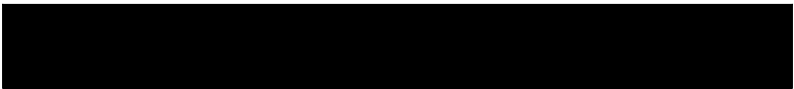


AMC501-D

Pneumatic-Electric 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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1 Basic information

1.1 Features and Specifications

The AMC501-D-920B7 is a dual-channel quantitative packaging controller instrument specifically designed for gas-electric scales, equipped with SLS intelligent packaging algorithm and based on a Chinese touch screen. It supports various modes such as bucket-less scale, bucket-with scale, valve port scale, and bulk material accumulation. It is equipped with an internal stepper motor PWM output, which can be directly connected to the stepper motor driver without the need for an external PLC program. The setup and debugging are extremely simple. The AMC501-D is implemented with a high-color TFT touch screen, supporting Chinese input and display. It features an elegant graphical interface and a reasonable classification and layout of functions.

The AMC501-D human-machine interface has the following basic characteristics:

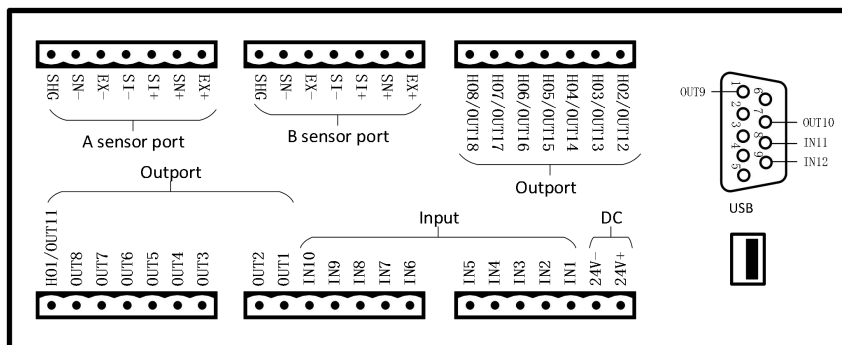
- PWM output, which can be directly connected to the stepper motor driver without the need for an external PLC program
- TFT high-color touch screen, with Chinese input and display
- Beautiful interface, reasonable functional classification and layout, easy to use
- Weighing channel: Dual channels
- Working voltage: DC24V
- Sensor: DC5V/4-6 wire compatible
- Switch quantity: 12 inputs and 18 outputs (expandable with 2 inputs and 3 outputs)
- Installation method: Cabinet installation (tray installation)
- Dimensions: 203×149×50 (length, width, height, mm)

The detailed technical specifications are as follows:

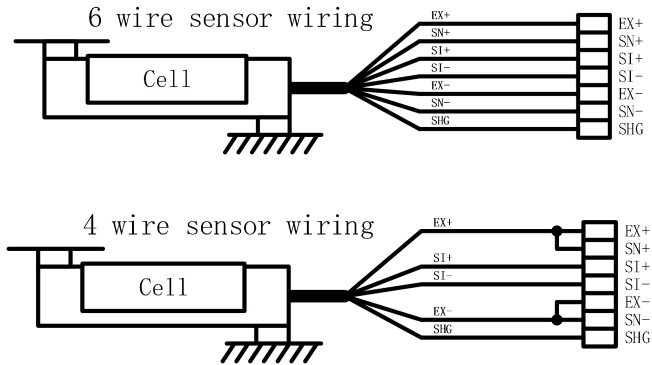
Transducer Excitation	DC5V±10%/120mA	Drive	current/can
-----------------------	----------------	-------	-------------

	receive eight Ω 350 specifications of the sensor
Adaptive Sensor Sensitivity	2mV/V or 3mV/V
Input Signal Range	0~15mV
Minimum Input Sensitivity	0.5uV/d
Nonlinearity	0.02%FS (3mV/V hour)
Zero Drift	<0.5 μ V/°C
Gain Drifting	<10PPM/°C
AD Rate	960Times/Seconds
Maximum Accuracy of Display	1/100000
Product Accuracy Grade	III
Working Voltage	DC24V (18V~30V compatibility)
Product Power Consumption	<5W
<u>Operating Temperature Range</u>	-10°C~45°C
Storage Temperature	-20°C~60°C
Humidity	Within 90%RH (No Condensation)

1.2 Wiring port

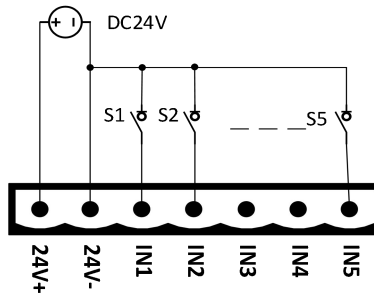


1.3 Sensor wiring method



1.4 IO wiring method

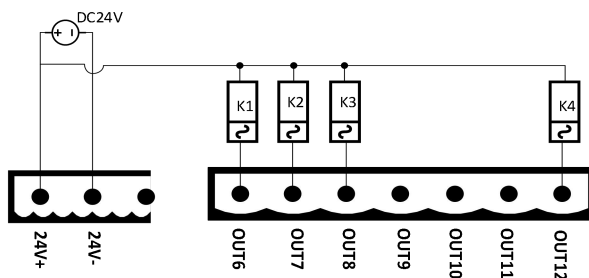
For example, IN1, IN2, and IN5 are shown as follows:



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:

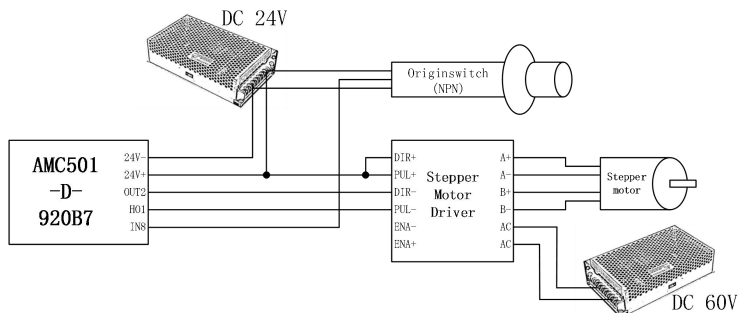
1. The external circuit should be co-located with the controller;
2. Low level when switching quantity output is active.

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 Reference for stepper motor wiring

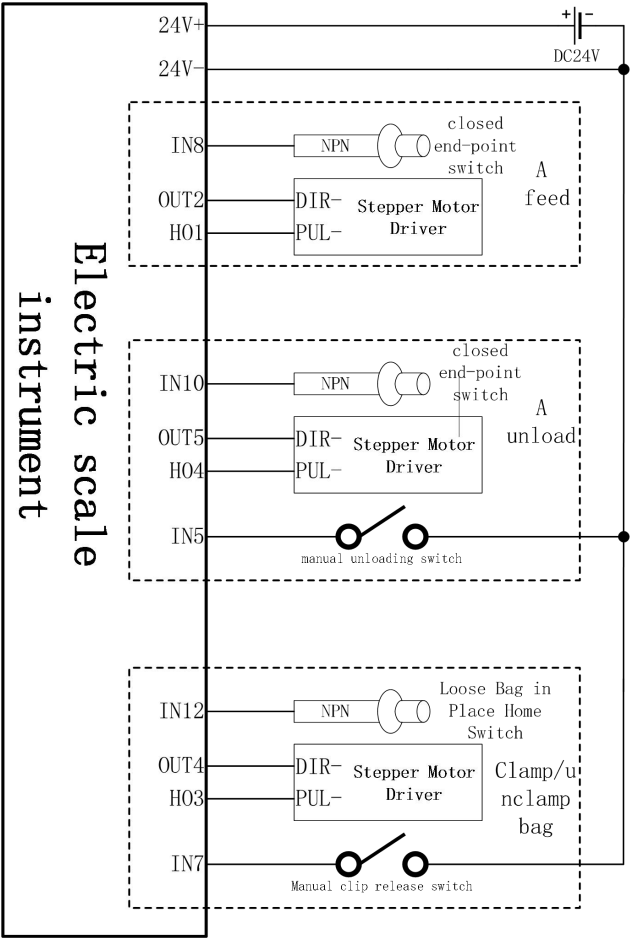
The following figure shows the wiring reference for the stepper motor, driver, power supply and electric instrument, taking the feeding of A scale as an example. The wiring for other operations such as feeding, unloading, and bag clamping of the B scale is the same, but the switch and measurement ports are different.

A feeding



1.6 System wiring reference

Take the feeding of A scale, unloading of A scale, bag clamping/bag loosening as an example: as shown in the following figure



1.7 Initial definition of the IO interface

inter	instructions	interf	instructions
power supply			

24	DC24V+	2	DC24V-
IO INPUT			
IN1	I1.Running(pul)	IN8	I28.A#FlowCloseRdy
IN2	I2.urgently stop	IN9	I21.B#FlowCloseRdy
IN3	I26.A zeroing(pul)	IN10	I13.A disc closed
IN4	I27.B zeroing(pul)	IN11	I14.B disc closed
IN5	I4.A disc(pul)	IN12	I0.NC
IN6	I6.B disc(pul)	IN13	I0.NC
IN7	I8.A clamp alt	IN14	I0.NC
IO OUTPUT			
OUT1	Q1.running	OUT1	Q0.NC
OUT2	Q36.A feed direct	OUT1	Q0.NC
OUT3	Q37.B feed direct	OUT1	Q0.NC
OUT4	Q38 A clamp direct	OUT1	Q0.NC
OUT5	Q40.A disc direct	OUT1	Q0.NC
OUT6	Q41.B disc direct	OUT1	Q0.NC
OUT7	Q42.sewing bale	OUT1	Q0.NC
OUT8	Q54.Cut dir	OUT1	Q0.NC
OUT9	Q45.TractorMoveDirRR	OUT2	Q0.NC
OUT10	Q47.TractorClampDirir	OUT2	Q0.NC
OUT11	Q0.NC		
HO port			
HO1	P1.A feed	HO7	P8.Ttr Move
HO2	P2.B feed	HO8	P9.Ttr clamp
HO3	P3.A clamp/unclamp	HO9	P0.NC
HO4	P5.A disc	HO1	P0.NC
HO5	P6.B disc	HO1	P0.NC
HO6	P7.Cut string		
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	B/SH	Load Cell Shielded

1.8 Extension interface

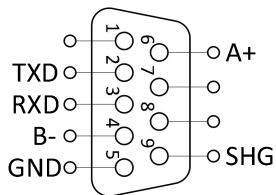
The controller can be optionally equipped with four types of expansion boards:

- ① Dual serial ports (RS232+RS485)
- ② Extended IO (2 inputs and 3 outputs)

The expansion interface form is a DB9 type plug, and the controller can automatically recognize the expansion board.

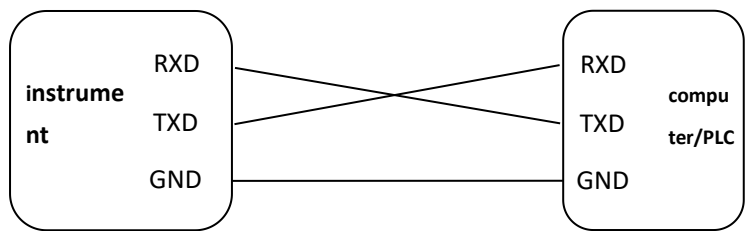
1.8.1 Dual serial ports (RS232+RS485)

When the expansion board ① dual serial ports (RS232+RS485) are selected, the interface definition is as follows:

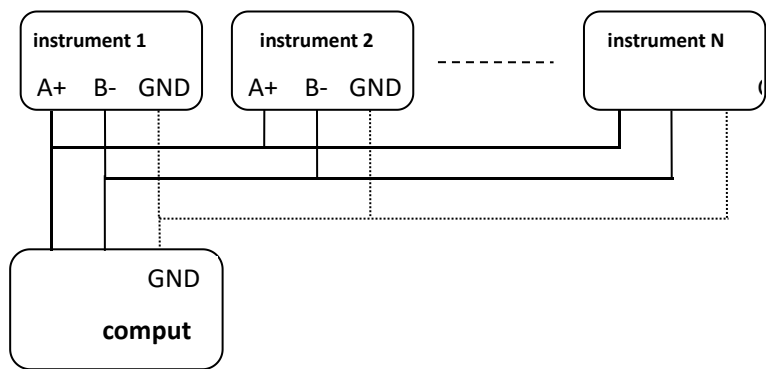


DB9 lead foot	Interface specification
NO.1	Empty
NO.2	RS232(TXD)
NO.3	RS232(RXD)
NO.	RS485(B-)
NO.5	RS232(GND)
NO.6	RS485(A+)
NO.7	Empty
NO.8	Empty
NO.9	Shielding

RS232 Wiring schematic:

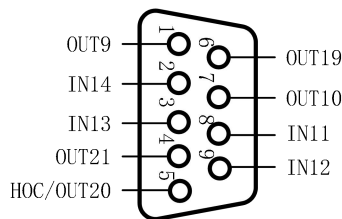


RS485 Wiring diagram:



1.8.2 5-channel IO expansion

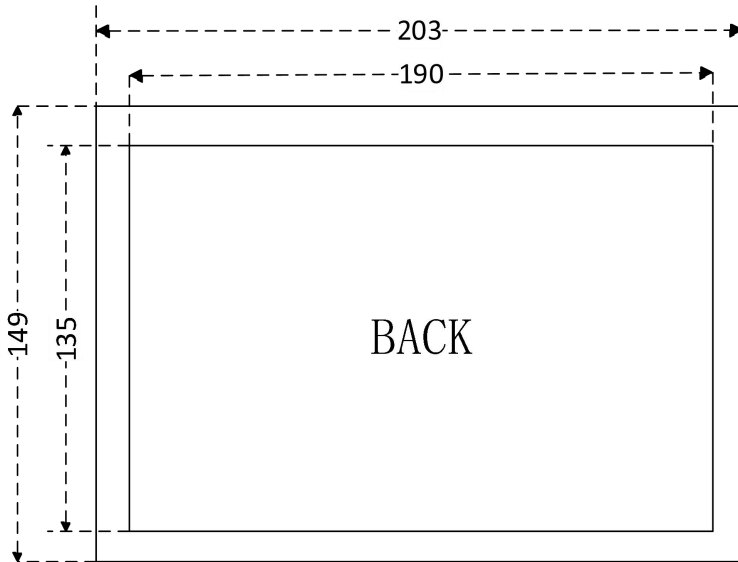
When the 5-channel IO expansion board (2 inputs and 3 outputs) is selected, the switch quantity related function interface will automatically display the added switch quantity function definitions. The interface definitions are as follows:



DB9 lead foot	Interface specification
NO.1	OUT9
NO.2	IN14
NO.3	IN13
NO.	OUT21

NO.5	OUT20/HOC
NO.6	OUT19
NO.7	OUT10
NO.8	IN11
NO.9	IN12

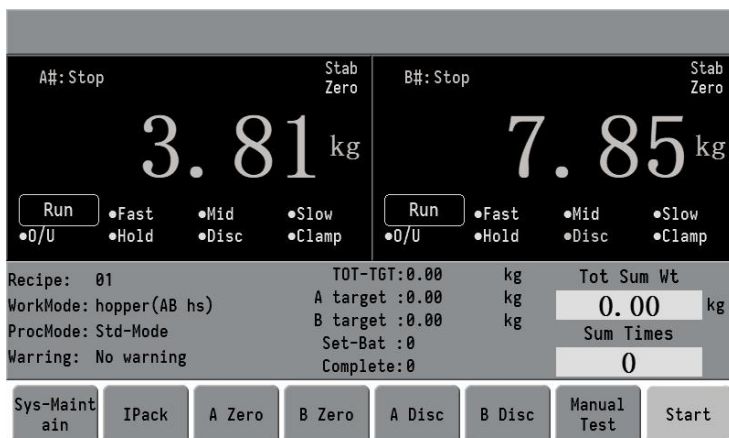
1.9 Mounting Dimension



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

Recommended installation hole size: 192mm×138mm

2 Main interface



The current weight value, weight stability, zero point and other status indicators, as well as the detailed operation steps of the controller are displayed at the top of the main interface.

The content displayed in the middle information bar is described as follows:

The "Recipe" display the currently selected recipe num and name.

【 Working Mode 】 The currently set working mode.

【 Proc Mode 】 Standard mode or intelligent mode. When the smart packaging is opened and the material speed is two material speeds, it is displayed as smart mode here.

【 Warring 】 Displays the current alarm information. Clicking on it allows you to clear the alarm.

The total target value refers to the total target packaging weight of the current recipe.

【 A Target 】 The target packaging weight of Scale A set by the current recipe.

【 B Target 】 The target packaging weight of Scale B set by the current recipe.

【 Set-Batch 】 The number of packages to be packaged. After the batch setting is completed, the controller will automatically shut down.

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

【Tot sun Wt】 The total weight of the completed packaging.

【Sum Times】 The total number of completed packages.

Note: Clicking on the cumulative data display position allows you to clear the cumulative data. To clear the accumulation, a password can be set. For detailed instructions, please refer to 3.2.2 Batch and Accumulation.

The bottom column contains the function keys.

Sys-Maintain Enter the main interface for controller system maintenance.

