
| 4.2.4 | Slow Feed | When the weight value $\geq$ target value -fine                                                                                              |

|       |                                |                                                                                                                                                                                                                                                                                                                            |
|-------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                | feed, close slow feeding;                                                                                                                                                                                                                                                                                                  |
| 4.2.5 | A Fast Delay Time              | <p>0.0~99.9s</p> <p>The vibration elimination time at the beginning of the fast, During this time, the signal of fast casting is always effective and is not affected by weight, At the end of this time, it is judged whether the weight has reached the advance amount of the fast casting to end the large casting.</p> |
| 4.2.6 | A Med Delay Time               | <p>0.0~99.9s</p> <p>Vibration elimination time at the beginning of med. During this time, med signal is always effective and not affected by weight. After the end of this time, it will judge whether the weight has reached the advance amount of med and end med.</p>                                                   |
| 4.2.7 | A Slow Delay Time              | <p>0.0~99.9s</p> <p>The elimination of vibration time at the beginning of the slow,in this time, the slow signal has been effective and is not affected by weight. At the end of this time, judge whether the weight reaches the slow drop value to end the slow t.</p>                                                    |
| 4.2.8 | Total target (Total shipments) | <p>In bucket scale combination mode, set the weight of the material in a bag (one bag for multiple unloading).</p> <p><b>Note: In bucket scale combination mode, the total target value should be set to an integer multiple of the single target value.</b></p>                                                           |

|               |                     |                                                                                                                                                                                                                                                                                                                                   |
|---------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                     | In the related working mode of bulk material accumulation, it is set for the total quantity delivered.                                                                                                                                                                                                                            |
| <b>4.2.9</b>  | B target value      | Reference 4.2.1~4.2.7 A scale related parameters of the scale.                                                                                                                                                                                                                                                                    |
| <b>4.2.10</b> | B fast Feed         |                                                                                                                                                                                                                                                                                                                                   |
| <b>4.2.11</b> | B med Feed          |                                                                                                                                                                                                                                                                                                                                   |
| <b>4.2.12</b> | B slow Feed         |                                                                                                                                                                                                                                                                                                                                   |
| <b>4.2.13</b> | B fast Delay Time   |                                                                                                                                                                                                                                                                                                                                   |
| <b>4.2.14</b> | B med Delay Time    |                                                                                                                                                                                                                                                                                                                                   |
| <b>4.2.15</b> | B slow Delay Time   |                                                                                                                                                                                                                                                                                                                                   |
| <b>4.2.16</b> | Discharge Zero Area | <p><b>【3.1.1 Working mode】</b> It works when it is set to bucket scale or bulk material accumulative scale.</p> <p>When the discharge , when the current weight is less than or equal to the zero zone value of discharging, the unloading is considered to have been completed and the unloading door is ready to be closed.</p> |
| <b>4.2.17</b> | Feed Speed          | <p>①[Two material speed (size)] : large and small feeding to achieve two material speed.</p> <p>②[Two material speed (medium and small)] : medium and small casting realize two material speed feeding.</p>                                                                                                                       |

|  |  |                                                                                                    |
|--|--|----------------------------------------------------------------------------------------------------|
|  |  | ③[three material speed] : large, medium and small casting to achieve three material speed feeding. |
|--|--|----------------------------------------------------------------------------------------------------|

### 3.4.3. Time Set

Set related time parameters in the feeding process.

| < Back |             | 4.Recipe Setting |                         | A: 1.44 | Home |
|--------|-------------|------------------|-------------------------|---------|------|
| 4.1    | Recipe      | 4.3.1            | Feed Delay Time         | 0.5     | s    |
| 4.2    | Target      | 4.3.2            | Stabilisation Time      | 1.0     | s    |
| 4.3    | Time Set    | 4.3.3            | Discharge Delay Time    | 0.5     | s    |
| 4.4    | Flapping    | 4.3.4            | Clamp Delay Time        | 0.5     | s    |
| 4.5    | Over/Under  | 4.3.5            | Unclamp Delay Time      | 0.5     | s    |
| 4.6    | Valve Blow  | 4.3.6            | A Feed Delay After Belt | 0.0     | s    |
| 4.7    | Feed Analog | 4.3.7            | B Feed Delay After Belt | 2.0     | s    |
|        |             | 4.3.8            | A Lift Time             | 0.0     | s    |
|        |             | 4.3.9            | B Lift Tim              | 0.0     | s    |
|        |             | 4.3.10           | B Lift Push Safe Time   | 0.0     | s    |

|       |                      |                                                                                                                                                                                         |
|-------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.3.1 | Feed Delay Time      | 0.0~99.9s<br>Delay time before feeding begins.                                                                                                                                          |
| 4.3.2 | Stabilisation Time   | 0.0~99.9s<br>The waiting time after feeding is completed, and the feeding result of current weight record is obtained after this time.                                                  |
| 4.3.3 | Discharge Delay Time | 0.0~99.9s<br>【3.1.1 work mode】Set to bucket scale or bulk accumulative scale when the effect.<br>When unloading, check the current weight $\leq$ 【4.2.16 Discharging zero zone value】 , |

|               |                        |                                                                                                                                                                                                                                              |
|---------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                        | when the unloading is finished, start the unloading delay time and close the unloading door when the time is up.                                                                                                                             |
| <b>4.3.4</b>  | Clamp Delay Time       | 0.0~99.9s<br>After the clamping bag is effective, the clamping bag action is considered to be completed after the time delay, and the subsequent process can be started, such as feeding (no bucket scale) or unloading (with bucket scale). |
| <b>4.3.5</b>  | Unclamp Delay Time     | 0.0~99.9s<br>Delay time before automatic bag release.                                                                                                                                                                                        |
| <b>4.3.6</b>  | A Bag time             | 0.0~60.0s<br>[Scowless packaging (AB waiting for each other)] mode, when A and B finish feeding and start the conveyor, start the anti-bagging time, and delay until A starts feeding the next scale.                                        |
| <b>4.3.7</b>  | B Bag time             | 0.0~60.0s<br>In the scowless correlation mode (except the AB mutually independent mode), start the anti-bagging time when starting the conveyor, and then start the feeding of the next scale of B after the delay.                          |
| <b>4.3.8</b>  | A Lift time            | 0.0~60.0s<br><b>【 3.1.8 Coordination of Non-bucket Bag Holding Machine 】</b> It works when it is set to [lifting mode]. For details, please refer to section 3.3.1.1.                                                                        |
| <b>4.3.9</b>  | B Lift time            |                                                                                                                                                                                                                                              |
| <b>4.3.10</b> | B Push bag safety time |                                                                                                                                                                                                                                              |

### 3.4.4. Flapping

Set the function related to flapping action.

| < Back |             | 4.Recipe Setting |                       | A: 1.44<br>B: 0.41 |    | Home |
|--------|-------------|------------------|-----------------------|--------------------|----|------|
| 4.1    | Recipe      | 4.4.1            | Flap Mode             | ①OFF               | >  |      |
| 4.2    | Target      | 4.4.2            | Flap Start Delay      | 0.5                | s  |      |
| 4.3    | Time Set    | 4.4.3            | Flap Times When Feed  | 0                  |    |      |
| 4.4    | Flapping    | 4.4.4            | Flap Times After Feed | 4                  |    |      |
| 4.5    | Over/Under  | 4.4.5            | Flap On Time          | 0.5                | s  |      |
| 4.6    | Valve Blow  | 4.4.6            | Flap Off Time         | 0.5                | s  |      |
| 4.7    | Feed Analog | 4.4.7            | Flap Start Weight     | 0.00               | kg |      |
|        |             | 4.4.8            | Ext Flap Start Delay  | 0.00               | s  |      |
|        |             | 4.4.9            | Ext Flap Time         | 0.0                | s  |      |

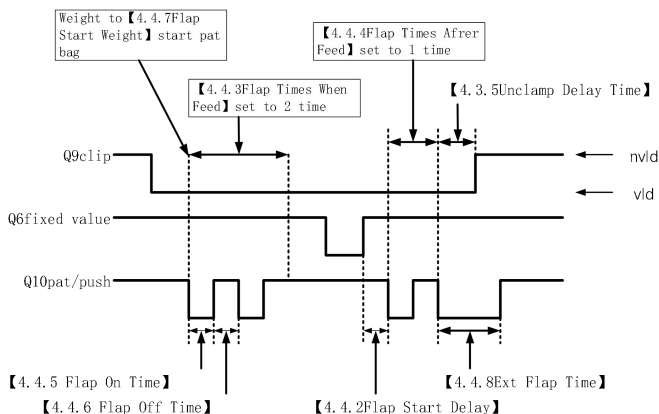
|       |                       |                                                                                                                                                                        |
|-------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.4.1 | Flap Mode             | ①[OFF]: Closed Flap<br>②[Feeding]: Flap only during feeding。<br>③[After constant value]: Flap only after setting the value.<br>④[All]: Flap after feeding and setting. |
| 4.4.2 | Flap Start Delay      | 0.0~99.9s<br>Set the delay time before the backslap bag function starts.                                                                                               |
| 4.4.3 | Flap Times When Feed  | 0~99<br>Number of patting bag signal pulse output by patting bag function in feeding.                                                                                  |
| 4.4.4 | Flap Times After Feed | 0~99<br>Set the number of patting bag signal pulse output by the patting bag function.                                                                                 |

|       |                                |       |                                                                                                                                                                                                                                                                                                                                                                  |
|-------|--------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.4.5 | Flap Time                      | On    | 0.0~99.9s<br>Effective time of pulse signal output by tapping bag.                                                                                                                                                                                                                                                                                               |
| 4.4.6 | Flap Time                      | Off   | 0.0~99.9s<br>Invalid time of pulse signal output by tapping bag.                                                                                                                                                                                                                                                                                                 |
| 4.4.7 | Flap Weight                    | Start | In the process of feeding, when the current weight is greater than the initial weight of the feeding bag, the feeding bag function will be started.                                                                                                                                                                                                              |
| 4.4.8 | Extra delay before patting bag |       | 0.00~60.00s<br>Additional delay time of bag patting action starting, which starts at the same time as <b>【4.3.5 Delay before Bag Loosening】</b> .                                                                                                                                                                                                                |
| 4.4.9 | Ext Time                       | Flap  | 0.0~60.0s<br>After finishing the patting times after setting the value, the extra time of patting signal output is commonly used in the pier bag function. This time is set to be longer than <b>【4.3.5 delay before releasing the bag】</b> to realize that after putting the bag down, the bag is first loosened and then the bag clamping mechanism is lifted. |

### 3.4.4.1. Detailed description of patting bag function

Taking the bucket-less scale mode as an example, the signal sequence diagram of all bag-beating signals after feeding and setting

values is as follows:



### 3. 4. 5. Over/Under

Over and under difference is the collective name of over and under difference or under difference. In the packaging process, when the packaging result is higher than the target value within a certain range, it is considered as over and under difference, and the range is set according to the production demand.

| < Back |             | 4.Recipe Setting |                     | A: 1.44<br>B: 0.41 |    | Home |
|--------|-------------|------------------|---------------------|--------------------|----|------|
| 4.1    | Recipe      | 4.5.1            | Over/Under Func     | OFF                |    |      |
| 4.2    | Target      | 4.5.2            | Check Delay Time    | 0.5                | s  |      |
| 4.3    | Time Set    | 4.5.3            | Over Tolerance      | 0.00               | kg |      |
| 4.4    | Flapping    | 4.5.4            | Under Tolerance     | 0.00               | kg |      |
| 4.5    | Over/Under  | 4.5.5            | Over/Under Pause    | OFF                |    |      |
| 4.6    | Valve Blow  | 4.5.6            | Over/Under Interval | 0                  |    |      |
| 4.7    | Feed Analog |                  |                     |                    |    |      |

|       |                  |                                                                                                                                                        |
|-------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.5.1 | Over/Under Func  | g) [OFF]<br>[ON]: At the end of each feeding, the result of feeding will be tested.                                                                    |
| 4.5.2 | Check Delay Time | 0.0~99.9s<br>After the end of feeding, delay this time and wait for the current weight stability to carry out the over and under difference detection. |
| 4.5.3 | Over Tolerance   | In the detection of overerror and undererror, if the weighing result > the target value + overerror value, it is judged as overerror;                  |
| 4.5.4 | Under Tolerance  | If the weight value is less than the target value - the underdifference value, it is judged as underdifference.                                        |
| 4.5.5 | Over/Under Pause | ① [OFF]: The controller will give an alarm and continue to run after the alarm is                                                                      |

|       |                     |                                                                                                                                                                                                                                                                            |
|-------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                     | <p>over.</p> <p>②[ON]: When there is overdifference, the controller will alarm and wait for the user to deal with it. At this time, the controller will continue to run after clearing the alarm, or give "l4 stop" signal to return to the stop state for processing.</p> |
| 4.5.6 | Over/Under Interval | <p>0~9999</p> <p>How many times of packing should be inspected for overage and underage at intervals? When the value is set to 0, the overage and underage detection is performed for each package.</p>                                                                    |

### 3.4.6. Valve port scale blowing material

[3.1.1 Working Mode] This function is effective when it is set to [AB port scale]. Set the valve port scale related blowing functions.

| < Back |             | 4.Recipe Setting |                     | A: 1.44<br>B: 0.41 |    | Home |
|--------|-------------|------------------|---------------------|--------------------|----|------|
| 4.1    | Recipe      | 4.6.1            | Blow Pulse On Time  | 0.0                | s  |      |
| 4.2    | Target      | 4.6.2            | Blow Pulse Off Time | 0.0                | s  |      |
| 4.3    | Time Set    | 4.6.3            | Valve Zero Area     | 0.00               | kg |      |
| 4.4    | Flapping    |                  |                     |                    |    |      |
| 4.5    | Over/Under  |                  |                     |                    |    |      |
| 4.6    | Valve Blow  |                  |                     |                    |    |      |
| 4.7    | Feed Analog |                  |                     |                    |    |      |

|       |                                        |                                                                                                                                                                                                  |
|-------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.6.1 | Effective time of blowing              | 0.0 ~ 99.9 s                                                                                                                                                                                     |
| 4.6.2 | Invalid time of blowing point movement | When the valve port scale enters the small feeding process, it controls "Q20 blowing material" for pulse point output according to the set effective and invalid time of blowing material point. |
| 4.6.3 | Zero zone value of valve port scale    | After clamping the bag, the weight is lower than the zero zone value of the valve port scale before zero clearance and start feeding. Otherwise do not clear the zero directly start feeding.    |

### 3.4.7. Feed Analog

**Notice:** The analog output function needs to be equipped with the analog output extension, See Section1.6 for details.

When the controller is equipped with analog expansion, analog

output can be used to control feeding, fast, med and slow can be corresponding to three analog size, to achieve analog control frequency converter or vibration feeder output voltage, feeding different material speed.

| < Back |             | 4.Recipe Setting |                    |         |       | A: 1.43<br>B: 0.41 Home |         |
|--------|-------------|------------------|--------------------|---------|-------|-------------------------|---------|
| 4.1    | Recipe      | 4.7.1            | Large Feed Analog  | 0.000 % | 4.7.4 | Large Feed Analog       | 0.000 % |
| 4.2    | Target      | 4.7.2            | A Med Feed Analog  | 0.000 % | 4.7.5 | B Med Feed Analog       | 0.000 % |
| 4.3    | Time Set    | 4.7.3            | A Slow Feed Analog | 0.000 % | 4.7.6 | B Slow Feed Analog      | 0.000 % |
| 4.4    | Flapping    |                  |                    |         |       |                         |         |
| 4.5    | Over/Under  |                  |                    |         |       |                         |         |
| 4.6    | Valve Blow  |                  |                    |         |       |                         |         |
| 4.7    | Feed Analog |                  |                    |         |       |                         |         |

|       |                     |                                                                   |
|-------|---------------------|-------------------------------------------------------------------|
| 4.7.1 | A Large Feed Analog | 0.000~100.000%<br>A the size of the analog output at large input. |
| 4.7.2 | A Med Feed Analog   | 0.000~100.000%<br>A the size of the analog output at med input.   |
| 4.7.3 | A Slow Feed Analog  | 0.000~100.000%<br>A the size of the analog output at slow input.  |
| 4.7.4 | B Large Feed Analog | 0.000~100.000%<br>B the size of the analog output at large input. |
| 4.7.5 | B Med Feed Analog   | 0.000~100.000%<br>B the size of the analog output at med input.   |
| 4.7.6 | B Slow Feed Analog  | 0.000~100.000%<br>B the size of the analog output at slow input.  |

Note: Take scale A for example , The analog output percentage

set here is related to **【 8.4.1 Analog output range 】** settings, for example:

**【 8.4.1 Analog output range 】** set to 0~5V

**【 4.7.1 A large Feed Analog 】** set to 80.000%

**【 4.7.2 A med Feed Analog 】** set to 40.000%

**【 4.7.3 A slow Feed Analog 】** set to 10.000%

Then the analog output is 4V when the large feeding, 2V when the large feeding, 0.5V when the small feeding, 0V when the stop feeding.

## 3.5. AI Packing

The controller has the AI intelligent packaging algorithm developed by AMP measurement and control company for the packaging process, which can collect the characteristic parameters of each feeding process, calculate and analyze the collected data through the machine learning AI algorithm, and automatically adjust the parameters, so that the packaging scale operation to achieve both fast and accurate.

### 3.5.1. Function Settings

AI Intelligent packaging basic function Settings.

|       |         |                                                                                                                                                                   |
|-------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.1.1 | AI Pack | <p>AI intelligent packaging function of the master switch</p> <p>When the function is enabled, the controller automatically adjusts the following parameters:</p> |
|-------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|       |               |                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |               | <p>【4.2.2 A large Feed】</p> <p>【4.2.3 A Med Feed】</p> <p>【4.2.4 A Slow feed】</p> <p>【 4.2.6 A med feeding to prohibit comparison time】</p> <p>【 4.2.7 A slow feeding to prohibit comparison time】</p> <p>【4.2.10 B large Feed】</p> <p>【4.2.11 B Med Feed】</p> <p>【4.2.12 B Slow feed】</p> <p>【 4.2.14 Bmed feeding to prohibit comparison time】</p> <p>【 4.2.15 B slow feeding to prohibit comparison time】</p>      |
| 5.1.2 | A Sample Data | <p>The AI intelligent packaging function will save the weighing data of the latest 100 times at most, carry out machine learning AI intelligent packaging algorithm calculation, and get the relevant parameters of feeding suitable for the current state.</p> <p>This project can view the number of saved sampled data. You can enter 0 to clear the saved sampled data and start statistical sampling again.</p> |
| 5.1.3 | B Sample Data |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5.1.4 | Material Type | <p>①Granule</p> <p>②powder</p> <p>Select the material type of packaging, AI intelligent packaging algorithm can be optimized for different types of materials,</p>                                                                                                                                                                                                                                                   |

|  |  |                                                                               |
|--|--|-------------------------------------------------------------------------------|
|  |  | get more suitable for the characteristics of the material related parameters. |
|--|--|-------------------------------------------------------------------------------|

### 3.5.2. Speed control

AI intelligent packaging function Related to packaging speed control parameters, the AI intelligent packaging algorithm can be set to automatically calculate and control the packaging speed, or the customer can manually set the packaging speed to be controlled, and the AI intelligent packaging algorithm can adjust the parameters to achieve the set speed.

**Note:** If the packaging speed set manually is too fast and exceeds the speed that the equipment can achieve, inaccurate packaging accuracy may occur.

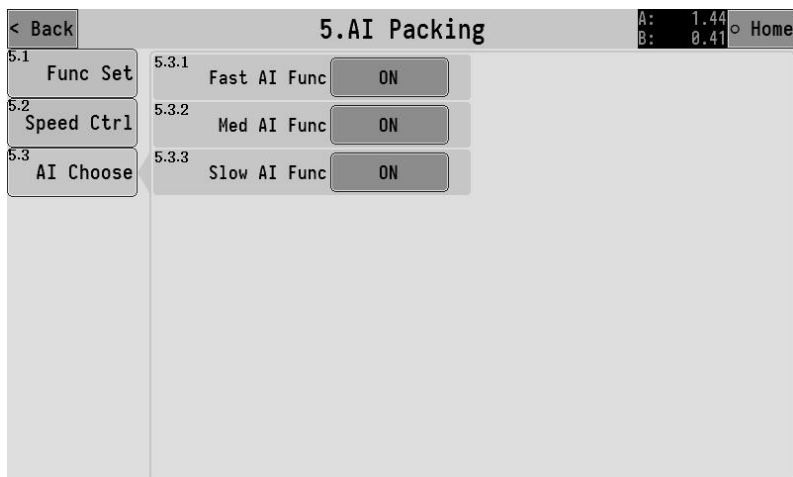
| < Back |            | 5.AI Packing |                    | A: 1.44<br>B: 0.41 |    | Home |
|--------|------------|--------------|--------------------|--------------------|----|------|
| 5.1    | Func Set   | 5.2.1        | Speed Control Mode | ①Auto              | >  |      |
| 5.2    | Speed Ctrl | 5.2.2        | Speed Grade        | 1                  |    |      |
| 5.3    | AI Choose  | 5.2.3        | Slow Min Time      | 800                | ms |      |
|        |            | 5.2.4        | Slow Error Time    | 500                | ms |      |
|        |            | 5.2.5        | Med Min Time       | 500                | ms |      |
|        |            | 5.2.6        | Med Error Time     | 500                | ms |      |

|       |                    |                                                                                                                                                          |
|-------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.2.1 | Speed Control Mode | ①Auto : The controller automatically controls the packaging speed<br>②Manual: The loading speed is determined by the set parameters【5.2.3 Slow Min time】 |
|-------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|       |                 |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                 | 和【5.2.4 Slow error time】.                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5.2.2 | Speed Grade     | 0~4<br>【5.4.1 control mode】When set to automatic, the smaller the number, the faster the speed.                                                                                                                                                                                                                                                                                                                               |
| 5.2.3 | Slow Min Time   | 0~9999ms<br>【5.4.1 control mode】When set to manual, use these two time parameters to determine the standard time of small casting. Slow prohibit comparison time + slow minimum time ≤ slow standard time ≤ Slow prohibit comparison time + slow minimum time + slow error time.<br>The intelligent packaging function controls the small casting time within the standard time by adjusting the leading quantity parameters. |
| 5.2.4 | Slow Error Time |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5.2.5 | Med Min Time    | 0~9999ms<br>These two time parameters determine the standard time of CIC.<br>Med prohibited comparison time + Med minimum time ≤ Med standard time ≤ Med prohibited comparison time + Med minimum time + CIC error time<br>The intelligent packaging function controls the Med time within the standard time by adjusting the leading parameters.                                                                             |
| 5.2.6 | Med Error Time  |                                                                                                                                                                                                                                                                                                                                                                                                                               |

### 3.5.3. Modify switch

The correction switch of fast、med and slow can be controlled independently. After the switch is closed, the AI intelligent packaging algorithm will not adjust the corresponding amount of advance.



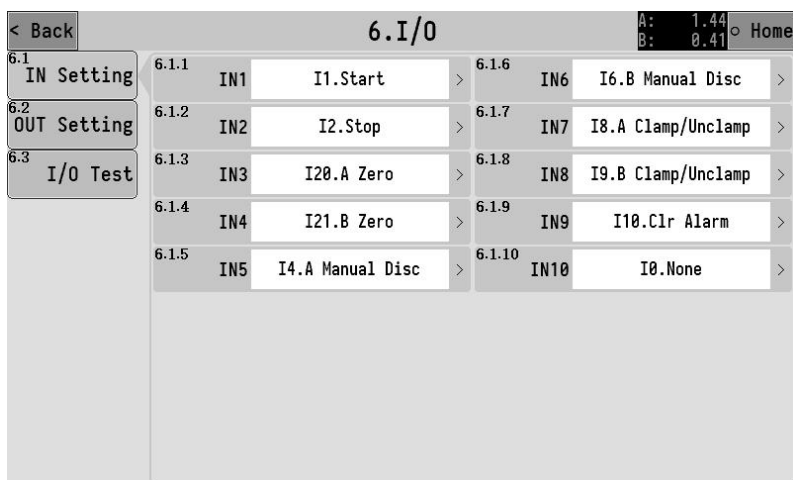
|       |              |                                                                            |
|-------|--------------|----------------------------------------------------------------------------|
| 5.3.1 | Fast AI Func | ①[OFF]: Do not modify the parameter of <b>【4.2.2 Fast feed】</b> .<br>②[ON] |
| 5.3.2 | Med AI Func  | ①[OFF]: Do not modify the parameter of <b>【4.2.3 Med feed】</b> .<br>②[ON]  |
| 5.3.3 | Slow AI Func | ①[OFF]: Do not modify the parameter of <b>【4.2.4 Slow feed】</b> .<br>②[ON] |

## 3.6. I/O

It can define the switch input and output corresponding functions, and can use the switch test function to test whether the external switch circuit is normal.