Ipack Enter the interface for quickly setting target values and other intelligent packaging parameters. As shown in the following figure:

The screenshot displays the 'IPack' control interface. At the top, there are buttons for 'Quit' (with a back arrow) and 'Home' (with a house icon). The main area is divided into three columns. The left column, labeled 'A#', contains four rows of settings for scale A: 'A Target' (0.00 kg), 'A fast' (0.00 kg), 'A mid' (0.00 kg), and 'A slow' (0.00 kg). The middle column, labeled 'B#', contains four rows of settings for scale B: 'B Target' (0.00 kg), 'B fast' (0.00 kg), 'B mid' (0.00 kg), and 'B slow' (0.00 kg). The right column contains several controls: 'Auto Swt (2 Speed)' set to 'Closed', 'Material' set to 'Granule', 'Feed-Grade' set to '3 speed', an 'Auto Speed' slider between 'Fast' and 'Slow', and 'Statistic Data' showing 'A: 0 B: 0' with a 'Clr' button. At the bottom, there are three more settings: 'TOT-TGT' (0.00 kg), 'Disc Zero' (0.50 kg), and 'Recipe' (1).

A Zero: Perform a Zero operation on the current weight of scale A. When the key is gray, it indicates that it is unavailable. For example, it is gray when running.

B Zero: Perform a zero operation on the current weight of scale B. When the key is gray, it indicates that it is unavailable. For example, it is gray when running.

A Disc: Click to turn on and off the unloading signal of the A scale.

B Disc: Click to turn on and off the unloading signal of the B scale.

Manual Test: It can manually control fast feeding, Med feeding, slow feeding, bag clamping, bag tapping, etc., and has real-time status display of switch quantity ports, as well as conveyor testing. The interface is shown as follows:

← Quit		Manual Test				Home →	
A fast		A mid		A slow		A Clamp	
B fast		B mid		B slow		B Clamp	
A Flap		B Flap		A Ext Flap		B Ext Flap	
A Disc		B Disc		A Disc Hit		B Disc Hit	
A Code		B Code		Ttr Move			
vy Height	1	Auto R-F		↑		A# 3.81 kg	
User Ctrl	Rise	Stop	Fall	↓		B# 7.85 kg	
				1			
				2			
				3			
				4			
				5			

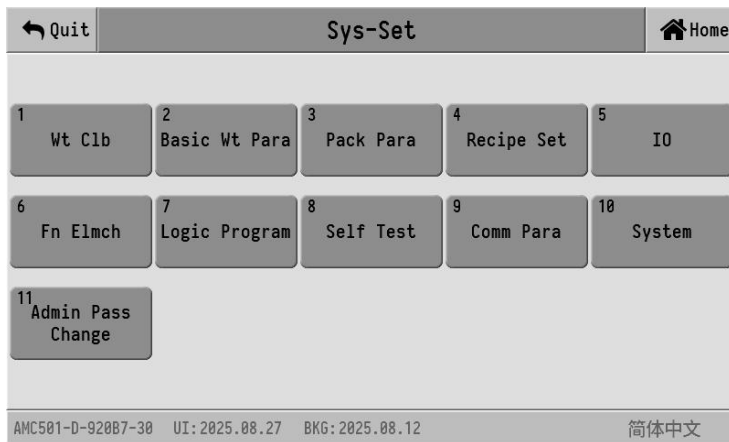
Start: A gray color indicates a stop status. Click **Start**. If no error is reported, the system will start the packaging workflow.

Note: When entering the operation state, the button will automatically change to **stop** operation button. After clicking the stop operation button, the controller will switch to the stop state.

3 System maintenance

On the main interface, click **System Maintenance** to enter the main menu interface of system maintenance, as shown in the following figure:

(Initial password for system maintenance: 000000)



All the parameter setting option entries of the controller are listed in this interface.

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

The following provides a detailed explanation of each major item in system maintenance.

3.1 Weight calibration

Before using the new equipment, the weight needs to be calibrated, and the system's unit, decimal point, minimum division, maximum range and other parameters should be set properly.

Unit	g/kg/t/lb;" Select the unit for the system's weight display.
point	0/0.0/0.00/0.000/0.0000; Select the number of decimal places for the system weight display.
Min Div	Set the minimum division value that the system weight can display.
Max range	Set the maximum weighing range. If the displayed weight exceeds the set maximum range, it will show that the weight has exceeded "OFL".

There are three ways to calibrate weight. You can choose any one of them according to the actual situation

- (1) Weight calibration: Place weights or objects of known weight on the scale platform for calibration.
- (2) Material calibration: Directly add the material to the weighing packaging bag or weighing hopper, then release it and weigh the actual weight of the material for calibration.
- (3) Calibration without weights: Directly input the zero-point voltage value, the gain voltage value and the corresponding weight for calibration.

3.1.1 Calibration of weights

Unit	Point	Min Div	Max Range
kg	0.00	0.01	100.00 kg

A# Wt Clb	B# Wt Clb
0.00 kg	OFL kg
abs Voltage: 0.597 mV	abs Voltage: 15.624 mV
rin Voltage: 0.000 mV	rin Voltage: 13.565 mV
Zero Clb Weights Clb	Zero Clb Weights Clb

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

The relative voltage, on the other hand, refers to the difference between the current absolute voltage of the sensor and the voltage value at zero Clb calibration, which is equivalent to the voltage value generated by the gain weight.

The calibration process can be completed in just two steps: Zero Clb and weight clb. Taking the calibration of scale A as an example, the operation is as follows:

- (1) Empty the scale platform. After the signal stabilizes (the sensor voltage value does not fluctuate), click **zero Clb**. After successful calibration, the current weight will become 0.
- (2) Place the weights or objects of known weight on the scale platform. After the signal stabilizes (the sensor voltage value does not fluctuate), click **Weights Clb**. At this time, an input box will pop up. Enter the exact weight of the placed object and click **ok**.

After the above two steps are completed, the weight calibration process is finished, and the controller will display the accurate weight value on the scale platform.

3.1.2 Material calibration

← Quit 1. Weight Clb 🏠 Home	
1.1 Weights Clb	A# 0.00 kg B# OFL kg Step 1: Zero clb Zero Clb Step 2: Manual feed use fast/mid/slow Fast Mid Slow Step 3: Press to record data Record Wt Step 4: Clip bag and disc Disc Step 5: Input weight and click wt clb Weigh Wt 0.00 Wt Clb
1.2 Material Clb	A# 0.00 kg B# OFL kg Step 1: Zero clb Zero Clb Step 2: Manual feed use fast/mid/slow Fast Mid Slow Step 3: Press to record data Record Wt Step 4: Clip bag and disc Disc Step 5: Input weight and click wt clb Weigh Wt 0.00 Wt Clb
1.3 No Wt Clb	A# 0.00 kg B# OFL kg Step 1: Zero clb Zero Clb Step 2: Manual feed use fast/mid/slow Fast Mid Slow Step 3: Press to record data Record Wt Step 4: Clip bag and disc Disc Step 5: Input weight and click wt clb Weigh Wt 0.00 Wt Clb

Material calibration can be achieved by directly adding materials to the weighing packaging bag or weighing hopper, then discharging and weighing the actual weight of the materials for calibration. The operation is as follows:

(1) Calibration of empty scale

Empty the scale platform. After the signal stabilizes, click the empty scale calibration button. Once the calibration is successful, the current weight will become 0.

(2) Record the weight

Click on the fast, med and slow to start and stop the feeding device, and add a certain amount of material to the weighing hopper. After the signal stabilizes, click the "Record Wt" button to record the weight signal at this time.

(3) Input the actual weight

After putting on the packaging bag, click Disc to place the material in the weighing hopper into the packaging bag. Remove the packaging bag and place it on the accurate scale to weigh the weight of the packaging bag to obtain the accurate weight value (note that the weight of the packaging bag is not included). Click the [weight Wt] input box, enter the actual weight of the material obtained by weighing, and then click the wt cal to complete the material calibration process.

3.1.3 No weight calibration

← Quit		1. Weight Clb		Home	
1.1	Weights Clb	A weight: 0.00 kg			
1.2	Material Clb	A Gain Vol A Gain Wt			
1.3	No Wt Clb	Zero Clb	3.125	20.00	
		B weight: OFL kg			
		B Gain Vol B Gain Wt			
		Zero Clb	3.125	20.00	

On this interface, the empty scale calibration is the same as the empty scale calibration with weights and materials. Input the gain voltage and the corresponding gain weight, and click "OK" to complete the calibration process without weights.

3.2 Basic weighing parameters

On the system maintenance interface, click the **2. Basic Wt para** button to enter the basic weighing and batch and cumulative parameter setting interface. The interface is as follows:

← Quit		2. Basic Wt Para		Home	
2.1	Basic Wt	2.1.1 Zero range 0 d			
2.2	Bat And Sum	2.1.6 Stab-Range 1 d			
		2.1.2 Zeroing range 10 %			
		2.1.7 Stab-Time 0.5 s			
		2.1.3 Powerup zeroing Closed			
		2.1.8 Filt-Grade 5			
		2.1.4 A sensor-mv 1mv/V			
		2.1.9 Filt-Grade 5			
		2.1.5 B sensor-mv 2mv/V			
		2.1.10 Disc Filt 2			

3.2.1 Basic weighing

2.1.1	Zero range	0-9d; d stands for [1.1.3 Minimum Division]. It only works in the stopped state. When the weight value stabilizes within the range of $\pm d$ of this set value, it automatically resets to zero.	
2.1.2	Zeroing range	0-99% When performing the zeroing operation, the weight must be less than or equal to "【Max Range】× zeroing Range" to allow zeroing.	
2.1.3	Powerup zeroing	After being turned on, the controller will automatically perform a zeroing operation each time it is powered on and started.	
2.1.4	A sensor-mv	Optional: 1mV/V; 2mV/V 3mV/V	
2.1.5	B sensor-mv	Optional: 1mV/V; 2mV/V 3mV/V	
2.1.6	Stab-Range	1~9d	d stands for [Min Div]. These two parameters work together to determine whether the weight is stable. Take all the weight values within the "stabilization time". If the difference between the maximum and minimum values is $\leq$ the "stabilization range", it is considered that the weight value is stable at this time.
2.1.7	Stab-time	0.1 ~ 9.9 s	
2.1.8	A Filt-grade	0 to 9; The intensity level of software digital filtering should be set according to the actual debugging effect of the equipment, with appropriate filtering level parameter values. 0: The weakest filtering effect, fast weight response, and poor anti-vibration performance; 9: It has the strongest filtering effect, slow weight response, and good anti-vibration performance.	
2.1.9	B Filt-grade		
2.1.10	Disc Filt	0 to 9; The software digital filter intensity level in the unloading state is generally set to a slower size, which can accelerate the weight response speed during unloading.	

3.2.2 Batch and cumulative

The screenshot shows a software interface titled "2. Basic Wt Para". At the top left is a "Quit" button with a back arrow, and at the top right is a "Home" button with a house icon. On the left side, there is a vertical menu with two items: "2.1 Basic Wt" and "2.2 Bat And Sum". The main area contains several input fields and buttons:

- A "Batch" field with the value "0".
- A "Manual-Disc-Sum" field with the value "No".
- A section for cumulative data:
 - "Sum wt:" with the value "97.98 kg" and a "Clr" button.
 - "Sum-No:" with the value "5" and a "Clr" button.
 - "Sum-Deal:" with the value "0.00 kg" and a "Clr" button.
- A "Change Clr Sum Pass" button.

【Batch】 It is used to set the quantity of packaging. When the number of runs reaches the set batch count, the packaging process will be stopped and an alarm will be triggered to remind. Turn off this function when it is set to 0.

【Manual-Disc-Sum】 Click to switch to "yes" or "No".

The cumulative weight is the sum of the weights of each packaging result, while the cumulative number of times is the number of times the weight is accumulated. Clicking **Clr** will clear the cumulative weight and cumulative times to 0. The accumulation of receipts and deliveries is specifically designed for the bulk material accumulation mode. Clicking **Clr** will reset the accumulation of receipts and deliveries to 0.

【Change Clr Sum pass】 Cumulative value clearing switch. Click the key and enter the same password twice to turn on the password switch for clearing the accumulation, including the password switch for clearing the accumulation when clicking the accumulation display area on the main interface. When changing the password interface, simply press **OK** twice to turn off the password switch.

3.3 Pack Para

On the system maintenance interface, click on **"3. Pack Para"** to enter the setting interface of the packaging scale parameters.

3.3.1 Mode Settings

Quit

3. Pack Para

Home

3.1 Mode Set

3.2 Convery

3.1.1 Work Mode ②hopper (AB hs)

3.1.2 Feed Mode Composite

3.1.3 No hopper Net

3.1.4 Clr tick 0

3.1.5 Disc interlock time 0.0 s

3.1.6 Supp dly time 8.0 s

3.1.7 Supp cont 0.0 s

3.1.8 Supp Dbc 0.5 s

3.1.9 ual Clamp Off Closed

3.1.1	Working mode	①[hopper (AB cmb)] ②[hopper(AB hs)] ③[hopper(A cmb)] ④[hopper (B cmb)] ⑤[No hopper(hs)] ⑥[No hopper (A first)] ⑦[No hopper(AB wait)] ⑧[No hopper(independent)] ⑨[bulk mutex] ⑩[Bulk together]] ⑪[Bulk A)] ⑫[Bulk B)] ⑬AB LCS-FK ⑭[hopper (ABA cmb)] The workflow descriptions corresponding to different working modes are detailed in 4 packaging control the chapter.
3.1.2	Feeding mode	①[Independent] :/②[composite]: ③[slow indep]: There are three different output signals, as shown below:

		Feeding mode	Fast speed	Med speed	Slow speed
		Independent	Fast	Med	Slow
		composite	Fast/ med /slow	Med/ slow	slow
		slow indep	Fast /med	Med	slow
3.1.3	No-hopper	This function is effective in the working mode of the no-hopper. ①[Gross]: The skin is not removed before adding materials. ②[Net]: Peel before adding materials.			
3.1.4	Clr tick	0-99,After each packaging process, perform a zeroing before the feeding begins. Note: The first scale after startup is not reset to zero.			
3.1.5	Disc interlock time	0.0 to 99.9s; It only works in the [with bucket Packaging (AB combination)] mode. When one scale starts unloading, the unloading interlock time is initiated. The other scale is not allowed to unload before the unloading interlock time ends to prevent simultaneous unloading from blocking the discharge port.			
3.1.6	Supp dly time	0.1 to 99.9s; When the storage hopper only has the feeding level, start this delay when the material level is lower than the feeding level. After the delay is completed, start feeding			
3.1.7	Supp cont	0.0 to 99.9s; When the storage hopper is only defined with an upper material level, this delay is initiated when the material is higher than the upper material level during feeding. After the delay is completed, the feeding is closed			
3.1.8	Supp Dbc	0.0 to 99.9s; The filtering time of the induction switches for the upper and lower material levels			
3.1.9	Manual Clamp off	①[Closed]/②[opened]: While opened, packaging is completed, the bag will be released only after the clamp/unclamp signal is input.			

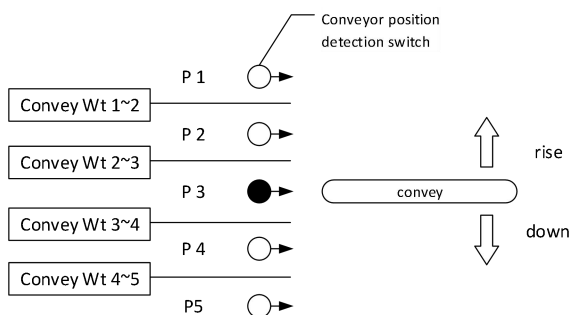
3.3.2 Conveyor lifting

← Quit Home	
3.1 Mode Set	3.2.1 Convey Swt Opened 3.2.5 Convey Wt 1~2 5.50 kg
3.2 Convery	3.2.2 Convey Pos 5 3.2.6 Convey Wt 2~3 12.00 kg
	3.2.3 Convey Overtime 0.0 s 3.2.7 Convey Wt 3~4 16.00 kg
	3.2.4 Convey Ivl time 0.8 s 3.2.7 Convey Wt 4~5 27.00 kg
	1 2 3 4 5 ↑ ↓ Cvy Height 1 Auto R-F User Ctrl Rise Stop Fall

3.2.1	Convey Swt	The main switch for the lifting control function of the conveyor
3.2.2	Convey Pos	2 to 5, select the number of input signals for the conveyor position detection that the equipment has
3.2.3	Convey Overtime	0.0 to 99.9s; When the conveyor is lifting or lowering, if the height to be adjusted has not been reached within this time, the height adjustment of the conveyor will be stopped and an alarm will be triggered
3.2.4	Convey Ivl time	0.0 to 99.9s; The interval time for the conveyor to suddenly change from an ascending action to a descending action (or from a descending action to an ascending action)
3.2.5	Convey Wt 1~2	Set the weight boundary values corresponding to the target values at different positions to determine the conveyor height corresponding to different target values. The target value of scale A is 4 to 5 greater than or equal to the weight boundary value. Corresponding
3.2.6	Convey Wt 2~3	
3.2.7	Convey Wt 3~4	

3.2.8	Convey Wt 4~5	to the height position 5 of the conveyor; The weight boundary value of 4 to 5> the target value of A scale $\geq$ the weight boundary value of 3 to 4, corresponding to the height position of the conveyor being 4. The weight boundary value of 3 to 4> the target value of A scale $\geq$ the weight boundary value of 2 to 3, corresponding to the height position of the conveyor being 3. The weight boundary value 2 to 3> the target value of A scale $\geq$ the weight boundary value 1 to 2, corresponding to the height position of the conveyor being 2. The target value of scale A is less than the weight boundary value by 1 to 2, corresponding to the height position of the conveyor being 1.
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The schematic diagram of the conveyor's lifting control function is shown as follows:



Conveyor lift control schematic diagram

The working process of the conveyor's lifting control function: Different packaging specifications require different sizes of packaging bags, so the height of the conveyor needs to be adjusted to a height suitable for the size of the packaging bag specification. The controller determines which corresponding height range it belongs to based on the recipe target value set by the user,

thereby controlling the lifting action of the conveyor and adjusting it to a suitable height.