### 3. 6. 1. Input Definition

Define the functions of switch input ports IN1 to IN7. Click the switch input port to be set and select the function to be defined in the popup option



The list of functions available for switching input is as follows:

| Function No. | Function Name | Description                           |
|--------------|---------------|---------------------------------------|
| I0           | No definition | No functional definition.             |
| I1           | running       | Stop running.                         |
| I2           | stop          | Stop running.                         |
| I3           | slowly stop   | Enter the slow stop process, that is, |

|     |                     |                                                                                                                                                                       |
|-----|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                     | automatically stop the operation after the completion of the packaging.                                                                                               |
| I4  | A manual-disc       | Used to manually clear the material in the metering hopper.<br>The input can effectively open the unloading door once and close the unloading door again.             |
| I5  | A manual-disc(lvl)  | Used to manually clear the material in the metering hopper.<br>When the input is valid, open the unloading door; when the input is invalid, close the unloading door. |
| I6  | B manual-disc       | Used to manually clear the material in the metering hopper.<br>The input can effectively open the unloading door once and close the unloading door again.             |
| I7  | B manual-disc(lvl)  | Used to manually clear the material in the metering hopper.<br>When the input is valid, open the unloading door; when the input is invalid, close the unloading door. |
| I8  | A clamp/unclamp bag | A pinch/loosen bag operation input signal.                                                                                                                            |
| I9  | B clamp/unclamp bag | B pinch/loosen bag operation input signal.                                                                                                                            |
| I10 | Clear alarm         | Clear alarm status.                                                                                                                                                   |

|     |               |                                                                                                                                                                                                                                                                                                                                                                               |
|-----|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I11 | upper level   | Storage hopper feeding level detection input signal.<br>When effective, the material is considered to have reached the feeding level. For details, see 3.3.7 Chapter.                                                                                                                                                                                                         |
| I12 | lower level   | Storage hopper feeding level detection input signal.<br>When effective, the material is considered to have reached the cutting level.<br>For details, see 3.3.7 Chapter.                                                                                                                                                                                                      |
| I13 | A disc-closed | If the input is defined, it means that the unloading door is closed in place, otherwise, it means that the closure is not in place.<br><br>The controller determines that the input is invalid when feeding, and closes the output of large, medium and small inputs. After judging that the signal input is valid, if feeding is needed, the feeding output will be resumed. |
| I14 | B disc-closed |                                                                                                                                                                                                                                                                                                                                                                               |
| I15 | A bag clipped | If this input is defined, it indicates that the clamping bag is in place, otherwise, it indicates that the clamping bag is not in place.<br><br>In the unloading process, if the signal is detected to be invalid, the unloading                                                                                                                                              |
| I16 | B bag clipped |                                                                                                                                                                                                                                                                                                                                                                               |

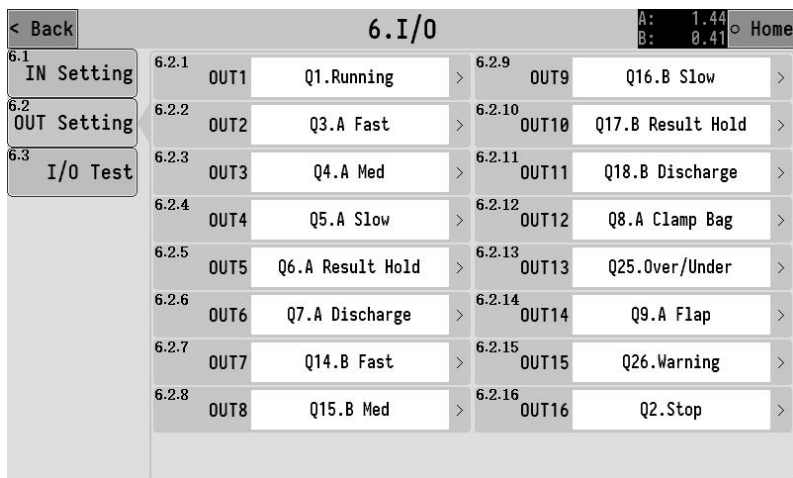
|     |                                          |                                                                                                                                                                                                                              |
|-----|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                          | output will be turned off.                                                                                                                                                                                                   |
| I17 | Manual discharging                       | It works in bulk accumulation mode.<br>It is used to manually remove the material in the lower liquid storage tank when it is stopped. The input is effective once the output is effective, and the output is invalid again. |
| I18 | Feeding level of liquid storage tank     | Bulk mode, used to connect the feeder of the lower liquid storage tank.                                                                                                                                                      |
| I19 | Discharging level of liquid storage tank | Bulk mode, used to connect the feeder of the lower liquid storage tank.                                                                                                                                                      |
| I20 | A zero                                   | Carry out an effective zero-clearing operation of A scale.                                                                                                                                                                   |
| I21 | B zero                                   | Carry out an effective zero-clearing operation of B scale.                                                                                                                                                                   |
| I22 | tangent in place                         | If the input is defined, if the input is valid, the tangent action is considered to have been completed and the tangent is terminated.                                                                                       |
| I23 | sewing bale inspection                   | Used to check whether the bag reaches the sewing machine position.<br>See section 3.3.2.1 for details.                                                                                                                       |
| I24 | No definition                            | No functional definition.                                                                                                                                                                                                    |
| I25 | No definition                            | No functional definition.                                                                                                                                                                                                    |
| I26 | No definition                            | No functional definition.                                                                                                                                                                                                    |
| I27 | No definition                            | No functional definition.                                                                                                                                                                                                    |

|     |                                      |                                                                                                                                                                                          |
|-----|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I28 | No definition                        | No functional definition.                                                                                                                                                                |
| I29 | No definition                        | No functional definition.                                                                                                                                                                |
| I30 | A Bag holding done                   | No bucket packaging (AB mutually independent) mode, used for bag-holding machine with signal.<br>See the parameter description of 【 3.1.8 Coordination of Bagless Machine 】 for details. |
| I31 | B Bag holding done                   |                                                                                                                                                                                          |
| I32 | Prohibition of intelligent packaging | If the input is valid, the AI intelligent packaging function is disabled.                                                                                                                |
| I33 | A running                            | Start A scale separately.                                                                                                                                                                |
| I34 | A stop                               | Stop the operation of scale A alone.                                                                                                                                                     |
| I35 | B running                            | Start B scale separately.                                                                                                                                                                |
| I36 | B stop                               | Stop the operation of scale B alone.                                                                                                                                                     |
| I37 | Disconnection detection 1            | Used for connecting the input signal of the broken line detector.<br>For details, see 3.3.2 parameters related to the disconnection detection function                                   |
| I38 | Disconnection detection 2            |                                                                                                                                                                                          |
| I39 | print                                | When the serial port communication function is set to print, it is used to control the printing of accumulated data.                                                                     |
| I40 | Start/stop                           | Start running when input is valid; Stop running when input is invalid.                                                                                                                   |

### 3.6.2. Output Definition

Define functions corresponding to switch output ports OUT1 to

OUT12. Click the switch output port to be set and select the function to be defined in the popup option box.



The list of functions available for switching output is as follows:

| Function | Function Name | Describe                                                                                                                                                                                                                           |
|----------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q0       | No definition | No functional definition.                                                                                                                                                                                                          |
| Q1       | run           | The output is valid when running.                                                                                                                                                                                                  |
| Q2       | Stop          | The output is valid in the stopped state.                                                                                                                                                                                          |
| Q3       | A Fast        | Fast control signal.                                                                                                                                                                                                               |
| Q4       | A med         | Med control signal                                                                                                                                                                                                                 |
| Q5       | A slow        | Slow control signal                                                                                                                                                                                                                |
| Q6       | fixed value   | The output will be effective when the feeding is completed, indicating that the feeding has been completed. The duration can be set 【4.3.2 Fixed hold time】, and the current weight will be recorded as the packaging result after |

|     |                  |                                                                                                                                                                                                                                                         |
|-----|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                  | the fixed holding time.                                                                                                                                                                                                                                 |
| Q7  | A disc           | Discharge door to control weighing hopper.                                                                                                                                                                                                              |
| Q8  | A clip bag       | Clamping bag mechanism control signal, effective clamping bag, ineffective loose bag.                                                                                                                                                                   |
| Q9  | A pat            | Patting bag function control signal. For details, see 3.4.4.                                                                                                                                                                                            |
| Q10 | A zero           | The output is effective when the current weight is lower than <b>【4.2.16 Discharge zero value】</b> .                                                                                                                                                    |
| Q11 | A sever material | The output is effective when feeding.                                                                                                                                                                                                                   |
| Q12 | A disc shaking   | Discharging vibration output control signal. For details, see 3.3.4.                                                                                                                                                                                    |
| Q13 | A code           | The output control signal of the coding function.<br>For details, see 3.3.5.2.                                                                                                                                                                          |
| Q14 | B Fast           | Fast control signal.                                                                                                                                                                                                                                    |
| Q15 | B med            | Med control signal                                                                                                                                                                                                                                      |
| Q16 | B slow           | Slow control signal                                                                                                                                                                                                                                     |
| Q17 | B fixed          | The output will be effective when the feeding is completed, indicating that the feeding has been completed. The duration can be set <b>【4.3.2 Fixed holding time】</b> , and the current weight will be recorded as the packaging result after the fixed |

|     |                  |                                                                                                                         |
|-----|------------------|-------------------------------------------------------------------------------------------------------------------------|
|     |                  | holding time.                                                                                                           |
| Q18 | B disc           | Discharge door to control weighing hopper.                                                                              |
| Q19 | B zero           | The output is effective when the current weight of B scale is lower than 【4.2.16 Unloading zero zone value】.            |
| Q20 | B sever material | The output is effective when feeding.                                                                                   |
| Q21 | B clip bag       | Clamping bag mechanism control signal, effective clamping bag, ineffective loose bag.                                   |
| Q22 | B disc shaking   | Discharging vibration output control signal.For details, see 3.3.4.                                                     |
| Q23 | B pat            | Patting bag function control signal. For details, see section3.4.4.                                                     |
| Q24 | B code           | The output control signal of the coding function. For details, see 3.3.5.2.                                             |
| Q25 | ove/und          | The function of ove/und is turned on, and the output is effective when the ove/und alarm appears in the feeding result. |
| Q26 | warning          | The output is valid when the controller has an alarm.                                                                   |
| Q27 | clip bag         | Clamping bag mechanism control signal, effective clamping bag, ineffective loose bag.                                   |

|     |               |                                                                                                                                                                                          |
|-----|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q28 | filling       | Feed control output signal.<br>When the signal is valid, start the feeding device to feed the material to the storage hopper. For details, see 3.3.7.                                    |
| Q29 | starving      | Lack of material output signal.<br>When the signal input of "I12 blanking level" is invalid, it is the state of lacking material.                                                        |
| Q30 | A Discharge   | In bulk accumulation mode, it is used to control the discharge oil pump of liquid storage tank under A scale.<br>In port scale mode, the output of A small casting process is effective. |
| Q31 | B Discharge   | In port scale mode, the output of B small casting process is effective.                                                                                                                  |
| Q32 | A blow        | Valve port scale mode controls A scale blowing mechanism。                                                                                                                                |
| Q33 | B blow        | Valve port scale mode controls B scale blowing mechanism                                                                                                                                 |
| Q34 | Final balance | When the delay signal input is effective or when the last balance is delivered in bulk scale mode, the signal output is effective.                                                       |
| Q35 | Belt conveyer | Belt conveyor function output control signal.<br>For details, see 3.3.5.1.                                                                                                               |

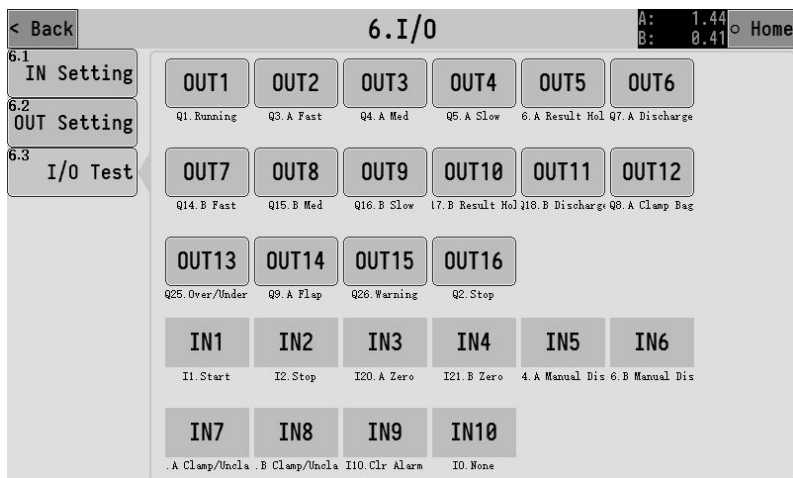
|     |                   |                                                                                                                                                                                                                                                                                              |
|-----|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q36 | Sewing output     | Sewing bag output control signal.<br>For details, see 3.3.2.                                                                                                                                                                                                                                 |
| Q37 | Tangent output    | Tangents output control signals.<br>For details, see 3.3.2.                                                                                                                                                                                                                                  |
| Q38 | Logic output 1    | Logic programming 1 function output signal.                                                                                                                                                                                                                                                  |
| Q39 | Logic output 2    | Logic programming 2 function output signal.                                                                                                                                                                                                                                                  |
| Q40 | Logic output 3    | Logic programming 3 function output signal.                                                                                                                                                                                                                                                  |
| Q41 | Logic output 4    | Logic programming 4 function output signal.                                                                                                                                                                                                                                                  |
| Q42 | Logic output 5    | Logic programming 5 function output signal.                                                                                                                                                                                                                                                  |
| Q43 | Logic output 6    | Logic programming 6 function output signal.                                                                                                                                                                                                                                                  |
| Q44 | Tractor transfer  | The output switch is used to control the movement of the tractor slider. When the output is effective, the slider moves to the direction of the packaging machine; When the output is invalid, the slider moves in the direction of the sewing machine.<br><br>See section 3.3.6 for details |
| Q45 | Pocket of tractor | The output switch is used to control the action of the tractor bag clamping. When the output is                                                                                                                                                                                              |

|     |                     |                                                                                                                                                                                                                                                                                                   |
|-----|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                     | effective, the mechanism will clamp the bag mouth; When the output is invalid, the mechanism will release the bag opening. See section 3.3.6 for details                                                                                                                                          |
| Q46 | A Hold bags allowed | AB Mutually independent mode<br>When the matching function of the non-bucket bag-holding machine is turned on, the "bag-holding permit" signal will be output after the packaging is completed.<br>See the parameter description of <b>【 3.1.8 Coordination of Bagless Machine 】</b> for details. |
| Q47 | B Hold bags allowed |                                                                                                                                                                                                                                                                                                   |
| Q48 | A running           | A the output is valid when the scale is running.                                                                                                                                                                                                                                                  |
| Q49 | A stop              | The output is valid when the balance A is stopped.                                                                                                                                                                                                                                                |
| Q50 | B running           | B the output is valid when the scale is running.                                                                                                                                                                                                                                                  |
| Q51 | B stop              | The output is valid when the balance B is stopped.                                                                                                                                                                                                                                                |
| Q52 | A Loading finished  | This output is valid when A is finished feeding.                                                                                                                                                                                                                                                  |
| Q53 | B Loading finished  | This output is valid when B is finished feeding.                                                                                                                                                                                                                                                  |
| Q54 | Disconnection alarm | When the disconnection detection function detects the disconnection,                                                                                                                                                                                                                              |

|     |                 |                                                                                                                                                                 |
|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                 | the output of the alarm signal is effective.                                                                                                                    |
| Q55 | A Tare abnormal | Output when abnormal tare weight is detected during bucket mode peeling.<br>For details, see 【 3.1.10 Upper Tare 】 【 3.1.11 Lower Tare 】 parameter description. |
| Q56 | B Tare abnormal |                                                                                                                                                                 |

### 3.6.3. I/O Test

Switch volume test is used to test whether the input switch volume and output switch volume work normally, The interface is as follows:



#### I/O output test:

The OUT1 to OUT12 buttons are used to test the output function of the switch quantity. Gray indicates that the output is invalid, and

green indicates that the output is valid.

For Example:

O UT3 output port is connected to a relay. To test whether OUT3 output is normal, click the OUT3 button to switch the output state to valid. If the line is normal, the relays connected to OUT3 can be observed to close.

### **I/O input test:**

IN1 to IN7 test the input function of the switch quantity. Gray indicates that the switching input is invalid, and green indicates that the switching input is valid.

For Example:

The IN1 input port is connected with a button switch. To test whether the button switch is normal, you can manually press the connected button. If the line is normal, you can observe that the IN1 indicator turns green. After releasing the button, if the line is normal, you can observe that the IN1 indicator turns gray.

## 3.7. Acc Data

View the batch, cumulative, and historical data of controllers.

### 3.7.1. Batche and Acc

View the accumulated control values and set the number of batches to be run. The interface is as follows:

The screenshot displays the '7.Acc Data' screen. At the top, there are navigation buttons '< Back' and 'Home', and status indicators 'A: 1.43' and 'B: 0.41'. On the left, a sidebar contains '7.1 Bat&Acc.' and '7.2 History Data'. The main area shows 'Acc. Nums: 0', 'Acc. Wt : 0.00 kg', and 'Batch Acc.: 0.00 kg'. Below this is a table titled 'Rec. Acc.' with columns 'Rec.', 'Acc. Nums', and 'Acc. Weight'. The table lists 14 rows, all with '0' in the 'Acc. Nums' column and '0.00' in the 'Acc. Weight' column. To the right of the table, there are four settings: '7.1.1 Batch Set' (0), '7.1.2 Completed' (0), '7.1.3 Manual Disc Acc' (No), and '7.1.4 Manual Disc Acc Rng' (50.00 %). At the bottom right, there are five buttons: 'Clr All Acc.', 'Clr Acc.', 'Clr Batch Acc.', 'Clr Rec. Acc.', and 'Clr Sel. Rec', along with a 'USB Export' button.

|       |           |                                                                                                                                                                                                                                                           |
|-------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7.1.1 | Batch set | Set the number of batches to be packaged after operation. When the number of batches to be packaged reaches the set number, the packaging process will be stopped and an alarm will be given to remind. Disable this function when the value is set to 0. |
| 7.1.2 | Completed | If the number of batches is set, the number of batches that have been completed is                                                                                                                                                                        |

|              |                                               |                                                                                                                                                                                                                                                                                                                    |
|--------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                               | displayed.                                                                                                                                                                                                                                                                                                         |
| <b>7.1.3</b> | Manual Disc<br>Acc                            | ①No<br>②Yes                                                                                                                                                                                                                                                                                                        |
| <b>7.1.4</b> | Cumulative<br>range of<br>manual<br>unloading | 0.00%~100.00%<br>When manual discharging is included in the accumulative function, if the material discharged manually exceeds the target value × the accumulative range of manual discharging, it will be included in the accumulative function, otherwise, it will not be included in the accumulative function. |

When the controller is inserted into a USB flash drive, the accumulated data file can be exported to the USB flash drive in CSV format.

## 3.7.2. Acc Data

View the historical data of packaging, including cumulative No, Date, Result, Formulation parameter setting and packaging time, etc.

The controller can store a maximum of 100,000 pieces of historical data. When the storage space is used up, the controller starts to store historical data from number 1 and overwrites the old data.

When the controller is inserted into a USB flash drive, the historical data file can be exported to the USB flash drive in CSV format.

< Back

7.Acc Data

A: 1.44  
 B: 0.41 Home

7.1 Bat&Acc.  
 7.2 History Data

| No. | Acc. No. | Date Time | Result | CHAN | Rec. | Target | Fast Feed |
|-----|----------|-----------|--------|------|------|--------|-----------|
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |
| -   | -        | -         | -      | -    | -    | -      | -         |

PageUp 1 / 0 PageDn
Clear Data
USB Export

Num of data : 0 /100000

## 3.8. Extended interfaces

This function is optional. Two types of expansion boards are available:

- ①Dual serial port (RS232+RS485)
- ②Dual analog + serial port (RS485)

### 3.8.1. RS232 Set

This section describes how to set the parameters of an RS232 serial port.

| < Back |          | 8.Extend |             | A: 1.44<br>B: 0.41 |   | Home |
|--------|----------|----------|-------------|--------------------|---|------|
| 8.1    | RS232    | 8.1.1    | Slave ID    | 1                  |   |      |
| 8.2    | RS485    | 8.1.2    | Protocol    | ③Modbus-RTU-H      | > |      |
| 8.3    | ExModbus | 8.1.3    | Baudrate    | ④38400             | > |      |
| 8.4    | Analog 1 | 8.1.4    | Data Format | ③8-N-1             | > |      |
| 8.5    | Analog 2 |          |             |                    |   |      |

|       |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8.1.1 | Slave ID | Set the communication address (slave station number) of the device.                                                                                                                                                                                                                                                                                                                                                                             |
| 8.1.2 | Protocol | ①[Print/accumulate]<br>②[Print/continuous]<br>③[Modbus-RTU-H]: Modbus-RTU Modbus-RTU protocol ( Double-word data is preceded by high word )。<br>④[Modbus-RTU-L]: Modbus-RTU Modbus-RTU protocol ( Double word data low word before ) .<br>⑤[Cont1]<br>⑥[Cont2]<br>⑦[ExModbus-H]: Modbus Modbus master station ( Double-word data is preceded by high word )<br>⑧[ExModbus-L]: Modbus Modbus master station ( Double word data low word before ) |

|              |                    |                                                                                                                                                                                                                                             |
|--------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>8.1.3</b> | <b>Baudrate</b>    | Set the baud rate for the serial port                                                                                                                                                                                                       |
| <b>8.1.4</b> | <b>Data Format</b> | ①[7-E-1]:7 data bits, parity check, 1 stop bit<br>②[7-O-1]:7 data bits, odd check, 1 stop bit<br>③[8-N-1]:8 data bits, no check, 1 stop bit<br>④[8-E-1]:8 data bits, parity check, 1 stop bit<br>[8-O-1]:8 data bits, odd check, 1 stop bit |

### 3.8.1.1. Print format

When **【 8.1.2 Communication Protocol 】** is set to ①[Print/Accumulative], click the "Print" button on the main interface to output the accumulative information printed through the serial port, including accumulative times, accumulative weight and current time, in the following format:

```
-----
Sum:           6
Total:        17.75kg
2022.05.23   10:52
-----
```

When **【 8.1.2 Communication Protocol 】** is set to ①[Print/continuous], the printed result information, including the communication address, formula number, accumulative times and the packaging result, will be output through the serial port after each packaging, in the following format:

```
01, 1,      7,   3.05
01, 1,      8,   3.06
01, 1,      9,   3.03
```

### 3.8.1.2. Cont format

When **【8.1.2 Communication Protocol】** is set to ⑤[Cont1], the

serial port will continuously send the following data:

|     |         |   |   |    |    |            |   |            |     |      |
|-----|---------|---|---|----|----|------------|---|------------|-----|------|
| STX | Balance | R | T | SP | SP | cumulative | , | cumulative | CRC | CRLF |
|     | no.     |   |   |    |    | number     |   | weight     |     |      |

Among them:

STX —— 1 byte. Start character, 02H

Device number —— 2 bytes. For example, if the scale number is 01, 30H 31H

R —— 52H

T —— 54H

SP —— 20H

Cumulative count -- 9 bytes, 000000000~999999999

, —— 2CH。

Total weight -- 10 bytes including decimal point

CRC —— 2 bytes. Checksum, which is the sum of all the preceding hexadecimal values and conversion to decimal, and then the last two digits and conversion to **ASCII**. (The tens place is first and the ones place is last

CR —— 1 byte, press enter 0DH

LF —— 1 byte, newline 0AH.

When [8.1.2 Communication Protocol] is set to ⑥[Cont2], the serial port will continuously send the following data:

|     |         |   |   |            |   |                 |     |      |
|-----|---------|---|---|------------|---|-----------------|-----|------|
| STX | Balance | R | T | cumulative | , | aggregate-value | CRC | CRLF |
|     | no.     |   |   | number     |   |                 |     |      |

Among them:

STX —— 1 byte. The starting character, 02H

Device number —— 2 bytes. If the scale number is 01, That is: 30H 31H

R —— 52H

T — 54H

cumulative number — 4 bytes, 0000~9999

aggregate-value — 9 bytes, Includes 8 bytes of data and 1 byte of decimal point

, — 2CH。

CRC — 2 bytes , Checksum, which is the sum of all the preceding hexadecimal values and conversion to decimal, and then the last two digits and conversion to ASCII. (The tens place is first and the ones place is last).

CR — 1 bytes, enter 0DH。

LF — 1 bytes, newline 0AH。

### 3.8.2. RS485 Setting

For details to see 3.8.1 RS232 setting.

### 3.8.3. ExModbus

When the communication protocol is set as ExModbus, the controller can be used as the master station to read the address of the external device, often used to read the address of the frequency converter, used to set the frequency of the frequency converter to achieve the purpose of controlling the motor speed.