The composition of the conveyor's lifting control function:

Up to 5 conveyor position detection switch input signals are supported. When the conveyor reaches the corresponding position, the input signal of the corresponding detection switch is valid.

Two output signals for the conveyor's ascent and descent control the lifting and lowering actions of the conveyor.

Four weight boundary values are used to distinguish which corresponding height position the set recipe target value belongs to.

3.4 Recipe setting

The controller has 20 sets of recipe parameters available for setting. Users can set the commonly used recipe parameters in advance and switch to the corresponding recipe when in use.

3.4.1 Recipe

← Quit

4. Recipe set

🏠 Home

4.1 Recipe

4.2 Target Set

4.3 Time Set

4.4 Flap & Convey

4.5 Fall Over/Und

4.6 Others

4.1.1 Recipe id 20

4.1.2 Choosable Closed

4.1.3 Recipe Name

4.1.4 Moto Grp 1

4.1.1	recipe	Set the currently used recipe number.
4.1.2	choose able	After opening, when you click on the recipe number position on the main interface to select the recipe number, the recipe will be in an optional state.

4.1.3	Recipe name	The name of the recipe can be entered for easy memory. After setting, the corresponding recipe name will be displayed at the recipe number position on the main interface.
4.1.4	Moto Grp	1 to 5, electric parameter groups. The motor number follows the recipe. When the recipe number is changed, all parameters under the 3.6 function and the electromechanical parameters are switched to the parameter Settings under the new group number under the current recipe.

3.4.2 Target set

This interface sets the target value and other recipe parameters for this recipe number:

← Quit		4. Recipe set		Home	
4.1	Recipe	4.2.1 A Target	20.00 kg	4.2.10 B Target	20.00 kg
4.2	Target Set	4.2.2 A fast	10.00 kg	4.2.11 B fast	8.00 kg
		4.2.3 A mid	4.00 kg	4.2.12 B mid	4.00 kg
		4.2.4 A slow	1.00 kg	4.2.13 B slow	1.00 kg
4.3	Time Set	4.2.5 A fast no cmp time	0.5 s	4.2.14 B fast no cmp time	0.5 s
4.4	Flap & Convey	4.2.6 A mid no cmp time	0.5 s	4.2.15 B mid no cmp time	0.5 s
4.5	Fall Over/Und	4.2.7 A slow no cmp time	1.4 s	4.2.16 B slow no cmp time	1.4 s
4.6	Others	4.2.8 Feed-Grade	2 speed	4.2.17 TOT-TGT	0.00 kg
		4.2.9 Disc Zero	0.50 kg	4.2.18 A2 Target	0.00 kg

4.2.1	A target	Set the target weight that the packaging aims to achieve.
4.2.2	A fast	When adding materials, if the weight value is greater than or equal to the target value - the lead amount for fast feeding, close the fast feeding. When set to 0, it indicates that the fast output process will not be initiated.

4.2.3	A med	When adding materials, if the weight value is greater than or equal to the target value - the advance amount of the middle input, turn off the middle input. When set to 0, it indicates that the mid-input output process will not be initiated.
4.2.4	A slow	When adding materials, if the weight value is greater than or equal to the target value - the drop value of the slow feeder, close the slow feeder.
4.2.5	A fast no cmp time	0.0 to 99.9s; The vibration elimination time at the beginning of the fast throw. During this time, the fast throw signal remains valid and is not affected by weight. Only after this time ends is it determined whether the weight has reached the lead time for the fast throw, and thus the fast throw ends.
4.2.6	A med no cmp time	0.0 to 99.9s; The vibration elimination time at the beginning of the mid-range operation, during which the mid-range operation signal remains valid and is not affected by weight. Only after this time ends is it determined whether the weight has reached the mid-range operation lead quantity, and thus the mid-range operation ends.
4.2.7	A slow no cmp time	0.0 to 99.9s; The vibration elimination time at the beginning of the slow throw, during which the slow throw signal remains valid and is not affected by weight. Only after this time ends is it determined whether the weight has reached the slow throw drop value, and thus the slow throw ends.
4.2.8	Feed-grade	①[Two-speed feeding (fast and slow)]: Fast and slow feeders are used to achieve two-speed feeding. ②[2-speed feeding (Med and Slow)]: Med and slow feeders achieve two-speed feeding. ③[3-Speeds]: Fast, Med and slow feeders are used to achieve three feeding speeds.
4.2.9	Disc zero	【3.1.1 Working Mode】 It works when set to a bucket scale or a bulk material accumulation scale.

		When unloading, if the current weight is detected to be less than or equal to the Disc zone value, it is considered that the unloading is complete and the unloading door is ready to be closed.
4.2.10	B target	Refer to the relevant parameter descriptions corresponding to the A scale from 4.2.1 to 4.2.7.
4.2.11	B fast	
4.2.12	B med	
4.2.13	B slow	
4.2.14	B fast no cmp time	
4.2.15	B med no cmp time	
4.2.16	B slow no cmp time	
4.2.17	TOT-TGT	In the bucket scale combination mode, set the weight of the material contained in one packaging bag (one bag clamping and multiple unloading). Note: In the bucket scale combination mode, the setting of the total target value should be an integer multiple of the target value of each individual scale. Under the relevant working mode of bulk material accumulation, it is set for the total shipment volume.
4.2.18	A2 target	The weight that scale A needs to reach during its second packaging. Note: This parameter is only valid when [3.1.1 Working Mode] is selected as ⑭ with bucket packaging (ABA combination). This target value is the target weight of the second packaging of scale A in the combination.

3.4.3 Time setting

Set the relevant time parameters during the feeding process.

← Quit		4. Recipe set		Home	
4.1	Recipe	4.3.1	Feed-Dly t1	0.5	s
4.2	Target Set	4.3.2	Fixed time t6	1.0	s
4.3	Time Set	4.3.3	Disc-Dly t7	0.5	s
4.4	Flap & Convey	4.3.4	Clamp-Dly	0.5	s
4.5	Fall Over/Und	4.3.5	Unclamp-Dly	0.5	s
4.6	Others	4.3.6	Lower level dly time	4.0	s
		4.3.7	Clamp Diff Time	0.0	s

4.3.1	Feed-delay t1	0.0 to 99.9s; The delay time before the start of adding materials.
4.3.2	Fixed time t6	0.0 to 99.9s; The waiting time after the feeding is completed. Once this time is up, obtain the current weight record of the feeding result.
4.3.3	Disc-dly t7	0.0 to 99.9s; 【3.1.1 Working Mode】 It works when set to a bucket scale or a bulk material accumulation scale. When unloading, if the current weight is detected to be $\leq$ [4.2.16 Unloading zero zone value], it is considered that the unloading has been completed. Start the unloading delay time and close the unloading door when the time is up.
4.3.4	Clamp-Dly	0.0 to 99.9s; After the bag clamping is effective, extend this time and consider the bag clamping action to be completed. Then, subsequent processes such as feeding (without a bucket scale) or unloading (with a bucket scale) can be initiated.
4.3.5	Unclamp-dly	0.0 to 99.9s; The delay time before automatic bag loosening.
4.3.6	Lower level dly time	0.0 to 99.9s; Only the no-bucket scale mode is effective. When another scale has already picked up

		the bag and is within this delay time, the discharge level signal will not be detected. Even if the discharge level is lower at this time, feeding will be initiated
4.3.7	Clamp Diff time	0.0 to 99.9s; It's not useful for now and no Settings are required. Keep the initial value 0.0.

3.4.4 flap & convey

Set the functions related to the bag patting action.

← Quit 4. Recipe set Home	
4.1 Recipe	4.4.1 Pat-Bag mode Closed 4.4.6 Pat Off-Time 0.5 s
4.2 Target Set	4.4.2 Pat-Dly time 0.5 s 4.4.7 Pat-Init-Wt 0.00 kg
4.3 Time Set	4.4.3 Pat-Times Feed 0 4.4.8 Tamp-Time 0.0 s
4.4 Flap & Convey	4.4.4 Pat-Times Fixed 4 4.4.9 Belt dly time 0.5 s
4.5 Fall Over/Und	4.4.5 Pat On-Time 0.5 s 4.4.10 Belt Run-Time 4.0 s
4.6 Others	

4.4.1	Pat-bag mode	① [Turned Off]: Disable the bag patting function. ② [During feeding]: Only tap the bag during feeding. ③ [After setting the value]: Only tap the bag after setting the value. ④ [All]: After adding materials, neutralizing and setting the value, all should be bagged.
4.4.2	Pat-dly time	0.0 to 60.0s; The delay time before the bag-tapping function is activated after setting the value.
4.4.3	Pat-times feed	0-99 The number of pulse pulses of the bag-tapping signal output by the bag-tapping function during feeding.
4.4.4	Pat-times fixed	0-99 The number of pulse pulses of the bagging signal output by the bagging function after setting the value.
4.4.5	Pat	0.0 to 60.0s; The effective time of the pulse signal output by the

	on-time	tap bag.
4.4.6	Pat off-time	0.0 to 60.0s; The invalid time of the pulse signal output by the tap bag.
4.4.7	Pat-init-Wt	During the feeding process, when the current weight exceeds the initial weight of the feeding bag, the feeding bag function will be activated.
4.4.8	Tamp-time	0.0 to 60.0s; When the bag release delay is initiated, the additional bag patting time is also started simultaneously. When both the bag-loosening delay and the bag-piling delay are reached and the unloading delay is also reached, one bucket-less packaging is completed
4.4.9	Belt Dly time	0.0 to 99.9 s; From the start of the belt, after a delay of one belt start delay time, the belt signal is truly output at the switch port
4.4.10	Belt run-time	0.0 to 99.9s; The time between the start of the belt output signal and the end of the belt operation

3.4.5 Fall over/under

Over-tolerance or under-tolerance is a collective term for over-tolerance or under-tolerance. During the packaging process, if the packaging result is higher than the target value by a certain range, it is considered over-tolerance, while if it is lower than a certain range, it is considered under-tolerance. This range is set according to production requirements.

Quit

4. Recipe set

Home

4.1 Recipe

4.2 Target Set

4.3 Time Set

4.4 Flap & Convey

4.5 Fall Over Und

4.6 Others

4.5.1 Ove/Und est-Time t5 0.5 s

4.5.2 Over TOL 0.00 kg

4.5.3 Und TOL 0.00 kg

4.5.4 Ove/Und alarm Closed

4.5.5 Ove/Und pause Closed

4.5.6 Correct times 0

4.5.7 Correct range 2.0 %

4.5.8 orrent extent 50%

4.5.1	Ove/Und test time	0.0 to 99.9s; After the feeding is completed, delay for this period of time and wait for the current weight to stabilize before conducting the over-limit and under-limit detection.
4.5.2	Over TOL	When conducting out-of-tolerance detection, if the weighing result is greater than the target value plus the out-of-tolerance value, it will be judged as out-of-tolerance.
4.5.3	Und TOL	When conducting over-limit and under-limit detection, if the weighing value is less than the target value - the under-limit value, it is judged as under-limit.
4.5.4	Ove/Und alarm	①[Closed] ②[Opened]: After each feeding is completed, the feeding results will be checked for excess or deficiency.
4.5.5	Ove/und pause	①[Closed]: When there is an over-limit or under-limit error, the controller will give an alarm prompt. After the alarm ends, the operation will continue. ②[Opened]: When an over-limit or under-limit error occurs, the controller will alarm and pause to wait for the user to handle it. After clearing the alarm, the operation will continue. Alternatively, a "I4 Stop" signal can be given to return to the stop state for processing.
4.5.6	Correct times	0-99 The average obtained by averaging the differences of the set number of times serves as the basis for the difference correction.
4.5.7	Correct range	0.0% to 99.9% The percentage of the target value. When the current drop exceeds the set range, this drop will not be included in the arithmetic mean range.
4.5.8	Correct extent	25%, 50%, and 100% are optional, representing the extent of each drop correction.

In some cases, the drop correction function may be needed to improve packaging accuracy. The drop correction function is to continuously correct the slow drop value during operation. Its principle is as follows:

The target difference = the weighing result of this time - the target value

2. Average target difference =(Target 1+target 2+... + Target_{correct times})/

correct times;

3. The new slow drop = the previous slow drop + the average target difference × Correct extent.

3.4.6 Others

Click on [4.6 Others] on the left to enter the other Settings interface, as shown in the following figure:

4. Recipe set		Home
4.1 Recipe	4.6.1 Inching switch Closed	4.6.8 No disc/feed in coding Closed
4.2 Target Set	4.6.2 Inching On-Time 0.5 s	4.6.9 Coding dly time 0.5 s
4.3 Time Set	4.6.3 Inching Off-Time 0.5 s	4.6.10 Coding cont time 0.0 s
4.4 Flap & Convey	4.6.4 Disc overtime 2.0 s	4.6.11 LCS-FK zero 0.00 kg
4.5 Fall Over/Und	4.6.5 Disc-Rap On-Time 0.5 s	4.6.12 Blow On-Time 0.0 s
4.6 Others	4.6.6 Disc-Rap Off-Time 0.5 s	4.6.13 Blow Off-Time 0.0 s
	4.6.7 Disc-Rap times 0	

4.6.1	Inching switch	①[Closed] ②[opened]: Each time a slow feeding agent is added, the feeding is done in a point-by-point manner.
4.6.2	Inching on-time	0.0-99.9 This time is the effective time when adding materials in a slow jog
4.6.3	Inching-off time	0.0-99.9 When adding materials with a slow jog, this time is invalid
4.6.4	Disc overtime	This delay is initiated when the unloading output signal is valid. If the weight is lower than the zero zone value within this delay, the unloading delay is initiated. If the delay reaches and the current weight is still greater than the zero zone, the shaking function will be activated. During the vibration period, if the weight is lower than the zero

		zone, the unloading delay will be initiated; otherwise, an alarm output will be triggered.
4.6.5	Disc-Rap-on-time	0.0-99.9 The effective time of the unloading vibration action
4.6.6	Disc-Rap-off-time	0.0-99.9 The ineffective time of the unloading vibration action
4.6.7	Disc-Rap times	0-99 After completing the set number of vibration strikes, the unloading vibration strike is completed
4.6.8	No Disc/feed in coding	①[Closed] ②[opened] : During the coding process, unloading output is not allowed if there is a bucket, and feeding output is not allowed if there is no bucket
4.6.9	Coding Dly time	0.0-99.9 When the bag clamping is effective, this delay is initiated. After the delay is completed, a coding signal is output
4.6.10	Coding cont time	0.0-99.9 The timer starts when the coding is valid and stops when the delay is up
4.6.11	LCS-FK zero	This function is not available for the moment
4.6.12	Blow on-time	0.0-99.9 In the valve port scale mode, when the output of the material blowing switch quantity is defined, if the fast, Med and slow inputs are effective, the material blowing starts; if the fast, Med and slow inputs are ineffective, the material blowing stops. This time is the valid time for blowing the material.
4.6.13	Blow off-time	0.0-99.9 Ineffective time for material blowing.

3.5 Switch quantity

3.5.1 In port

Define the functions corresponding to the switch input ports IN1 to IN12.

Click on the input port of the switch quantity you want to set, and in the pop-up option box, select the function you want to define.