This function supports A maximum of two slave devices (channel A and channel B), and each slave device supports A maximum of two read and write addresses (start ADDRESS 1 and start address 2).

| < Back |          | 8.Extend |                            | A: 1.44<br>B: 0.41 |        | Home                       |       |
|--------|----------|----------|----------------------------|--------------------|--------|----------------------------|-------|
| 8.1    | RS232    | 8.3.1    | Channel A<br>Slave ID      | 0                  | 8.3.8  | Channel B<br>Slave ID      | 0     |
| 8.2    | RS485    | 8.3.2    | Channel A<br>Start Addr 1  | 0                  | 8.3.9  | Channel B<br>Start Addr 1  | 0     |
| 8.3    | ExModbus | 8.3.3    | Channel A<br>Speed 1       | 0 rpm              | 8.3.10 | Channel B<br>Speed 1       | 0 rpm |
| 8.4    | Analog 1 | 8.3.4    | Channel A<br>Coefficient 1 | 0                  | 8.3.11 | Channel B<br>Coefficient 1 | 0     |
| 8.5    | Analog 2 | 8.3.5    | Channel A<br>Start Addr 2  | 0                  | 8.3.12 | Channel B<br>Start Addr 2  | 0     |
|        |          | 8.3.6    | Channel A<br>Speed 2       | 0 rpm              | 8.3.13 | Channel B<br>Speed 2       | 0 rpm |
|        |          | 8.3.7    | Channel A<br>Coefficient 2 | 0                  | 8.3.14 | Channel B<br>Coefficient 2 | 0     |

|       |                           |                                                                                                    |
|-------|---------------------------|----------------------------------------------------------------------------------------------------|
| 8.3.1 | Channel A<br>Slave ID     | 0~99<br>Set the slave station number of channel A.                                                 |
| 8.3.2 | Channel A<br>Start Addr 1 | 0~65535<br>Set the read/write address of channel A to 1.                                           |
| 8.3.3 | Channel A<br>Speed 1      | 1~9999999<br>Set speed 1 of channel A.                                                             |
| 8.3.4 | Channel A<br>Coefficient  | 0~9999999<br>The value of speed 1 x coefficient 1 is written to the corresponding start address 1. |
| 8.3.5 | Channel A<br>Start Addr 2 | 0~65535<br>Set the read/write address of channel A to 2.                                           |
| 8.3.6 | Channel A<br>Speed 2      | 1~9999999<br>Set speed 2 of channel A.                                                             |
| 8.3.7 | Channel A                 | 0~9999999                                                                                          |

|  |               |                                                                                       |
|--|---------------|---------------------------------------------------------------------------------------|
|  | Coefficient 2 | The value of speed 2 x coefficient 2 is written to the corresponding start address 2. |
|--|---------------|---------------------------------------------------------------------------------------|

8.3.8~8.3.14 The setting method of channel B is the same as that of channel A.

## 3.8.4. Analog 1

Analog values can be set only when the controller is equipped with dual analog values and serial port (RS485) expansion boards. The following interface is displayed for setting related parameters:

< Back

8.Extend

A: 1.44  
B: 0.41

Home

8.1 RS232

8.2 RS485

8.3 ExModbus

8.4 Analog 1

8.5 Analog 2

8.4.1 Analog Range ①0-5V >

8.4.2 Analog Meaning ①Feeding A >

8.4.3 User Set Max 0.000 V

8.4.4 User Set Min 0.000 V

Analog Calib OFF

| Calib Point | Actual Value |
|-------------|--------------|
| 2V          | 0.000 V      |
| 4V          | 0.000 V      |
| 6V          | 0.000 V      |
| 8V          | 0.000 V      |
| 10V         | 0.000 V      |

|       |              |                                                                                                             |
|-------|--------------|-------------------------------------------------------------------------------------------------------------|
| 8.4.1 | Analog Range | ① [0-5V]<br>② [0-10V]<br>③ [4-20mA]<br>④ [0-20mA]<br>⑤ [0-24mA]<br>⑥ [Custom voltage]<br>⑦ [Custom current] |
|-------|--------------|-------------------------------------------------------------------------------------------------------------|

|       |                |                                                                                                                                                                                  |
|-------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8.4.2 | Analog Meaning | ①feeding: feeding can output large, medium and small input corresponding to the size of the simulation, to control the feeding device for feeding.<br>For details can see 3.4.7. |
| 8.4.3 | User Set Max   | When 【 8.4.1 Analog Range 】 set to⑥[Custom voltage] or ⑦[custom current], can use these two parameters to customize the output voltage or current output range.                  |
| 8.4.4 | User Set Min   |                                                                                                                                                                                  |

### 3.8.4.1. Analog Calibration

The analog quantity has been calibrated before delivery and can be used directly.

When the analog output is not allowed to have deviation, the analog output can be calibrated to calibrate the output value of the analog.

Here the method of 0~5V voltage calibration is taken as an example to illustrate. The current calibration method is the same as the voltage method.

1 First click on the calibration switch and open state of analog calibration, then point 2 v place there will be a sign of the arrow, instructions are currently calibration of analog point is 2 v, the output voltage of the multimeter is used to measure the actual value (A01 + and voltage between A01-), normal should be about 2 v, behind and enter into the corresponding actual output values in the input box.

**Note: When using the multimeter to measure the voltage, remove the connection line on the AO1+and A01- ports to prevent the influence of the back-end circuit on the output voltage value.**

2. Click 4V of the marking point, the arrow switches to 4V of the marking point, measure the actual output voltage value and input it into the corresponding input box.
3. The calibration methods for 6V, 8V and 10V points are the same as above.
4. After all the calibration points are completed, the calibration state of the analog quantity can be closed to complete the calibration of the analog quantity.

**Note:** There is no analog output setting and calibration data when reset all parameters. For analog parameters, click

**Analog reset**

### 3.8.5. Analog 2

Refer to the description of analog quantity 1 in section 3.8.4.

## 3.9. Self-inspection

The self-test function is to test whether the mechanical structure of the equipment is normal. The self-check process is the same as the normal operation process. Start related devices based on the current parameters. The difference between the two is that the controller can automatically simulate the feeding process without actual feeding operation.

The interface of self-check function is as follows. The controller will prompt the detailed steps and status information. Click "Start Self-check" in the lower right corner to start the self-check process.

| < Back                                                                                                                           |  | 9.Self Test                                                                                                                      |  | A: 1.44<br>B: 0.41                                                                                                                            |  | Home |  |
|----------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------|--|------|--|
| <b>A status</b><br><br>●RUN      ●HOLD<br>●FAST     ●O/U<br>●MED      ●CLAMP<br>●SLOW     ●DISC<br><br><b>A details:</b><br>Stop |  | <b>B status</b><br><br>●RUN      ●HOLD<br>●FAST     ●O/U<br>●MED      ●CLAMP<br>●SLOW     ●DISC<br><br><b>B details:</b><br>Stop |  | <b>Work Mode:</b><br>⑬AB Valve<br><br><b>Warring :</b><br>No warning<br><br><b>Recipe :</b><br>(01)----<br><br>Clr Alarm      Start Self-Test |  |      |  |

## 3.10. Logic

The controller supports six logic programming functions. If the existing functions of the controller cannot meet the control requirements of the device, you can use the logic programming

function to define auxiliary logical output signals in addition to the running flow of the controller to control device actions.

The logic programming setting interface is as follows:

The screenshot displays the '10.Logic' configuration screen. On the left, a vertical list shows 'Logic 1' through 'Logic 6'. The main panel is titled '10.Logic' and includes a '< Back' button. The settings are as follows:

- Logic Type:** ①Close
- 10.1.4 Delay On Time:** 0.0 s
- 10.1.5 Delay Off Time:** 0.0 s
- 10.1.2 Trigger Type:** ①Signal Trigger
- 10.1.6 Trigger Signal 1:** None
- 10.1.7 Signals Logic:** ①OR
- 10.1.15 Trigger Signal 1:** None
- 10.1.3 Logic Signal Output Port:** None
- Home** button

The following uses logic programming 1 as an example to explain the functions of each parameter:

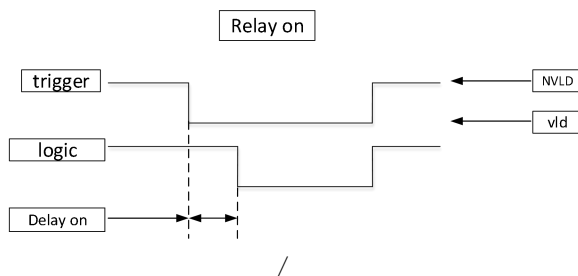
|        |            |                                                                                                                                                                                                                                                                                                                                                                       |
|--------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1.1 | Logic Type | <p>Select the type of logical programming.</p> <p>①[OFF] : Disable the logical output function.</p> <p>④ [Delay on]</p> <p>⑤ [Delay disconnect]</p> <p>⑥ [Delay on and delay off]</p> <p>⑦ [Valid - Invalid jump edge trigger]</p> <p>⑧ [Invalid - Valid jump edge trigger]</p> <p>⑨ [lock]</p> <p>⑩ [pulse]</p> <p>Corresponding function description in detail:</p> |
|--------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

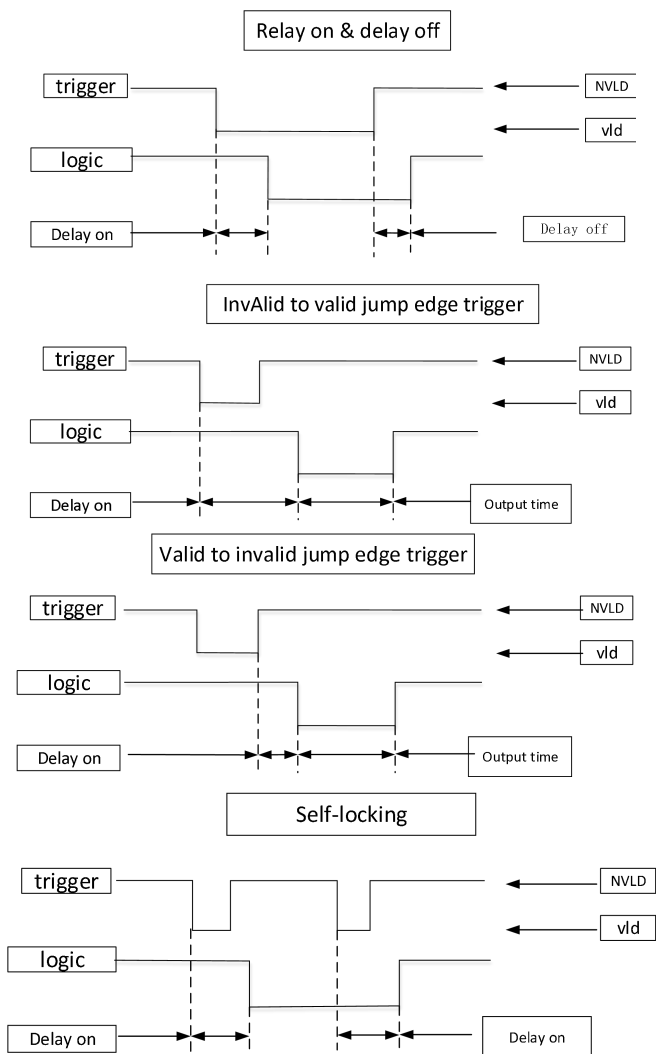
|        |                          |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1.2 | Trigger Type             | <p>① [Signal trigger]: The logical output is triggered by a signal.</p> <p>②[Condition triggered] : Trigger the logical output by reaching a condition.</p> <p>③[Communication trigger]: The logical output is triggered by a communication command.</p>                                                                                                                                                                  |
| 10.1.3 | Logic Signal Output Port | Select the logical output signal to define to an OUT outlet.                                                                                                                                                                                                                                                                                                                                                              |
| 10.1.4 | Delay on Time            | Logic output signal delay on time.                                                                                                                                                                                                                                                                                                                                                                                        |
| 10.1.5 | Delay off Time           | The time when the logic output signal is delayed.                                                                                                                                                                                                                                                                                                                                                                         |
| 10.1.6 | Trigger Signal 1         | Select signal 1 to trigger the logical output.                                                                                                                                                                                                                                                                                                                                                                            |
| 10.1.7 | Signal Logic             | <p>Select the logical relationship between trigger signals 1 and 2 used to trigger the logical output.</p> <p>1.[or] : Trigger signal 1 and trigger signal 2 can trigger the logical output if either signal is valid.</p> <p>2.[and] : Trigger signals 1 and 2 need to be valid to trigger the logical output.</p> <p>3.[XOR] : The logical output can be triggered only when trigger signals 1 and 2 are different.</p> |

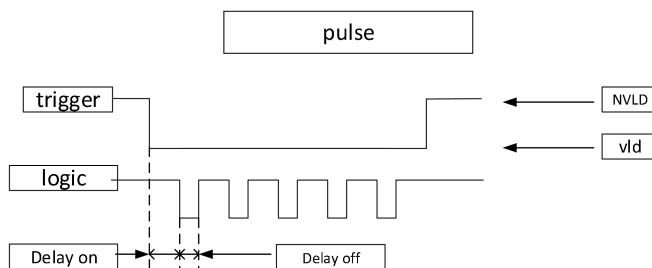
|         |                       |                                                                                                                                                                                                                                                                                                          |
|---------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1.8  | Output time           | <p>【 10.1.1 Logic type 】 You can set this parameter when item 5/6 is set. The valid time of the output after the logic signal is triggered, and the logic output ends when the time expires.</p> <p>When this time is set to 0, the logical output signal will be terminated only by a reset signal.</p> |
| 10.1.9  | Reset signal set      | <p>【 10.1.1 Logic type 】 You can set this parameter when item 5/6 is set. After the logical output is valid, the reset signal resets the logical output, making the logical output invalid and ending the logical output process.</p>                                                                    |
| 10.1.10 | Reset signal logic    | <p>1.[Effective reset] : Reset the logical output when the reset signal is effective.</p> <p>2.[Invalid reset] : Reset the logic output when the reset signal is invalid.</p>                                                                                                                            |
| 10.1.11 | Trigger Condition Set | <p>Select the condition that triggers the logical output.</p> <p>1.[Weight greater than set value]<br/> 2.[Weight less than set value]<br/> 3.[Weight within range]<br/> 4.[Weight outside the range]</p>                                                                                                |
| 10.1.12 | set value 1           | Used to set the weight value corresponding to the trigger condition.                                                                                                                                                                                                                                     |
| 10.1.13 | set value 2           |                                                                                                                                                                                                                                                                                                          |
| 10.1.14 | Weight                | 1.[ON] : The logical output can be                                                                                                                                                                                                                                                                       |

|         |                     |                                                                                                                                                                                                          |
|---------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | stability condition | <p>triggered only when the weight meets the trigger condition and is stable.</p> <p>2.[Off] : The logic output can be triggered after the weight meets the trigger condition, without stabilization.</p> |
| 10.1.15 | Trigger Signal 2    | Select signal 2 to trigger the logical output.                                                                                                                                                           |
| 10.1.16 | Weight selection    | <p>Select the weight value to use for conditional triggering</p> <p>1. [A] weight</p> <p>2. Weight [B]</p>                                                                                               |

### 3.10.1. Output sequence diagrams logically







## 3.10.2. Examples

Through logic programming to achieve the coding function: bag output signal effective, delay 1 second time, and then output OUT12 lasting 2 seconds, used to control the coding machine in the bag after the completion of the code printed on the bag.

The Settings are as follows:

**【10.1.1 Logic type】:** Invalid - Valid jump edge trigger

**【10.1.4 Delay on time】:** 1s

**【10.1.8 Output time】:** 2s

**【10.1.2 Trigger type】:** Signal trigger

**【10.1.6 Trigger Signal 1】:** Clamp

**【10.1.3 Logic Signal Output Port】:** OUT12

Through the coordination of different trigger signals, trigger conditions and logic programming signals, very flexible logic signals can be combined and output.

For example, to achieve the following logic: real-time detection weight is higher than 100kg, output OUT10 for alarm indication. After the alarm is effective, the delay time is 2 seconds, and the output OUT11 lasts 3 seconds to control the unloading mechanism to discharge the material.

The Settings are as follows:

**Logic programming 1: realize the output of OUT10 when the detection weight is higher than 100kg.**

【10.1.1 Logic type】: Delay on

【10.1.4 Delay on time】: 0s

【10.1.2 Trigger type】: Condition triggered

【10.1.11 Trigger condition set】: Weight greater than the set value

【10.1.12 set value 1】: 100kg

【10.1.3 Logic Signal Output Port】: OUT10

**Logic programming 2: implement OUT10 effective delay of 2 seconds, output OUT11 lasts 3 seconds.**

【10.2.1 Logic type】: Invalid - Valid jump edge trigger

【10.2.4 Delay on time】: 2s

【10.2.8 Output time】: 3s

【10.2.2 Trigger type】: Signal trigger

【10.2.6 Trigger Signal 1】: Logical output 1

【10.2.3 Logic Signal Output Port】: OUT11

## 3.11. Shortcut Setting

You can use the Shortcut screen configuration function to configure the parameters displayed in the Shortcut Settings screen (clickShortcut set )to enter the main screen.(Chapter 2.1) .

A maximum of four pages can be displayed on the shortcut page. Shortcuts 1 to 4 can be selected by the check box on the shortcut page. The selected pages are displayed on the shortcut setting page. Quick Settings A maximum of 16 parameters can be displayed on each page. Click the option box and select the parameters to be displayed on the shortcut screen.

The shortcut interface configuration is as follows:

| < Back |           | 11.Shortcut Setting |                                 | A: 1.44<br>B: 0.41 |                      | Home |  |
|--------|-----------|---------------------|---------------------------------|--------------------|----------------------|------|--|
| 11.1   | Shortcut1 | 11.1.1<br>Para 1    | 4.2.1 A Target >                | 11.1.9<br>Para 9   | 4.2.9 B Target >     |      |  |
| 11.2   | Shortcut2 | 11.1.2<br>Para 2    | 4.2.2 A Fast Feed >             | 11.1.10<br>Para 10 | 4.2.10 B Fast Feed > |      |  |
| 11.3   | Shortcut3 | 11.1.3<br>Para 3    | 4.2.3 A Med Feed >              | 11.1.11<br>Para 11 | 4.2.11 B Med Feed >  |      |  |
| 11.4   | Shortcut4 | 11.1.4<br>Para 4    | 4.2.4 A Slow Feed >             | 11.1.12<br>Para 12 | 4.2.12 B Slow Feed > |      |  |
|        |           | 11.1.5<br>Para 5    | None >                          | 11.1.13<br>Para 13 | None >               |      |  |
|        |           | 11.1.6<br>Para 6    | 4.2.8 Total Target >            | 11.1.14<br>Para 14 | 5.1.1 AI Pack >      |      |  |
|        |           | 11.1.7<br>Para 7    | 4.2.16 Discharge<br>Zero Area > | 11.1.15<br>Para 15 | 4.2.17 Feed Speed >  |      |  |
|        |           | 11.1.8<br>Para 8    | None >                          | 11.1.16<br>Para 16 | None >               |      |  |

## 3.12. Password

The **System setting** button on the main screen and 1 to 13 items on the system maintenance menu screen can set a separate password and password switch for each item.

All passwords are set by default: 000000.

To change the password, enter it twice and click **OK**.

The password management page is as follows:

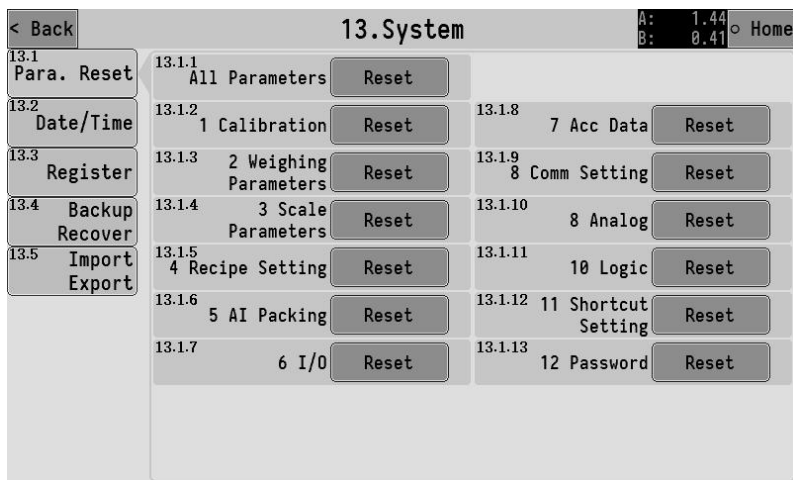
| < Back                |                              | 12.Password |     | A: 1.44<br>B: 0.41          |     | Home |  |
|-----------------------|------------------------------|-------------|-----|-----------------------------|-----|------|--|
| 12.1 Password Setting | 12.1.1 System Setting        | ON          | Set | 12.1.8 7 Acc Data           | OFF | Set  |  |
|                       | 12.1.2 1 Calibration         | OFF         | Set | 12.1.9 8 CExtend            | OFF | Set  |  |
|                       | 12.1.3 2 Weighing Parameters | OFF         | Set | 12.1.10 9 Self Test         | OFF | Set  |  |
|                       | 12.1.4 3 Scale Parameters    | OFF         | Set | 12.1.11 10 Logic            | OFF | Set  |  |
|                       | 12.1.5 4 Recipe Setting      | OFF         | Set | 12.1.12 11 Shortcut Setting | OFF | Set  |  |
|                       | 12.1.6 5 AI Packing          | OFF         | Set | 12.1.13 12 Password         | ON  | Set  |  |
|                       | 12.1.7 6 I/O                 | OFF         | Set | 12.1.14 13 System           | OFF | Set  |  |

## 3.13. System

The system interface provides the functions of Para. Reset、Date、Time、Register、Backup Recover、Import Export.

### 3.13.1. Para. Reset

Press the button Reset to reset corresponding parameter values, and the parameter values will be restored to factory Settings. Exercise caution when performing this operation.



### 3.13.2. Date/Time

It can modify the time and date of the controller.

< Back

13.System

A: 1.44  
B: 0.41 Home

13.1  
Para. Reset

13.2  
Date/Time

13.3  
Register

13.4  
Backup  
Recover

13.5  
Import  
Export

2022-06-21(Tue)15:06:25

Year2022

Hour15

Mon6

Min6

Day21

Sec23

Write In

### 3. 13. 3. Register

Product use registration Settings.

< Back

13.System

A: 1.44  
B: 0.41 Home

13.1  
Para. Reset

13.2  
Date/Time

13.3  
Register

13.4  
Backup  
Recover

13.5  
Import  
Export

Status:Licensed

Random ID:1304302769

Registration Code

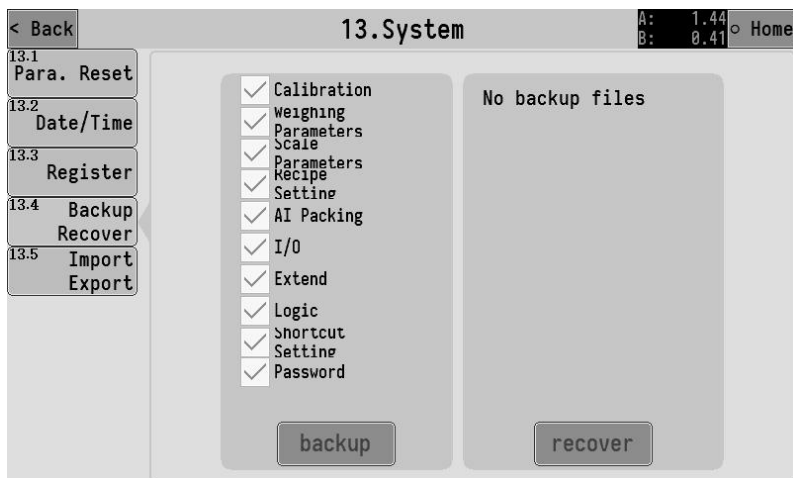
Register

### 3.13.4. Backup and Recovery

The parameter values of the controller can be backed up to the memory in the machine, and can be restored when needed.

The parameter items to be backed up can be selected on the left side, and the backup file date is displayed on the right side. You can delete the backup file.

To prevent misoperations, when the parameter Backup and recovery page is displayed, By default, the buttonBackup and Delete Backupare disabled.Special operations are required to enable the backup and delete backup functions, the operation method is to click position ① three times, then click position② three times, and then click position③ three times to enable backup and delete backup.



### 3.13.5. Import and Export

The controller can export the current parameters to a USB flash drive in CSV format.

### Data export operation:

Select the parameter items to be exported on the left of the interface. After inserting the USB flash drive, click USB Export to export the selected items to the USB flash drive.

### Data import operation:

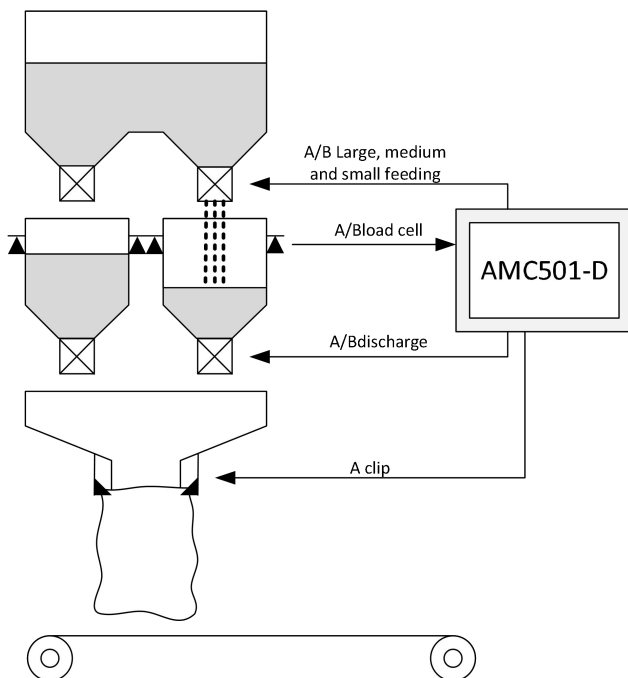
Insert a USB flash drive with data files. Data files in the current USB flash drive are displayed in the list on the right of the interface. Select the data file to be imported and click USB Import.