The list of selectable functions for switch input is as follows:

Number	Function name	Description
I0	NC	No function definition.
I1	Running (pul)	Start running.
I2	urgently stop	Stop running.
I3	Slow stop	Enter the slow-stop process, that is, automatically stop running after the completion of this packaging.
I4	A Disc (pul)	It is used for manually clearing the materials in the metering hopper. This input effectively opens the discharge door once and effectively closes it again.
I5	A disc(lvl)	It is used for manually clearing the materials in the metering hopper. When the input is valid, open the discharge door; when the input is invalid, close the discharge door.
I6	B disc(pul)	It is used for manually clearing the materials in the metering hopper. This input effectively opens the discharge door once and effectively closes it again.
I7	B disc(lvl)	It is used for manually clearing the materials in the

		metering hopper. When the input is valid, open the discharge door; when the input is invalid, close the discharge door.
I8	A clamp alt	Input signal for A scale clamp/bag loosening operation.
I9	B clamp alt	Input signal for B scale clamp/bag loosening operation.
I10	Clr alarm	Clear the alarm status.
I11	Upper level	Input signal for material level detection on the storage hopper. When effective, it is considered that the material has reached the feeding level.
I12	Lower level	Input signal for detecting the discharge level of the storage hopper. When effective, it is considered that the material has reached the discharge level.
I13	A disc closed	If this input is defined, it effectively indicates that the discharge door has been fully closed; otherwise, it indicates that it has not been fully closed. When the controller is feeding and determines that the input is invalid, it will turn off the fast, Med and slow input outputs. After determining that the signal input is valid, if additional feeding is still required, the feeding output will be restored.
I14	B disc closed	
I15	A bag clipped	If this input is defined, it effectively indicates that the bag clip is in place; otherwise, it indicates that the bag clip is not in place. During the unloading process, if the signal is detected to be invalid, the unloading output will be turned off.
I16	B bag clipped	
I17	Manual feed	It works in the bulk material accumulation mode. It is used to manually clear the material in the liquid

		storage tank in the stopped state. If the input is valid for one discharge, the output is valid. If it is valid again, the output is invalid.
I18	L upper lvl	Bulk material mode, used to connect the upper material level of the lower liquid storage tank.
I19	L lower lvl	Bulk material mode, used to connect the discharge level of the lower storage tank.
I20	A#FlowCloseRdy	If this input is defined, it effectively indicates that the feeding door has been fully closed; otherwise, it indicates that it has not been fully closed. Before adding materials, if the controller determines that the input is invalid, it will alarm the output and wait. It is determined that the signal input is valid. Then it enters the normal feeding process.
I21	B#FlowCloseRdy	
I22	A unclampRdy(Lvl)	If this input is defined, it is valid to indicate that the bag is in place; otherwise, it indicates that the bag is not in place. If the signal is detected to be valid during the bag loosening process, the bag loosening has been completed
I23	B unclampRdy(Lvl)	
I24	Unclamp permit	It is mainly used for bucketed packaging. The bag will only be loosened when the input is valid; it will not be loosened when the input is invalid
I25	B#UnlodOpenRdy(Lvl)	If this input is defined, it effectively indicates that the discharge door has been fully opened; otherwise, it indicates that it has not been fully opened.
I26	A Zeroing (pul)	Perform an effective zeroing operation on Scale A.
I27	B Zeroing (pul)	Effectively perform a zeroing operation on Scale B.
I28	Run (lvl)	Start running when it is effective and stop running when it is ineffective.
I29	Choose Recipe	Enter once valid to switch to the next recipe with a

		target value
I30	Tangent in place	If this input is defined, when it is detected to be valid during tangling, it is considered that the tangling action has been completed and the tangling ends.
I31	Sewing inspection bale	It is used to detect whether the bag has reached the position of the sewing machine. For details, please refer to the chapters.
I32	Trigger 1	The input trigger signal of Logic Programming 1
I33	Trigger 2	The input trigger signal of Logic Programming 2
I34	Trigger 3	The input trigger signal of Logic Programming 3
I35	Trigger 4	The input trigger signal of Logic Programming 4
I36	trigger 5	The input trigger signal of Logic Programming 5
I37	Trigger 6	The input trigger signal of Logic Programming 6
I38	TtrMoveBackPlace	The slider moves back to the detection input of the position.
I39	TtrMoveOutPlace	The slider is moved out of the detection input in place.
I40	TtrClampOffPlace	Detection input for pulling loose bags into place.
I41	ConveyPos1	Limit detection input for conveyor position 1
I42	ConveyPos 2	Limit detection input for conveyor position 2
I43	ConveyPos 3	Limit detection input for conveyor position 3
I44	ConveyPos 4	Limit detection input for conveyor position 4
I45	ConveyPos 5	Limit detection input for conveyor position 5
I46	Convey Rise Once	Each effective conveyor rises once
I47	Convey Fall Once	Each effective conveyor descends once
I48	Tractor Close	Turn off the traction machine function when the input is valid
I49	Propbag Place	The bag-holding mechanism is loosely positioned for input
I50	A running (pul)	A scale performs one operation each time it is valid
I51	B running (pul)	Each effective operation of scale B is executed once

I52	A Urgently stop(pul)	Each time the A scale is effective, it will perform an emergency stop once
I53	B Urgently stop(pul)	Each time the B scale is effective, it will execute an emergency stop once
I54	A Slowly stop (pul)	Each time the A scale is effective, it will perform a pause once
I55	B Slowly stop (Pul)	Each time the B scale is valid, it will perform a pause once

3.5.2 Out port

Define the functions corresponding to the switch output ports OUT1 to OUT18. Click on the switch output port you want to set, and in the pop-up option box, select the function you want to define.

Quit		5. IO				Home
5.1 In port	5.2.1 OUT1	Q1. Running	5.2.9 OUT9	45. TractorMoveDir	5.2.17 OUT17	Q0. NC
5.2 Out port	5.2.2 OUT2	Q36. A Feed Direct	5.2.10 OUT10	47. TractorClampDi	5.2.18 OUT18	Q0. NC
5.3 Ho port	5.2.3 OUT3	Q37. B Feed Direct	5.2.11 OUT11	Q0. NC		
5.4 IO test	5.2.4 OUT4	Q38. A Clamp Direct	5.2.12 OUT12	Q0. NC		
	5.2.5 OUT5	Q9. A patting	5.2.13 OUT13	Q0. NC		
	5.2.6 OUT6	Q20. B patting	5.2.14 OUT14	Q0. NC		
	5.2.7 OUT7	Q56. Convey Fall	5.2.15 OUT15	Q0. NC		
	5.2.8 OUT8	Q55. Convey Rise	5.2.16 OUT16	Q0. NC		

The list of selectable functions for switch output is as follows:

number	Function name	Description
Q0	NC	No function definition.
Q1	Running	The output is valid when in operation.
Q2	Stop	The output is valid when in the stopped state.
Q3	A fast	Rapid feeding control signal.
Q4	A med	Med-speed feeding control signal.
Q5	A slow	Slow feeding control signal.
Q6	A fixed	When the feeding is completed, the output is valid,

		indicating that the feeding has been completed. The duration can be set with the parameter [4.3.2 Fixed holding Time]. After the fixed holding time ends, the current weight will be recorded as the packaging result of this time.
Q7	A Disc	Control the discharge door of the weighing hopper.
Q8	A clamp	Control signal of the bag clamping mechanism: When effective, the bag is clamped; when ineffective, the bag is released.
Q9	A patting	Control signal for the bag patting function. For detailed functions, please refer 3.4.4 flap & convey to the chapter.
Q10	A zero	When the current weight of scale A is lower than the value of the zero zone for unloading in 4.2.16, the output is valid.
Q11	A sever	The output is effective when feeding.
Q12	A disc shaking	Discharge vibration output control signal.
Q13	A coding	The output control signal of the coding function.
Q14	B fast	Rapid feeding control signal.
Q15	B med	Med-speed feeding control signal.
Q16	B slow	Slow feeding control signal.
Q17	B fixed	When the feeding is completed, the output is valid, indicating that the feeding has been completed. The duration can be set with the parameter [4.3.2 Fixed holding Time]. After the fixed holding time ends, the current weight will be recorded as the packaging result of this time.
Q18	B Disc	Control the discharge door of the weighing hopper.
Q19	B clamp	Control signal of the bag clamping mechanism: When effective, the bag is clamped; when ineffective, the bag is released.
Q20	B patting	Control signal for bag patting function."
Q21	B zero	The output of scale B is valid when the current weight is

		lower than the [Zero zone value for unloading in 4.2.16].
Q22	B sever	The output is effective when feeding.
Q23	B disc shaking	Discharge vibration output control signal.
Q24	B coding	The output control signal of the coding function.
Q25	Ove/und	The over-limit and under-limit function is opened. When an over-limit and under-limit alarm occurs in the feeding result, this output is valid.
Q26	warning	The output is effective when the controller has an alarm.
Q27	Batch complete	The signal output becomes valid after the cumulative completion of the set batches.
Q28	filling	Feed control output signal. When the signal is valid, start the feeding device to supply materials to the storage hopper.
Q29	starving	Output signal for material shortage status. When the "I12 material level" signal input is invalid, it is in a state of material shortage.
Q30	A feed	In the bulk material accumulation mode, it is used to control the operation of the discharge oil pump of the liquid storage tank under scale A. The output of the A slow input process is effective in the valve port scale mode. In the no-bucket scale mode, it is the suction function, controlling the suction action of scale A.
Q31	B feed	The output of the B slow input process is effective in the valve port scale mode. In the no-bucket scale mode, it is the suction function, controlling the suction action of scale B.
Q32	A Blow	The valve port scale mode controls the blowing mechanism of scale A
Q33	B Blow	The valve port scale mode controls the B scale's material blowing mechanism
Q34	last	When the slow stop signal input is valid or when the last scale is dispatched in bulk material scale mode, this signal

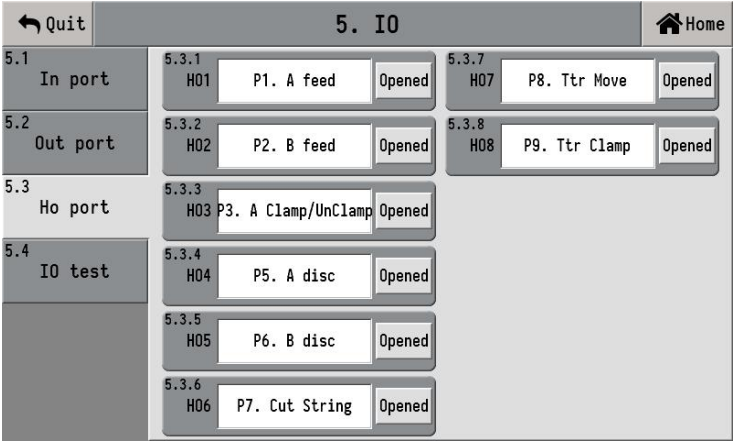
		output is valid.
Q35	Belt	The belt conveyor function outputs control signals.
Q36	A feed Direct	When the stepper motor controls the feeding of scale A, this signal serves as the direction signal of the stepper motor driver.
Q37	B feed direct	When the stepper motor controls the B scale to add materials, this signal serves as the direction signal of the stepper motor driver.
Q38	A clamp direct	When the stepper motor controls the bag clamping of scale A, this signal serves as the direction signal of the stepper motor driver.
Q39	B clamp direct	When the stepper motor controls the bag clamping of scale B, this signal serves as the direction signal of the stepper motor driver.
Q40	A Disc direct	When the stepper motor controls the unloading of scale A, this signal serves as the direction signal of the stepper motor driver.
Q41	B Disc direct	When the stepper motor controls the B scale to unload, this signal serves as the direction signal for the stepper motor driver.
Q42	Sewing bale	The sewing bag outputs control signals.
Q43	Tangent out	Tangential output control signal.
Q44	Tractor Move	Control signal for the slider mechanism of the traction machine
Q45	TractorMoveDir	When the stepper motor controls the traction slider, this signal serves as the direction signal of the stepper motor driver
Q46	TractorClamp	This output switch quantity is used to control the bag clamping action of the traction machine. When the output is valid, the mechanism will clamp the bag opening. When the output is invalid, the mechanism will loosen the bag opening.
Q47	TractorClampDir	When the stepper motor controls the bag clamping of the

		traction machine, this signal serves as the direction signal of the stepper motor driver.
Q48	Logical 1	Logic Programming 1 Function output signal.
Q49	Logical 2	Logic Programming 2 Function output signal.
Q50	Logical 3	Logic Programming 3 Function output signal.
Q51	Logical 4	Logic programming 4 Function output signal.
Q52	Logical 5	Logic programming 5 Function output signal.
Q53	Logical 6	Logic programming 6 Function output signal.
Q54	Cut Dir	When the stepper motor controls the tangential line, this signal serves as the direction signal of the stepper motor driver.
Q55	conveyor rise	The output signal for controlling the upward movement of the conveyor.
Q56	Conveyor fall	The output signal for controlling the descent of the conveyor.
Q57	Prop bag Dir	When the stepper motor controls the bag opening, this signal serves as the direction signal of the stepper motor driver.
Q58	Push bag	Standby
Q59	stretch	The control signal for the extension and retraction of the gripper when the traction machine is operating in the "two-sided stretching" mode
Q60	Move rise fall	The slider lifting control signal when the traction machine is operating in the "two-side stretching" mode
Q61	pull	The signal for pulling the bag clamping mechanism to both sides
Q62	Holdbag	Heat sealing signal for packaging bags

3.5.3 HO port

Each high-speed output switch quantity can be turned off. Once turned off, it can be used as a regular output switch quantity port. Displaying "On" indicates that the current high-speed output is turned on. Clicking "On" can switch it to "Off", which means the high-speed output switch quantity is turned off and is

used as a regular output switch quantity. Its function can be set in the "5.3 HO PORT" interface.



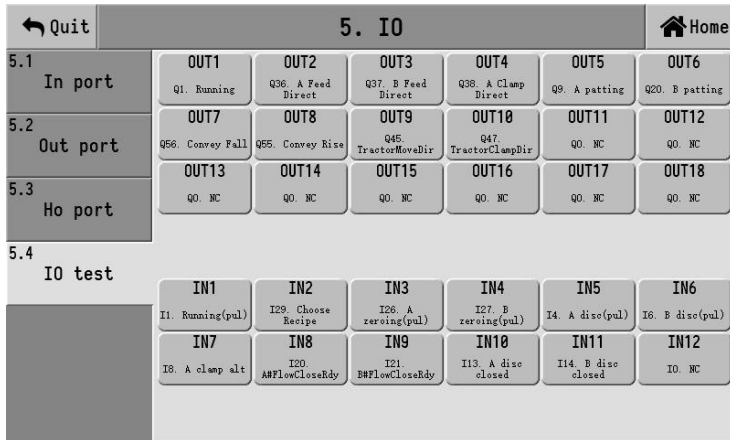
Click the corresponding high-speed switch quantity editing box, and a high-speed output switch quantity function selection interface will pop up. The list of available functions for the high-speed port is as follows:

Number	Function name	Description
P0	NC	No function definition.
P1	A feed	Control the action of the feeding stepping motor of Scale A
P2	B feed	Control the action of the feeding stepping motor of Scale B
P3	A clamp/unclamp	Control the action of the bag-loosening stepping motor of the A scale clamp
P4	B clamp/unclamp	Control the action of the bag-loosening stepping motor of the B scale clamp
P5	A disc	Control the action of the unloading stepping motor of Scale A
P6	B disc	Control the action of the unloading stepping motor of Scale B
P7	Cut string	Control the action of the tangential stepping motor
P8	Ttr Move	Control the action of the stepper motor of the

		traction machine slider
P9	Ttr clamp	Control the action of the bag-holding stepping motor of the traction machine
P10	propbag	Control the action of the stepper motor of the bag-holding mechanism

3.5.4 IO test

Switch quantity testing is a function used to test whether the input switch quantity and output switch quantity ports are working properly. The interface is shown in the following figure



Switch output test

The OUT1 to OUT16 buttons are used to test the output function of the switch quantity. Gray indicates that the switch output is invalid, while green indicates that the switch output is valid.

For example:

The output port of OUT3 is connected to a relay. To test whether the output of OUT3 is normal, you can click the OUT3 button to switch the output state to effective. If the circuit is normal, you can observe that the relay connected to OUT3 is engaged at this time. Clicking the OUT3 button again to switch the output state is ineffective. If the circuit is normal, you can observe that the relay connected to OUT3 is disconnected at this time.

Switch input test

IN1 to IN10 are used to test the input functions of switch quantities. Gray indicates that the switch input is invalid, while green indicates that the switch input is valid.

For example:

The IN1 input port is connected to a push-button switch. To test whether this push-button switch is functioning properly, you can manually press the connected button. If the circuit is normal, you can observe that the IN1 indicator light turns green. After releasing this button, if the circuit is normal, you can observe that the IN1 indicator light turns gray.

3.6 Functions and electrical Para

There are three control methods for electric feeding, discharging and bag clamping:

1. Ordinary switch mode, 2. Fixed pulse mode, 3. In-place switch mode.

1. Common switch mode:

Output the corresponding bag clamping signal at the ordinary output switch quantity port. Just define the corresponding output switch quantity, and this mode can be used. In this mode, the high-speed switch quantity is set to undefined.

2 Pulse mode

The mode outputs a fixed number of pulses. It operates in this mode without setting the bag release position switch. Note that in this mode, the normal output switch quantity will remain in synchronous output. It will not loosen the bag automatically after being powered on.

3 In-place switch mode

Input the switch quantity to set the bag release position switch, that is, it works in this mode. Note that in this mode, the normal output switch quantity will remain in synchronous output. After power-on, if it is detected that the switch is not in place, a closing pulse will be output. If the switch is already in the closed position, no closing pulse will be output.