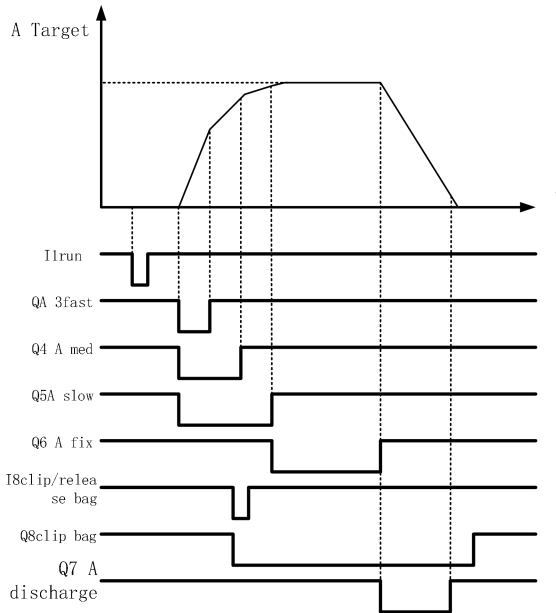
## IV. Work Process and Function Description

### 4.1. Bucket packing

Bucket packing scale basic structure schematic diagram is as follows:



Taking A scale as an example, the basic operation process and signal sequence diagram of bucket packaging are as follows:



Combined with the above figure, the basic packaging process of bucket scale is explained:

1. Start to ON.
2. **【4.3.1 Delay before feeding】** Time.
3. After starting the A large throw, collect the A weight in real time and compare the weight. When the A weight value  $\geq$  **【4.2.1 A target value】** - **【4.2.2 A leading quantity of fast feeding】** , close the A fast feeding ,start to A med feeding;
4. When the A weight value  $\geq$  **【4.2.1 A target value】** - **【4.2.3 leading quantity of A med feeding】** , close the A med feeding ,start to A slow feeding;
5. When the A weight value  $\geq$  **【4.2.1 A target value】** - **【4.2.4 A slow feeding drop in level number, close A slow feeding, end feeding;**

6. 【4.3.2 Fixed hold time】。
7. Start unloading after judging the completion of the clamping bag.
8. When the weight is lower than 【4.2.16isdischarging zero zone value】 , start 【4.3.3 discharging delay time 】 and close discharging when the time is up.
9. Start 【4.3.5 Delay before bag loosening 】 and release the bag when the time is up.
10. Complete a packaging process and return to Step 1 to start a new packaging process.

**Note: The process does not include the description of special functions such as overage and underdifference detection, unloading vibration, material level, etc. If you need to know a certain function, please refer to the section description of the corresponding function.**

**【3.1.1 Working mode】** There are several working modes related to bucket packaging:

- ①[Bucket packaging (AB combination)]
- ②[Bucket packaging (AB high speed)]
- ③[Bucket packing (A scale alone)]
- ④[Bucket packing (B scale alone)]
- ⑤[Bucket packaging (B complementary mode)]
- ⑥name [bucket packaging (AB independent)]

**Note: the above only 15 persons [bucket packaging (AB independent)] mode for double bagging mechanism, other modes are all single bagging mechanism.**

### 4.1.1. ① [Bucket package (AB combination)]

This mode can be used when the weight of a bag of target material to be packed is greater than that of a single measuring bucket.

A scale and B scale work at the same time, for multiple feeding and unloading, to reach A certain number of times before A loose bag, complete A combination process.

Such as:

It is necessary to pack a bag of 50kg materials. A single measuring bucket can hold 30kg of materials. Then this mode can be used at this time. Set [4.2.8 total target value] to 50kg, [4.2.1A target value] to 25kg, and [4.2.9B target value] to 25kg, so that A/B scale will unload twice before loosening the bag after starting each bag clamping, and the weight of A bag is 50kg.

**Note:**

The Settings of [4.2.1a Target] and [4.2.9b target] must be the same.

[4.2.8 General Target Value] The value must be an integer multiple of [4.2.1a Target value].

### 4.1.2. ② [Bucket packing (AB High Speed)]

A scale and B scale work at the same time and share A bag clamping mechanism. After bag clamping, the scale that finishes feeding first will unload and loosen the bag, and the scale that finishes feeding after bag clamping will wait for unloading after next bag

clamping.

**Note:**

[4.2.1a Target value] and [4.2.9b target Value] can be set to different values. [4.2.8 Total target value] does not work in this mode.

### 4.1.3. ③ [Bucket packing (A scale alone)]

In this mode, only A scale works. When [4.2.8 General target value] is set to 0, the unloading mode is single discharge, and the bag is loosened once for each discharge. When [4.2.8 overall target value] is set to an integer multiple of [4.2.1a Target value], it is in combination mode, and the bag is loosened only for multiple unloading.

**Note:**

[4.2.9B target Value] does not work in this mode.

[4.2.8 General Target Value] The value must be an integer multiple of [4.2.1a Target value].

### 4.1.4. ④ [Bucket packing (B scale alone)]

In this mode, only B scale works. When [4.2.8 General target value] is set to 0, the unloading mode is single discharge, and the bag is loosened once for each discharge. When [4.2.8 overall target value] is set to an integer multiple of [4.2.9B target value], it is in combination mode, and the bag is loosened only for multiple unloading.

**Note:**

[4.2.1a Target Value] does not work in this mode.

[4.2.8 Overall Target Value] The value must be an integer multiple of [4.2.9B target value].

#### 4. 1. 5. ⑭ [Bucket packing (B complementary mode)]

This mode is A special working mode. A scale is used as fast rough feeding, and B scale is used for slow fine feeding of the remaining part of weight. The materials of A scale and B scale are unloaded into the packaging bag to get the target weight.

[4.2.8 General target value] is set as the packing weight required by A bag of materials. [4.2.1 A Target value] is set as the weight to be added by USING A scale, which should be less than [4.2.8 General target value]. When working, A scale is quickly added to the set target weight and unloaded into the packaging bag. Then the controller calculates the remaining weight and starts the B scale to add the remaining weight of the material, and then unload into the packaging bag.

The specific process is as follows:

1. Start the system.
2. A scales shall first add material according to the set [4.2.1 A target value].
3. After the completion of A's weighting, calculate [4.2.8 total target value] -a's weighting result as B's target value.
4. Start B scale for feeding.
5. After feeding, output switch quantity "Q6A fixed value" signal indicates that feeding is completed.
6. Discharge when the bag is detected to be effective.
7. Start the next cycle after unloading.

## 4.1.6. ⑮ [Bucket packaging (AB independent)]

In this mode, scales A and B work at the same time, and there are two sets of bag clamping mechanism, equivalent to two single scales used independently without influence.

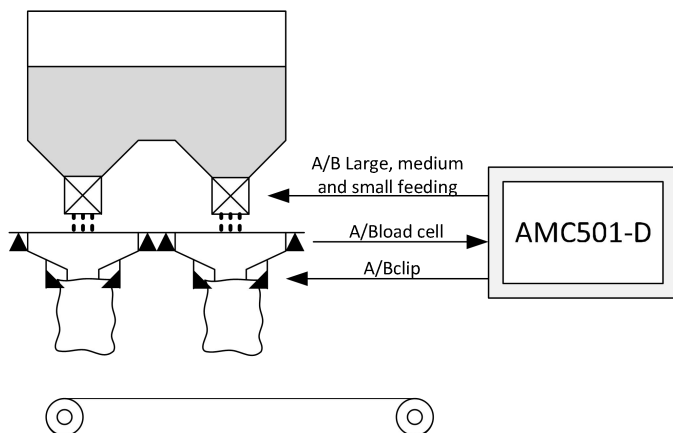
**Note:**

[4.2.1a Target value] and [4.2.9b target Value] can be set to different values.

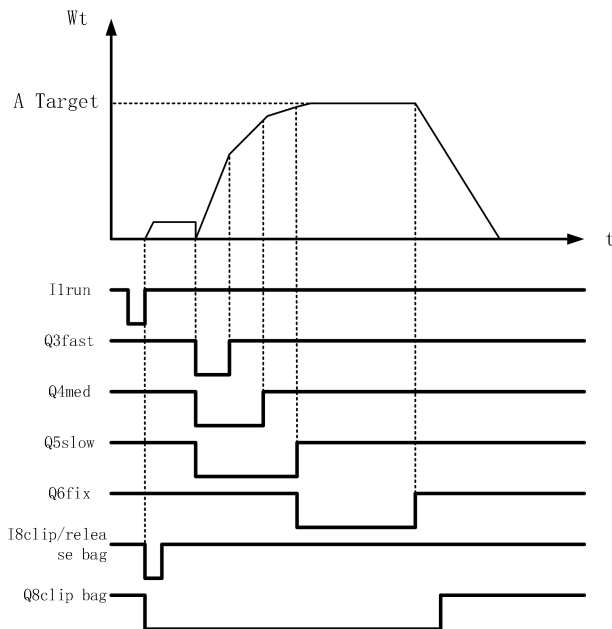
[4.2.8 Total target value] does not work in this mode.

## 4.2. Bucket less packaging

The basic structure of the bucket packing scale is as follows:



Taking A scale as an example, the basic operation process and signal sequence diagram of bucket less packaging are as follows:



Combined with the above figure, the basic packaging process of the bucket scale is explained:

1. Start the operation and wait for the bag to be clamped.
2. Clamp
3. 【4.3.1 Delay before feeding】 time.
4. If 【3.1.6 Bucket packing Mode】 is set to ①[gross weight packaging], do not peel and directly start feeding.
5. If 【3.1.6 No bucket packaging mode】 is set to [A net weight packaging], it will judge the stable peeling and start feeding.
6. Start fast feeding, When weight value  $\geq$  【4.2.1 A target

- value】 - 【4.2.2 leading quantity of A fast feeding】， Close the fast and enter the med.
7. When weight value  $\geq$  【4.2.1 A target value】 - 【4.2.3 leading quantity of A med feeding】 , Close med and enter slow.
  8. When weight value  $\geq$  【4.2.1 target value】-【4.2.4slow feeding drop in level number】 , Close slow, end feeding.
  9. 【4.3.2 Fixed hold time】
  10. Start 【4.3.5 Delay before bag loosening】 and loose when the time is up.
  11. Complete a packaging process and return to Step 1 to start a new packaging process.

**Note: the process does not include the description of special functions such as overage and underdifference detection, bag tapping, material level, etc. If you need to know a certain function, please refer to the section description of corresponding function.**

[3.1.1 Working mode] There are several working modes related to bucket less packaging:

- ①[bucket less packaging (loose bag at high speed)]
- ②[Bucket packing (loose bag A is preferred)]
- ③[No bucket packaging (AB waiting for each other)]
- ④[bucket less packaging (AB independent)]

The feeding process of the above mode is all the same, but the difference is the judgment of the loose bag time. Because the conveyor control is different, there will be different ways of loose bag.

### 4.2.1. ⑤ [Bucket less packaging (loose bag at high speed)]

In this mode the controller does not control the operation of the conveyor.

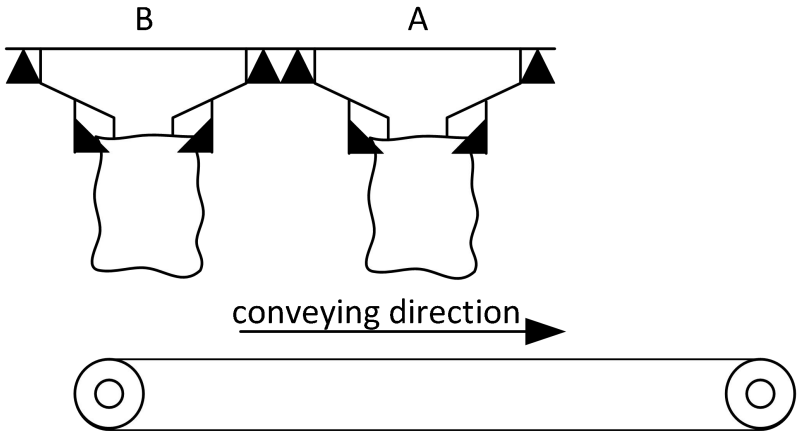
If one scale has finished feeding and the other scale has not bagged, the scale will release the bag directly without waiting for the other scale.

If one scale has finished feeding and the other scale has not finished feeding, wait for the completion of the other scale to loosen the bag at the same time.

**Note:** in this mode [4.3.7B anti-bagging time] takes effect. After starting the belt conveyor, B scale will start [4.3.7B anti-bagging time]. Even if B scale has already bagging, the next feeding will start after this time.

### 4.2.2. ⑥ [Bucket packing (loose bag A is preferred)]

In this mode, the controller will take the initiative to control the operation of the belt conveyor (" Q35 belt Conveyor ") and start the belt conveyor after the bag is loosened according to the relevant parameters of the belt function (see Section 3.3.5 for details). At the same time, the scale A is in front of the scale B, as shown below:



If A scale has finished feeding, regardless of whether B scale has not bagged, A scale directly loose the bag and start the belt conveyor, without waiting for B scale.

If the feeding of B scale has been completed, and the feeding of A scale has not been completed, the bag shall be loosened and the belt conveyor shall be started at the same time after the completion of A scale.