3.6.1 Moto flow

"6.1.1A Electric Feeding" setting interface:

Quit 6.1 Moto Flow Home	
6.1.1 A moto flow	6.1.1.1 Run Freq 20.0 KHz 6.1.1.6 tart freq 10.0 KHz
6.1.2 B moto flow	6.1.1.2 Slow pulses 3000 6.1.1.7 Start freqs 3000
	6.1.1.3 Mid pulses 6000 6.1.1.8 Stop freq 10.0 KHz
	6.1.1.4 Fast pulses 9000 6.1.1.9 Stop freqs 3000
	6.1.1.5 Close over time 2.0 s 6.1.1.10 Direct def ON-Open
	Single pulses 0 Open feed door Close feed door Feed-door Release Store to slow
	Sum pulses 0 Clear zero Store to mid Store to fast

6.1.1.1	Run freq	The rotation frequency of the electric feeding door
6.1.1.2	Slow pulses	The number of pulses required to open the door from the closing position to the slow switch. When set to 0, there is no slow switch opening/closing action
6.1.1.3	Mid pulses	The number of pulses required to open the door from the closing position to mid-range opening. When set to 0, there is no mid-range opening/closing action
6.1.1.4	Fast pulses	The number of pulses required to open the door from the closing position to the fast switch. When set to 0, there is no fast switch opening/closing action
6.1.1.5	Close over time	The signal for the feeding door to be fully closed only takes effect. After outputting the door closing pulse, if the fully closed signal is not detected within this time, it is considered that the fully closed switch is damaged and the pulse output will be directly stopped
6.1.1.6	Start-up freq	The frequency at which the electric feeding door

		starts to accelerate
6.1.1.7	start-up freqs	The number of frequencies that the electric feeding door undergoes during acceleration from the "start-up frequency" to the "operating frequency"
6.1.1.8	Stop frequ	The frequency after the deceleration of the electric feeding door is completed
6.1.1.9	Stop freqs	The number of frequencies that the electric feeding door undergoes from the "operating frequency" to the "deceleration frequency"
6.1.1.10	Direct def	"On-close" indicates that the output is in the closing direction when it is valid, and "on-Open" indicates that the output is in the opening direction when it is valid

The setting interface for "6.1.2B Electric Feeding" is the same as that for the electric feeding of scale A.

3.6.2 Moto Disc

"6.2.1A Scale Electric Unloading" Setting interface:

The screenshot shows the "6.2 Moto Flow" configuration screen. It includes a "Quit" button at the top left and a "Home" button at the top right. The screen is divided into two main sections: "A moto disc" and "B moto disc".

6.2.1 A moto disc settings:

- 6.2.1.1 Run Freq: 20.0 KHz
- 6.2.1.2 Open pulses: 6000
- 6.2.1.3 Close pulses: 6000
- 6.2.1.4 Close over time: 2.0 s
- 6.2.1.5 Direct def: ON-Open

6.2.2 B moto disc settings:

- 6.2.2.1 Start freq: 10.0 KHz
- 6.2.2.2 Start freqs: 3000
- 6.2.2.3 Stop freq: 10.0 KHz
- 6.2.2.4 Stop freqs: 3000

Bottom controls:

- Single pulses: 0
- Buttons: Open, Close, Disc rst
- Sum pulses: 0
- Buttons: Clear zero, Store to open, Store to close

6.2.1.1	Run freq	The rotation frequency of the electric discharge door
6.2.1.2	Open pulses	The number of pulses required from the closing position to the opening position
6.2.1.3	Close pulse	The number of pulses required from the opening position to

		the closing position
6.2.1.4	Close over time	This time only takes effect when the discharge door is configured with a fully closed signal. After outputting the door closing pulse, if the fully closed signal is not detected within this time, it is considered that the fully closed switch is damaged and the pulse output will be directly stopped
6.2.1.5	Direct def	"On-close" indicates that the output is in the closing direction when it is valid, and "on-Open" indicates that the output is in the opening direction when it is valid
6.2.1.6	Start freq	The frequency at which the electric discharge door starts to accelerate
6.2.1.7	start freqs	The number of frequencies that the electric discharge door undergoes to accelerate from the "starting frequency" to the "operating frequency"
6.2.1.8	stop freq	The frequency after the deceleration of the electric discharge door is completed
6.2.1.9	stop freqs	The number of frequencies that the electric discharge door undergoes from the "operating frequency" to the "deceleration frequency"

The setting interface for "6.2.2 Electric Unloading of Scale A" is the same as that for electric feeding of Scale A.

3.6.3 Moto clamp and prop

3.6.3.1 Electric bag clamp

"6.3.1A Scale Electric Bag Clamping" setting interface:

Quit		6.3 Moto clamp/prop				Home			
6.3.1	A moto Clamp	6.3.1.1	lamp freq	20.0	KHz	6.3.1.6	tart freq	10.0	KHz
6.3.2	B moto Clamp	6.3.1.2	Clamp freqs	6000		6.3.1.7	Start freqs	3000	
6.3.3	Prop bag	6.3.1.3	lamp freq	20.0	KHz	6.3.1.8	Stop freq	10.0	KHz
		6.3.1.4	Unclamp freqs	6000		6.3.1.9	Stop freqs	3000	
		6.3.1.5	amp over time	2.0	s	6.3.1.10	irect def	ON-Unlamp	
		Single pulses 0 Clamp step Unclamp step Clamp rst Sum pulses 0 Clear zero tore to clamp ore to uncla							

6.3.1.1	Clamp frep	The rotation frequency of the electric bag clamping door
6.3.1.2	Clamp freps	The number of pulses required from bag loosening to bag clamping is set to 0, and there is no slow opening/closing action
6.3.1.3	Unclamp freq	The rotation frequency of the electric loose bag door
6.3.1.4	Unclamp freqs	The number of pulses required from the completion of bag clamping to the completion of bag release, when set to 0, there is no opening/closing action
6.3.1.5	Clamp over time	It only takes effect when the electric bag release and closing signal is defined. After the bag release pulse is output, if the bag release and closing signal is not detected within this time, it is considered that the closing switch is damaged and the pulse output will be directly stopped
6.3.1.6	Start freq	The frequency at which the electric bag clamp starts to accelerate
6.3.1.7	start freqs	The number of frequencies that an electric bag clamping door undergoes to accelerate from the "starting frequency" to the "operating frequency"
6.3.1.8	stop freq	The frequency after the deceleration of the electric bag clamp is completed

6.3.1.9	stop freqs	The number of frequencies experienced by the electric bag clamp from the "operating frequency" to the "deceleration frequency"
6.3.1.10	Direct def	"On-close" indicates that when the output is valid, it is in the bag clamping direction, and "On-Open" indicates that when the output is valid, it is in the bag loosening direction

The parameter Settings for "6.3.2B scale electric Bag clamp" are the same as those for the A scale electric bag clamp.

3.6.3.2 prop bag

6.3 Moto clamp/prop	
6.3.1 A moto Clamp	6.3.3.1 op bag switch Closed
6.3.2 B moto Clamp	6.3.3.2 p on freq 20.0 KHz
6.3.3 Prop bag	6.3.3.3 Prop on freqs 3000
	6.3.3.4 lose freq 20.0 KHz
	6.3.3.5 Close freqs 3000
	6.3.3.6 on dly time 0.50 s
	6.3.3.7 ff dly time 0.50 s
	6.3.3.8 tart freq 10.0 KHz
	6.3.3.9 Start freqs 3000
	6.3.3.10 Stop freq 10.0 KHz
	6.3.3.11 Stop freqs 3000
	6.3.3.12 irect def ON-Open
	6.3.3.13 p off overt 1.60 s
	Prop on test
	Prop off test

6.3.3.1	Prop Bag switch	Closed; Opened: Activate the bag opening function
6.3.3.2	Prop on freq	The operating frequency of the bag support mechanism when it is opened
6.3.3.3	Prop on freqs	The number of pulses required for the bag opening mechanism to open
6.3.3.4	Close freq	The operating frequency of the bag opening mechanism when it is closed.
6.3.3.5	Close freqs	The number of pulses required for the bag opening mechanism to close.
6.3.3.6	On dly time	Control the delay before the bag opening

		mechanism opens
6.3.3.7	Off dly time	Control the delay before the bag opening mechanism closes
6.3.3.8	Start freq	The frequency at which the electric pusher bag starts to accelerate
6.3.3.9	start freqs	The number of frequencies experienced from the "start-up frequency" to the "operating frequency" during acceleration.
6.3.3.10	stop freq	The frequency after deceleration is completed
6.3.3.11	stop freqs	The number of frequencies experienced from the "operating frequency" to the "deceleration frequency".
6.3.3.12	Direct def	ON- Open door: When the output is valid, the corresponding bag opening mechanism opens the door. ON- Close door: When the output is valid, the corresponding bag opening mechanism closes the door.
6.3.3.13	Prop off overt	The maximum time that the bag-spreading mechanism cannot be closed for

Control mode of the bag support mechanism

There are two control modes for the bag-holding mechanism:

1. Regarding the gate origin method. Define a "bag opening origin" in the input switch quantity, which is the closing origin mode. Each time the door is closed, this origin will be detected. If the detection is valid, it indicates that the door is closed in place.

2. No closing origin method. If the input switch quantity does not define the "bag-opening origin", it means there is no closing origin mode. Each time the door is closed, a fixed number of pulses will be driven. When powered on and started, in order to reset, the number of pulses for closing the door will also be driven once.

The opening/closing test of the lower bag support can be used to check whether the action of the bag support motor is correct.

3.6.4 Sew cut set

3.6.4.1 Sewing bag Settings

6.4 Sew cut set

6.4.1 Sew set

6.4.2 Cut set

6.4.3 Push Bag

6.4.1.1 Stitch mode Tim-Stop

6.4.1.2 Stitch time 4.0 s

6.4.1.3 Stitch Sen-Time 0.2 s

6.4.1.1	Stitch mode	Start timing: Start timing once the bag is detected to have arrived Timing at the end: Timing starts only after the bag has passed through
6.4.1.2	Stitch time	0.0 to 99.9s; The duration of continuous output of the suture signal
6.4.1.3	Stitch sen-time	The packaging bag detection filter is used within the range of 0.0 to 99.9s. The packaging bag is considered to have arrived only when the effective signal exceeds this time. Similarly, the packaging bag is considered to have passed only when the sewing signal disappears for more than this time

3.6.4.2 Tangent line setting

← Quit		6.4 Sew cut set		Home				
6.4.1	Sew set	6.4.2.1	Cut mode	StepMoto Round	6.4.2.6	Start freq	10.0	KHz
6.4.2	Cut set	6.4.2.2	Run Freq	20.0	KHz	6.4.2.7	Start freqs	3000
6.4.3	Push Bag	6.4.2.3	Run Freqs	3000		6.4.2.8	Stop freq	10.0
		6.4.2.4	Cut dly time	0.2	s	6.4.2.9	Stop freqs	3000
		6.4.2.5	Cut hold time	1.5	s	6.4.2.10	irect def	ON-Open
Single pulses 0 Open Close Cut reset Sum pulses 0 Clear zero Save Cut test								

6.4.2.1	Cut mode	① Normal IO: Output (tangential output) signal and maintain it for a period of time ② Step turnover: The tangential method for controlling the step motor to rotate one full circle ③ Step forward and reverse rotation: The tangential method for controlling the forward rotation and then reverse rotation of the stepping motor ④ Ordinary motor rotation: The tangential method for controlling the rotation of an ordinary motor once. This method uses (tangential output) signals to control the rotation of the ordinary motor
6.4.2.2	Run freq	The rotational frequency of tangential motors
6.4.2.3	Run freqs	When in the "step turnover" mode, the number of frequencies corresponds to the number of pulses required for one full rotation. When using the "step forward and reverse rotation" mode, the same number of frequencies is used for both forward and reverse rotations
6.4.2.4	Cut dly time	After the sewing of the bag is completed, the tangential signal is output only after passing through this delay signal

6.4.2.5	Cut hold time	In the "Normal I/O" tangential mode, after the tangential output takes this time, the output is turned off. In the "stepper motor" mode, if the origin switch is not detected after the stepper motor has been rotating for this period of time, the motor will stop rotating
6.4.2.6	Start freq	0.0-60.0KHz; The frequency at which acceleration begins
6.4.2.7	start freqs	0-250,000 The number of frequencies experienced from the "start-up frequency" to the "operating frequency" during acceleration
6.4.2.8	stop freq	0.0-60.0KHz; The frequency after deceleration is completed
6.4.2.9	stop freqs	0-250,000 The number of frequencies experienced from the "operating frequency" to the "deceleration frequency"
6.4.2.10	Direct def	ON- Move out; It indicates the direction of the output when it is valid. ON- Move back; When the table output is valid, it is shifted back in direction

When in the "step turnover" and "step forward and reverse rotation" modes, the tangential output of the ordinary switch quantity will be synchronously output.

The sewing bag cutting line is equipped with a multi-cache function. That is, while this bag is still being cut, the next bag can start sewing, without having to wait until this bag is completely finished before starting the sewing of the next bag. This can improve efficiency.

Under the tangential mode of "step turnover", "step forward and reverse rotation" and "motor turnover", if it is detected that it is not at the tangential origin after power-on, it will automatically reset to the origin.

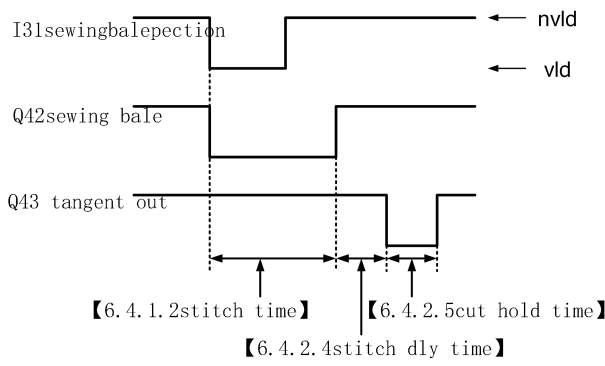
3. The sewing bag cutting line setting interface has a "cutting line Test" function. Clicking on it will start a cutting line action once to check whether the current cutting line function is normal. It should be noted that the "tangential start delay" will also be effective in the test. If the start delay time is set too fast, it may take a relatively long time to see the tangential action output after clicking

the test.

4. The "step forward and reverse rotation" tangential mode supports applications without origin switches. It will automatically reset upon power-on, but there may be a jamming phenomenon.

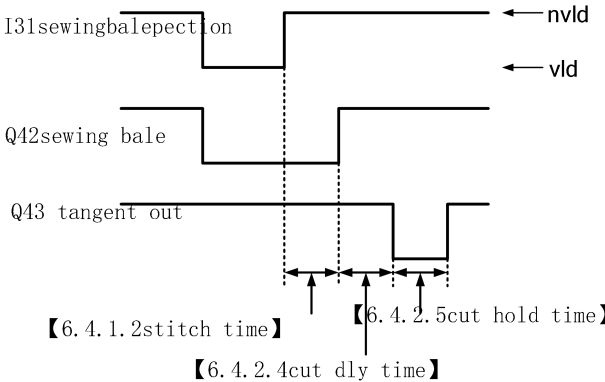
Detailed description of the bag sewing function

- 1. **【6.4.1.1 Sewing Bag Timing Mode】** When set to ①[Start timing] and the tangency mode is normal IO, the signal timing diagram of the sewing bag tangency function is as follows:



【6.4.1.1cut mode】 set ①tim-start

- 2. **【6.4.1.1 Sewing Bag Timing Mode】** When set to ②[Timing at the end] and the tangent mode is normal IO, the signal timing diagram of the sewing bag tangent function is as follows:



【6.4.1.1 stitch mode】 set ①tim-stop

3.6.4.3 Bag pushing setting

Quit		6.4 Sew cut set		Home				
6.4.1	Sew set	6.4.2.1	sh Bag Mode	Closed	6.4.2.8	start freq	8.0	KHz
6.4.2	Cut set	6.4.2.2	Run Freq	20.0	KHz	6.4.2.9	Start freqs	10000
6.4.3	Push Bag	6.4.2.3	Run Freqs	10000	6.4.2.10	Stop freq	8.0	KHz
		6.4.2.4	Push Bag Dly	1.00	s	6.4.2.11	Stop freqs	10000
		6.4.2.5	Push Bag Hold	1.00	s	6.4.2.12	ag Dir Port	OUT1
		6.4.2.6	in Bag HO Port	HO1	6.4.2.13	irect def	Out Open	
		6.4.2.7	in Bag In Port	IN1	6.4.2.14	ag Run Port	OUT1	
Start test								

6.4.3.1	Push bag mode	The following are optional: 【Off】 : Turn off the bag-pushing kinetic energy 【 Switch Quantity】: Single switch quantity control mode. When the switch quantity output is effective, the bag is pushed; when the switch quantity output is invalid, it is returned. 【Linear Turnover】 : A bag-pushing method that controls a common linear motor to rotate once. 【Step Turnover】 : A bag-pushing method that controls the step motor to rotate once.
6.4.3.2	Run freq	【Step Turnover】 The rotational frequency of the step motor under the bag-pushing method
6.4.3.3	Run freqs	When in the "step turnover" mode, the number of frequencies corresponds to the number of pulses required for one full rotation
6.4.3.4	Push bag dly	After receiving the bag-pushing command, the actual bag-pushing action is output only after this delay time
6.4.3.5	Push bag hold	In the "switch quantity" mode, the bag-pushing signal is maintained for this period of time and then

		withdrawn Under the "linear turnover" and "step turnover" modes, if there is an origin switch and the bag has not returned to the origin after the "bag-pushing duration", it is considered that the origin switch is damaged and the bag-pushing motor should be stopped immediately
6.4.3.6	Push bag HO port	Pulse output port in the "step turnover" mode
6.4.3.7	push bag in port	The input port of the origin switch
6.4.3.8	Start freq	0.0-60.0KHz; The frequency at which acceleration begins
6.4.3.9	start freqs	0-250,000 The number of frequencies experienced from the "start-up frequency" to the "operating frequency" during acceleration
6.4.3.10	stop freq	0.0-60.0KHz; The frequency after deceleration is completed
6.4.3.11	stop freqs	0-250,000 The number of frequencies experienced from the "operating frequency" to the "deceleration frequency"
6.4.3.12	Bag dir port	Direction signal output ports under the "linear turnover" and "step turnover" modes
6.4.3.13	Direct def	Output valid; It indicates that when the output is valid, it is a bag push. Output invalid; When the output is invalid, it indicates that the bag is being pushed.
6.4.3.14	Bag run port	No matter what control method is used for bag pushing, when the bag pushing action is output, this signal will be output

3.6.5 Ttr Set

3.6.5.1 Ttr process

6.5 Tractor set		Home
6.5.1 Ttr process	6.5.1.1 Ttr switch Closed	6.5.1.8 Clamp start dly 0.010 s
6.5.2 Ttr move	6.5.1.2 Ttr Mode Area Clip	6.5.1.9 Clamp travel time 1.5 s
6.5.3 Ttr clip	6.5.1.3 Over start dly 0.0 s	6.5.1.10 Clamp hold time 3.0 s
	6.5.1.4 Over travel time 4.0 s	6.5.1.11 lBag Start Dly 0.00 s
	6.5.1.5 Back dly time 1.20 s	6.5.1.12 lBag Hold Time 0.00 s
	6.5.1.6 Stretch Start Dly 0.50 s	6.5.1.13 Clip Trig Src UnClamp Dly
	6.5.1.7 Stretch Travel 1.00 s	Start test

6.5.1.1	Ttr switch	Turn on/off the traction machine function
6.5.1.2	Ttr mode	① Full-sided clip ② Stretching on both sides
6.5.1.3	Over start dly	0.0 to 99.9s; The delay time before the start slider moves out towards the packaging scale
6.5.1.4	Over travel time	0.0 to 99.9s; When using the "normal pneumatic" slider control mode, this time is used to determine the completion of the removal
6.5.1.5	Back dly time	The delay time from 0.0 to 99.9s before the slider moves back to the action output
6.5.1.6	Stretch start dly	0.0 to 99.9s; Output the delay time before the bag clamping action of the traction machine
6.5.1.7	Stretch travel	0.0 to 99.9s; The traction machine clamps the bag and moves back. After this period of time, the bag is released
6.5.1.8	Clamp start dly	0.0 to 99.9s; The time elapsed before the signal output is extended
6.5.1.9	Clamp travel	0.0 to 99.9s; Extend the signal, hold for this time and

	time	then withdraw
6.5.1.10	Clamp hold time	0.0 to 99.9s; The time elapsed before pulling the signal output
6.5.1.11	Drag start dly	0.0 to 99.9s; Pull the signal and hold it for this time before withdrawing
6.5.1.12	Heat seal holding time	0.0 to 99.9s; The heat seal signal is held for this time and then withdrawn
6.5.1.13	Clip trig src	0.0 to 99.9s; When using the "ordinary pneumatic" bag clamping control mode, this time is used to determine the completion of bag clamping

3.6.5.2 Ttr move

6.5 Tractor set		Home
6.5.1 Ttr process	6.5.2.1 out freq 20.0 KHz	6.5.2.7 tart freq 10.0 KHz
6.5.2 Ttr move	6.5.2.2 move out freqs 9000	6.5.2.8 Start freqs 3000
6.5.3 Ttr clip	6.5.2.3 back freq 20.0 KHz	6.5.2.9 Stop freq 10.0 KHz
	6.5.2.4 move back freqs 9000	6.5.2.10 Stop freqs 3000
	6.5.2.5 move out overtime 3.0 s	6.5.2.11 direct def ON-Out
	6.5.2.6 back overtime 3.0 s	6.5.2.12 Ttr move mode Step Moto
	Single pulses 0	move out step move back step Move rst
	Sum pulses 0	Clear zero pre to move pre to move b

6.5.2.1	out freq	0.0-60.0KHz; The operating frequency at which the slider moves out towards the packaging machine
6.5.2.2	Move out freq	0-250,000 The number of pulses required for the slider to move out of the packaging machine position
6.5.2.3	Back freq	0.0-60.0KHz; The operating frequency at which the slider moves back towards the sewing machine
6.5.2.4	Move back freqs	0-250,000 The number of pulses required for the slider to move back to the position of the sewing machine
6.5.2.5	Move out	0.0 to 99.9s; When a move out (towards the

	overtime	packaging machine position) position switch is installed, this time can be used. If the move out switch position is not reached within this time, the move out action will stop
6.5.2.6	Back over time	0.0 to 99.9s; When a retracting (moving towards the position of the sewing machine) switch is installed, this time can be used. If the retracting switch position is not reached within this time, the retracting action will be stopped.
6.5.2.7	Start freq	0.0-60.0KHz; The frequency at which acceleration begins
6.5.2.8	start freqs	0-250,000 The number of frequencies experienced from the "start-up frequency" to the "operating frequency" during acceleration
6.5.2.9	stop freq	0.0-60.0KHz; The frequency after deceleration is completed
6.5.2.10	stop freqs	0-250,000 The number of frequencies experienced from the "operating frequency" to the "deceleration frequency"
6.5.2.11	Direct def	ON- Move out; It indicates the direction of the output when it is valid. ON- Move back; When the table output is valid, it is shifted back in direction
6.5.2.12	Ttr move mode	1. Common pneumatic, 2. Linear motor (i.e., common motor), 3. Stepper motor

3.6.5.3 Ttr clip

Quit		6.5 Tractor set				Home	
6.5.1 Ttr process	6.5.3.1	lamp freq	20.0	KHz	6.5.3.7	tart freq	10.0 KHz
6.5.2 Ttr move	6.5.3.2	Clamp freqs	3000		6.5.3.8	Start freqs	3000
	6.5.3.3	lamp freq	20.0	KHz	6.5.3.9	Stop freq	10.0 KHz
6.5.3 Ttr clip	6.5.3.4	Unclamp freqs	3000		6.5.3.10	Stop freqs	3000
	6.5.3.5	amp over time	1.6	s	6.5.3.11	irect def	ON-Unlamp
	6.5.3.6	ttr clamp mode	Step Moto		6.5.3.12	Steps	Steps 1
					6.5.3.13	Clamp freqs2	3000
	Single pulses	0		Clamp step	Unclamp step	Clamp rst	
	Sum pulses	0		Clear zero	tore to clamp	tore to uncla	

6.5.3.1	clamp freq	0.0-60.0KHz; The operating frequency of the traction machine when clamping bags
6.5.3.2	Clamp freqs	0-250,000 The number of pulses required for the traction machine to hold the bag
6.5.3.3	Unclamp freq	0.0-60.0KHz; The operating frequency of the traction machine when loosening bags
6.5.3.4	Unclamp freqs	0-250,000 The number of pulses required for the traction machine to release the bag and return it to the origin
6.5.3.5	Clamp over time	0.0 to 99.9s; When the bag release position switch is installed, this time can be used. If the bag release position switch position is not reached within this time, the bag release action will be stopped
6.5.3.6	Ttr clamp mode	1 air valve, 2 stepper motors
6.5.3.7	Start freq	0.0-60.0KHz; The frequency at which acceleration begins
6.5.3.8	start freqs	0-250,000 The number of frequencies experienced from the "start-up frequency" to the "operating frequency" during acceleration
6.5.3.9	stop freq	0.0-60.0KHz; The frequency after deceleration is completed
6.5.3.10	stop freqs	0-250,000 The number of frequencies experienced from

		the "operating frequency" to the "deceleration frequency"
6.5.3.11	Direct def	ON- Bag clamping: Indicates the direction of bag clamping when the output is effective ON- Loose bag: Indicates the direction of loose bag when the output is valid
6.5.3.12	steps	steps 1 / steps 2 When in the first stage, directly clamp the bag. When using two sections, first clamp the first section. After the unloading is completed, clamp the second section
6.5.3.13	Clamp freqs2	0-250,000 The number of pulses required for the traction machine to clamp the second section of the bag. This parameter does not work when only one section of the bag is clamped

Description of the bag clamping control mode for the traction machine

1. Ordinary pneumatic

The common pneumatic clamp control mode uses a common output switch quantity to control the clamp and unclamp of the traction machine. When the output is effective, it is clamp; when the output is ineffective, it is unclamping. The completion of bag clamping and bag release is determined by the "bag clamping travel time".

2. Stepper motor

The clamp and unclamp control methods of stepper motors are divided into clamp and unclamp.

There is only one control mode for bag clamping, which is to fix the number of pulses. After outputting the "clamp frequ", it is considered that bag clamping is completed.

There are two ways to loosen the bag, as follows:

a. [unclamp freqs] When the traction unclamp origin switch is not installed, the unclamp is considered complete after outputting the [[unclamp freqs] under the operation of this machine.

b. [Bag Release Mode with In-place Switch] When a traction bag release origin switch is installed, the traction machine operates in this mode for bag release. In this mode, the continuous output of pulse numbers is used to control

the bag release until the bag release position is detected and then the action stops. If the bag release is not detected within the "bag release timeout time", the operation will also stop.

Other explanations

1. After power-on and startup, the slider and bag clamp of the traction machine will be automatically reset. In the stepper motor mode, if the slider is not equipped with a return switch, a fixed number of pulses will be output. If it is already in the return position at this time, a Carmen noise will occur. Similarly, in the stepper motor mode, if the release bag is not installed with a release switch in place, a fixed number of pulses will be output, and there may also be a noise.

2. In the tangential mode of the "stepper motor", if it is detected that it is not at the tangential origin after power-on, it will automatically reset to the origin.

3. The sewing bag cutting line setting interface has a "cutting line Test" function. Clicking on it will start a cutting line action once to check whether the current cutting line function is normal. It should be noted that the "tangential start delay" will also be effective in the test. If the start delay time is set too fast, it may take a relatively long time to see the tangential action output after clicking the test

3.6.6 Event

The event function is used to customize high-speed electric actions. When specific high-speed electric actions are required, you can try to implement them using the event function.

3.6.6.1 Event

← Quit		6.6 Event program					Home
6.6.1	Event	Event ch11	Event ch12	Event ch13	Event ch14	Event ch15	
6.6.2	Moto act	Event ch16	Event ch17	Event ch18	Event ch19	Event ch110	
		Event ch111	Event ch112	Event ch113	Event ch114	Event ch115	
		Event ch116	Event ch117	Event ch118	Event ch119	Event ch120	
		6.6.1.1 igger event 1# Custom1 6.6.1.2 Execute act 0# Closed 6.6.1.3 leted event 0# Closed					

Currently,20 event channels are provided. Each channel can correspond to an event, which then triggers an electric action. After the action is completed, another event is triggered. Its execution process is as shown in the following figure:



【 Trigger Event 】 The event used to trigger an action can be selected as follows:

"Event	Function
0# Closed	Close the event to make it ineffective
User Event 1#	User-defined events
User Event 2#	User-defined events
User Event 3#	User-defined events
User Event 4#	User-defined events
User Event 5#	User-defined events
User Event 6# 6	User-defined events
User Event 7#	User-defined events
User Event 8# 8	User-defined events
User Event 9# 9	User-defined events
User Event 10#	User-defined events
User Event 11#	User-defined events

User Event 12# 12	User-defined events
User Event 13#	User-defined events
User Event 14# 14	User-defined events
User Event 15# 15	User-defined events
16# User Event 16	User-defined events
User Event 17#	User-defined events
User Event 18# 18	User-defined events
User Event 19#	User-defined events
User Event 20# 20	User-defined events
Power on No. 21 has been completed	The event sent after the system is powered on
No. 22 has started operation	The event sent when starting the runtime
No. 23 has stopped running	The event sent when the running stops
Big throw on Scale 24# A	The event sent when Scale A reaches the big throw
Big throw on Scale 25# B	The event sent when Scale B reaches the big throw
Mid-range investment on Scale 26# A	The event sent when Scale A reaches the middle range
Middle range on Scale 27# B	The event sent when Scale B reaches the middle range
28# A scale slow throw	The event sent when Scale A reaches the slow throw
Slow throw on Scale 29# B	The event sent by Scale B when it reaches the slow throw
30# A scale set value	The event sent when Scale A reaches the set value
Scale value for 31# B	The event sent when Scale B reaches its set value
Unloading from scale 32# A	The event sent when Scale A starts unloading
Unloading from scale 33# B	The event sent when Scale B starts unloading
Loosen the bag on scale 34# A	The event sent when Scale A starts to loosen the bag
Loosen the bag on scale 35# B	The event sent when Scale B starts to loosen the bag
Move the No. 36 traction slider out	The event sent when the traction slider starts to move out
Move the No. 37 traction slider back	The event sent when the traction slider starts to move back

【 Execution Action 】 High-speed actions executed after triggering an

event, with a total of 20 channels, and the action of each channel can be set.

The event sent after the action execution is completed can be used to trigger another event channel.

3.6.6.2 High-speed action

Quit

6.6 Event program

Home

6.6.1
Event

6.6.2
Moto act

6.6.2.1
act channel

1# EAHo1

6.6.2.8
start freq

10.0 KHz

6.6.2.2
Run Freq

20.0 KHz

6.6.2.9
Start freqs

3000

6.6.2.3
Run Freqs

10000

6.6.2.10
Stop freq

10.0 KHz

6.6.2.4
In Point

None

6.6.2.11
Stop freqs

3000

6.6.2.5
Dir Out

None

6.6.2.12
Overtime

0.00 s

6.6.2.6
HO Index

None

6.6.2.13
Polarity

Out Open

6.6.2.7
Start Dly

1.00 s

Forward

Backward

6.6.2.1	Moto act channel	High-speed operation from 1# to 20#
6.6.2.2	Run freq	0.0-60.0KHz; The frequency of high-speed action execution
6.6.2.3	Run freqs	0-250,000 The number of frequencies output when high-speed actions are executed
6.6.2.4	In poit	If there is an origin switch, select the origin input port. If there is no origin switch, select "Off"
6.6.2.5	Dir out	Select the OUT port for the direction signal output
6.6.2.6	HO index	Select the high-speed port for high-speed pulse output
6.6.2.7	Start delay	0.0 to 99.9s; The delay time before the high-speed action starts
6.6.2.8	Start freq	0.0-60.0KHz; The frequency at which acceleration begins
6.6.2.9	start freqs	0-250,000 The number of frequencies experienced from the "start-up frequency" to the "operating frequency" during acceleration

6.6.2.10	stop freq	0.0-60.0KHz; The frequency after deceleration is completed
6.6.2.11	stop freqs	0-250,000 The number of frequencies experienced from the "operating frequency" to the "deceleration frequency"
6.6.2.12	overtime	0.0 to 99.9s; When there is an origin switch, if the origin switch is not reached within this time, the action will stop. This time does not work when there is no origin switch
6.6.2.13	polarity	Output valid/Output invalid; When defining the output of the direction signal, determine whether the output is valid or invalid

For example

Here are some examples to illustrate the usage of events. Suppose the following function is to be implemented now:

During the unloading and bag loosening process, the traction and clamping should move towards the bag opening for a certain period of time (for example, 3000 pulses) to get closer to the bag opening.

2. When the bag drops, proceed to the second section (for example, 4000 pulses) for clamping.

3. After the traction slider moves back for a period of time (for example, 2s), the traction strap loosens and returns to the origin.

4. When powered on and started, if the traction strap is not at the origin, it should return to the origin.

(1) The first section of function implementation

The first function is that when unloading and loosening the bag, the traction strap moves 3000 pulses towards the bag opening. The "Event Channel 1" and "1# High-Speed Action 1" can be selected to achieve this function.

"1# High-Speed Action 1" is set as follows:

Run freq	Set according to actual conditions
Run freqs	3000
Start freq	Set according to actual conditions
start freqs	Set according to actual conditions
stop freq	Set according to actual conditions
stop freqs	Set according to actual conditions

Start delay	0. Execute immediately
overtime	0. It doesn't work
In poit	Select "None", no origin is needed
HO index	Set according to actual conditions
Dir out	Set according to actual conditions
polarity	Set according to actual conditions

"Event Channel 1" is set as follows:

Trigger event	Loosen the bag on scale 34# A
Perform an action	# High-speed Action 1
Complete the event	User Event 1#

After completing the above Settings, when starting the bag loosening process, the "34# A scale Bag Loosening" event will be triggered, and then "1# High-speed Action 1" will be executed. This way, the first section of the function is achieved.

In addition, after the completion of "1# High-speed Action 1", send the completion event "1# User Event 1", which is used to trigger the second action.

(2) The second section of function implementation

The second function is to travel 4,000 pulses and perform clamping. This function can be accomplished by choosing "Event Channel 2" and "2# High-Speed Action 2".

"2# High-Speed Action 2" is set as follows:

Run freq	Set according to actual conditions
Run freqs	4000
Start freq	Set according to actual conditions
start freqs	Set according to actual conditions
stop freq	Set according to actual conditions
stop freqs	Set according to actual conditions
Start delay	Set according to actual conditions
overtime	0. It doesn't work
In poit	Select "None", no origin is needed
HO index	Set according to actual conditions
Dir out	Set according to actual conditions

polarity	Set according to actual conditions
----------	------------------------------------

"Event Channel 2" is set as follows:

Trigger event	User Event 1#
Perform an action	2# High-speed Action 2
Complete the event	0# Closed

After the above Settings are completed, when "1# User Event 1" occurs, "2# High-speed Action 2" will be executed. In this way, the second section of the function is realized, fulfilling the requirements of the interlocking.