If B scale feeding has been completed, A scale has no bag, B scale directly loose the bag and start the belt conveyor.

**Note:** in this mode [4.3.7B anti-bagging time] takes effect. After starting the belt conveyor, B scale will start [4.3.7B anti-bagging time]. Even if B scale has already bagging, the next feeding will start after this time.

### 4.2.3. ⑦ [Bucket less packaging (AB waiting for each other)]

In this mode, the controller will take the initiative to control the operation of the belt conveyor (" Q35 belt conveyor ") and start the belt conveyor after the bag is loosened according to the relevant parameters of the belt function (see Section 3.3.5 for details).

When [3.1.12 AB Forced To Wait for Each other] function is disabled:

One of the scales after the first feeding and loose bag, the other scale has no bag, the scale directly start the belt conveyor.

If one of the scales has finished feeding and loose bag, the other scale has not finished feeding bag, wait for the other scale also finished feeding and loose bag, and then start the belt conveyor.

When [3.1.12 AB Forced To Wait for Each other] function is enabled:

One of the scale is finished feeding and loose bag, no matter the other scale has no bag, wait for the other scale is finished feeding and loose bag, and then start the belt conveyor.

#### **Note:**

In this mode, [4.3.6a anti-bagging time] takes effect. After starting the belt conveyor, A scale will start [4.3.6a anti-bagging time]. Even if A scale has already bagging, the next feeding will start after this time.

In this mode, [4.3.7B anti-bagging time] takes effect. After starting the belt conveyor, B scale will start [4.3.7B anti-bagging time]. Even if B scale has already bagging, the next feeding will start after this time.

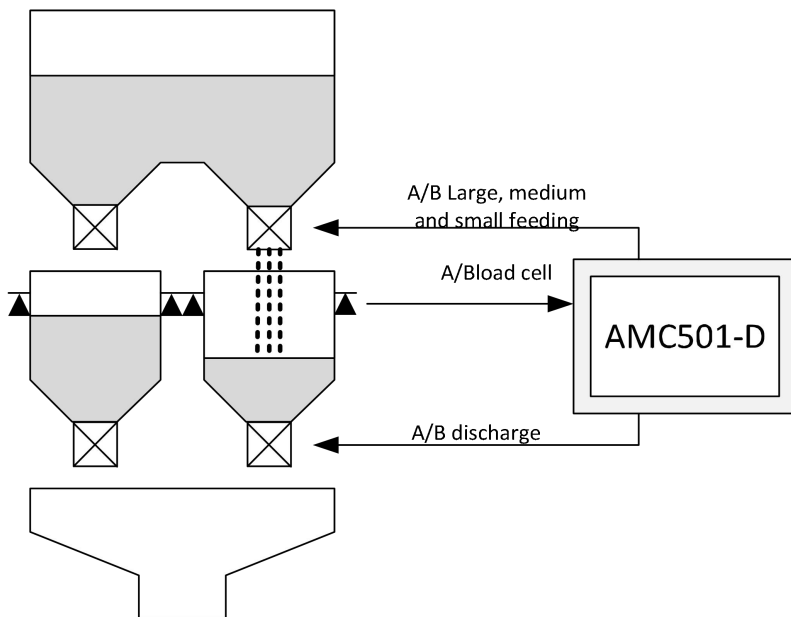
## 4.2.4. ⑧ [Bucket less packaging (AB independent)]

In this mode the controller does not control the operation of the conveyor.

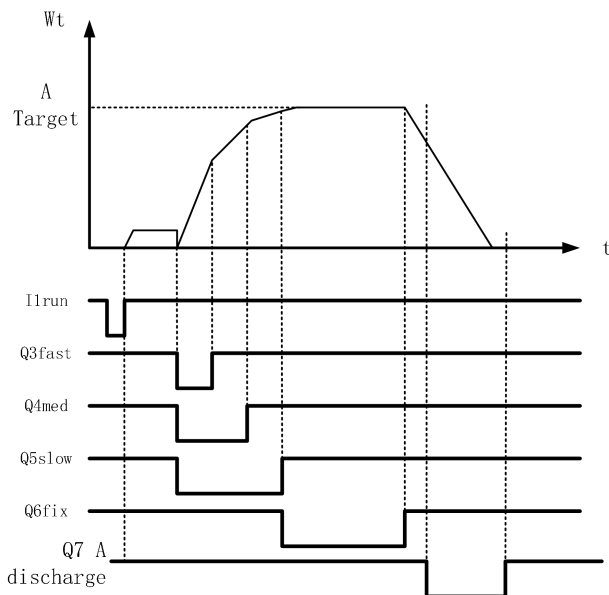
A scale and B scale are completely independent and do not interfere with each other, equivalent to two independent single scale packaging controllers.

## 4.3. Accumulation of bulk materials

The basic structure diagram of bulk accumulative scale is as follows:



Taking A scale as an example, the basic operation process and signal sequence diagram of bulk material accumulation are as follows:



Combined with the above figure, the basic packaging process of bucket scale is explained:

1. Start to ON.
2. 【4.3.1 Delay before feeding】 Time.
3. After starting the large throw, collect the weight in real time and compare the weight. When the weight value  $\geq$  【4.2.1 target value】 - 【4.2.2 leading quantity of fast feeding】, close the fast feeding ,start to med feeding;
4. When the weight value  $\geq$  【4.2.1 target value】 - 【4.2.3 leading quantity of med feeding】 , close the med feeding ,start to slow feeding;
5. When the weight value  $\geq$  【4.2.1 target value】 - 【4.2.4 slow feeding drop in level number, close slow feeding, end

feeding;

6. 【4.3.2 Fixed hold time】。
7. Start unloading ;
8. When the weight is lower than 【4.2.16 discharging zero zone value】 , start 【4.3.3 discharging delay time 】 and close discharging when the time is up.
9. Start 【4.3.5 Delay before bag loosening 】 and release the bag when the time is up.
10. Complete a packaging process and return to Step 1 to start a new packaging process.

**Note: The process does not include the description of special functions such as overage and underdifference detection, unloading vibration, material level, etc. If you need to know a certain function, please refer to the section description of the corresponding function.**

Parameter [4.2.8] is set for [total shipment] in bulk accumulation mode.

When [4.2.8 Total shipped volume] is set to 0, the receiving mode will be used. After starting, the controller will run continuously without automatically stopping feeding, and "I3" will be received. After the "slow stop" signal, the receiving process will be stopped after finishing the feeding.

When [4.2.8 Total delivered Quantity] is not set to 0, the delivery mode is set. After starting, the controller will run continuously and accumulate the finished weight. When the accumulated weight reaches the set total delivered quantity, the controller will stop feeding and prompt "Bulk material accumulation is completed"

**Note: in shipping mode, the controller will automatically modify the target value of the last scale to improve the accuracy of the total amount shipped**

Bulk accumulation mode with liquid storage tank material level and manual discharge control function.

1. "I18 liquid storage tank feeding level" and "I19 liquid storage tank feeding level" are defined: "I18 liquid storage tank feeding level" input effective, output "Q30 A discharging" signal; When "I19 liquid storage tank discharging level" is invalid, turn off "Q30 A discharging" signal.

2. Only define "I18 liquid storage tank feeding level" : when "I18 liquid storage tank feeding level" is valid, "Q30A discharging" signal is output; If the "Q30 A discharging" signal is closed, it is closed by manually inputting "I17 manual discharging" signal.

3. Only define "I19 discharging level of liquid storage tank" : "Q30 A discharging" signal is opened by manually inputting "I17 manual discharging" signal. When "I19 discharging level of liquid storage tank" is invalid, "Q30 A discharging" signal is closed.

[3.1.1 Working mode] Set the following working modes related to bulk material accumulation:

- ①[Bulk material accumulation (AB mutually exclusive)]
- ②[Bulk material accumulation (AB at the same time)]
- ③[Bulk material accumulation (only A scale)]
- ④Idle material accumulation (B scale only)

#### 4. 3. 1. ⑨ [Bulk accumulation (AB mutually exclusive)]

In this mode, A scale and B scale are fed alternately.

1. After starting up and running, first A scales start feeding, and B scales wait;

2. When A scale begins to discharge, B scale begins to feed;

3. When B starts unloading, A starts feeding;

4. The feeding of A scale and B scale are mutually exclusive, and the feeding is not carried out at the same time.

#### 4.3.2. ⑩ [Bulk accumulation (AB at the same time)]

A scale and B scale work independently, can be feeding and unloading at the same time, without interference.

#### 4.3.3. ⑪ [Bulk material accumulation (only A scale)]

After startup, only A scales work, B scales do not work.

#### 4.3.4. ⑫ [Bulk material accumulation (B scale only)]

After startup, only B scales work, A scales do not work.

### 4.4. Valve port scale.

In the port scale working mode, A/B scales work independently without interfering with each other. The workflow of each port scale is basically the same as the bucket less packaging process, except for the blowing function related to the port scale (Section 3.4.6) .

# V. Troubleshooting Common Faults

When the controller is running, detailed running steps are displayed on the main screen, indicating the functions and processes that the controller is performing. You can determine the running process of the controller according to the prompts, helping you troubleshoot faults.

The following table lists some faults and troubleshooting methods that the controller may encounter during use:

| Number | Content            | Instructions                                                                                                                                                                                                                                                                                                                                                        |
|--------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | ADOFL / -<br>ADOFL | <p>The sensor signal is abnormal.</p> <ol style="list-style-type: none"> <li>1. The sensor is incorrectly connected and has poor contact. (Note the four-wire and six-wire connections)</li> <li>2. The sensor is damaged.</li> <li>3. The load borne by the sensor exceeds the range.</li> </ol>                                                                   |
| 2      | OFL / -OFL         | <p>Weight overflow, OFL will be prompted when weight exceeds [1.1.4 Maximum range] setting value. If the empty scale shows OFL, please check:</p> <ol style="list-style-type: none"> <li>1. [1.1.4 Maximum range] Is the setting correct?</li> <li>2. Calibrate the abnormality and calibrate it again.</li> <li>3. Check whether the sensor is damaged.</li> </ol> |
| 3      | Equipment          | <ol style="list-style-type: none"> <li>1. Whether the sensor line connection is</li> </ol>                                                                                                                                                                                                                                                                          |

|   |                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | static<br>state<br>weight<br>abnormal<br>jump<br>unstable | <p>correct and reliable, whether the line rust oxidation.</p> <p>2. Whether weighing mechanism is affected by external force or vibration.</p> <p>3. Check whether the sensor is damaged.</p> <p>4. .The sensor or controller is interfered by electrical equipment around the site, such as motors and frequency converters.</p> <p>5. [2.1.5a scale filtering level]<br/>[2.1.6B scale filtering level] is set properly.</p> |
| 4 | Unable to start                                           | <p>1. Check whether input lines such as the external start button are connected to the controller properly (you can test the switch value).</p> <p>2. Check whether the input port of start signal access is correctly defined as ON.</p>                                                                                                                                                                                      |
| 5 | Feeding result is inaccurate                              | <p>1. Inaccurate results displayed by the controller after feeding:</p> <p>(1) Adjust the setting of Fast, med and small dosage of leading amount of formula parameters. Ensure that the small casting process is long enough to ensure accuracy.</p> <p>(2) Whether the feeding mechanism is normal, whether the following</p>                                                                                                |

|   |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                              | <p>material mouth is blocked, and whether the material flow is smooth.</p> <p>2. The results displayed by the controller are accurate, but the actual results are accurate.</p> <p>(1) There is a deviation between the display and the actual weight, which needs to be calibrated.</p> <p>(2) It is best to use weights or materials of the same weight as the target value for calibration, and pay attention to the uniform force on the scale platform during calibration, not unbalance loading.</p> |
| 6 | Incorrect accumulated weight | <p>The controller records the accumulated value at the end of the fixed value process, so check whether the setting of <b>【4.3.2 Fixed value holding time】</b> is enough to ensure that at the end of the fixed value holding time, the controller shows that the weight has stabilized and no longer jumps greatly, so as to record the accurate cumulative result of feeding.</p>                                                                                                                        |

# Appendix

## Update record

| Time       | Content                                                                                                                                                                                                                                                      |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2021-10-13 | The first edition.                                                                                                                                                                                                                                           |
| 2022-1-24  | Update the picture of the main interface,<br>add the number F1~F8 to the bottom<br>button.<br>Add function parameters:<br>【3.1.12 AB forces each other to wait】<br>【 3.7.7 Material level input signal<br>shake time】<br>And the corresponding instructions. |
| 2022-5-30  | 【3.1.1 Working mode】 Add option ⑩[AB<br>ingredients]。<br>Increase the chapters 4.1.7⑩[AB<br>ingredients] Process description.<br>Increase the chapters 3.8.1.1Print<br>format description.<br>Increase the chapters 3.8.1.2Cont format<br>description.       |
|            |                                                                                                                                                                                                                                                              |
|            |                                                                                                                                                                                                                                                              |