(3) Realization of the third section of functions

The third function is to pull the slider back for a certain period of time (for example, 2s), and then the traction strap loosens and returns to the origin. This function can be accomplished by using "Event Channel 3" and "2# High-Speed Action 3".

The Settings for "3# High-Speed Action 3" are as follows:

Run freq	Set according to actual conditions
Run freqs	7000
Start freq	Set according to actual conditions
start freqs	Set according to actual conditions
stop freq	Set according to actual conditions
stop freqs	Set according to actual conditions
Start delay	2, that is, release and return to the original point after 2s
overtime	Set according to actual conditions
In poit	Set according to actual conditions
HO index	Set according to actual conditions
Dir out	Set according to actual conditions
polarity	Set according to actual conditions

"Event Channel 3" is set as follows:

Trigger event	Move the No. 36 traction slider back
Perform an action	3# High-speed Action 3
Complete the event	0# Closed

After the above Settings are completed, when the traction slider moves back,

the "36# Traction Slider Moves Back" event will be triggered, and "3# high-speed Action 3" will be executed to bring the strap back to the origin.

(4) The fourth section: Function realization

The fourth function is to bring the traction back to the origin after power-on is completed. This is the same action as the return to the origin in the third section, so there is no need to define a new action. It is only necessary to trigger the "3# high-speed Action 3" in the third section to execute once.

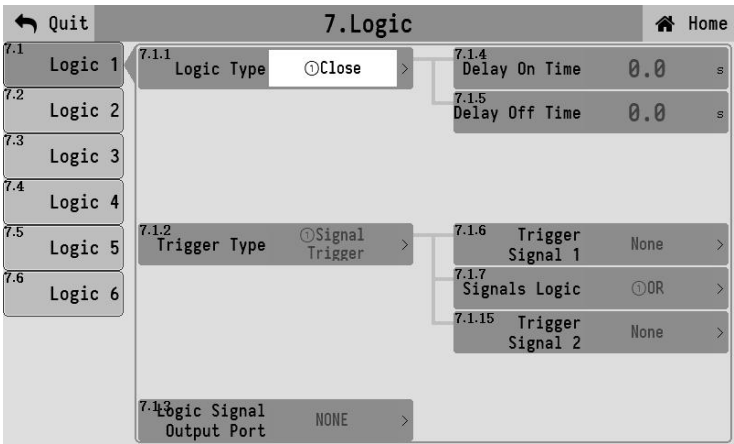
It can be implemented using "Event Channel 4", and the Settings are as follows:

Trigger event	Power on No. 21 has been completed
Perform an action	3# High-speed Action 3
Complete the event	0# Closed

3.7 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:



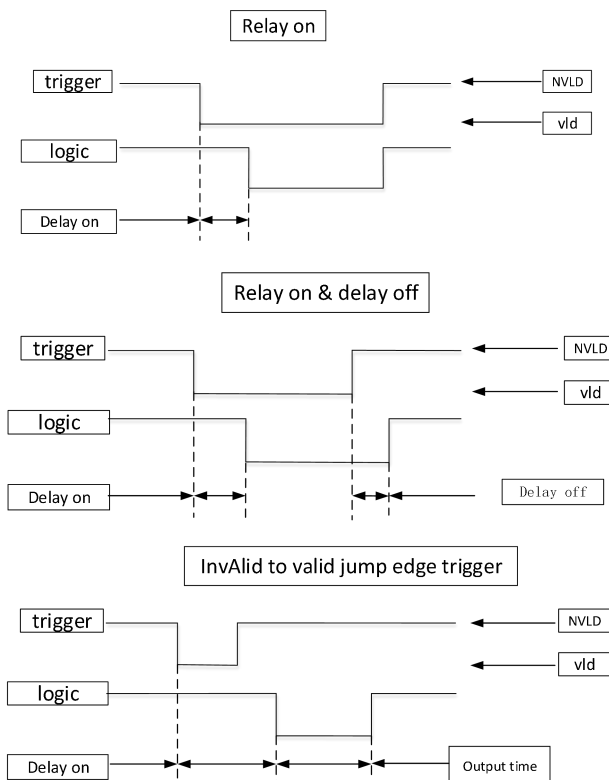
The following uses logic programming 1 as an example to explain the functions of each parameter:

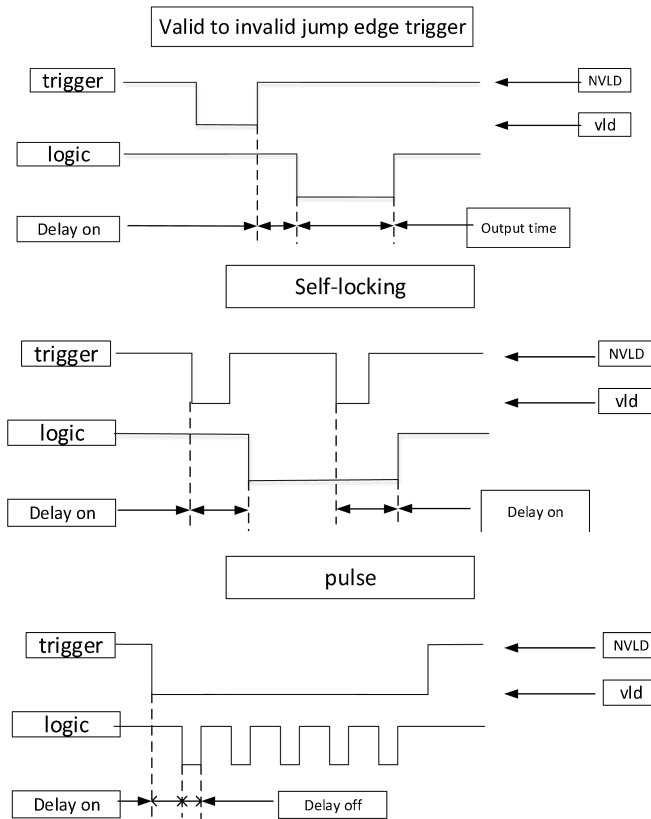
10.1.1	Logic Type	Select the type of logical programming. ① [OFF] : Disable the logical output function. ② [Delay on] ③ [Delayoff] ④ [Delay on and delay off] ⑤ [OFF-ON edge trigger] ⑥ [ON-OFF edge trigger] ⑦ [Self Hold] ⑧ [pulse] Corresponding function description in detail:
10.1.2	Trigger Type	① [Signal trigger]: The logical output is triggered by a signal. ②[Condition triggered] : Trigger the logical output by reaching a condition. ③[Communication trigger]: The logical output is triggered by a communication command.
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	Select the logical relationship between trigger signals 1 and 2 used to trigger the logical output. 1.[or]: Trigger signal 1 and trigger signal 2 can trigger the logical output if either signal is valid.

		2.[and]: Trigger signals 1 and 2 need to be valid to trigger the logical output. 3.[XOR]: The logical output can be triggered only when trigger signals 1 and 2 are different.
10.1.8	Output time	【 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. When this time is set to 0, the logical output signal will be terminated only by a reset signal.
10.1.9	Reset signal set	【 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.
10.1.10	Reset signal logic	1.[Effective reset]: Reset the logical output when the reset signal is effective. 2.[Invalid reset]: Reset the logic output when the reset signal is invalid.
10.1.11	Trigger Condition Set	Select the condition that triggers the logical output. 1.[Weight greater than set value] 2.[Weight less than set value] 3.[Weight within range] 4.[Weight outside the range]
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 stability	1.[ON]: The logical output can be triggered only when the weight meets the

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

3.1.1. Time diagrams logically





3.1.2. Examples

Through logic programming to achieve the coding function: bag output signal effective, delay 1 second time, and then output OUT12 lasting 2s, 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 2s, and the output OUT11 lasts 3s 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 2s, output OUT11 lasts 3s.

【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

3.8 Self-check

The self-check function can get the system running without materials or load cells connected to check if all mechanisms are functioning properly. Click the "Self-Check" button on the system maintenance interface, and you will enter the self-check interface as follows:

8. Self Test		Home
A Related Status •Run •Hold •Fast •O/U •Mid •Clamp •Slow •Disc A Detail Step Stop	B Related Status •Run •Hold •Fast •O/U •Mid •Clamp •Slow •Disc B Detail Step Stop	WorkMode: @hopper (AB hs) Warring: No warning Recipe: (20) Clr Alarm Start Self Test

Click "Start Self-Check" to activate the self-check function. Click again to stop the self-check.

3.9 Communication parameters

Communication needs to be selected. After selection, it can be equipped with 1 RS485 channel and 1 RS232 channel.

3.9.1 RS485/232 Comm Set

The RS232 setting interface is shown in the following figure:

Quit 9. Sio Para Home			
9.1 RS232 Set	9.1.1 Sio Addr 1	9.1.3 Buadrate 4800	9.1.4 Data Fmt 7-E-1
9.2 RS485 Set		9600	7-0-1
9.3 Print Set	9.1.2 Protocol Modbus-RTU-H Modbus-RTU-L Print	19200 38400 57600	8-N-1 8-E-1 8-O-1

9.1.1	SIO addr	The device address, RS232 and RS485 can be set to different addresses separately
9.1.2	protocol	Modbus-RTU-H, Modbus-RTU-L, printing
9.1.3	Baud rate	4800,9600,19200,38400,57600
9.1.4	Data fmt	7-E-1, 7-O-1,8-N-1, 8-E-1, 8-O-1

The RS485 Settings are the same as the RS232 communication Settings

3.9.2 Print Settings

When the 9.1.2 communication protocol is set to print, the parameter Settings are valid.

Quit 9. Sio Para Home		
9.1 RS232 Set	9.3.1 int Language Chinese	9.3.6 nstrument ID ..+
9.2 RS485 Set	9.3.2 Print Column 16 Columns	
9.3 Print Set	9.3.3 Auto Print Closed	
	9.3.4 ber of lines ter printing 3	
	9.3.5 Print Mode Acc Data	

9.3.1	Print language	Chinese/English is optional
-------	----------------	-----------------------------

9.3.2	Print column h	16 columns /24 columns /32 columns are available for selection
9.3.3	auto print	Closed Opened: Opened automatic printing of packaging results.
9.3.4	Number of liner after print	0 to 16; The number of lines between each two prints
9.3.5	Print mode	Cumulative data/net weight.
9.3.6	Instrument ID	When the net weight value is selected in the manual print mode, the instrument ID will also be printed out.

When the [9.2.2 Communication Protocol] or [9.1.2 Communication Protocol] is set to print and the [9.3.5 Manual Print Mode] is set to cumulative data, a print button will appear on the main interface. Each time it is pressed, the cumulative data will be printed once. The style is as follows:

	Chinese	English
16 columns	累计次数: 4497 总累计: 1124.84 kg 2024.11.23-11:24	Sum: 4498 Total Sum: 1125.10 kg 2024.11.23-11:24
Column 24	累计次数: 4499 总累计: 1125.36 kg 时间: 2024.11.23-11:25	Sum: 4500 Total: 1125.62 kg Time: 2024.11.23-11:25
32 columns	累计次数: 4501 总累计: 1125.87 kg 打印时间: 2024.11.23-11:25	Sum: 4502 Total Sum: 1126.13 kg Print Time: 2024.11.23-11:25

When the [9.2.2 Communication Protocol] or [9.1.2 Communication Protocol] is set to print and the [9.3.5 Manual Print Mode] is set to net weight, a print button will appear on the

main interface. Pressing it once will print the net weight value once. The style is as follows:

	Chinese	English
"16 columns	A秤净重: 0.01 kg B秤净重: 0.01 kg 日期: 2024/12/05 时间: 17:55:10 仪表ID: 01234567	Scale A Net: 0.01 kg Scale B Net: 0.01 kg Date: 2024/12/05 Time: 17:55:01 ID: 01234567
Column 24	A秤净重: 0.01 kg B秤净重: 0.01 kg 日期: 2024/12/05 时间: 17:50:27 仪表ID: 01234567	Scale A Net: 0.01 kg Scale B Net: 0.01 kg Date: 2024/12/05 Time: 17:53:54 ID: 01234567
32 columns	A秤净重: 0.01 kg B秤净重: 0.01 kg 打印时间: 2024/12/05-17:54:24 仪表ID: 01234567	Scale A Net: 0.01 kg Scale B Net: 0.01 kg Print Time: 2024/12/05-17:54:32 ID: 01234567

When [9.3.3 Auto printing] is set to be opened, the relevant data of the current completion will be automatically printed after each scale of packaging is finished. The style is as follows:

	Chinese	English
"16 columns	1, 4497 20, 0.25 2024.11.23-11:24 The content is Device number, cumulative number of times Recipe number, weight for this time	1, 4498 20, 0.26 2024.11.23-11:24 The content is Device number, cumulative number of times Recipe number, weight for this time
Column 24	设备号: 1 配方号: 20 累计次数: 4499 本次结果: 0.26 kg 时间: 2024.11.23-11:25 	Device: 1 Result: 20 Sum: 4500 Result: 0.26 kg Time: 2024.11.23-11:25

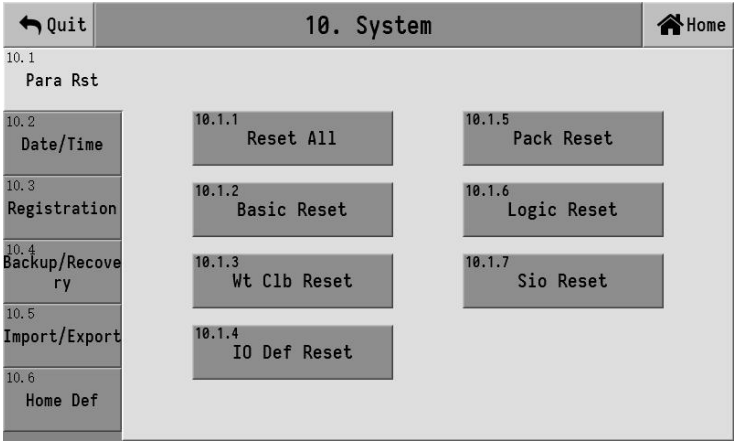
32 columns	1, 20, 4501, 0.25 打印时间: 2024.11.23-11:25	1, 20, 4502, 0.26 Print Time: 2024.11.23-11:25
	The content is Equipment number, recipe number, cumulative number of times, current weight	The content is Equipment number, recipe number, cumulative number of times, current weight

3.10 System

The system interface includes functions such as parameter reset, time and date, product registration, parameter backup and recovery, and data import and export.

3.10.1 Parameter reset

Click the Para Rst button to reset the corresponding parameter values. The parameter values will be restored to the factory Settings. Please operate with caution.



3.10.2 Date/Time

It can modify the time and date of the controller.

← Quit 10. System Home

10.1 Para Rst

10.2 Date&Time

10.3 Registration

10.4 Backup&Recovery

10.5 Import&Export

10.6 Home Def

2025-08-29(Fri)14:53:39

Year 2025 Hour 14

Month 8 Minute 53

Day 29 Second 39

Write In

3.10.3 Registration

Product use registration Settings.

← Quit 10. System Home

10.1 Para Rst

10.2 Date/Time

10.3 Registration

10.4 Backup/Recovery

10.5 Import/Export

10.6 Home Def

Release Sts: Product Licensed

Random Id: 2930555555

Input Reg Code

Regist

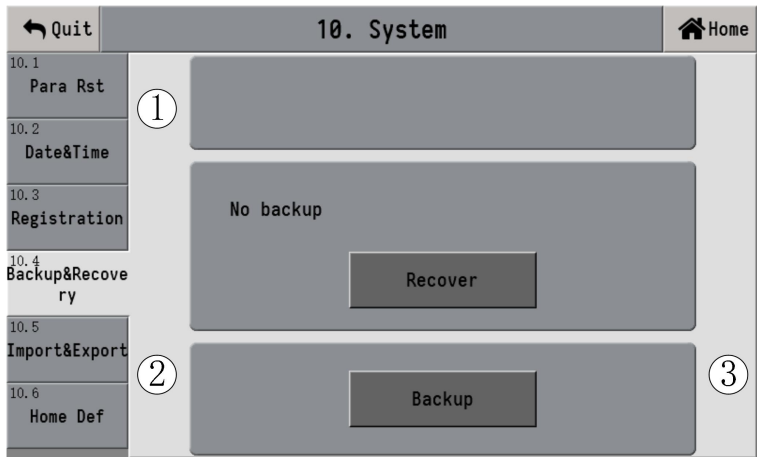
3.10.4 Backup and Recovery

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 mis operation, when the parameter Backup and recovery page is displayed, By default, the button Backup and Delete Backup are 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 position ② three times, and then click position ③ three times to enable backup and delete backup.



3.10.5 Import and Export

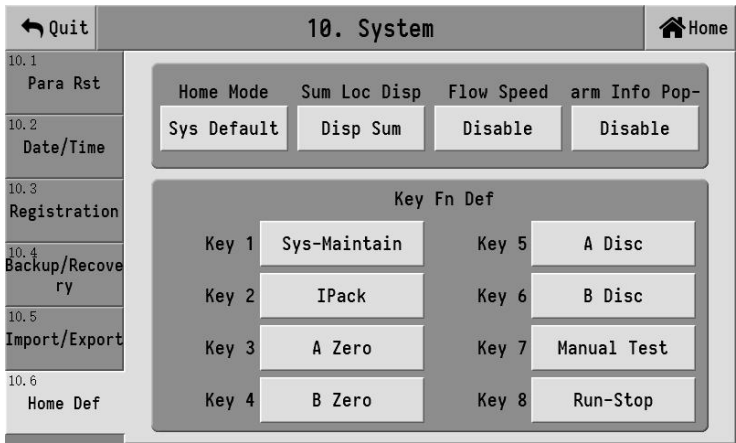
The controller can export the current parameters to a USB flash drive in CSV format.



3.10.6 Home page Definition

This interface sets the main display mode, whether to display cumulative

values, and the definitions of function keys, etc.



3.11 Admin pass change

When leaving the factory, the default administrator password is six zeros. Under the administrator's authority, the administrator password can be modified. In the system maintenance interface, click on "Administrator Password Modification", then enter the new password in the pop-up interface and click "ok". If you click "Exit", the old password will remain unchanged.

3.12 Cumulative data

The cumulative data consists of two interfaces: cumulative data and historical data. The cumulative data calculates the cumulative number of packages and cumulative weight under each recipe as well as the cumulative number of packages and weight of A/B scales. The historical data interface records the packaging data of each scale, as shown in the following figure:

Quit

12.Acc Data

Home

12.1 Acc. Data

12.2 History Data

Total Acc.

	Acc. Nums	Acc. Weight
Total	5	97.98
A	10	110.96
B	4	62.43
Batch	----	0.00

Rec. Acc.

Rec.	Acc. Nums	Acc. Weight
1	6	15.27
2	0	0.00
3	0	0.00
4	0	0.00
5	0	0.00
6	0	0.00
7	0	0.00
8	0	0.00
9	0	0.00
10	0	0.00
11	0	0.00
12	0	0.00

Clr All Acc.

Clr Acc.

Clr Batch Acc.

Clr Rec. Acc.

Clr Sel. Rec

JDisk Export

Quit

12.Acc Data

Home

12.1 Acc. Data

12.2 History Data

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

PageUp

1 / 0

PageDown

Clear Data

JDisk Export

Num of data : 0 / 100000

4 Packaging control

4.1 packaging process for hopper

There are four modes available for the bucket scale packaging, namely AB combination mode, AB high-speed mode, A scale single mode, B scale single mode, and ABA combination mode.

(1) AB combination mode

Scale A and Scale B respectively carry out multiple feeding and unloading

operations. Only after reaching a certain number of times do they loosen the bag once to complete one combination. In the AB combination mode, the setting of the target value must meet the following conditions:

The target value of scale A must wait for the target value of scale B

The TOT-TGT value must be an integer multiple of the target value of scale A

The number of combinations = total target value/target value of A scale. For instance, if the total target value is 60.0 and both the target values of Scale A and Scale B are 20.0, then the number of combinations is 3. That is to say, each time scale A and Scale B are combined three times, the bag will be loosened once.

(2) AB high-speed mode

In this mode, both scale A and Scale B add materials simultaneously, but they share one bag clamping mechanism. Only one scale is used for unloading and bag loosening each time. While one scale is unloading, the other is waiting. The target values of Scale A and Scale B can be set separately and can be set to different values.

(3) Scale A standalone mode

In this mode, Scale B is not in use. When the total target value is 0, Scale A is fed and unloaded once, and then the bag is loosened once to complete one packaging process. When the total target value is not 0, the total target value is equal to an integer multiple of the target value of scale A. The number of combinations = total target value/target value of scale A. After multiple loading and unloading operations on scale A, one bag release is carried out.

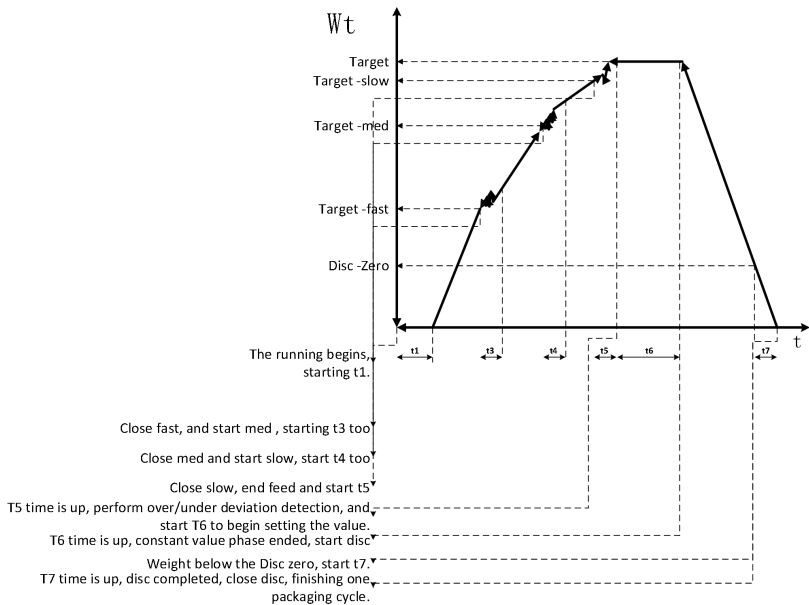
(4) Scale B standalone mode

In this mode, Scale A is not used, and the process is the same as in the standalone mode of Scale A.

(5) ABA combination

The A scale, B scale, and A scale (using the target value 2 of the A scale) are successively used for one feeding and unloading. After completion, one bag loosening is carried out to complete the ABA combined packaging. In this mode, the target values of scales A and B may not be equal, and there is no requirement to set a total target value.

Regardless of which bucket packaging mode is used, the basic packaging process for each channel is the same, as shown in the following figure:



Now, we will explain the basic packaging process of the bucket scale in combination with the above figure

Each time the packaging starts running, it will first wait for a delay time t1.

After t1 time arrives, if the automatic zeroing condition is met, an automatic zeroing will be carried out once, and then the investment will be initiated. If not satisfied, a fast investment will be directly initiated.

3. After initiating the big throw;

4. Collect the weight in real time and compare it. When the weight value is greater than or equal to the target value - the lead amount for the fast throw, close the fast throw and start the Med throw.

5. After the middle range is activated, start the middle range to prohibit comparison time t3. Only after t3 time will the weight comparison begin.

6. Collect the weight in real time and compare it. When the weight value is greater than or equal to the target value - the lead amount of the middle range, turn off the middle range and start the slow range.

7. After the slow throw is activated, the comparison time t4 is prohibited when starting the slow throw. Weight comparison should only begin after t4 time.

8. Collect the weight in real time and compare it. When the weight value is greater than or equal to the target value - the drop value of the slow feeder, close the slow feeder and end the feeding.

After the feeding is completed, start the over-limit and under-limit detection time t_5 . When the instrument is stable and the scale bucket is stable, record the data. In the combination mode, the out-of-tolerance detection will only be carried out if the current scale is the last scale of this packaging. If the detection is out of tolerance or out of tolerance, it may stop for 2s or be paused directly according to the Settings.

After the over-limit and under-limit detection is completed, start the fixed value holding time t_6 .

11. After the t_6 time is up, the setting process is completed. At this point, it will detect whether the bag has been clamped. If it has not been clamped, wait for it to be clamped. If it has already been clamped, start unloading.

12. When unloading, if the weight is lower than the zero zone value for unloading, start t_7 and delay until the unloading is completed. At this point, complete one quantitative packaging process and return to step 1 to start the next packaging process.

4.2 Packaging process of no hopper

The bucket-less scale has four working modes: bucket-less mode 1, bucket-less mode 2, bucket-less mode 3, and bucket-less mode 4.

(1) No-bucket Mode 1: Simultaneous bag release high-speed mode

In this mode, the instrument does not control the operation of the conveyor. If one scale has completed the loading and bagging (if the bagging is opened), and the loading of the other scale has not yet been completed, then wait for the other scale to complete the loading and bagging, and then release the bag and start the additional bagging together. If the other scale is not in the bag-clamping and feeding state, this scale will directly release the bag and start the additional bag-tapping without waiting for the other scale.

(2) No-bucket mode 2: Simultaneously release bag A scale priority mode

In this mode, the instrument does not control the operation of the conveyor and simultaneously considers Scale A to be in front of Scale B.

When scale B arrives but Scale A has not, wait for Scale A. When Scale A

arrives, loosen the bag and tap the extra bag simultaneously

If scale B arrives but Scale A does not hold the bag, Scale B will directly release the bag and perform an additional tap on it

When scale A arrives but Scale B does not, Scale A will directly loosen the bag and tap the additional bag without waiting for Scale B

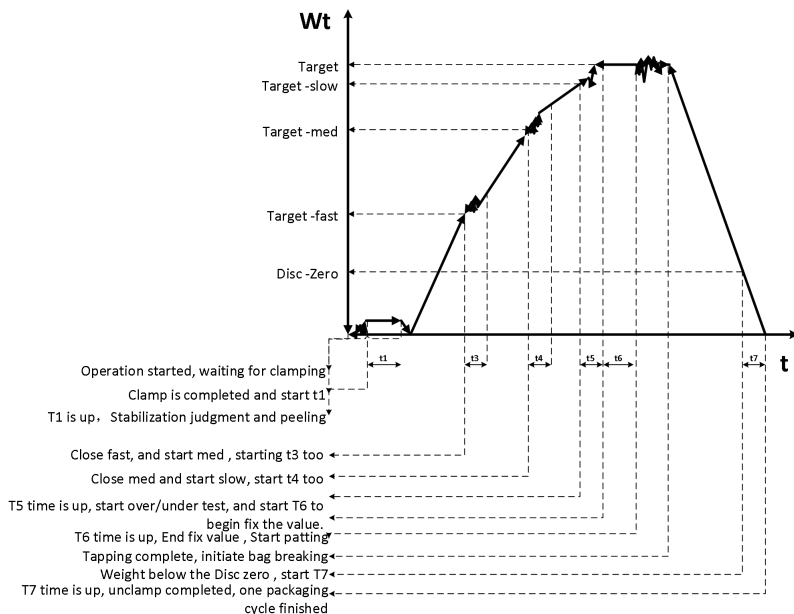
(3) No-fight Mode 3: AB mutual waiting mode

In this mode, after one scale finishes loading and loosens the bag, it will wait for the other scale to also load and loosen the bag. Once both scales have loosened the bag, the conveyor will be started.

(4) No-Fight Mode 4: AB independent mode

In this mode, the instrument does not control the operation of the conveyor, and Scale A and Scale B are completely independent. They can simultaneously add materials and loosen bags without being affected by the status of the other scale.

The basic packaging process in all no-bucket modes is the same, as shown in the following figure:



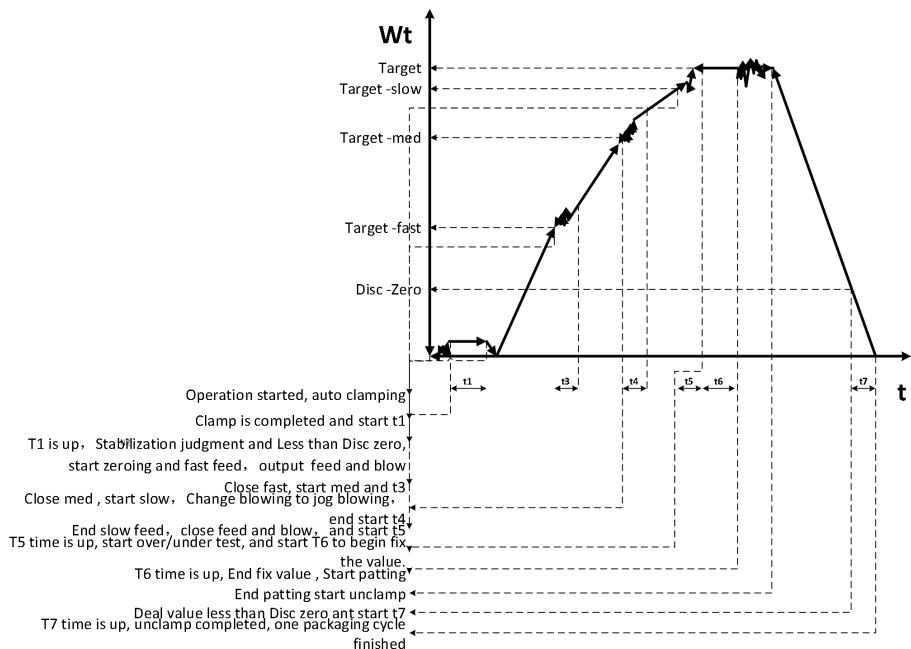
Now, we will explain the basic packaging process of the bucket-less scale in combination with the above figure

1. At the start of operation, first wait for the bag clamp to be effective;
2. After the bag clamping is effective, wait for the feeding delay time t_1 .
After t_1 , perform the stable peeling.
3. After successful peeling, start the fast feeding.
4. When the weight value is greater than or equal to the target value - the lead time for the fast throw, close the fast throw, start the middle throw, and activate the middle throw to prohibit comparison time t_3 . Only after t_3 will the real-time weight value comparison begin.
5. When the weight value is greater than or equal to the target value - the lead amount of the middle range, turn off the middle range, activate the slow range, and start the slow range to prohibit the comparison time t_4 . Only after t_4 will the real-time weight value comparison begin.
6. When the weight value is greater than or equal to the target value - the drop value of the slow input, close the slow input, end the feeding, and start the over-limit and under-limit detection time t_5 .
7. After t_5 time, the instrument determines stability and records the data. If the detection shows an over-tolerance or under-tolerance, it may stop for 2s or even pause directly according to the Settings. Then start the fixed value holding time t_6 ;
8. After the t_6 time is up, the setting process is completed
9. After the setting is completed, if the bag tapping has not been initiated, the bag release delay will be activated. If the bag-tapping function after setting the value is opened, the bag-tapping will be carried out first. After the bag-tapping is completed, the bag release delay will be initiated. When the delay ends, the bag will be automatically released, meaning that the bag clamping is invalid and a bag release signal will be output.
10. When the weight value is less than half of the target value, start the unloading delay time t_7 . After t_7 time, one packaging process is completed and return to step 1 to start a new packaging process.

4.3 Packaging process of AB LCS-FK

The valve port scale has only one mode, which is that the two channels operate completely independently and are not related to each other. The basic

process of each channel is the same, as shown in the following figure:



Now, we will explain the basic packaging process of the valve port scale in combination with the above figure

1. When the operation starts, it actively outputs the bag-holding signal;
2. Start the feeding delay time t1. After t1 arrives, if the weight value is stable and below the zero zone value of the valve port, perform zeroing.

After the zeroing is successful, start the fast feeding and output the blowing and discharging signals.

4. When the weight value is greater than or equal to the target value - the lead time for the fast throw, close the fast throw, start the middle throw, and simultaneously activate the middle throw to prohibit comparison time t3. Only after t3 will the real-time weight value comparison begin.

5. When the weight value is greater than or equal to the target value - the lead amount of the Med input, the Med input is turned off and the slow input is started. The material blowing mode is changed to a point operation mode. At the same time, the slow input is started and the comparison time t4 is prohibited. The real-time weight value comparison only begins after t4.

6. When the weight value is greater than or equal to the target value - the drop value of the slow throw, close the slow throw, end the feeding, turn off the blowing and discharging signals, and simultaneously start time t5.

7. After the t5 time, determine the stability and make a judgment of the excess or deficiency, then start the t6 time.

8. After the t6 time is up, the setting process is completed.

9. After the setting is completed, if the bag tapping has not been initiated, the bag release delay will be activated. If the bag-patting function after setting the value is opened, the bag-patting will be carried out first. After the bag-patting is completed, the bag-releasing delay will be initiated. When the delay ends, the bag will be automatically released, meaning that bag clamping is invalid.

10. When the weight value is lower than the zero zone value of the valve port, wait for the unloading delay time t7. After t7 time, one packaging process is completed and return to step 1 to start a new packaging process.

4.4 Bulk material accumulation process

The basic process of bulk material accumulation is the same as that of the hopper scale. Please refer to the process of the hopper scale. Bulk materials are accumulated for receiving or shipping. When the total target value (total shipping volume) is set to 0, it is in the receiving mode; otherwise, it is in the shipping mode.

In the receiving mode, the instrument will operate continuously. After receiving the slow stop signal, complete the last process, stop receiving goods, and count the total amount of goods received this time into the total cumulative weight and number of times.

In the shipping mode, materials are added and unloaded according to the target values of scale A and scale B. When the total shipping volume is reached, the shipping ends and the total shipping volume is included in the total cumulative weight and frequency. If the last scale is less than the target value of a single scale, this insufficient value will be taken as the target value of the last scale.

Whether in shipping mode or receiving mode, when it is the last scale, the output switch will output the "last scale" signal.

There are a total of four working modes for bulk materials, namely AB mutual exclusion, AB simultaneous, only A scale, and only B scale mode.

(1) AB mutual exclusion mode

In this mode, after starting and running, Scale A operates first while Scale B waits. When scale A starts unloading, Scale B begins to add materials. When scale B starts unloading, Scale A begins to add materials. Scale A and Scale B are mutually exclusive and do not operate simultaneously.

(2) AB simultaneous mode

Scale A and Scale B are independent and can be fed and unloaded simultaneously.

(3) Scale Mode A

In this mode, only Scale A is in operation, Scale B is not in use, and the target value of Scale B is meaningless.

(4) Scale B mode

In this mode, only Scale B is in operation, Scale A is not in use, and the target value of Scale A is meaningless.

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